

**BH160 Backhoe
(SN: 010001-)
(North American Edition)**



JOHN DEERE

OPERATOR'S MANUAL

**BH160 Backhoe
(SN: 010001-)
(North American Edition)**

OMTR146512 ISSUE J5 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

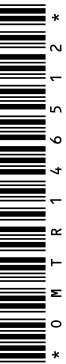
If this product contains a gasoline engine:

! WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

John Deere Augusta Works
North American Edition
Printed in U.S.A.



Introduction

Foreword

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. See www.techpubs.deere.com (Ag&Turf/JDPS), www.johndeeretechnico.com (C&F), or your John Deere dealer to order.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBERS (PIN) in the Specification or Machine Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. PIN information is helpful when ordering parts. File the identification numbers in a secure place off the machine.

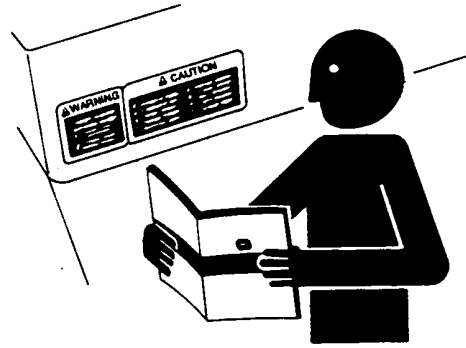
WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate or statement which you should have received at time of purchase.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

If you are not the original owner of this machine, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

DX,IFC1-19-03APR09

John Deere Is at Your Service



TS201—UN—15APR13

Customer satisfaction is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts, and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.
- **John Deere replacement parts, repair services, and information for maintenance or repair are available. For more information, please visit deere.com or deere.ca.**

DX,IFC,JDS-19-30SEP25

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Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Product Identification

Product Compatibility

The backhoe is designed for use with John Deere compact utility tractors.

Contact your John Deere dealer for specific tractor compatibility information.

UP00731,0000185-19-18MAY16

Record Identification Numbers

Backhoe Serial No. (010001-)

If you need to contact a Service Center for information on servicing, always provide the product model and serial number.

DATE OF PURCHASE:

DEALER NAME:

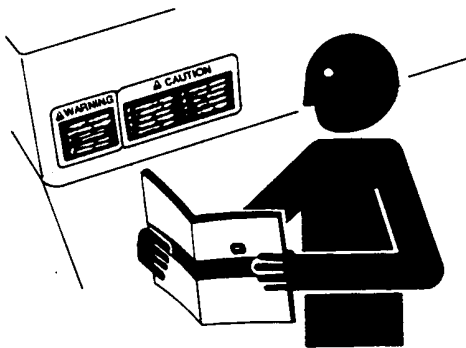
DEALER PHONE:

PRODUCT SERIAL NUMBER:

UP00731,0000186-19-21OCT25

Safety Labels

Replace Safety Signs



TS201—UN—15APR13

Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

DX,SIGNS-19-18AUG09



LVP18998—UN—07JAN25

Right side of machine

Operate backhoe controls from backhoe seat, except when installing or removing backhoe.

CAUTION - HELP AVOID INJURY

Safety Labels

WARNING - AVOID CRUSH INJURY OR DEATH



LVP19065—UN—08APR25



LVP19065—UN—08APR25



Right-Hand Side

LVP18998—UN—07JAN25

WARNING - AVOID CRUSH INJURY OR DEATH



LVP19066—UN—08APR25

Read Operator's Manual.

- Secure the backhoe to the tractor mount plates with lock pins before operating.
- Keep bystanders away from maximum swing reach area and stabilizers.
- Do not operate the tractor and backhoe using two operators.
- Lock the backhoe swing and boom with a locking device when not in use or when transporting.
- Lower stabilizers and bucket before leaving the seat.
- Keep all shields in place.
- Consult local utilities before digging. Check the operating area to be dug for any possible overhead or underground lines such as electric, gas, oil, water, etc. Extreme caution must be exercised in these areas where present.
- Operate backhoe controls ONLY from the normal operating position.
- Only operate the backhoe with the loader bucket and stabilizers down and on firm footing. Stay clear of steep areas or excavation banks that are soft or could give way.
- Add front end weight as needed to provide a minimum of 20% of the total gross weight on the front wheels of the tractor.
- The loader must be installed when backhoe is attached to the tractor.



Left side of machine

LVP18999—UN—07JAN25

- Operate backhoe controls from backhoe seat, except when installing or removing backhoe.
- DO NOT enter or exit from this side.

CAUTION - HELP AVOID INJURY



LVP19066—UN—08APR25

operating area to be dug for any possible overhead or underground lines such as electric, gas, oil, water, etc. Extreme caution must be exercised in these areas where present.

- Operate backhoe controls **ONLY** from the normal operating position.
- Only operate the backhoe with the loader bucket and stabilizers down and on firm footing. Stay clear of steep areas or excavation banks that are soft or could give way.
- Add front end weight as needed to provide a minimum of 20% of the total gross weight on the front wheels of the tractor.
- The loader must be installed when backhoe is attached to the tractor.

pjeeaud,1737114216144-19-19MAR25



LVP18999—UN—07JAN25

Left-Hand Side

Read Operator's Manual.

- Secure the backhoe to the tractor mount plates with lock pins before operating.
- Keep bystanders away from maximum swing reach area and stabilizers.
- Do not operate the tractor and backhoe using two operators.
- Lock the backhoe swing and boom with a locking device when not in use or when transporting.
- Lower stabilizers and bucket before leaving the seat.
- Keep all shields in place.
- Consult local utilities before digging. Check the

Safety

Operating The Backhoe Safely

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 involved in the operation, transport, maintenance, and storage of equipment.

You can reduce the risk of accidents by following these simple precautions:

- Read the machine and attachment operator's manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Know how to stop the machine and disengage the controls quickly.
- Never operate tractor with backhoe attached and loader removed. The front end weight shall be added as needed to provide a minimum of 20% of the total gross weight on the front wheels while backhoe is in transport position.
- Secure backhoe to tractor mount plates with lock pins before operating.
- Keep all shields in place and properly maintain the equipment. Keep hardware tight and repair or replace damaged, badly worn, or missing parts
- Check the operating area to be dug for any possible overhead or underground lines such as electric, gas, oil water, etc., and extreme caution must be exercised in these areas where present. Consult local utilities before digging.
- Operate backhoe controls ONLY from the seat except when installing, removing or when lowering stabilizers to enter the backhoe.
- Do not operate tractor and backhoe using two operators.
- Lock backhoe swing, boom, and stabilizer(s) with locking device when not in use or when transporting.
- Keep bystanders away from the maximum swing reach area and the stabilizers.
- Use your backhoe only for the jobs it was designed to perform. For example, digging, trenching and backfilling.
- Do not let children or an untrained person operate the machine.
- Do not modify machine or safety devices. Unauthorized modifications to the machine or attachment may impair its function and safety.

Operating the Backhoe

- Do not ballast a tractor and backhoe configuration beyond the stated ROPS certification maximum machine mass.
- Operate only with stabilizer(s) down and on firm footing. Stay clear of steep areas or excavation banks that are soft or could give way.
- Do not let anyone, especially children, ride on machine or attachment.
- Use extreme caution when operating on or near

drives, walks, or roads. Stay alert for hidden hazards or traffic.

- Use extreme caution when working around and with branches, sticks or other objects that may inadvertently become entangled in the backhoe and contact the operator.
- When digging on a hillside, always dump the bucket on the uphill side of excavation.
- Do not let anyone work under raised bucket.
- Do not dig under the stabilizer or tractor.
- Never attempt to drive the tractor when seated at the backhoe controls unless using creeper repositioning.

Parking, Getting on and Getting off the Backhoe

- Before leaving the seat: Lower the stabilizers and bucket to the ground.
- Only enter and exit the backhoe from the approved side with provided step and handholds.
- Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.
- When parking, lock backhoe swing, boom, and stabilizers with locking device.
- Take all possible precautions when leaving the machine unattended: lock the park brake, stop the engine and remove the key.
- Wait for movement to stop before servicing machinery.
- Relieve pressure in hydraulic system by bringing attachment to the ground and rotating controls after machine has stopped.

