

BUSH HOG®

Model 3860 QT Front End Loader Operator's Manual



OPERATION ● MAINTENANCE

CONGRATULATIONS!

You have invested in the best implement of its type on the market today.

The care you give your Bush Hog implement will greatly determine your satisfaction with its performance and its service life. We urge a careful study of this manual to provide you with a thorough understanding of your new implement before operating, as well as suggestions for operation and maintenance.

If your manual should become lost or destroyed, Bush Hog will be glad to provide you with a new copy. Order from Bush Hog, P. O. Box 1039, Selma, Alabama 36702-1039.

As an authorized Bush Hog dealer, we stock genuine Bush Hog parts which are manufactured with the same precision and skill as our original equipment. Our trained service personnel are well informed on methods required to service Bush Hog equipment, and are ready and able to help you.

Should you require additional information or assistance, please contact us.

YOUR AUTHORIZED
BUSH HOG DEALER

BECAUSE BUSH HOG MAINTAINS AN ONGOING PROGRAM OF PRODUCT IMPROVEMENT, WE RESERVE THE RIGHT TO MAKE IMPROVEMENTS IN DESIGN OR CHANGES IN SPECIFICATIONS WITHOUT INCURRING ANY OBLIGATION TO INSTALL THEM ON UNITS PREVIOUSLY SOLD.

BECAUSE OF THE POSSIBILITY THAT SOME PHOTOGRAPHS IN THIS MANUAL WERE TAKEN OF PROTOTYPE MODELS, PRODUCTION MODELS MAY VARY IN SOME DETAIL. IN ADDITION, SOME PHOTOGRAPHS MAY SHOW SHIELDS REMOVED FOR PURPOSES OF CLARITY. **NEVER OPERATE** THIS IMPLEMENT WITHOUT ALL SHIELDS IN PLACE.

3860 QT

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RETAIL CUSTOMER'S RESPONSIBILITY UNDER THE BUSH HOG WARRANTY

It is the Retail Customer and/or Operator's responsibility to read the Operator's Manual, to operate, lubricate, maintain and store the product in accordance with all instructions and safety procedures. Failure of the operator to read the Operator's Manual is a misuse of this equipment.

It is the Retail Customer and/or Operator's responsibility to inspect the product and to have any part(s) repaired or replaced when continued operation would cause damage or excessive wear to other parts or cause a safety hazard.

It is the Retail Customer's responsibility to deliver the product to the authorized Bush Hog Dealer, from whom he purchased it, for service or replacement of defective parts which are covered by warranty. Repairs to be submitted for warranty consideration must be made within forty-five (45) days of failure.

It is the Retail Customer's responsibility for any cost incurred by the Dealer for traveling to or hauling of the product for the purpose of performing a warranty obligation or inspection.



LIMITED WARRANTY



Bush Hog warrants to the original purchaser of any new Bush Hog equipment, purchased from an authorized Bush Hog dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state, and municipalities' use and ninety (90) days for commercial use from date of retail sale. The obligation of Bush Hog to the purchaser under this warranty is limited to the repair or replacement of defective parts.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Bush Hog dealer during regular working hours. Bush Hog reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Bush Hog's obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, **INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE** and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Bush Hog; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Bush Hog.

THIS LIMITED WARRANTY SHALL NOT APPLY:

1. To vendor items which carry their own warranties, such as engines, tires, and tubes.
2. If the unit has been subjected to misapplication, abuse, misuse, negligence, fire or other accident.
3. If parts not made or supplied by Bush Hog have been used in connection with the unit, if, in the sole judgement of Bush Hog such use affects its performance, stability or reliability.
4. If the unit has been altered or repaired outside of an authorized Bush Hog dealership in a manner which, in the sole judgement of Bush Hog, affects its performance, stability or reliability.
5. To normal maintenance service and normal replacement items such as gearbox lubricant, hydraulic fluid, worn blades, or to normal deterioration of such things as belts and exterior finish due to use or exposure.
6. To expendable or wear items such as teeth, chains, sprockets, belts, springs and any other items that in the company's sole judgement is a wear item.

NO EMPLOYEE OR REPRESENTATIVE OF BUSH HOG IS AUTHORIZED TO CHANGE THIS LIMITED WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY BUSH HOG'S SERVICE MANAGER, POST OFFICE BOX 1039, SELMA, ALABAMA 36702-1039.



Record the model number, serial number and date purchased. This information will be helpful to your dealer if parts or service are required.

MODEL NUMBER _____

MAKE CERTAIN THE WARRANTY REGISTRATION CARD HAS BEEN FILED WITH BUSH HOG/
SELMA, ALABAMA

SERIAL NUMBER _____

DATE OF RETAIL SALE _____

DEALER PREPARATION CHECK LIST

3860 QT LOADER

BEFORE DELIVERING MACHINE - The following check list should be completed.
Use the Operator's Manual as a guide.

- Machine properly assembled.
- All safety decals readable. (See decal page)
- All bolts tightened to torque specifications given in torque chart.
- Machine operates properly.
- Customer has appropriate mounting kit for his tractor and loader.
- Customer has appropriate attachments for loader operations. (Buckets for lifting loose materials; bale spear for lifting round bales; fork lift for lifting palletized material)

CAUTION

**IT IS RECOMMENDED THAT TRACTOR BE
EQUIPPED WITH ROLLOVER PROTECTIVE SYS-
TEM (ROPS) AND SEAT BELT BE USED FOR ALL
LOADER OPERATIONS.**

- Operator's manual has been delivered to owner and he has been instructed on the safe and proper use of the front end loader.

Dealer's Signature _____

THIS CHECK LIST TO REMAIN IN OPERATOR'S MANUAL
It is the responsibility of the dealer to complete the procedures listed
above before delivery of this implement to the customer.

IMPORTANT SAFETY PRECAUTIONS

This symbol is used to call attention to safety precautions that should be followed by the operator to avoid accidents. When you see this symbol, carefully read the message that follows and heed its advice. Failure to comply with safety precautions could result in serious bodily injury.



In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel in the operation, transport, maintenance and storage of equipment. Lack of attention to safety can result in accident, personal injury, reduction of efficiency and worst of all—loss of life. Watch for safety hazards and correct deficiencies promptly. Use the following safety precautions as a general guide to safe operations when using this machine. Additional safety precautions are used throughout this manual for specific operating and maintenance procedures. Read this manual and review the safety precautions often until you know the limitations.

THE TRACTOR

1. Read the tractor operator's manual to learn how to operate your tractor safely. Failure to do so could result in serious injury or death and equipment damage.
2. It is recommended that tractor be equipped with Rollover Protective System (ROPS) and a seat belt be used for all loader operations.
3. Add wheel ballast or rear weight for stability.
4. Move wheels to the tractor manufacturer's widest recommended settings to increase stability.
5. For better stability, use tractor with wide front axle rather than tricycle front wheels.
6. Move and turn the tractor at low speeds.
7. Stop tractor engine, place transmission in park (or neutral), engage parking brake, lower loader arms to ground, cycle all hydraulic controls to relieve pressure, allow machine moving parts to stop, remove ignition key to prevent unauthorized person from starting engine before dismounting tractor or servicing, repairing, or making adjustments to the equipment.
8. Wear personal protective equipment (PPE), such as, but not limited to, protection for eyes, ears, lungs, head, hands and feet when operating, servicing, or repairing equipment. Avoid wearing loose clothing or jewelry that may catch and entangle on equipment moving parts.

THE LOADER

1. Read the loader operator's manual to learn how to operate your loader safely. Failure to do so could result in serious injury or death and equipment damage.
2. Become familiar with all the machine's controls and all the caution, warning and danger decals affixed to the machine before attempting to start or operate.
3. Improper use of a loader can cause serious injury or death.
4. Do not lift or carry anybody on the loader or in the bucket or attachment.
5. Never allow anyone to get under the loader bucket or reach through the booms when the bucket is raised.
6. Do not walk or work under a raised loader bucket or attachment unless it is securely blocked or held in position.
7. Avoid overhead wires and obstacles when loader is raised. Contacting electrical lines can cause electrocution.
8. Make sure all parked loaders on stands are on a hard, level surface.
9. Use a piece of cardboard or wood rather than hands and wear eye protection when searching for hydraulic leaks. Escaping hydraulic oil under pressure can penetrate skin. If oil is injected into skin, it must be surgically removed within a few hours by a doctor or gangrene may result.

SAFETY PRECAUTIONS CONTINUED

10. Before disconnecting hydraulic lines, relieve all hydraulic pressure.
11. Do not tamper with the relief valve setting. The relief valve is pre-set at the factory. Changing the setting can cause overloading the loader and tractor and serious operator injury may result.
12. Always wear safety goggles when repairing or servicing machine.
13. When servicing or replacing pins in cylinder ends, buckets, etc., always use a brass drift and hammer. Failure to do so could result in injury from flying fragments.
14. Replace damaged or illegible safety decals. See decal page for required decals.
15. Do not modify or alter or permit anyone else to modify or alter the loader, any of its components or any loader function without first consulting your local dealer.

OPERATING THE LOADER

1. It is the loader owner's responsibility to instruct and have a person read operator's manual, safety decals and become familiar with machine controls before allowing them to operate loader.
2. Do not allow children to operate the loader.
3. Before starting or operating the equipment, make a walk around inspection and check for loose or damaged components. Correct any deficiency before starting.
4. Keep the area of operation clear of all persons, particularly small children. The operator should cease operation whenever anyone comes within the operating area.
5. Operate the loader from the "Operator's Seat Only."
6. Exercise caution when operating the loader with a raised loaded bucket or fork.
7. Avoid loose fill, rocks and holes. They can be dangerous for loader operation or movement.
8. Be extra careful when working on inclines.
9. Allow for the loader length when making turns.
10. Stop the loader arms gradually when lowering or lifting.
11. Use caution when handling loose or shiftable loads.
12. Carry loader arms at a low position during transport.
13. Lower loader arms, stop engine, and lock brakes before leaving the tractor seat.
14. Operate the loader controls only when properly seated at the controls.
15. Do not use loader for handling large, heavy objects such as logs, oil drums, etc.
16. Handling large, heavy objects is dangerous due to:
 - *Possibility of rolling the tractor over.
 - *Possibility of upending the tractor.
 - *Possibility of the object rolling or sliding down the loader arms onto the operator.
17. Use large round hay bale handler attachment with bale retaining devices (grapples, bale spears, clamps, etc.) to handle large round hay bales. Failure to use retaining devices could allow round hay bales to roll or fall down loader boom arms onto the operator causing serious injury or death and equipment damage.

IMPORTANT FEDERAL LAWS AND REGULATIONS* CONCERNING EMPLOYERS, EMPLOYEES AND OPERATIONS.

*(This section is intended to explain in broad terms the concept and effect of the following federal laws and regulations. It is not intended as a legal interpretation of the laws and should not be considered as such).

U.S. Public Law 91-596 (The Williams-Steiger Occupational and Health Act of 1970) OSHA

This Act Seeks:

“...to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources...”

DUTIES

Sec. 5 (a) Each employer—

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.
 - (b) Each employee shall comply with occupational safety and health standards and all rules, regulations and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA Regulations

Current OSHA regulations state in part: “At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved.” These will include (but are not limited to) instructions to:

Keep all guards in place when the machine is in operation;

Permit no riders on equipment;

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain the equipment.

Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

EMPLOYEE TRACTOR OPERATING INSTRUCTIONS:

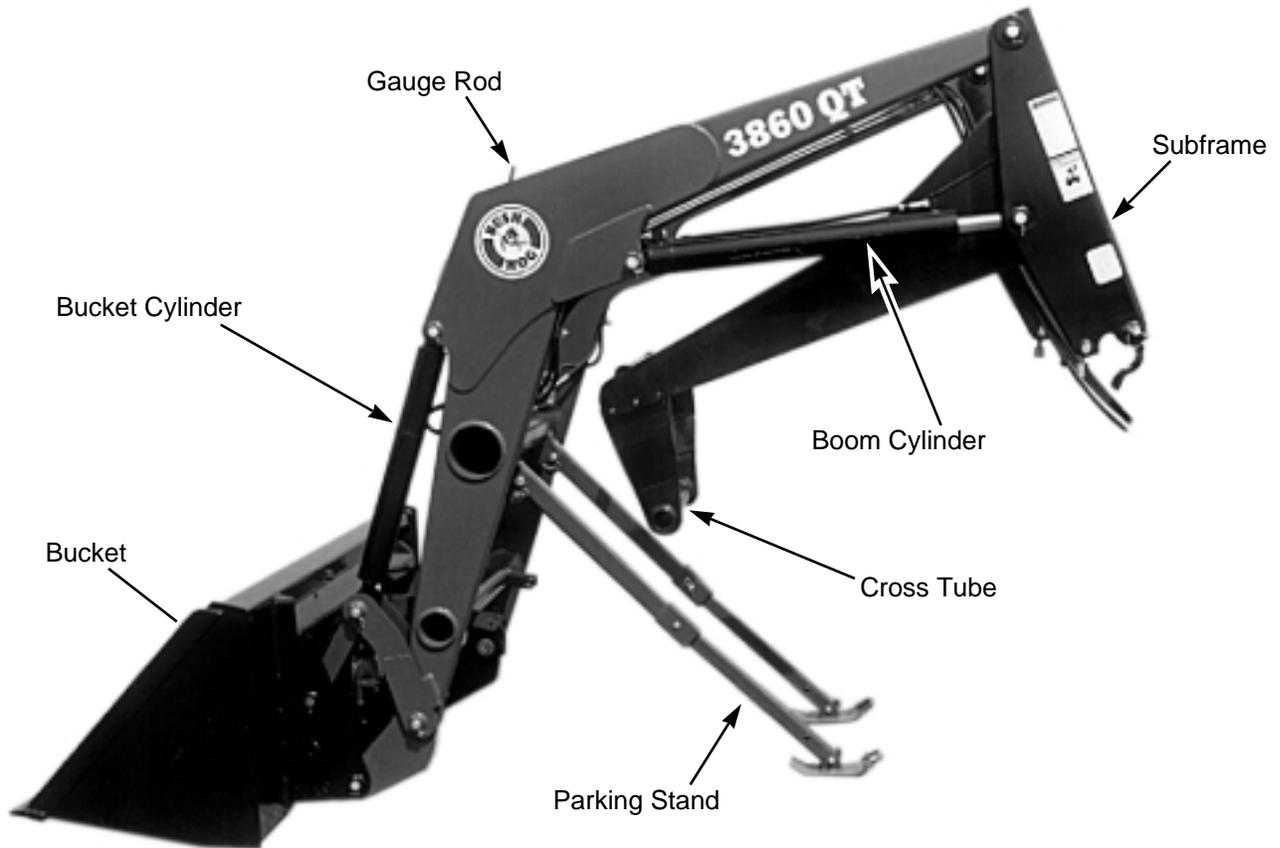
1. Securely fasten your seat belt if the tractor has a ROPS.
2. Where possible, avoid operating the tractor near ditches, embankments, and holes.
3. Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.
4. Stay off slopes too steep for safe operation.
5. Watch where you are going, especially at row ends, on roads, and around trees.
6. Do not permit others to ride.
7. Operate the tractor smoothly - no jerky turns, starts, or stops.
8. Hitch only to the drawbar and hitch points recommended by tractor manufacturers.
9. When tractor is stopped, set brakes securely and use park lock if available.

Child Labor Under 16 Years Old

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102.)

1. INTRODUCTION AND DESCRIPTION

Figure 1 Major Components



INTRODUCTION

We are pleased to have you as a Bush Hog customer. Your Front End Loader has been carefully designed to give maximum service with minimum down time. This manual is provided to give you the necessary operating and maintenance instructions for keeping your front end loader in top operating condition. Please read this manual thoroughly. Understand what each control is for and how to use it. Observe all safety precautions decal on the machine and noted throughout the manual for safe operation of implement. If any assistance or additional information is needed, contact your authorized Bush Hog dealer.

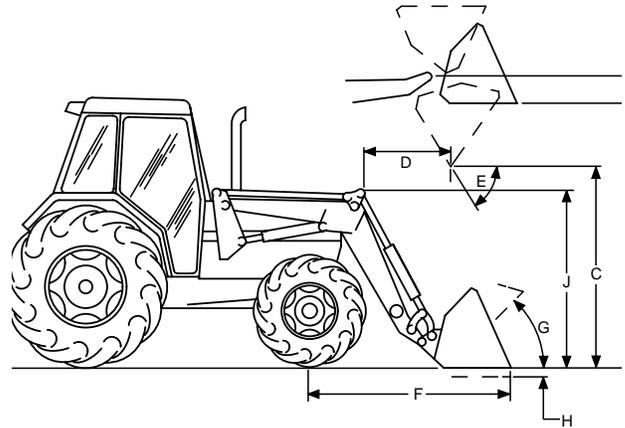
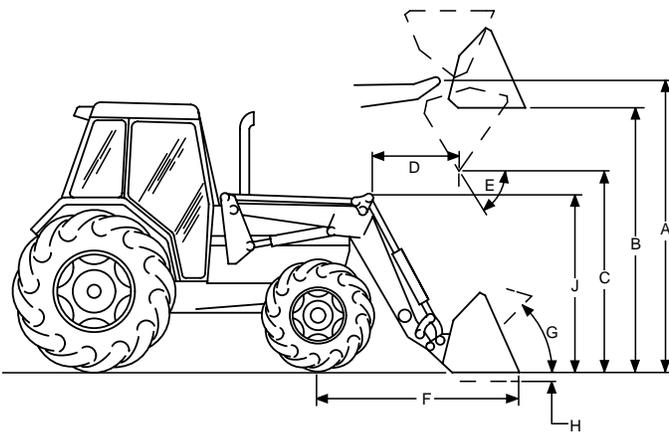
NOTE

All references made to right, left, front, rear, top or bottom is as viewed facing the direction of forward travel with implement properly attached to tractor.

DESCRIPTION

The model 3860 Front End Loader (Figure 1) is designed for two and four wheel drive tractors. It comes equipped with parking stands to support loader so tractor can be "driven in" for quick attachment, optional hydraulic self leveling for maintaining the load in position during the raising and lowering cycle and a bucket level indicator that allows operator to gauge bucket position when bucket cannot be seen. Available attachments include buckets for lifting loose materials; a bale spear for lifting round hay bales; a grapple attachment for handling bulky materials; a dozer for pushing; and a fork lift for palletized material. All operations should be conducted within the loader limits specified in Technical Specifications.

Model 3860 QT Technical Specifications



- A. Maximum Lift Height - Measured at Pivot Pin . . . 176"
- B. Maximum Lift Height - Under Level Bucket . . . 170"
- C. Clearance with Attachment Dumped 45° . . . 148"
- D. Reach at Maximum Height . . . 33"
- E. Maximum Dump Angle . . . 34°
- F. Reach with Bucket on Ground . . . 89"
- G. Maximum Rollback Angle . . . 19°
- H. Digging Depth . . . 5"
- J. Overall Height in Carry Position . . . 81"
- U. Lift Capacity to Maximum Height - At Pivot Pin . . 4580 lbs.
- V. Lift Capacity to Maximum Height -
31.5" Forward of Pivot Pin . . . 3680 lbs.
- W. Lift Capacity to 59" Height - At Pivot Pin . . . 7100 lbs.
- X. Lift Capacity to 59" Height -
31.5" Forward of Pivot Pin . . . 4970 lbs.
- Y. Breakout Force - At Pivot Pin . . . 8400 lbs.
- Z. Breakout Force - 31.5" Forward of Pivot Pin . . 6050 lbs.

- VV. Rollback Force at Maximum Height -
31.5" Forward of Pivot Pin . . . 7706 lbs.
- XX. Rollback Force at 59" Height -
31.5" Forward of Pivot Pin . . . 6787 lbs.
- ZZ. Rollback Force at Ground Level -
31.5" Forward of Pivot Pin . . . 5250 lbs.
- Raising Time - Ground Level to Full Height . . 5.7 sec.
- Lowering Time - Full Height to Ground Level . . 5.1 sec.
- Bucket Dumping Time - Full Rollback
to Full Dump . . . 3.3 sec.
- Bucket Rollback Time - Full Dump
to Full Rollback . . . 3.8 sec.

