ORIGINAL INSTRUCTIONS

OPERATOR'S MANUAL

Workmaster™ 25S

Compact Tractor

PIN LSM0W25STP0021943 and after

Part number 92157405
1st edition English
December 2023

NEW HOLLAND

This Notice is provided in accordance with a prior Legal settlement:

⚠ **WARNING:** Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

Contents

Every 8 hours or daily

After the first 50 hours of operation

Every 50 hours

Every 250 hours

Every 500 Hours

Every 1000 hours

Every two years

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.

Your NEW HOLLAND dealer will instruct you in the general operation of your new equipment. (Refer to the 'Delivery Report' at the back of this manual.) Your dealer's staff of factory-trained service technicians will be glad to answer any questions that may arise regarding the operation of your machine. New Holland Top Service is also available. Call 1-866-NEWHLND (1-866-639-4563) or email na.topservice@cnh.com.

Your NEW HOLLAND dealer carries a complete line of genuine NEW HOLLAND service parts. These parts are manufactured and carefully inspected to insure high quality and accurate fitting of any necessary replacement parts. Be prepared to give your dealer the model and product identification number of your new equipment when ordering parts. Locate these numbers now and record them below. Refer to the 'General Information' section of this manual for the location of the model and product identification numbers of your machine.

PLEASE RECORD THE FOLLOWING INFORMATION

Model _____

Product Identification Number (PIN) _____

Engine number _____

Transmission number _____

Purchase date _____

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.

⚠ 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

ATTENTION: *The engine and fuel system on your machine is designed and built to government emission standards. Tampering by dealer, customers, operators, and end users is strictly prohibited by law. Failure to comply could result in government fines, rework charges, invalid warranty, legal action, and possible confiscation of the machine until rework to original condition is completed. Engine service and/or repairs must be done by a certified technician only!*

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

⚠ WARNING

Roll-over hazard!
Always pull from the drawbar. DO NOT attach chains or ropes to the Roll Over Protective Structure (ROPS) for pulling purposes, as the machine could tip over. When driving through door openings or under low overhead objects, make sure there is sufficient clearance for the ROPS.
Failure to comply could result in death or serious injury.

W0463A

Your tractor is designed and made to pull, to carry, and to power a variety of mounted or towed equipment, 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 tractor is designed to perform in combination with a variety of equipment in most crops and conditions, there may be a number of combinations of above parameters, for which there is severe degradation of performance of the tractor and/or its mounted or trailed equipment. If you notice degradation of performance, contact your dealer for assistance. He may have useful information for improvements, or a kit may be available to enhance the performance.

- Do not use the tractor for another purpose than intended by the manufacturer and outlined in this manual.
- Do not use the tractor beyond its limits of terrain gradient and stability as outlined further in this manual. Using the tractor 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 tractor on higher speeds than allowed by the load and the environment. A wet surface or other low adherence conditions may increase the braking distance or result in vehicle instability. Always adapt your traveling speed according to the load of the vehicle and the characteristics of the road.
- Do not use the tractor near or on soft verges of canals and brooks or banks and verges that are undermined by rodents. The tractor may sink sideways and roll-over.
- Do not use the tractor on brittle bridge heads and poor bridge floors. These constructions may collapse and cause roll-over of the tractor. Always check out the condition and carrying capacity of bridges and ramps prior to engage.
- Do not use the tractor without wearing the seat restraint system during activities where roll-over or tip-over hazards exist. The Roll Over Protection Structure (ROPS) cab or ROPS structure will only be fully effective when the driver remains attached to his seat.
- Do not use equipment mounted on the tractor which is not correctly matching and firmly fixed. Such equipment may increase the risk for roll-over and hit the tractor when coming loose. Ensure that the dimensions of the three-point linkage interface of both the tractor and the equipment are matching according to the categories defined in ISO 730. Ensure that the dimensions and speed of the Power Take-Off (PTO) shaft on the tractors are matching those of the equipment.
- Do not use the tractor in combination with equipment, without having consulted the specific operator's manual provided with the equipment. The tractor is a universal tool to carry, tow, and drive a variety of equipment. This manual alone cannot provide you with all the information required for the safe operation of the combination.
- Do not use the tractor beyond its limits of dynamic stability. High speed, abrupt maneuvers, and fast and short cornering will increase the risk of roll-over.
- Do not use the tractor for pulling work, in cases where you do not know whether the load will yield, for instance when pulling stumps. The tractor may flip over when the stump is not yielding.
- Be cautious that the center of gravity of the tractor may increase when loads on the front-end loader or the three-point linkage are raised. In these conditions, the tractor may roll-over earlier than expected.
- Do not step down from the tractor without shutting down the PTO, shifting the transmission to park or neutral and applying the park brake, unless continued PTO operation is required for some equipment, such as pumps or wood chippers. The latter equipment may have an emergency stop device on the equipment itself, as human intervention is needed during operation. But other equipment, engaged and driven by the tractor will have no means to stop the power transmission, other than the PTO clutch of the tractor.
- 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 tractor during work; ask bystanders to leave the field. There is not only the risk to be overrun by the tractor, but objects ejected by some

equipment mounted on the tractor, such as a rotary mower, may cause harm. Stones may be thrown further than the mowed crop. Pay the necessary attention while operating next to public roads or footpaths. Thrown objects can get projected outside the field and hit unprotected people like bikers or pedestrians. Wait to cut the edge of the field till it is clear of bystanders.

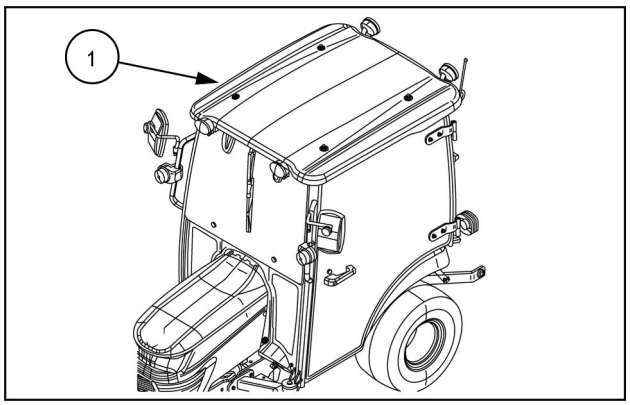
- Do not allow riders on the tractor; do not allow people standing on the access way or step to the cab when the tractor is moving. Your view to the left will be obstructed and a rider risks to fall from the tractor during unforeseen or abrupt movements.
- Always stay clear from implements operating area and especially do not stand between tractor and trailed vehicle either three-point linkage when operating lift controls; ensure no bystanders are near these operating areas.
- Your tractor may be equipped with a number of sensors to control safety functions. Tripping these sensors will result in a safe operation mode. Do not attempt to bypass any function on the tractor. You will be exposed to serious hazards, and moreover, the behavior of the tractor may become unpredictable.
- A tractor has only one operator station and is a one man operated vehicle. Other people on or around the tractor 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 engine and fuel system on your machine is designed and built to government emissions standards. Tampering by dealer, customers, operators and users is strictly prohibited by law. Failure to comply could result in government fines, rework charges, invalid warranty, legal action and possible confiscation of the machine until rework to original condition is completed. Engine service and/or repairs must be done by a certified technician only!
- 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.

Before using the tractor - Cab (If equipped)

Must read and understand this operator's manual carefully and always refer to information and prescriptions outlined in this manual to prevent all potential health and safety risks.

General information for intended use

- This compact tractor with semi-cab is designed and manufactured to carry a load or work with various front/rear mounted or towed equipment for special agricultural use in snowy or cold conditions. Do not use the product for other purposes than intended by the manufacturer and outlined in this manual. Never use this tractor for any forestry application.
- When working with front-end loader, be careful of the center of gravity of the tractor which may be higher than the Roll Over Protective Structure (ROPS) model. Do not use this tractor beyond its limits of terrain gradient and stability as outlined in the operator's manual. Using the tractor beyond these limits may cause a rollover accident, or an overturning accident.
- Protective Structures (Cabin **(1)**):
  - DO NOT weld, drill holes, or attempt to straighten the protective structure arbitrarily.
    This modification can reduce the structural integrity of the structure.
  - Any modification may cause an accident and subsequently cause death or serious injury, and void the warranty.
  - Do not step on the fender for the maintenance of cabin **(1)** roof.



NHIL20CT01086AA 1

⚠ WARNING

Roll-over hazard!
After an accident, fire, tip over, or roll over, a qualified technician MUST replace the Roll-Over Protective Structure (ROPS) before returning the machine to the field or job site operation.
Failure to comply could result in death or serious injury.

W0134A

⚠ WARNING

Misuse hazard!
The cab is an integral part of the machine's structure. DO NOT repair, weld, or straighten the cab. Contact your Dealer and follow their instructions to avoid reducing the structural integrity of the machine.
Failure to comply could result in death or serious injury.

W0045B

⚠ WARNING

Equipment failure could cause accident or injury!
Always fasten the seat belt securely before you operate the machine. Inspect seat belt parts for wear and damage. Replace any and all worn or damaged parts of the seat belt prior to operation.
Failure to comply could result in death or serious injury.

W0046C

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Do not modify or repair ROPS or FOPS in any manner.
Failure to comply could result in death or serious injury.

W1556A

⚠ WARNING

Harmful dust!
Properly maintain filters. Keep cab doors and windows closed. Cab air filter, even if it is carbon, does not protect against all substances (for example, chemical residue on crops). Absolute protection requires product-specific knowledge about potential hazards and how to counter them.
Failure to comply could result in death or serious injury.

W0100B

Genuine Parts

⚠ WARNING

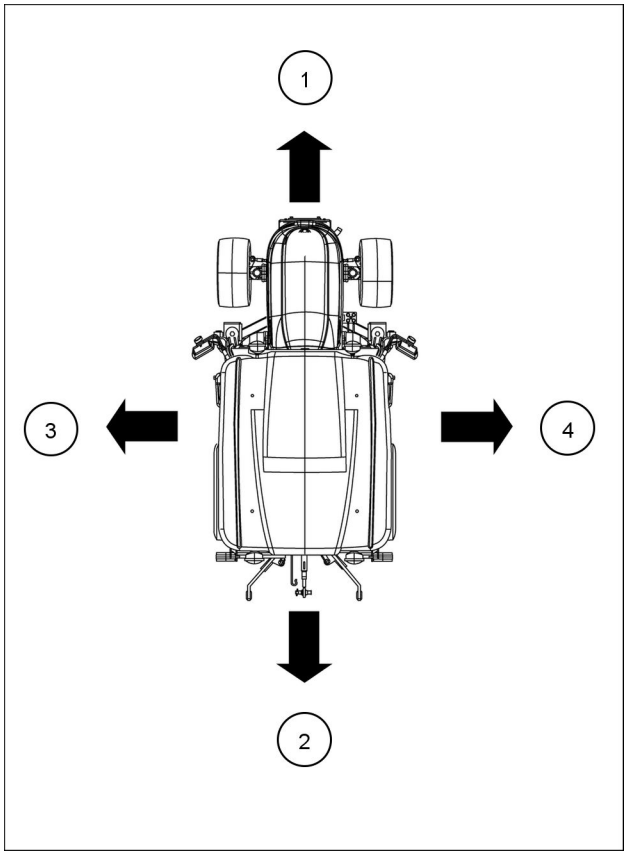
Avoid injury and/or machine damage!
This component has a safety function. Do not attempt to repair it unless you are totally familiar with it.
Only use new genuine parts.
Failure to comply could result in death or serious injury.

W1280A

Orientation

NOTE: *On this equipment, left-hand and right-hand are determined by standing behind the unit, looking in the direction of travel.*

1. Front view
2. Rear view
3. Left-hand view
4. Right-hand view



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Electro-Magnetic Compatibility (EMC)

Interference may arise as a result of add-on equipment that may not necessarily meet the required standards. As such interference can result in serious malfunction of the unit and/or create unsafe situations, you must observe the following:

- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity of electronic components
- The add-on equipment must not interfere with the functioning of the on board electronics

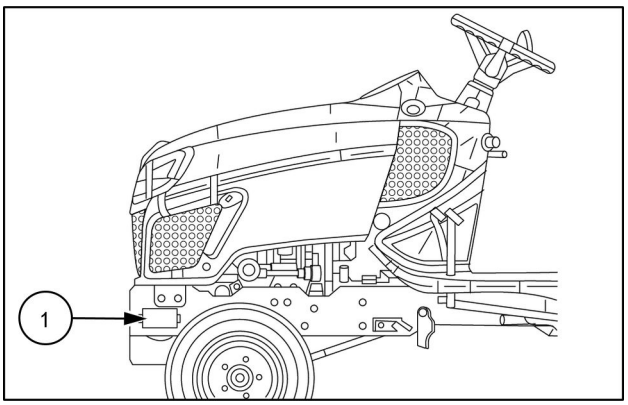
Failure to comply with these rules will render the NEW HOLLAND warranty null and void.

Product Identification Number (PIN)

Chassis number

The Product Identification Number (PIN) plate **(1)** for the chassis is located on the left-hand side of the frame, near the left front wheel.

The numbers on the plate are important in the event your tractor should require future service.

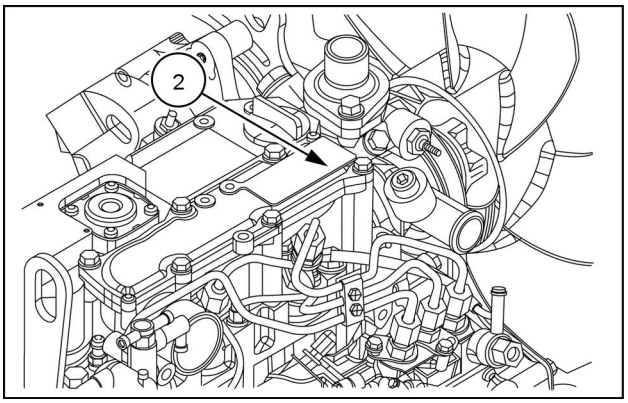


NHIL23CT00591AA 1

Engine number

The Product Identification Number (PIN) plate **(2)**, for the engine is located on the forward end of the valve cover.

The numbers on the plate are important in the event your engine should require future service.

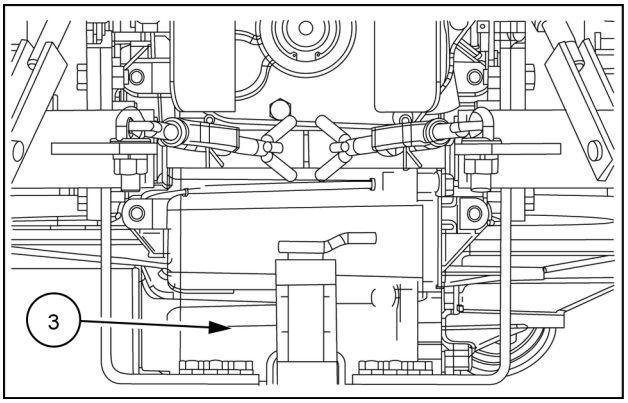


NHIL17CT01119AA 2

Transmission number

The Product Identification Number (PIN) plate **(3)**, for the transmission is located below the Power Take-Off (PTO) shield.

The numbers on the plate are important in the event your transmission should require future service.

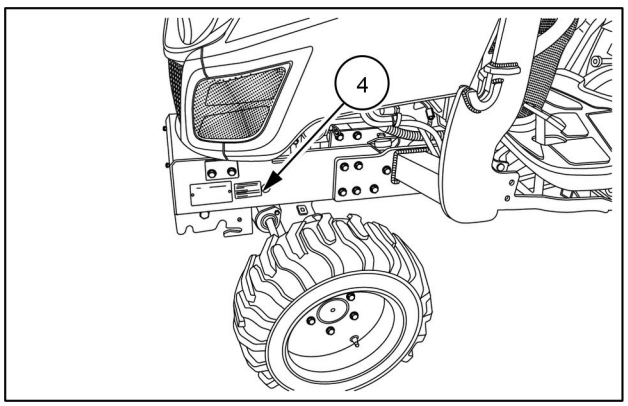


NHIL17CT01120AA 3

Emissions plate

The emissions information plate **(4)** is located to the rear of the chassis PIN plate.

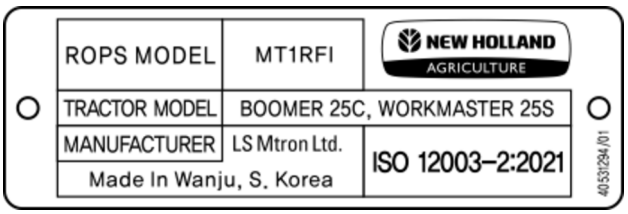
The plate contains important emissions related information.



NHIL17CT01347AA 4

Roll Over Protective Structure (ROPS) information plate with cab (If equipped) and loader (If equipped)

The loader mount information plate **(5)** is located on the right-hand side loader tower.



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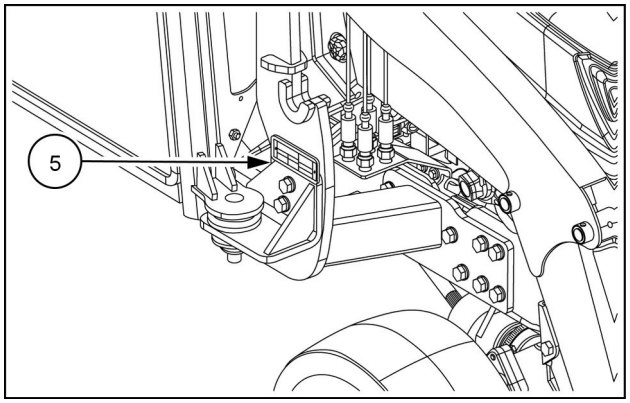
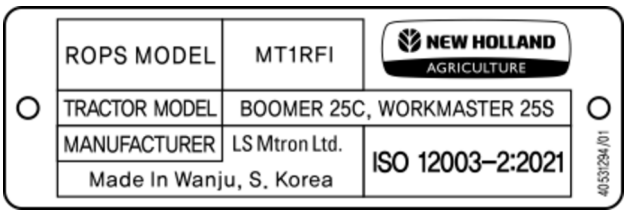


NHIL21CT00074AA 6

Roll Over Protective Structure (ROPS) information plate with cab (If equipped) without loader

The cab mount information plate **(6)** (If equipped) is located on the right-hand side cab mount.



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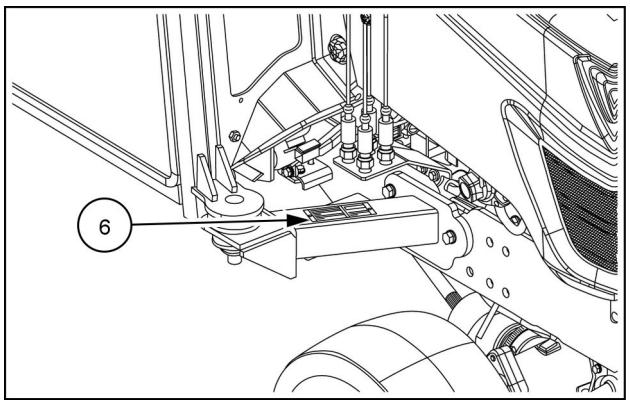
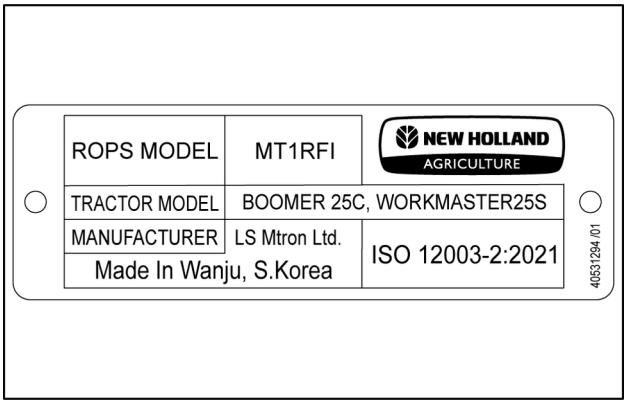


NHIL21CT00075AA 8

Roll Over Protective Structure (ROPS) information plate

The Roll Over Protective Structure (ROPS) information plate **(7)** is located on the left-hand side of the cross plate.