Transporting the Tractor and Backhoe

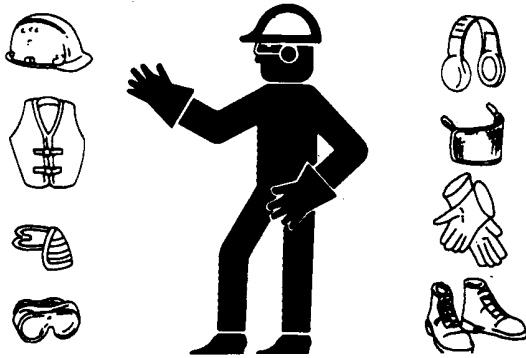
- Lock backhoe swing, boom and stabilizers. Curl the bucket.
- Check the local codes or regulations that may apply to tractor operation on public streets or highways, prior to transporting or traveling. Use the SMV emblem and warning flashers as required.
- Drive carefully, especially on turns and slopes, where room is limited, over rough ground, curbs or tracks, near a ditch or excavation, and during slippery conditions while transporting.

Preventing Accidents

Unsafe operation or misuse of the backhoe can result in accidents. Be alert to hazards of backhoe operation.

UP00731,00002B5-19-04FEB15

Wear Protective Clothing



TS206—UN—15APR13

Wear close fitting clothing and safety equipment appropriate to the job.

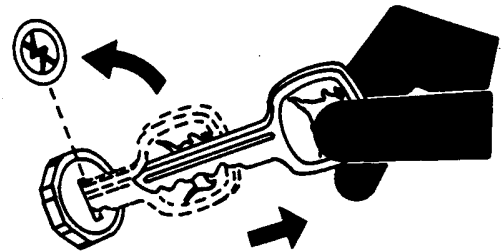
Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

DX,WEAR2-19-03MAR93

available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID-19-12OCT11

Park Machine Safely



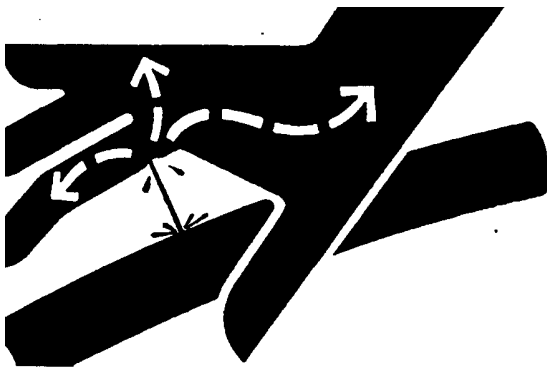
TS230—UN—24MAY89

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.

DX,PARK-19-04JUN90

Avoid High-Pressure Fluids



X9811—UN—23AUG88

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

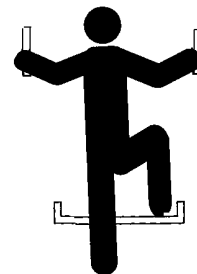
Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is

Use Steps and Handholds Correctly



T133468—UN—15APR13

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

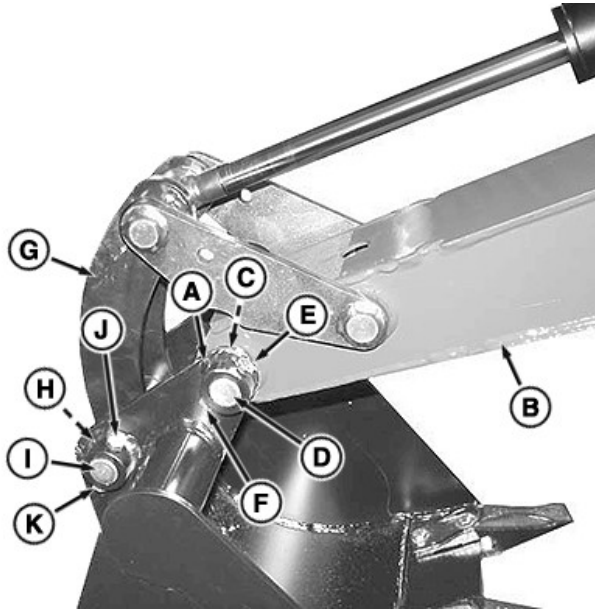
Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.

DX,WW,MOUNT-19-12OCT11

Assembly

Install Bucket

NOTE: Lubricate all pivot pins before installation.



LV25365—UN—18MAY16

A—Bucket Ear
B—Dipperstick
C—Spacer
D—Pivot Pin
E—Cap Screw
F—Nut
G—Link
H—Spacer
I—Pivot Pin
J—Cap Screw
K—Nut

1. Align holes in bucket ears (A) with holes in dipperstick (B).
2. Insert spacer (C), if necessary, between dipperstick and bucket to minimize side-to-side clearance. Install pivot pin (D). Secure with cap screw (E) and nut (F).
3. Tighten nut until cap screw threads are extending past nut.

NOTE: Cap screw must not be tight.

4. Align holes in bucket with holes in link (G).
5. Insert spacer (H), if required, between link and bucket to minimize side-to-side clearance.
6. Install pivot pin (I). Secure with cap screw (J) and nut (K).
7. Tighten nut until cap screw threads extend past nut.

NOTE: Cap screw must not be tight.

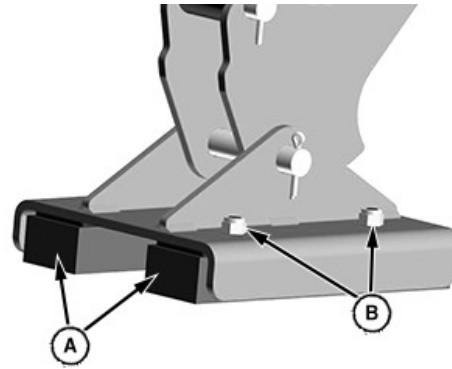
UP00731,0000184-19-17MAY16

Lubricate Backhoe

Lubricate all grease points before operating backhoe.

UP00731,00000C7-19-07OCT13

Install Optional Street Pads



LV27468—UN—02FEB17

A—Street Pads
B—Nuts

Install four street pads (A) on stabilizers with nuts and washers (B) as needed.

UP00731,00001AC-19-21OCT25

Preparing Vehicle

Required Equipment

⚠ CAUTION: Avoid injury! Do not operate backhoe without front loader installed on tractor. Loader provides front ballast to make machine more stable during backhoe operation and provides better steering control during tractor operation. Mount rear wheels in the widest position to provide maximum machine stability. Adequate headroom is required for the operator when sitting in backhoe seat. Do not operate backhoe if Roll Over Protection System (ROPS) does not provide adequate headroom.

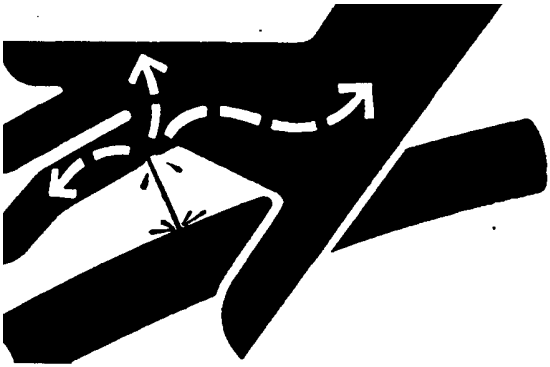
Before operating the backhoe, tractor rear wheels must be mounted in widest position, and the following equipment must be installed on the tractor. See your John Deere dealer or other service provider.

- Front Loader - Follow ballast requirements in loader operator's manual, except the backhoe replaces 3-point hitch ballast.
- Roll Over Protection System (ROPS)
- Power Beyond hydraulic kit

UP00731,00003B6-19-21OCT25

Installing

Attach Backhoe to Tractor



X9811—UN—23AUG88

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Refer to a knowledgeable medical source if doctors are unfamiliar with this type of injury. Such information is available from the Deere & Company Medical Department in Moline, Illinois, U.S.A.

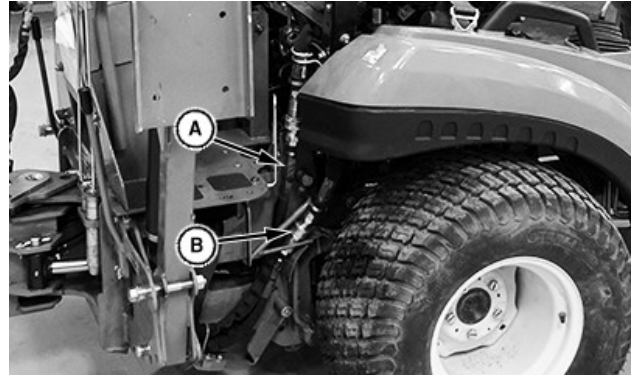
CAUTION: The Operator must be seated in the tractor seat when positioning the tractor for backhoe installation.