Specifications based on tractor system of 2800 psi hydraulic pressure and 28 gpm pump capacity. Specifications will vary slightly with different tractors.

SPECIFICATIONS BASED ON 1997 ASAE STANDARDS AND SUBJECT TO CHANGE WITHOUT NOTICE



2. INSTALLATION INSTRUCTIONS



EQUIP YOUR TRACTOR WITH A ROPS CAB OR FRAME FOR YOUR PROTECTION. SEE YOUR TRACTOR/ROPS OPERATOR MANUAL FOR CORRECT SEAT BELT USAGE.

Read entire instructions before beginning to install the loader. Personal injury and machine damage may be prevented if you read and understand these instructions and special safety messages.

TRACTOR PREPARATION

TRACTOR FRONT TIRES - Use front tires of equal size and maintain equal pressure in each tire. The pressure of the front tires must be increased to the maximum approved pressure recommended by the tire manufacturer to compensate for additional load placed on the tires with the Front End Loader. See your tractor Operator Manual. Adjust the front tires to the widest recommended setting on adjustable models for maximum stability. Front end weights must NOT be used while loader is on the tractor.

Observe tractor preparation guide in loader Operator Manual. Pay particular attention to "minimum tread settings" information in your Mounting Kit Installation Instructions.

TRACTOR REAR TIRES - Maintain equal pressure in each of the rear tires. Use the widest recommended rear wheel setting for maximum stability.

IMPORTANT: Do not exceed the maximum load capacity of the tires on your tractor. See **Tire and Wheel Specifications** in tractor Operator Manual for more information.

IMPORTANT NOTICE

This loader has both standard and metric fasteners. Verify that the proper fasteners are placed in the correct locations.

Do not tighten any bolts firmly until all components are attached onto the tractor.

INSTALLATION

Position tractor on level hard surface.

Install mounting brackets on tractor as shown in Installation Instructions included with your Mounting Kit.

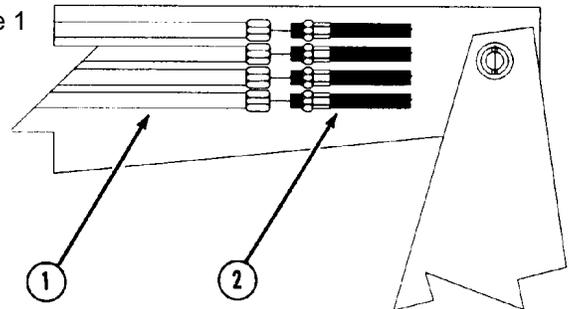
Remove all loader components from shipping packaging.



LIFT AND SUPPORT ALL LOADER COMPONENTS SAFELY.

HOSE KIT HOOKUP: Install hoses to loader hydraulic steel tubing. Install male quick couplers (customer furnished) to 1/2" male pipe ends of hoses. Refer to Figure 1.

Figure 1



- (1) Loader hydraulic steel tubing.
- (2) Remote hoses.

EXTERNAL VALVE, CONTROL VALVE, CABLE CONTROL VALVE AND PFC VALVE HOOKUP: Install valve working port hoses to loader hydraulic steel tubing. Install valve kit to your tractor/loader as described in instructions included with these kits.



WHEN PROPERLY INSTALLED, THE TRACTOR REMOTE VALVE OR EXTERNAL VALVE CONTROL LEVER/LEVERS WILL CONTROL THE HYDRAULIC CIRCUITS AS DESCRIBED ON PAGES 12 & 13. REFER TO TRACTOR OPERATOR MANUAL FOR FURTHER EXPLANATION OF TRACTOR REMOTE CONTROL LEVER/LEVERS.

Front crossbrace assembly has been preassembled at factory. This front crossbrace assembly is adjustable and may have to be re-adjusted in the field. Check measurement "A" from the front of the center bracket tube to the forward side of front bracket channel. Refer to Figure 2. This dimension will be either 48-15/32" or 53-15/32". Inspect your loader and compare it to the subframe assembly. Refer to Figures 3 & 4. If your loader dimension does not match your tractor bracket dimension, then disassemble front crossbrace assembly, relocate as shown in drawings, and reinstall. **Torque 3/4" Grade 8 front crossbrace assembly bolts to 380 ft. lbs. six places.**

NOTE: Some Models of the 3860 Loader have been designed to custom fit specific makes and models of tractors. These will not require this field change.

Figure 2

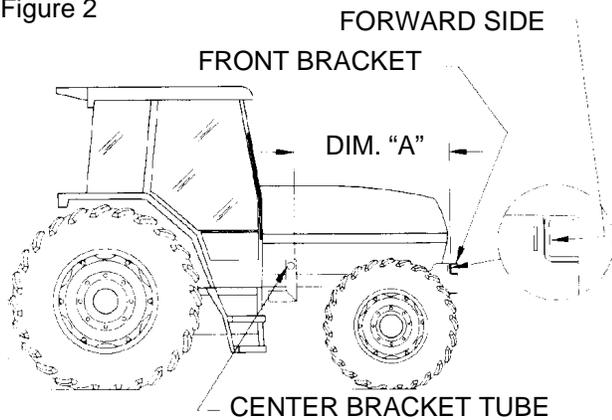


Figure 3

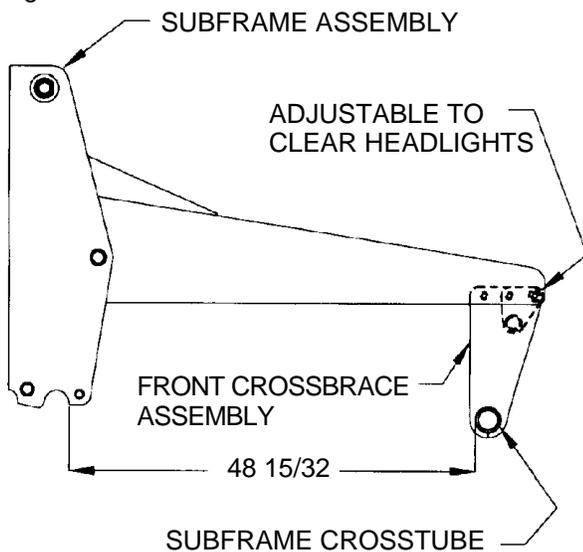
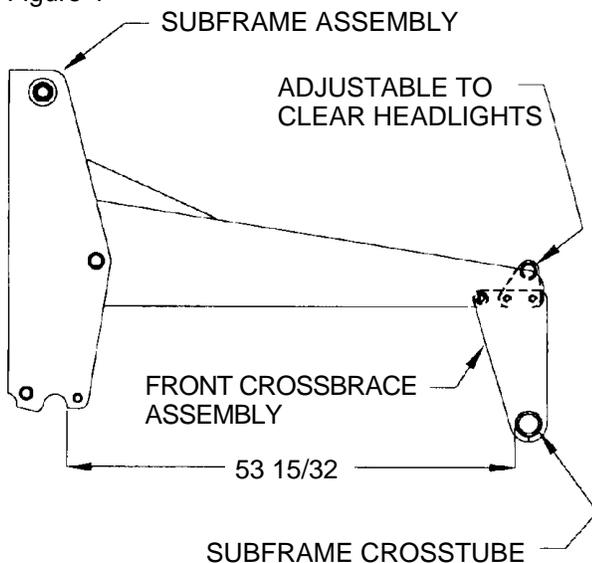
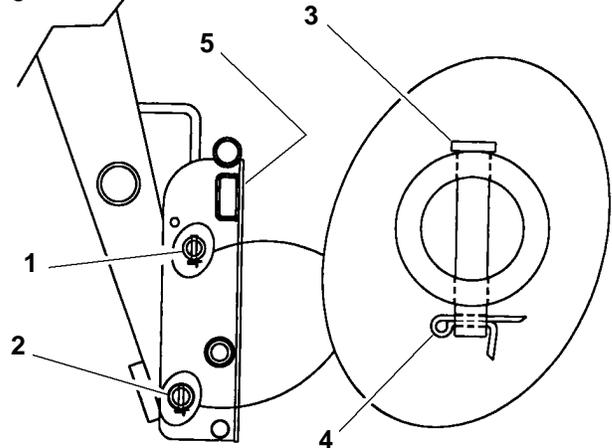


Figure 4



Quick Draw Latch Attach: Before installing loader to tractor, install quick draw latch attach to loader. Using a hoist, install bucket or attachment to your quick draw latch attach. Refer to Figure 5 and pages 27 & 28 for quick draw latch attach instructions. Following these instructions will add stability to loader package and will allow easier handling of loader with a hoist.

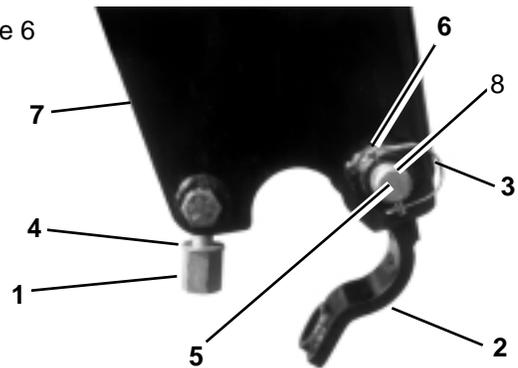
Figure 5



- (1) Top pin 1-1/8" x 6-7/8", 2 places.
- (2) Bottom pin 1-1/8" x 6-7/8", 2 places
- (3) Clevis pin 5/16" x 2", 4 places
- (4) Cotter pin 1/8" x 1", 4 places
- (5) Quick Draw Latch Attach Adapter.

Remove hinge nuts and hardened flatwashers from eyebolts. Swing hinge assemblies back. Reinstall hardened flatwashers and hinge nuts onto eyebolts. Remove snap pins from inner hole of rear hinge pins and reinstall into outer holes of rear hinge pins. Using snap pins as handles, remove rear hinge pins and hinge assemblies from loader. Refer to Figure 6.

Figure 6

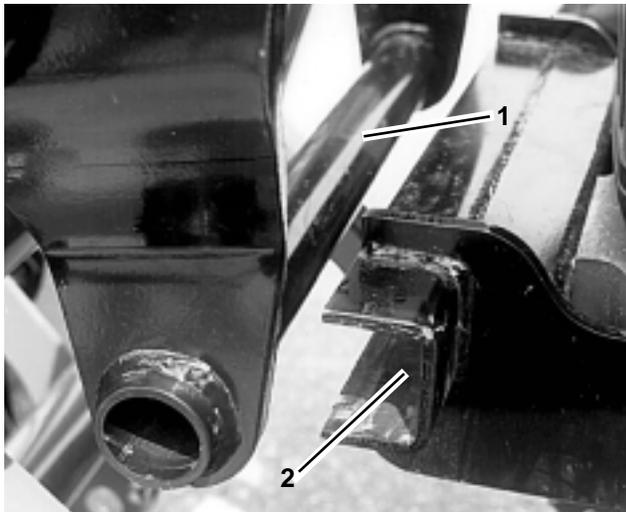


- (1) Hinge nut.
- (2) Hinge assembly.
- (3) Loader mounted snap pin position.
- (4) Hardened flatwasher.
- (5) Rear hinge pin.
- (6) Subframe bushing.
- (7) Subframe pedestal.
- (8) Rear hinge pin outer hole.

Using a hoist to support the loader frame, align the subframe crosstube with the front bracket. Refer to Figure 7 and Figures 2, 3, & 4, page 10.



LIFT AND SUPPORT ALL LOADER COMPONENTS SAFELY.



(1) Subframe Crosstube. Figure 7
(2) Front Bracket.

Slowly drive the tractor forward until the subframe crosstube is seated into the front bracket. Using hoist, lower the front end loader until the subframe assembly is seated on center bracket tubes. Refer to Figures 2, 3, & 4, page 10.

Using snap pins as handles, reinstall rear hinge pins and hinge assemblies. Remove snap pins from outer holes of rear hinge pins and reinstall into inner holes. Secure rear hinge pins to subframe bushings in loader mounted position as shown in Figure 8. Remove hinge nuts and hardened flatwashers from eyebolts. Swing hinge assemblies forward. Secure by locking hinge assemblies into position using hardened flatwashers and hinge nuts. Torque hinge nuts to 200 ft. lb. Refer to Figures 8 & 9.

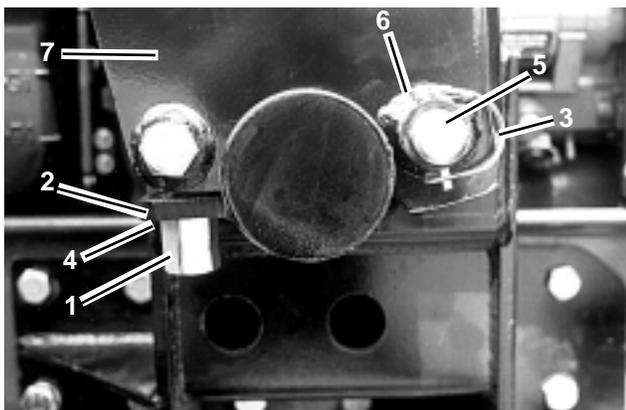


FIGURE 8

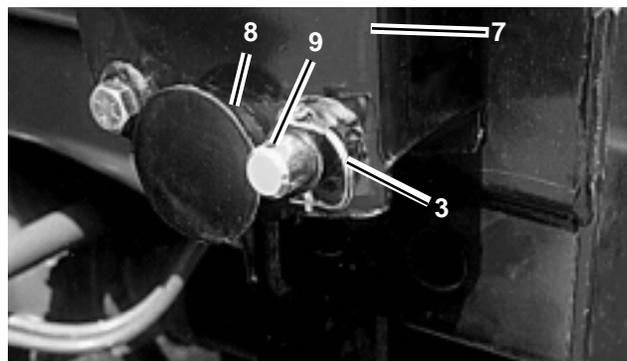


Figure 9

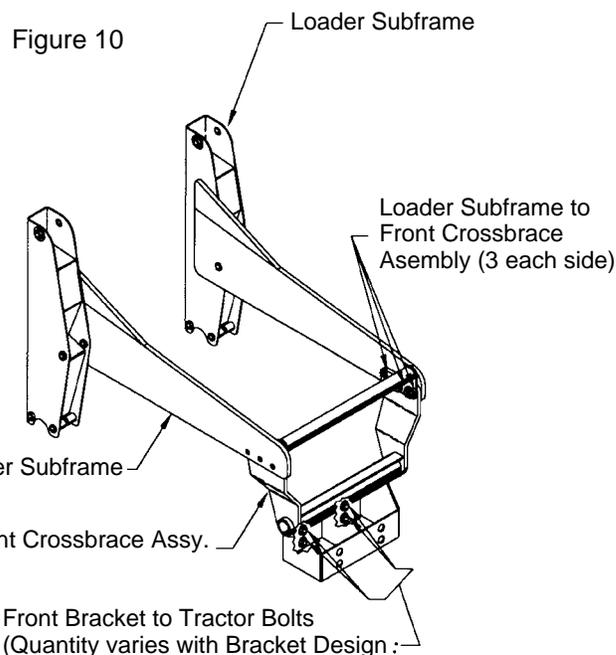
- (1) Hinge nut.
- (2) Hinge assembly.
- (3) Snap pin in loader mounted position.
- (4) Hardened flatwasher.
- (5) Rear hinge pin.
- (6) Subframe bushing.
- (7) Subframe pedestal.
- (8) Center mounting bracket tubes.
- (9) Rear hinge pin outer hole.

TORQUE IDENTIFICATION

Torque all mounting kit and loader hardware as specified.

- (A) Identify hardware size and grade.
- (B) Refer to Torque Chart, page 43 and find correct torque for your hardware size and grade.
- (C) Torque hardware to this specification unless otherwise specified.

IMPORTANT: Make sure that all front bracket to tractor hardware and loader subframe to front crossbrace assembly hardware has been torqued properly before operating loader. Refer to Figure 10.



3. PRE-OPERATION INSTRUCTIONS

IMPORTANT: Do not extend bucket cylinders without quick draw latch attach installed on loader. Failure to follow these instructions could cause attachment cylinder damage and will void loader warranty.

TRANSMISSION FLUID

Check the tractor hydraulic fluid level and fill, if required.

INITIAL LOADER OPERATION

NOTE: Keep engine speed at low idle during the initial loader operation.



ESCAPING HYDRAULIC FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE SKIN, CAUSING SERIOUS PERSONAL INJURY. BEFORE DISCONNECTING LINES, BE SURE TO RELIEVE ALL PRESSURE.

BEFORE APPLYING PRESSURE TO SYSTEM, BE SURE ALL CONNECTIONS ARE TIGHT AND THAT LINES, TUBES AND HOSES ARE NOT DAMAGED.

FLUID ESCAPING FROM A VERY SMALL HOLE CAN BE ALMOST INVISIBLE. USE A PIECE OF CARDBOARD OR WOOD, RATHER THAN HANDS, TO SEARCH FOR SUSPECTED LEAKS.

IF INJURED BY ESCAPING FLUID, SEE A DOCTOR AT ONCE. SERIOUS INFECTION OR REACTION CAN DEVELOP IF PROPER MEDICAL TREATMENT IS NOT ADMINISTERED IMMEDIATELY. REFER TO FIGURE 1.

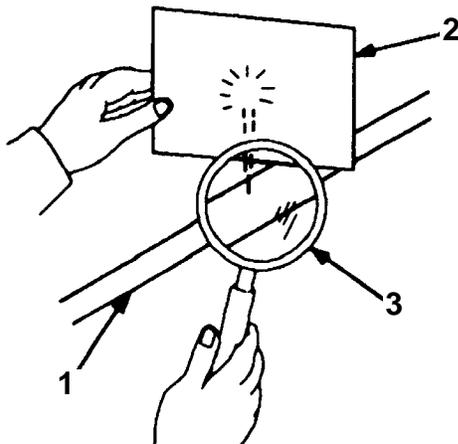


Figure 1

- (1) Hydraulic line.
- (2) Cardboard.
- (3) Magnifying glass.

EXTERNAL LOADER AND/OR TRACTOR VALVE



WHEN PROPERLY INSTALLED, THE TRACTOR REMOTE VALVE OR EXTERNAL VALVE CONTROL LEVER/LEVERS WILL CONTROL THE LOADER HYDRAULIC CIRCUITS AS SHOWN IN FIGURES 2 AND 3. REFER TO TRACTOR OPERATOR MANUAL FOR FURTHER EXPLANATION OF TRACTOR REMOTE CONTROL LEVER/LEVERS.

IMPORTANT: Contaminants in hydraulic fluid can cause valve spools to stick. BE ALERT when operating loader and follow your tractor Operator Manual hydraulic fluid maintenance schedule.

LOADER MOUNTED CONTROL VALVE EQUIPPED WITH SINGLE LEVER CONTROL HANDLE OR TRACTOR REMOTE VALVE EQUIPPED WITH SINGLE LEVER CONTROL HANDLE

If your loader utilizes a loader mounted control valve equipped with single lever control handle or tractor remote valve equipped with single lever control handle, it will function as described in Figure 2.

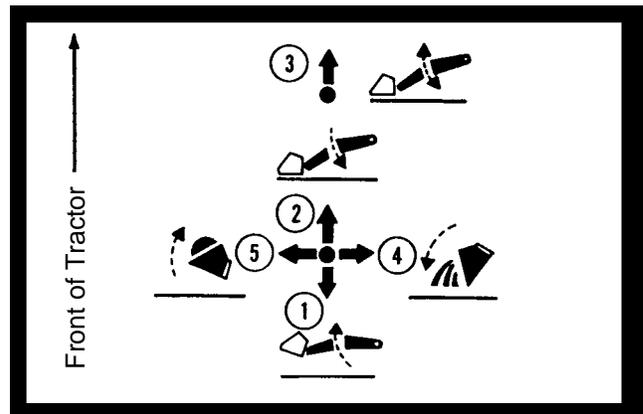


Figure 2

- Number 1 Position: Pull the joystick back to raise loader.
- Number 2 Position: Push the joystick forward to lower loader.
- Number 3 Position: Push the joystick full forward to activate float position.
- Number 4 Position: Push the joystick outward to dump attachment.
- Number 5 Position: Pull the joystick inward to roll back attachment.