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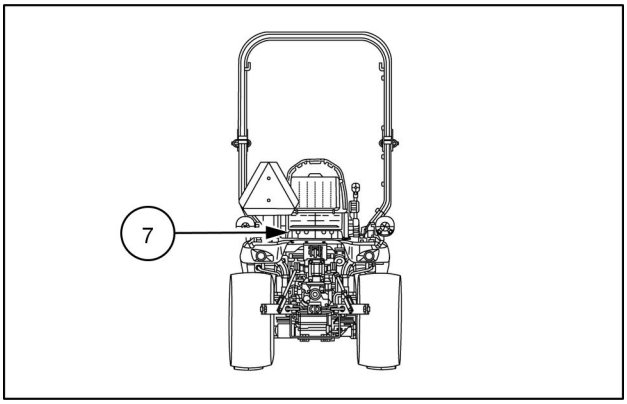

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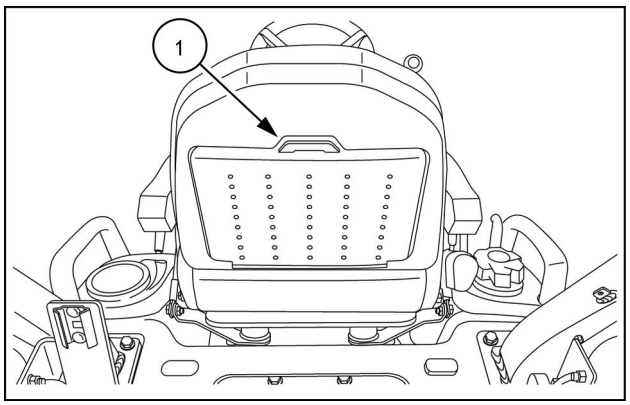
Operator's manual storage on the machine

The operator’s manual must be stored in a compartment **(1)** located in the rear of the operator’s seat back and be kept available for use by all operators.



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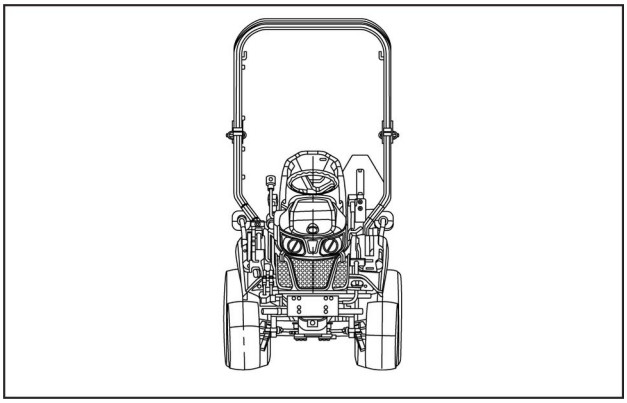
Machine orientation

NOTE: *On this equipment, left–hand and right-hand are determined by standing behind the unit, looking in the direction of travel.*

Front view



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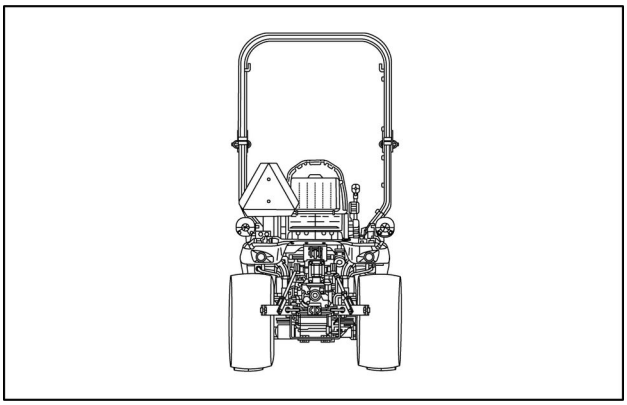
Rear view



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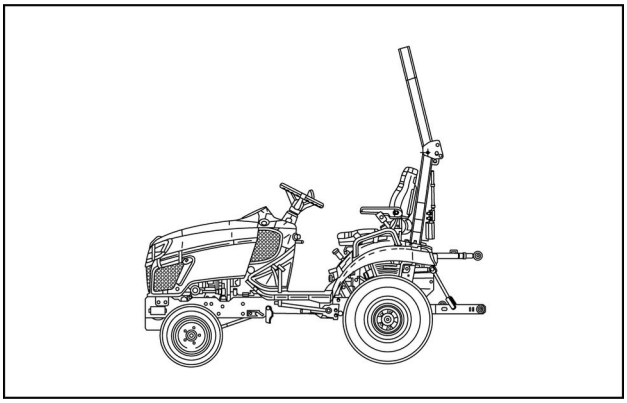
Left-hand view



NHIL23CT00412AA 3

Note to the owner

YANMAR CO., LTD. EMISSION CONTROL SYSTEM WARRANTY - USA ONLY

Your Warranty Rights and Obligations:

The California Air Resources Board (CARB), the United State Environmental Protection Agency (EPA) and YANMAR CO., LTD. hereafter referred to as YANMAR, are pleased to explain the emission control system warranty on your 2016, 2017, or 2018 model year industrial compression-ignition engine. California-certified, new off-road compression-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In the remaining forty nine (49) states, new non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions standards. YANMAR must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system, the air induction system, the electronic control system, EGR (Exhaust Gas Recirculation) system and the diesel particulate filter system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, YANMAR will repair your off-road compression-ignition engine at no charge to you including diagnosis, parts and labor.

Manufacturer's Warranty Period:

2016, 2017, or 2018 model year off-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is found to be defective during the applicable warranty period, the part will be repaired or replaced by YANMAR.

If your engine is certified as	And its maximum power is	And its rated speed is	Then its warranty period is
Variable speed or constant speed	Less than **19.0 kW** (**25.8 Hp**)	Any speed	1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	**19.0 – 37.0 kW** (**25.8 – 50.3 Hp**)	**3000 RPM** or higher	1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	**19.0 – 37.0 kW** (**25.8 – 50.3 Hp**)	Less than **3000 RPM**	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed	**19.0 – 37.0 kW** (**25.8 – 50.3 Hp**)	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed or constant speed	Greater than **37.0 kW** (**50.3 Hp**)	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.

Warranty Coverage:

This warranty is transferable to each subsequent purchaser for the duration of the warranty period. YANMAR recommends that repair or replacement of any warranted part will be performed at an authorized YANMAR dealer.

Warranted parts not scheduled for replacement as required maintenance in the owner's manual shall be warranted for the warranty period. Warranted parts scheduled for replacement as required maintenance in the owner's manual are warranted for the period of time prior to the first scheduled replacement. Any warranted parts scheduled for replacement as required maintenance that are repaired or replaced under warranty shall be warranted for the remaining period of time prior to the first scheduled replacement. Any part not scheduled for replacement that is repaired or replaced under warranty shall be warranted for the remaining warranty period.

During the warranty period, YANMAR is liable for damages to other engine components caused by the failure of any warranted part during the warranty period.

Any replacement part which is functionally identical to the original equipment part in all respects may be used in the maintenance or repair of your engine, and shall not reduce YANMAR's warranty obligations. Add-on or modified parts that are not exempted may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty.

Warranted Parts:

This warranty covers engine components that are a part of the emission control system of the engine as delivered by YANMAR to the original retail purchaser. Such components may include the following:

A. Fuel injection system (including Altitude compensation system)

B. Cold start enrichment system

C. Intake manifold and Air intake throttle valve

D. Turbocharger systems

E. Exhaust manifold and exhaust throttle valve

F. Positive crankcase ventilation system

G. Charge Air Cooling systems (only 3TNV86CHT, 4TNV86CHT, 4TNV94CHT)

H. Exhaust Gas Recirculation (EGR) systems

I. Exhaust gas after treatment (diesel particulate filter system)

J. Electronic Control units, sensors, solenoids and wiring harnesses used in above systems

K. Hoses, belts, connectors and assemblies used in above systems

L. Emission Control Information Labels

Since emissions related parts may vary slightly between models, certain models may not contain all of these parts and other models may contain the functional equivalents.

Exclusions:

Failures other than those arising from defects in material or workmanship are not covered by this warranty. The warranty does not extend to the following: malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, or use of non-recommended fuels and lubricating oils; accident-caused damage and replacement of expendable items made in connection with scheduled maintenance. YANMAR disclaims any responsibility for incidental or consequential such as loss of time, inconvenience, loss of use of equipment/engine or commercial loss.

Owner's Warranty Responsibilities:

As the off-road compression-ignition engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. YANMAR recommends that you retain all documentation, including receipts, covering maintenance on your off-road compression-ignition engine, but YANMAR cannot deny warranty solely for the lack of receipts, or for your failure to ensure the performance of all scheduled maintenance.

YANMAR may deny your warranty coverage if your off-road compression-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with CARB and EPA emissions requirements.

You are responsible for initiating the warranty process. You are responsible for presenting your engine to an authorized YANMAR dealer or distributor as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible. If you have any questions regarding your warranty rights and responsibilities, or would like information on the nearest YANMAR dealer or authorized service center, you should contact YANMAR America Corporation.

Website: https://www.yanmar.com
E-mail: CS_support@yanmar.com
Toll free telephone number: 1-800-872-2867, 1-855-416-7091

What the Emergency Stationary Type Engine Owner must Do:

The engines for emergency stationary type generators certified by Federal Law (40 CFR Part60) are limited to emergency use only, and the operation for maintenance checks and verification test for functions is required. The total operating hours for maintenance and verification test for functions should not exceed 100 hours per year. However, there is no limitation on the operating hours for emergency use. Keep a log of the number of hours the engine is operated for both emergency use and non-emergency use. Also, note the reason for the operation.

2 - SAFETY INFORMATION

Safety rules and signal word definitions

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.

   W0113A

   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.

⚠ General battery safety ⚠

Always wear eye protection when you work with batteries.

Do not create sparks or have open flame near a battery.

Ventilate the area when you charge a battery or use a battery in an enclosed area.

Disconnect the negative (-) terminal first and reconnect the negative (-) terminal last.

When you weld on the machine, disconnect both terminals of the battery.

Do not weld, grind, or smoke near a battery.

When you use auxiliary batteries or connect jumper cables to start the engine, use the procedure shown in the operator's manual. Do not short across terminals.

Follow the manufacturer's instructions when you store and handle batteries.

Battery post, terminals, and related accessories contain lead and lead compounds. Wash hands after handling. This is a California Proposition 65 warning.

Battery acid causes burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.

Keep out of reach of children and other unauthorized persons.

⚠ Operator presence system ⚠

Your machine is equipped with an operator presence system to prevent the use of some features while the operator is not in the operator's seat.

Never disconnect or bypass the operator presence system.

If the operator presence system is inoperable, then it must be repaired.

See page **6-9** for more information on how the operator presence system functions on your tractor.

⚠ Power Take-Off (PTO) ⚠

PTO-driven machinery can cause death or serious injury. Before you work on or near the PTO shaft or service or clear the driven machine, put the PTO lever in the disengage position, stop the engine, and remove the key.

Whenever a PTO is in operation, a guard must be in place to prevent death or injury to the operator or bystanders.

When doing stationary PTO work, keep clear of all moving parts and make sure that appropriate guards are in place.

Never use a spline adaptor:

- Match the right tractor PTO spline and speed with the PTO driveshaft provided with an implement. This will assure proper geometry and operating speed.
- Never operate **540 RPM** implements at **1000 RPM**.
- Never operate **1000 RPM** implements at **540 RPM**.
- Use of PTO adaptors will void the warranty of the driveshaft, and the PTO drive train of the machine and implement.
- For correct hitch geometry, refer to the operator's manual for each implement you connect.

⚠ Reflectors and warning lights ⚠

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

⚠ Seat belts ⚠

Seat belts must be worn at all times.

Seat belt inspection and maintenance:

- Keep seat belts in good condition.
- Keep sharp edges and items than can cause damage away from the belts.
- Periodically check belts, buckles, retractors, tethers, slack take-up system, and mounting bolts for damage and wear.
- Replace all parts that have damage or wear.
- Replace belts that have cuts that can make the belt weak.
- Check that bolts are tight on the seat bracket or mounting.
- If the belt is attached to the seat, make sure that the seat or seat brackets are mounted securely.
- Keep seat belts clean and dry.
- Clean belts only with soap solution and warm water.
- Do not use bleach or dye on the belts because this can make the belts weak.

⚠ 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 cab 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 or 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 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.

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.

Do not operate tag

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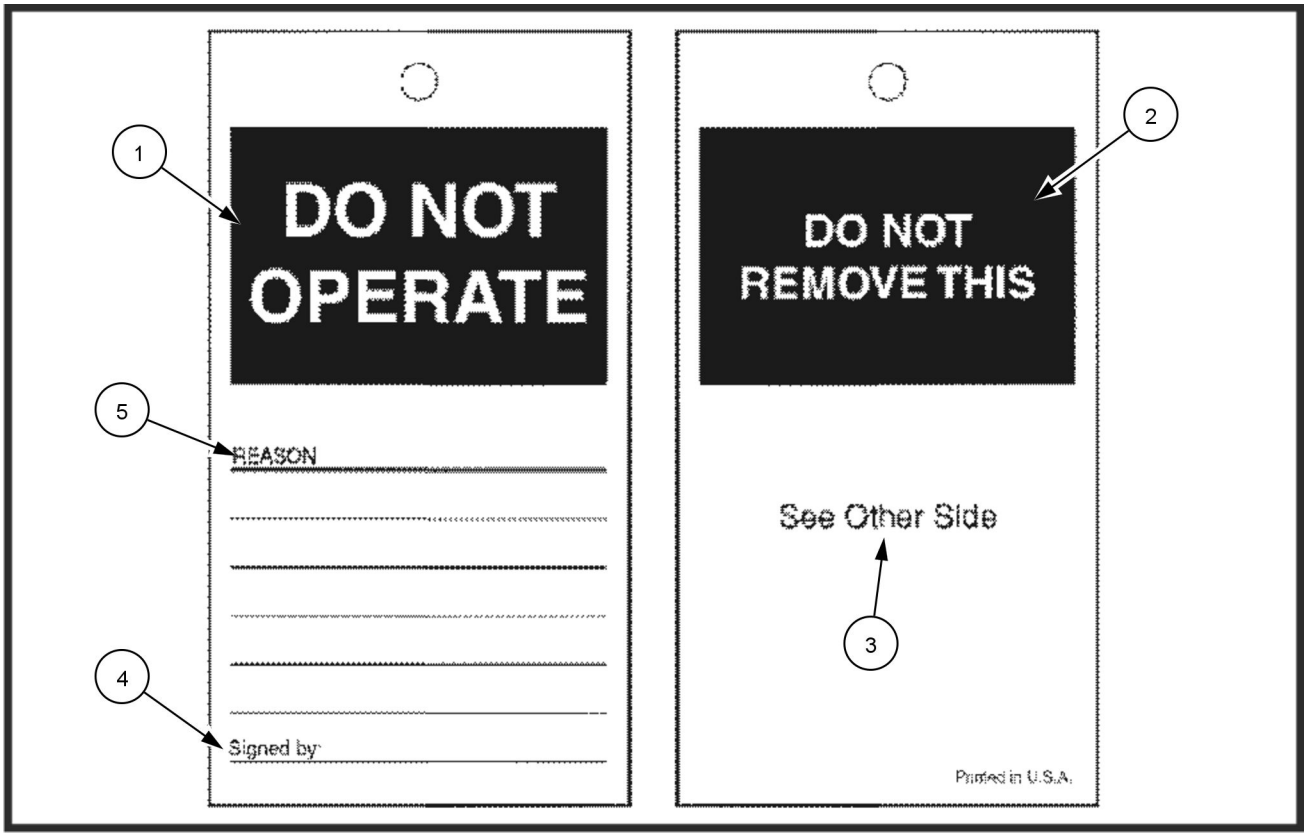
Before you service the machine, put a DO NOT OPERATE tag on the instrument panel.



321_4614 1

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.

NHIL14GEN0038AA 1

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 as amended by CONAMA Resolution 424/2010 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 - Roll Over Protective System (ROPS)

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.

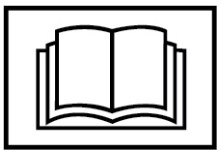
Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and gentle detergent.

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

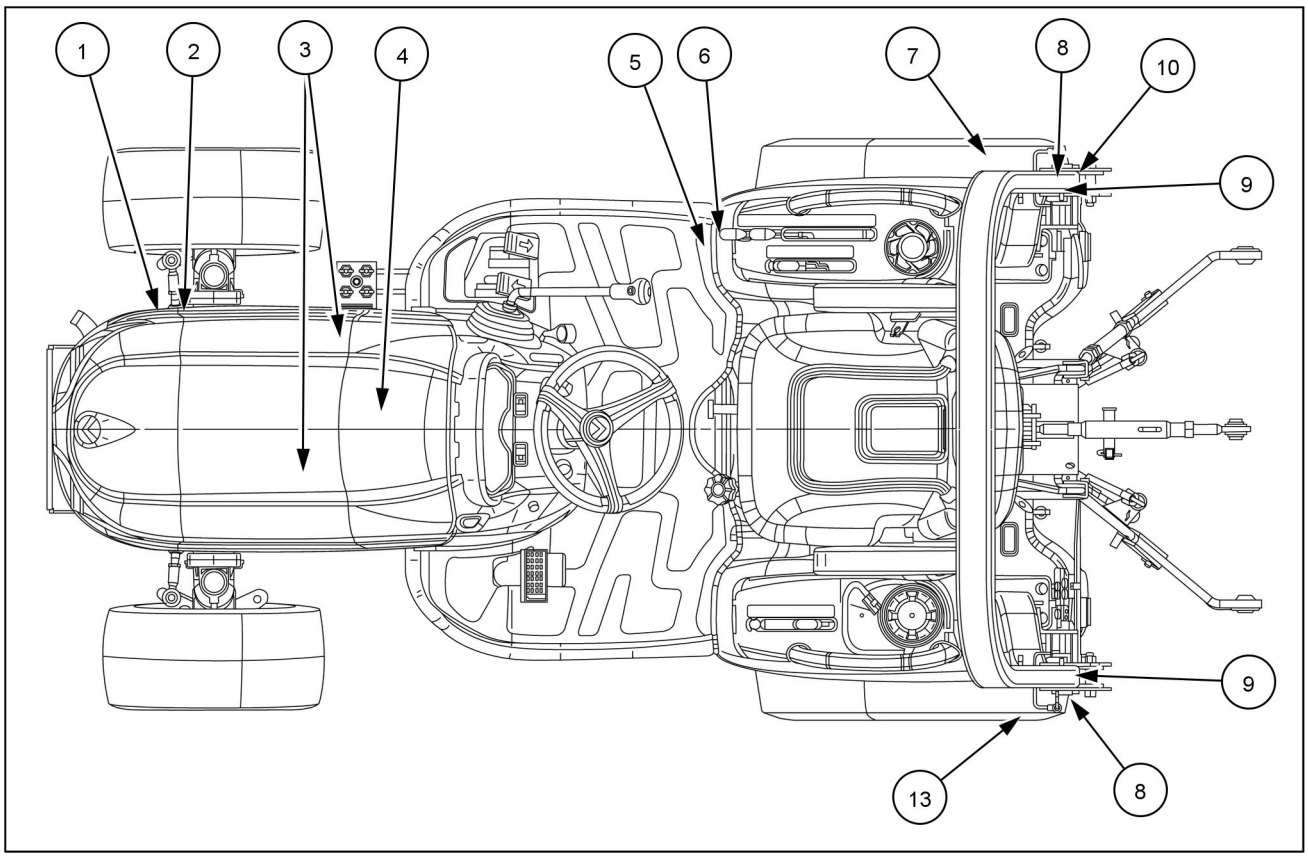
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

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.



