

ORIGINAL INSTRUCTIONS

OPERATOR'S MANUAL

905GBL

Backhoe

Part number 90441918

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1 - GENERAL INFORMATION

Note to the Owner

This manual contains information concerning the adjustment and maintenance of your new equipment. You have purchased a dependable machine, but only by proper care and operation can you expect to receive the performance and long service built into this equipment. Please have all operators read this manual carefully and keep it available for ready reference.

PLEASE RECORD THE FOLLOWING INFORMATION

Model

Product Identification Number (PIN)

Date Purchased

Header Width (As Applicable)

	This is the safety alert symbol. It is used with and without signal words to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.
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WARNING

Illustrations in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment.

Replace all shields before operating the machine.

Failure to comply could result in death or serious injury.

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IMPROVEMENTS

CNH INDUSTRIAL AMERICA LLC is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

Intended use

Your backhoe is designed and made to move dig, trench, move material(s) and level, although within some physical limits. The working speed and performance may depend on a number of various parameters, such as weather and terrain conditions. Though the machine is designed to perform satisfactory in most materials and conditions, there may be a number of combinations of above parameters, for which there is severe degradation of performance of the machine. If you notice degradation of performance, contact your NEW HOLLAND dealer for assistance. He may have useful information for improvements, or a kit may be available to enhance the performance.

- Do not use the machine for another purpose than intended by the manufacturer and outlined in this manual.
- Do not use the machine beyond its limits of terrain gradient and stability as outlined further in this manual. Using the machine beyond these limits may result in roll-over or tip-over. Observe the recommendations in this manual.
- Use only approved accessories and attachments that are designed for your machine. Consult your dealer on changes, additions or modifications that may be required for your machine. Do not make any unauthorized modifications to your machine.
- Do not use the machine near or on soft verges of canals and brooks or banks and verges that are undermined by rodents. The machine may sink sideways and roll-over.
- Do not use the machine on brittle bridge heads and poor bridge floors. These constructions may collapse and cause roll-over of the machine. Always check out the condition and carrying capacity of bridges and ramps prior to engage.
- Do not use the machine without wearing the seat restraint system during activities where roll-over or tip-over hazards exist. The Roll Over Protection Structure (ROPS) structure will only be fully effective when the driver remains attached to his seat.
- Do not use the machine beyond its limits of dynamic stability. High speed, abrupt maneuvers, and fast and short cornering will increase the risk of roll-over.
- Be cautious that the center of gravity of the machine may increase when loads on the bucket or attachment are raised. In these conditions, the machine may roll-over earlier than expected.
- You shall take the necessary precautions to always be aware of the possible presence of bystanders, certainly when maneuvering in confined areas, such as the farm yard and sheds. Keep people away from the machine during work; ask bystanders to leave the field. There is not only the risk to be overrun by the machine, but objects may be dropped from a backhoe. The path of the fallen objects are unknown. Keep bystanders away from the work area.
- Do not allow riders on the machine.
- A machine has only one operator station and is a one man operated vehicle. Other people on or around the machine during normal operation are not allowed.
- All persons who will be operating this machine shall possess a valid local vehicle operating permit and/or other applicable local age work permits.
- The machine is designed and produced exclusively for agricultural use.
- The machine is not designed for light/heavy forestry applications; usage is prohibited for forestry applications.
- All other use will be considered to be contrary to the use specified by CNH INDUSTRIAL AMERICA LLC, who cannot be held liable for damage to property or the machine, or for personal injuries which may result.
- Persons who risk improper use will therefore assume the responsibility for any consequences arising from such use.
- Compliance with the instructions for use, maintenance and repairs described in this manual, are the essential pre-conditions for the use specified by CNH INDUSTRIAL AMERICA LLC.
- The machine must only be used, serviced, or repaired by personnel trained in the relevant working methods and safety regulations and who have been authorized to work on the machine.
- The user must also observe the rules concerning general safety and accident prevention, including the Highway Code when driving on public highways.
- Any arbitrary modifications made to this machine will release CNH INDUSTRIAL AMERICA LLC from any liability resulting from damage or injury.
- CNH INDUSTRIAL AMERICA LLC and all its distribution organizations, inclusive of, but not restricted to, national, regional, or local distributors, cannot be held liable for damage resulting from the malfunction of parts and/or components not approved by CNH INDUSTRIAL AMERICA LLC.

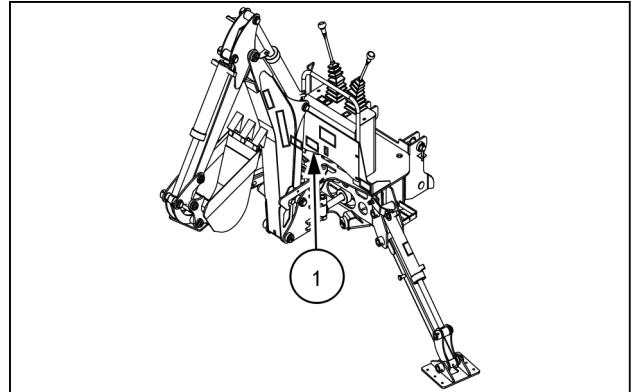
- Under no circumstances will a guarantee be issued for products made or sold by CNH INDUSTRIAL AMERICA LLC that are damaged as a result of the malfunction of parts and/or components not approved by CNH INDUSTRIAL AMERICA LLC.

Product Identification Number (PIN)

Product Identification Number (PIN) plate

Each backhoe has a Product Identification Number (PIN) plate **(1)** with an identification number. The plate is located on the frame.

The identification numbers on this plate are important in the event that your backhoe should require future service.



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The plate specifies:

Model, Product identification number, and Production Date.

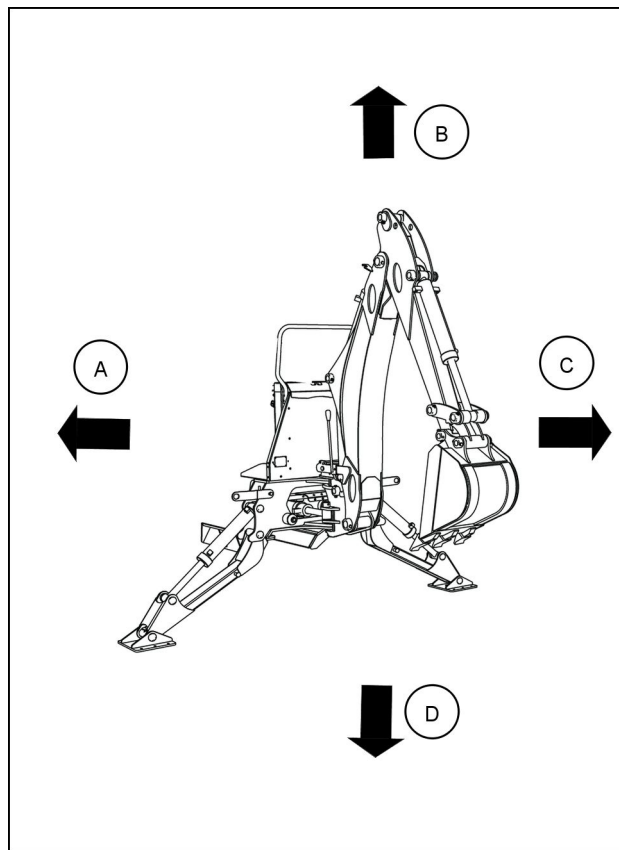
The backhoe model, product identification number, and production date must always be quoted during service questions or when spare parts are needed.



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Machine orientation

Throughout this operator's manual, references to the right-hand side and left-hand side are viewed from the backhoe operator's seat looking in forward direction.



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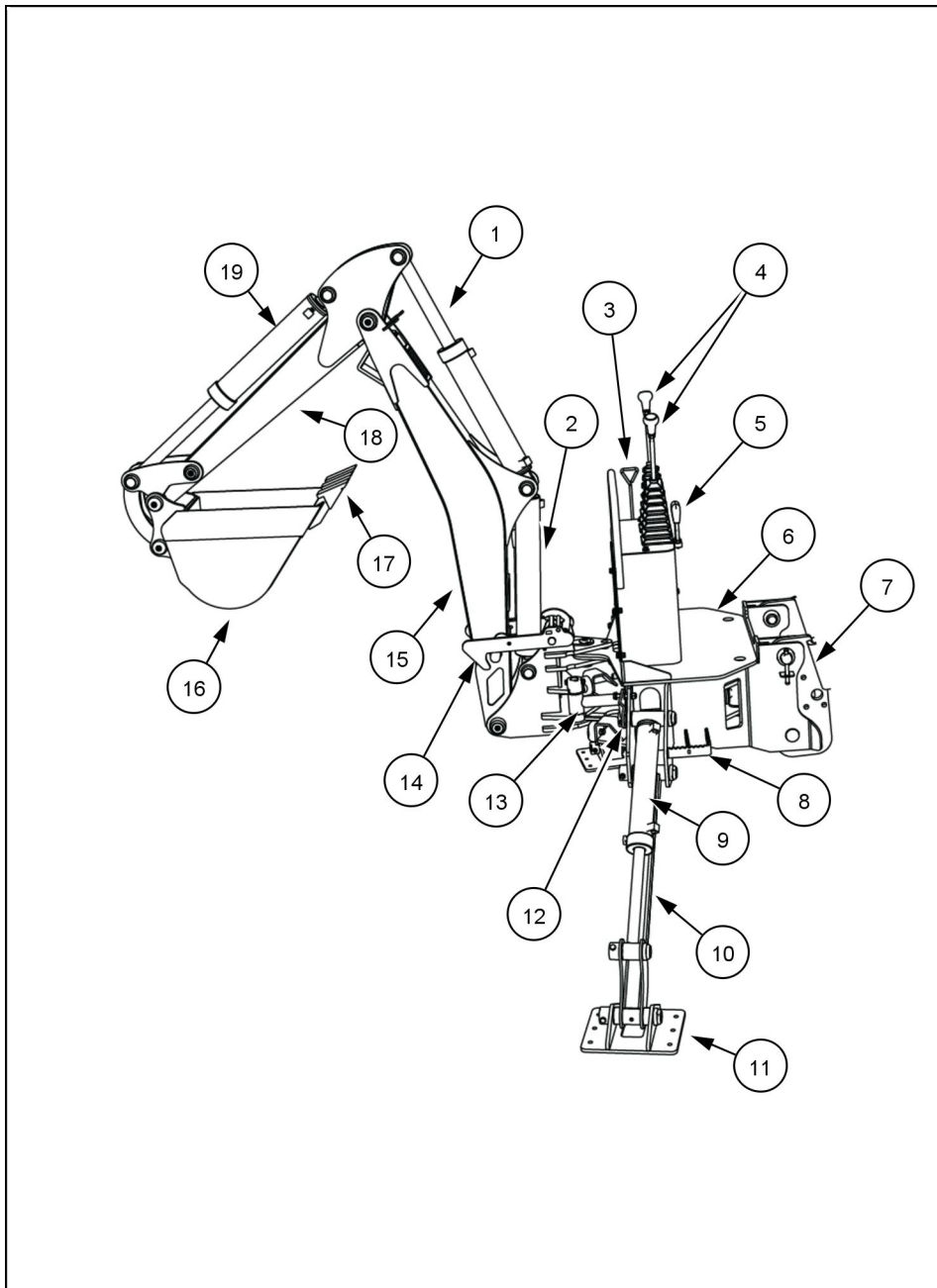
(A) Right-hand side

(B) Top

(C) Left-hand side

(D) Bottom

Machine components



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(1) Cylinder (dipperstick)	(6) Main frame	(11) Stabilizer foot	(16) Bucket
(2) Cylinder (boom)	(7) Sub-frame system	(12) Stabilizer lock	(17) Bucket teeth
(3) Swing lock pin	(8) Step	(13) Cylinder (swing)	(18) Dipper stick
(4) Control levers	(9) Cylinder (stabilizer)	(14) Boom lock	(19) Cylinder (bucket)
(5) Control levers - stabilizer	(10) Stabilizers	(15) Boom	

2 - SAFETY INFORMATION

Safety rules

Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

 DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

 WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

 CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: Notice indicates a situation that, if not avoided, could result in machine or property damage.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

Safety rules

General safety rules

Use caution when you operate the machine on slopes. Raised equipment, full tanks and other loads will change the center of gravity of the machine. The machine can tip or roll over when near ditches and embankments or uneven surfaces.

Never permit anyone other than the operator to ride on the machine.

Never operate the machine under the influence of alcohol or drugs, or while you are otherwise impaired.

When digging or using ground-engaging attachments, be aware of buried cables. Contact local utilities to determine the locations of services.

Pay attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety.

Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin, causing serious injury or infection.

- DO NOT use your hand to check for leaks. Use a piece of cardboard or paper.
- Stop the engine, remove the key, and relieve the pressure before you connect or disconnect fluid lines.
- Make sure that all components are in good condition. Tighten all connections before you start the engine or pressurize the system.
- If hydraulic fluid or diesel fuel penetrates the skin, seek medical attention immediately.
- Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid long term contact and wash the skin promptly with soap and water.

Keep clear of moving parts. Loose clothing, jewelry, watches, long hair, and other loose or hanging items can become entangled in moving parts.

Wear protective equipment when appropriate.

DO NOT attempt to remove material from any part of the machine while it is being operated or while components are in motion.

Make sure that all guards and shields are in good condition and properly installed before you operate the machine. Never operate the machine with shields removed. Always close access doors or panels before you operate the machine.

Dirty or slippery steps, ladders, walkways, and platforms can cause falls. Make sure these surfaces remain clean and clear of debris.

A person or pet within the operating area of a machine can be struck or crushed by the machine or its equipment. DO NOT allow anyone to enter the work area.

Raised equipment and/or loads can fall unexpectedly and crush persons underneath. Never allow anyone to enter the area underneath raised equipment during operation.

Never operate the engine in enclosed spaces as harmful exhaust gases may build up.

Before you start the machine, be sure that all controls are in neutral or park lock position.

Start the engine only from the operator's seat. If you bypass the safety start switch, the engine can start with the transmission in gear. Do not connect or short across terminals on the starter solenoid. Attach jumper cables as described in the manual. Starting in gear may cause death or serious injury.

Always keep windows, mirrors, all lighting, and Slow-Moving Vehicle (SMV) emblem clean to provide the best possible visibility while you operate the machine.

Operate controls only when seated in the operator's seat, except for those controls expressly intended for use from other locations.

Before you leave the machine:

1. Park the machine on a firm, level surface.
2. Put all controls in neutral or park lock position.
3. Engage the parking brake. Use wheel chocks if required.
4. Lower all hydraulic equipment — Implements, header, etc.
5. Turn off the engine and remove the key.

When, due to exceptional circumstances, you would decide to keep the engine running after you leave the operator's station, then you must follow these precautions:

1. Bring the engine to low idle speed.
2. Disengage all drive systems.
3.  **WARNING**

Some components may continue to run down after you disengage drive systems. Make sure all drive systems are fully disengaged. Failure to comply could result in death or serious injury.

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Shift the transmission into neutral.

4. Apply the parking brake.

Modifications made to this machine may increase the likelihood or potential for debris accumulations that would normally not be present. Modifications include frame-mounted attachments, plates, screens, or other aftermarket equipment. Operators of modified machines must be aware of accumulations of organic debris and/or material and overall machine cleanliness.

Modified machines require additional and more frequent inspection and cleaning during usage. The machine may require inspection and cleaning multiple times per day during usage. Operators must be aware of the operating environment and conditions. Operators must take appropriate actions to maintain the machines during use. In particular, pay attention to the following machine areas:

- In and around the engine compartment
- Hot exhaust components
- Moving, turning, or rotating machine components

Operators that operate the machine in atypical applications and/or conditions must be aware of accumulations of organic debris and/or material and overall machine cleanliness. Pay particular attention where material accumulations are possible or may result.

Machines that operate in atypical applications or conditions require additional and more frequent inspection and cleaning during usage. The machine may require inspection and cleaning multiple times per day during usage. Operators must be aware of the operating environment and conditions. Operators must take appropriate actions to maintain the machines during use. In particular, pay attention to the following machine areas:

- In and around the engine compartment
- Hot exhaust components
- Moving, turning, or rotating machine components

General maintenance safety

Keep the area used for servicing the machine clean and dry. Clean up spilled fluids.

Service the machine on a firm, level surface.

Install guards and shields after you service the machine.

Close all access doors and install all panels after servicing the machine.

Do not attempt to clean, lubricate, clear obstructions, or make adjustments to the machine while it is in motion or while the engine is running.

Always make sure that working area is clear of tools, parts, other persons and pets before you start operating the machine.

Unsupported hydraulic cylinders can lose pressure and drop the equipment, causing a crushing hazard. Do not leave equipment in a raised position while parked or during service, unless the equipment is securely supported.

Jack or lift the machine only at jack or lift points indicated in this manual.

Incorrect towing procedures can cause accidents. When you tow a disabled machine follow the procedure in this manual. Use only rigid tow bars.

Stop the engine, remove the key, and relieve pressure before you connect or disconnect fluid lines.

Stop the engine and remove the key before you connect or disconnect electrical connections.

Scalding can result from incorrect removal of coolant caps. Cooling systems operate under pressure. Hot coolant can spray out if you remove a cap while the system is hot. Allow the system to cool before you remove the cap. When you remove the cap, turn it slowly to allow pressure to escape before you completely remove the cap.

Replace damaged or worn tubes, hoses, electrical wiring, etc.

The engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when you service such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment when appropriate.

When welding, follow the instructions in the manual. Always disconnect the battery before you weld on the machine. Always wash your hands after you handle battery components.

Wheels and tires

Make sure that tires are correctly inflated. Do not exceed any recommended load or pressure. Follow the instructions in the manual for proper tire inflation.

Tires are heavy. Handling tires without proper equipment could cause death or serious injury.

Never weld on a wheel with a tire installed. Always remove the tire completely from the wheel prior to welding.

Always have a qualified tire technician service the tires and wheels. If a tire has lost all pressure, take the tire and wheel to a tire shop or your dealer for service. Explosive separation of the tire can cause serious injury.

DO NOT weld to a wheel or rim until the tire is completely removed. Inflated tires can generate a gas mixture with the air that can be ignited by high temperatures from welding procedures performed on the wheel or rim. Removing the air or loosening the tire on the rim (breaking the bead) will NOT eliminate the hazard. This condition can exist

whether tires are inflated or deflated. The tire **MUST** be completely removed from the wheel or rim prior to welding the wheel or rim.

Driving on public roads and general transportation safety

Comply with local laws and regulations.

Use appropriate lighting to meet local regulations.

Make sure that the SMV emblem is visible.

Make sure that the brake pedal latch is engaged. You must lock brake pedals together for road travel.

Use safety chains for trailed equipment when safety chains are provided with machine or equipment.

Lift implements and attachments high enough above ground to prevent accidental contact with road.

When you transport equipment or a machine on a transport trailer, make sure that it is properly secured. Be sure the SMV on the equipment or machine is covered while being transported on a trailer.

Be aware of overhead structures or power lines and make sure that the machine and/or attachments can pass safely under.

Travel speed should be such that you maintain complete control and machine stability at all times.

Slow down and signal before turning.

Pull over to allow faster traffic to pass.

Follow correct towing procedure for equipment with or without brakes.

Fire and explosion prevention

Fuel or oil that is leaked or spilled on hot surfaces or electrical components can cause a fire.

Crop materials, trash, debris, bird nests, or flammable material can ignite on hot surfaces.

Always have a fire extinguisher on or near the machine.

Make sure that the fire extinguisher(s) is maintained and serviced according to the manufacturer's instructions.

At least once each day and at the end of the day, remove all trash and debris from the machine especially around hot components such as the engine, transmission, exhaust, battery, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

At least once each day, remove debris accumulation around moving components such as bearings, pulleys,

belts, gears, cleaning fans, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

Inspect the electrical system for loose connections and frayed insulation. Repair or replace loose or damaged parts.

Do not store oily rags or other flammable material on the machine.

Do not weld or flame cut any items that contain flammable material. Clean items thoroughly with non-flammable solvents before welding or flame-cutting.

Do not expose the machine to flames, burning brush, or explosives.

Promptly investigate any unusual smells or odors that may occur during operation of the machine.

Reflectors and warning lights

You must use flashing amber warning lights when you operate equipment on public roads.

Operator protective structure

Your machine is equipped with an operator protective structure, such as: a Roll Over Protective Structure (ROPS), Falling Objects Protective Structure (FOPS), or a cab with a ROPS. A ROPS may be a can frame or a two-posted or four-posted structure used for the protection of the operator to minimize the possibility of serious injury. The mounting structure and fasteners forming the mounting connection with the machine are part of the ROPS.