LOADER MOUNTED CONTROL VALVE EQUIPPED WITH 2 OR 3 CONTROL HANDLES OR TRACTOR REMOTE VALVE EQUIPPED WITH 2 OR 3 CONTROL HANDLES

If your loader utilizes a loader mounted control valve equipped with 2 or 3 control handles or tractor remote valve equipped with 2 or 3 control handles, it will function as described in Figure 3.

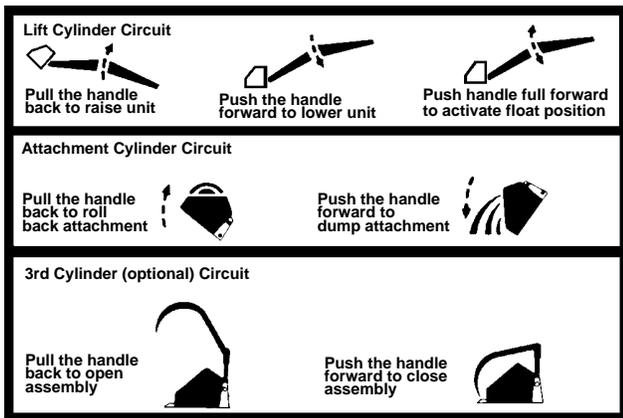


Figure 3

NEUTRAL POSITION

The loader external valve provided by Bush Hog has a “neutral position” which prevents movement of the loader or attachment. When the control handle is manually released from the work position, the valve spool will return to the neutral position.

FLOAT POSITION

The loader external valve provided by Bush Hog has a “float position” incorporated into the lift cylinder circuit which allows the loader to float. This float feature is important for satisfactory operation when scraping, sweeping, leveling, or any job where it is necessary to follow the contour of the surface. To activate the float position, lower the bucket or attachment and push the control handle all the way forward into detent. The valve will stay in float detent position until the operator manually pulls the control handle out of detent position to deactivate float.

INITIAL LOADER OPERATION

Before operating the loader, fully raise and lower the boom two or three times. Then raise the loader bucket approximately four (4) feet above the ground and cycle the bucket cylinders two or three times. Lower the bucket or attachment to the ground. Check the tractor hydraulic fluid level and fill as required. Refer to the tractor Operator Manual for the proper hydraulic fluid and the correct hydraulic fluid level.

⚠ CAUTION ⚠

BEFORE LEAVING THE TRACTOR SEAT, LOWER ATTACHMENT OR LOADER BOOM TO GROUND, STOP ENGINE, LOCK BRAKES, RELIEVE HYDRAULIC PRESSURE, AND REMOVE KEY.

IMPORTANT: Always keep the cylinders in a retracted position when the loader is not in use to guard against rust and contamination which may cause damage to the cylinder rods and hydraulic system.

REMOVING AIR FROM HYDRAULIC SYSTEM

Repeat raising and lowering the loader boom and bucket operations until all the air is removed from the system and the system responds properly.

HOSE IDENTIFICATION

Check if loader functions as shown and described in Figures 2 and 3. Then install colored nylon ties, one color per each circuit. Locate nylon ties so one is attached to male side of quick coupler and one is attached to female side of quick coupler. This will allow easy identification of loader circuits when mounting and dismounting loader.

BUCKET LEVEL INDICATOR

BLI (bucket level indicator) rod has been preassembled to loader linkage pin at the factory.

BLI (bucket level indicator) must be adjusted during initial loader set up. Adjust the BLI as follows: Position the bucket level on the ground. Loosen the BLI clamp holding the BLI tube, and align the BLI tube so that it is flush with end of the BLI rod, then retighten BLI clamp. When operating loader, use the attachment cylinder controls to align the BLI rod so that it is flush with the end of the BLI tube. This will inform the operator that the bucket and/or attachment bottom is level with ground. Refer to Figure 4.

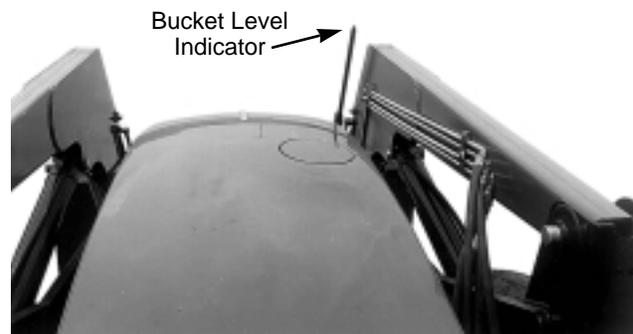


Figure 4

REMOTE HOSES SUPPORT

After installing loader onto tractor, raise the loader to full height, stop engine, lock brakes, and remove key. Then gather remote hoses and install nylon tie through hose support hole located in right hand loader subframe. Secure hoses as shown. This will allow remote hoses to be supported by loader frame instead of loader steel tubing. Refer to Figure 5.



DO NOT STAND, WALK OR WORK UNDER A RAISED LOADER OR ATTACHMENT UNLESS IT IS SECURELY BLOCKED OR HELD IN POSITION. ACCIDENTAL MOVEMENT OF A CONTROL LEVER/LEVERS OR LEAKS IN THE HYDRAULIC SYSTEM COULD CAUSE THE LOADER TO DROP, OR ATTACHMENT TO DUMP, CAUSING SEVERE INJURY.

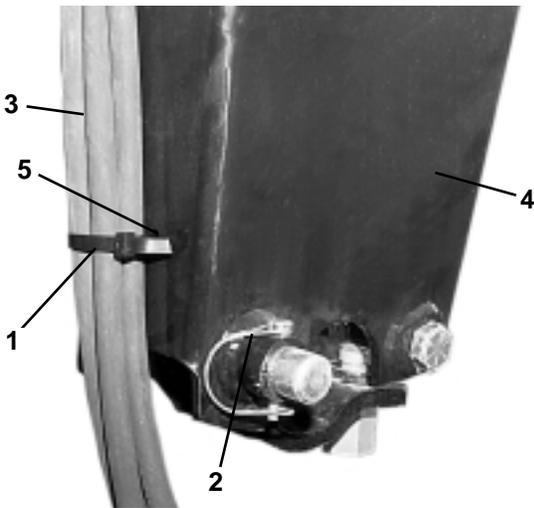


Figure 5

- (1) Nylon tie
- (2) Snap pin (note location)
- (3) Remote hoses
- (4) Subframe (right-hand shown)
- (5) Right hand support hole located in subframe

THIRD CYLINDER TUBE KIT (OPTIONAL)

Install two steel tubes to inside of right hand loader boom. Then connect the two hoses and fittings to the front of the steel tubes. Refer to Figure 6 for further installation instructions.

NOTE: Hydraulic hoses from third cylinder steel tubes to tractor rear remotes are not supplied in this kit.

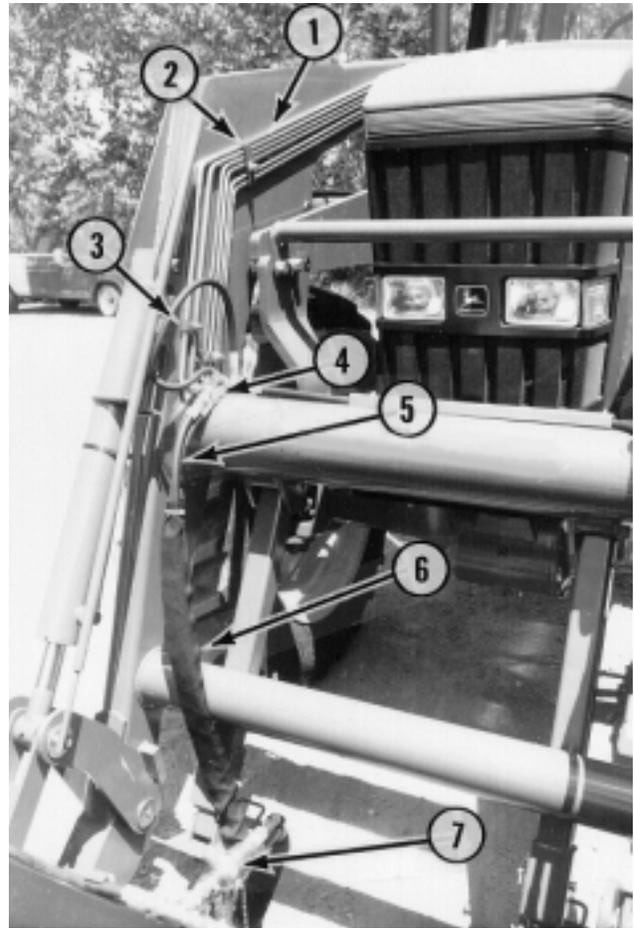


Figure 6

- (1) Steel tubes.
- (2) Existing tube clamp, 2 places.
- (3) New tube clamp, secure using 3/8" nylon locknut.
- (4) Fitting, 90° JICM 3/4" x JICF 3/4", install one on each tube.
- (5) Hoses 3/8" x 80", installed to fitting on steel tubes.
- (6) Install hose protector over hoses. Secure each end using nylon ties.
- (7) Male and female quick couplers, supplied with attachment. Connect one to each hose.

4. MAINTENANCE

DAILY CHECKS

Check all hardware daily before operation. Tighten hardware to torque values as specified in the Torque Chart, page 43 unless otherwise specified.

With the engine off and the bucket on the ground, inspect all hoses for cuts or wear. Check for signs of leaks and make sure all fittings are tight.



CAUTION

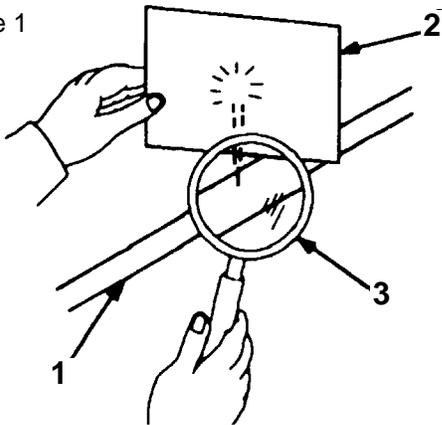
ESCAPING HYDRAULIC FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE SKIN, CAUSING SERIOUS PERSONAL INJURY. BEFORE DISCONNECTING LINES, BE SURE TO RELIEVE ALL PRESSURE.

BEFORE APPLYING PRESSURE TO SYSTEM, BE SURE ALL CONNECTIONS ARE TIGHT AND THAT LINES, TUBES, AND HOSES ARE NOT DAMAGED.

FLUID ESCAPING FROM A VERY SMALL HOLE CAN BE ALMOST INVISIBLE. USE A PIECE OF CARDBOARD OR WOOD, RATHER THAN HANDS, TO SEARCH FOR SUSPECTED LEAKS.

IF INJURED BY ESCAPING FLUID, SEE A DOCTOR AT ONCE. SERIOUS INFECTION OR REACTION CAN DEVELOP IF PROPER MEDICAL TREATMENT IS NOT ADMINISTERED IMMEDIATELY. REFER TO FIGURE 1.

Figure 1



- (1) Hydraulic line.
- (2) Cardboard.
- (3) Magnifying glass.

Service your loader at the intervals and locations as specified. When you service your loader, use only high quality lubricants. The engine hour meter on the tractor shows the amount of hours the engine has worked. Use the hour meter to service your loader at the correct time periods.

IMPORTANT: Lower the loader boom to the ground and relieve pressure in loader hydraulic lines prior to doing any service or maintenance operations on the tractor or loader. Check the tractor hydraulic fluid level as specified in the tractor Operator Manual.

NOTE: When checking hydraulic system fluid level, the loader boom must be on the ground with the bucket or attachment resting flat on a level surface.

LOADER LUBRICATION

Position bucket and/or attachment level with ground, lower loader boom to ground, and relieve all hydraulic pressure before lubricating. Refer to Figures 2 & 3.

There are 16 grease fittings on the Model 3860 Loader, one at each pivot point. Lubricate pivots as specified.

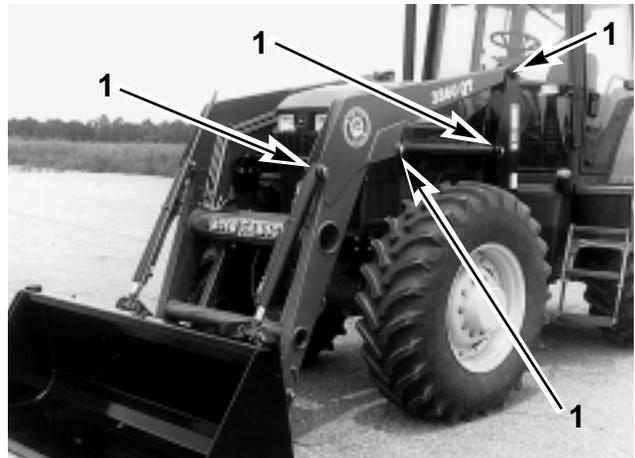


Figure 2

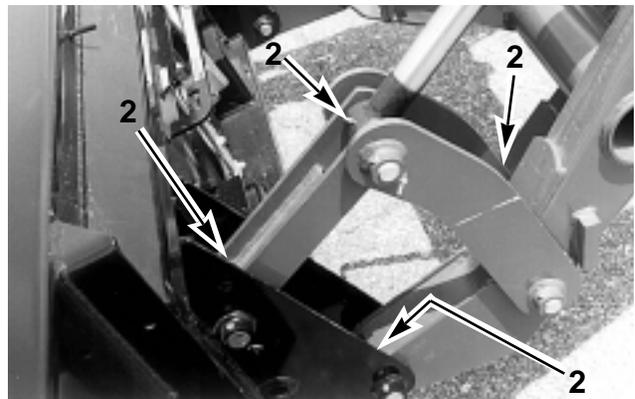


Figure 3

- (1) Lubricate these 8 pivot points every 10 hours of operation.
- (2) Lubricate these 8 pivot points every 5 hours of operation.

⚠ CAUTION ⚠

DO NOT STAND, WALK OR WORK UNDER A RAISED LOADER OR ATTACHMENT UNLESS IT IS SECURELY BLOCKED OR HELD IN POSITION. ACCIDENTAL MOVEMENT OR A CONTROL LEVER/LEVERS OR LEAKS IN THE HYDRAULIC SYSTEM COULD CAUSE THE LOADER TO DROP, OR ATTACHMENT TO DUMP, CAUSING SEVERE INJURY.

QUICK DRAW LATCH ATTACH LUBRICATION

Your quick draw latch attach handle springs and pin areas have been pre-lubricated and sealed at the factory. If handle pin sticking occurs: remove spring cover plates, lubricate spring and pin areas, reinstall cover plates, and seal plates using a 1/4" bead of Sika-Flex sealant. Refer to Figure 4.

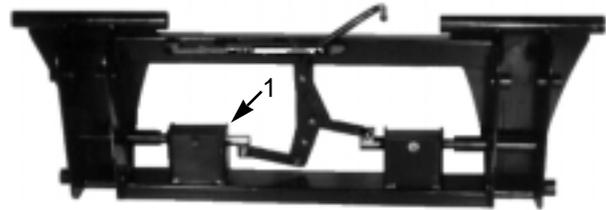


Figure 4

(1) Spring cover plate, one each side.

5. OPERATING INSTRUCTIONS

GENERAL SAFETY

Only qualified people familiar with this operator's manual should operate this machine. Operator should wear hard hat, safety glasses and safety shoes. The operator should read, understand and practice all safety messages shown on the caution, warning and danger decals affixed to the loader to avoid serious injury or death. It is recommended that tractor be equipped with Rollover Protective System (ROPS) and a seat belt be used per tractor manufacturer's recommendations. Check for ditches, stumps, holes or other obstacles that could upset tractor or damage loader. Always turn off tractor engine, set parking brake and lower loader to ground before leaving tractor operator's seat.

BUCKET LEVEL GAUGE ROD

The bucket level gauge rod (Figure 4, page 13) can be used to determine bucket angle. Before beginning work, observe the position of gauge rod with bucket flat on ground. Raise boom to several different positions. At each position, level bucket, then observe gauge rod. Once familiar with the gauge rod positions, operation of the loader will be easier and more efficient.

OPERATION

The loader should be operated with the tractor engine running at 1200-1700 rpm. Excessive speeds are dangerous and may cause bucket spillage and unnecessary strain on both the tractor and loader.

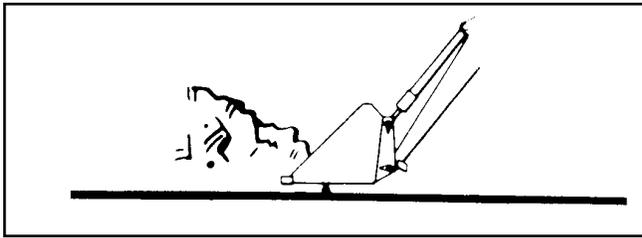
When operating in temperatures below 30°F, run the tractor engine below 1200 rpm until the hydraulic fluid temperature exceeds 30°F.

The following text and illustrations offer suggested loader and tractor operating techniques.

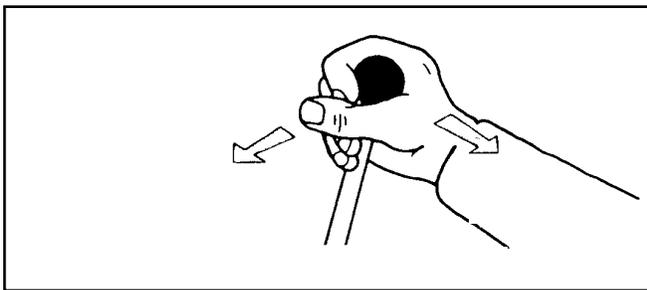


FILLING THE BUCKET

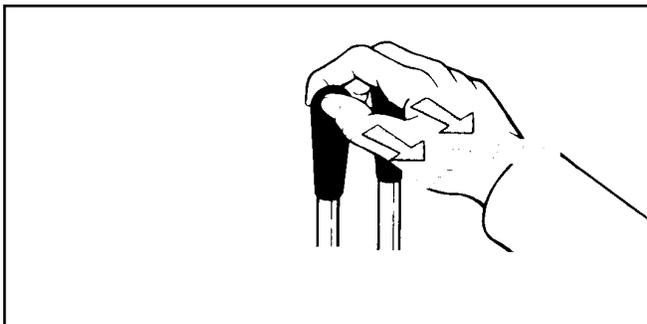
Approach and enter the pile with a level bucket.



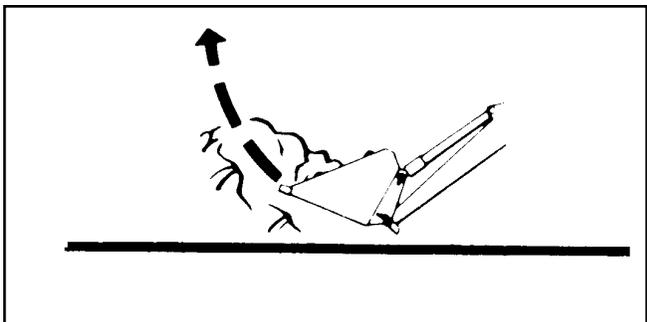
Loaders with 1-lever control, ease lever back and toward you to lift and rollback the bucket.