NHIL23CT00510FA 1

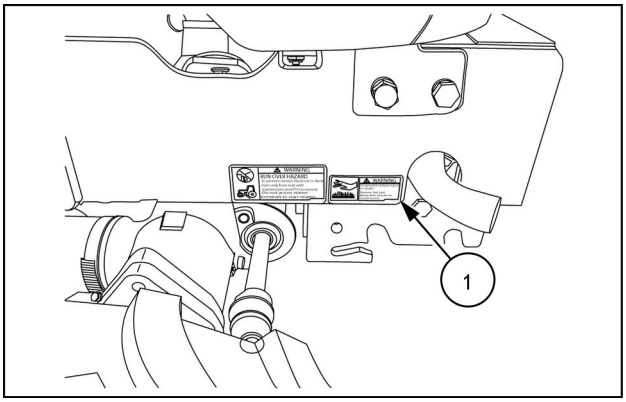
(1)
WARNING
To prevent serious injury or death.
Beware hot part.
Keep clear of muffler to avoid injury.
Failure to comply could result in minor or moderate injury.

-

Quantity: 1
English Part Number: MT40239636

40239636 2

(1) Location: On the front engine frame, right-hand side.



NHIL17CT01362AA 3

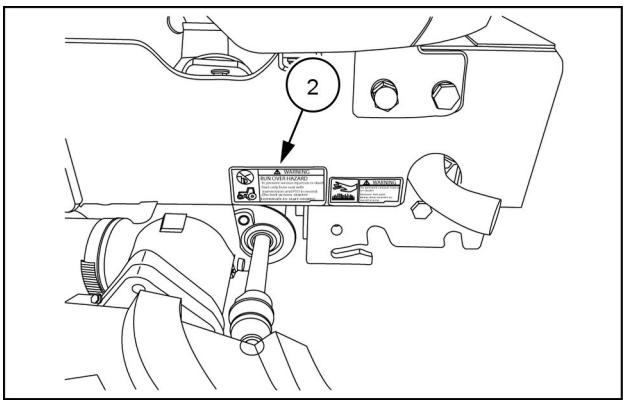
(2)
WARNING
RUN OVER HAZARD
To prevent serious injury or death:

- **Start only from seat with transmission and PTO in neutral**
- **Do not short across starter terminals to start engine.**

Failure to comply could result in death or serious injury.
Quantity: 1
English Part Number: MT40195651

40195651 4

(2) Location: On the front engine frame, right-hand side.



NHIL17CT01362AA 5

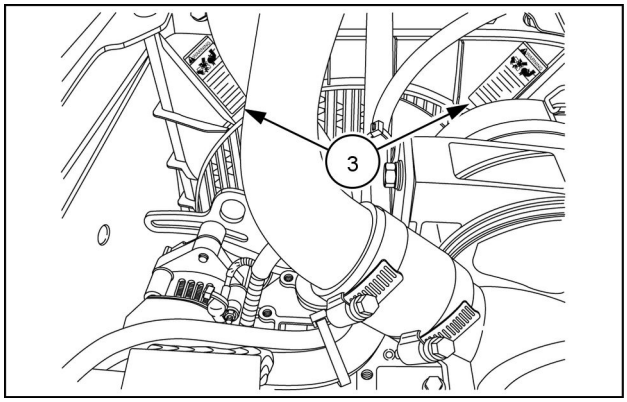
(3)
WARNING
Keep hands and clothing away from the rotating fan and belts.
Contact with moving parts may cause loss of fingers or a hand.
Failure to comply could result in death or serious injury.

•

Quantity: 2
English Part Number: MT40239638

40239638 6

(3) Location: On the left-hand and right-hand sides of the fan shroud.



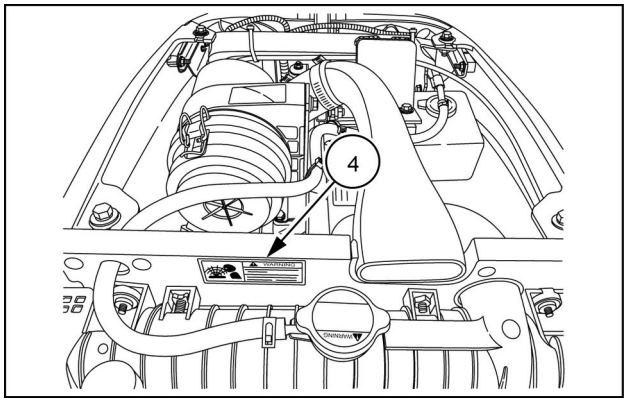
NHIL17CT01361AA 7

(4)
WARNING
To prevent serious injury or death.
High pressure steam and hot water.
Remove filler cap with extreme care.
Failure to comply could result in death or serious injury.

Quantity: 1
English Part Number: MT40297729

40297729 8

(4) Location: On the radiator support bracket .



NHIL17CT01360AA 9

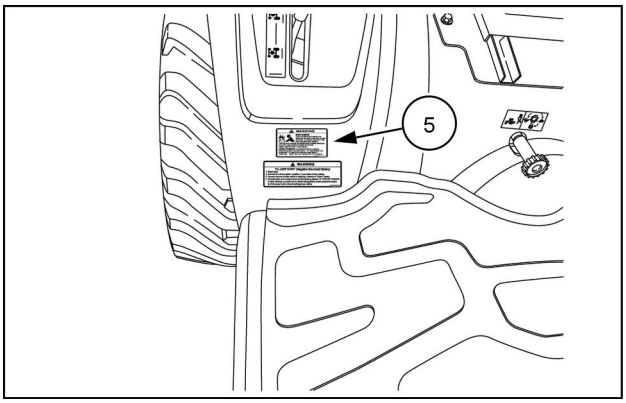
(5)
WARNING
EXPLOSIVE
Can cause blindness or severe injury, protect eyes. Sparks, flames, cigarettes can cause explosion. Tools and cable clamps can cause sparks. Do not use without instruction. Keep vents tight and level. ACID-POISON causes severe burns. Contains sulphuric acid. In the event of contact flush with water and see a doctor. Keep out of reach of children. Failure to comply could result in death or serious injury.

•

Quantity: 1
English Part Number: MT40239639

40239639 10

(5) Location: On the fender right-hand side.



NHIL17CT01373AA 11

(6)

WARNING

- **TO JUMP START (Negative Grounded Battery)**

1. Shield eyes.

2. Connect end of one cable to positive (+) terminals of each battery.

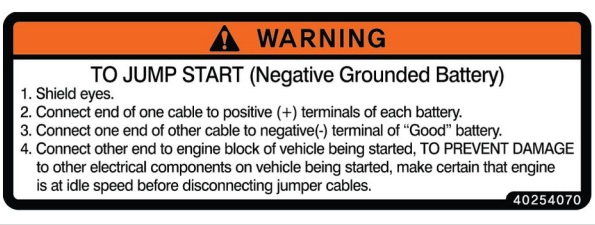
3. Connect one end of other cable to negative (-) terminal of “Good” battery.

4. Connect other end to engine block of vehicle being started, TO PREVENT DAMAGE to other electrical components on vehicle being started, make certain that engine is at idle speed before disconnecting jumper cables.

Failure to comply could result in death or serious injury.

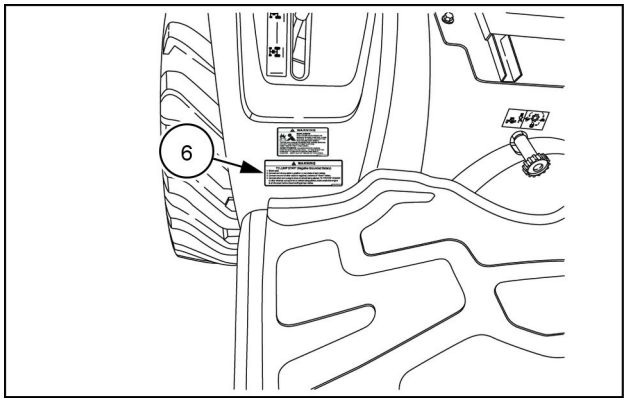
Quantity: 1

English Part Number: MT40254070



40254070 12

(6) Location: On the fender right-hand side.

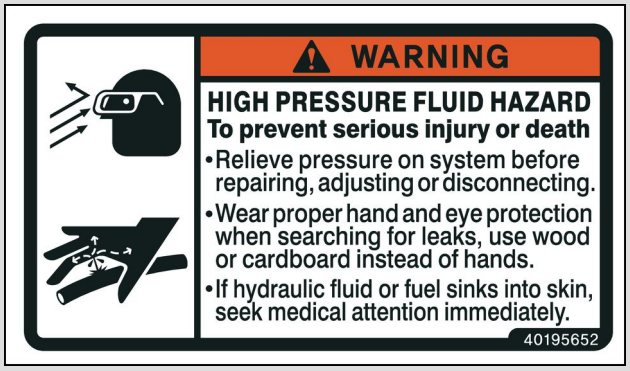


NHIL17CT01373AA 13

(7)
WARNING
HIGH PRESSURE FLUID HAZARD
To prevent serious injury or death

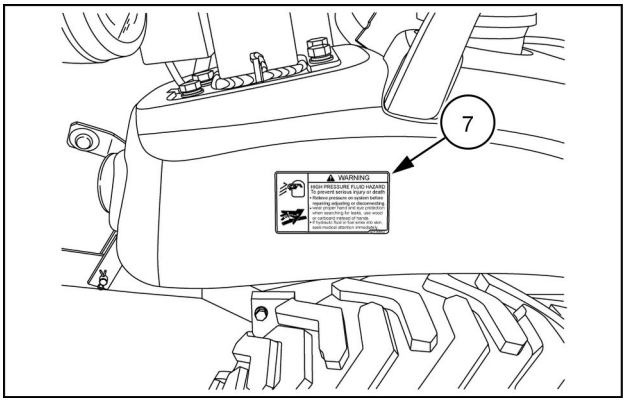
- **Relieve pressure on system before repairing, adjusting or disconnecting.**
- **Wear proper hand and eye protection when searching for leaks, use wood or cardboard instead of hands.**
- **If hydraulic fluid or fuel sinks into skin, seek medical attention immediately.**

Quantity: 1
English Part Number: MT40195652



40195652 14

(7) Location: On the side of the right-hand fender.



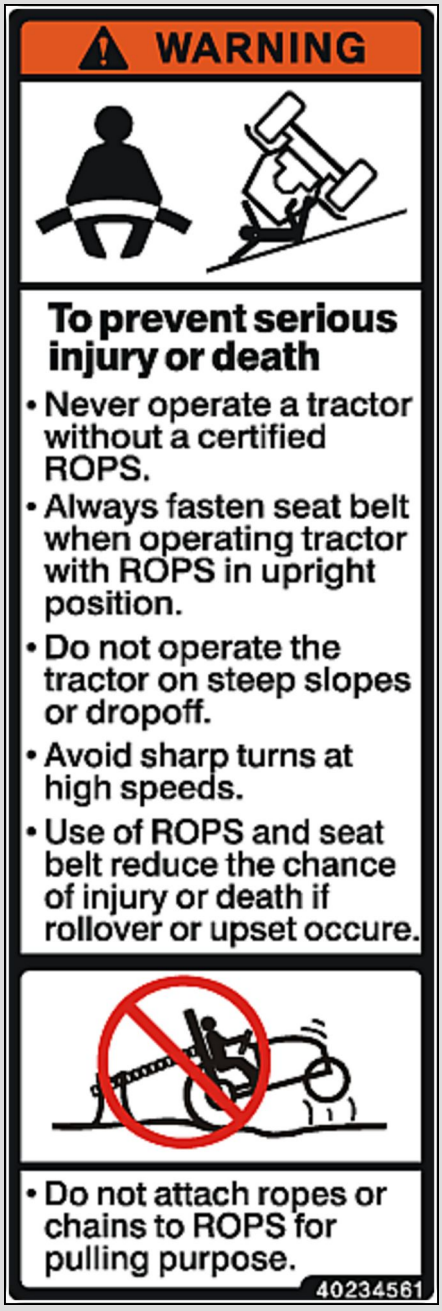
NHIL17CT01363AA 15

(8)
WARNING
To prevent serious injury or death:

- **Never operate a tractor without a certified ROPS.**
- **Always fasten seat belt when operating tractor with ROPS in upright position.**
- **Do not operate the tractor on steep slopes or drop-off.**
- **Avoid sharp turns at high speeds.**
- **Use of ROPS and seat belt reduce the chance of injury or death if rollover or upset occur.**
- **Do not attach ropes or chains to ROPS for pulling purpose.**

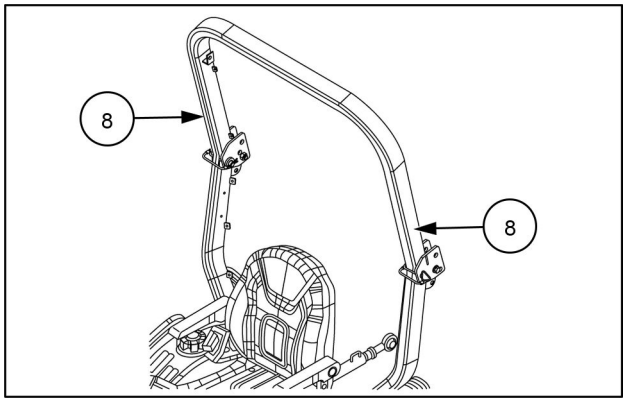
Failure to comply could result in death or serious injury.

Quantity: 2
English Part Number: MT40234561



40234561 16

(8) Location: On the left-hand and right-hand side of the upper Roll-Over Protective Structure (ROPS) frame.



NHIL23CT00409AA 17

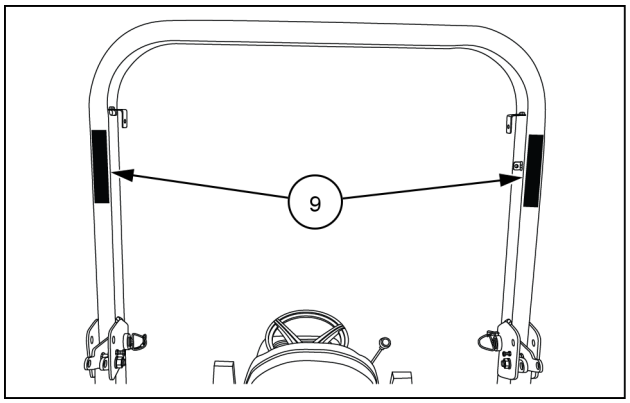
(9)
Reflective red tape

- **Quantity: 2**

English Part Number: MT40310801

86547781_RED 18

(9) Location: On both rear sides of the Roll Over Protective Structure (ROPS).



NHIL17CT00192AA 19

(10)
Multiple Safety Cautions and Warnings

CAUTION

- **PTO selector & lever must be in the “OFF” position to start engine.**
- **Do not operate on hard surfaces with 4WD engaged.**

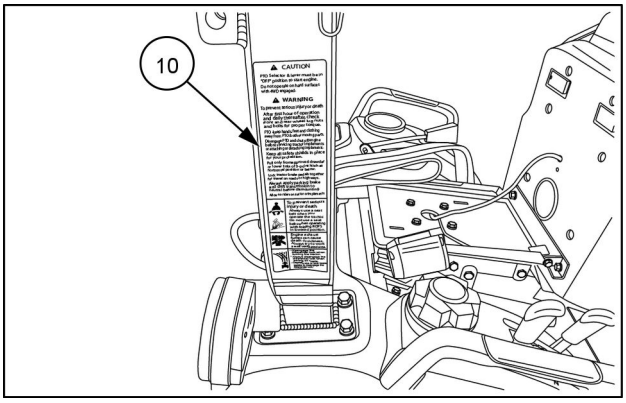
WARNING
To prevent serious injury or death:

- **After first hour of operation and daily thereafter, check front and rear wheel lug nuts and bolts for proper torque.**
- **PTO-keep hands. feet and clothing away from PTO & other moving parts.**
- **Disengage PTO and shut off engine before servicing tractor or implements or attaching or detaching implements.**
- **Keep all safety shields in place for your protection.**
- **Pull only from approved drawbar or lower links of 3-point hitch at horizontal position or below.**
- **Lock tractor brake pedals together for travel on roads or highways.**
- **Always apply parking brake and shift transmission to neutral before dismounting.**
- **Always use a seat belt when you operate the tractor.**
- **Allow no riders on tractor or implements.**
- **Always use a seat belt when you operate the tractor.**

- **Do not use a seat belt when operating with folding ROPS in lowered position.**
- **Engine exhaust fumes can cause death or sickness. Always try to work in a well ventilated area.**
- **Disengage the differential lock when turning the tractor. Always disengage the differential lock when driving on roads.**
- **Depress one or both brake pedals to disengage the differential lock.**

Failure to comply could result in death or serious injury.
Quantity: 1
English Part Number: MT40360330

(10) Location: On the right-hand side of the lower Roll-Over Protective Structure (ROPS) frame.



NHIL17CT00523AA 21

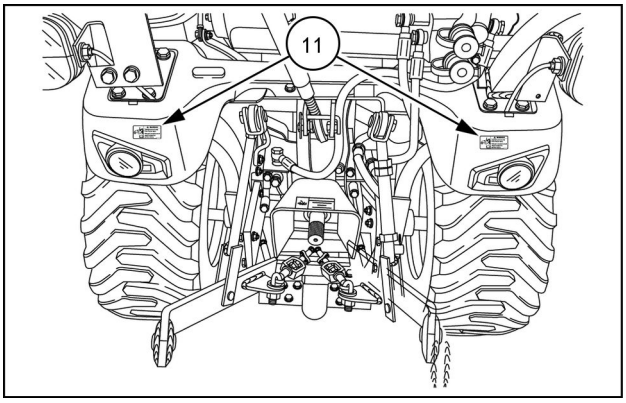
(11)
WARNING
Operate control only from tractor seat.
Failure to comply could result in death or serious injury.

-

Quantity: 2
English Part Number: MT40229994

40229994 22

(11) Location: On the rear of the left-hand and right-hand fenders.



NHIL17CT01368AA 23

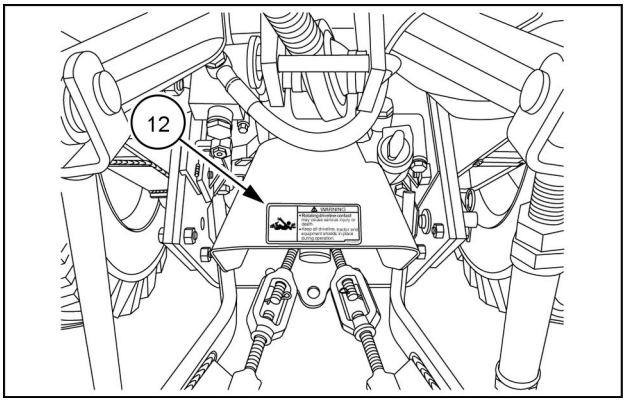
(12)
WARNING

- **Rotating driveline contact may cause serious injury or death.**
- **Keep all driveline, tractor and equipment shields in place during operation.**

Quantity: 1
English Part Number: MT40195650

40195650 24

(12) Location: On top of the rear PTO guard.