The protective structure is a special safety component of your machine.

DO NOT attach any device to the protective structure for pulling purposes. DO NOT drill holes to the protective structure.

The protective structure and interconnecting components are a certified system. Any damage, fire, corrosion, or modification will weaken the structure and reduce your protection. If this occurs, **THE PROTECTIVE STRUCTURE MUST BE REPLACED** so that it will provide the same protection as a new protective structure. Contact your dealer for protective structure inspection and replacement.

After an accident, fire, tip over, or roll over, the following **MUST** be performed by a qualified technician before returning the machine to field or job-site operations:

- The protective structure **MUST BE REPLACED**.
- The mounting or suspension for the protective structure, operator's seat and suspension, seat belts and mounting components, and wiring within the operator's

protective system MUST be carefully inspected for damage.

- All damaged parts MUST BE REPLACED.

DO NOT WELD, DRILL HOLES, ATTEMPT TO STRAIGHTEN, OR REPAIR THE PROTECTIVE STRUCTURE. MODIFICATION IN ANY WAY CAN REDUCE THE STRUCTURAL INTEGRITY OF THE STRUCTURE, WHICH COULD CAUSE DEATH OR SERIOUS INJURY IN THE EVENT OF FIRE, TIP OVER, ROLL OVER, COLLISION, OR ACCIDENT.

Seat belts are part of your protective system and must be worn at all times. The operator must be held to the seat inside the frame in order for the protective system to work.

Personal Protective Equipment (PPE)

Wear Personal Protective Equipment (PPE) such as hard hat, eye protection, heavy gloves, hearing protection, protective clothing, etc.

Do Not Operate tag

Before you start servicing the machine, attach a 'Do Not Operate' warning tag to the machine in an area that will be visible.

Hazardous chemicals

If you are exposed to or come in contact with hazardous chemicals you can be seriously injured. The fluids, lubricants, paints, adhesives, coolant, etc. required for the function of your machine can be hazardous. They may be attractive and harmful to domestic animals as well as humans.

Material Safety Data Sheets (MSDS) provide information about the chemical substances within a product, safe handling and storage procedures, first aid measures, and procedures to take in the event of a spill or accidental release. MSDS are available from your dealer.

Before you service your machine check the MSDS for each lubricant, fluid, etc. used in this machine. This information indicates the associated risks and will help you service the machine safely. Follow the information in the MSDS, and on manufacturer containers, as well as the information in this manual, when you service the machine.

Dispose of all fluids, filters, and containers in an environmentally safe manner according to local laws and regulations. Check with local environmental and recycling centers or your dealer for correct disposal information.

Store fluids and filters in accordance with local laws and regulations. Use only appropriate containers for the storage of chemicals or petrochemical substances.

Keep out of reach of children or other unauthorized persons.

Applied chemicals require additional precautions. Obtain complete information from the manufacturer or distributor of the chemicals before you use them.

Utility safety

When digging or using ground-engaging equipment, be aware of buried cables and other services. Contact your local utilities or authorities, as appropriate, to determine the locations of services.

Make sure that the machine has sufficient clearance to pass in all directions. Pay special attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines.

Retract raised or extended components, if necessary. Remove or lower radio antennas or other accessories. Should a contact between the machine and an electric power source occur, the following precautions must be taken:

- Stop the machine movement immediately.
- Apply the parking brake, stop the engine, and remove the key.
- Check if you can safely leave the cab or your actual position without contact with electrical wires. If not, stay in your position and call for help. If you can leave your position without touching lines, jump clear of the machine to make sure that you do not make contact with the ground and the machine at the same time.
- Do not permit anyone to touch the machine until power has been shut off to the power lines.

Electrical storm safety

Do not operate machine during an electrical storm.

If you are on the ground during an electrical storm, stay away from machinery and equipment. Seek shelter in a permanent, protected structure.

If an electrical storm should strike during operation, remain in the cab. Do not leave the cab or operator's platform. Do not make contact with the ground or objects outside the machine.

Mounting and dismounting

Mount and dismount the machine only at designated locations that have handholds, steps, and/or ladders.

Do not jump off of the machine.

Make sure that steps, ladders, and platforms remain clean and clear of debris and foreign substances. Injury may result from slippery surfaces.

2 - SAFETY INFORMATION

Face the machine when you mount and dismount the machine.

Maintain a three-point contact with steps, ladders, and handholds.

Never mount or dismount from a moving machine.

Do not use the steering wheel or other controls or accessories as handholds when you enter or exit the cab or operator's platform.

Personal safety

⚠ WARNING

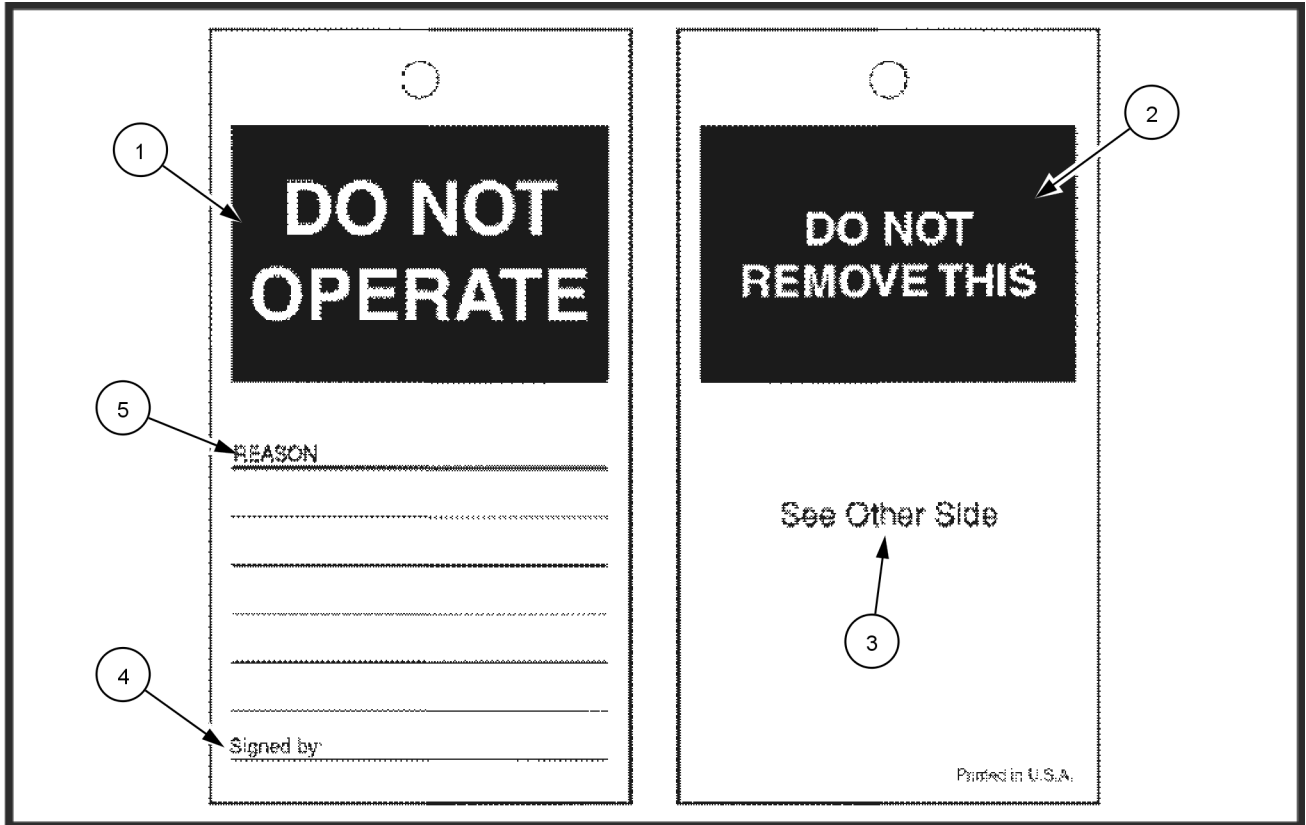
Moving parts!

Disengage the Power Take-Off (PTO), turn off the engine, and remove the key. Wait for all movement to stop before leaving the operator's position. Never adjust, lubricate, clean, or unplug machine with the engine running.

Failure to comply could result in death or serious injury.

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Before you service the machine, put a DO NOT OPERATE tag on the instrument panel.



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DO NOT OPERATE TAG

- A. (1) Do not operate.
- B. (2) Do not remove this.
- C. (3) See other side.
- D. (4) Signed by.
- E. (5) Reason

The DO NOT OPERATE tag can be obtained from your NEW HOLLAND dealer.

Ecology and the environment

Soil, air, and water quality is important for all industries and life in general. When legislation does not yet rule the treatment of some of the substances that advanced technology requires, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, anti-freeze, cleaning agents, etc., with regard to the effect of these substances on man and nature and how to safely store, use, and dispose of these substances. Your NEW HOLLAND dealer can also provide assistance.

Helpful hints

- Avoid the use of cans or other inappropriate pressurized fuel delivery systems to fill tanks. Such delivery systems may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of these products contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when you drain fluids such as used engine coolant mixtures, engine oil, hydraulic fluid, brake fluid, etc. Do not mix drained brake fluids or fuels with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- Do not open the air-conditioning system yourself. It contains gases that should not be released into the atmosphere. Your NEW HOLLAND dealer or air-conditioning specialist has a special extractor for this purpose and can recharge the system properly.
- Repair any leaks or defects in the engine cooling system or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.

Battery recycling

Batteries and electric accumulators contain several substances that can have a harmful effect on the environment if the batteries are not properly recycled after use. Improper disposal of batteries can contaminate the soil, groundwater, and waterways. NEW HOLLAND strongly recommends that you return all used batteries to a NEW HOLLAND dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.



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Mandatory battery recycling

NOTE: The following requirements are mandatory in Brazil.

Batteries are made of lead plates and a sulfuric acid solution. Because batteries contain heavy metals such as lead, CONAMA Resolution 401/2008 requires you to return all used batteries to the battery dealer when you replace any batteries. Do not dispose of batteries in your household garbage.

Points of sale are obliged to:

- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

Safety signs

The following safety signs are on your machine as a guide for your safety and for the safety of those working with you. Walk around the machine and note the content and the location of all safety signs before you operate your machine.

Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and gentle detergent.

NOTICE: Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety signs.

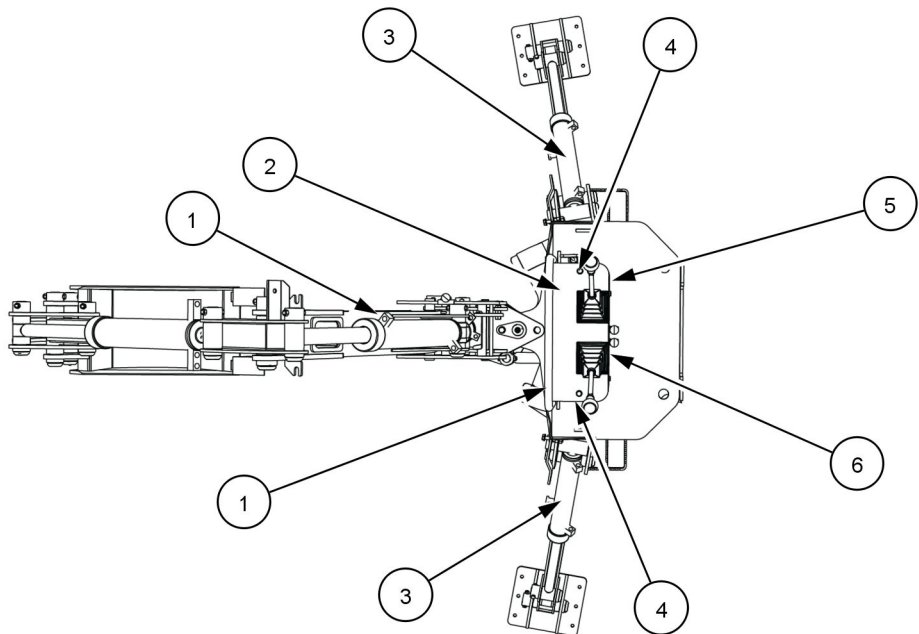
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

Safety signs that display the “Read operator’s manual” symbol direct you to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety sign displays this symbol, consult the appropriate page of the operator’s manual.



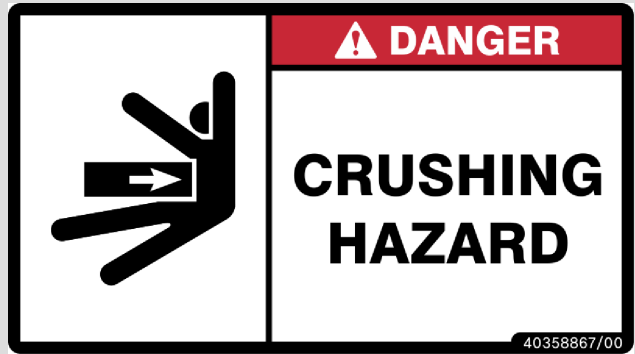
Safety signs that display the “Read service manual” symbol direct you to the service manual. If you doubt your ability to perform service operations, contact your dealer.



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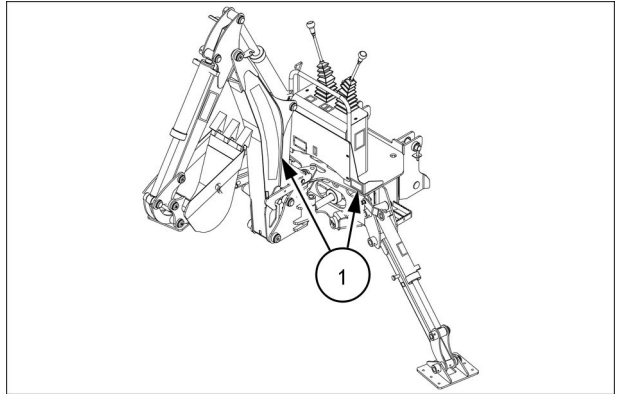
(1)
**DANGER
CRUSHING
HAZARD**

Quantity: 2
English Part Number: MT40358867



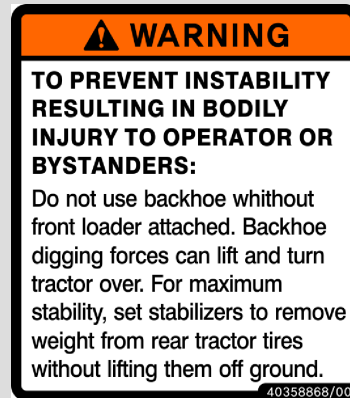
40358867 2

(1) Location: On the front lower left-hand side of the control panel and rear center of boom



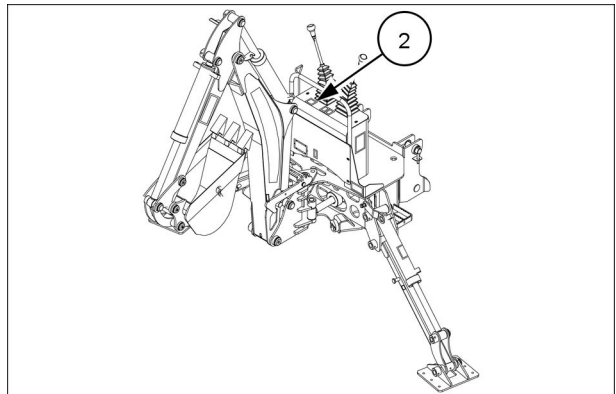
NHIL17CT01987FA 3

(2)
**WARNING
TO PREVENT INSTABILITY
RESULTING IN BODILY
INJURY TO OPERATOR OR
BYSTANDERS:**
Do not use the backhoe without front loader attached. Backhoe digging forces can lift and turn tractor over. For maximum stability, set stabilizers to remove weight from rear tractor tires without lifting them off the ground.
Quantity: 1
English Part Number: MT40358868



40358868 4

(2) Location: Top right-hand side of control panel



NHIL17CT01987FA 5

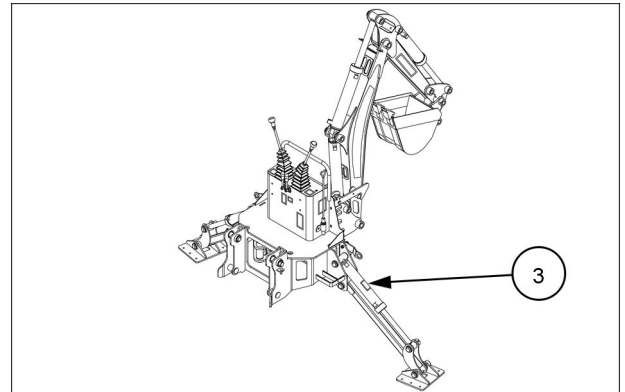
(3)
**DANGER
CRUSHING
HAZARD**

Quantity: 2
English Part Number: MT40255430

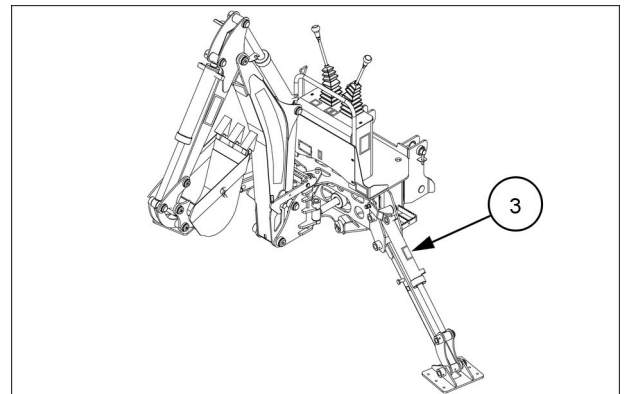


40255430 6

(3) Location: Top of left-hand and right-hand stabilizer cylinders



NHIL17CT01988FA 7

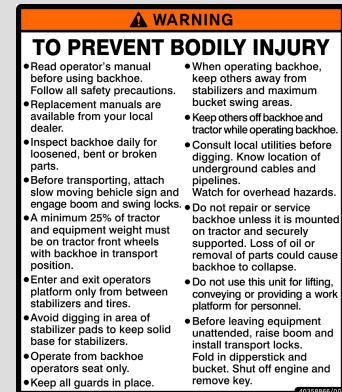


NHIL17CT01987FA 8

(4)

WARNING**TO PREVENT BODILY INJURY:****TO PREVENT BODILY INJURY:**

- Read operator's manual before using backhoe. Follow all safety precautions.
- Replacement manuals are available from your local dealer.
- Inspect backhoe daily for loosened, bent or broken parts.
- Before transporting, attach slow moving vehicle sign and engage boom and swing locks.
- A minimum 25% of tractor and equipment weight must be on tractor front wheels with backhoe in transport position.
- Enter and exit operators platform only from between stabilizers and tires.
- Avoid digging in area of stabilizer pads to keep solid base for stabilizers.
- Operate from backhoe operators seat only.
- Keep all guards in place.
- When operating backhoe, keep others away from stabilizers and maximum bucket swing areas.
- Keep others off backhoe and tractor while operating backhoe.
- Consult local utilities before digging. Know location of underground cables and pipelines. Watch for overhead hazard.
- Do not repair or service backhoe unless it is mounted on tractor and securely supported. Loss of oil or removal of parts could cause backhoe to collapse.
- Do not use this unit for lifting, conveying or providing a work platform for personnel.
- Before leaving equipment unattended, raise boom and install transport locks. Fold in dipperstick and bucket. Shut off engine and remove key.



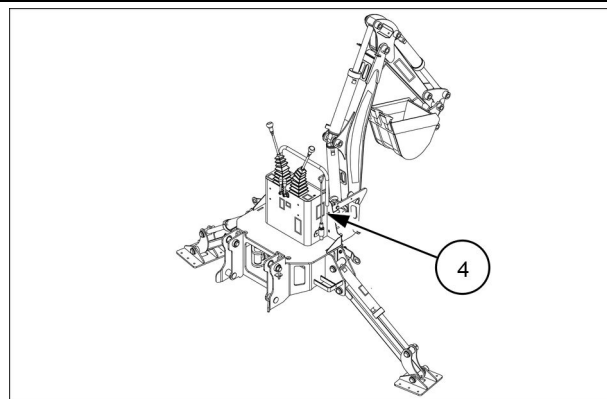
40358866 9

Quantity: 2

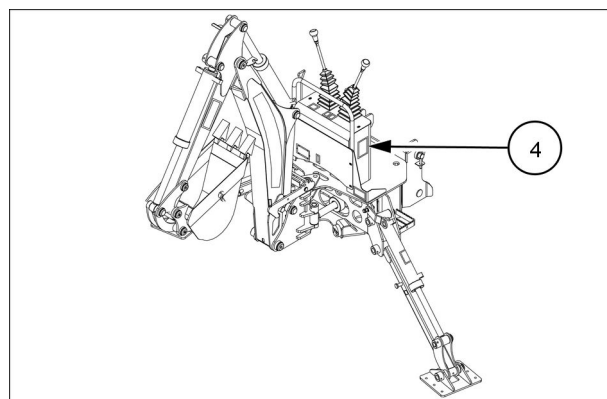
English Part Number: MT40358866

2 - SAFETY INFORMATION

(4) Location: On the left-hand side and right-hand side of the control panel.