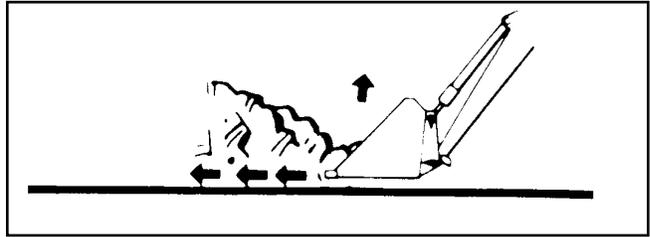
Loaders with 2-lever controls, ease both levers back to lift and rollback the bucket.



The lift and rollback of the bucket will increase efficiency because...



...a level bucket throughout the lifting cycle resists bucket lift and increases breakaway effort.



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. Time is lost if two or more attempts are made to fill the bucket on each pass.

LIFTING THE LOAD

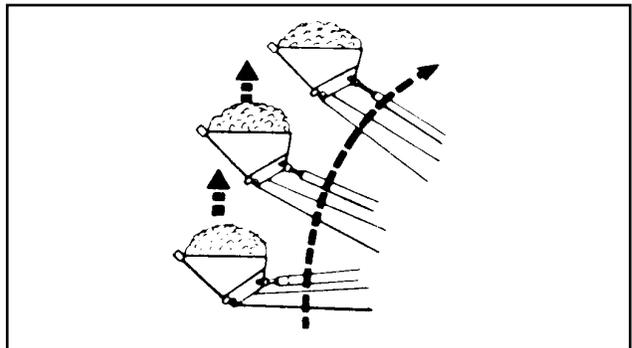
⚠ WARNING ⚠

DO NOT LIFT OR CARRY ANYONE IN THE BUCKET OR ON ANY OTHER PORTION OF THE LOADER OR LOADER ATTACHMENT. INADVERTENT MOVEMENT OF THE LOADER OR ATTACHMENT COULD RESULT IN SERIOUS INJURY OR DEATH FROM FALLING OR CRUSHING.

⚠ CAUTION ⚠

MAKE SURE MATERIAL IN BUCKET CANNOT ROLL OUT AND DOWN ON TRACTOR WHEN BUCKET IS RAISED TO FULL HEIGHT. KEEP CLEAR OF OVERHEAD OBSTRUCTIONS SUCH AS TREES, LIMBS OR POWER LINES WHEN RAISING THE BUCKET

When lifting the load, keep the bucket positioned to avoid spillage.

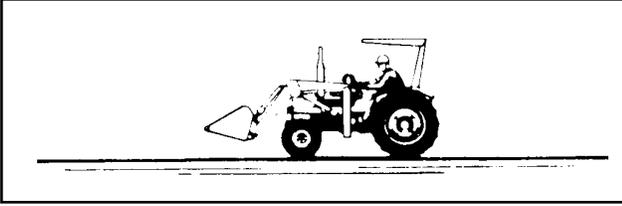


⚠ CAUTION ⚠

DO NOT ATTEMPT TO LIFT BUCKET LOADS IN EXCESS OF CAPACITIES LISTED IN TECHNICAL SPECIFICATIONS.

CARRYING THE LOAD

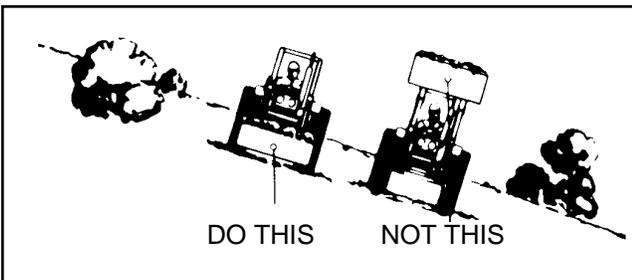
Position the bucket as low as possible below the level of the tractor hood for maximum stability and visibility, whether the bucket is loaded or empty.



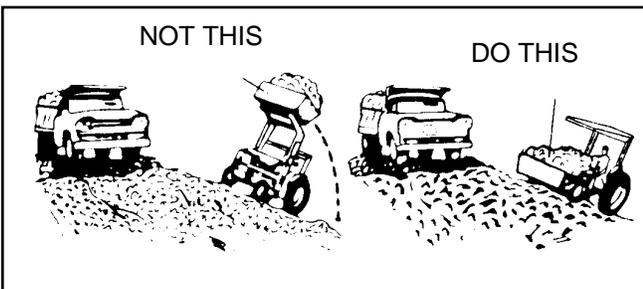
Use extreme caution when operating the loader on a slope and keep the bucket as low as possible. This keeps the bucket and tractor center of gravity low and will provide maximum tractor stability.



OPERATING THE LOADER ON A HILLSIDE IS DANGEROUS. EXTREME CARE IS RECOMMENDED.

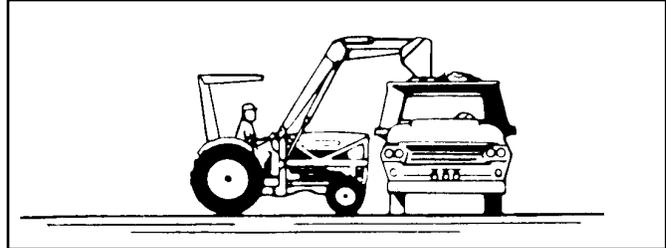


When transporting the load, keep the bucket as low as possible to avoid tipping, in case a wheel drops in a rut.



DUMPING THE BUCKET

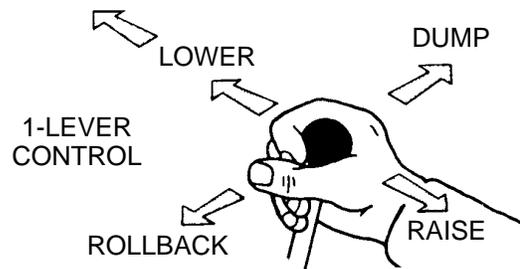
Lift the bucket high enough to clear the side of the vehicle. Move the tractor in as close to the side of the vehicle as possible, then dump the bucket.



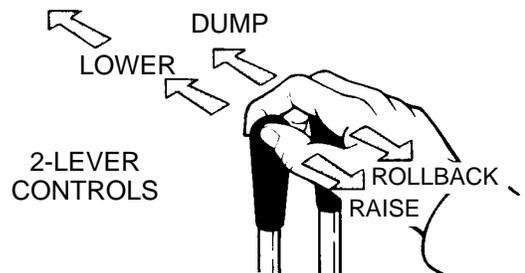
LOWERING THE BUCKET

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

FLOAT POSITION

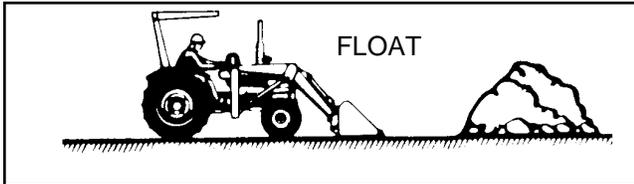


FLOAT POSITION

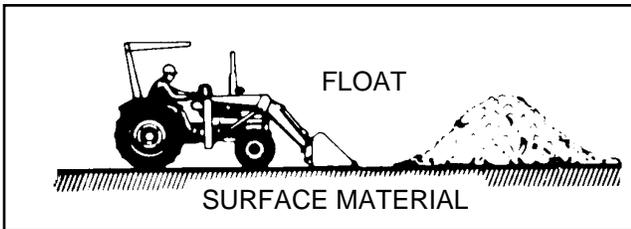


OPERATING WITH FLOAT CONTROL

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

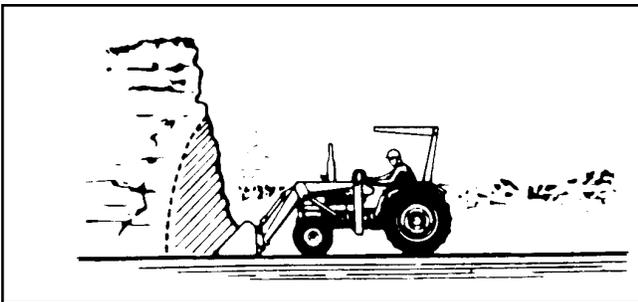


The float will also prevent the mixing of surface material with stockpile material. The float position will reduce the chance of surface gouging when removing snow or other material.

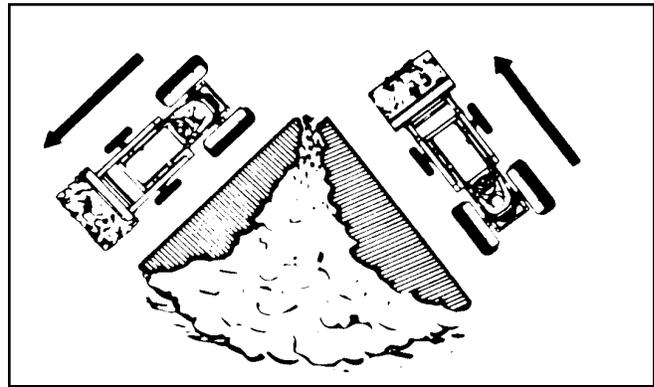


LOADING FROM A BANK

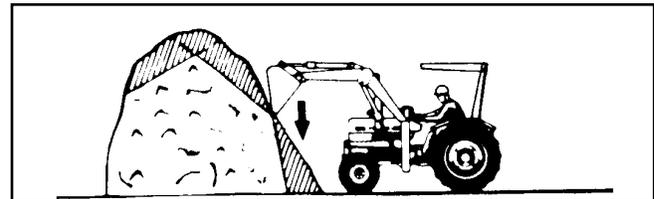
Choose a forward gear that provides sufficient ground speed for loading.



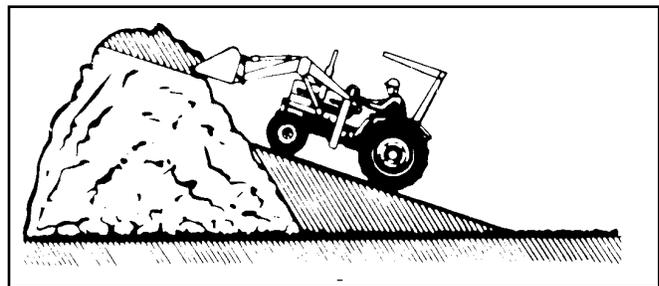
Exercise caution when undercutting high banks. Dirt slides can be dangerous. Load from as low as possible for maximum efficiency. Loader lift and break-away capacity diminish as loading height is increased.



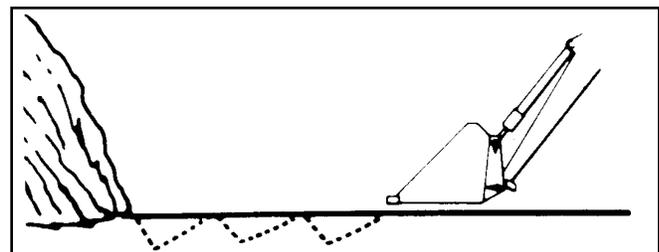
Sidecutting is a good technique for cutting down a big pile.



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

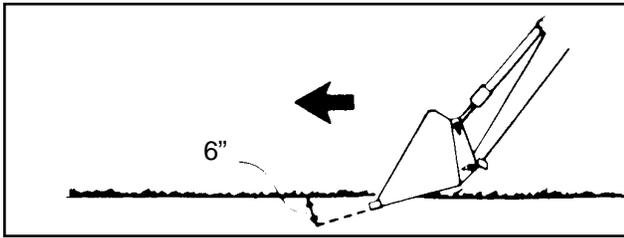


Another method for large dirt piles is to build a ramp approach to the pile.

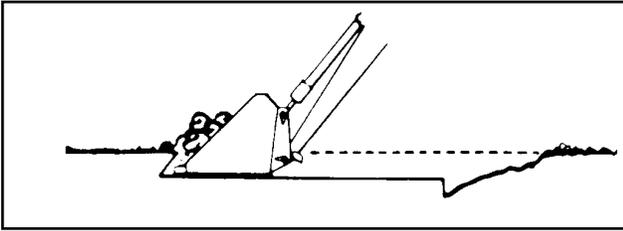


It's important to keep the bucket level when approaching a bank or pile. This will help prevent gouging the work area.

PEELING AND SCRAPING

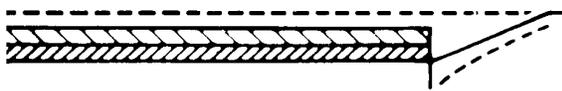


Use a slight bucket angle, travel forward, and hold the lift control forward to start the cut. Make a short, angle cut approximately 6" deep and break-out cleanly.



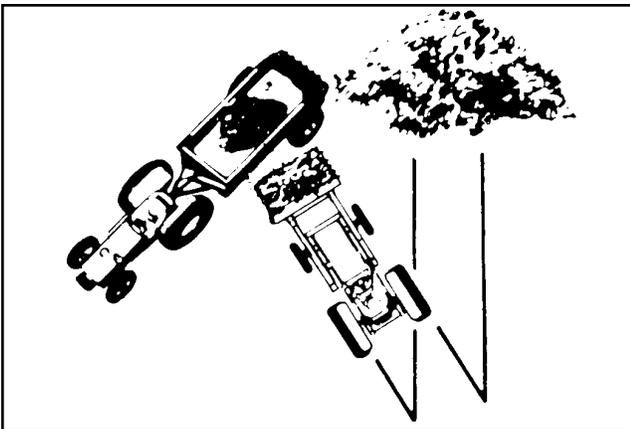
With the bucket level, start a cut at the notch approximately 2" deep. Hold the depth by feathering the bucket control to adjust the cutting lip up or down. When the front tires enter the notch, adjust the lift cylinder to maintain proper depth.

3RD CUT , 4TH CUT, ETC.



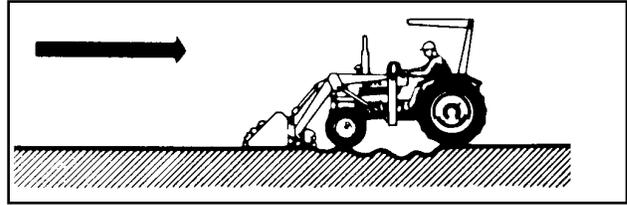
Make additional passes until the desired depth is reached. During each pass, only use the bucket control while at working depth. This will allow you to concentrate on controlling the bucket angle to maintain a precise cut.

LOADING LOW TRUCKS OR SPREADERS FROM A PILE



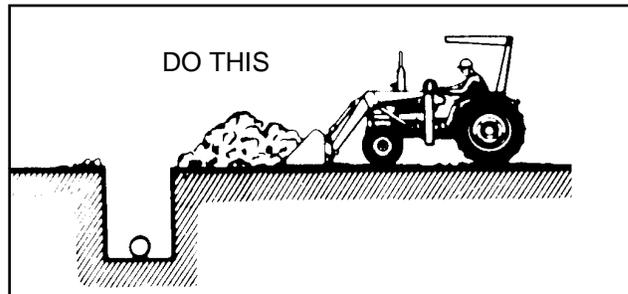
For faster loading, minimize the angle of turn and length of run between pile and spreader.

BACKFILLING

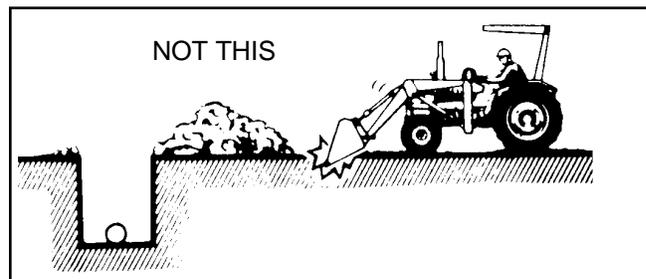


Backgrade occasionally with a loaded bucket to keep the working surface free of ruts and holes. Hold the lift control forward in **float position** so the **full weight** of the bucket is scraping the ground. Use only the heel of the bucket while backgrading.

IMPORTANT: To prevent damage to cylinders:
 (1) Do not backgrade with bucket cylinders extended.
 (2) Always backgrade with valve in **float position**.

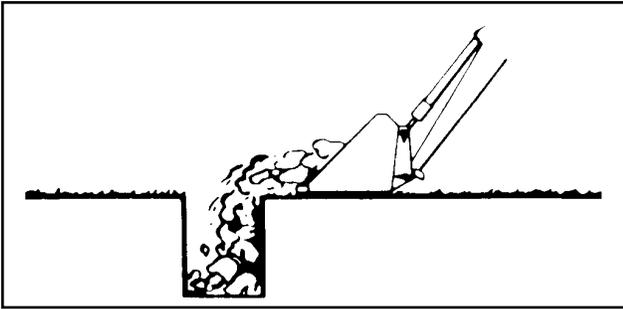


Approach the pile with a flat bucket.

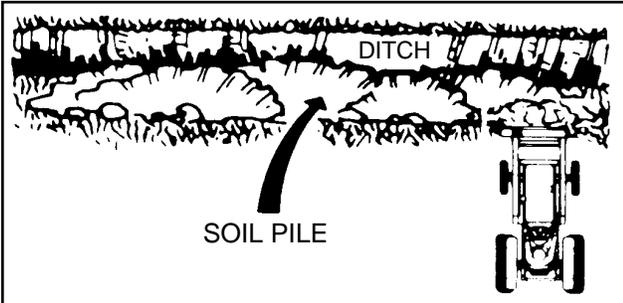


Poor methods actually move no more dirt and make it more difficult to hold a level grade.

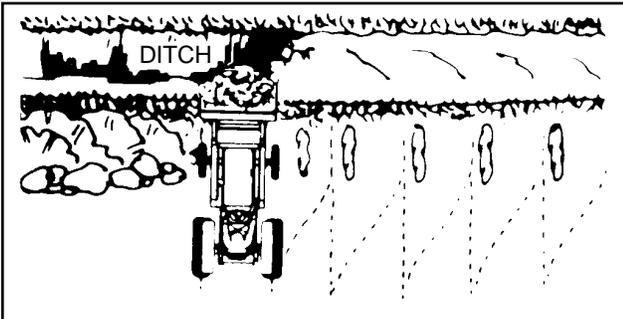
Do not use the bucket in the dumped position for bulldozing or backgrading. This method, shown above, will impose severe shock loadings on the dump linkage, the bucket cylinder, and the tractor.



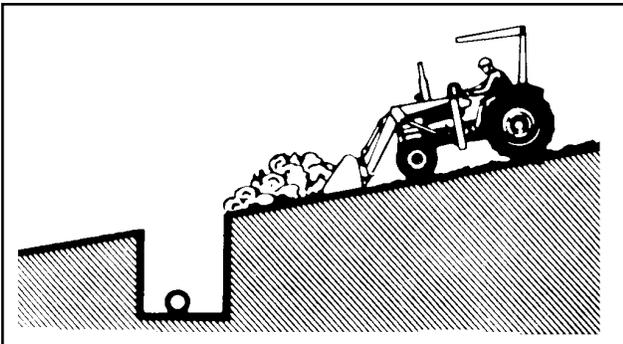
Leave dirt in the bucket because dumping on each pass wastes time.



Operate at right angles to the ditch. Take as big a bite as the tractor can handle without lugging down.



Leave dirt which drifts over the side of the bucket for final clean-up.



Pile dirt on the high side for easier backfilling on a slope.

HANDLING LARGE HEAVY OBJECTS



WARNING

DO NOT USE FRONT END LOADERS FOR HANDLING LARGE HEAVY OBJECTS SUCH AS LOGS OR OIL DRUMS. HANDLE LARGE ROUND HAY BALES ONLY WHEN LOADER IS EQUIPPED WITH BUSH HOG BALE SPEAR ATTACHMENT OR BUCKET WITH 4 TINE GRAPPLE.

HANDLING LARGE HEAVY OBJECTS CAN BE EXTREMELY DANGEROUS DUE TO:

- ★ Possibility of rolling the tractor over.
- ★ Possibility of upending the tractor.
- ★ Possibility of the object rolling or sliding down the loader arms onto the operator.

BACK GRADING

When back grading, the angle between the bottom of the bucket and the ground must not be more than 15 degrees. Refer to Figure 1.