1. Park the tractor safely on a flat level surface.
2. Remove the tractor three-point hitch assembly.
3. Lift the seat up to clear the tractor.

IMPORTANT: Avoid damage to the tractor and hydraulic hose. Ensure that all hydraulic hoses are routed away from pinch points before installing the backhoe to the tractor.

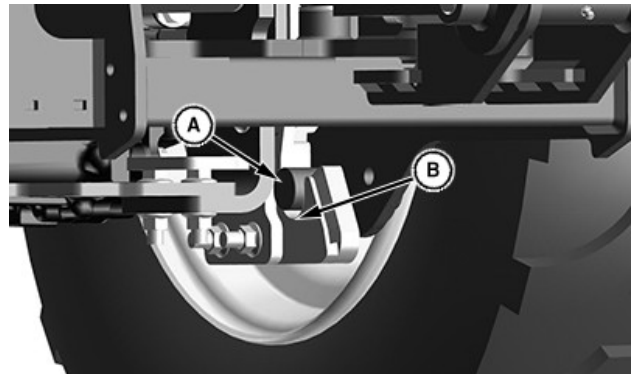
4. Lower the rockshaft to the lowest position.
5. Start the engine and run at low idle.
6. Back up the tractor to within 8 inches of the backhoe.
7. Stop the tractor engine and engage the park brake.
8. Ensure that the swing lock pin is installed.

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve hydraulic system pressure by moving hydraulic controls in all directions before connecting or disconnecting hydraulic lines.



LV27217—UN—02FEB17

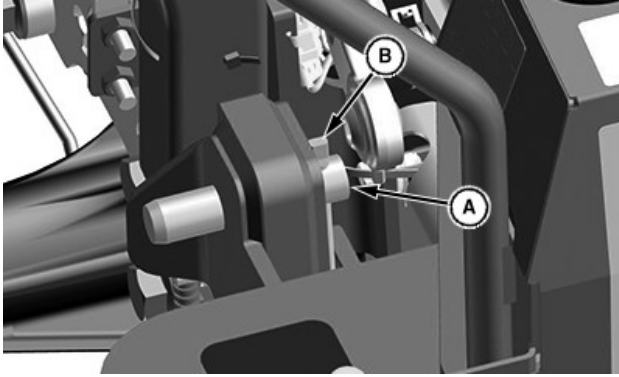
9. Disconnect the tractor power beyond the hydraulic coupler behind the tractor and connect to backhoe coupler tip (A).
10. Connect the backhoe hydraulic return line coupler to tractor coupler tip (B).
11. Start the tractor and set the engine to low idle.
12. Lower the backhoe stabilizers to raise the backhoe up so that the lower pins are above slots.
13. Back up the tractor until the backhoe pins contact the tractor frame.



LV27039—UN—05JAN17

A—Backhoe Pin
B—Frame Slot

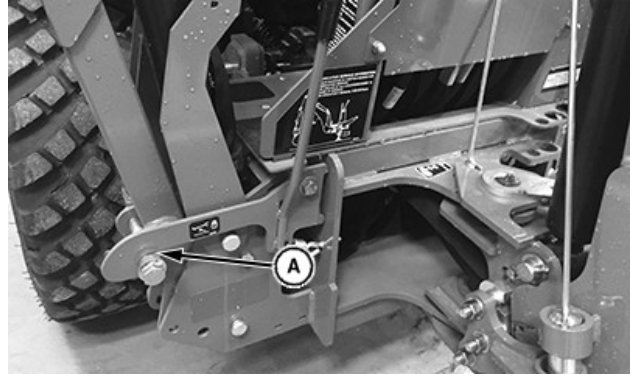
14. Raise the stabilizers until backhoe pins (A) engages into frame slots (B).
15. Lower the backhoe boom until the cross holes in the mount frame and backhoe align.



LV27204—UN—05JAN17

A—Lock Pin
B—Retainer Pin

16. Install lock pin (A) through backhoe and mount frame from the inside, and secure it by inserting retainer pin (B) into the slot on the frame. Repeat for the other side.
17. From the backhoe operator seat, bleed the hydraulic system by doing the following:
 - a. Ensure that the operating area is clear.
 - b. Raise and lower both stabilizers.
 - c. Raise and lower boom.
 - d. Extend and retract the dipperstick.
 - e. Curl and dump the bucket.
 - f. Swing boom from side to side.

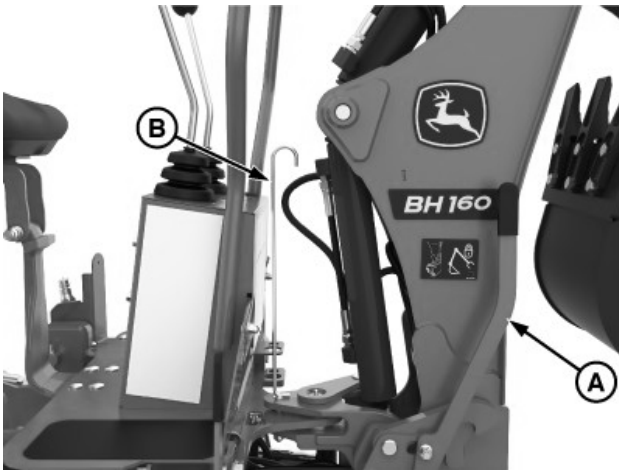


LV27203—UN—05JAN17

A—Stabilizer Locked

20. Raise both stabilizers until they lock (A) as shown.

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LVP19003—UN—07JAN25

A—Boom Lock
B—Swing Lock Pin

18. Raise the backhoe to the transport position and engage the boom lock (A).
19. Center the backhoe and install swing lock pin (B).

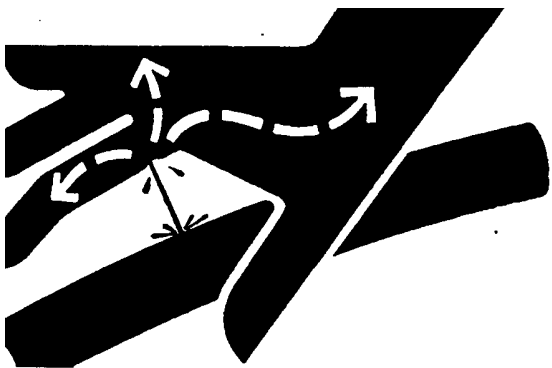
Removing and Storing

Removing Backhoe

⚠ CAUTION:

- Keep people away from tractor while removing backhoe. Run the engine just above low idle to keep tractor movements slow and controllable.
- Stay clear of path when raising or lowering stabilizer leg.

1. Park tractor safely on a flat level surface. Engage park brake, start engine and run at low idle.
2. Install the swing lock if not already installed.
3. Lift backhoe seat up to clear the tractor.
4. Without raising the tractor up, lower stabilizers to touch the ground.
5. Lower boom while keeping dipperstick vertical.
6. Place bucket flat on the ground with bucket teeth facing tractor.
7. Extend boom slowly to remove pressure from upper install pins.
8. Remove upper install pins.
9. Slowly raise boom to disengage backhoe from subframe. If necessary, slowly lower stabilizers to lift lower backhoe frame bar above the subframe hooks.
10. Move tractor ahead about 8 inches.
11. Raise boom and engage the boom lock.
12. Raise stabilizers up until they lock.
13. Shut off tractor.