NHIL17CT01988FA 10



NHIL17CT01987FA 11

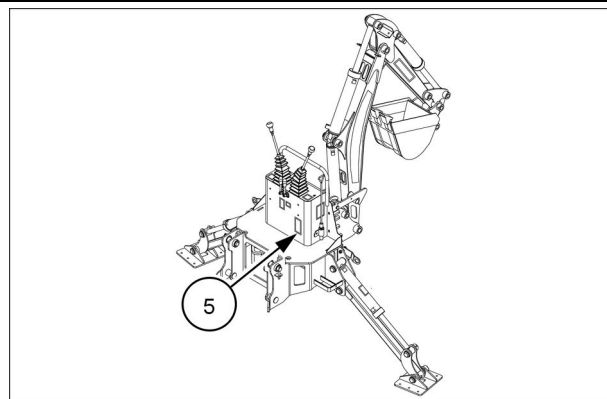
(5)
CAUTION
Underground utilities
Call before you dig.
811

Quantity: 1
English Part Number: MT40376684



40376684 12

(5) Location: On the lower rear right-hand side control panel

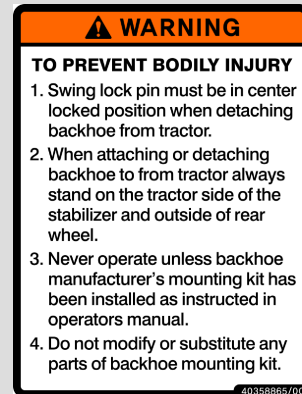


NHIL17CT01988FA 13

(6)
WARNING
TO PREVENT BODILY INJURY

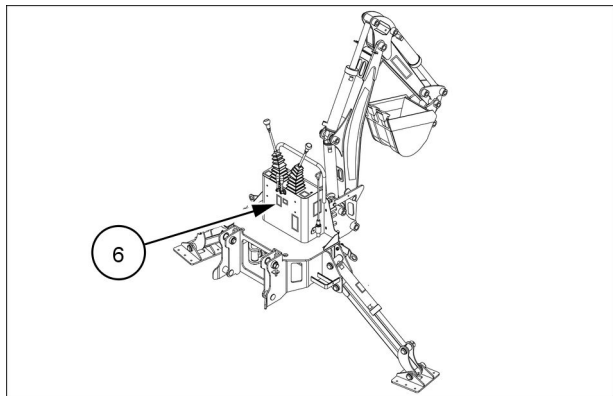
1. Swing lock pin must be in center locked position when detaching backhoe from tractor.
2. When attaching or detaching backhoe to from tractor always stand on the tractor side of the stabilizer and outside of rear wheel.
3. Never operate unless backhoe manufacture's mounting kit has been installed as instructed in operators manual.
4. Do not modify or substitute any parts of backhoe mounting kit.

Quantity: 1
English Part Number: MT40358865



40358865 14

(6) Location: On the rear center of control panel.



NHIL17CT01988FA 15

Instructional signs

The following safety signs are on your machine as a guide for your safety and for the safety of those working with you. Walk around the machine and note the content and the location of all safety signs before you operate your machine.

Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and gentle detergent.

NOTICE: Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety signs.

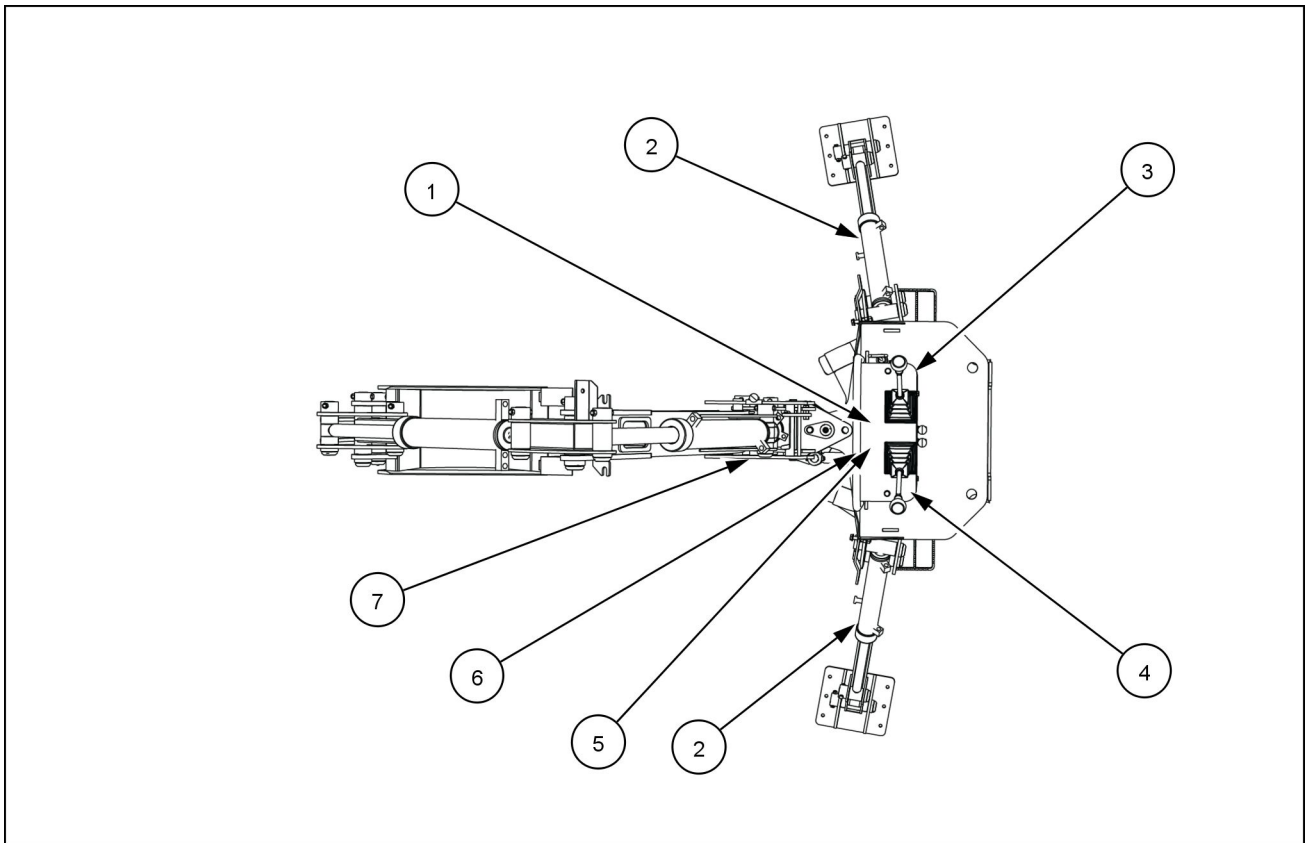
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

Safety signs that display the “Read operator’s manual” symbol direct you to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety sign displays this symbol, consult the appropriate page of the operator’s manual.



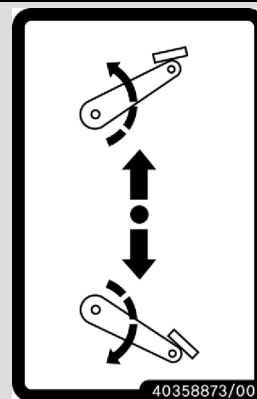
Safety signs that display the “Read service manual” symbol direct you to the service manual. If you doubt your ability to perform service operations, contact your dealer.



NHIL17CT02073FA 1

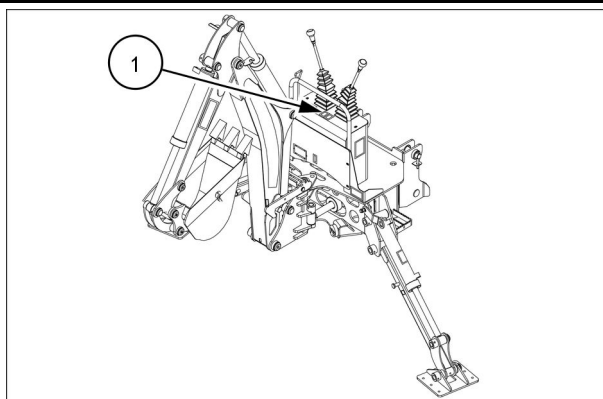
(1)
Right-hand stabilizer control

Quantity: 1
English Part Number: MT40358873



40358873 2

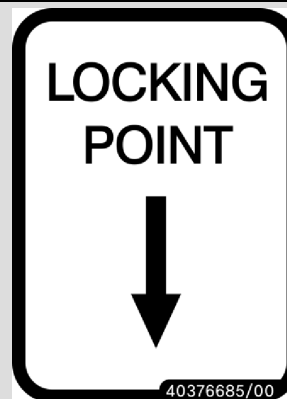
(1) Location: On the top right-hand side of the control panel



NHIL17CT01987FA 3

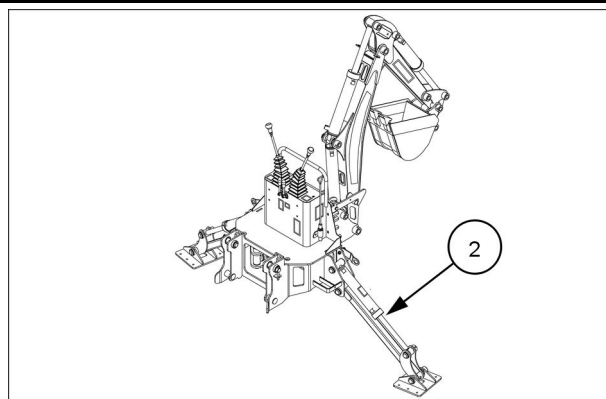
(2)
LOCKING
POINT

Quantity: 2
English Part Number: MT40376685

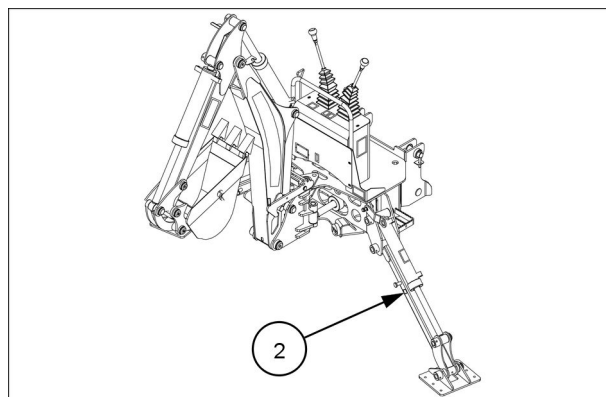


40376685 4

(2) Location: On the front of right-hand side and left-hand stabilizers



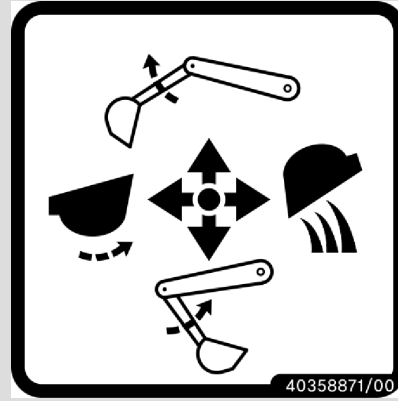
NHIL17CT01988FA 5



NHIL17CT01987FA 6

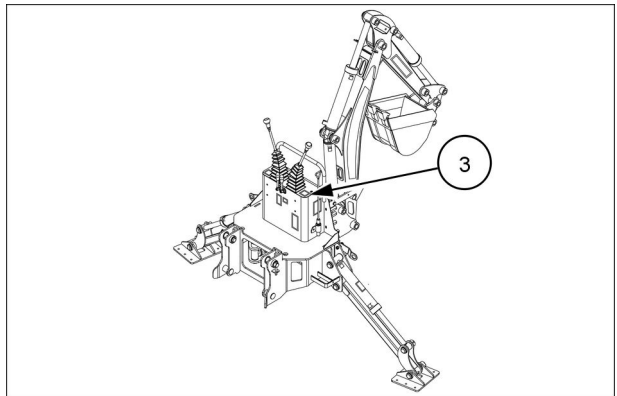
(3)
Operation of the right-hand joystick

Quantity: 1
English Part Number: MT40358871



40358871 7

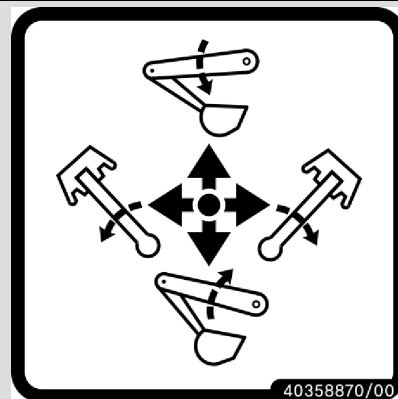
(3) Location: On the top right-hand side of the control pane



NHIL17CT01988FA 8

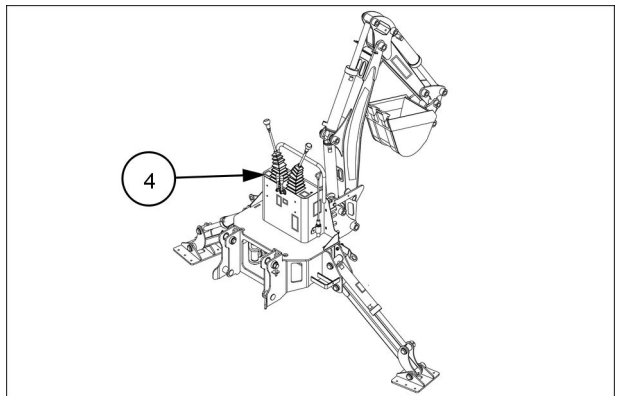
(4)
Operation of left-hand joystick

Quantity: 1
English Part Number: MT40358870



40358870 9

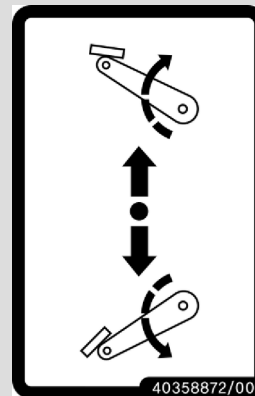
(4) Location: On the top left-hand side of the control panel.



NHIL17CT01988FA 10

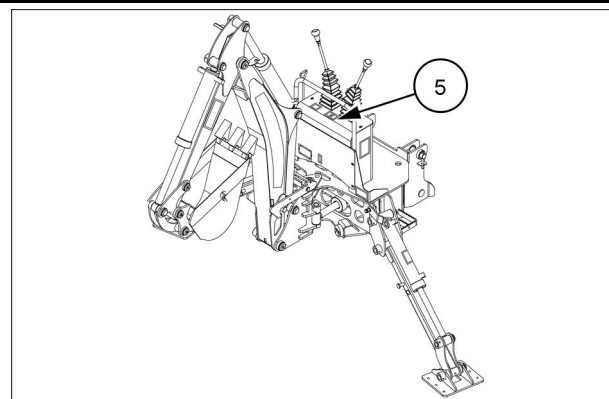
(5)
Left-hand stabilizer control

Quantity: 1
English Part Number: MT40358872



40358872 11

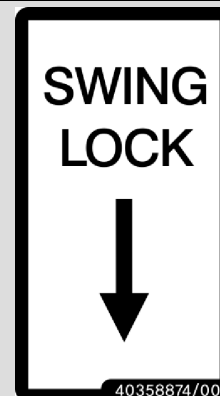
(5) Location: On the top left-hand side of the control panel



NHIL17CT01987FA 12

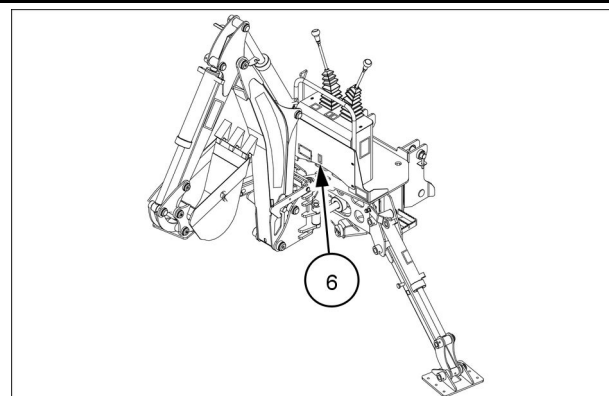
(6)
SWING LOCK

Quantity: 1
English Part Number: MT40358874



40358874 13

(6) Location: Lower frame left-hand side in front of control panel



NHIL17CT01987FA 14

(7)
BOOM
LOCK

Quantity: 1
English Part Number: MT40358875

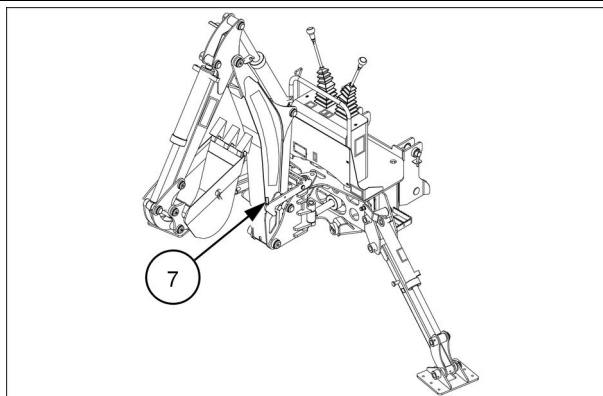
BOOM
LOCK



40358875/00

40358875 15

(7) Location: On the left-hand side of boom



NHIL17CT01987FA 16

3 - CONTROLS AND INSTRUMENTS

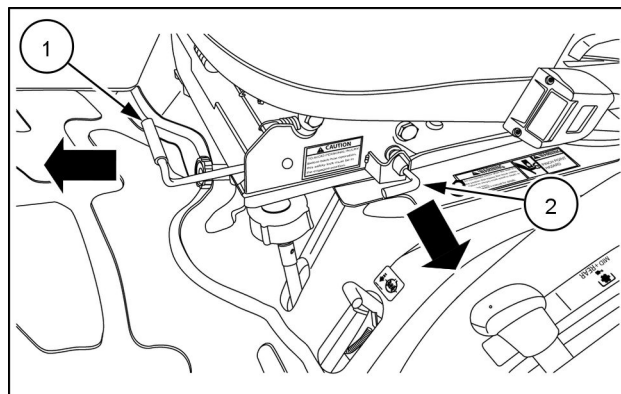
Operator's seat

Seat adjustment

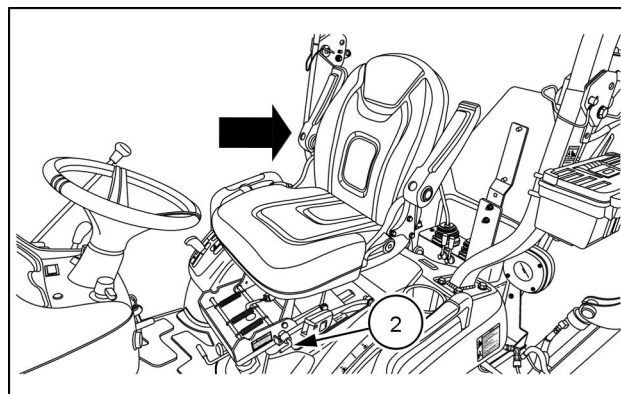
The operator's seat of the tractor is reversible for backhoe operation. Follow the instructions below to reverse the seat orientation for backhoe operation.