Failure to follow these instructions could cause loader attachment cylinders to fail and void warranty.

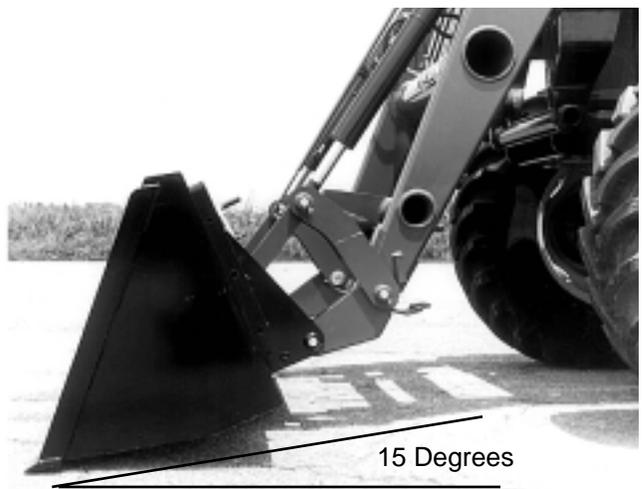


Figure 1

TROUBLESHOOTING PROCEDURES

PROBLEM	POSSIBLE CAUSE	REMEDY
Loader slow and/or will not dump.	Hydraulic oil too heavy. Oil filter plugged. Hydraulic pump worn. Oil line restricted or leaking. Quick couplers not properly connected. Control valve does not shift properly. Air in hydraulic system. Cylinder leaks internally. Faulty valve.	Change to proper oil. Clean or replace filter. Repair or replace pump. Check all hoses and tubes for leaks, damage or restrictions. Replace damaged or restricted hoses or tube lines. Check connection - Replace if necessary. Inspect clean, repair or replace valve. Cycle lift cylinders and bucket cylinders several times to free system of air. Replace seals. Repair or replace valve.
Loader chatters or vibrates when raising or lowering.	Air in hydraulic system. Oil level too low.	Cycle lift cylinders and bucket cylinders. Add oil as required.
Oil leaks.	Damaged fittings or hoses. Loose connections. Worn or damaged O-ring or wiper seal in cylinder rod end. Worn or damaged O-rings in valve.	Replace damaged parts. Tighten fittings. Install a seal repair kit. Install an O-ring repair kit.
Insufficient lift capacity.	Load is greater than boom lift capacity. Internal boom cylinder leakage. Improper hydraulic valve operation.	Check loader specifications. Check tractor system. Replace any worn parts and install a seal repair kit. Repair or replace valve.
Slow leakdown.	Worn control valve. Worn cylinder piston seals.	Have authorized Bush Hog dealer replace seals. Have authorized Bush Hog dealer replace seals.
Excessive wear on bottom of bucket and wear pads.	Float position not used while operating loader.	Use float position provided on valve.
Hydraulic cylinders inoperative.	Hose from control valve improperly connected.	Refer to plumbing diagrams in Section V.
Pump operating continually on closed center tractor hydraulic system.	Hydraulic control valve relief stuck open. Hydraulic control valve relief set too low.	See your tractor manual for proper adjustment or Bush Hog dealer for loader valve. (3000 PSI is maximum pressure relief setting recommended)
Loader lift and bucket tilt controls do not work according to decal.	Hoses improperly connected.	Refer to plumbing diagrams in Section V and correct hose connections.
Valve noisy and/or hot.	Open center control valve on closed center tractor.	Install closed center plug on optional valve.
Tractor loads/pump squeals.	Closed center control valve on open center tractor.	Install open center plug on optional valve.

6. DISMOUNTING THE LOADER



CAUTION

ALWAYS PARK LOADER WITH MATERIAL BUCKET OR AUTHORIZED BUSH HOG ATTACHMENT ATTACHED TO THE LOADER.

BEFORE LEAVING THE TRACTOR SEAT, LOWER ATTACHMENT OR LOADER BOOM TO GROUND, STOP ENGINE, LOCK BRAKES, RELIEVE HYDRAULIC PRESSURE AND REMOVE KEY.

DO NOT STAND, WALK, OR WORK UNDER A RAISED LOADER OR ATTACHMENT UNLESS IT IS SECURELY BLOCKED OR HELD IN POSITION. ACCIDENTAL MOVEMENT OF A CONTROL LEVER/LEVERS OR LEAKS IN THE HYDRAULIC SYSTEM COULD CAUSE THE LOADER TO DROP, OR ATTACHMENT TO DUMP, CAUSING SEVERE INJURY.

DO NOT ALLOW BYSTANDERS IN LOADER WORK AREA.

IMPORTANT: Never allow weight of tractor to be placed on parking stands when mounting or dismounting loader.

Position the tractor/loader on a hard level surface. Raise loader boom assembly. Position the bucket 90° to the ground. Then lower the loader boom until front edge of bucket is resting on the ground. Refer to Figure 1.



Figure 1

Remove the two clevis pins holding the two parking stands in the storage position. Refer to Figure 2.

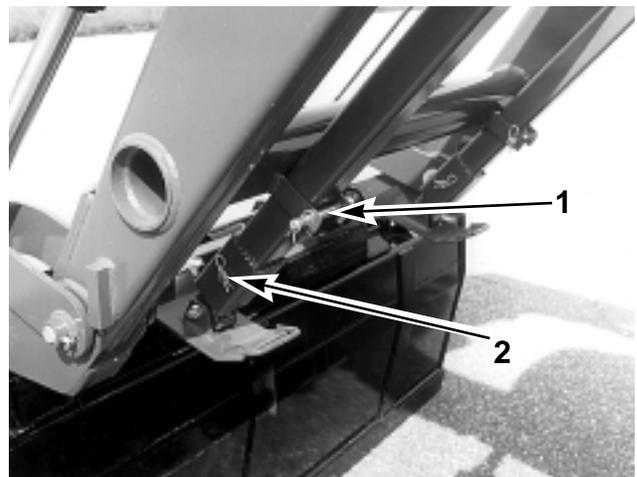


Figure 2

- (1) Clevis pin 5/8" x 4-1/2", one each side of loader.
- (2) Clevis pin 5/8" x 4", one each side of loader.

Rotate the parking stands rearward into the park position and secure using clevis pins and hairpin cotters. Remove the two clevis pins holding lower legs of parking stands in the retracted position. Extend the parking stands and reinstall clevis pins to hold lower legs in the park position. Refer to Figure 3.

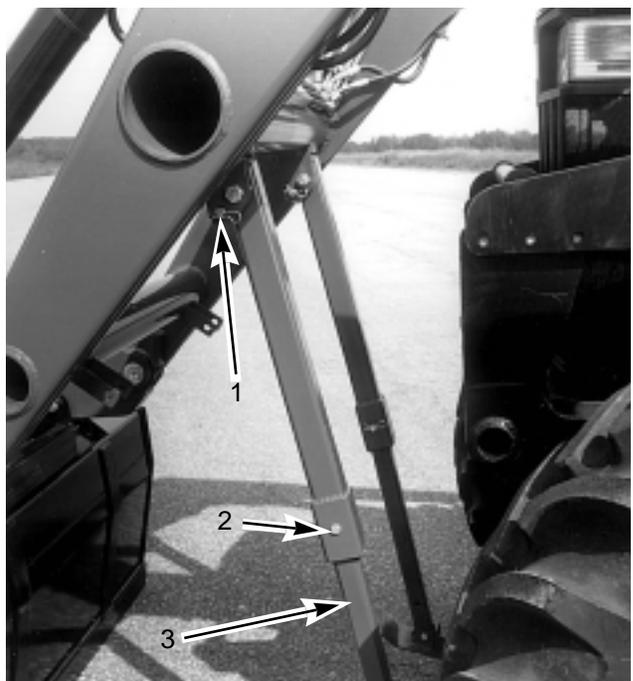


Figure 3

- (1) Clevis pin 5/8" x 4-1/2", one each side of loader.
- (2) Clevis pin 5/8" x 4", one each side of loader.
- (3) Lower parking stand leg extended.

Raise the loader boom and retract the bucket cylinders. Lower the loader boom until the parking stands make contact with the ground. Dump the bucket until the bucket touches the ground. Refer to Figure 4.



Figure 4

NOTE: Driving the tractor forward slowly while positioning loader will allow parking stands to contact ground firmly. Using float position during this operation will keep tractor weight from being applied to loader parking stands.

Remove hinge nuts and hardened flatwashers from eyebolts. Swing hinge assemblies back. Reinstall hardened flatwashers and hinge nuts onto eyebolts. Remove snap pins from inner hole of rear hinge pins and reinstall into outer holes of rear hinge pins. Using snap pins as handles, remove rear hinge pins and hinge assemblies from loader. Figures 5 & 6.

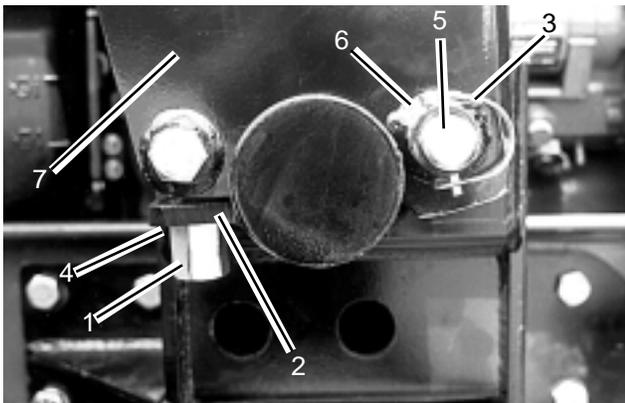


Figure 5

- (1) Hinge nut.
- (2) Hinge assembly.
- (3) Loader mounted snap pin position.
- (4) Hardened flatwasher.
- (5) Rear hinge pin.
- (6) Subframe bushing.
- (7) Subframe pedestal.
- (8) Center mounting bracket tubes. (Figure 6)
- (9) Rear hinge pin outer hole. (Figure 6)

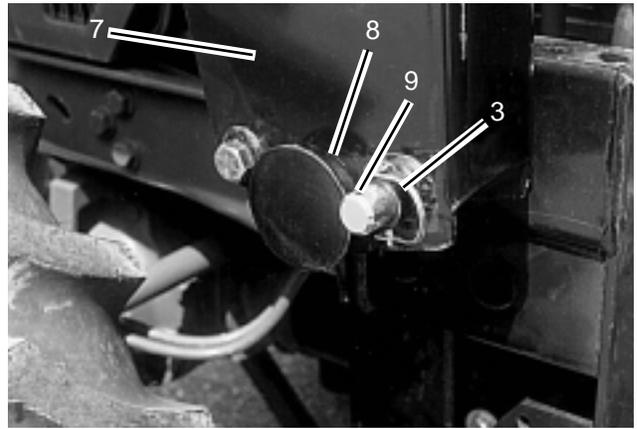


Figure 6

Start the tractor and position the valve control lever in the float position. Retract the bucket cylinder until the subframe assembly lifts off of the center bracket tubes. Take the valve control lever out of the float position. Back the tractor up approximately one foot. Make sure hydraulic hoses are not pulled or damaged. Refer to Figure 7.



Figure 7

NOTE: Before backing the tractor away from the loader, use the lift cylinders to position the subframe crosstube so it moves freely in the front bracket channel. This will prevent loader movement when backing the tractor away from the loader.

Make sure the subframe assembly will clear the front wheels and axle of the tractor. Retract the lift and attachment cylinders. Stop the tractor engine and then work valve control lever/levers to relieve hydraulic fluid pressure in lines. See tractor Operator Manual for additional information.

Reinstall hinge assemblies, rear hinge pins, and snap pins to loader for storage. Disconnect the hoses at the quick couplers. Start the tractor. Slowly back the tractor away from the loader. Refer to Figure 8.



Figure 8

IMPORTANT: To avoid hydraulic hose damage, be alert and make sure hoses do not catch on tractor and/or loader during mounting or dismounting.

⚠ WARNING ⚠

MAKE SURE PARKED LOADER IS ON A HARD LEVEL SURFACE. ENGAGE ALL SAFETY DEVICES TO PREVENT LOADER FROM FALLING AND BEING DAMAGED OR INJURING SOMEONE. DO NOT REPAIR LOADER IF IT IS NOT MOUNTED ON THE TRACTOR. LOSS OF HYDRAULIC FLUID OR REMOVAL OF PARTS COULD CAUSE LOADER TO COLLAPSE RESULTING IN INJURY.

7. MOUNTING THE LOADER

⚠ CAUTION ⚠

BEFORE LEAVING THE TRACTOR SEAT, LOWER ATTACHMENT OR LOADER BOOM TO GROUND, STOP ENGINE, LOCK BRAKES, RELIEVE HYDRAULIC PRESSURE, AND REMOVE KEY.

DO NOT STAND, WALK OR WORK UNDER A RAISED LOADER OR ATTACHMENT UNLESS IT IS SECURELY BLOCKED OR HELD IN POSITION. ACCIDENTAL MOVEMENT OR A CONTROL LEVER/LEVERS OR LEAKS IN THE HYDRAULIC SYSTEM COULD CAUSE THE LOADER TO DROP, OR ATTACHMENT TO DUMP, CAUSING SEVERE INJURY.

DO NOT ALLOW BYSTANDERS IN LOADER WORK AREA

IMPORTANT: Never allow weight of tractor to be placed on parking stands when mounting or dismounting loader.

Slowly drive tractor to a position where the hoses can be connected to the quick couplers. Stop the engine. Connect the loader hydraulic hoses to the correct couplers. Refer to Figure 8 at top of page.

Remove rear hinge assemblies from loader.

Use the lift and attachment cylinders to align the subframe crosstube with the front bracket. Drive the tractor forward to install the subframe crosstube into the front bracket. Refer to Figure 1.

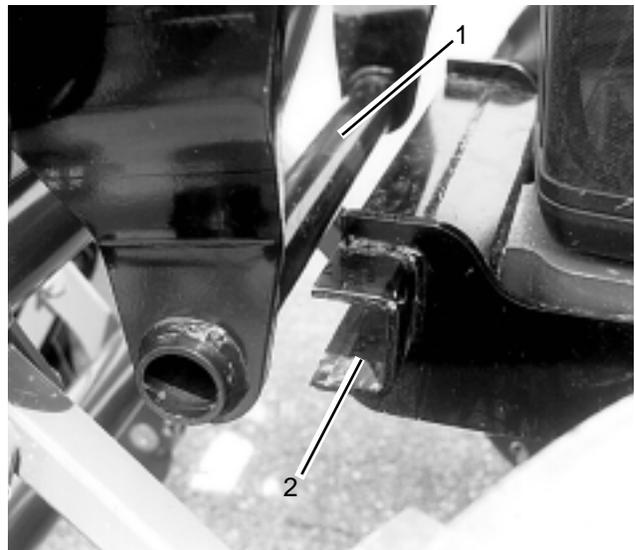


Figure 1

- (1) Subframe crosstube.
- (2) Front bracket.

Extend the attachment cylinders to lower loader subframes onto center mounting bracket tubes. Refer to Figure 2.

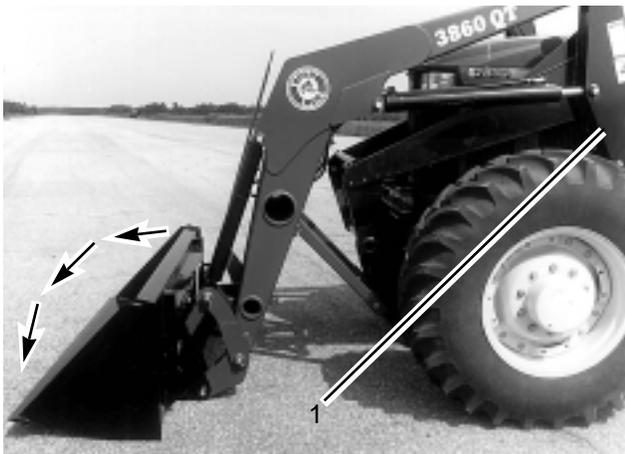


Figure 2

(1) Subframe being lowered to center mounting bracket.

Using snap pins as handles, reinstall rear hinge pins and hinge assemblies. Remove snap pins from outer holes of rear hinge pins and reinstall into inner holes. Secure rear hinge pins to subframe bushings in loader mounted position. Remove hinge nuts and hardened flatwashers from eyebolts. Swing hinge assemblies forward. Secure by locking hinge assemblies into position using hardened flatwashers and hinge nuts. Torque hinge nuts to 200 ft. lb. Refer to Figures 5 & 6, page 24.

Raise the loader boom and position the bucket 90° to the ground. Lower the loader boom assembly until front edge of bucket is resting on the ground. Refer to Figure 3.



Figure 3

Remove the two clevis pins holding lower legs of parking stands in the park position. Retract the parking stands and reinstall clevis pins to hold lower legs in the storage position. Refer to Figure 4.



Figure 4

- (1) Clevis pin 5/8" x 4-1/2", one each side of loader.
- (2) Clevis pin 5/8" x 4", one each side of loader.
- (3) Lower parking stand leg extended.

Remove parking stands from parked position and return to storage position. Secure parking stands in storage position using clevis pins and hairpin cotters. Refer to Figure 5.

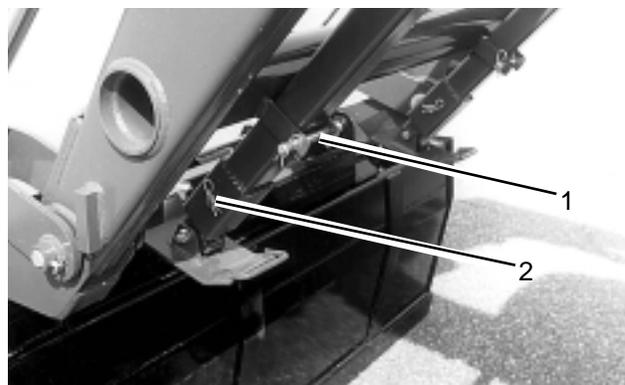


Figure 5

- (1) Clevis pin 5/8" x 4-1/2", one each side of loader.
- (2) Clevis pin 5/8" x 4", one each side of loader.

8. INSTALLATION & OPERATION OF QUICK DRAW LATCH ATTACH



WARNING

ALWAYS READ AND FOLLOW OPERATING INSTRUCTIONS BEFORE OPERATING QUICK DRAW LATCH ATTACH.



INSTALLATION INSTRUCTIONS

IMPORTANT: Do not extend bucket cylinders without quick draw latch attach installed on loader. Failure to follow these instructions will void loader warranty.

Install quick draw latch attach to loader using four (4) pins as specified below. Secure pins using clevis pins and cotter pins, 4 places. Refer to Figure 1.

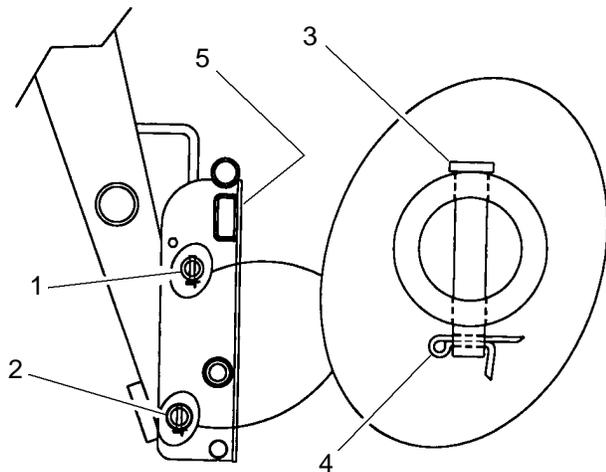


Figure 1

- (1) Top pin 1-1/8" x 6-7/8", 2 places.
- (2) Bottom pin 1-1/8" x 6-7/8", 2 places.
- (3) Clevis pin 5/16" x 2", 4 places.
- (4) Cotter pin 1/8" x 1", 4 places.
- (5) Quick Draw Latch Attach Adapter.