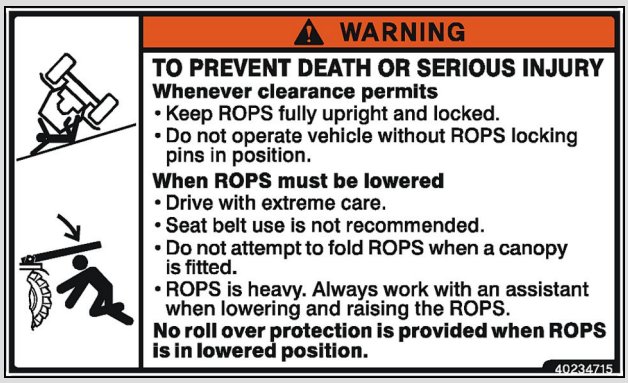
NHIL17CT01374AA 25

(13)
WARNING
TO PREVENT DEATH OR SERIOUS INJURY
Whenever clearance permits

- **Keep ROPS fully upright and locked**
- **Do not operate vehicle without ROPS locking pins in position**
- **When ROPS must be lowered:**
  - **Drive with extreme care.**
  - **Seat belt use is not recommended.**
  - **Do not attempt to fold ROPS when a canopy is fitted.**
  - **ROPS is heavy. Always work with an assistant when lowering and raising the ROPS.**

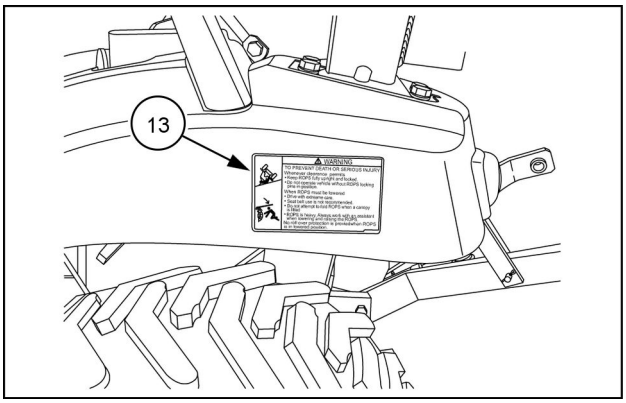
No roll over protection is provided when ROPS is in lowered position
Failure to comply could result in death or serious injury

Quantity: 1
English Part Number: MT40234715



40234715 26

(13) Location: On the side of the left-hand fender.



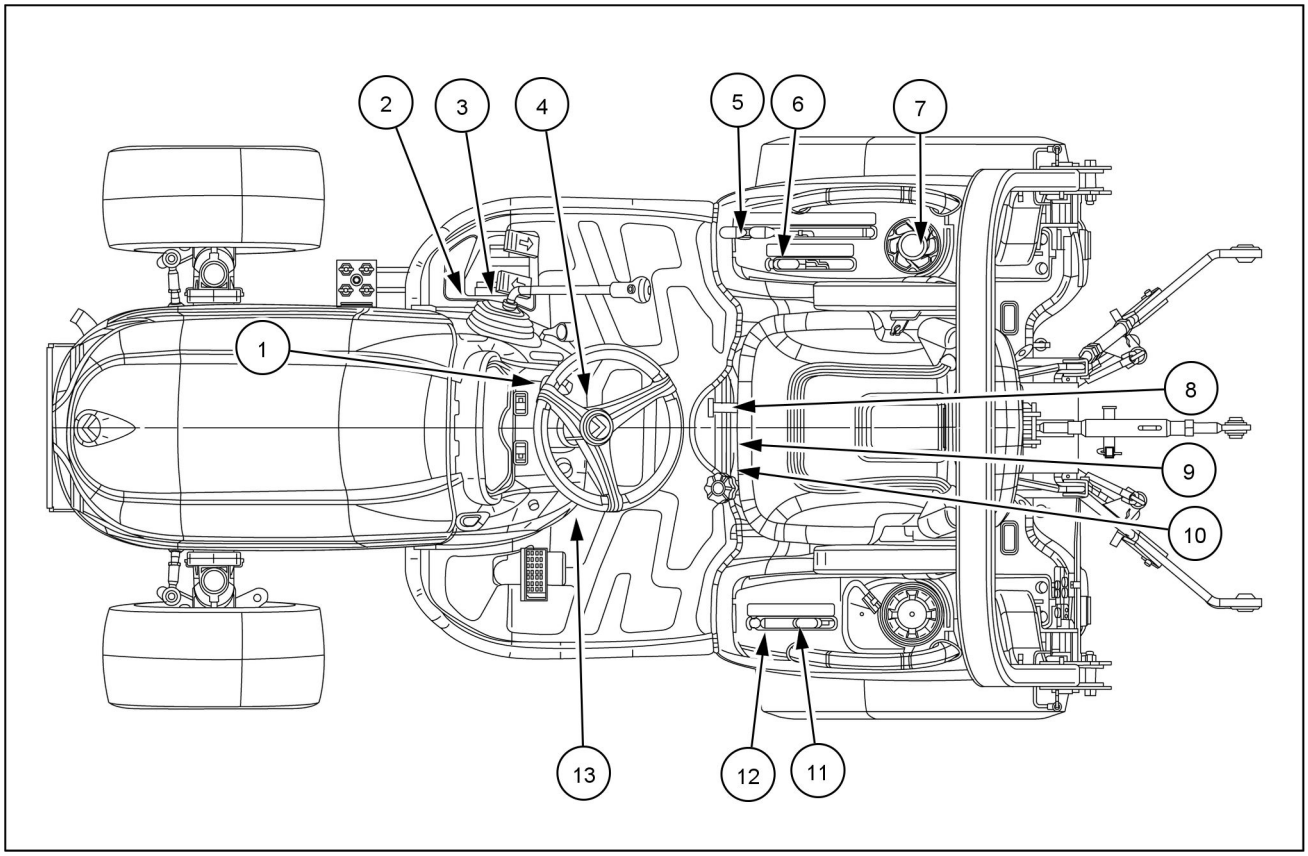
NHIL17CT01364AA 27

Instructional signs - Roll Over Protective Structure (ROPS)

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

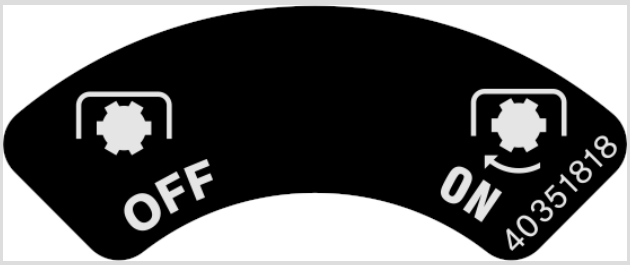
Keep instructional signs clean and legible. Clean instructional signs with a soft cloth, water, and a gentle detergent. Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove instructional signs.

Replace all instructional signs that are damaged, missing, painted over, or illegible. If an instructional sign is on a part that is replaced, make sure the instructional sign is installed on the new part. See your NEW HOLLAND dealer for replacement instructional signs.



NHIL23CT00510FA 1

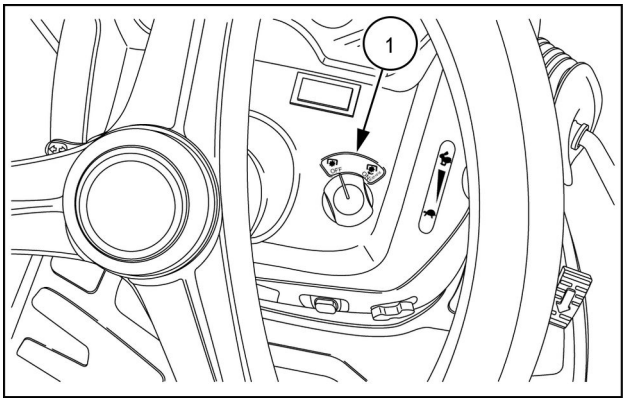
(1)
Power Take-Off (PTO) switch



40351818-00 2

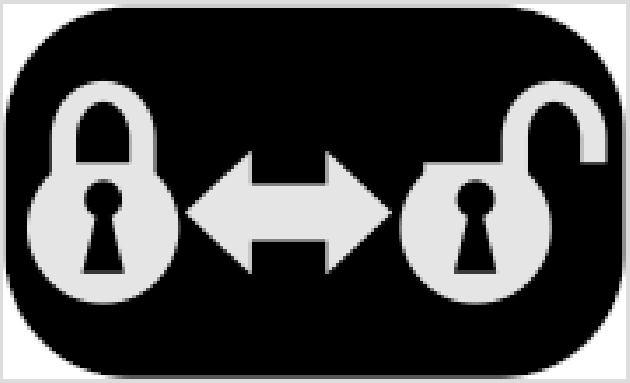
Quantity 1
English: MT40351818

(1) Located on the top surface of the right-hand side of the dash panel.



NHIL17CT01228AA 3

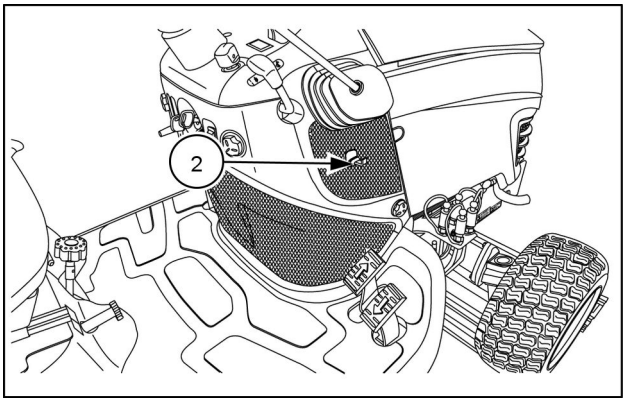
(2)
Mid-mount control lever lock-out



40376363-00 4

Quantity 1
English: MT40376363

(2) Located on the mid-mount control lever lock-out.



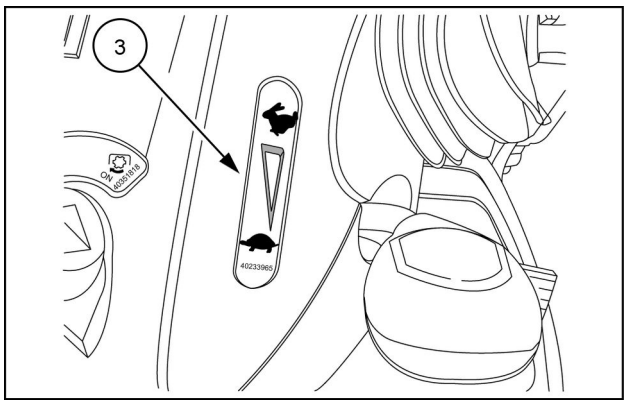
NHIL17CT00475AA 5

(3)
Hand throttle lever

Quantity 1
English: MT40233965

40233965-01 6

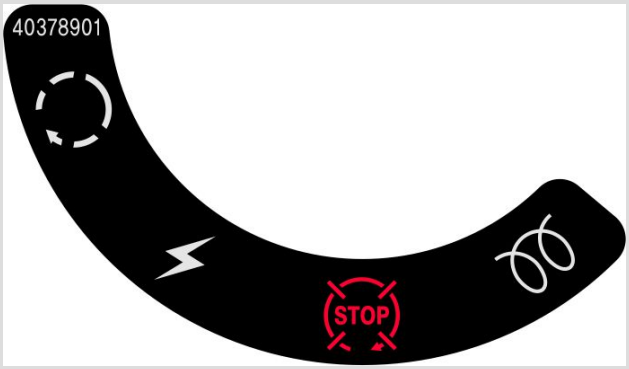
(3) Located on the top surface of the right-hand side of the dash panel.



NHIL17CT01370AA 7

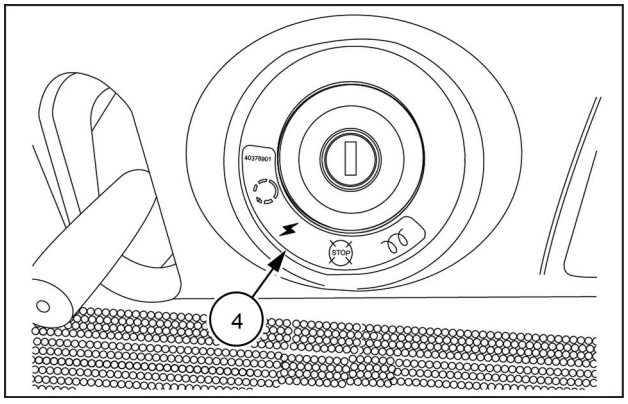
(4)
Key switch

Quantity 1
English: MT40378901



40378901-00 8

(4) Located on the middle of the rear dash panel.

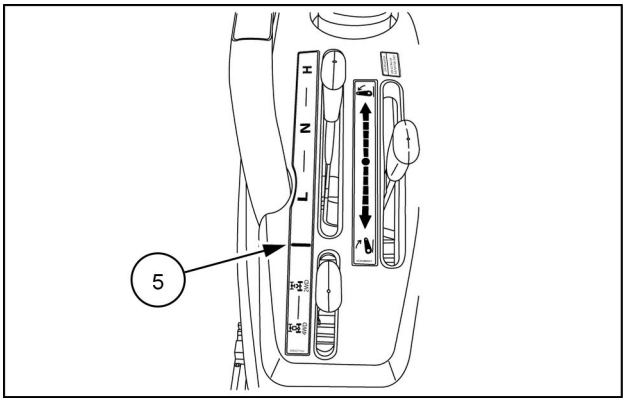


NHIL17CT01821AA 9

(5)
Four Wheel Drive (FWD) lever and transmission range lever
Quantity 1
English: MT40372518

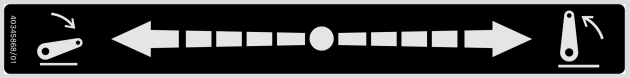
40372518-00 10

(5) Located on the right-hand side rear fender besides the operator's seat.



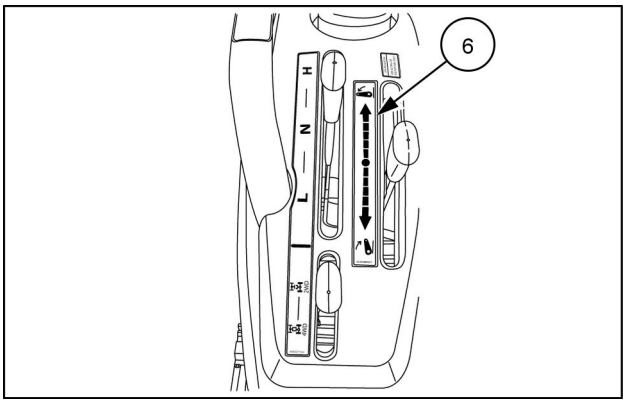
NHIL17CT00450AA 11

(6)
Position control lever
Quantity 1
English: MT40345868



40345868-01 12

(6) Located on the right-hand side rear fender besides the operator's seat.



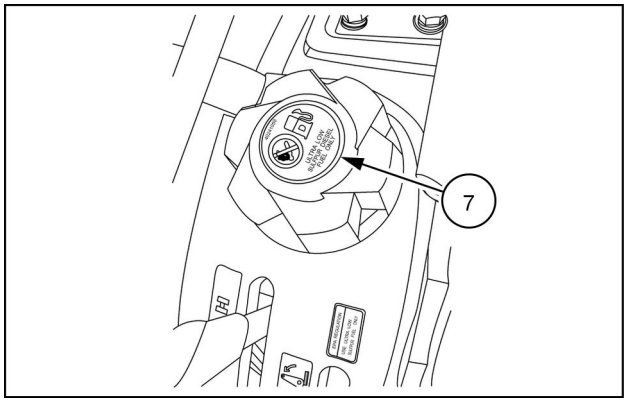
NHIL17CT00450AA 13

(7)
Fuel cap
Ultra low sulfur diesel fuel only

40241059 14

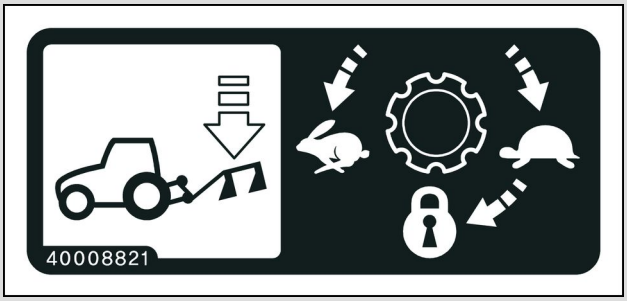
Quantity 1
English: MT40241059

(7) Located on top of the fuel cap on the rear of the right-hand side fender.



NHIL17CT01369AA 15

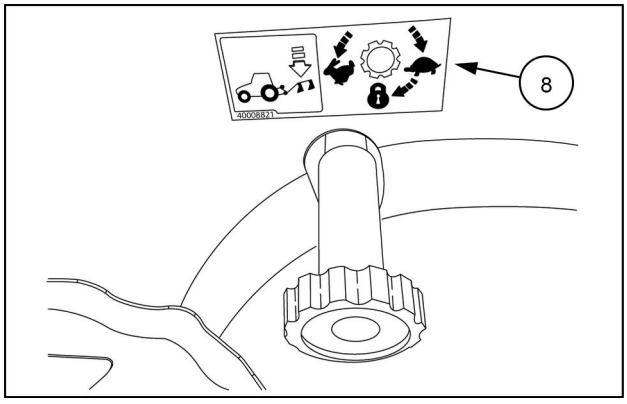
(8)
Drop rate control valve



40008821 16

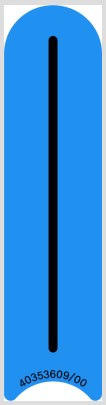
Quantity 1
English: MT40008821

(8) Located below the operator's seat.



NHIL17CT01367AA 17

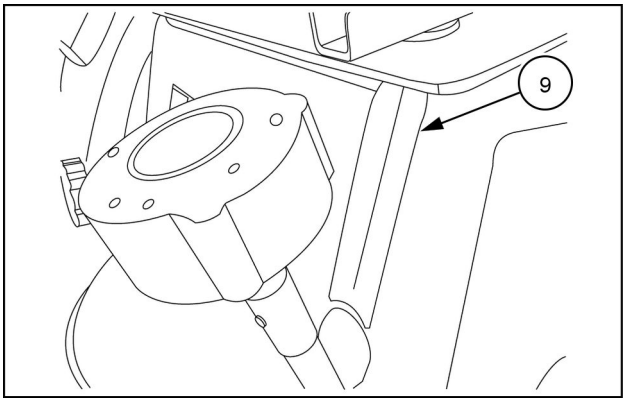
(9)
Mid mount mower knob position indicator



40353609-00 18

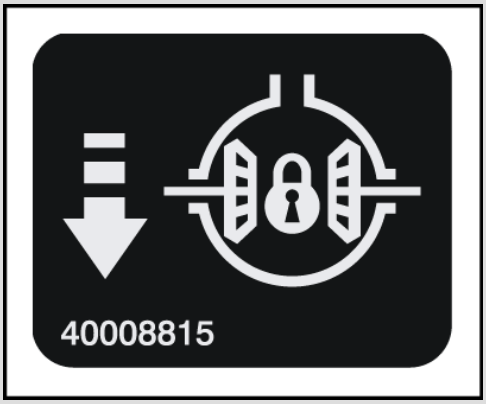
Quantity 1
English: MT40353609

(9) Located below the operator's seat.