Reverse the operator's seat for backhoe operation

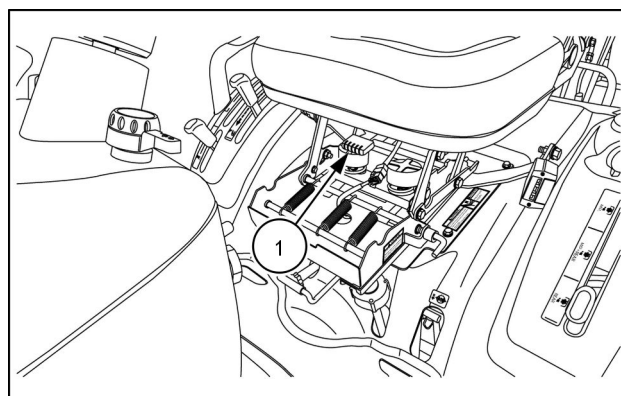
1. Shut off the engine.
2. Engage the park brake.
3. Lift up the seat adjustment handle **(1)** and adjust the seat fully forward toward the front of the tractor.
4. Pull the swivel lock handle **(2)** out towards the left-hand fender and rotate the handle **90°**.
5. Push the seat rearward to the rear of the tractor. The seat will raise up and move rearward. See figure 2.
6. Rotate the swivel lock handle **(2)** **90°** to lock the seat in this position.
7. Pull up on the seat swivel tab **(1)** and at the same time rotate the seat counter-clockwise to face the rear of the tractor.



NHIL17CT00570AA 1



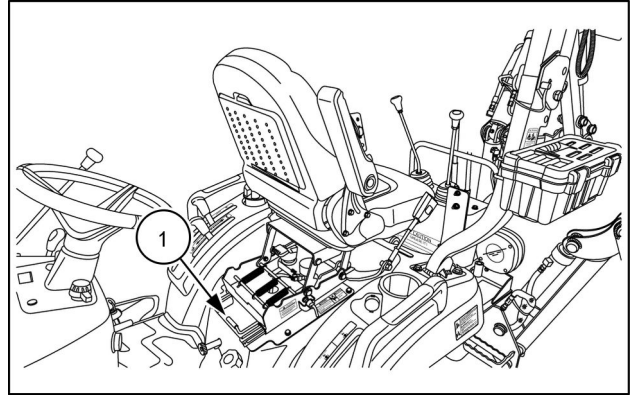
NHIL17CT00571AA 2



NHIL17CT00572AA 3

3 - CONTROLS AND INSTRUMENTS

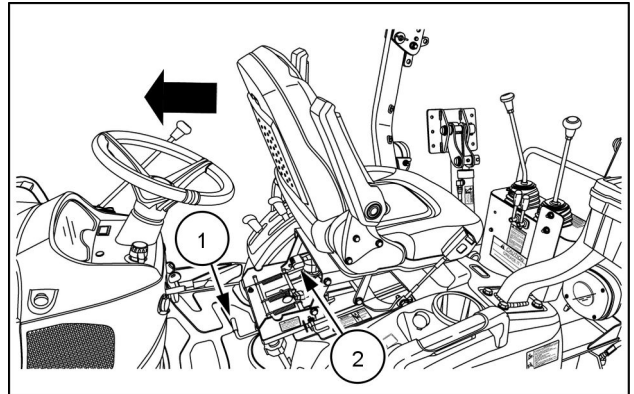
8. Lift up the seat adjustment handle **(1)** and adjust the seat rearward towards the backhoe.



NHIL17CT00588AA 4

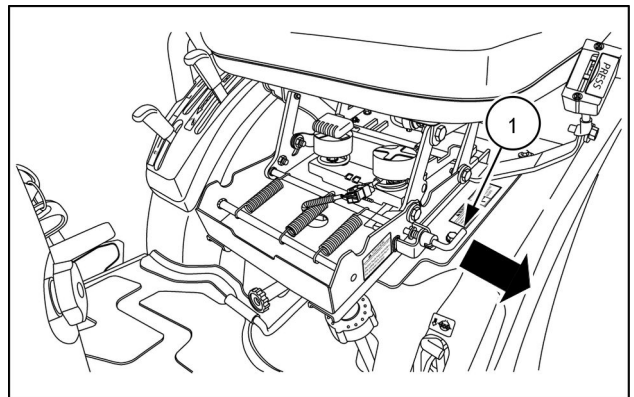
Reverse the operator's seat for tractor operation

1. Shut off the engine.
2. Engage the park brake.
3. Lift up the seat adjustment handle **(1)** and adjust the seat fully forward toward the front of the tractor.
4. Pull up on the seat swivel tab **(2)** and at the same time rotate the seat clockwise to face the front of the tractor.



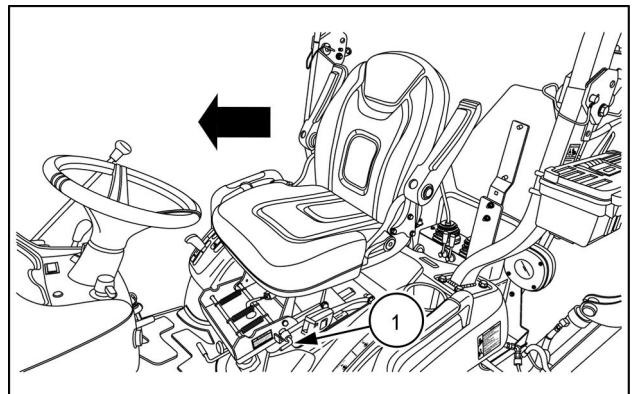
NHIL17CT00585AA 5

5. Pull the swivel lock handle **(1)** out towards the left-hand fender and rotate the handle **90°**.



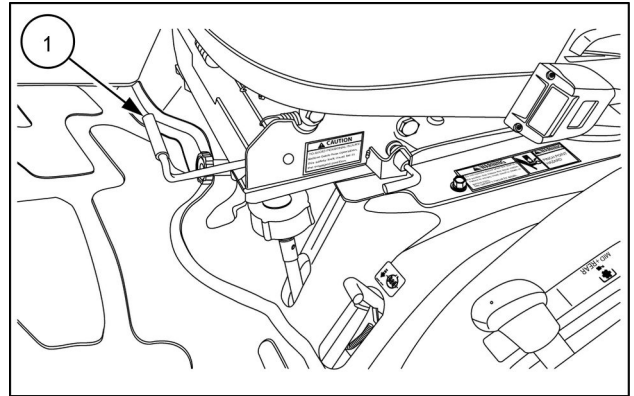
NHIL17CT00584AA 6

6. Push the seat forward to the front of the tractor. The seat will raise up and move forward. See figure 7 .
7. Rotate the swivel lock handle **(1)** **90°** to lock the seat in this position.



NHIL17CT00571AA 7

8. Lift up the seat adjustment handle **(1)** and adjust the seat to the proper position for tractor operation.



NHIL17CT00570AA 8

Forward controls

Control levers

⚠ CAUTION

Fall hazard!

When entering or exiting the backhoe platform, never use the control levers as handholds. Always mount and dismount the machine in a safe way. Maintain a three-point contact with steps and/or handholds.

Failure to comply could result in minor or moderate injury.

C0206A

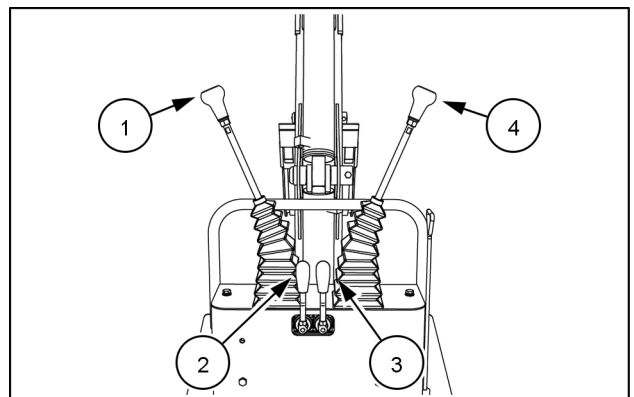
The machine has two main control levers located on the control panel:

- Boom/Swing **(1)**.
- Dipper stick/Bucket **(4)**.

The control levers for stabilizers are located in front of the two main control rods :

- Left-hand stabilizer **(2)**.
- Right-hand stabilizer **(3)**.

NOTE: The direction of movement corresponds to the direction of the control levers.



NHIL17CT01839AA 1

4 - TRANSPORT OPERATIONS

Road transport

Road transport

⚠ WARNING

Driving hazard!

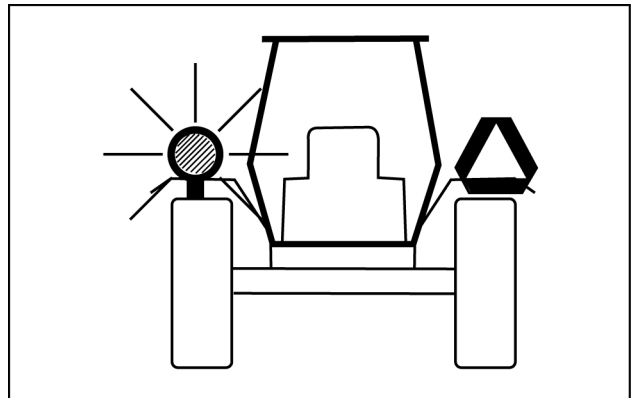
When traveling on public roads, only use the headlights and hazard warning lights. DO NOT use the work lights. An oncoming vehicle may confuse the rear work lights with the headlights.

Failure to comply could result in death or serious injury.

W0211A

For road transport, do the following:

1. When traveling on public roads, only use the headlights and hazard warning lights. DO NOT use the work lights. An oncoming vehicle may confuse the rear work lights with the headlights.



NHIL16CT01526AA 1

⚠ WARNING

Transport hazard!

ALWAYS make sure the safety latches are fully engaged across the machine before transport.

Failure to comply could result in death or serious injury.

W1500A

2. Make sure the safety latches are fully engaged across the machine before transport.

⚠ DANGER

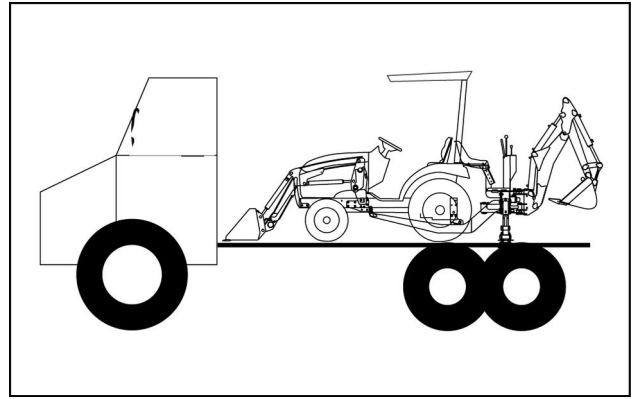
Unexpected machine movement!

Always engage the transport locks when working around the machine or when transporting the machine on a public road.

Failure to comply will result in death or serious injury.

D0203A

3. Always engage the transport locks when working around, or when transporting the machine on a public road.



NHIL16CT01535AA 2

⚠ WARNING

Unexpected machine movement!

Engage the safety locks when transporting the machine to prevent accidental movement.

Failure to comply could result in death or serious injury.

W1501B

4. Engage the safety locks when transporting the machine to prevent accidental movement.

⚠ WARNING

Avoid injury!

Know all rules, regulations, laws, and required safety equipment for transporting or operating this machine on a road or highway. See your dealer to obtain a rotating beacon, backup alarm, and other safety equipment.

Failure to comply could result in death or serious injury.

W1063A

5. Know all rules, regulations, laws, and required safety equipment for transporting or operating this machine on a road or highway. See your dealer to obtain a rotating beacon, backup alarm, and other safety equipment.

⚠ WARNING

Unexpected machine movement!

Engage the safety locks when transporting the machine to prevent accidental movement.

Failure to comply could result in death or serious injury.

W1501B

6. Engage the safety locks when transporting the machine to prevent accidental movement.

⚠ DANGER

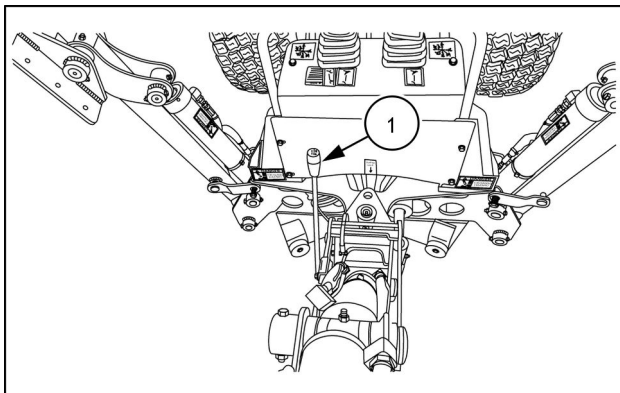
Crushing hazard!

Failure to engage the boom lock could cause the boom to fall unexpectedly. Verify that the boom lock is engaged.

Failure to comply will result in death or serious injury.

D0209A

- Boom lock (1)



NHIL17CT00567AA 3

⚠ WARNING

Avoid injury!

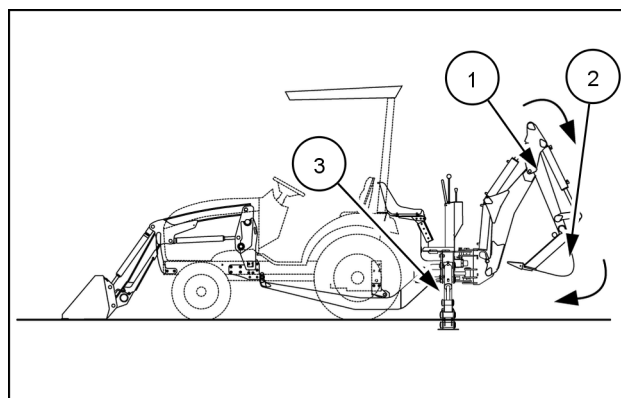
Read and follow the display instructions thoroughly.

Failure to comply could result in death or serious injury.

W0993A

- Drive slowly over uneven terrain or on hills or curves to reduce the risk of tipping.
- Do not drive the tractor near the edge of the trenches or pits.
- Check that you have good lightning and the SMV sign is visible when driving on roadways.

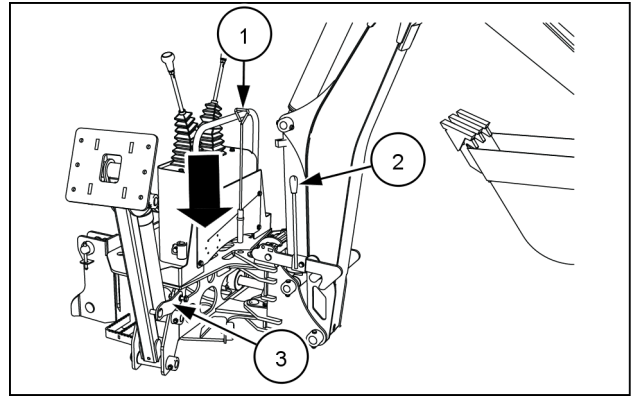
Pull in the digging boom (1), completely and center it, fold in the bucket (2), raise the stabilizers (3) to its highest position.



NHIL16CT01537AA 4

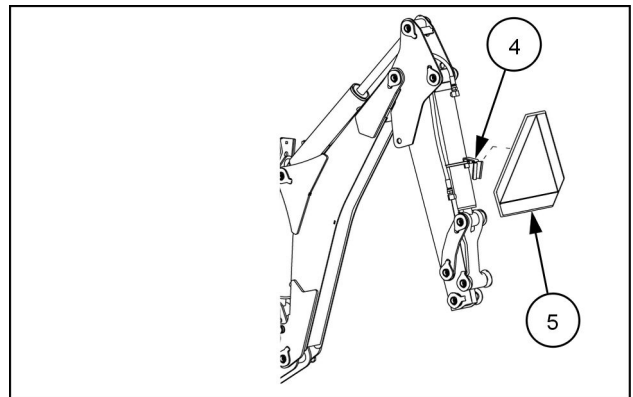
4 - TRANSPORT OPERATIONS

Install the swing lock pin (1). Engage the boom lock (2) and the stabilizer locks (3). For long trips, check the backhoe at regular intervals.



NHIL17CT01834AA 5

NOTE: Place the Slow Moving Vehicle (SMV) sign (5) in its holder (4) on the backhoe when driving on the roads.

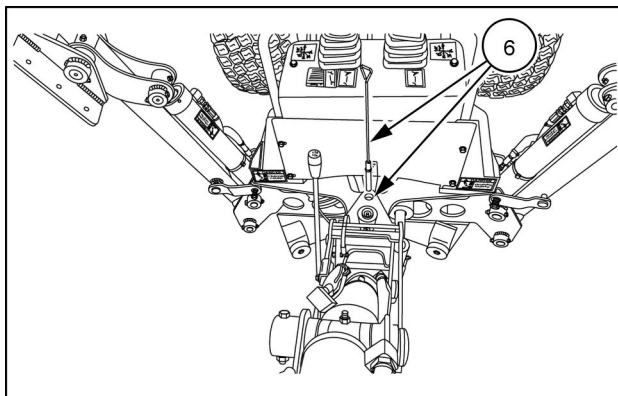


NHIL16CT01558AA 6

Swing lock

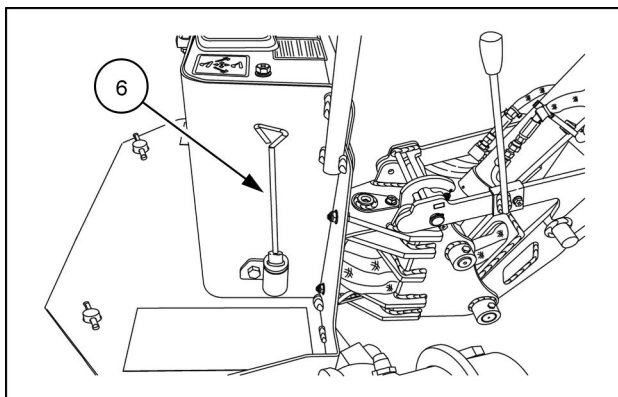
Use the swing lock **(6)** when dismounting or transporting the backhoe.

1. Center the boom
2. Insert the swing lock pin **(6)**



NHIL17CT01832AA 1

When not in use store the swing lock pin **(6)** in as shown in figure 2.

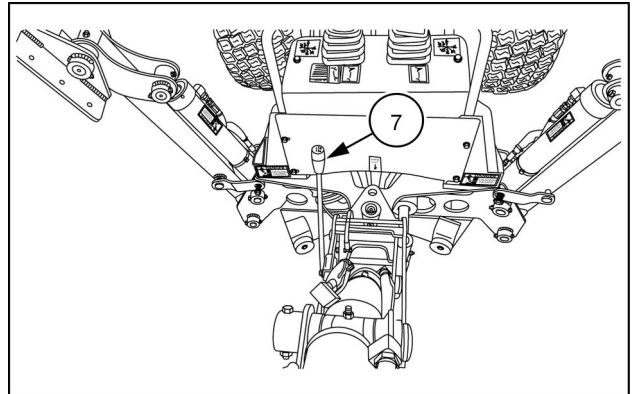


NHIL17CT01833AA 2

Boom lock

Use the boom lock when transporting the backhoe.

1. Retract the digging boom completely and lower the boom.
2. Lock the boom with the boom lock **(7)** by pushing the handle away from the operator's seat..

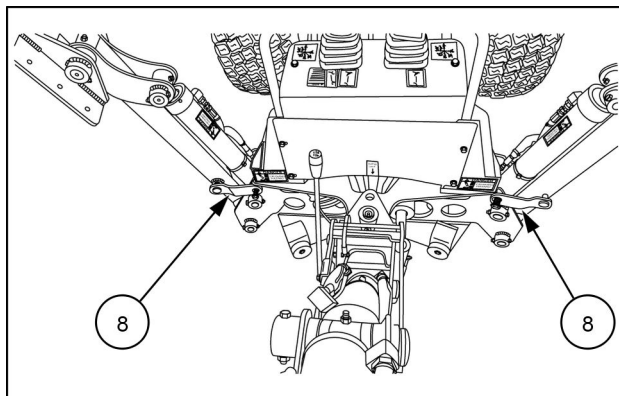


NHIL17CT00567AA 1

Stabilizer lock

Use the stabilizers lock when transporting the backhoe.

1. Raise the stabilizers completely.
2. Lock the stabilizers with the locking tabs **(8)**.



NHIL17CT00567AA 1

5 - WORKING OPERATIONS

General information

Backhoe operations

General information

DANGER

Crushing hazard!

Keep clear of this area. A swinging boom can kill or seriously injure you. Start and operate the backhoe from the operator's seat only. Do not place any loose objects inside the platform area.

Failure to comply will result in death or serious injury.

D0204A

WARNING

Avoid injury!

Operate controls only when seated in the operator's seat.

Failure to comply could result in death or serious injury.