OPERATING INSTRUCTIONS



CAUTION

EXCEPT WHEN DETACHING OR ATTACHING A QUICK DRAW BUCKET OR ATTACHMENT TO YOUR QUICK DRAW LATCH ATTACH, ALWAYS POSITION THE QUICK DRAW HANDLE IN THE HANDLE ENGAGED POSITION, FIGURE 6, PAGE 28 THIS WILL PREVENT ACCIDENTAL TRIPPING OF QUICK DRAW HANDLE WHEN NOT IN USE.

TO AVOID PERSONAL INJURY, KEEP HANDS AWAY FROM LOADER WHEN OPERATING.

IMPORTANT: To maintain your quick draw latch attach functioning properly, always inspect quick draw latch attach and quick draw handle linkage components for damage. If damage exists, replace component immediately.

IMPORTANT: To maintain your quick draw latch attach functioning properly, always keep quick draw latch attach, loader push off bar, quick draw handle linkages, and pin areas clean. Refer to Figure 2.

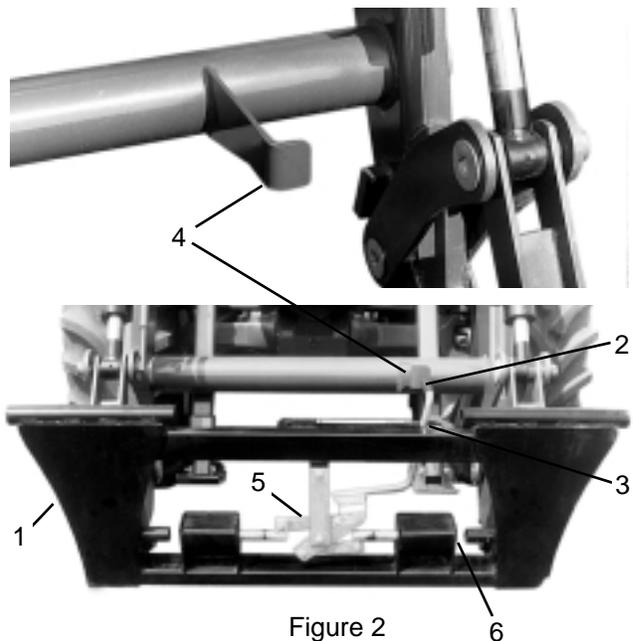


Figure 2

- (1) Quick draw latch attach.
- (2) Quick draw handle.
- (3) Quick draw notch.
- (4) Loader push off bar.
- (5) Quick draw handle linkages.
- (6) Quick draw pin area.

IMPORTANT: The quick draw latch attach must only be used in combination with quick draw buckets or attachments. To verify that your bucket or attachment can be used with your quick draw latch attach, inspect inside of upper channel to see that weld-in center support has been incorporated within channel section. Refer to Figure 3. If your bucket or attachment does not incorporate this support, consult your Bush Hog Dealer.

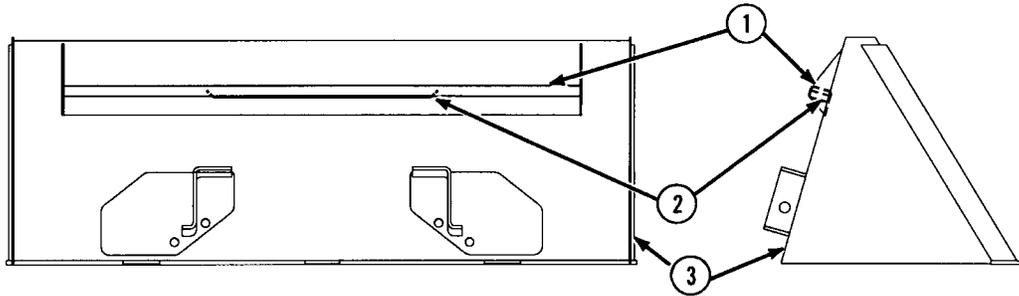


Figure 3

- (1) Upper channel.
- (2) Weld-in center support.
- (3) Bucket or attachment.

QUICK DRAW HANDLE DISENGAGED POSITION:

To position quick draw handle into the handle disengaged position, pull quick draw handle to the left as shown in Figure 4 and then lock into quick draw notch as shown in Figure 5.

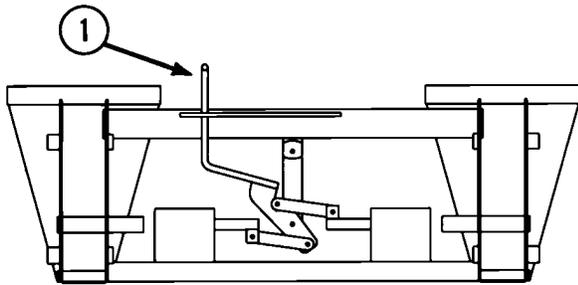


Figure 4

- (1) Handle disengaged position.

QUICK DRAW HANDLE ENGAGED POSITION:

Figure 6 shows quick draw handle in the handle engaged position. When quick draw handle is in this position, quick draw handle must line up with handle engaged arrow located on Warning Decal. Refer to Figure 5.

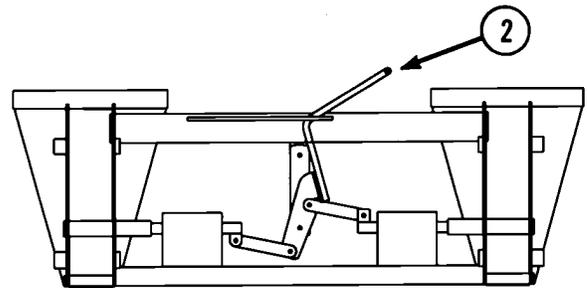


Figure 6

- (2) Handle engaged position.

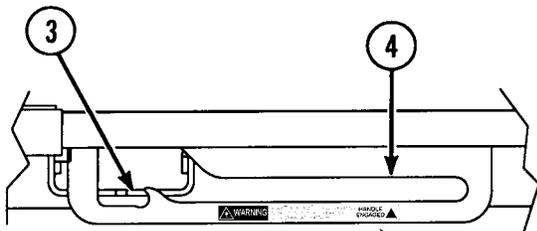


Figure 5



- (3) Quick draw notch.
- (4) Handle engaged arrow of decal.

9. INSTALLING BUCKET OR ATTACHMENT TO QUICK DRAW LATCH ATTACH

IMPORTANT: Refer to page 28 for instructions concerning Quick Draw Handle Disengaged and Engaged Positions.

⚠ CAUTION ⚠

BEFORE LEAVING THE TRACTOR SEAT, LOWER ATTACHMENT OR LOADER BOOM TO GROUND, STOP ENGINE, LOCK BRAKES, RELIEVE HYDRAULIC PRESSURE, AND REMOVE KEY.

DO NOT STAND, WALK OR WORK UNDER A RAISED LOADER OR ATTACHMENT UNLESS IT IS SECURELY BLOCKED OR HELD IN POSITION. ACCIDENTAL MOVEMENT OF A CONTROL LEVER/LEVERS OR LEAKS IN THE HYDRAULIC SYSTEM COULD CAUSE THE LOADER TO DROP, OR ATTACHMENT TO DUMP, CAUSING SEVERE INJURY.

OPERATING INSTRUCTIONS

To attach quick draw bucket or attachment to loader, lower loader boom to ground with quick draw latch attach rolled forward slightly. Pull quick draw handle into the handle disengaged position and lock into quick draw notch. Refer to Figure 1.

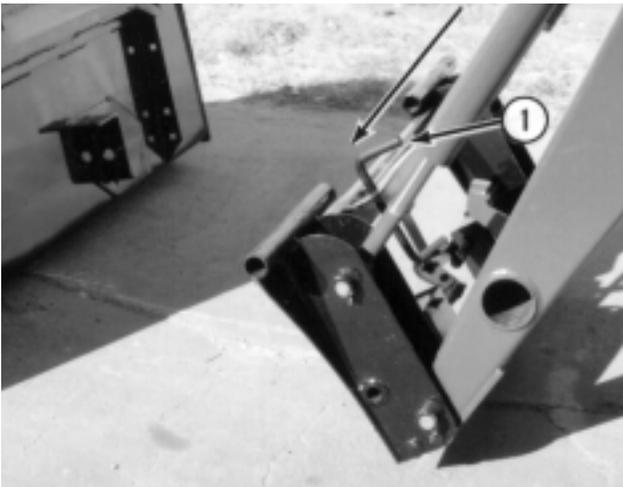


Figure 1

(1) Quick draw handle located in handle disengaged position.

Roll quick draw latch attach forward by extending attachment cylinders just enough to allow quick draw tubes to engage quick draw attachment channel. Drive tractor forward, aligning quick draw tubes with the quick draw attachment channel. Refer to Figure 2.



Figure 2

(1) Align quick draw tubes with quick draw attachment channel.

NOTE: Over extension of attachment cylinders during this operation could cause damage to quick draw handle due to handle contacting quick draw bucket or attachment.

When quick draw latch attach is aligned with quick draw bucket or attachment, raise loader boom slowly making sure quick draw tubes engage into quick draw attachment channel. Then roll quick draw bucket attachment back slowly. This will push quick draw handle forward securing quick draw bucket or attachment to quick draw latch attach. Refer to Figure 3.

NOTE: This operation must be done with quick draw bucket or attachment positioned close to ground to allow loader push off bar to function correctly.



Figure 3

Check to see that quick draw handle has moved to the handle engaged position by rolling quick draw bucket or attachment back and then raising loader boom to hood height.

NOTE: Quick draw handle must be located in the handle engaged position. Refer to Figure 4 below and to Figures 5 and 6 page 28.



Figure 4

Check that quick draw bucket or attachment is securely attached to quick draw latch attach by raising loader boom 3 to 4 feet, dumping quick draw bucket or attachment against stops, and checking to be sure quick draw bucket or attachment does not roll out of quick draw latch attach. Refer to Figure 5.



Figure 5



WARNING

A QUICK DRAW BUCKET OR ATTACHMENT THAT IS NOT SECURELY LOCKED INTO QUICK DRAW LATCH ATTACH COULD COME OFF DURING LOADER OPERATION CAUSING SERIOUS INJURY OR DEATH.

Inspect quick draw attaching areas to verify that quick draw pins have engaged quick draw bucket or attachment fully. Refer to Figure 6.

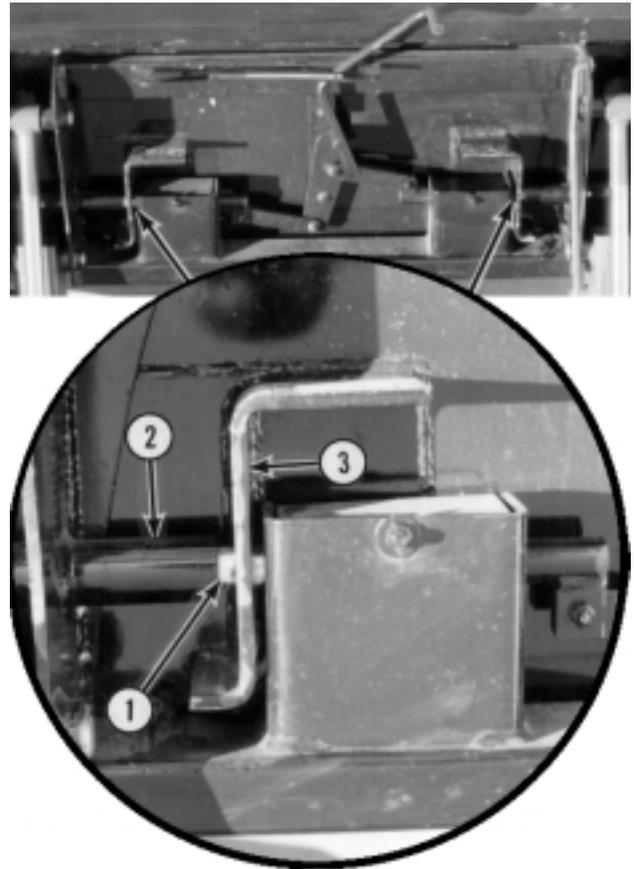


Figure 6

- (1) Quick draw pin.
- (2) Quick draw pin bushing.
- (3) Quick draw bucket or attachment engaging bar.

If installing an attachment utilizing a third cylinder hydraulic circuit, connect loader hose quick couplers to attachment quick couplers.

10. REMOVING BUCKET OR ATTACHMENT FROM QUICK DRAW LATCH ATTACH

IMPORTANT: Refer to page 28 For instructions concerning Quick Draw Handle Disengaged and Engaged Positions.



BEFORE LEAVING THE TRACTOR SEAT, LOWER ATTACHMENT OR LOADER BOOM TO GROUND, STOP ENGINE, LOCK BRAKES, RELIEVE HYDRAULIC PRESSURE, AND REMOVE KEY.

DO NOT STAND, WALK OR WORK UNDER A RAISED LOADER OR ATTACHMENT UNLESS IT IS SECURELY BLOCKED OR HELD IN POSITION. ACCIDENTAL MOVEMENT OF A CONTROL LEVER/LEVERS OR LEAKS IN THE HYDRAULIC SYSTEM COULD CAUSE THE LOADER TO DROP, OR ATTACHMENT TO DUMP, CAUSING SEVERE INJURY.

OPERATING INSTRUCTIONS

To disconnect quick draw bucket or attachment from loader, position bucket or attachment level with ground and approximately 1" off of ground. Refer to Figure 1. Then pull quick draw handle into the handle disengaged position and lock into quick draw notch. Refer to Figure 4, page 28.



Figure 1

(1) Quick draw handle.

Roll quick draw bucket or attachment forward and lower to ground. Back tractor/loader away from quick draw bucket or attachment. Refer to Figure 2. Then roll quick draw latch attach back so quick draw handle returns to the handle engaged position. Refer to Figure 6, page 28.



Figure 2

NOTE: Over extension of attachment cylinders during this operation could cause damage to quick draw handle due to handle contacting quick draw bucket or attachment.

If removing an attachment utilizing a third cylinder hydraulic circuit, disconnect loader hose quick couplers from attachment quick couplers. Secure and store loader hoses on loader frame.

11. BUCKET ATTACHMENT

QUICK DRAW BUCKET

IMPORTANT: Refer to pages 29 & 30 for instructions concerning Installing Attachment to Quick Draw Latch Attach.

IMPORTANT: Refer to page 31 for instructions concerning Removing Attachment from Quick Draw Latch Attach.

Quick draw buckets are available as follows.

72 inch, 84 inch, and 96 inch wide for Bush Hog 3860 Loaders.

These buckets utilize a replaceable weld-on cutting edge, and are pre-punched for tines.

Heavy duty/high capacity quick draw buckets are available as follows.

72 inch, 84 inch, 96 inch, and 102 inch wide for Bush Hog 3860 Loaders.

These buckets utilize a replaceable bolt-on cutting edge.

These buckets are equipped with a clevis mounting point for lifting. Refer to Figure 1.



CAUTION

NEVER LIFT ANY LOAD FROM ANY POINT OF THE LOADER WITH A CHAIN, ROPE, OR CABLE UNLESS LOADER IS EQUIPPED WITH A BUSH HOG FACTORY APPROVED ATTACHMENT WHICH WAS DESIGNED AND BUILT FOR THIS TYPE OF LIFTING. ALWAYS FOLLOW LIFTING INSTRUCTIONS INCLUDED WITH THIS ATTACHMENT.

NEVER TOW FROM ANY POINT OF THE LOADER WITH A CHAIN, ROPE, OR CABLE. DOING SO COULD CAUSE A ROLL OVER OR SERIOUS DAMAGE TO THE LOADER.

MAXIMUM LOAD LIMIT ON BUSH HOG CLEVIS AND CLEVIS MOUNTING POINT IS 6500 POUNDS. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD CAUSE DAMAGE TO LOADER AND/OR INJURY TO OPERATOR.

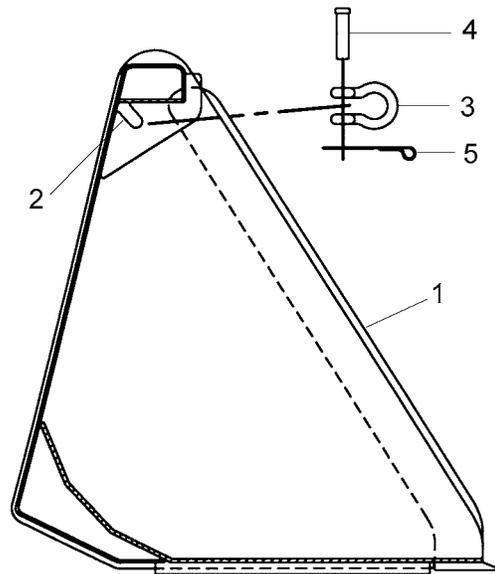


Figure 1

- (1) Bucket, heavy duty, high capacity.
- (2) Clevis mounting point.
- (3) Clevis (use only Factory approved clevis).
- (4) Clevis pin.
- (5) Cotter Pin.

SINGLE TINE KIT

Single tine kits are available for mounting on pre-punched buckets as follows. Each single tine kit includes one tine and attaching hardware.

72 inch quick draw buckets are punched for eight (8) single tine kits.

84 inch quick draw buckets are punched for ten (10) single tine kits.

96 inch quick draw buckets are punched for ten (10) single tine kits.

12. SUPER PENETRATOR BALE PROBE ATTACHMENT

IMPORTANT: It is not recommended that loader be detached from tractor with bale probe attached. Loaders will park safely, however, bale probe could be damaged during parking. Always detach loader with bucket or other Factory approved attachment attached.



WHEN TRANSPORTING A ROUND BALE, TILT THE BALE PROBE SLIGHTLY BACK FROM LEVEL AND CARRY THE LOAD IN A LOW POSITION.

APPROACH, PENETRATE AND TRANSPORT ROUND BALES AT SLOW SPEED.

DO NOT LIFT ANYTHING WITH PROBE EXCEPT ROUND BALES.

NEVER RAISE ROUND BALE TO FULL HEIGHT WITH BALE PROBE ROLLED BACK AS SERIOUS INJURY OR DEATH COULD OCCUR.

TO PREVENT BODILY INJURY, PARK AND STORE BALE PROBE WITH POINTS POINTED AGAINST BALE, BUILDING OR OTHER STABLE OBJECT.

IMPORTANT!

THIS SPEAR IS A HIGH STRENGTH ALLOY-DROP FORGED STEEL AND SHOULD NOT BE WELDED OR HEAT TREATED.

IMPORTANT: Maximum load limit on super penetrator bale probe is 2,200 pounds.

INSTALLATION INSTRUCTIONS

IMPORTANT: Refer to pages 29 & 30 for instructions concerning Installing Attachment to Quick Draw Latch Attach.

IMPORTANT: Refer to page 31 for instructions concerning Removing Attachment from Quick Draw Latch Attach.

Install bale probe into tapered sleeve and secure with 28mm nut. Torque super penetrator nut to 515 ft. lb. Refer to Figure 1. Failure to follow these instructions could cause damage to probe and void your warranty.

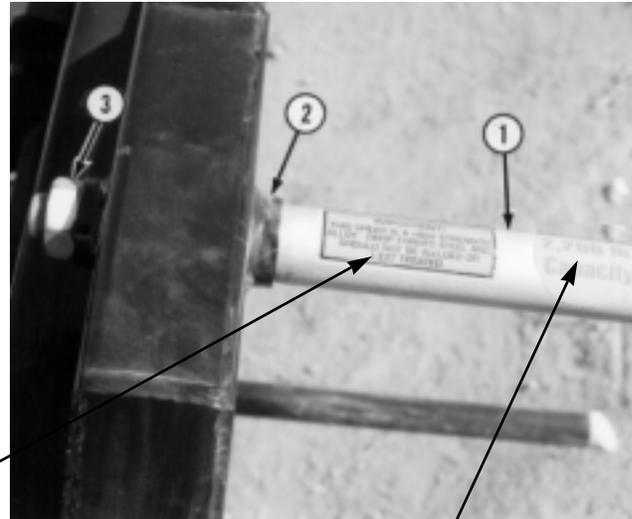


Figure 1

- (1) Super penetrator bale probe.
- (2) Tapered sleeve.
- (3) Nut, 28mm. Torque super penetrator nut to 515 ft. lb.