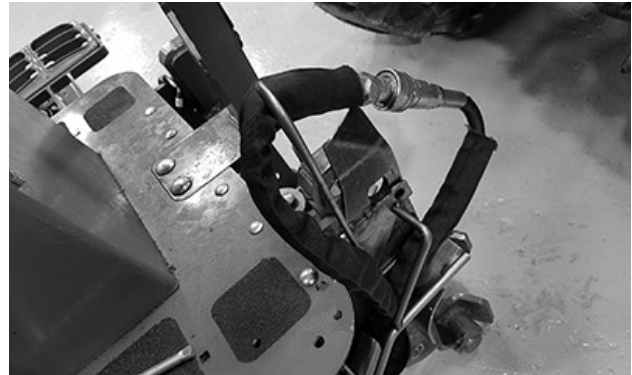


X9811—UN—23AUG88

- ⚠ **CAUTION:** Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene results. Refer a knowledgeable medical source if doctors are unfamiliar with this type of injury. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

14. Disconnect power beyond the hydraulic coupler from the backhoe coupler tip.



LV27283—UN—11JAN17

Hose in Storage Position

15. Disconnect the backhoe hydraulic return line coupler from the tractor coupler tip. Connect the coupler to backhoe coupler tip and store lines as shown.
16. Connect tractor power beyond hose to the tractor coupler tip.
17. Install the tractor 3-point hitch assembly.

PR59899,0001017-19-06JUL21

Storing

- ⚠ **CAUTION:** Avoid injury! Fuel vapors are explosive and flammable. Engine exhaust fumes contain carbon monoxide and can cause serious illness or death:

- Run the engine only long enough to move the machine to or from storage.
- Machine fires and structure fires can occur if:
 - If machine is stored before allowing it to cool.
 - If debris is not removed from around the engine and muffler.
 - If stored near combustible materials.
- Do not store vehicle with fuel in the tank inside a building where fumes may reach an open flame or spark.

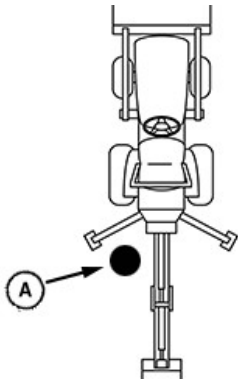
- **Allow the engine to cool before storing the machine in any enclosure.**
- Position boards under bucket and backhoe frame to prevent corrosion.
- Store backhoe in clean, dry place.
- Keep hydraulic hoses off ground and not kinked.
- Clean backhoe with water and air pressure.
- Paint worn or scratched areas.
- Lubricate all grease points.
- Keep swing lock pin in locked position.
- Coat exposed cylinder rods and hooks on the backhoe with thin film of grease.
- Put waterproof cover over backhoe if stored outside.

UP00731,00000D3-19-13JAN17

Operating

Operate Backhoe Controls from Ground

⚠ CAUTION: Avoid injury! Stay clear of path when raising or lowering stabilizer leg.



LV25350—UN—18MAY16

A—Stand Between Right Stabilizer Leg and Boom

Stand in area between right stabilizer leg and boom (A), facing the tractor.

UP00731,0000182-19-13MAR19



LV27206—UN—05JAN17

5. Using the step, enter the backhoe from the right side (left side of tractor), using the handrail near the controls and on the ROPS.

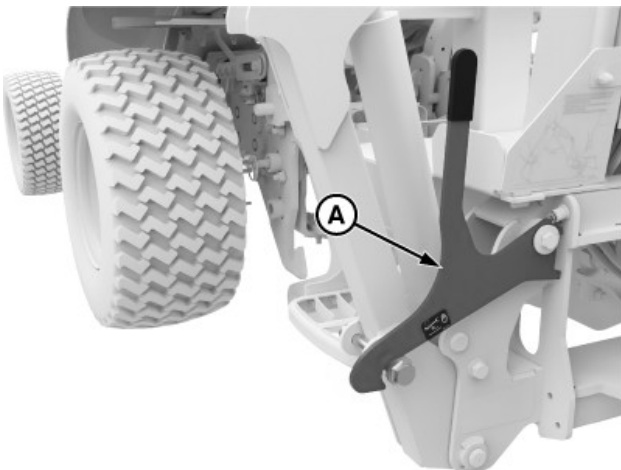
Exiting

1. Fully raise and center the boom.
2. Fully retract the dipperstick.
3. Curl the bucket back into the dipperstick.

Entering and Exiting Backhoe

Entering

1. Stop the machine on a level surface, not on a slope.
2. Lower the front loader to the ground.
3. Lock the park brake.



LVP19005—UN—07JAN25

4. Leave the tractor running at the desired engine speed. Pull the stabilizer lock (A) to unlock the stabilizers and lower them to the ground.



LVP19003—UN—07JAN25

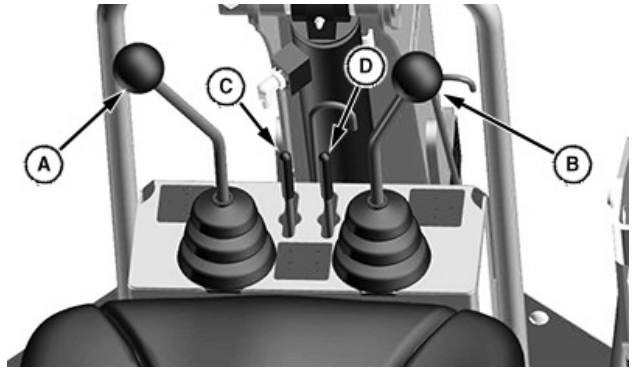
A—Boom Lock
B—Swing Lock Pin

4. Engage boom lock (A) and swing lock pin (B).
5. Exit the backhoe from the right side.
6. Push stabilizer control levers back to raise stabilizer legs until they are in the locked position.
7. Verify that the stabilizers are locked by trying to lower the stabilizers. If they do not lower, they are locked.
8. Flip backhoe seat up for the tractor operation if needed.

pjeeaud,1736255405864-19-15JAN25

Operate Controls

⚠ CAUTION: Avoid injury! Do not use control levers to help you mount or dismount the backhoe. Always use handrail. Do not operate controls while standing on the ground. Backhoe movements could strike and/or crush you against frame.



LV25420—UN—24MAY16

A—Boom and Swing Control Lever
B—Dipperstick and Bucket Control Lever
C—Left Stabilizer Control Lever
D—Right Stabilizer Control Lever

Boom and Swing Control Lever (A):

- To raise boom: pull control lever back.
- To lower boom: push lever forward.
- To swing boom to left: push lever to left.
- To swing boom to right: push lever to right.
- Boom float position: Push control to second forward position.

Dipperstick and Bucket Control Lever (B):

- To retract dipperstick: pull control lever back.
- To extend dipperstick: push control lever forward.
- To curl bucket in: push lever to left.
- To roll bucket out: push lever to right.

Dipperstick and Bucket Control Lever with Backhoe Thumb Enabled (If Equipped):

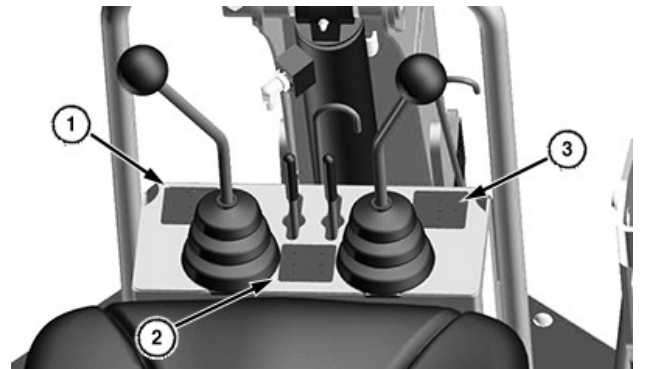
- To retract dipperstick: pull control lever back.
- To extend dipperstick: push control lever forward.
- To curl bucket and backhoe thumb in: push lever to left.
- To roll bucket and backhoe thumb out: push lever to right.

Stabilizer Control Levers, Left (C) and Right (D):

- To raise stabilizer: pull control lever back.
- To lower stabilizer: push control lever forward.