W0956A

NOTICE: *In order to operate the backhoe function and reduce wear and tear and risk of injury, follow the following checklist*

Check list

The machine is designed with safety, durability and operating comfort in mind. Check off the list below and make the adjustments where necessary.

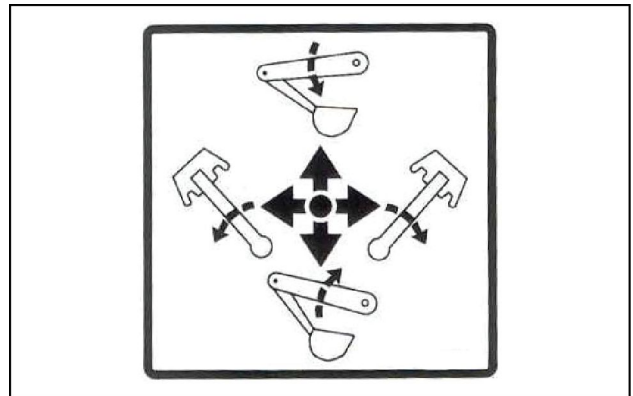
1. Be sure that all protective devices are installed.
2. All safety and warning decals should be mounted, intact and clean.
3. Check that all screws have been tightened.
4. All axles, bolts and locking pins to mount the backhoe on the tractor should be installed. Check the tightness of bolts and ensure that all pins are in good condition.
5. Be sure that the tractor is in good condition.
6. Lubricate the machine.
7. Ensure that the control equipment is functioning correctly.
8. Operate the cylinders slowly to clean air from the hydraulic system.
9. Check the oil level –fill as needed.

Engine speed

The heavier the work that the backhoe has to do, larger volume of hydraulic oil the tractor's hydraulic oil pump must deliver. This oil volume is determined by the speed of the tractor engine (RPM, revolutions/minute). Start working at low engine speed and then gradually increase the speed as needed.

Boom operation

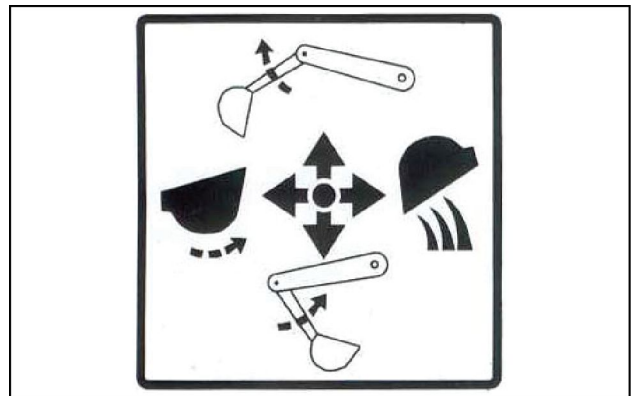
- Move the lever forward to lower the boom.
- Move the lever backward to raise the boom.
- Move the lever to the left to swing the boom to the left.
- Move the lever to the right to swing the boom to the right.
- Swing left and lower the boom by moving the lever forward and to the left.
- Swing left and raise the boom by moving the lever backward and to the left.
- Swing right and lower the boom by moving the lever forward and to the right.
- Swing right and raise the boom by moving the lever backward and to the right.



NHIL17CT01829AA 1

Dipper and bucket operation

- Move the lever forward to move the dipperstick forward.
- Move the lever backward to move the dipperstick backward.
- Move the rod to the left to pull the bucket in.
- Move the rod to the right to extend the bucket out.
- By moving the lever to one of the middle positions, the dipperstick can be extended or retracted, while the bucket is filled or emptied.
- Extend and fill the bucket by moving the lever forward and to the left.
- Retract and fill the bucket by moving the lever backward and to the left.
- Extend and empty the bucket by moving the lever forward and to the right.
- Retract and empty the bucket by moving the lever backward and to the right.
- The two functions for the boom in the combination with the two functions for the bucket and the dipperstick offer four simultaneously ways of working. The oil flow works in a way that requires the least amount of pressure.
-



NHIL17CT01830AA 1

Using the stabilizers

⚠ WARNING

Unexpected machine movement!

Before you use the backhoe attachment, make sure that the machine is resting on the stabilizers. Failure to comply could result in death or serious injury.

W1326A

⚠ WARNING

Tip-over hazard!

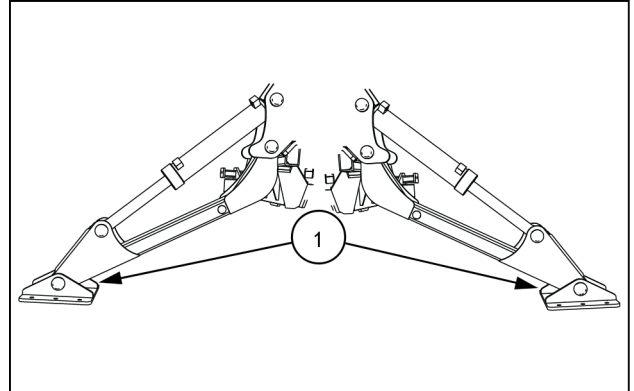
Do not dig the ground under the backhoe stabilizers. The machine can fall into the excavation site if the embankment collapses.

Failure to comply could result in death or serious injury.

W0198A

The stabilizers (1) are intended to take the pressure off the rear wheels of the tractor. The rear wheels should touch the ground because they have the lowest center of gravity and give the stabilizers the widest position.

Raised rear wheels provide less stability and less reach for the backhoe. In addition, it puts an unnecessary burden on the tractor and backhoe.



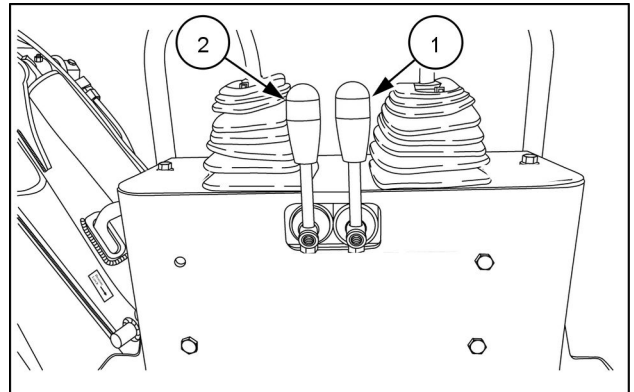
NHIL17CT01776AA 1

Left stabilizer

- Move left lever (2) forward, left stabilizer drops.
- Move left lever (2) backward, left stabilizer raises.

Right stabilizer

- Move right lever (1) forward, right stabilizer drops.
- Move right lever (1) backward, right stabilizer drops.



NHIL17CT00550AA 2

Using the backhoe

⚠ DANGER

Avoid injury!

Keep clear of the swing area. Ensure that any person near the working site is outside the swing area before you start or operate the machine. Sound the horn before you start or operate the machine.

Failure to comply will result in death or serious injury.

D0123A

⚠ WARNING

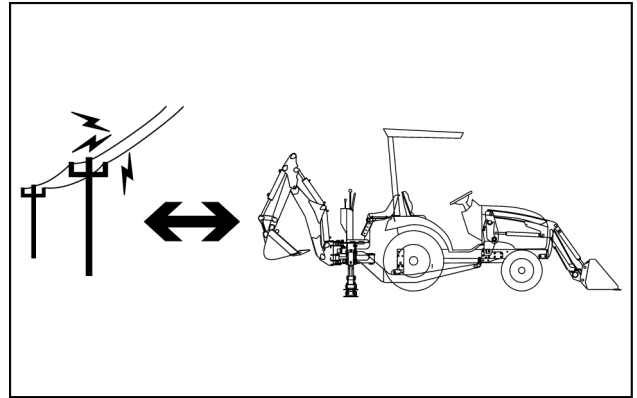
Electrocution hazard!

Be alert for overhead electrical lines. Proceed cautiously under electrical lines and around utility poles. Electrocution can occur without direct contact with overhead electrical lines.

Failure to comply could result in death or serious injury.

W1292A

Familiarize yourself with the working area and terrain. Pay attention to vertical clearance and limitations that arise due to the increased reach.



NHIL16CT01528AA 1

⚠ DANGER

Unexpected machine movement!

Air in the hydraulic system could cause unexpected machine movement. Purge the air from the hydraulic system after any hydraulic system maintenance or repair.

Failure to comply will result in death or serious injury.

D0054A

⚠ DANGER

Pressurized system!

Always remove all pressure before working on the hydraulic system. Follow the pressure BLEED program in the Configuration Mode to remove the pressure in the entire hydraulic system.

Failure to comply will result in death or serious injury.

D0035A

⚠ WARNING

Escaping fluid!

Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.

Failure to comply could result in death or serious injury.

W0178A

NOTICE: In order to avoid injury, observe the following safety precautions BEFORE using the machine.

- Only work from the operator's seat on your backhoe.
- Lower the stabilizers until the weight of the tractor is supported. Be sure that the tractor tires do not lift off the ground.
- Place front loader bucket on the ground.
- Do not dig in the area around the stabilizers.
- Do not raise the tractor off the ground or move the tractor forward or backward by using the dipperstick or the bucket.
- Do not swing the bucket outwards if you are on a sloped surface, this can result in a loss of stability.

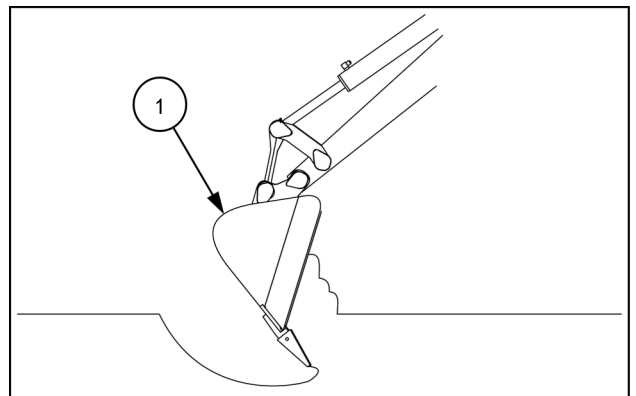
Swing the boom repeatedly to check the swinging motions.

The best results can be achieved by digging in the middle of the swing gradient so that the material can be emptied on both sides.

NOTE: Excessive engine RPM will result in jerky backhoe operation.

Fill the bucket

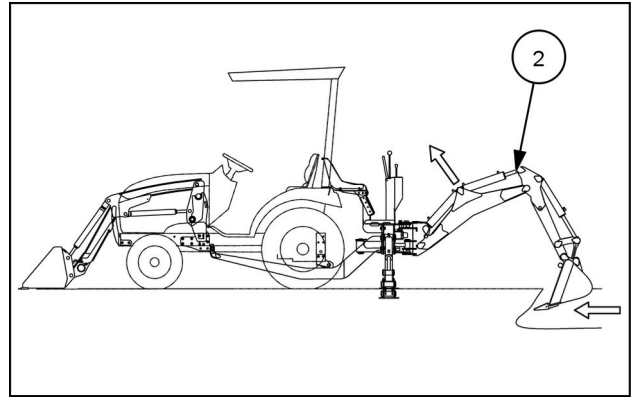
Check the position of the bucket (1) when digging to achieve a good result. This reduces wear and tear on the machine.



NHIL16CT01548AA 1

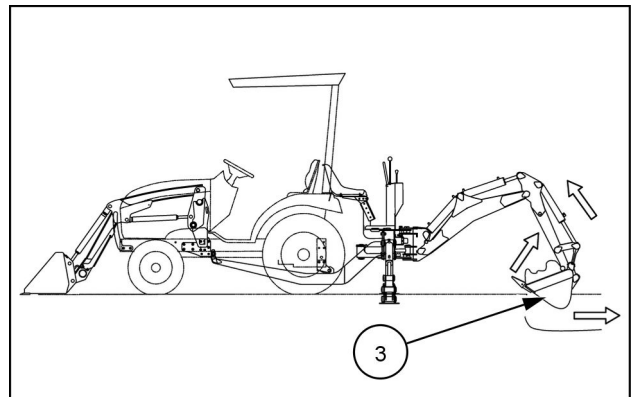
5 - WORKING OPERATIONS

When digging in hard soil, the digging capacity of the bucket can be improved by using pressure from the boom **(2)**. If the digging motion stops, lift and adjust the digging depth.



NHIL16CT01549AA 2

In order to achieve a clean trench and avoid material collecting in front of the backhoe, empty the bucket **(3)** completely and rotate it inwards when digging. This way, all the excess material will collect in the trench.

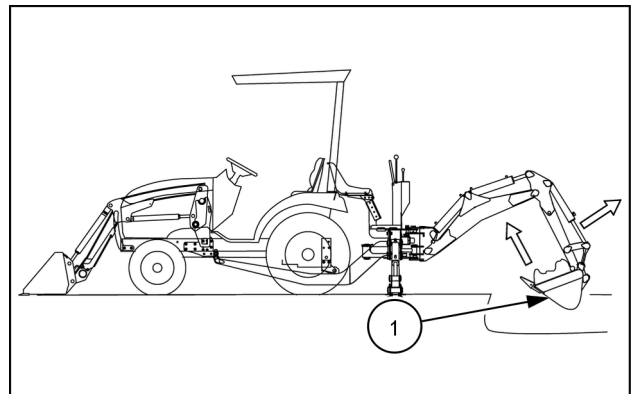


NHIL16CT01550AA 3

Emptying the bucket

In order to empty the bucket **(1)**, lift it up from the trench completely and empty it at the dumping site.

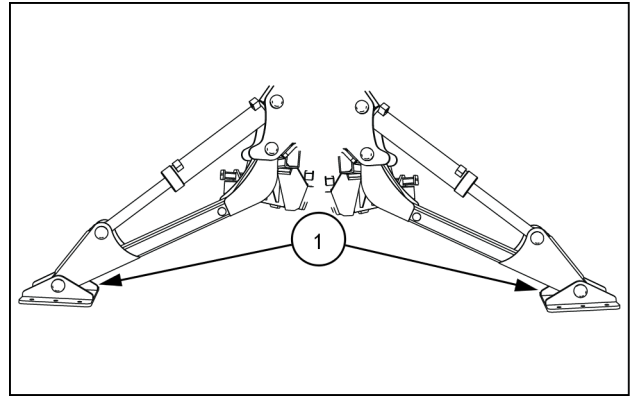
Avoid vibrations or hitting motions between the ground being excavated and the filled bucket, which can result in wear and tear on the pins and bushings.



NHIL16CT01551AA 1

Positioning the backhoe

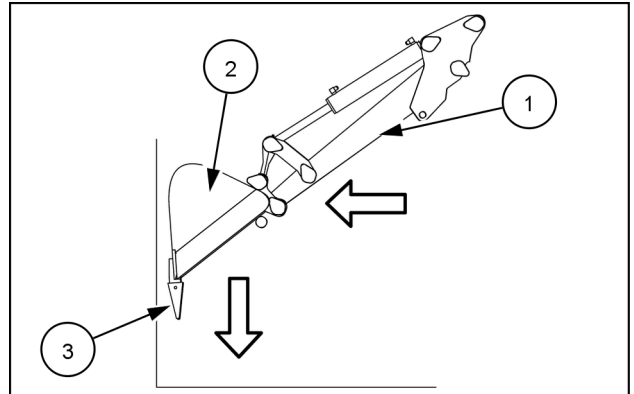
When digging with the backhoe in loose soil, place the tractor and the backhoe's stabilizers (1) on a platform to distribute the pressure and reduce the risk of the ground giving way. The platform counteracts any movements during demanding work.



NHIL17CT01776AA 1

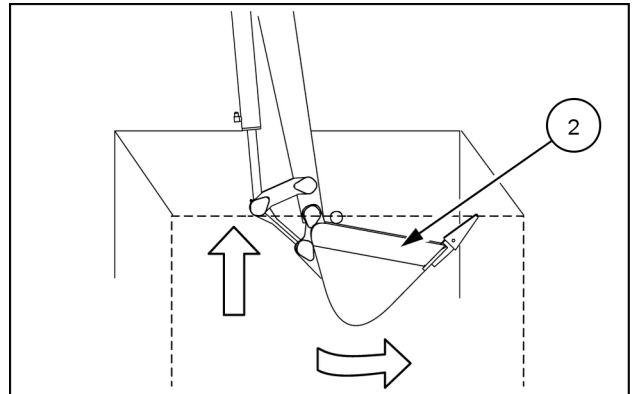
Digging vertical walls

In order to dig the far wall so that it is vertical, slowly extend the boom (1) while lowering the bucket (2). Tilt the bucket so that the bottom of the bucket (2) and its teeth (3) are always in a vertical position.



NHIL16CT01553AA 1

In order to dig so that the rear wall is vertical, raise the bucket (2) as you gradually pull it toward you. Keep the edges of the bucket horizontal.



NHIL16CT01554AA 2

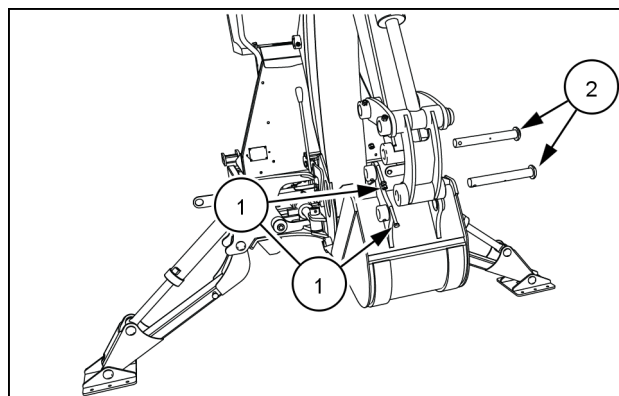
Backfilling

Fill the bucket by rotating the bucket inwards while simultaneously lifting it. Use both levers simultaneously to achieve a smooth motion.

NOTICE: Do not use swinging or lateral movements to refill. This results in significant breaking force which can damage the backhoe.

Coupling and uncoupling

Coupling and uncoupling the bucket using the two pins (2) and the two lock bolts and nuts (1).



NHIL17CT01779AA 1

Backhoe - Dismounting

⚠ WARNING

Collision hazard!

Always make sure the area behind the machine is clear of all persons, animals, and obstructions BEFORE backing up.

Failure to comply could result in death or serious injury.

W0232A

⚠ WARNING

Hazard to bystanders!

Be sure all persons and pets are standing clear during manual boom folding and unfolding.

Failure to comply could result in death or serious injury.

W0031A

⚠ WARNING

Hazard to bystanders!

Before you start the engine, make sure that the area surrounding the machine is clear of all persons, and that the backhoe swing lock pin is in the LOCK position.

Failure to comply could result in death or serious injury.

W1449B

⚠ CAUTION

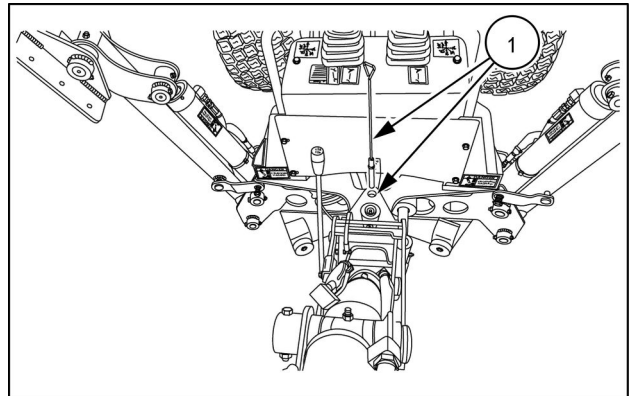
Crushing hazard!

Keep away from the space under the bucket or attachment when lowering the bucket or attachment. In cases where the machine fails and the engine stops, lower the attachment using the procedure described in this manual.

Failure to comply could result in minor or moderate injury.