2,200 lb Capacity

OPERATING INSTRUCTIONS

With bale probe attachment level with ground, slowly probe bale slightly above center. Refer to Figure 2.

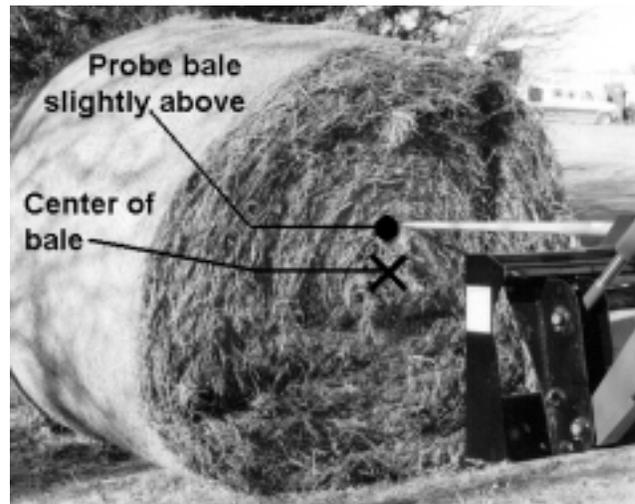


Figure 2

With all three bale probes completely engaged into bale, tilt the bale probe attachment slightly back from level and transport the load in a low position.

13. DOZER ATTACHMENT



TO HELP PREVENT BODILY INJURY, ALWAYS PARK AND STORE DOZER ATTACHMENT WITH PARKING STANDS IN PARKED POSITION.

IMPORTANT: Do not park loader with dozer attachment attached. Always detach loader with bucket or other factory approved attachment attached.

INSTALLATION INSTRUCTIONS

IMPORTANT: Refer to pages 29 & 30 for instructions concerning Installing Attachment to Quick Draw Latch Attach.

IMPORTANT: Refer to page 31 for instructions concerning Removing Attachment from Quick Draw Latch Attach.

A straight dozer is available in 84 inch and 96 inch widths.

OPERATING INSTRUCTIONS FOR DISMOUNTING DOZER FROM LOADER

Remove parking stands from stored position.

Position parking stands in parked position.

Disconnect from quick draw latch attach as shown on page 31. Figure 1 shows dozer attachment with parking stands in parked position. Refer to Figure 1.

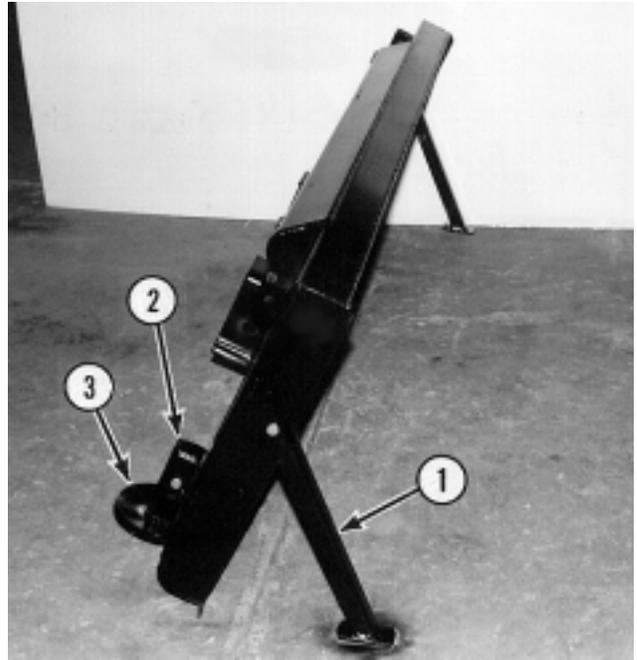


Figure 1

- (1) Parked position
- (2) Storage position
- (3) Adjustable skid

14. MANURE FORK ATTACHMENT

INSTALLATION INSTRUCTIONS

IMPORTANT: Refer to pages 29 & 30 for instructions concerning Installing Attachment to Quick Draw Latch Attach.

IMPORTANT: Refer to page 31 for instructions concerning Removing Attachment from Quick Draw Latch Attach.

A manure fork is available in a 72" width. The manure fork utilizes 10 each of 1-1/2" x 1" x 33" tines. Refer to Figure 1.

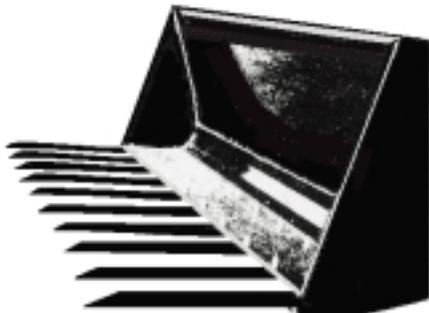


Figure 1

Install tines to manure fork using hardware included. Position plow bolt head on underside of manure fork. Refer to Figure 2.

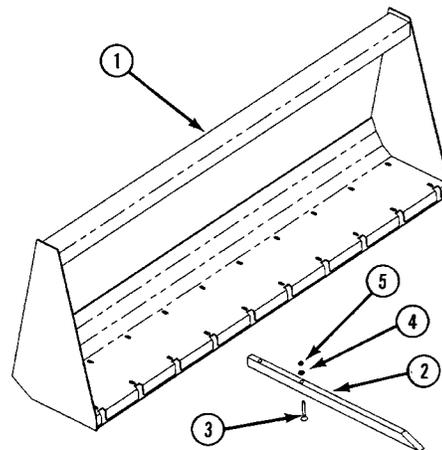


Figure 2

- (1) Manure fork assembly.
- (2) Manure fork tine.
- (3) Plow bolt 3/8"-16NC x 3" Grade 5.
- (4) Flatwasher, 3/8".
- (5) Hex nut 3/8"-16NC 2 way lock.

15. PALLET FORK ATTACHMENT



CAUTION
FORK TINES MUST BE ADJUSTED OUTWARD AND LOCKED BEHIND PARKING ANGLES BEFORE PARKING LOADER.

NEVER OPERATE PALLET FORKS WITHOUT GUARD ASSEMBLY INSTALLED.



WARNING
TO AVOID SERIOUS INJURY OR DEATH:

- ★ NEVER LIFT LARGE ROUND HAY BALES OR OTHER LOADS ON THE FORK LIFT ATTACHMENT THAT COULD ROLL BACK ONTO TRACTOR OPERATOR AREA.
- ★ NEVER USE FORK LIFT ATTACHMENT TO LIFT OR SUPPORT PEOPLE.
- ★ TRANSPORT LOADS LOW AND SLOW.
- ★ AVOID CONTACT WITH POWER LINES.

IMPORTANT: When parking loader with pallet fork attached, fork tines must be adjusted outward and locked behind parking angles before parking loader. Refer to Figure 1.

INSTALLATION INSTRUCTIONS

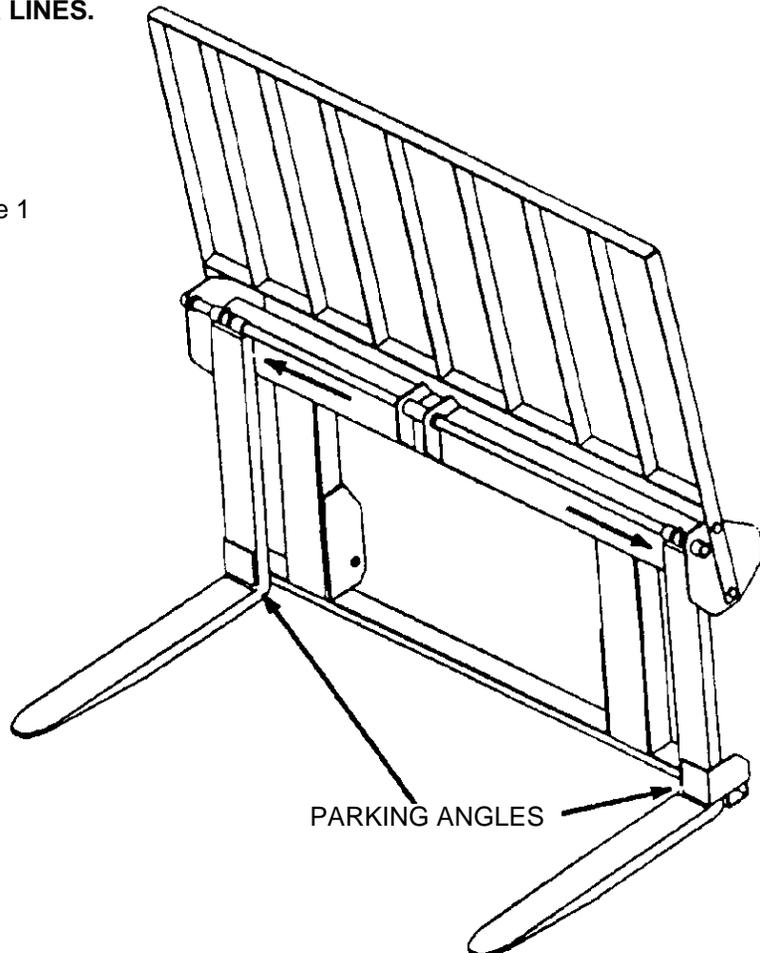
IMPORTANT: Refer to pages 29 & 30 for instructions concerning Installing Attachment to Quick Draw Latch Attach.

IMPORTANT: Refer to page 31 for instructions concerning Removing Attachment from Quick Draw Latch Attach.

OPERATING INSTRUCTIONS

The pallet fork attachment has two tines, 44" long, and adjustable from 12" to 50" in width. The operator must keep the load centered and as far back on the forks as possible. Operator must always keep load level. Carry the load low and at a slow speed.

Figure 1



16. GRAPPLE ATTACHMENT

INSTALLATION INSTRUCTIONS

IMPORTANT: Refer to pages 29 & 30 for instructions concerning Installing Attachment to Quick Draw Latch Attach.

IMPORTANT: Refer to page 31 for instructions concerning Removing Attachment from Quick Draw Latch Attach.

A four tine, two cylinder grapple is available to fit 3860 QT bucket widths of 72, 84, 96 and 102 inches.

The bucket grapple is useful for picking up loose hay or roughage out of stacks, stacking and transporting hay bales, carrying silage, and cleaning up brush. Refer to Figure 1.



Figure 1

NOTE: Optional extended length grapple tines are available on some grapple/bucket configurations. Contact Factory for further information.

Install right and left hand grapple pedestal to bucket back using 5/8" x 5-1/2" carriage bolts, flatwashers, and nuts. Install pedestal support using 1/2" x 5-1/2" bolts, flatwashers, and nuts. **DO NOT TIGHTEN.** Refer to Figure 2.

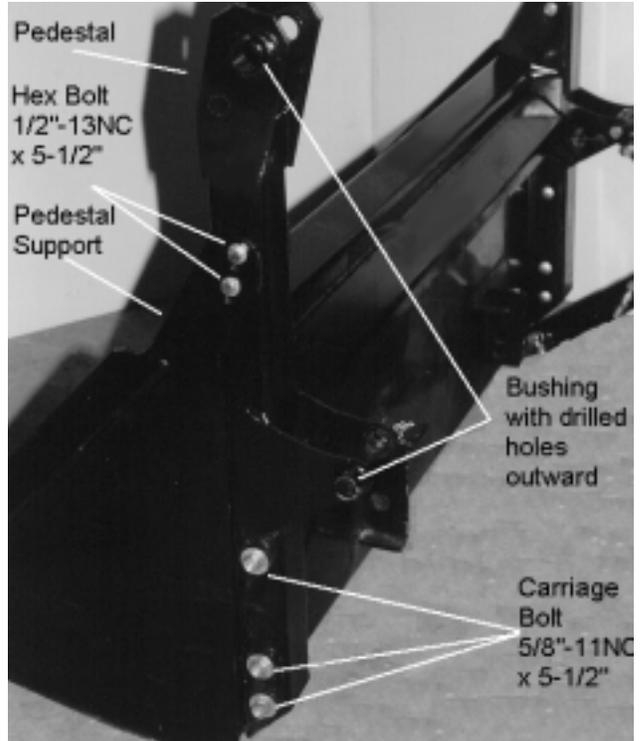


Figure 2

If your bucket has not been pre-drilled at the factory, then you must mark center line of pedestal support slots and center punch. Remove pedestal assembly and drill 9/16" holes 4 places. Reinstall pedestals. Refer to Figure 3.

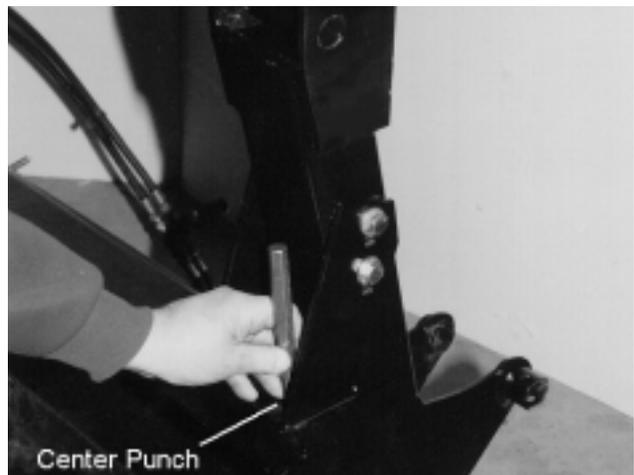


Figure 3

Install bar supports and attach using 1/2" x 3-1/2" bolts, flatwashers, and nuts. Refer to Figure 4.

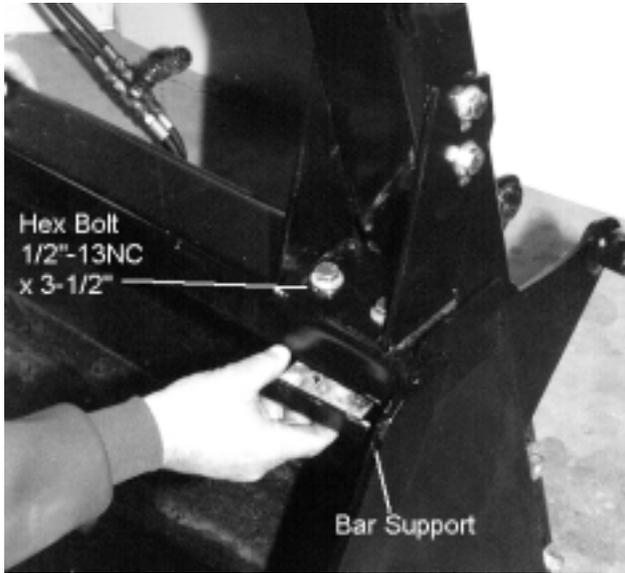


Figure 4

Install grapple swing arm assembly to pedestal using 1-5/16" x 6-5/8" pins. Install grapple cylinders to grapple pedestals using 1-1/8" x 6-1/2" pins. Install grapple cylinders to swing arm using 1-1/8" x 4-1/2" pins. Secure all pins using clevis pins and cotters. Install 90° fittings into cylinder ports and rotate into position shown. Refer to Figures 5 & 6.

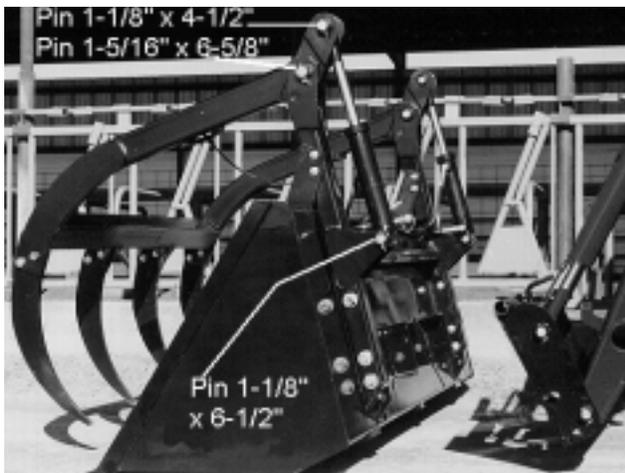


Figure 5

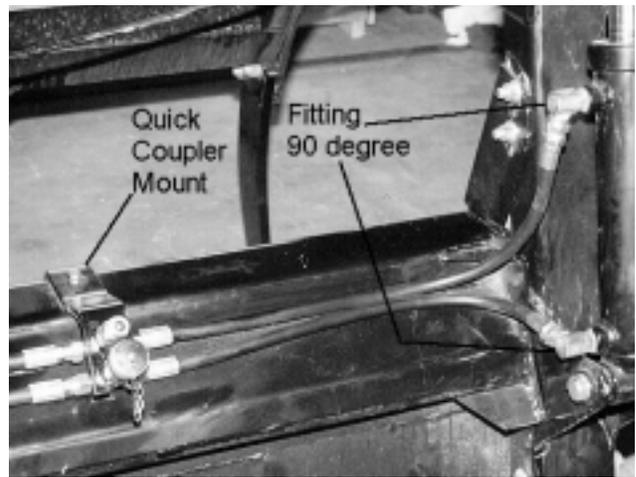


Figure 6

Install grapple tines to swing arm using 3/4" x 2-1/2" bolts and locknuts, 8 places. Refer to Figure 7.

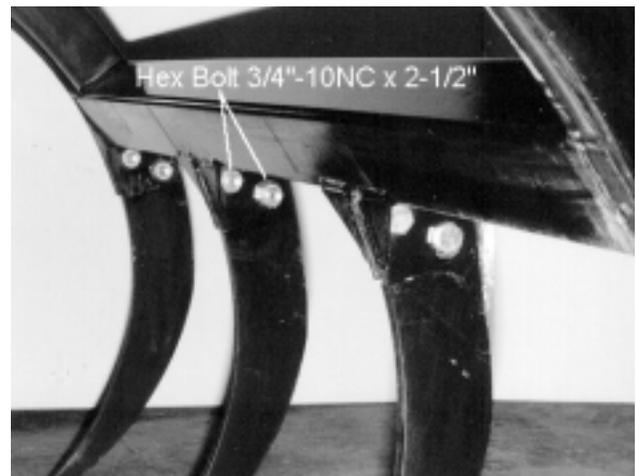


Figure 7

QUICK DRAW BUCKET ONLY: Loosely secure plastic hose clamp and bar support with 3/8" flat-washer and nylon lock nut to 3/8" stud located on back side of bucket.

Locate center top of bucket and measure right 10 inches. Locate quick coupler mount on bucket at this point. Center punch and drill 7/16" diameter hole through top box section of bucket. Refer to Figure 9 and to Figure 6, page 37.

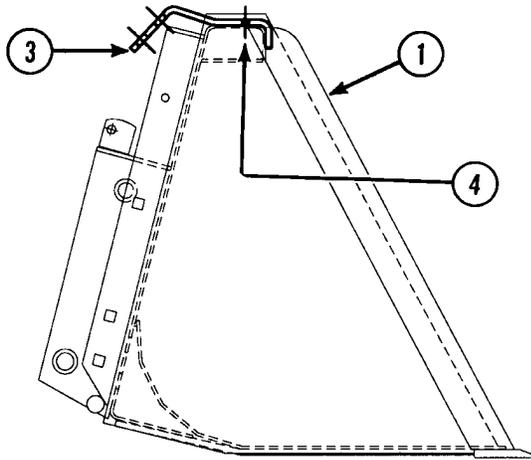


Figure 8

- (1) Bucket.
- (2) Quick coupler mount.
- (3) Center punch and drill 7/16" hole.