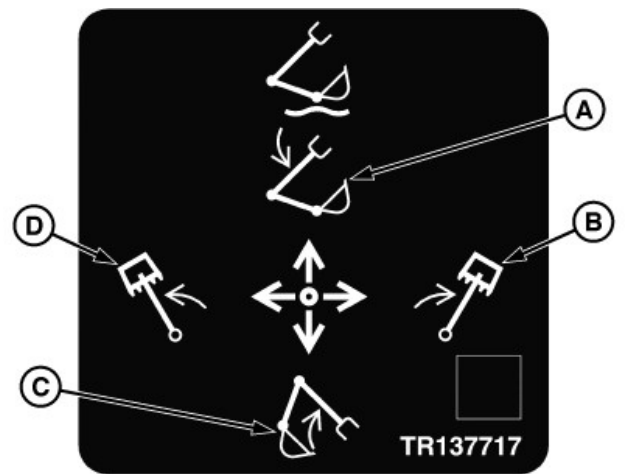
UP00731,00008FF-19-13JUN22

Control Labels



LV27642—UN—13FEB17

1—Boom and swing label
2—Stabilizer label
3—Dipperstick and bucket label

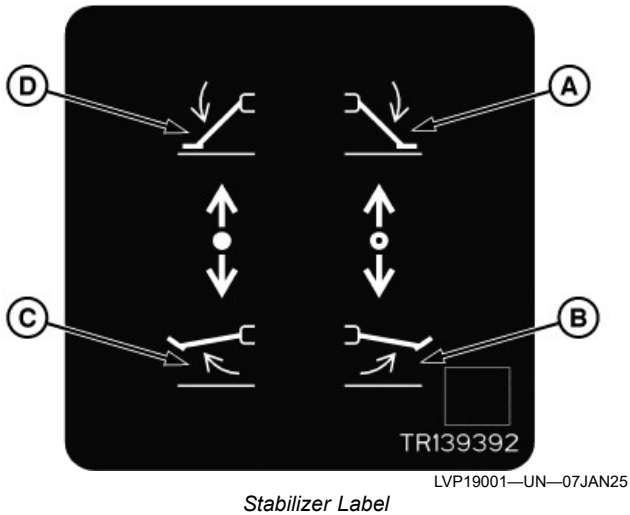


LVP19000—UN—07JAN25

Boom and Swing Label

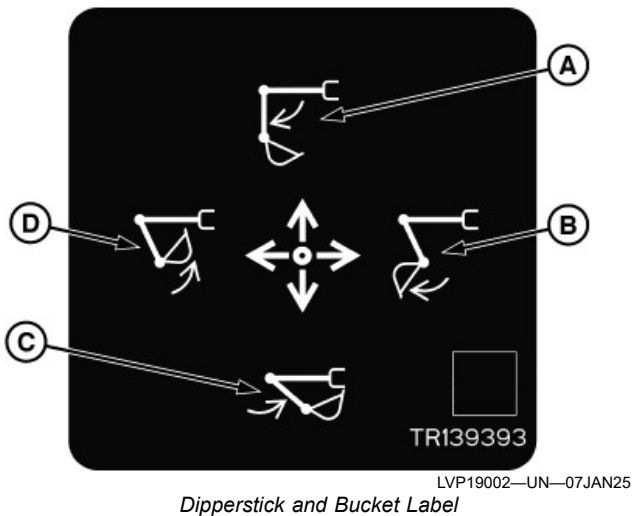
1. Boom and swing label:

- a. Boom down and float position
- b. Boom swing right
- c. Boom swing left.
- d. Boom up



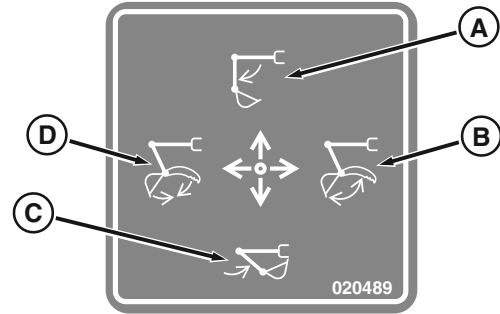
2. Stabilizer label:

- Right stabilizer down
- Right stabilizer up
- Left stabilizer up
- Left stabilizer down



3. Dipperstick and bucket label:

- Dipperstick out
- Bucket dump
- Dipperstick in
- Bucket dig and curl position

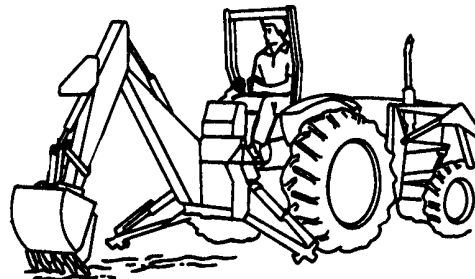


4. Dipperstick and bucket label with backhoe thumb installed, if equipped:

- Dipperstick out
- Bucket and backhoe thumb dump
- Dipperstick in
- Bucket and backhoe thumb dig and curl position

pjeeaud,1736255659164-19-07JAN25

Dig Safely



LV19579—UN—30OCT13

CAUTION: Avoid injury! To dig safely:

- Sit in backhoe seat.
- Lower stabilizers to the ground. Stabilizers will leak down if the tractor is lifted.
- Lower bucket to the ground.

UP00731,00000DB-19-13MAR19

Operate Tractor

IMPORTANT: Avoid damage! Always check tractor hydraulic fluid level before operating backhoe.

- Faster engine speeds result in faster backhoe

movement. When operating where precise movements of the backhoe are required, slow the engine to slow backhoe movement.

- The weight of mounted machines (including their loads) can influence tractor maneuverability and stability and a means of assessing stability
- Digging forces and breakout forces are functions of hydraulic pressure only and are the same at any engine rpm.
- Use only with remote open center valve.
- Do not operate with hose disconnected.
- • Before disconnecting hoses:
 - Lower rockshaft.
 - Shut off engine.

UP00731,00003BC-19-13MAR19

Operating Backhoe Mechanical Thumb (If Equipped)

IMPORTANT: Improper use of mechanical thumb will damage backhoe and/or thumb.

Do not use mechanical thumb:

- as a pry bar to loosen objects.
- to push or pull material or objects.
- to move objects from side to side.
- as an area to wrap a chain or rope for lifting purposes.

NOTE: Grasping large objects such as rocks and logs will increase momentum of the backhoe as it moves from side to side.

Do not make sudden start and stops when moving large objects.

Be aware when lifting and moving long objects that may extend beyond normal backhoe swing arc area.

Operate Mechanical Thumb

The mechanical thumb can be used to pick up objects and secure them between thumb and bucket.

To operate the mechanical thumb:

1. Remove hitch pin.
2. Slide column assembly to the desired position.
3. Secure using hitch pin and lock pin.

When thumb is not in use, it should be placed in the storage position.

To place the mechanical thumb in the storage position:

1. Remove hitch pin.
2. Slide column assembly to its shortest position.

3. Secure using hitch pin and cotter pin.

UP00731,0000183-19-09APR19

Operating Backhoe Hydraulic Thumb (If Equipped)

IMPORTANT: Improper use of hydraulic thumb damages the backhoe and/or thumb.

Do not use the hydraulic thumb:

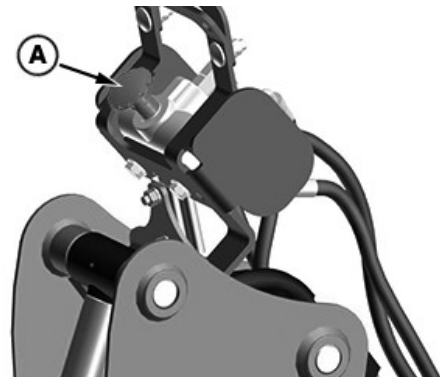
- As a pry bar to loosen objects.
- To push or pull material or objects.
- To move objects from side to side.
- As an area to wrap a chain or rope for lifting purposes.

NOTE: Grasping large objects such as rocks and logs increases momentum of the backhoe as it moves from side to side.

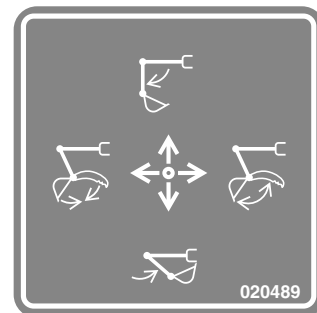
Do not make sudden start and stops when moving large objects.

Be aware when lifting and moving long objects that extend beyond normal backhoe swing area.

Be aware when clearing brush because the object being uprooted can fall towards the operator.



LV30550—UN—09APR19



LV30571—UN—09APR19

Bucket Lever Label—With Backhoe Thumb

A—Knob

The hydraulic thumb can be used to pick up objects and secure them between the thumb and bucket. To operate the thumb, pull out the knob on the thumb valve (A).