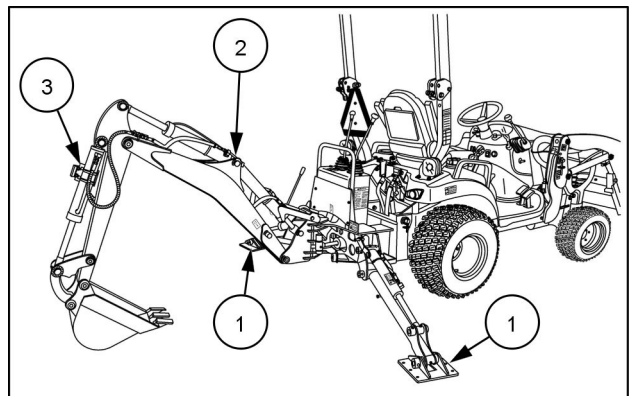
C0169A

1. Insert the swing lock pin (1).



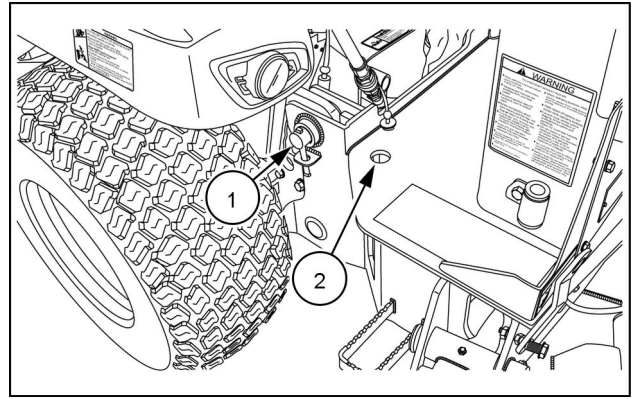
NHIL17CT01832AA 1

2. Lower the left-hand (1) and right-hand (1) stabilizers to the ground as shown in figure 2. Apply slight pressure to the ground.
3. Lower the boom (2) and extend the dipper stick (3) as shown in figure 2. Apply slight pressure to the ground.
4. Engage the park brake and turn off the engine.

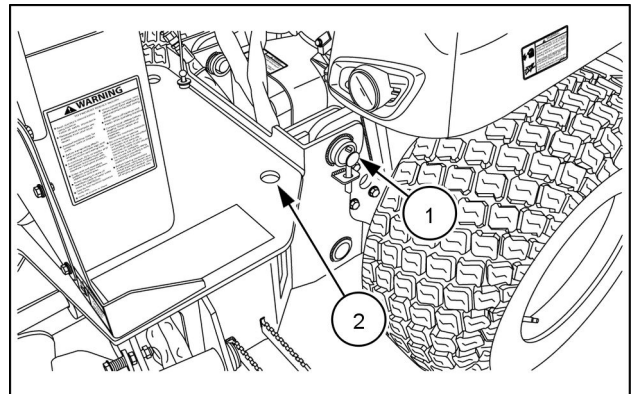


NHIL17CT00559AA 2

5. Remove the two M30 pins (1).
6. Store the M30 pins in the storage location (2).

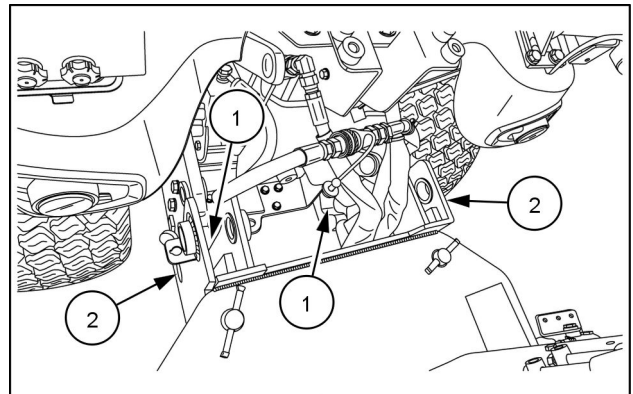


NHIL17CT00561AA 3



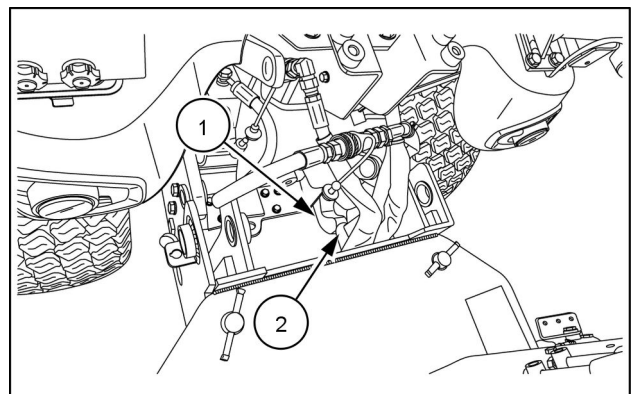
NHIL17CT00560AA 4

7. Start the tractor.
8. Slowly lower the stabilizers one side at a time until the backhoe raises off the sub frame and the pins (2) in the backhoe are slightly above the saddles (1) of the sub-frame.



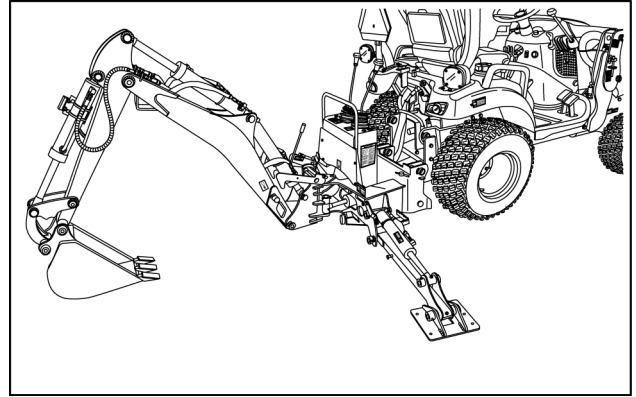
NHIL17CT00564AA 5

9. Release the park brake.
10. Slowly drive the tractor forward until the sub frame (1) is clear of the backhoe main frame (2).
11. Engage the park brake.



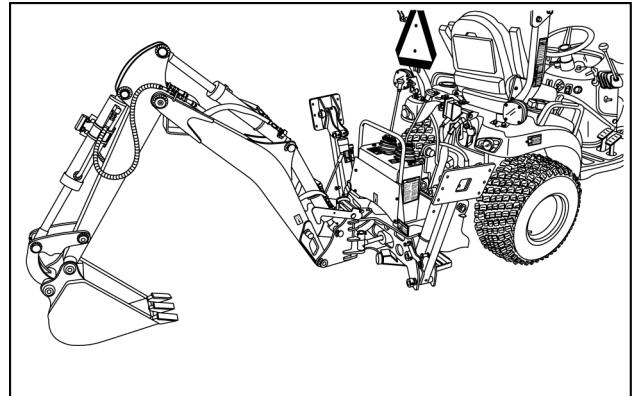
NHIL17CT00564AA 6

12. Slowly raise the stabilizers and the boom until the backhoe is sitting on the ground. See figure 7.



NHIL17CT00565AA 7

13. Continue raising the stabilizers until they are in the upright position. See figure 8
14. Engage the stabilizer locks.
15. Engage the park brake.
16. Shut off the engine.



NHIL17CT00566AA 8

⚠ WARNING

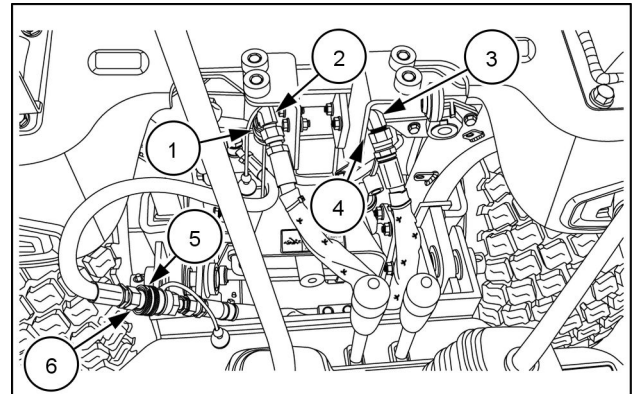
Escaping fluid!

Do not connect or disconnect hydraulic quick coupler under pressurized conditions. Make sure all hydraulic pressure is removed from the system before connecting or disconnecting hydraulic quick coupler.

Failure to comply could result in death or serious injury.

W0095B

17. Disconnect the hose with the **90° male quick coupler (3)** on the backhoe from the female quick coupler **(4)** on the tractor.
18. Install the dust cap on the female quick coupler **(3)** on the backhoe.
19. Disconnect the hose with the **90° female quick coupler (2)** on the backhoe from the male quick coupler **(1)** on the tractor.
20. Install the dust caps on the female quick coupler **(2)** on the backhoe and the male quick coupler **(1)** on the tractor.
21. Disconnect the hose with the male quick coupler **(6)** on the tractor from the hose with the straight female quick coupler **(5)** on the backhoe.
22. Install the dust cap on the female quick coupler **(5)** from the backhoe.
23. Connect the male quick coupler **(6)** to the female quick coupler **(4)**.

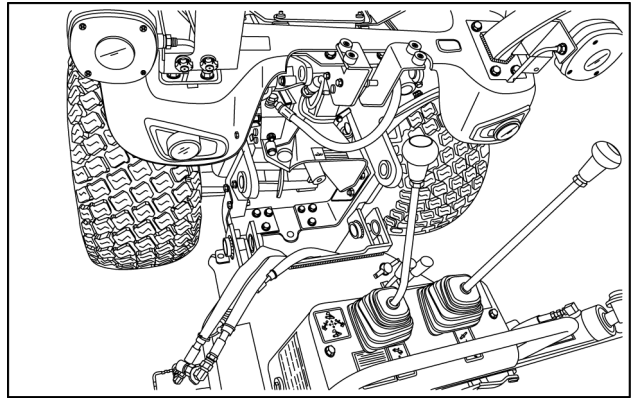


NHIL17CT00557AA 9

NOTICE: This step must be performed prior to starting the engine or damage could occur to the hydraulic system.

5 - WORKING OPERATIONS

24. Start the engine.
25. Release the park brake.
26. Slowly drive the tractor away from the backhoe.
27. Backhoe dismounting is complete.
28. If the backhoe will be in storage for an extended period of time see page **6-11** for backhoe storage instructions.



NHIL17CT00568AA 10

Backhoe - Mounting

⚠ WARNING

Collision hazard!

Always make sure the area behind the machine is clear of all persons, animals, and obstructions BEFORE backing up.

Failure to comply could result in death or serious injury.

W0232A

⚠ WARNING

Hazard to bystanders!

Be sure all persons and pets are standing clear during manual boom folding and unfolding.

Failure to comply could result in death or serious injury.

W0031A

⚠ WARNING

Hazard to bystanders!

Before you start the engine, make sure that the area surrounding the machine is clear of all persons, and that the backhoe swing lock pin is in the LOCK position.

Failure to comply could result in death or serious injury.

W1449B

⚠ CAUTION

Crushing hazard!

Keep away from the space under the bucket or attachment when lowering the bucket or attachment. In cases where the machine fails and the engine stops, lower the attachment using the procedure described in this manual.

Failure to comply could result in minor or moderate injury.

C0169A

1. Back the tractor as close to the backhoe without making contact.
2. Shut off the engine.
3. Engage the park brake.

4. ⚠ WARNING

Escaping fluid!

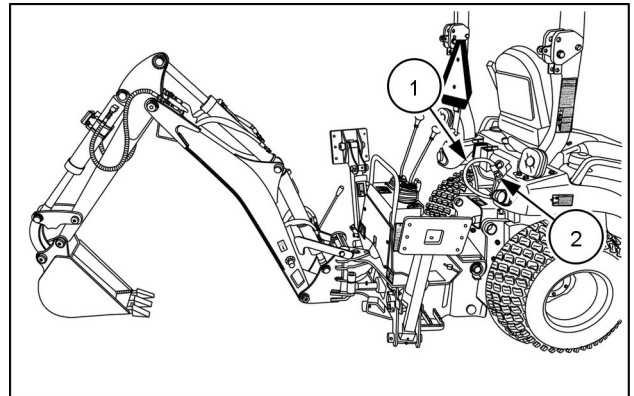
Do not connect or disconnect hydraulic quick coupler under pressurized conditions. Make sure all hydraulic pressure is removed from the system before connecting or disconnecting hydraulic quick coupler.

Failure to comply could result in death or serious injury.

W0095B

Release the male quick disconnect attached to the hose (1) from the right-hand female quick disconnect (2).

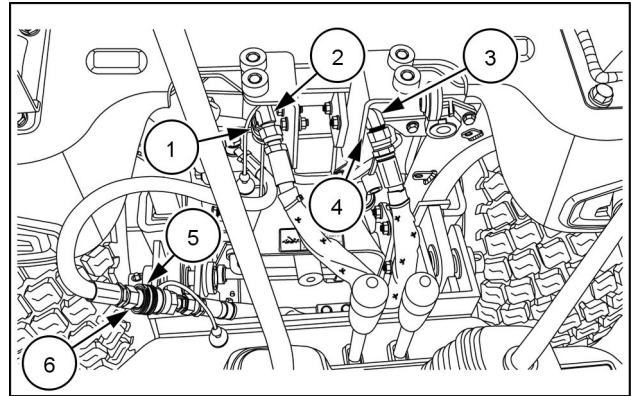
NOTE: Remove the dust caps before connecting the hoses in the following steps.



NHIL17CT00569AA 1

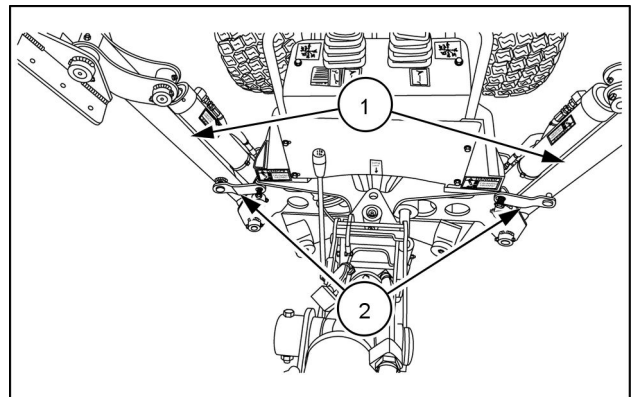
5 - WORKING OPERATIONS

5. Connect the hose with the male quick disconnect **(6)** on the tractor to the hose with the straight female quick disconnect **(5)** on the backhoe.
6. Connect the hose with the **90°** female quick disconnect **(2)** on the backhoe to the male quick disconnect **(1)** on the tractor.
7. Connect the hose with the **90°** male quick disconnect **(3)** on the backhoe to the female quick disconnect **(4)** on the tractor.



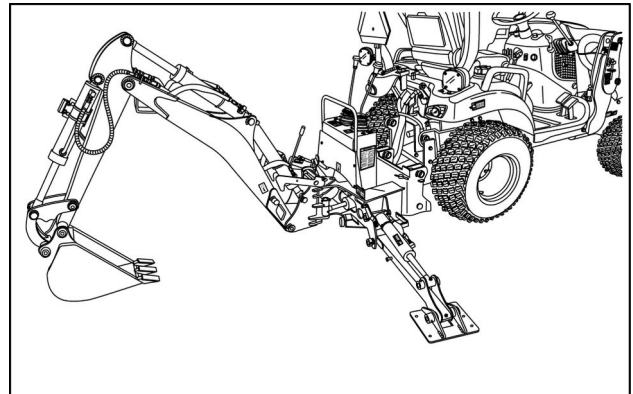
NHIL17CT00557AA 2

8. Start the engine.
9. Operate the stabilizer control knobs to raise the stabilizers **(1)** off of the transport locks **(2)**.
10. Release the stabilizer transport locks by pulling the locks over the pins and swinging the locks toward the center of the backhoe.



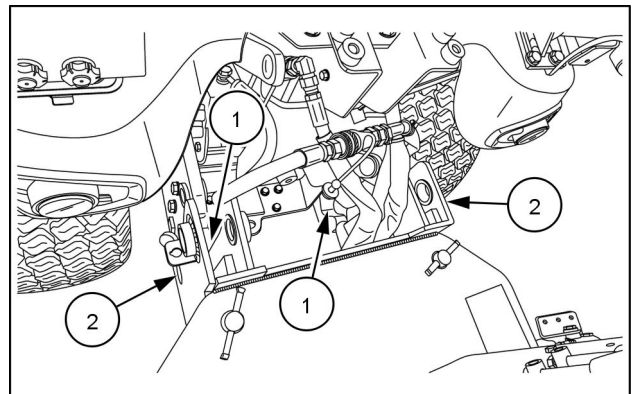
NHIL17CT00567AA 3

11. Lower the stabilizers until the stabilizers contact the ground.



NHIL17CT00565AA 4

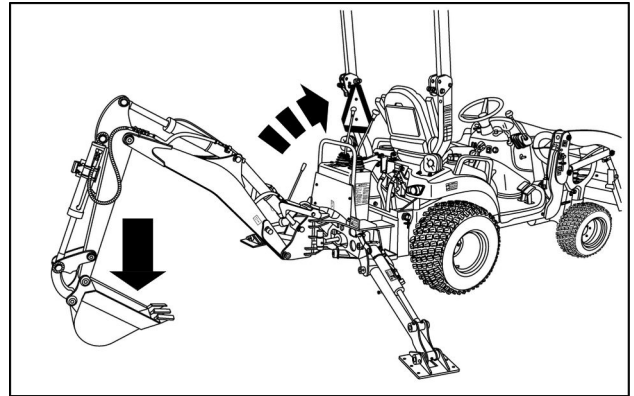
12. Continue lowering the stabilizers one side at a time until the backhoe raises off the ground and the pins **(2)** in the backhoe are slightly above the saddles **(1)** of the sub-frame.



NHIL17CT00564AA 5

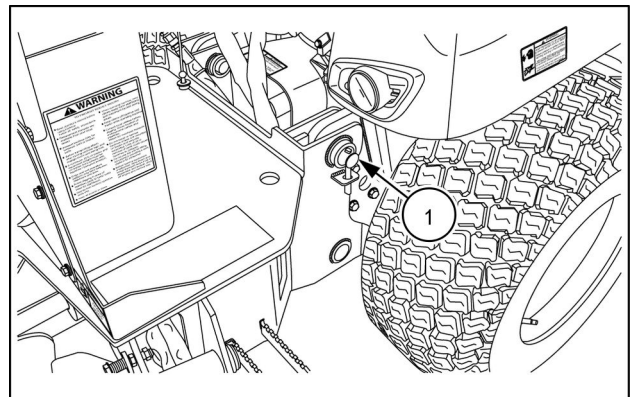
5 - WORKING OPERATIONS

13. Release the park brake and back up the tractor until the sub-frame is beneath the backhoe.
14. Apply the park brake.
15. Raise the stabilizers until the backhoe pins are fully seated in the sub-frame saddle.
16. Operate the boom control handle to lower the boom and apply pressure to the floor. This will push the backhoe against the sub-frame.

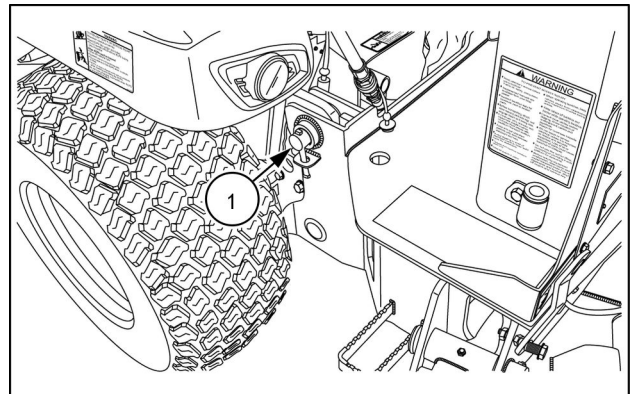


NHIL17CT00559AA 6

17. Insert a M30 lock pin (1) on each side of the backhoe as shown in figures 7 and 8

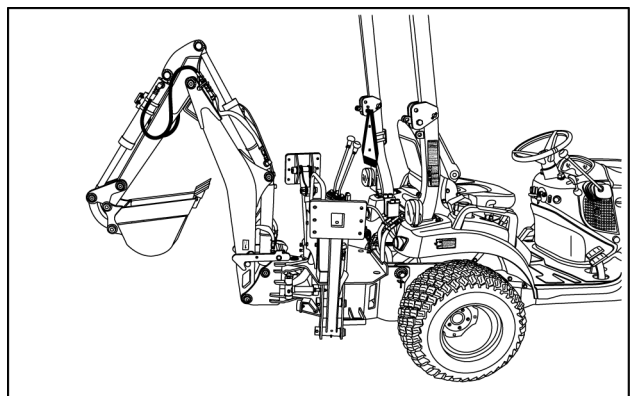


NHIL17CT00560AA 7



NHIL17CT00561AA 8

18. Fold the boom and dipperstick.
19. Engage the boom lock.
20. Raise the stabilizers.
21. Engage the stabilizer locks.
22. Backhoe mounting is complete.



NHIL17CT00553AA 9

6 - MAINTENANCE

General information

Safety rules

⚠ WARNING

Avoid injury!

1. Disengage all drives.
2. Engage parking brake.
3. Lower all attachments to the ground, or raise and engage all safety locks.
4. Shut off engine.
5. Remove key from key switch.
6. Wait for all machine movement to stop.

Failure to comply could result in death or serious injury.