Install two bulkhead straight fittings to quick coupler mount using bulkhead nuts. Install o-ring to top end of bulkhead fitting (if not already installed by factory). Install 3/4"-16 O-Ring Boss male and female quick couplers to top o-ring side of bulkhead fittings. Install JIC tee fittings to other side of bulkhead fittings. Refer to Figure 11, page 39. Secure quick coupler mount to bucket using 3/8"-16NC x 3-1/2" bolt, lockwasher and nylon lock nut. Refer to Figure 6, page 37.

IMPORTANT: Grapple kit contains one each of 3/4"-16 O-ring boss male and female quick coupler. Third cylinder tube kit contains one each of 1/2"-14 NPT male and female quick coupler. Identify quick coupler and fitting ends before installing quick couplers.

Install four hoses between cylinder 90° fittings and bulkhead tee fittings. Guide left hand hoses under plastic hose clamp and then tighten bolt. Refer to Figure 11, page 39.

IMPORTANT: Do not over tighten hose clamp hardware. Only tighten hardware enough to clamp hoses snugly. Tighten all other grapple bolts and fittings using Torque Chart, page 43.

Install hoses and fittings from grapple to loader using third cylinder tube kit. Connect hoses so that grapple operates as shown below. Refer to Figure 9.

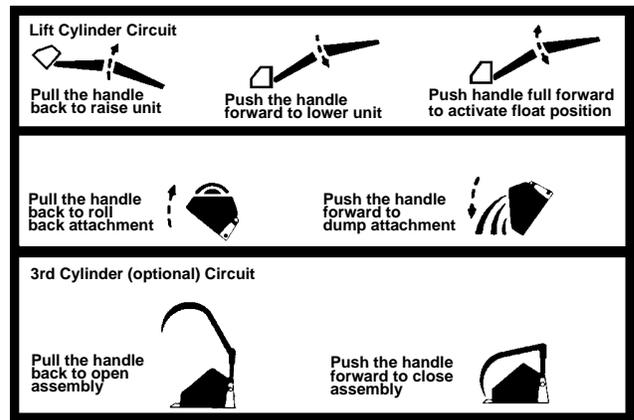


Figure 9

OPERATING INSTRUCTIONS

When operating the loader with the grapple attachment, always remove the upper level of the stack first and approach the stack with the bucket level. The upper grapple teeth must be in the maximum open position. Never ram the grapple into material to be loaded to gain the desired depth. Close the upper grapple assembly only far enough to hold the material in place.

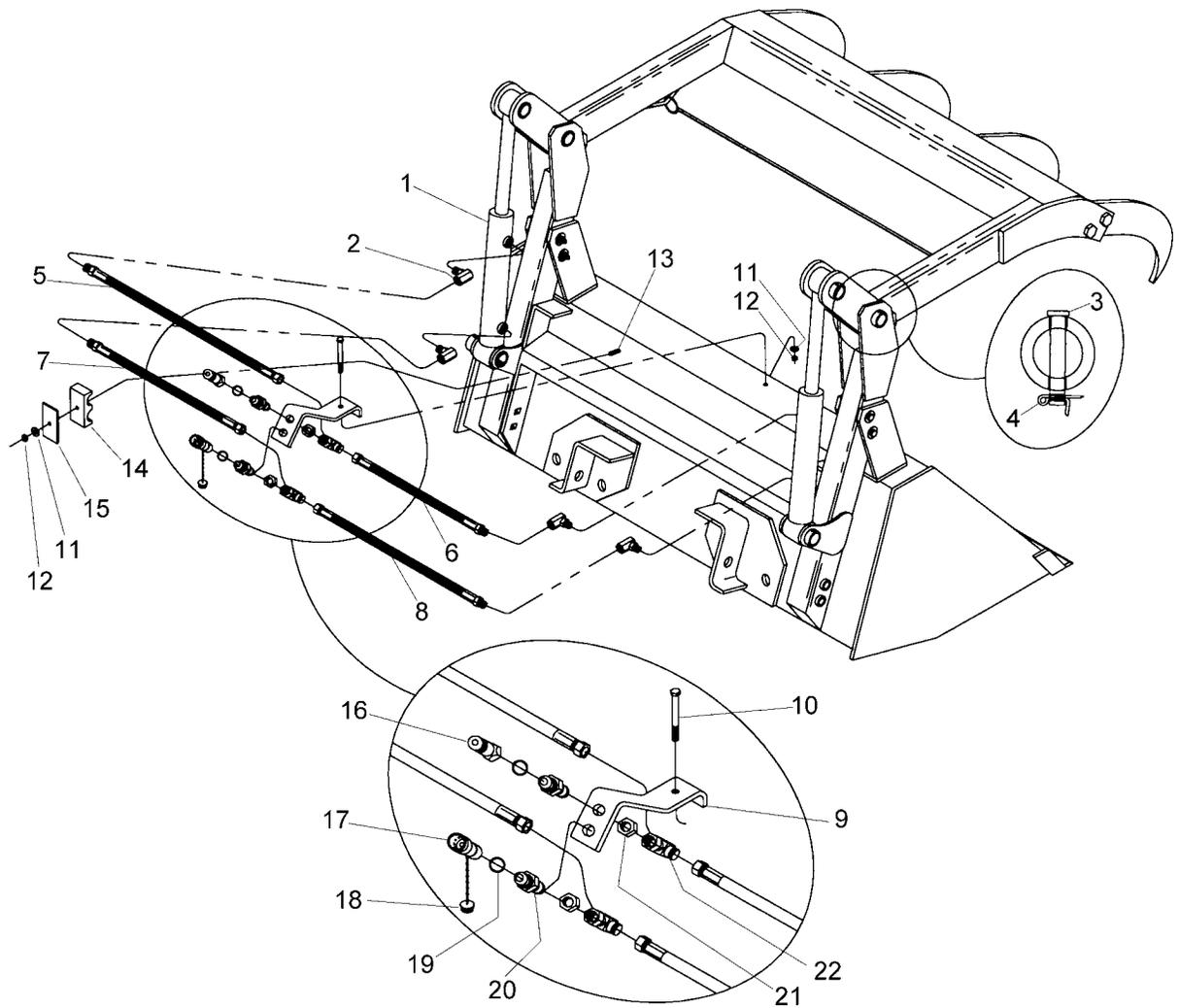


Figure 10

Ref.	Qty.	Description	Ref.	Qty.	Description
1	2	Grapple Cylinder 2-1/2"	12	2	Hex Nut 3/8" Nylon Lock
2	4	Fitting, 90° NPTF 1/2" x ORBM 3/4"	13	1	Hex Bolt 3/8"-16NC x 1-3/4" Pin On Bucket only, or
3	4	Clevis pin 5/16" x 2" Heat Treated for use on 1-1/8" pins	1	1	Weld-on Stud Quick Draw Bucket only.
	2	Clevis pin 3/8" x 2-1/4" for use on 1-5/16" pins.	14	1	Hose Clamp Plastic 5/8 x 5/8
4	6	Cotter Pin 1/8" x 1"	15	1	Hose Bar Support 3/16" x 1" x 2-1/2"
5	1	Hose 3/8" x 47.72" Top Left	16	1	Quick Coupler Male ORBF 3/4"
6	1	Hose 3/8" x 27.48" Top Right	17	1	Quick Coupler Female ORBF 3/4"
7	1	Hose 3/8" x 42.73" Bottom Left	18	1	Quick Coupler Dust Plug
8	1	Hose 3/8" x 22.98" Bottom Right	19	2	Bulkhead O-Ring 3/4"
9	1	Quick Coupler Mount	20	2	Fitting Str. Bulkhead JIC M 3/4"-16
10	1	Hex Bolt 3/8"-16NC x 3-1/2" Grade 5	21	2	Bulkhead Nut 3/4"-16
11	2	Flatwasher 3/8"	22	2	Fitting Tee JIC M-M-F 3/4"-16

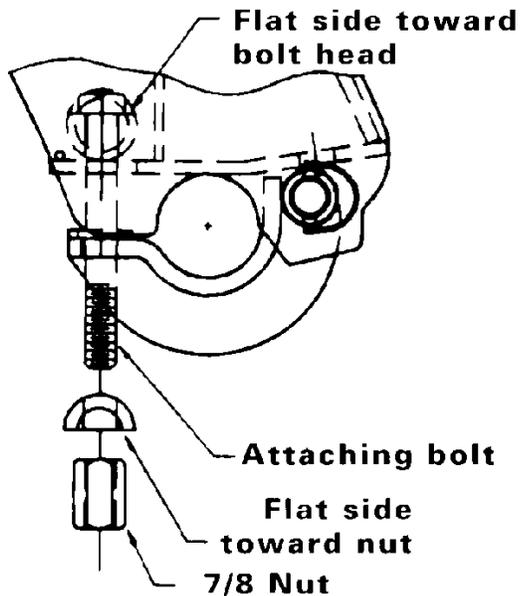
NOTICE

SUPPLEMENTAL INSTRUCTIONS FOR FORD GENESIS SPECIAL

Refer to Form BHF 1820 Packing List and Installation Instructions included with your BHF 82356 Mounting Kit for detailed Operation Instructions specific for this Loader.

HINGE LATCHING INSTRUCTION

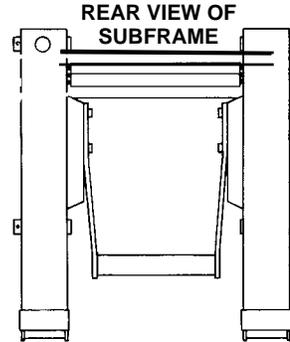
Always assemble hinge latch components as shown below. This will prevent attaching bolt from being damaged during loader use.



SAFETY DECALS

To promote safe operation, Bush Hog supplies safety decals on all products manufactured. Because damages can occur to safety decals either through shipment, use or reconditioning, Bush Hog will, upon request, provide safety decals for any of our products in the field at no charge. Contact your authorized Bush Hog dealer for more information.

Decals 25H46070, 25H46071, 25H46010 and 25H46012 are located on the left side of the subframe. Other decals are located on attachments (Bucket, Fork Lift, Bale Spear).



<h2>CAUTION</h2>	TO AVOID SERIOUS INJURY OR DEATH:		
	<ul style="list-style-type: none"> • READ OPERATOR'S MANUAL AND DECALS BEFORE OPERATING & FOLLOW ALL PRECAUTIONS. (CONTACT DEALER OR BUSH HOG FOR REPLACEMENT) • ALLOW NO CHILDREN OR UNQUALIFIED PERSONS TO OPERATE EQUIPMENT. • ROPS (ROLLOVER PROTECTIVE SYSTEM) AND SEAT BELT EQUIPPED TRACTOR IS RECOMMENDED FOR OPERATOR USE IN ALL LOADER OPERATIONS. • ADD RECOMMENDED WHEEL BALAST OR REAR WEIGHT FOR STABILITY. 	<ul style="list-style-type: none"> • MOVE WHEELS TO WIDEST RECOMMENDED SETTINGS TO INCREASE STABILITY. • OPERATE LOADER ONLY FROM "OPERATOR'S SEAT". • STOP ENGINE, LOWER ARMS, RELIEVE ALL HYDRAULIC PRESSURE AND LOCK BRAKES BEFORE LEAVING OPERATOR'S SEAT. • DO NOT STAND, WORK, OR ALLOW OTHERS UNDER RAISED LOADER. • MOVE AND TURN TRACTOR AT LOW SPEEDS. 	<ul style="list-style-type: none"> • CARRY LOADER ARMS AT A LOW POSITION DURING TRANSPORT. • DO NOT LIFT OR CARRY ANYONE ON LOADER OR ON BUCKETS, FORKS, OR ATTACHMENTS. • OPERATOR SHOULD WEAR SAFETY HARD HAT, SAFETY GLASSES, SAFETY SHOES AND OTHER P.P.E. AVOID WEARING LOOSE CLOTHING OR JEWELRY THAT MAY CATCH IN MOVING PARTS.
	25H46071		

25H46071

<h2>WARNING</h2>
<p>RAISED LOADER OR BOOM CAN FALL FROM HYDRAULIC SYSTEM FAILURE. TO AVOID SERIOUS INJURY OR DEATH,</p> <ul style="list-style-type: none"> • BLOCK UP OR SECURELY SUPPORT LOADER AND BOOM BEFORE WORKING UNDERNEATH. • PURGE ALL AIR FROM HYDRAULIC SYSTEM BEFORE ATTEMPTING TO RAISE OR LOWER LOADER OR BOOM. • STAND CLEAR IF LOWERING OR RAISING LOADER OR BOOM. • DO NOT USE HAND OR SKIN TO CHECK FOR HYDRAULIC LEAKS. USE CARDBOARD OR WOOD. WEAR EYE PROTECTION. • HIGH PRESSURE OIL LEAKS CAN PENETRATE SKIN CAUSING SERIOUS INJURY AND GANGRENE. CONSULT A PHYSICIAN IMMEDIATELY. • LOWER THE LOADER OR BOOM AND RELEASE HYDRAULIC PRESSURE BEFORE LOOSENING FITTINGS. • REFER TO OWNERS MANUAL FOR DETAILS.
25H46070

25H46070

<h2>WARNING</h2>
<p>TO AVOID SERIOUS INJURY OR DEATH,</p> <ul style="list-style-type: none"> • DO NOT LIFT OR CARRY ANYONE ON BUCKETS, FORKS, SPEARS OR ANY OTHER PORTIONS OF THE LOADER OR LOADER ATTACHMENTS. <p>INADVERTENT MOVEMENT OF THE LOADER OR ATTACHMENT COULD RESULT IN SERIOUS INJURY OR DEATH.</p> <ul style="list-style-type: none"> • AVOID CONTACT WITH ELECTRICAL POWER LINES BY LOADER OR ATTACHMENTS
25H46012

25H46012

	<h2>DANGER</h2> <p>LIVE WIRES OVERHEAD</p>
33792	

50020705

<h2>WARNING</h2>
<p>TO AVOID SERIOUS INJURY OR DEATH FROM LARGE ROUND HAY BALE HANDLING,</p> <ol style="list-style-type: none"> 1. USE BUSH HOG BALE SPEAR OR BALE RETAINING DEVICE HANDLER ATTACHMENTS. 2. DO NOT USE BUCKETS, FORKS, OR OTHER ATTACHMENTS WITHOUT BALE RETAINING DEVICES. 3. DO NOT USE LOADER FOR HANDLING LARGE, HEAVY OBJECTS SUCH AS LOGS, TANKS, ETC. <p>HANDLING LARGE HEAVY OBJECTS CAN BE EXTREMELY DANGEROUS DUE TO:</p> <ul style="list-style-type: none"> • DANGER OF ROLLING THE TRACTOR OVER. • DANGER OF UPENDING THE TRACTOR. • DANGER OF THE OBJECT ROLLING OR SLIDING DOWN THE LOADER ARMS ONTO THE OPERATOR.
25H46010

25H46010

DECALS CONTINUED

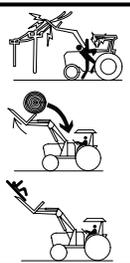
⚠ CAUTION

1. USE ONLY FACTORY SUPPLIED CLEVIS AND MOUNTING HARDWARE WHEN ATTACHING TO CLEVIS MOUNTING POINT OF BUCKET.
2. MAXIMUM LOAD LIMIT ON FACTORY CLEVIS AND CLEVIS MOUNTING POINT IS 6500 POUNDS.
3. NEVER TOW ANY POINT OF THE LOADER WITH A CHAIN, ROPE, OR CABLE.
4. DO NOT APPLY TRACTOR PULL OR PUSH FORCE TO THIS CLEVIS MOUNTING POINT. APPLY ONLY LOADER HYDRAULIC LIFT OR ROLLBACK CAPACITY TO THIS CLEVIS MOUNTING POINT.

41077

50020844

⚠ WARNING



TO AVOID SERIOUS INJURY OR DEATH:

- ★ DO NOT USE FORK ATTACHMENT TO LIFT LARGE OBJECTS, ROUND HAY BALES OR ITEMS THAT MAY ROLL DOWN LOADER ARMS ONTO THE OPERATOR.
- ★ DO NOT LIFT OR CARRY ANYONE ON BUCKETS, FORKS, SPEARS OR ANY OTHER PORTIONS OF THE LOADER OR LOADER ATTACHMENTS. INADVERTENT MOVEMENT OF THE LOADER OR ATTACHMENT COULD RESULT IN SERIOUS INJURY OR DEATH.
- ★ LIFT ONLY OBJECTS WITHIN LOADER STATED LIFT CAPACITY. REFER TO LOADER AND FORK ATTACHMENT OPERATOR MANUALS FOR LOAD LIMITS.
- ★ AVOID CONTACT WITH ELECTRICAL POWER LINES BY LOADER OR ATTACHMENTS.

50021178

50021178

⚠ CAUTION

TO HELP PREVENT BODILY INJURY, ALWAYS PARK AND STORE DOZER ATTACHMENT WITH PARKING STANDS IN PARKED POSITION.

36464

50020800

⚠ WARNING



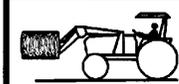
TO AVOID SERIOUS INJURY OR DEATH:

- ★ UNLOAD ONLY ON A LEVEL SURFACE.
- ★ KEEP BYSTANDERS CLEAR OF WORK AREA WHEN LOADING AND UNLOADING BALES.

25H49268

25H49268

⚠ CAUTION


TO AVOID SERIOUS INJURY OR DEATH:

- ★ READ OPERATOR'S MANUAL AND FOLLOW ALL SAFETY, OPERATING AND SERVICE INSTRUCTIONS (CONTACT DEALER FOR MANUALS).
- ★ BE CAREFUL DURING LOADING, TRANSPORTING, AND STACKING TO MINIMIZE ROLLING BALES AND TRACTOR TIP OVER.
- ★ ROPS (ROLL OVER PROTECTION SYSTEM) AND SEAT BELT EQUIPPED TRACTORS ARE RECOMMENDED FOR BALE SPEAR OPERATION.
- ★ DO NOT ALLOW RIDERS ON TRACTORS OR SPEAR.
- ★ AVOID LOADING/UNLOADING BALES ON SLOPING OR UNEVEN SURFACES.
- ★ AVOID TRANSPORTING WITH BALES RAISED HIGH. KEEP BALES LOW TO SURFACE WHILE MOVING.
- ★ TRANSPORT BALES AT LOW SPEEDS AND REDUCE SPEEDS ON CURVES, HILLS, ROUGH GROUND OR WHEN TURNING.

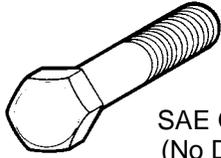
25H49267

25H49267

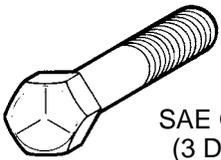
TORQUE SPECIFICATIONS

Proper torque for American fasteners used on Bush Hog equipment.
Recommended Torque in Foot Pounds (Newton Meters).*

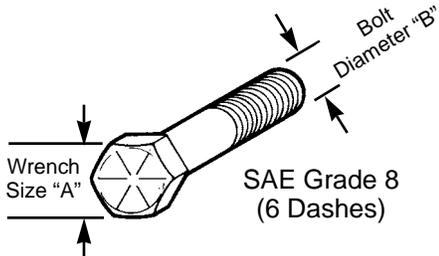
AMERICAN Bolt Head Markings



SAE Grade 2
(No Dashes)



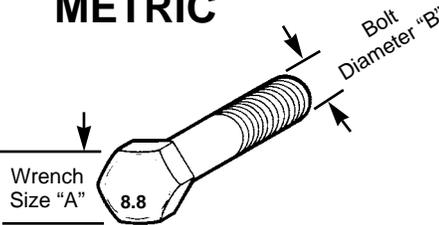
SAE Grade 5
(3 Dashes)



SAE Grade 8
(6 Dashes)

WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288(1745)
1-11/16	1-1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 - 12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

METRIC



Numbers appearing on bolt heads indicate ASTM class.

Proper torque for metric fasteners used on Bush Hog equipment.
Recommended torque in foot pounds (newton Meters).*

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.



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Performance You Can Count OnSM

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