NHIL17CT01366AA 19

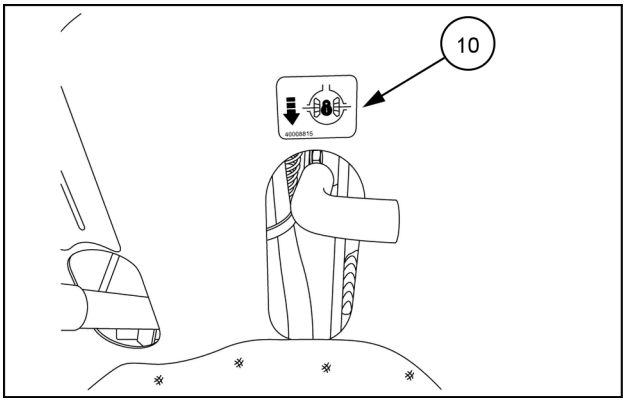
(10)
Differential lock



40008815 20

Quantity 1
English: MT40008815

(10) Located below the operator's seat.



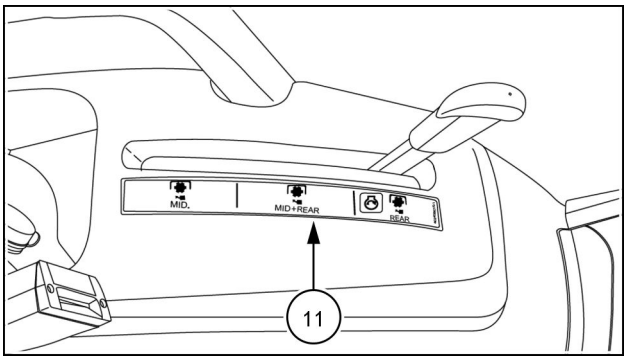
NHIL17CT01365AA 21

(11)
Power Take-Off (PTO) shift lever

Quantity 1
English: MT40345867

40376364 22

(11) Located on top of the left-hand rear fender.



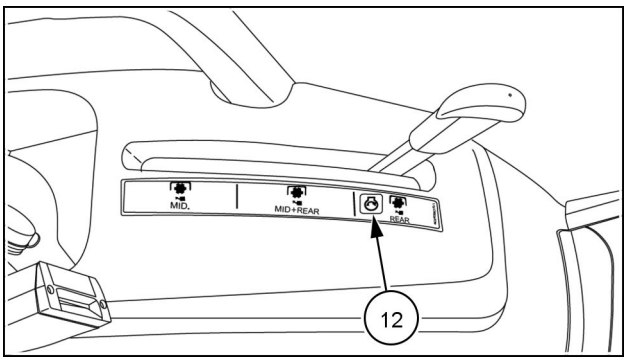
NHIL17CT01822AA 23

(12)
Engine starting position

40376364-00 24

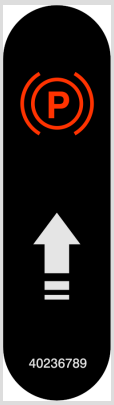
Quantity 1
English: MT40376364

(12) Located on top of the left-hand rear fender.



NHIL17CT01822AA 25

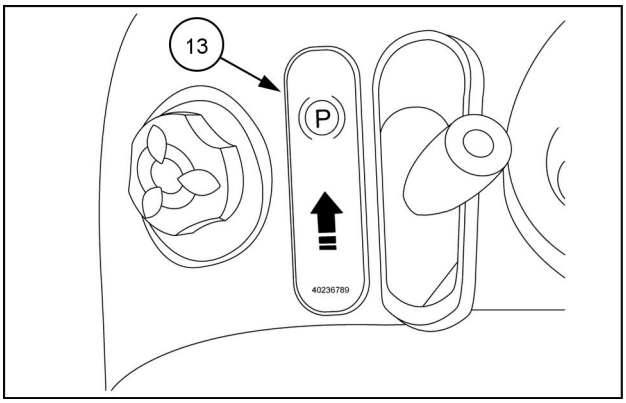
(13)
Park brake



40236789-00 26

Quantity 1
English: MT40236789

(13) Located on the middle of the rear dash panel.



NHIL17CT01371AA 27

Safety signs - Cab (If equipped)

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.

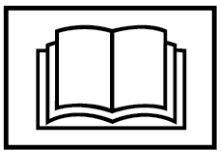
Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and gentle detergent.

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

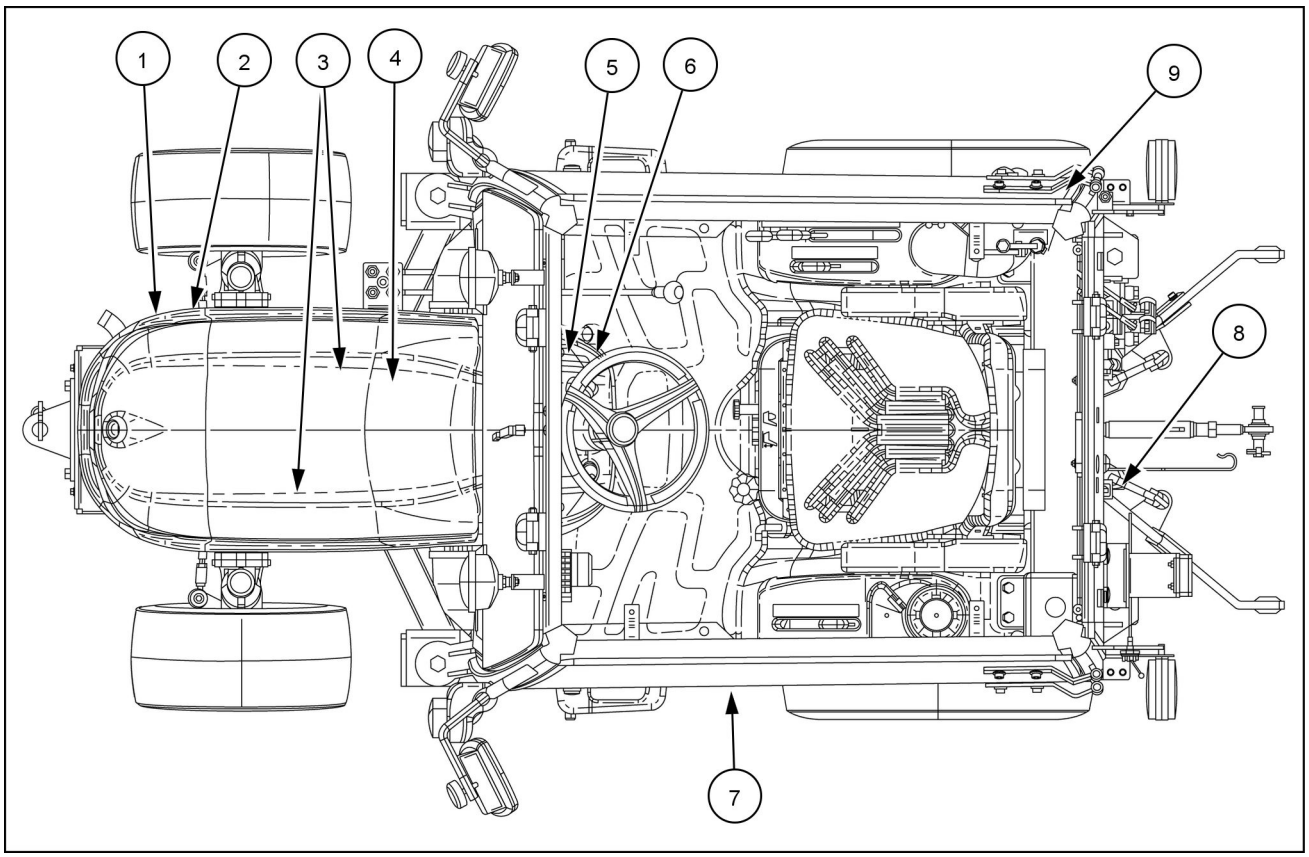
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

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.



NHIL21CT00066FA 1

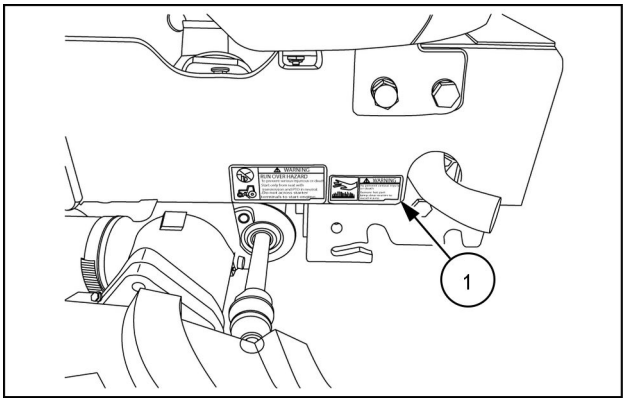
(1)
WARNING
To prevent serious injury or death.
Beware hot part.
Keep clear of muffler to avoid injury.
Failure to comply could result in minor or moderate injury.

-

Quantity: 1
English Part Number: MT40239636

40239636 2

(1) Location: On the front engine frame, right-hand side.



NHIL17CT01362AA 3

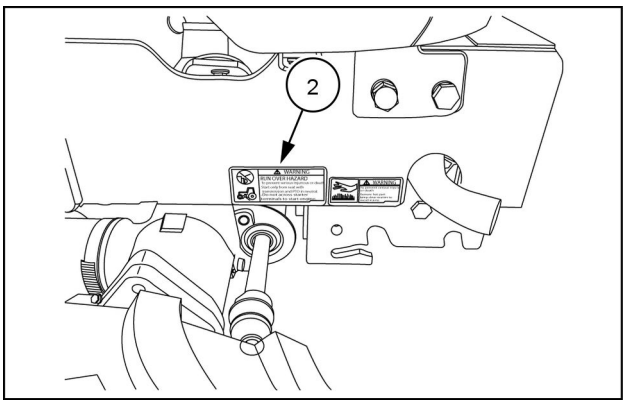
(2)
WARNING
RUN OVER HAZARD
To prevent serious injury or death:

- **Start only from seat with transmission and PTO in neutral**
- **Do not short across starter terminals to start engine.**

Failure to comply could result in death or serious injury.
Quantity: 1
English Part Number: MT40195651

40195651 4

(2) Location: On the front engine frame, right-hand side.



NHIL17CT01362AA 5

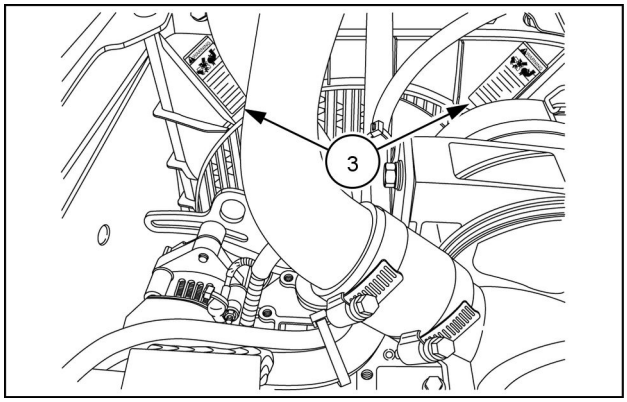
(3)
WARNING
Keep hands and clothing away from the rotating fan and belts.
Contact with moving parts may cause loss of fingers or a hand.
Failure to comply could result in death or serious injury.

•

Quantity: 2
English Part Number: MT40239638

40239638 6

(3) Location: On the left-hand and right-hand sides of the fan shroud.



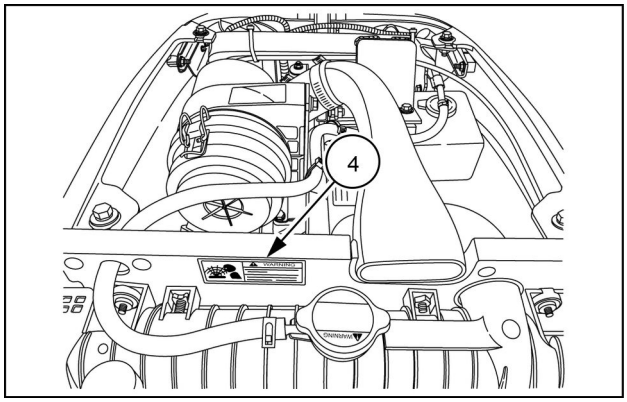
NHIL17CT01361AA 7

(4)
WARNING
To prevent serious injury or death.
High pressure steam and hot water.
Remove filler cap with extreme care.
Failure to comply could result in death or serious injury.

Quantity: 1
English Part Number: MT40297729

40297729 8

(4) Location: On the radiator support bracket .



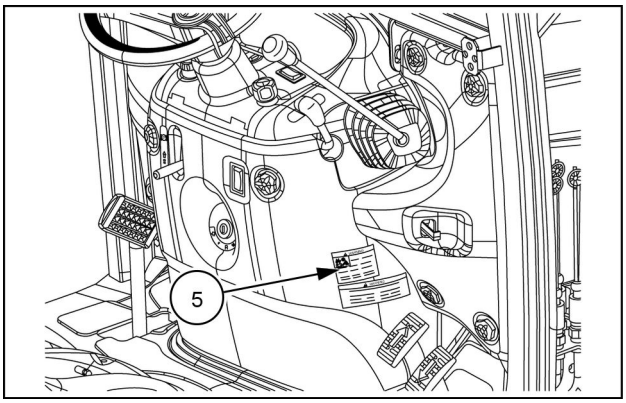
NHIL17CT01360AA 9

(5)
WARNING
EXPLOSIVE
Can cause blindness or severe injury, protect eyes. Sparks, flames, cigarettes can cause explosion. Tools and cable clamps can cause sparks. Do not use without instruction. Keep vents tight and level. ACID-POISON causes severe burns. Contains sulphuric acid. In the event of contact flush with water and see a doctor. Keep out of reach of children. Failure to comply could result in death or serious injury.

- **Quantity: 1**
  English Part Number: MT40448012

40448012-00 10

(5) Location: On the body panel right-hand side.



NHIL21CT00073AA 11

(6)

WARNING

- **TO JUMP START (Negative Grounded Battery)**

1. Shield eyes.

2. Connect end of one cable to positive (+) terminals of each battery.

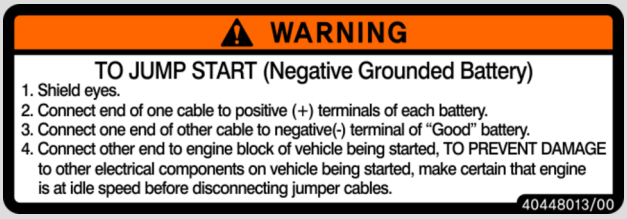
3. Connect one end of other cable to negative (-) terminal of “Good” battery.

4. Connect other end to engine block of vehicle being started, TO PREVENT DAMAGE to other electrical components on vehicle being started, make certain that engine is at idle speed before disconnecting jumper cables.

Failure to comply could result in death or serious injury.

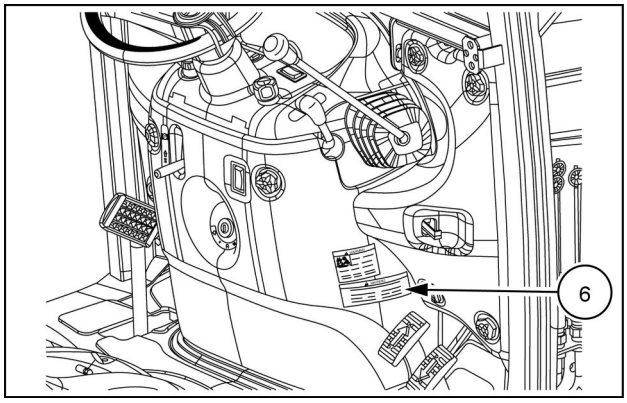
Quantity: 1

English Part Number: MT40448013



40448013-00 12

(6) Location: On the body panel right-hand side.



NHIL21CT00073AA 13

(7)
Multiple Safety Cautions and Warnings

CAUTION

- **PTO selector & lever must be in the “OFF” position to start engine.**
- **Do not operate on hard surfaces with 4WD engaged.**

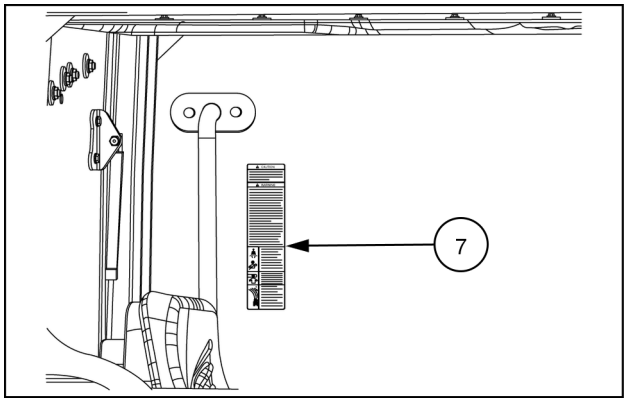
WARNING
To prevent serious injury or death:

- **After first hour of operation and daily thereafter, check front and rear wheel lug nuts and bolts for proper torque.**
- **PTO-keep hands. feet and clothing away from PTO & other moving parts.**
- **Disengage PTO and shut off engine before servicing tractor or implements or attaching or detaching implements.**
- **Keep all safety shields in place for your protection.**
- **Pull only from approved drawbar or lower links of 3-point hitch at horizontal position or below.**
- **Lock tractor brake pedals together for travel on roads or highways.**
- **Always apply parking brake and shift transmission to neutral before dismounting.**
- **Always use a seat belt when you operate the tractor.**
- **Allow no riders on tractor or implements.**
- **Always use a seat belt when you operate the tractor.**

- **Do not use a seat belt when operating with folding ROPS in lowered position.**
- **Engine exhaust fumes can cause death or sickness. Always try to work in a well ventilated area.**
- **Disengage the differential lock when turning the tractor. Always disengage the differential lock when driving on roads.**
- **Depress one or both brake pedals to disengage the differential lock.**

Failure to comply could result in death or serious injury.
Quantity: 1
English Part Number: MT40360330

(7) Location: On the door, left-hand side.



NHIL21CT00077AA 15

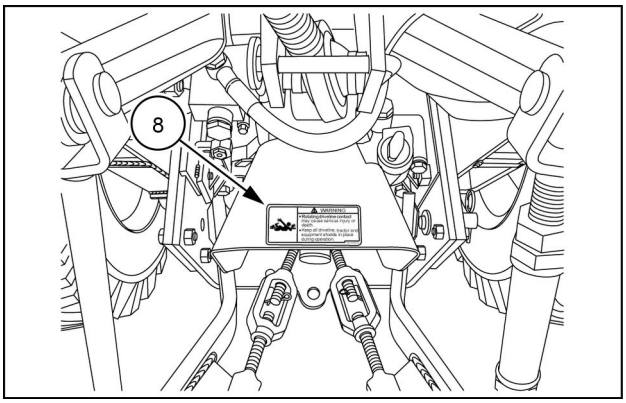
(8)
WARNING

- **Rotating driveline contact may cause serious injury or death.**
- **Keep all driveline, tractor and equipment shields in place during operation.**

Quantity: 1
English Part Number: MT40195650

40195650 16

(8) Location: On top of the rear PTO guard.