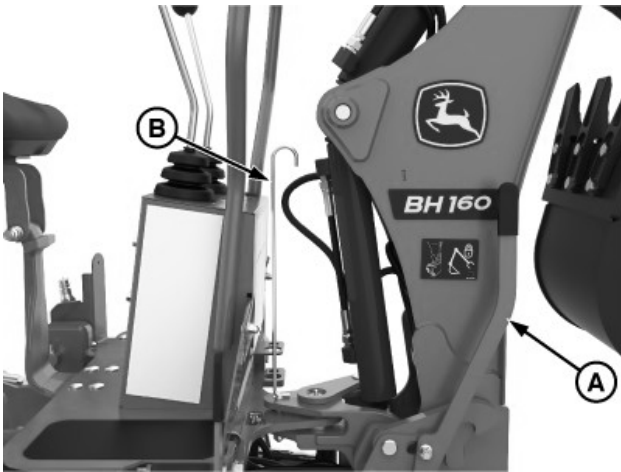
- The bucket cylinder and hydraulic cylinder are now linked together into one circuit and controlled by the bucket lever.
- When clamping on an object with the thumb, it is normal that the bucket or thumb moves separately of each other until one of them contacts the object.
- Upon contact, the bucket/thumb stops and the opposite bucket/thumb moves and clamps onto the object.
- It is normal that the bucket and backhoe thumb do not move at the same rate of speed during operation.

Place the backhoe thumb in the storage position when it is not in use.

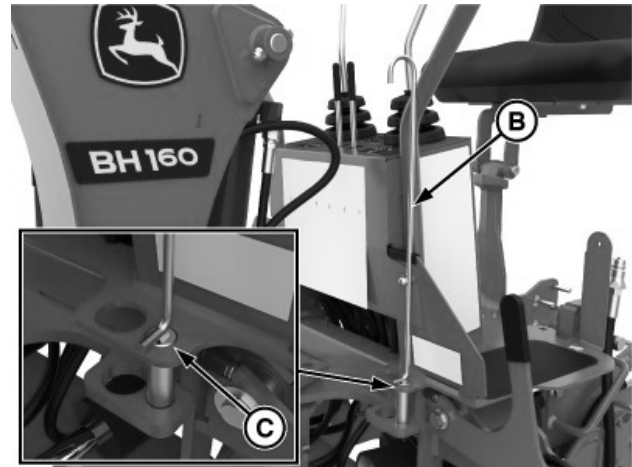
- Activate the hydraulic thumb by pulling out the knob on the thumb valve.
- Curl out the bucket and hold until both bucket and backhoe thumb cylinders are fully retracted.
- Push the knob on the backhoe thumb valve down. Thumb cylinder is now out of the circuit and the bucket operates as normal.

UP00731,000090B-19-09APR19

Removing Boom Swing Lock



LVP19003—UN—07JAN25



LVP19004—UN—07JAN25

- A—Boom Lock
B—Swing Lock Pin
C—Pins in Storage Location

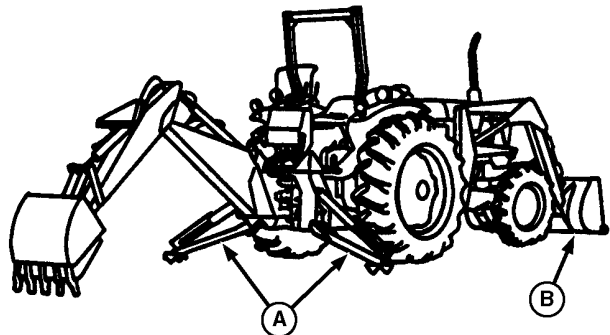
1. From the operator's seat, disengage boom lock (A) and remove swing lock pin (B).
2. Store the swing lock pin in storage location (C).

pjeeaud,1736256136423-19-15JAN25

Dig Position

CAUTION: Avoid serious injury or death: Check for buried electric cables or gas pipes before you dig.

IMPORTANT: Do not raise the tractor with the backhoe stabilizers. The stabilizers are not outriggers, and will not hold the tractor off the ground. Do not let backhoe bucket contact stabilizers.



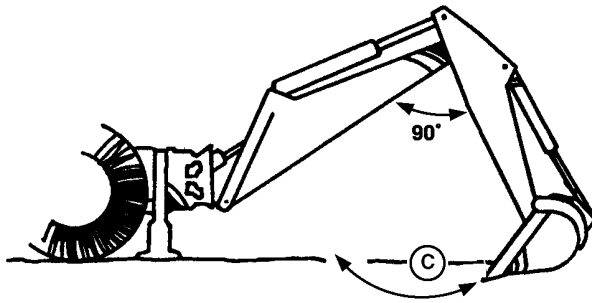
LV19580—UN—30OCT13

- A—Stabilizers
B—Loader Bucket

Lower backhoe stabilizers (A) and loader bucket (B) to ground.

UP00731,00003BE-19-13MAR19

Dig Angle



LV19581—UN—30OCT13

C—Angle

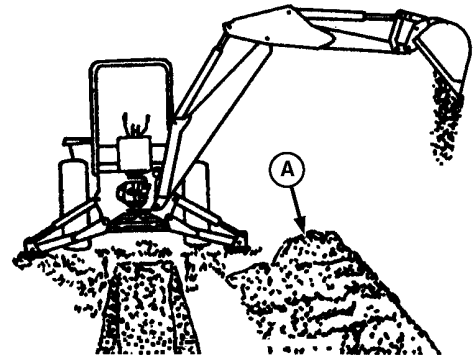
1. Put dipperstick at the correct angle to boom for digging, approximately 90 degrees.
2. Put bucket teeth in line with crowd angle (C).

UP00731,00000E0-19-13MAR19

2. Retract dipperstick until the bucket is half full.
3. Retract dipperstick as you roll the bucket back.
4. When the bucket is full, raise, swing, and dump onto spoil pile.

UP00731,00000E2-19-13MAR19

Spoil Pile Location



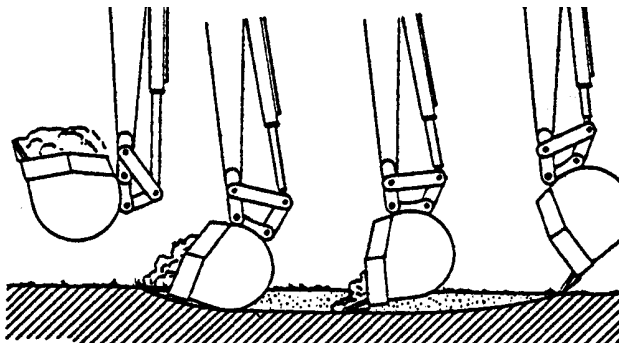
LV19584—UN—30OCT13

A—Spoil Pile

Put spoil pile (A) where minimum effort is needed to back fill. Spoil pile should be a minimum of 0.6m (2 ft.) from hole.

UP00731,00000E3-19-10JAN14

Dig with Bucket

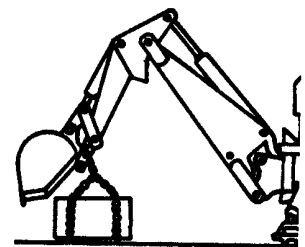


LV19582—UN—30OCT13

1. Lower bucket to ground.
2. Retract dipperstick and curl bucket until full.
3. Raise bucket, swing, and dump onto spoil pile.