W1197A

⚠ WARNING

Illustrations in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment.

Replace all shields before operating the machine.

Failure to comply could result in death or serious injury.

W0012A

⚠ WARNING

Escaping fluid!

Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.

Failure to comply could result in death or serious injury.

W0178A

⚠ WARNING

Impact and crushing hazard!

Before performing any maintenance, park the machine on a firm, level surface. Lower the bucket or attachment to the ground. Relieve all hydraulic pressure. Place the service link in the locked position to prevent unexpected machine articulation. Keep the area clear of unauthorized bystanders.

Failure to comply could result in death or serious injury.

W1304A

⚠ WARNING

Avoid injury!

Do not lubricate, adjust, or repair the implement when it is in motion.

Failure to comply could result in death or serious injury.

W0964A

⚠ WARNING

Fall hazard!

If you cannot reach certain areas of the machine from ground level, use a suitable ladder or other appropriate means to gain access. Do not climb on the machine for any reason.

Failure to comply could result in death or serious injury.

W0920A

⚠ CAUTION

Hot area!

Use care when working near hot components. Wear protective gloves.

Failure to comply could result in minor or moderate injury.

C0034A

Adequate lubrication and maintenance on a regular schedule is vital to maintaining your equipment. To ensure long service and efficient operation, follow the lubrication and maintenance schedules outlined in this manual. The use of proper fuels, oils, grease and filters, as well as keeping the systems clean, will also extend machine and component life.

NOTICE: *While any company can perform necessary maintenance or repairs on your equipment, NEW HOLLAND strongly recommends that you use only authorized NEW HOLLAND dealers and products that meet the given specifications. Improperly or incorrectly performed maintenance and repair voids the equipment warranty and may affect service intervals.*

NOTICE: *Always use genuine NEW HOLLAND replacement parts, oils and filters to ensure proper operation, filtration of engine and hydraulic systems. See your NEW HOLLAND dealer for additional oil quantities.*

Regular lubrication is the best insurance against delays and repairs. Proper lubrication will extend machine life. Refer to the following charts for lubricants and service intervals.

NOTICE: *Failure to complete the required maintenance at the recommended intervals can cause unnecessary downtime.*

Use the intervals listed in the Lubrication Chart as guidelines when operating in normal conditions. Adjust the intervals for operating in adverse environmental and working conditions. Shorten the intervals for sandy, dusty, and extremely hot operating conditions.

Torque - Minimum tightening torques for normal assembly

Metric non-flanged hardware

Nom- inal size	Class 8.8 bolt and class 8 nut		Class 10.9 bolt and class 10 nut		Lock nut class 8 with class 8.8 bolt	Lock nut class 10 with class 10.9 bolt
	Unplated	Plated with ZnCr	Unplated	Plated with ZnCr		
M4	2.2 N·m (19 lb in)	2.9 N·m (26 lb in)	3.2 N·m (28 lb in)	4.2 N·m (37 lb in)	2 N·m (18 lb in)	2.9 N·m (26 lb in)
M5	4.5 N·m (40 lb in)	5.9 N·m (52 lb in)	6.4 N·m (57 lb in)	8.5 N·m (75 lb in)	4 N·m (36 lb in)	5.8 N·m (51 lb in)
M6	7.5 N·m (66 lb in)	10 N·m (89 lb in)	11 N·m (96 lb in)	15 N·m (128 lb in)	6.8 N·m (60 lb in)	10 N·m (89 lb in)
M8	18 N·m (163 lb in)	25 N·m (217 lb in)	26 N·m (234 lb in)	35 N·m (311 lb in)	17 N·m (151 lb in)	24 N·m (212 lb in)
M10	37 N·m (27 lb ft)	49 N·m (36 lb ft)	52 N·m (38 lb ft)	70 N·m (51 lb ft)	33 N·m (25 lb ft)	48 N·m (35 lb ft)
M12	64 N·m (47 lb ft)	85 N·m (63 lb ft)	91 N·m (67 lb ft)	121 N·m (90 lb ft)	58 N·m (43 lb ft)	83 N·m (61 lb ft)
M16	158 N·m (116 lb ft)	210 N·m (155 lb ft)	225 N·m (166 lb ft)	301 N·m (222 lb ft)	143 N·m (106 lb ft)	205 N·m (151 lb ft)
M20	319 N·m (235 lb ft)	425 N·m (313 lb ft)	440 N·m (325 lb ft)	587 N·m (433 lb ft)	290 N·m (214 lb ft)	400 N·m (295 lb ft)
M24	551 N·m (410 lb ft)	735 N·m (500 lb ft)	762 N·m (560 lb ft)	1016 N·m (750 lb ft)	501 N·m (370 lb ft)	693 N·m (510 lb ft)

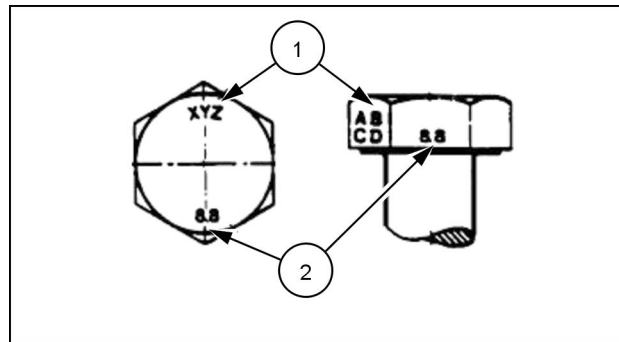
NOTE: M4 through M8 hardware torque specifications are shown in pound-inches. M10 through M24 hardware torque specifications are shown in pound-feet.

Metric flanged hardware

Nom- inal size	Class 8.8 bolt and class 8 nut		Class 10.9 bolt and class 10 nut		Lock nut class 8 with class 8.8 bolt	Lock nut class 10 with class 10.9 bolt
	Unplated	Plated with ZnCr	Unplated	Plated with ZnCr		
M4	2.4 N·m (21 lb in)	3.2 N·m (28 lb in)	3.5 N·m (31 lb in)	4.6 N·m (41 lb in)	2.2 N·m (19 lb in)	3.1 N·m (27 lb in)
M5	4.9 N·m (43 lb in)	6.5 N·m (58 lb in)	7.0 N·m (62 lb in)	9.4 N·m (83 lb in)	4.4 N·m (39 lb in)	6.4 N·m (57 lb in)
M6	8.3 N·m (73 lb in)	11 N·m (96 lb in)	12 N·m (105 lb in)	16 N·m (141 lb in)	7.5 N·m (66 lb in)	11 N·m (96 lb in)
M8	20 N·m (179 lb in)	27 N·m (240 lb in)	29 N·m (257 lb in)	39 N·m (343 lb in)	18 N·m (163 lb in)	27 N·m (240 lb in)
M10	40 N·m (30 lb ft)	54 N·m (40 lb ft)	57 N·m (42 lb ft)	77 N·m (56 lb ft)	37 N·m (27 lb ft)	53 N·m (39 lb ft)
M12	70 N·m (52 lb ft)	93 N·m (69 lb ft)	100 N·m (74 lb ft)	134 N·m (98 lb ft)	63 N·m (47 lb ft)	91 N·m (67 lb ft)
M16	174 N·m (128 lb ft)	231 N·m (171 lb ft)	248 N·m (183 lb ft)	331 N·m (244 lb ft)	158 N·m (116 lb ft)	226 N·m (167 lb ft)
M20	350 N·m (259 lb ft)	467 N·m (345 lb ft)	484 N·m (357 lb ft)	645 N·m (476 lb ft)	318 N·m (235 lb ft)	440 N·m (325 lb ft)
M24	607 N·m (447 lb ft)	809 N·m (597 lb ft)	838 N·m (618 lb ft)	1118 N·m (824 lb ft)	552 N·m (407 lb ft)	

Identification

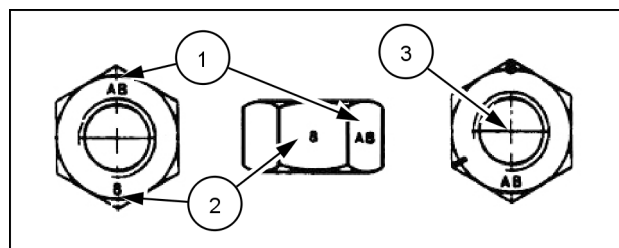
Metric hex head and carriage bolts, classes 5.6 and up



20083680 1

1. Manufacturer's identification
2. Property class

Metric hex nuts and lock nuts, classes 05 and up



20083681 2

1. Manufacturer's identification
2. Property class

6 - MAINTENANCE

3. Clock marking of property class and manufacturer's identification (optional), i.e. marks **60°** apart indicate

Class 10 properties, and marks **120°** apart indicate Class 8.

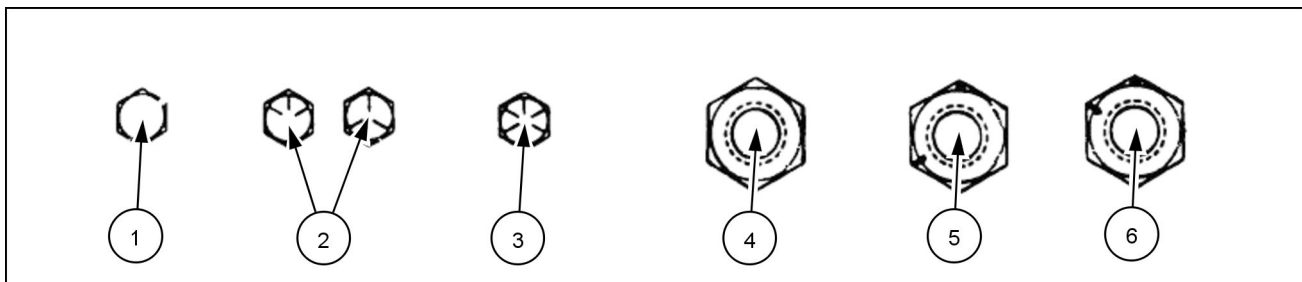
Inch non-flanged hardware

Nominal size	SAE Grade 5 bolt and nut		SAE Grade 8 bolt and nut		Lock nut Grade B with Grade 5 bolt	Lock nut Grade C with Grade 8 bolt
	Unplated or plated Silver	Plated with ZnCr Gold	Unplated or plated Silver	Plated with ZnCr Gold		
1/4	8 N·m (71 lb in)	11 N·m (97 lb in)	12 N·m (106 lb in)	16 N·m (142 lb in)	8.5 N·m (75 lb in)	12.2 N·m (109 lb in)
5/16	17 N·m (150 lb in)	23 N·m (204 lb in)	24 N·m (212 lb in)	32 N·m (283 lb in)	17.5 N·m (155 lb in)	25 N·m (220 lb in)
3/8	30 N·m (22 lb ft)	40 N·m (30 lb ft)	43 N·m (31 lb ft)	57 N·m (42 lb ft)	31 N·m (23 lb ft)	44 N·m (33 lb ft)
7/16	48 N·m (36 lb ft)	65 N·m (48 lb ft)	68 N·m (50 lb ft)	91 N·m (67 lb ft)	50 N·m (37 lb ft)	71 N·m (53 lb ft)
1/2	74 N·m (54 lb ft)	98 N·m (73 lb ft)	104 N·m (77 lb ft)	139 N·m (103 lb ft)	76 N·m (56 lb ft)	108 N·m (80 lb ft)
9/16	107 N·m (79 lb ft)	142 N·m (105 lb ft)	150 N·m (111 lb ft)	201 N·m (148 lb ft)	111 N·m (82 lb ft)	156 N·m (115 lb ft)
5/8	147 N·m (108 lb ft)	196 N·m (145 lb ft)	208 N·m (153 lb ft)	277 N·m (204 lb ft)	153 N·m (113 lb ft)	215 N·m (159 lb ft)
3/4	261 N·m (193 lb ft)	348 N·m (257 lb ft)	369 N·m (272 lb ft)	491 N·m (362 lb ft)	271 N·m (200 lb ft)	383 N·m (282 lb ft)
7/8	420 N·m (310 lb ft)	561 N·m (413 lb ft)	594 N·m (438 lb ft)	791 N·m (584 lb ft)	437 N·m (323 lb ft)	617 N·m (455 lb ft)
1	630 N·m (465 lb ft)	841 N·m (620 lb ft)	890 N·m (656 lb ft)	1187 N·m (875 lb ft)	654 N·m (483 lb ft)	924 N·m (681 lb ft)

NOTE: For imperial units, **1/4 in** and **5/16 in** hardware torque specifications are shown in pound-inches. **3/8 in** through **1 in** hardware torque specifications are shown in pound-feet.

Inch flanged hardware

Nom- inal size	SAE Grade 5 bolt and nut		SAE Grade 8 bolt and nut		Lock nut Grade F with Grade 5 bolt	Lock nut Grade G with Grade 8 bolt
	Unplated or plated Silver	Plated with ZnCr Gold	Unplated or plated Silver	Plated with ZnCr Gold		
1/4	9 N·m (80 lb in)	12 N·m (106 lb in)	13 N·m (115 lb in)	17 N·m (150 lb in)	8 N·m (71 lb in)	12 N·m (106 lb in)
5/16	19 N·m (168 lb in)	25 N·m (221 lb in)	26 N·m (230 lb in)	35 N·m (310 lb in)	17 N·m (150 lb in)	24 N·m (212 lb in)
3/8	33 N·m (25 lb ft)	44 N·m (33 lb ft)	47 N·m (35 lb ft)	63 N·m (46 lb ft)	30 N·m (22 lb ft)	43 N·m (32 lb ft)
7/16	53 N·m (39 lb ft)	71 N·m (52 lb ft)	75 N·m (55 lb ft)	100 N·m (74 lb ft)	48 N·m (35 lb ft)	68 N·m (50 lb ft)
1/2	81 N·m (60 lb ft)	108 N·m (80 lb ft)	115 N·m (85 lb ft)	153 N·m (113 lb ft)	74 N·m (55 lb ft)	104 N·m (77 lb ft)
9/16	117 N·m (86 lb ft)	156 N·m (115 lb ft)	165 N·m (122 lb ft)	221 N·m (163 lb ft)	106 N·m (78 lb ft)	157 N·m (116 lb ft)
5/8	162 N·m (119 lb ft)	216 N·m (159 lb ft)	228 N·m (168 lb ft)	304 N·m (225 lb ft)	147 N·m (108 lb ft)	207 N·m (153 lb ft)
3/4	287 N·m (212 lb ft)	383 N·m (282 lb ft)	405 N·m (299 lb ft)	541 N·m (399 lb ft)	261 N·m (193 lb ft)	369 N·m (272 lb ft)
7/8	462 N·m (341 lb ft)	617 N·m (455 lb ft)	653 N·m (482 lb ft)	871 N·m (642 lb ft)	421 N·m (311 lb ft)	594 N·m (438 lb ft)
1	693 N·m (512 lb ft)	925 N·m (682 lb ft)	979 N·m (722 lb ft)	1305 N·m (963 lb ft)	631 N·m (465 lb ft)	890 N·m (656 lb ft)

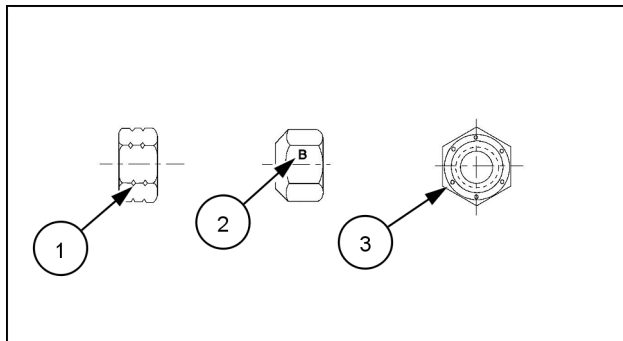
Identification**Inch bolts and free-spinning nuts**

20083682 3

Grade marking examples

SAE grade identification			
1	Grade 2 - no marks	4	Grade 2 nut - no marks
2	Grade 5 - three marks	5	Grade 5 nut - marks 120° apart
3	Grade 8 - five marks	6	Grade 8 nut - marks 60° apart

Inch lock nuts, all metal (three optional methods)



20090268 4

Grade identification

Grade	Corner marking method (1)	Flats marking method (2)	Clock marking method (3)
Grade A	No notches	No mark	No marks
Grade B	One circumferential notch	Letter B	Three marks
Grade C	Two circumferential notches	Letter C	Six marks

Maintenance planning

Maintenance chart

Lubricate		Check
Maintenance action		Page no.
Every 10 hours		
Grease fittings - Lubricate	x	6-8
As necessary		
Hardware - Check	x	6-9
Hydraulic hoses - Check	x	6-10

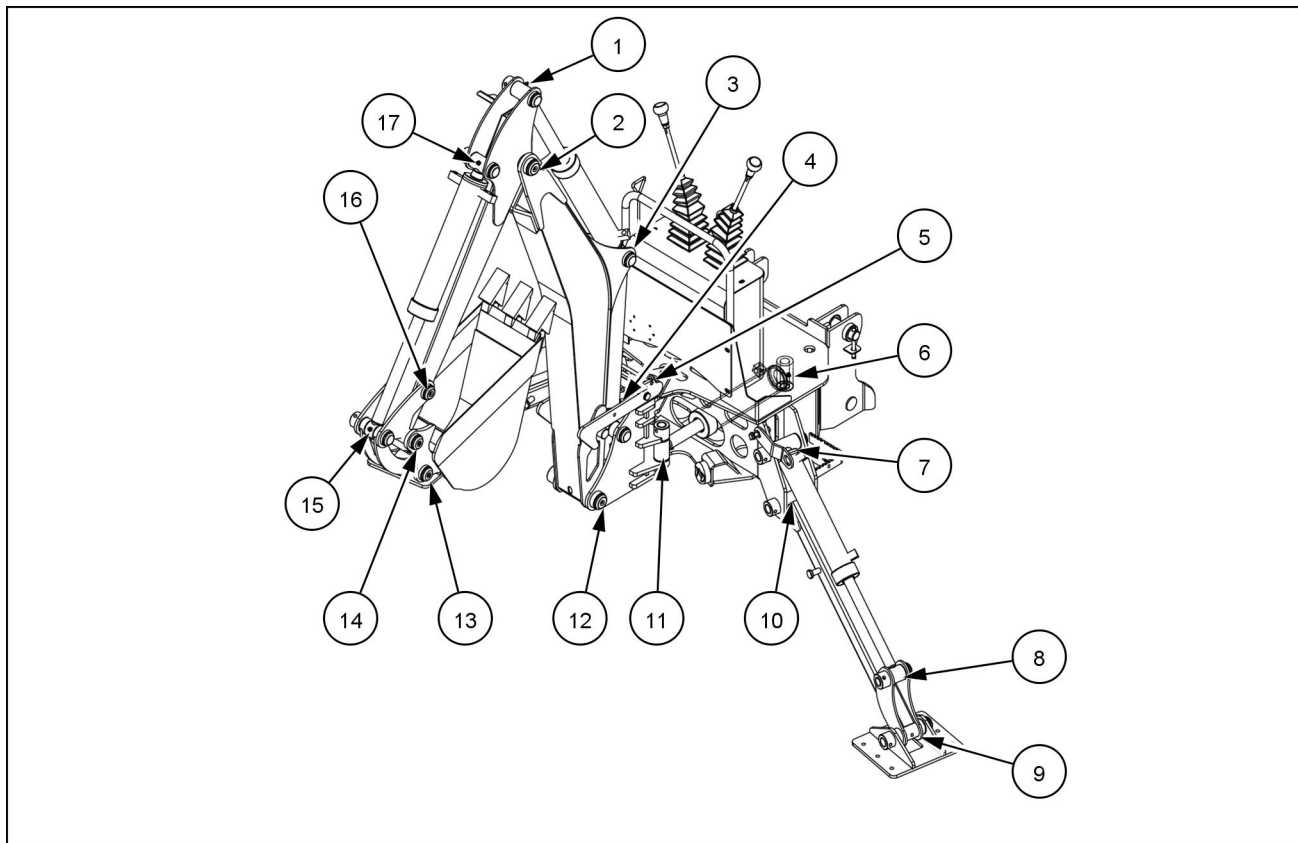
Every 10 hours

Grease fittings - Lubricate

Grease Fittings

1. Wipe dirt from fittings before greasing.
2. Use a grease gun containing clean high grade of **MULTI-PURPOSE GREASE EXTREME PRESSURE AND ANTI-WEAR NLGI 2**.
3. Pump fresh grease into the fitting to lubricate the component and force out any contamination from the grease passage.
4. Wipe off excess grease.
5. Make sure that all the moving parts and grease fittings on the backhoe are lubricated as well as the control levers for the control valve.
6. Lubricate the following grease fittings **(1)** through **(17)** with **MULTI-PURPOSE GREASE EXTREME PRESSURE AND ANTI-WEAR NLGI 2** every 10 operating hours.