NHIL17CT01374AA 17

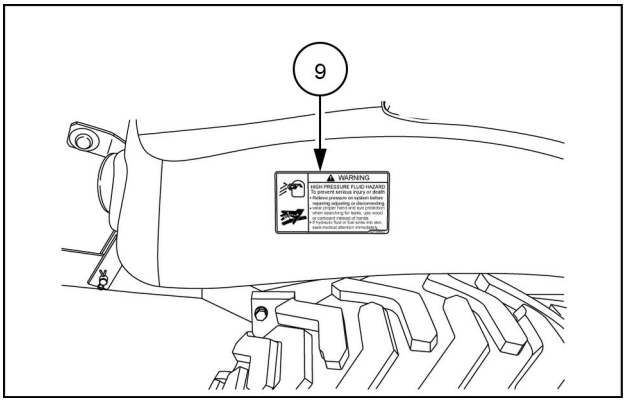
(9)
WARNING

- **HIGH PRESSURE FLUID HAZARD**
- **Relieve pressure on system before repairing, adjusting or disconnecting.**
- **Wear proper hand and eye protection when searching for leaks, use wood or cardboard instead of hands.**
- **If hydraulic fluid or fuel sinks into skin, seek medical attention immediately.**

Quantity: 1
English Part Number: MT40195652

40195652 18

(9) Location: On the side of the right-hand rear fender.



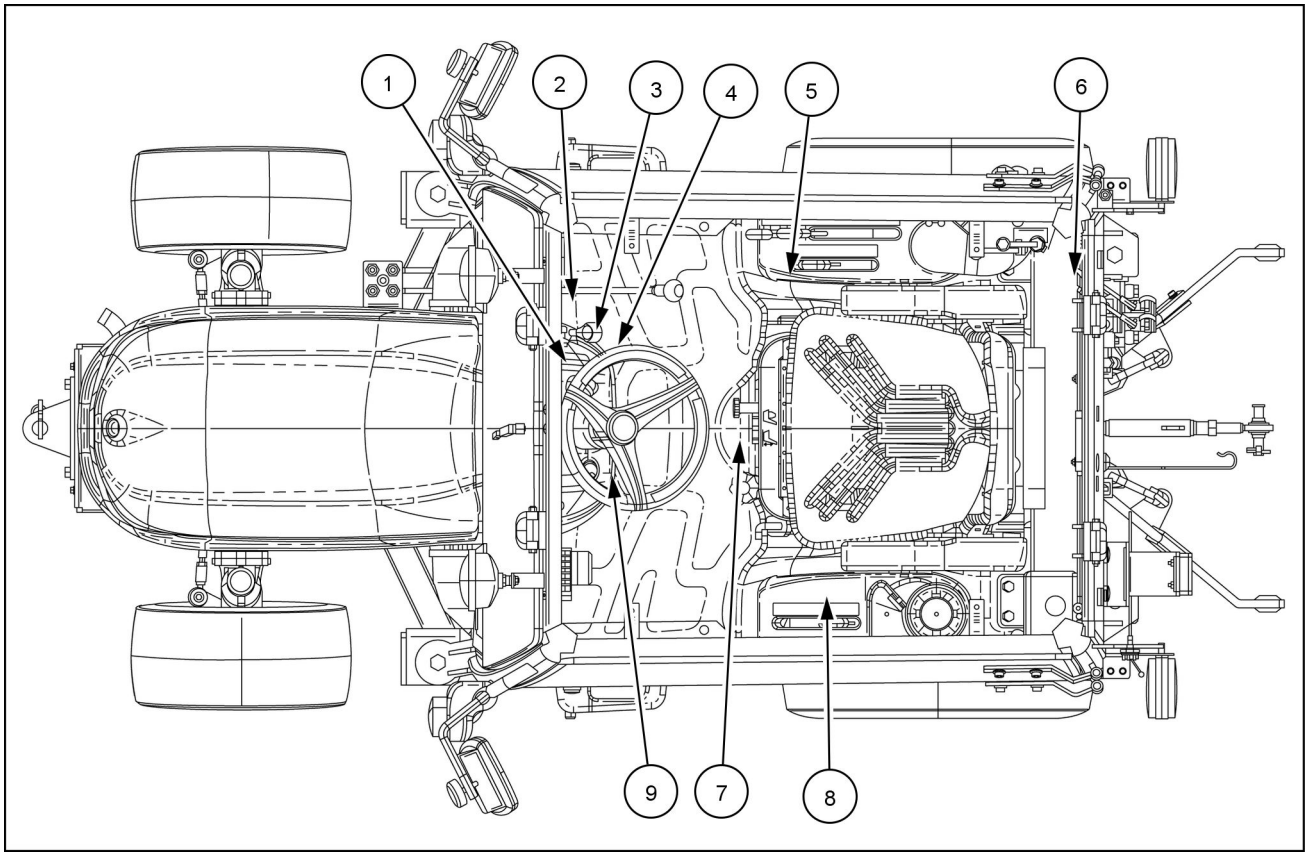
NHIL17CT01363AA 19

Instructional signs - Cab (If equipped)

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

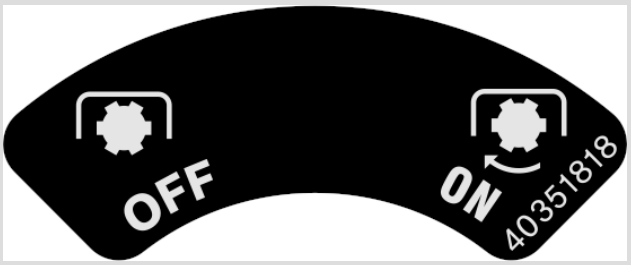
Keep instructional signs clean and legible. Clean instructional signs with a soft cloth, water, and a gentle detergent. Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove instructional signs.

Replace all instructional signs that are damaged, missing, painted over, or illegible. If an instructional sign is on a part that is replaced, make sure the instructional sign is installed on the new part. See your NEW HOLLAND dealer for replacement instructional signs.



NHIL21CT00066FA 1

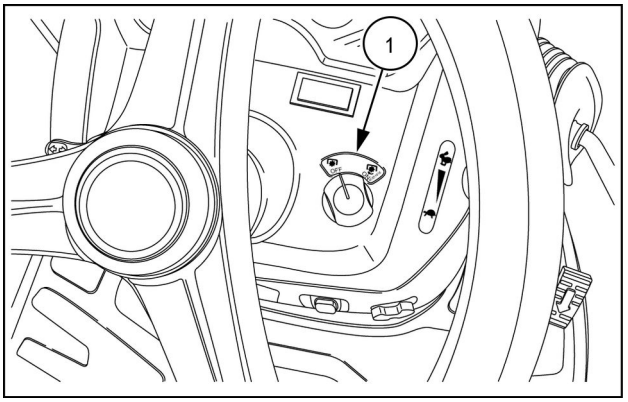
(1)
Power Take-Off (PTO) switch



40351818-00 2

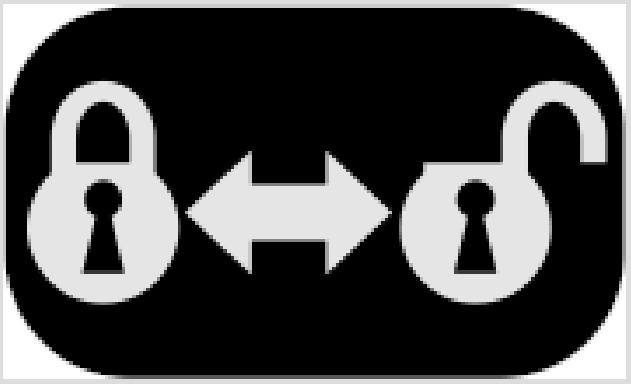
Quantity 1
English: MT40351818

(1) Located on the top surface of the right-hand side of the dash panel.



NHIL17CT01228AA 3

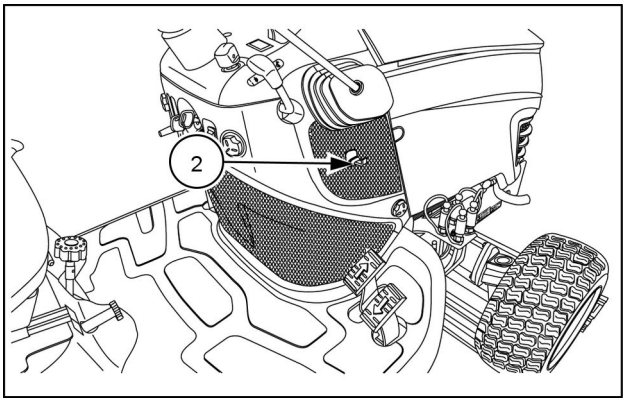
(2)
Mid-mount control lever lock-out



40376363-00 4

Quantity 1
English: MT40376363

(2) Located on the mid-mount control lever lock-out.



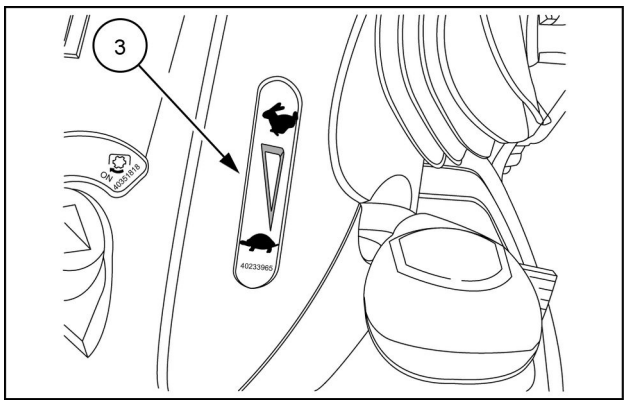
NHIL17CT00475AA 5

(3)
Hand throttle lever

Quantity 1
English: MT40233965

40233965-01 6

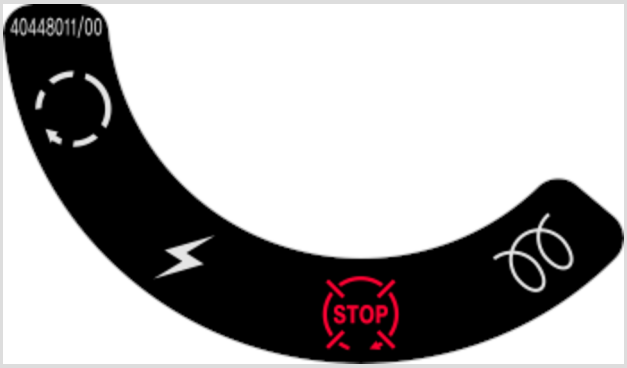
(3) Located on the top surface of the right-hand side of the dash panel.



NHIL17CT01370AA 7

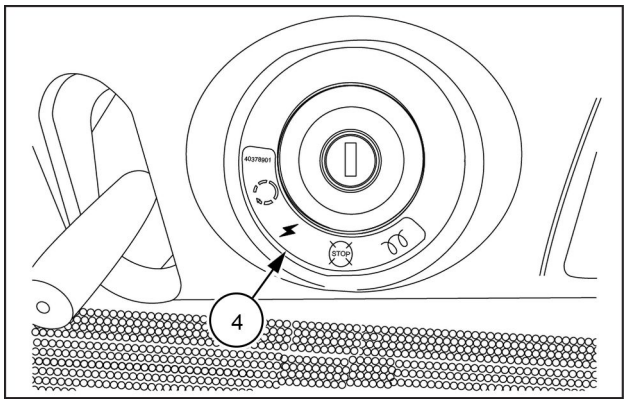
(4)
Key switch

Quantity 1
English: MT40448011



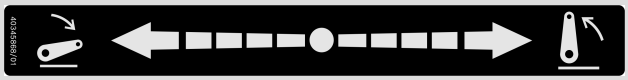
40448011-00 8

(4) Located on the middle of the rear dash panel.



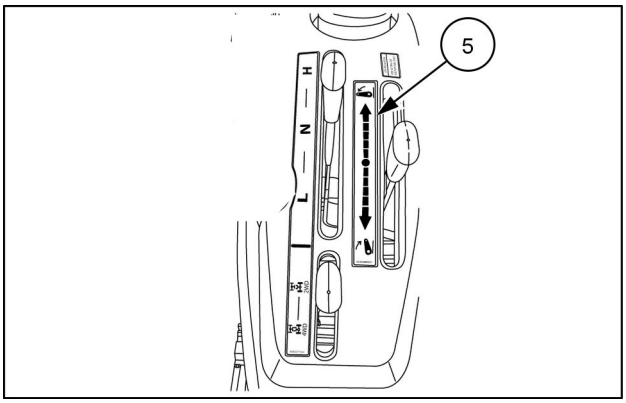
NHIL17CT01821AA 9

(5)
Position control lever
Quantity 1
English: MT40345868



40345868-01 10

(5) Located on the right-hand side rear fender besides the operator's seat.



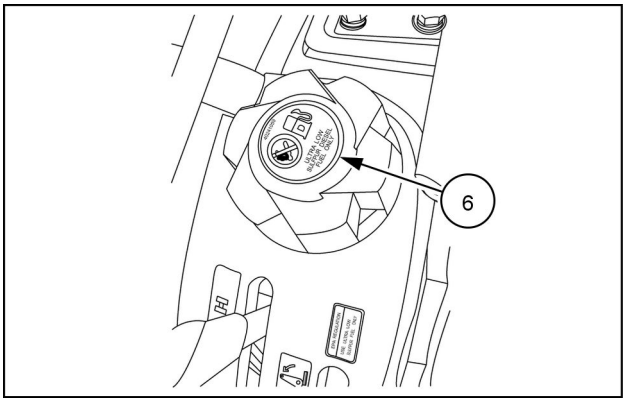
NHIL17CT00450AA 11

(6)
Fuel cap
Ultra low sulfur diesel fuel only

40241059 12

Quantity 1
English: MT40241059

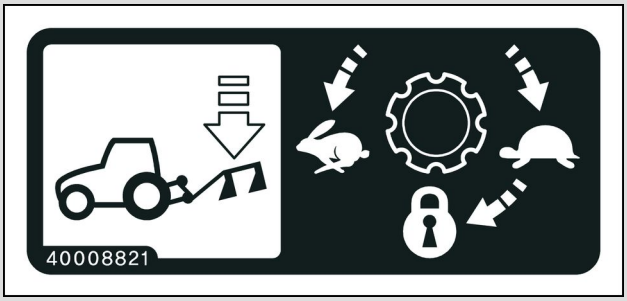
(6) Located on top of the fuel cap on the rear of the right-hand side fender.



NHIL17CT01369AA 13

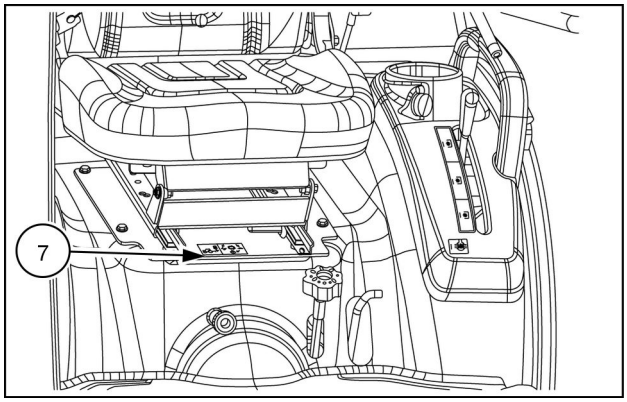
(7)
Drop rate control valve

Quantity 1
English: MT40008821



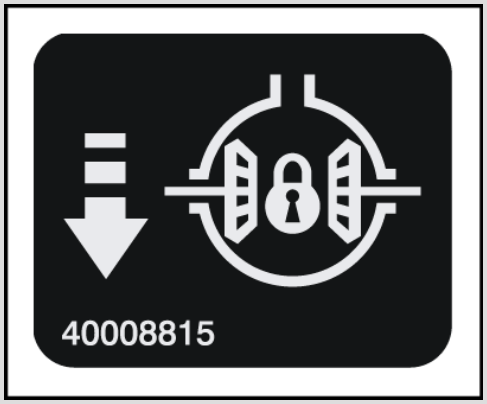
40008821 14

(7) Located below the operator's seat.



NHIL21CT00076AA 15

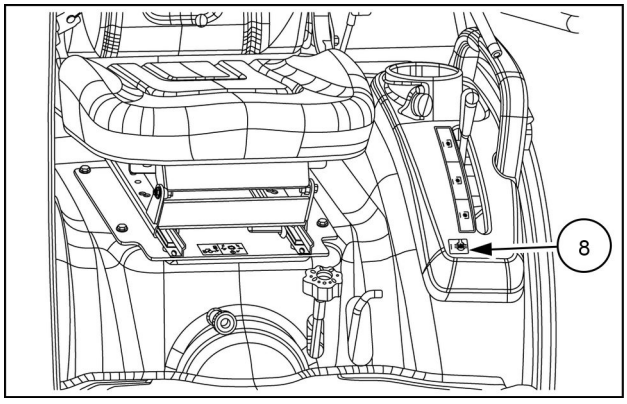
(8)
Differential lock



40008815 16

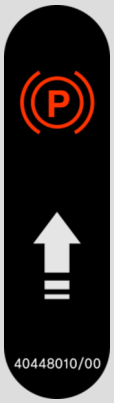
Quantity 1
English: MT40008815

(8) Located: On the left-hand lever guide.



NHIL21CT00076AA 17

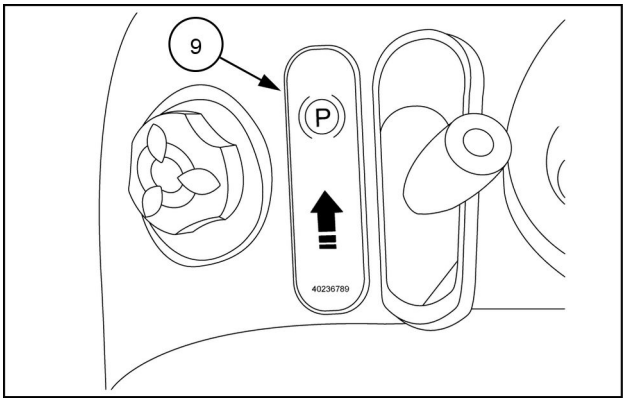
(9)
Park brake



40448010-00 18

Quantity 1
English: MT40448010

(9) Located on the middle of the rear dash panel.



NHIL17CT01371AA 19

3 - CONTROLS AND INSTRUMENTS

Access to operator's platform

Access to operator’s platform - Roll Over Protective Structure (ROPS)

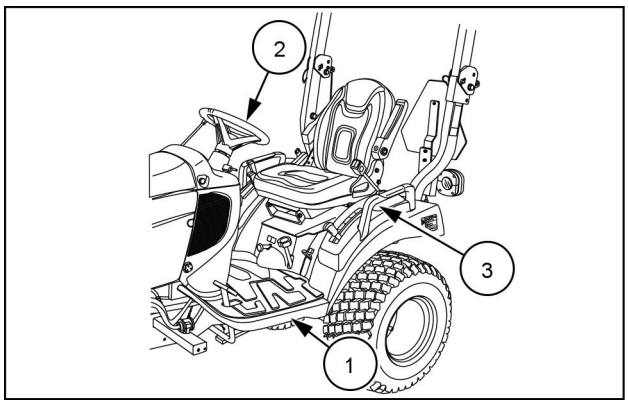
⚠ WARNING

Fall hazard!
Jumping on or off the machine could cause an injury. Always face the machine, use the handrails and steps, and get on or off slowly. Maintain a three-point contact to avoid falling: both hands on the handrails and one foot on the step, or one hand on the handrail and both feet on the steps.
Failure to comply could result in death or serious injury.

W0141A

Entering and exiting the tractor:

- Whenever possible, use the left-hand side step **(1)** for entering and exiting the tractor operator’s platform.
- When boarding the tractor, use the step **(1)**, steering wheel **(2)** and grab handle **(3)** on the left-hand fender.



NHIL17CT00169AA 1

Access to operator’s platform - Cab (If equipped)

⚠ WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY.
MAKE SURE THAT EVERY OPERATOR:
-learns and practices the safe use of machine controls in a safe, clear area before operating the machine on a job site.
-clears the work area of all bystanders.
-observes pertinent laws and regulations.
-follows the instructions in this operator's manual.
Failure to comply could result in death or serious injury.