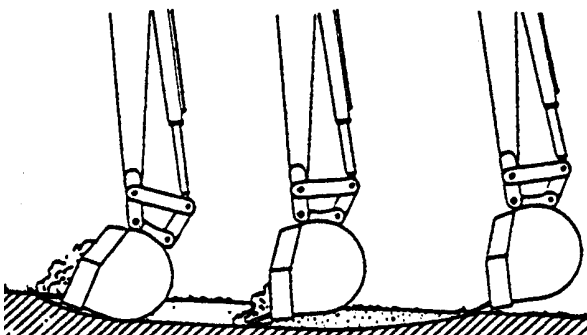
UP00731,00000E1-19-13MAR19

Lift With Backhoe



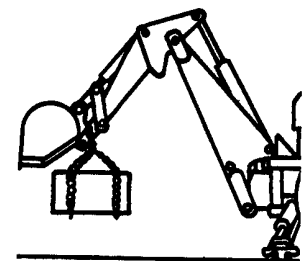
LV19585—UN—30OCT13

Dig with Dipperstick

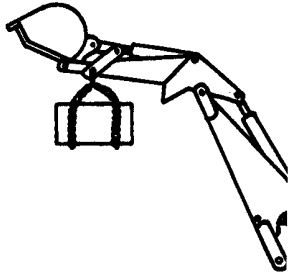


LV19583—UN—30OCT13

1. Lower bucket until teeth lie flat on ground.



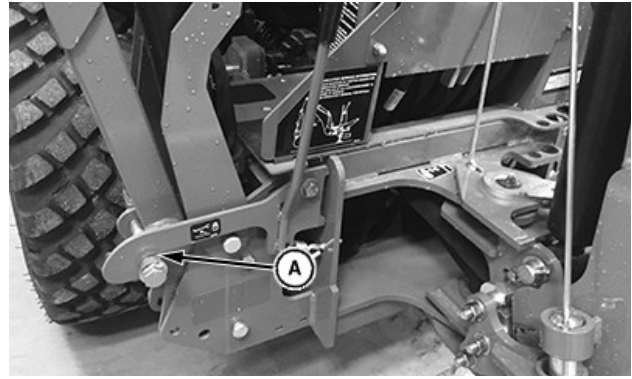
LV19586—UN—30OCT13



LV19587—UN—30OCT13

1. Extend boom and dipperstick until you can fasten chain to object.
2. Fasten chain to dipperstick approximately 50 mm (2 in.) above bucket pin.
3. Fasten chain to object.
4. Raise boom to full height. Extend dipperstick cylinder if needed.
5. Retract dipperstick cylinder to lift load.

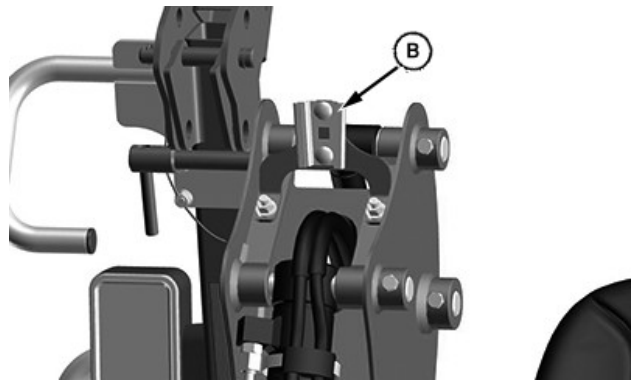
UP00731,00000E4-19-13MAR19



LV27203—UN—05JAN17

A—Lock

5. Fully raise the stabilizer legs to lock (A) into the transport position as shown.



LV27208—UN—06JAN17

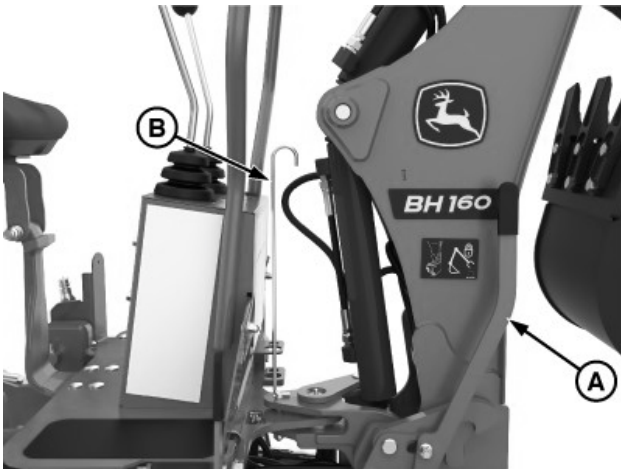
B—Bracket

6. Install Slow Moving Vehicle (SMV) sign-in bracket (B) on the dipper.

pjeeaud,1736256318163-19-15JAN25

Transporting Backhoe

1. Fully raise and center the boom.
2. Fully retract the dipperstick.
3. Curl the bucket back into the dipperstick.



LVP19003—UN—07JAN25

A—Boom Lock
B—Swing Lock Pin

4. From the operator seat, engage the boom lock (A) and install swing lock pin (B).

Transport Tractor With Backhoe

⚠ CAUTION: Avoid injury! Do not chain backhoe down in order to secure tractor to trailer.

1. Put wheel chocks against tractor wheels. Chain tractor securely to trailer bed.
2. Do not attach hold-down chains to any part of the backhoe assembly. Lower the backhoe bucket to the trailer bed, if possible.

UP00731,00000E6-19-13MAR19

Service Intervals

Service Intervals

After Assembly	Lubricate all pivot points and grease fittings.
After Each Use	Clean backhoe of all oil and debris.
As Needed	Replace bucket teeth.
Every 10 Hours	Lubricate all cylinder pivots.
	Lubricate swing frame pivots.
	Lubricate boom pivot and dipperstick pivot.
	Lubricate bucket pivot and linkage.
Every 50 Hours	Lubricate stabilizer pivots.
	Check for loose hardware.
Every 100 Hours	Clean inside valve covers.

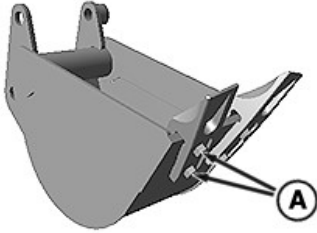
NOTE: If you use backhoe for more than 10 hours daily, lubricate all points listed above twice a day.

UP00731,00003C6-19-27MAY25

Service

Replacing Bucket Teeth

⚠ CAUTION: Avoid injury! Bucket teeth are heavy. When you remove them, they may pinch fingers. Wear gloves and safety glasses when you remove teeth.



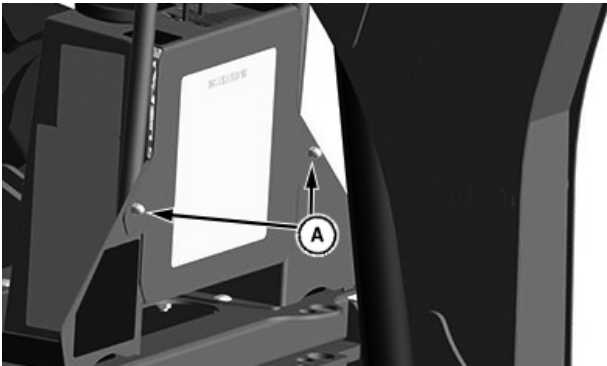
LV25383—UN—17MAY16

A—Lock nuts

1. Remove lock nuts (A) and cap screws securing tooth to bucket.
2. Install new tooth. Tighten hardware to 110 N·m (81 lb·ft).

UP00731,00003C1-19-17MAY16

Cleaning Inside Valve Covers



LV25444—UN—31MAY16

A—Bolts

1. Remove carriage bolts and nuts (A) and remove cover.
2. Clean with pressurized air.
3. Install cover and secure with carriage bolts and nuts.

UP00731,00003C2-19-31MAY16

Lubrication

Grease

Use grease based on the expected air temperature range during the service interval.

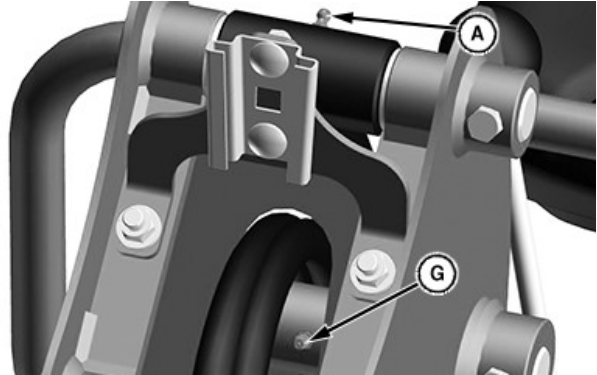
The following greases are recommended:

- John Deere Moly High Temperature EP Grease.

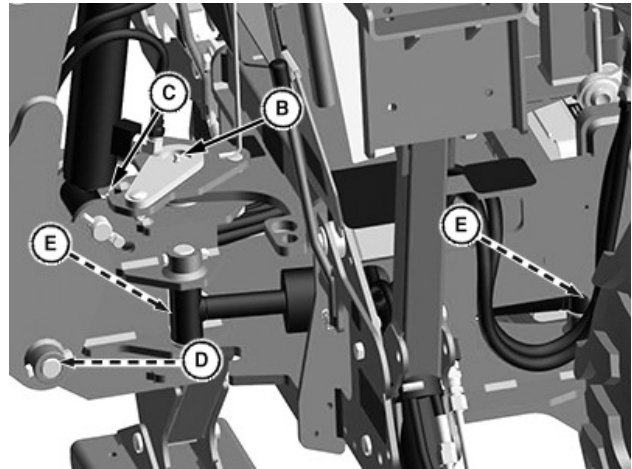
- John Deere High Temperature EP Grease.
- John Deere GREASE-GARD™.