NOTE: (7) (8) (9) (10) have grease fittings on the right-hand side as well.



NHIL17CT01828FA 1

As necessary

Hardware - Check

⚠ WARNING

Roll-over hazard!

Never operate the machine with a loose wheel rim or disc. Always tighten nuts and/or bolts to the specified torque value and at the recommended intervals.

Failure to comply could result in death or serious injury.

W0346B

Avoid injury by doing the following:

- At regular intervals, check that the nuts and bolts are tight as per the specified tightening torque.
- Check the pivot pins, washers and holders. Replace missing parts.
- Tighten all the screws and all fasteners to the values specified in the table. Refer to page **6-3** expect in the cases where the tightening torque is specified in the assembly instructions.
- The torques apply to clean, dry threads. Lubricated threads can lead to the joint being tightened too strongly. Damaged or dirty threads can cause torque values to be too low.
- A torque amplifier may be needed when tightening screws to high torque values.
- Tightening torques should be checked immediately after installation, and several times after a short period of use. Incorrect tightening can damage the structure of the backhoe and/or tractor.

Hydraulic hoses - Check

WARNING

Escaping fluid!

Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.

Failure to comply could result in death or serious injury.

W0178A

WARNING

Pressurized hydraulic fluid can penetrate the skin and cause severe injuries.

Tighten all of the connections before starting the engine. If hydraulic fluid has penetrated the skin, seek medical assistance immediately.

Failure to comply could result in death or serious injury.

W0117A

CAUTION

Escaping fluid!

Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight and all components are in good condition. Never use your hand to check for suspected leaks under pressure. Use a piece of cardboard or wood for this purpose. If injured by leaking fluid, see your doctor immediately.

Failure to comply could result in minor or moderate injury.

C0104A

1. The hydraulic hose on the backhoe are particularly exposed and will wear out over time. Check the hydraulic hoses regularly and replace them when they are worn out. Ensure that the hydraulic hoses are not stretched, pinched or broken.

Storage

Storing the unit

Preparation for storage

Prepare the backhoe for storage, by doing the following:

- Apply a thin layer of grease on visible piston rods in order to protect them.

Use after storage

Prepare for use after storage, by doing the following:

- Remove excess lubricant from the piston rods if the backhoe has been stored for long time.
- Check the condition of the hydraulic hoses and replace them as needed. Always release the hydraulic pressure before disconnecting the hoses. Refer to **6-10**.
- Grease all lubrication points. **6-8**.
- Clean and inspect all warning decals. Replace damaged warning decals.
- Tighten loose bolts, nuts and adjusting screws. Refer to **6-9**.
- Work with light loads using gentle movement before using the full capacity of the backhoe.
- Operate all backhoe functions several times to remove air from the system.

7 - TROUBLESHOOTING

Fault code resolution

Troubleshooting - Foreword

The following troubleshooting information will help you in the unlikely event a problem occurs with your equipment.

Reading the troubleshooting chart is easy. The left-hand column will be the problem you may be having with your equipment. The center column explains the possible cause or causes of the problem. The right-hand columns gives you corrective actions you can take to solve the problem. If you feel unsure how to handle the problem with your equipment do not hesitate to contact your NEW HOLLAND dealer for assistance.

Hydraulic systems - Troubleshooting

Problem	Possible Cause	Correction
The machine cannot be operated at the start	Low hydraulic oil level.	Check and top up with hydraulic oil.
	No oil supply.	Connect the tractor to the power outlet.
	Low system pressure from pump.	Check the power outlet. Connect the pump to the power outlet.
	Hydraulic hoses incorrectly connected.	Important! Check that the hoses are correctly installed to the valve.
	Excessive back pressure.	Restriction between the "in" and "out" port and the reservoir.
	Pressure relief valve working irregularly or set too low.	Contact your dealer.
The machine loses power after functioning normally	The hydraulic hoses to/from control valve are "blocked".	Check hoses and couplings for leakage, abrasion and twist.
	Low hydraulic level.	Check and top up with hydraulic oil.
	Loose hydraulic hoses, leaking moving parts or hoses.	Tighten hoses, replace damaged O-rings if leaking. Replace damaged hoses.
	Piston in lifting cylinders leaks.	Contact your dealer.
	Excessive back pressure.	Restriction between the "in" and "out" port and the reservoir.
Lifting and implementing cylinders malfunctioning, other cylinders functioning.	Pressure relief valve working irregularly or set too low.	Contact your dealer.
	Spool does not have full stroke.	The spool motion should be 5/16" or in one direction or 5/8" total.
	Loader control valve or tractor's main relief valve is stuck in the open position.	Contact your dealer.
	Check that the check ball in the anti-cavitation valve is seated properly.	Clean the anti-cavitation valve properly. Be sure that it moves freely and is correctly placed or replace it.
Non-functioning lifting and implement cylinders	Loose hydraulic hoses, leaking moving parts or hoses.	Tighten hoses, replace damaged O-rings if leaking. Replace damaged hoses.
	Limitations to movable parts or hoses.	Replace damaged hoses and movable parts. Check stripped hoses.
	Piston in lifting cylinders leaks.	Contact your dealer.
	Piston unit damaged (does not seal).	Contact your dealer.
	Lifting cylinder piston rods bent	Contact your dealer.
	Worn out or damaged piston seal. External leakage.	Contact your dealer.
	Spool does not have full stroke.	The spool motion should be 5/16" in one direction or 5/8" total.
	Pressure relief valve working irregularly or set too low.	Contact your dealer.

7 - TROUBLESHOOTING

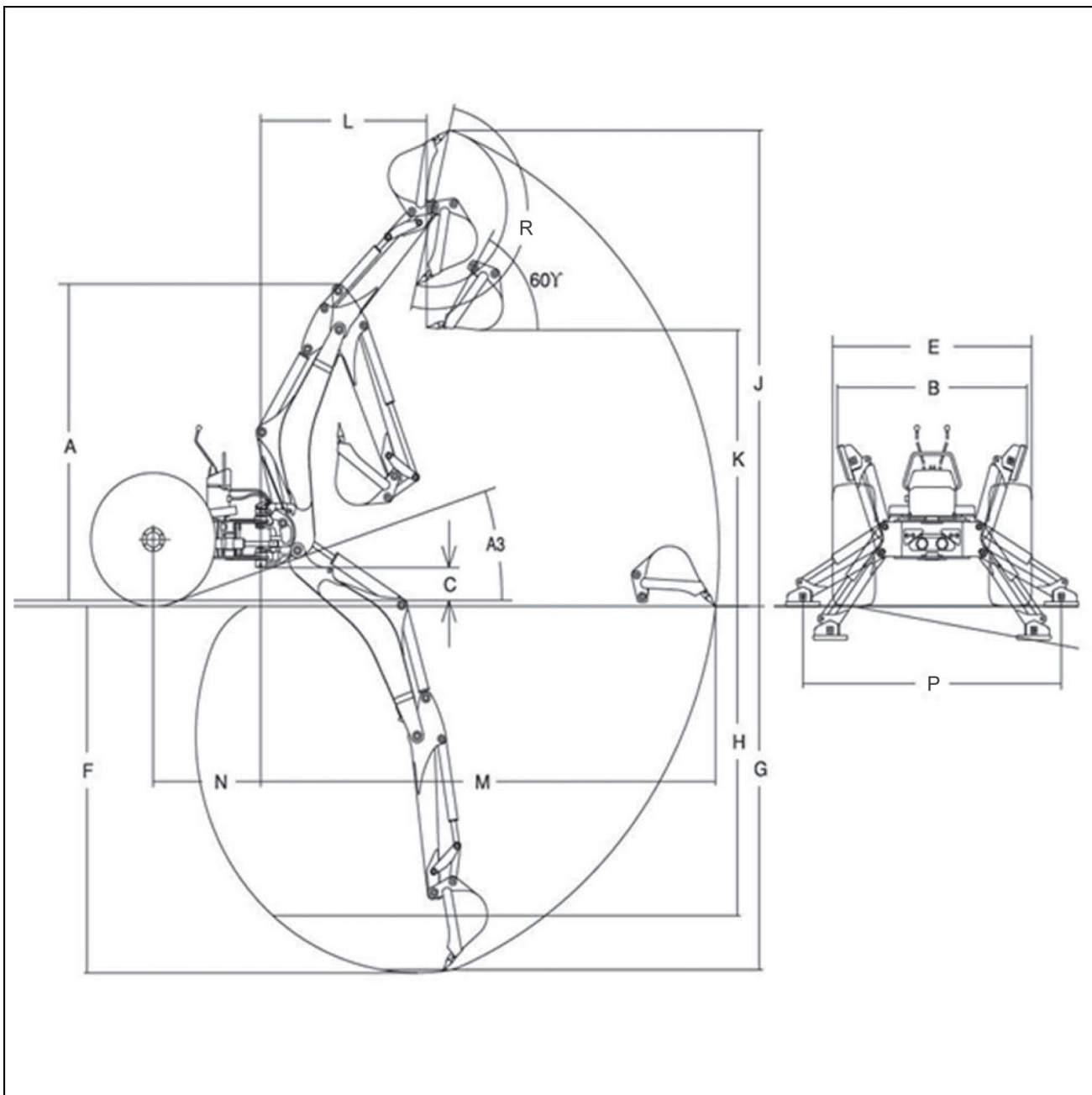
Problem	Possible Cause	Correction
Dampening in swing cylinders malfunctioning	Worn out control valve.	Replace the valve.
	Check that the check ball in the anti-cavitation is seated properly.	Clean the anti-cavitation valve properly. Be sure that it moves freely and is correctly placed or replace it.
	Loose hydraulic hoses, leaking moving parts or hoses.	Tighten hoses, replace damaged O-rings if leaking. Replace damaged hoses.
	Limitations to movable parts or hoses.	Replace damaged hoses and movable parts. Check stripped hoses.
	Piston in lifting cylinders leaks.	Contact your dealer.
	Piston unit damaged (does not seal).	Contact your dealer.
	Worn out or damaged piston seal. External leakage.	Contact your dealer.
	Lifting cylinder piston rods bent.	Contact your dealer.
	Spool does not have full stroke.	The spool motion should be 5/16" in one direction or 5/8" total.
	Pressure relief valve working irregularly or set too low.	Contact your dealer.
	Worn out control valve.	Replace the valve.
	Check that the check ball in the anti-cavitation valve is seated properly.	Clean the anti-cavitation valve properly. Be sure that it moves freely and is correctly placed or replace it.
The swing radius is limited	Piston in lifting cylinders leaks.	Contact your dealer.
	Piston unit damaged (does not seal).	Contact your dealer.
	Lifting cylinder piston rods bent.	Contact your dealer.
	The swinging boom is stuck.	Remove disruptions.
	The cylinder restrictor is blocked.	Remove and clean the restrictors.
	Hydraulic hoses incorrectly connected.	Check and connect hoses correctly.
The machine is functioning slowly	Low hydraulic oil level.	Check and top up with hydraulic oil.
	Low hydraulic oil level. Cold hydraulic oil.	Check and top up with hydraulic oil. Allow the hydraulic oil warm up to working temperature.
	Low system pressure.	Contact your dealer.
	Excessive back pressure.	Restriction between the "in" and "out" port and the reservoir.
	Pressure relief valve working irregularly or set too low.	Contact your dealer.
	The cylinder restrictor is blocked.	Remove and clean the restrictors.
Jerking motions on the cylinder and running noisily.	Low hydraulic oil level.	Check and top up with hydraulic oil.
	Air in the system.	Air out the system by operating the cylinders repeatedly. Check that the oil is not foaming or any other type of leaking has occurred. Fill with oil.
	Low hydraulic oil level. Cold hydraulic oil.	Check and top up with hydraulic oil. Allow the hydraulic oil warm up to working temperature.
	Low system pressure from pump.	Check the power outlet. Connect the pump to the power outlet.
	The cylinder restrictor is blocked.	Remove and clean the restrictors.
Lift, dipperstick or bucket tips when lifted	Piston in lifting cylinders leaks.	Contact your dealer.
	Piston unit damaged (does not seal).	Contact your dealer.
	Worn out control valve.	Replace the valve.
	Check that the safety valve in the control valve is not stuck.	Clean the safety valve thoroughly and make sure it can move freely. If there is a problem, replace the valve.

7 - TROUBLESHOOTING

Problem	Possible Cause	Correction
The load sinks	Loose hydraulic hoses, leaking moving parts or hoses.	Tighten hoses, replace damaged O-rings if leaking. Replace damaged hoses.
	Piston in lifting cylinders leaks.	Contact your dealer.
	Worn out or damaged piston seal. External leakage.	Contact your dealer.
	Loader control valve or tractor's main relief valve is stuck in the open position.	Contact your dealer.
	Worn out control valve.	Replace the valve.
	Check that the safety valve in the control valve is not stuck.	Clean the safety valve thoroughly and make sure it can move freely. If there is a problem, replace the valve.
The cylinder leaks	Piston in lifting cylinders leaks.	Contact your dealer.
	Piston unit damaged (does not seal).	Contact your dealer.
	Lifting cylinder piston rods bent.	Contact your dealer.
	Worn out or damaged piston seal. External leakage.	Contact your dealer.
Problem mounting the valve spool	Paint on the valve spool. Dirty or damaged valve spool.	Clean the valve spool. check that the screws are not too tight.
	Hydraulic oil is leaking through the spool seals in the spool cover.	Replace the spool seals.
	Affected by outside particles.	Clean the system and the valve.
	Control device's links are displaced.	Check the links.
	Centering spring in the cover is broken.	Remove the screws for the valve protector. Operate the valve spool and tighten the screws.
	When replacing the valve, the O-rings should be lubricated, which can cause the spools that are stuck to the vale to twist.	Dismantle and remove the lubricant from around the O-rings.
Spring- centered valve spool does not return to normal position.	Valve spool cap bolts are not tight.	Check the tightening torque.
	Paint on the valve spool. Dirty or damaged valve spool.	Clean the valve spool. Check that the screws are not too tight.
	Hydraulic oil is leaking through the spool seals in the spool cover.	Replace the spool seals.
Control lever overreacts or does not stay in the middle position.	Broken return spring.	Replace the return spring.
	Damaged valve spool.	Contact your dealer.
	Control device's links are displaced.	Check the links.
	Worn out control valve.	Replace the valve.
Damaged piston rod	Loader control valve or tractor's main relief valve is stuck in the open position.	Contact your dealer.
	Excessive hydraulic pressure.	Do not move the tractor unless the backhoe is in the transport position and lifted off the ground.

8 - SPECIFICATIONS

Backhoe specifications



NHIL16CT01584GA 1

NOTICE: See Figure 1 for referencing the following table.

Backhoe		905GBL
Measurement specifications		
A	Transport height	1897.0 mm (74.7 in)
B	Raised stabilizers during transport	1353.0 mm (53.3 in)
G	Max digging depth	1910.0 mm (75.2 in)
K	Load height	1513.0 mm (59.6 in)
M	Max reach	2921.0 mm (115.0 in)
P	Lowered stabilizers	1996 mm (79 in)
R	Bucket rotation	170°
	Swing arch	135°

8 - SPECIFICATIONS

Backhoe		905GBL
Measurement specifications		
	Weight (without bucket)	300 kg (661 lb)
	Bucket's digging force	995 kgf (2194 lbf)
	Dipperstick's digging force	604 kgf (1332 lbf)

Bucket data			
Bucket width	SAE struck capacity	SAE heaped capacity	Bucket weight
9 in	0.021 m ³ (0.730 ft ³)	0.025 m ³ (0.870 ft ³)	20.9 kg (46.0 lb)
12 in	0.029 m ³ (1.010 ft ³)	0.035 m ³ (1.240 ft ³)	25.4 kg (56.0 lb)
16 in	0.039 m ³ (1.380 ft ³)	0.050 m ³ (1.760 ft ³)	29.0 kg (64.0 lb)
18 in	0.044 m ³ (1.560 ft ³)	0.057 m ³ (2.020 ft ³)	34.0 kg (75.0 lb)

CYLINDER				
Cylinder	Diameter cylinder	Diameter rod	Retracted length	Cylinder stroke
Bucket	65.00 mm (2.56 in)	35.00 mm (1.38 in)	535.00 mm (21.06 in)	290.00 mm (11.42 in)
Boom	65.00 mm (2.56 in)	35.00 mm (1.38 in)	575.00 mm (22.64 in)	365.00 mm (14.37 in)
Dipperstick	65.00 mm (2.56 in)	40.00 mm (1.57 in)	524.00 mm (20.63 in)	303.00 mm (11.93 in)
Stablizer	60.00 mm (2.36 in)	35.0 mm (1.38 in)	446.00 mm (17.56 in)	262.00 mm (10.31 in)
Swing	55.00 mm (2.17 in)	30.0 mm (1.2 in)	465.00 mm (18.31 in)	265.00 mm (10.43 in)

9 - FORMS AND DECLARATIONS

Pre-delivery report - Dealer's copy

Dealer name: _____

Dealer address: _____

Model: _____

Product Identification Number (PIN): _____

A thorough pre-delivery inspection is time well spent and can prevent unnecessary after-sale service calls.

After you complete the machine assembly, use the following checklist and operator's manual to thoroughly inspect the unit. Follow all precautionary safety messages when servicing.

Make adjustments or corrections as required, then check the item off the list.

1. SAFETY SIGN, SHIELDS, and OPERATOR'S PLATFORM

Check all the items below to insure they are installed correctly and operating properly.

- ☐ Slow Moving Vehicle (SMV) emblem installed
- ☐ Safety decals installed
- ☐ Operator's seat is properly installed

2. FLUID LEVELS and LUBRICATION

Check and top off as necessary.

- ☐ Lubricate/grease the entire machine
- ☐ Wipe off excess grease or oil
- ☐ Hydraulic fluid level of the attached tractor

3. OPERATIONAL CHECKS

Perform all operating checks with the backhoe hydraulic fluid at normal operating temperature.

- ☐ Operation of the boom lock
- ☐ Operation of the swing lock
- ☐ Operation of the stabilizer locks
- ☐ Operation of the swing
- ☐ Operation of the boom
- ☐ Operation of the dipperstick
- ☐ Operation of the bucket
- ☐ Operation of the stabilizers
- ☐ Control levers function correctly

☐ No fluid or oil leaks

4. Other

Check the following items.

☐ Sub-frame hardware torque

☐ Backhoe to sub-frame hardware torque

The above pre-delivery service was performed and corrective action taken as required.

Dealer Representative's Signature: _____

"I have been instructed in the operation, maintenance, and safety features of this machine as detailed in the operator's manual."

Owner's Signature _____

Date _____

Remove this pre-delivery report and retain for future reference.

Pre-delivery report - Owner's copy

Dealer name: _____

Dealer address: _____

Model: _____

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- ☐ Operation of the swing lock
- ☐ Operation of the stabilizer locks
- ☐ Operation of the swing
- ☐ Operation of the boom
- ☐ Operation of the dipperstick
- ☐ Operation of the bucket
- ☐ Operation of the stabilizers
- ☐ Control levers function correctly
- ☐ No fluid or oil leaks

4. Other

Check the following items.

- ☐ Sub-frame hardware torque
- ☐ Backhoe to sub-frame hardware torque

The above pre-delivery service was performed and corrective action taken as required.

Dealer Representative's Signature: _____

"I have been instructed in the operation, maintenance, and safety features of this machine as detailed in the operator's manual."

Owner's Signature _____

Date _____

Remove this pre-delivery report and retain for future reference.

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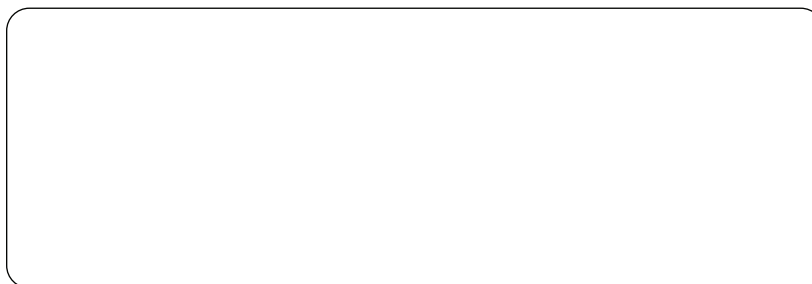
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Dealer's stamp



CNH Industrial America LLC reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold.

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