W0189A

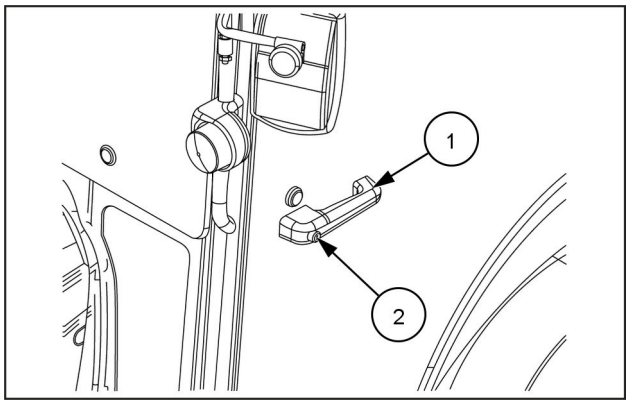
⚠ WARNING

Avoid injury!
Do not operate the machine while under the influence of alcohol or drugs.
Failure to comply could result in death or serious injury.

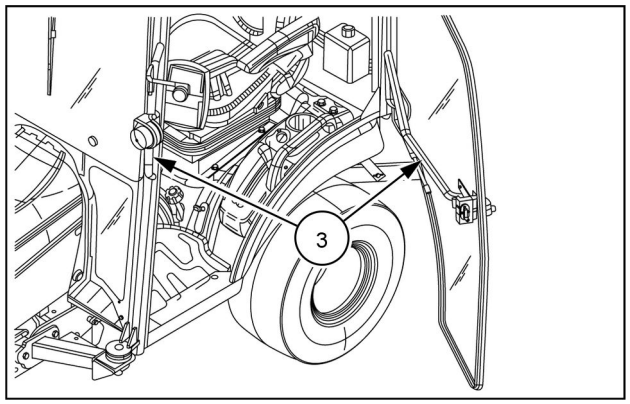
W0160A

NOTICE: *Do not grasp the gear levers when entering the cabin from the right-hand side.*

- Whenever possible, use the left-hand side door **(1)** for entering.
- Release the cabin door locked with the provided key and open the cabin door after pressing the push-button **(2)**.
- When boarding the tractor, use the grab handles **(3)** provided on the cabin frame and doors.
- Do not jump up/down for your safety. Jumping on/off the tractor could cause an injury. Always face the tractor, use the handrails and steps, and get on/off slowly. Maintain a three-point contact to avoid falling: both hands on the handrails and one foot on the step, or one hand on the handrail and both feet on the steps.
- When leaving the tractor, lock the cabin door and remove the key.



NHIL20CT01088AA 1

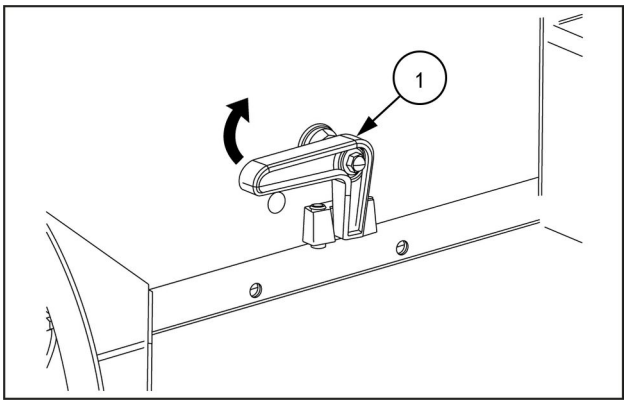


NHIL20CT01089AA 2

Using window controls - Cab (If equipped)

Rear window

- To open the rear window,
  - Turn the rear window grip **(1)** clockwise while pulling it.
  - Push the grip outside slightly.
- The rear window is supported by gas cylinders.
- It can be used for emergency exit.



NHIL20CT01091AA 1

Exiting the tractor - Cab (If equipped)

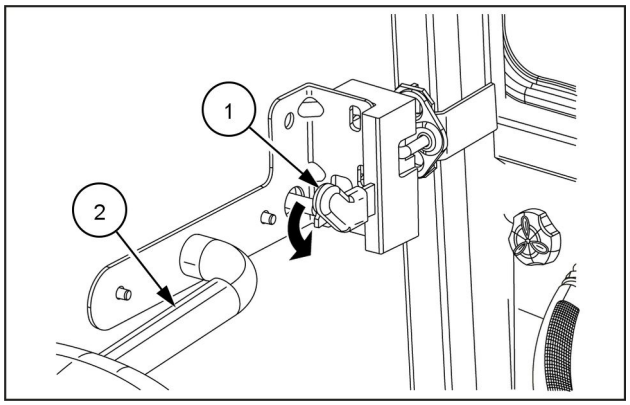
Door (Left / Right)

⚠ WARNING

Fall hazard!
When entering or exiting the cab, never use the control levers as handholds. Always mount and dismount the machine in a safe way. Maintain a three-point contact with steps, ladders, and/or handholds. Failure to comply could result in death or serious injury.

W1340B

- Whenever possible, use the left-hand side door for exiting the cabin.
- To open the left/right cabin door, push the door release lever **(1)** downward, and use the grab handle **(2)** to push the door open.
- Do not jump up/down for your safety. Jumping on/off the tractor could cause an injury. Always face the tractor, use the handrails and steps, and get on/off slowly. Maintain a three-point contact to avoid falling: both hands on the handrails and one foot on the step, or one hand on the handrail and both feet on the steps.
- When leaving the tractor, lock the cabin door and remove the key.



NHIL20CT01092AA 1

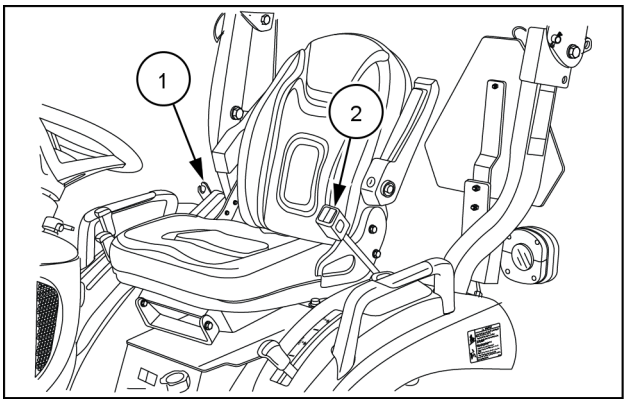
Operator's seat

Seat belt

The male end of the seat belt **(1)** is located on left -hand side of the seat. To extend length of seat belt, pull out on male end until correct length is obtained. To latch seat belt, insert male end into the buckle **(2)** located on right-hand side of the seat. Make sure belt is securely buckled and belt length is adjusted correctly for size of operator.

Use soap and water to clean the seat belt if necessary. Do not use carbon tetrachloride, naphtha, etc., as these substances will weaken the webbing. Additionally, do not bleach or dye the webbing, as these products will also weaken the webbing.

Replace the seat belt if it becomes damaged or worn.



NHIL17CT00170AA 1

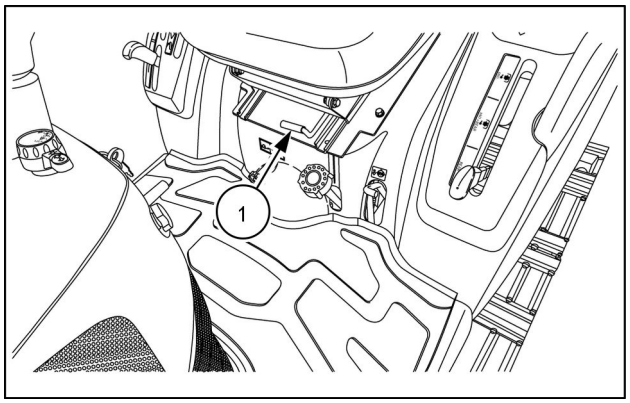
Operator's seat - Adjust

Adjusting the tractor seat

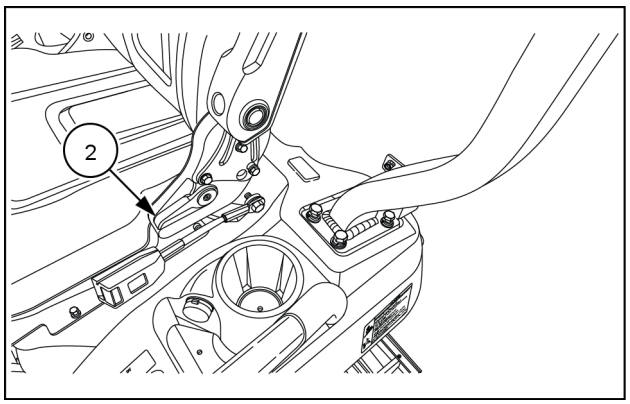
Your tractor is equipped with an adjustable seat.

To move the seat forward or backwards, raise the adjustment lever **(1)**. and move the seat rearward or forward in the seat track. After the seat is adjusted, release the adjustment lever.

To adjust the angle of the seat back, pull upward on the lever **(2)** on the left-hand side of the seat. Place the seat in the desired position and release the lever. The seat will lock in this position.



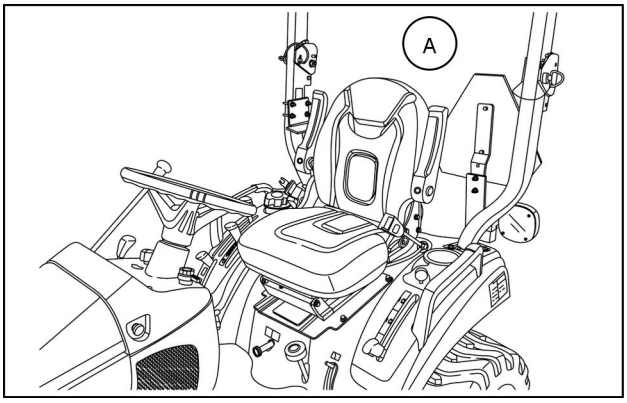
NHIL17CT00449AA 1



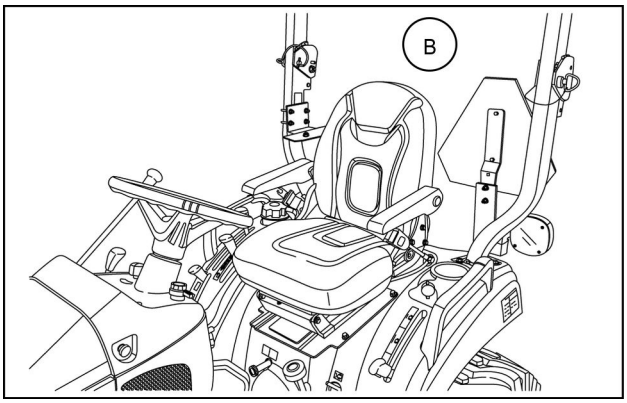
NHIL17CT00171AA 2

Arm rest and storage positions

The arm rest on the right-hand side and left-hand side can be in the “UP” **(A)** or “DOWN” **(B)** position.

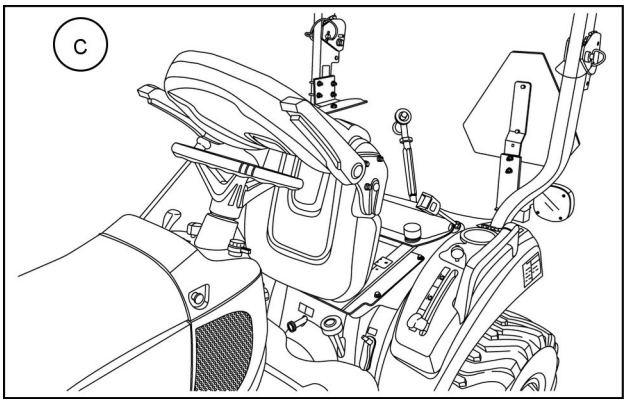


NHIL17CT01225AA 3



NHIL17CT01226AA 4

The seat can also be tilted forward in a storage position **(C)**.



NHIL17CT01227AA 5

Seat care

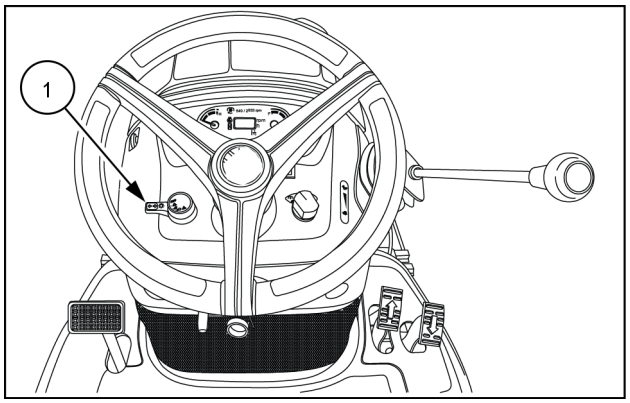
For cleaning of vinyl, plastic, and rubber parts, use only a mild car washing soap and water, as described below.

First remove any loose dirt by rinsing with clean water. Mix a warm, mild liquid car washing soap solution (1 part soap and 99 parts water). Then using a sponge or soft cloth, apply the soap solution to the part. Allow the solution to soak for a few minutes to loosen the dirt. Finally, rinse the part with clean water to remove the dirt, and any solution residue. If all the dirt does not come off, repeat the procedure.

Forward controls

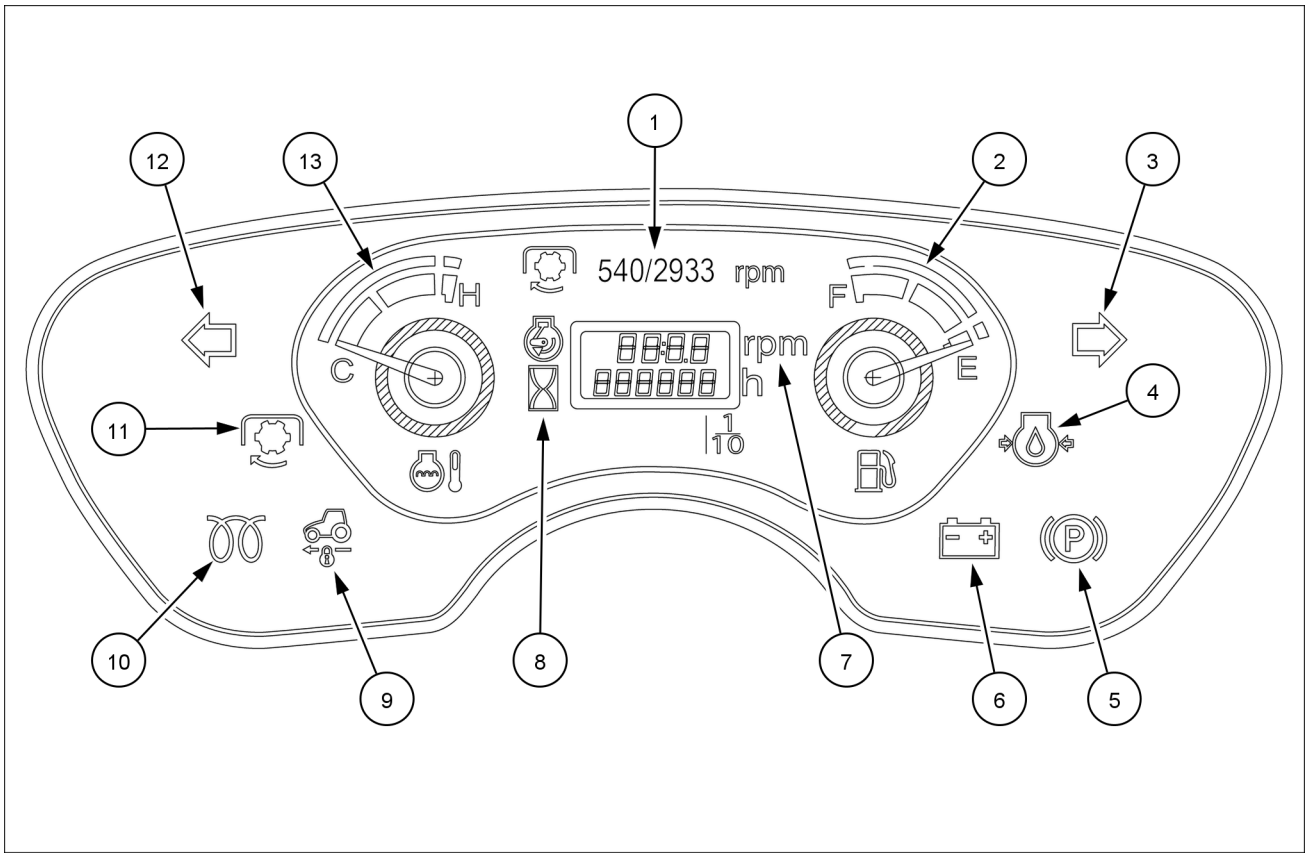
Multifunction light switch

The location of the multifunction light switch **(1)** is on the left-hand side of the dash panel. This switch controls the external lighting equipment. See page **6-1** for external lighting operating instructions.



NHIL17CT00175AA 1

Instrument cluster panel



NHIL17CT00176FA 1

The following icons and indicators will display on the instrument cluster during operation of the tractor. Become familiar with each item and when you might see them based on the operating conditions of the tractor.

(1) This text informs to obtain a rear Power Take-Off (PTO) speed of **540 RPM** the engine speed must be **2933 RPM**.

(2) Fuel Gauge - Indicates the amount of diesel fuel remaining in the tank. The gauge will activate when the key switch is in the "ON" position. It will register "empty" with the key switch in the "OFF" position.

(3) Flasher Turn Lights -Right-hand - Operates when the multifunction switch lever is moved upwards. The flasher warning lights will also cause this to operate. The key switch has to be in the "ON" or "START" positions.

(4) Engine Oil Pressure Warning Light - Illuminates with the key switch in the "ON" position and remains illuminated for a short period, after you start the engine. The light indicates low engine oil pressure only and goes out when sufficient oil pressure is present at the oil sender. If the bulb illuminates during operation, stop the tractor immediately, and investigate the cause.

(5) Park Brake Indicator Light - Illuminates if the park brake is engaged with the key switch rotated to the "ON" position.

(6) Battery Charge Warning Light - Illuminates when the key switch is in the "ON" position and goes out when the operator starts the engine. An illuminated bulb during this operation indicates the charging system is not operating normally.

(7) Tachometer - Registers engine speed in Revolutions Per Minute (RPM).

(8) Hour Meter - Records the hours and portions of hours that your tractor has accumulated regardless of engine RPM. Use the hour meter as a guide to determine hourly service and maintenance intervals.

(9) Cruise Control Indicator Light - Illuminates with the key switch in the "ON" position and the cruise control rocker switch is engaged.

(10) Cold Starting Indicator Light - Illuminates when the key switch is turned to the "PRE-HEAT" or “START” position. When the indicator light is illuminated, the glow plugs are heating the engine combustion chambers.

(11) PTO Indicator Light - When either the rear or mid PTO is engaged, the indicator will be illuminated with the key in the "START" or "ON" positions.

(12) Flasher Turn Lights - Left-hand - Operates when the multifunction switch lever is moved downwards. The flasher warning lights will also cause this to operate. The key switch has to be in the "ON" or "START" positions.

(13) Temperature Gauge - Indicates coolant temperature. It activates when you turn the key switch to the "ON" position. The gauge will register cold with the key switch in the "OFF" position. If the needle registers in the white range of the gauge, this indicates a normal operating temperature. If the needle moves to the red portion of the gauge, this indicates an overheated condition. Stop the tractor engine immediately and investigate the cause.

Power Take-Off (PTO) switch

The location of the Power Take-Off (PTO) switch **(1)** is on the right-hand side of the dash panel.