Other greases that may be used:

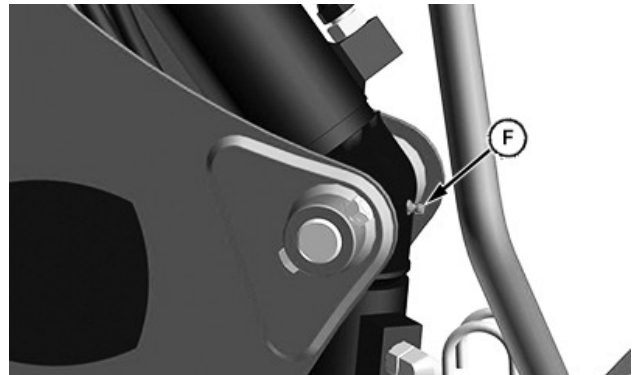
- SAE Multipurpose EP Grease with 3 to 5 percent molybdenum disulfide.
- SAE Multipurpose EP Grease.
- Greases meeting Military Specification MIL-G-10924C may be used as arctic grease.



LV27209—UN—05JAN17

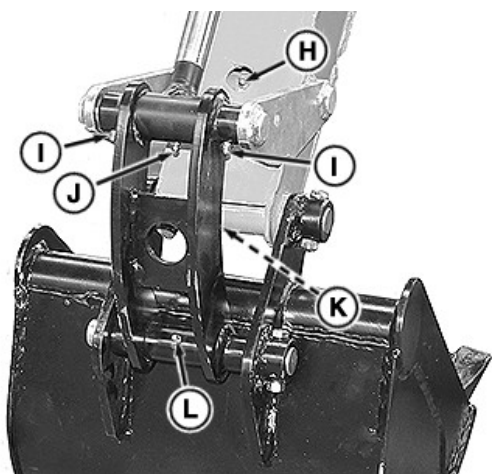


LV27210—UN—13JAN17



LV27211—UN—05JAN17

GREASE-GARD is a trademark of Deere & Company



LV25387—UN—18MAY16

- A—Dipper Cylinder Rod End
- B—Upper and Lower Swing Pivot
- C—Boom Cylinder Rod End
- D—Boom Pivot
- E—Swing Pivot
- F—Boom Cylinder Barrel End
- G—Dipper Pivot
- H—Guide Link to Dipper Pivot
- I—Guide Link to Bucket Link Pivot
- J—Bucket Cylinder Rod End
- K—Bucket to Dipper Pivot
- L—Bucket to Bucket Link Pivot

- Lubricate grease fittings as shown. Add grease until fresh grease exits joint. If fresh grease cannot enter pivot, check for clogged grease path. Wipe excess grease from joint.
- Lubricate stabilizer pivots and all other pivot points with SAE-10 oil.

UP00731,000012E-19-27MAY25

Troubleshooting

Use Troubleshooting Chart

If you are experiencing a problem that is not listed in this chart, see your John Deere dealer or other service provider for service.

and you are still experiencing the problem, see your John Deere distributor or other service provider.

KN52281,1003F58-19-15OCT25

When you have checked all the possible causes listed

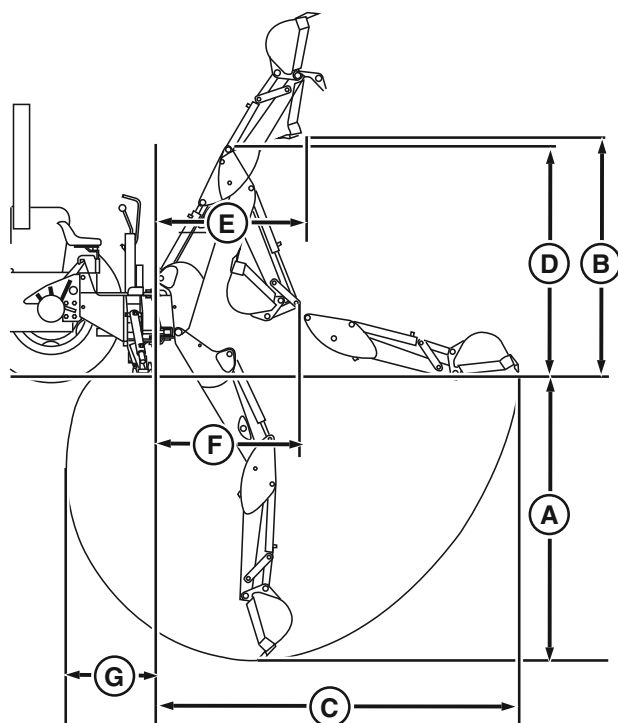
Troubleshooting

If	Check
Backhoe does not run smoothly.	• Tractor hydraulic oil level low. • Air in hydraulic oil lines. Bleed air from lines. • Backhoe needs lubrication. • Increase engine RPM.
Backhoe will not swing.	• Swing lock pin is installed. Remove swing lock pin. • Tractor hydraulic oil level low. • Attempting to move too much material with swing operation.
Backhoe will not operate.	• Debris inside valve cover. • Hydraulic lines not connected properly. Check hydraulic quick-disconnect couplers for full engagement.
Backhoe will not hold position.	• Hydraulics are leaking. Check lines and tighten any leaking connections. • Tractor hydraulic oil level low. • Tractor hydraulic oil is dirty. Change oil if needed. • Locking devices are not in place during transport. Engage all locks when transporting.

PR59899,000101C-19-07JUL21

Specifications

Backhoe Specifications



A—Digging Depth
 B—Loading Height
 C—Reach from Center Line of Swing Pivot
 D—Transport Height
 E—Loading Reach
 F—Transport Overhang
 G—Undercut

NOTE: Dimensions are given for backhoe with boom pivot pin 30 cm (12 in.) above ground.

LV25388—UN—18MAY16

Item	Measurement	Specification
Backhoe		
A—Digging Depth	Depth	1890 mm (75 in)
B—Loading (Bucket at 60°)	Height	1524 mm (60 in)
C—Reach from Center Line of Swing Pivot	Distance	2642 mm (104 in)
D—Transport Height	Height	1676 mm (66 in)
E—Loading Reach (Bucket at 60°)	Distance	840 mm (33 in)
F—Transport Overhang	Length	940 mm (37 in)
G—Undercut	Length	43 cm (17 in.)
Bucket	Rotation	180°
Swing Arc	Angle	150°
Hydraulic Stabilizer Spread (Raised)	Width	approx. 1473 mm (58 in)
Hydraulic Stabilizer Spread (Lowered)	Width	approx. 1880 mm (74 in)
Boom ¹	Lift	129 kg. (285 lb)
SAE Dipperstick Digging	Force	5280 N (1187 lbf)
SAE Bucket Digging	Force	9057 N (2036 lbf)

¹ Dipper arm and boom extended, lifting with boom cylinder only, weight attached at bucket pivot, bucket pivot 91 cm (36 in.) off the ground.

Buckets

Item	Measurement	Specification
20 cm (8 in.) Bucket		
SAE Struck	Capacity	0.011 m ³ (0.42 ft ³)
Heaped	Capacity	0.013 m ³ (0.46 ft ³)
30 cm (12 in.) Bucket		
SAE Struck	Capacity	0.019 m ³ (0.66 ft ³)
Heaped	Capacity	0.022 m ³ (.76 ft ³)
41 cm (16 in.) Bucket		
SAE Struck	Capacity	0.025 m ³ (0.90 ft ³)
Heaped	Capacity	0.030 m ³ (1.06 ft ³)

Recommended Lubricants

- Gear Oil
 - John Deere Low Viscosity Hy-Gard®
- Grease
 - John Deere Moly High Temperature EP Grease
 - John Deere High Temperature Grease
 - John Deere Grease Gard™

NOTE: Specifications and design are subject to change without notice.

UP00731.000012F-19-17JAN17

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