NOTE: *Place the PTO switch in the “OFF” position to start the engine.*

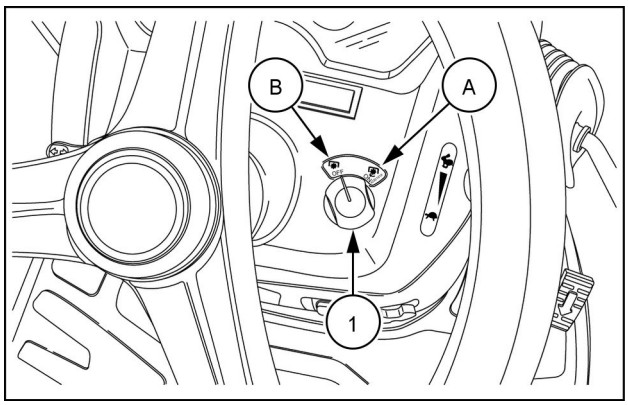
To engage the PTO, push down on the PTO switch and turn the switch to the "ON" position **(A)**.

NOTE: *Only engage the PTO when the engine is at low idle speed. This will reduce the shock load on the drive-line of the attachment.*

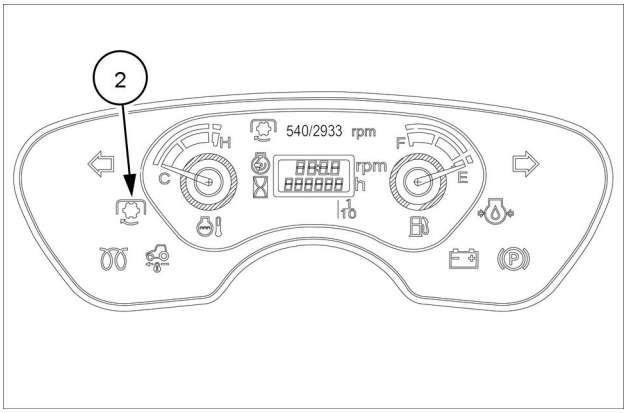
When the PTO is engaged the PTO indicator light **(2)** will be illuminated on the instrument panel.

To disengage the PTO, push down on the PTO switch and the switch will automatically return to the "OFF" position **(B)**.

For PTO operating instructions see page **6-15**.



NHIL17CT01228AA 1

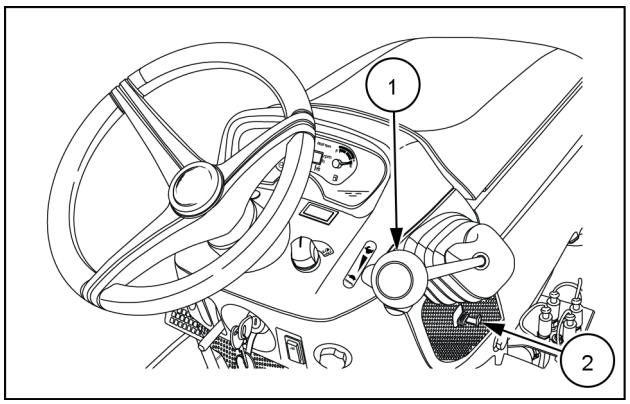


NHIL17CT00176FA 2

Mid-mount two-spool control valve lever

The mid mount two-spool control valve **(1)** location is to the right-hand side of the instrument panel. The control valve operates the front-end loader and other front mounted implements.

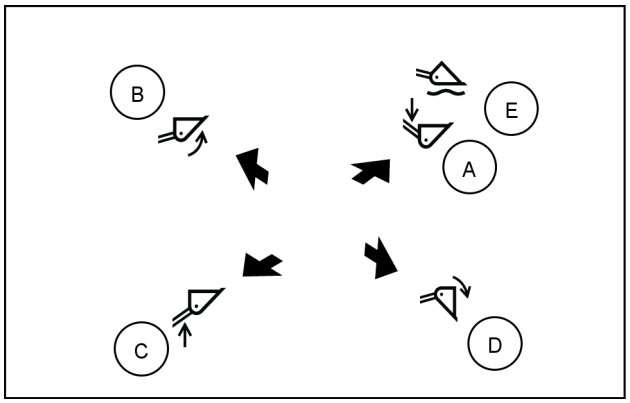
The control valve is equipped with a control lever lockout **(2)** that locks the control valve handle in the neutral position and does not allow the valve to operate.



NHIL17CT00179AA 1

To operate the control valve, move the control lever **(1)** in any of the four directions.
Release the control lever to stop the cylinder in any position, the lever automatically returns to neutral.

- Move the control lever forward to lower the loader/retract cylinder **(A)**.
- Move the control lever to the left to curl the bucket/retract cylinder **(B)**.
- Move the control lever rearward to raise the loader/extend cylinder **(C)**.
- Move the control lever to the right to dump bucket/extend cylinder **(D)**.



NHIL17CT01827AA 2

Move the control lever fully forward to "FLOAT" position **(E)** which allows the loader boom lift cylinders to extend or retract. This valve position will allow the loader to follow the ground contour during operation. Float is also a “dented” position, meaning you must manually return the control valve lever to the neural position.

NOTE: *Do not use the "FLOAT" position **(E)** if the loader bucket is off the ground.*

Hydraulic hose connection

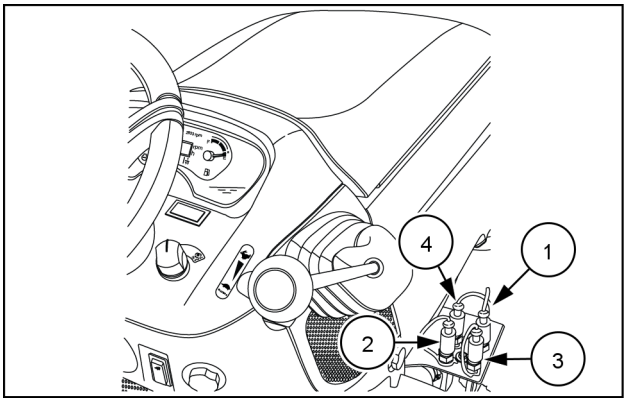
⚠ WARNING

Crushing hazard!
Before disconnecting the cylinders or equipment, make sure you adequately support and secure the equipment or implement.
Failure to comply could result in death or serious injury.

W0243A

When connecting hydraulic hoses, follow the instructions listed below.

- Loader down/retract cylinder, green coupler **(1)**.
- Loader up/extend cylinder, yellow coupler **(2)**.
- Bucket curl/retract cylinder, red coupler **(3)**.
- Bucket dump/extend cylinder, blue coupler **(4)**.

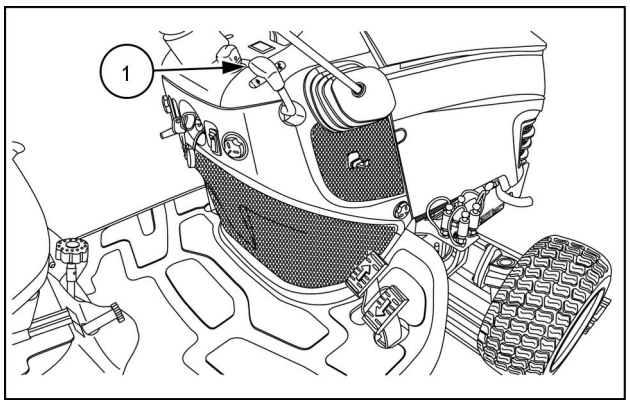


NHIL17CT00180AA 3

Hand throttle lever

The location of the hand throttle lever **(1)** is on the right-hand side of the dash panel.

Push the lever forward to increase the engine speed and rearward to decrease the engine speed.

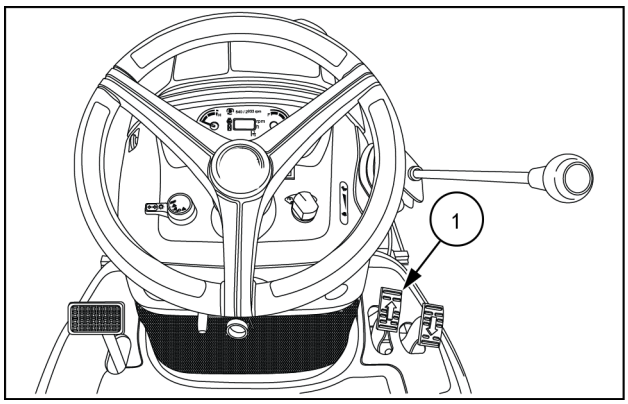


NHIL17CT00475AA 1

Forward travel pedal

The forward travel pedal **(1)** location is on the right-hand side of the operator's platform.

To travel in the forward direction simply depress the forward travel pedal. The further the pedal is depressed the faster the tractor will travel in each transmission range. The forward travel pedal will return to the neutral position once the forward travel pedal is released.

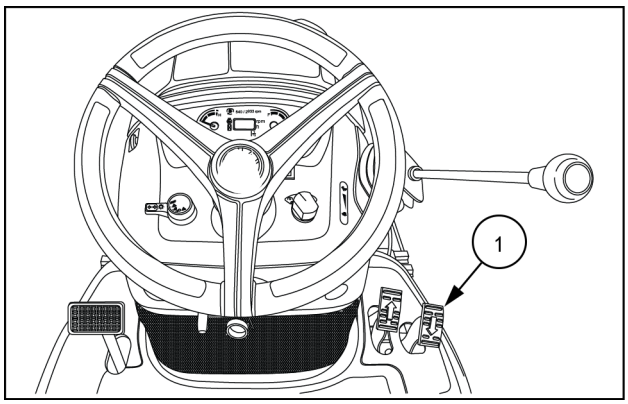


NHIL17CT00175AA 1

Reverse travel pedal

The reverse travel pedal **(1)** location is on the right-hand side of the operator's platform.

To travel in the reverse direction simply depress the reverse travel pedal. The further the pedal is depressed the faster the tractor will travel in each transmission range. The reverse travel pedal will return to the neutral position once the reverse travel pedal is released.



NHIL17CT00175AA 1

Cruise control switch

⚠ WARNING

Loss of control hazard!
To maintain optimum control of the machine, do not use cruise control at high speeds or when roading.
Failure to comply could result in death or serious injury.

W1058H

The location of the cruise control switch is below the instrument panel, to the right-hand side of the key switch. The cruise control maintains a constant forward or reverse speed.

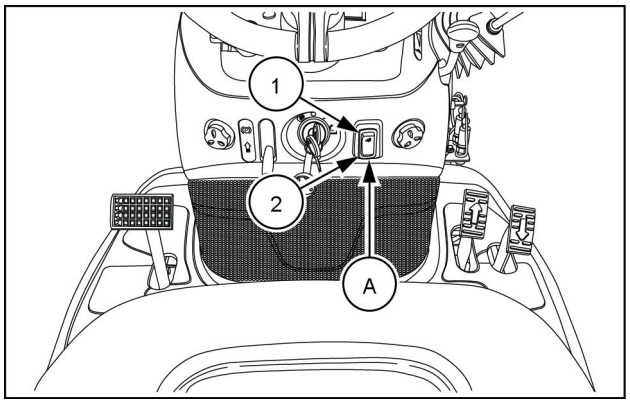
Once the desired ground speed is met momentarily press the upper portion **(1)** of the cruise control switch.

You can now release the travel pedals and maintain a constant speed.

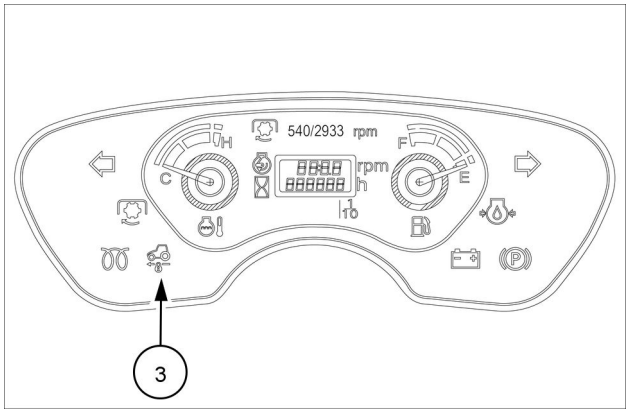
The cruise control indicator **(3)** will illuminate on the instrument panel to remind you the cruise control is engaged.

To disengage the cruise control momentarily press the lower portion **(2)** of the cruise control switch.

Depressing the brake pedal will also disengage the cruise control



NHIL17CT00182AA 1



NHIL17CT00176FA 2

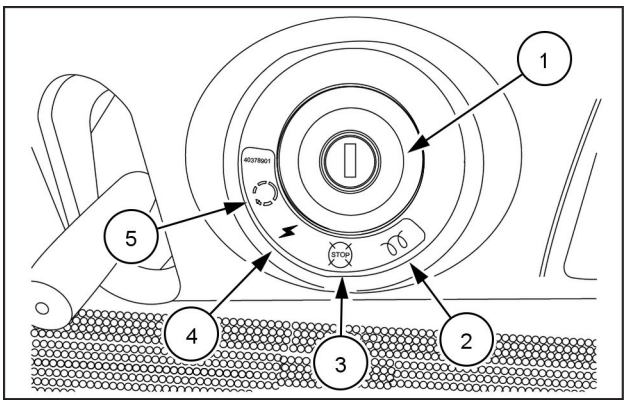
Key switch

The location of the key switch **(1)** is in the center of the panel below the instrument panel. Turning the key clockwise to the "ON" position **(4)** activates the warning lights, and instruments.

The engine starts when the operator turns the key to the extreme clockwise "START" position **(5)**. An internal spring returns the key to the "ON" position when the operator releases the key.

Turning the key the counterclockwise "PREHEAT" position **(2)** will preheat the engine for cold starting.

Placing the key in the “OFF” position **(3)** will shut off the engine and any electrical functions.



NHIL17CT01821AA 1

Park brake lever

⚠ WARNING

Unexpected movement!
Always engage the parking brake and switch off the engine before exiting the machine.
Failure to comply could result in death or serious injury.

W0209A

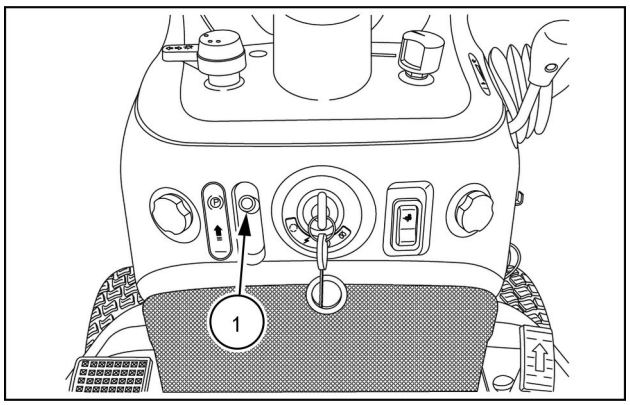
The location of the park brake lever **(1)** is below the instrument panel, to the left-hand side of the key switch.

To engage the park brake depress the service brake pedal and pull upward on the park brake lever. Then release the service brake pedal.

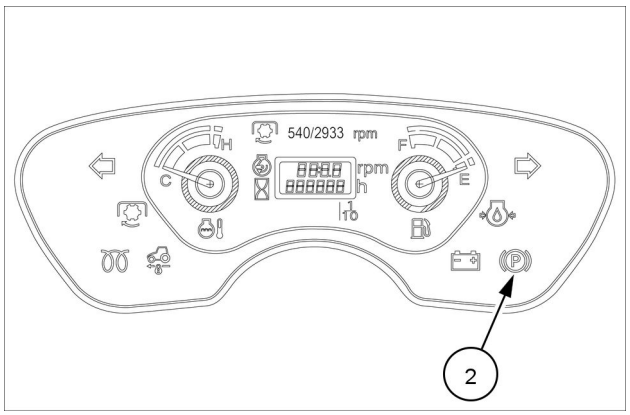
NOTE: *Always engage the park brake when getting off the tractor. If the operator does not engage the brake or the operator leaves the seat without engaging the park brake an alarm will sound. The alarm will continue to sound for approximately ten seconds or until the operator engages the park brake.*

The park brake indicator **(2)** will illuminate on the instrument panel to remind you the park brake is engaged.

To disengage the park brake firmly depress the service brake pedal and the park brake lever will self release. Then release the service brake pedal.



NHIL18CT00700AA 1

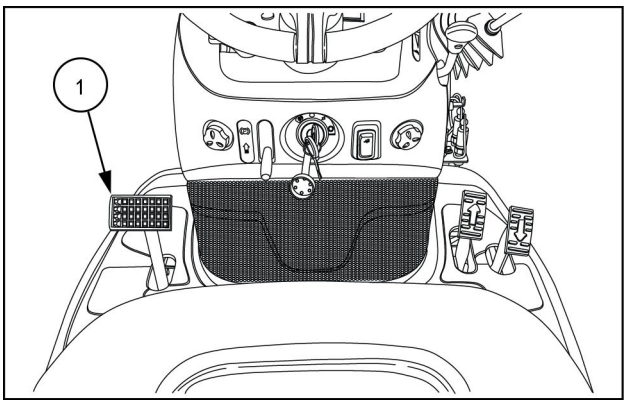


NHIL17CT00176FA 2

Service brake pedal

The location of the service brake pedal **(1)** is on the left-hand side of the operator's platform.

Depress the pedal to apply the brakes. The brakes will only act on the rear wheels when the tractor is placed in two wheel drive. For four wheel braking, engage the four wheel drive.



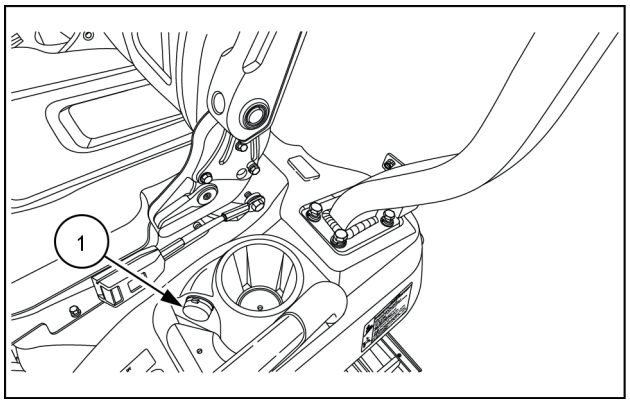
NHIL17CT00182AA 1

Left-hand side controls

Auxiliary power outlet

The location of the **12 V** auxiliary power outlet **(1)** is in the left-hand rear fender forward of the cup holder.

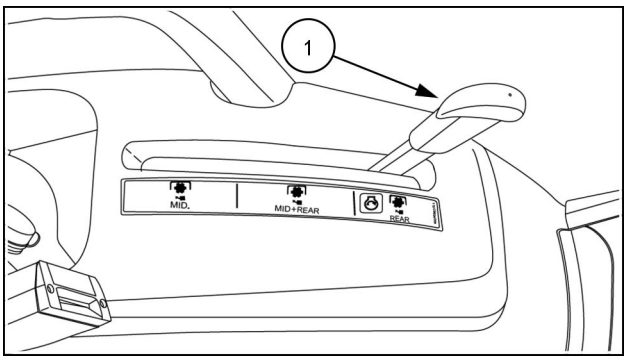
Verify the auxiliary power equipment uses less than **10 A** of current flow.



NHIL17CT00171AA 1

Power Take-Off (PTO) shift lever

The location of the Power Take-Off (PTO) shift lever **(1)** is in the left-hand fender.



NHIL17CT01822AA 1

Three choices of PTO operations are available.

- REAR
- MID + REAR
- MID

For PTO operating instructions see page **6-15**.

Right-hand side controls

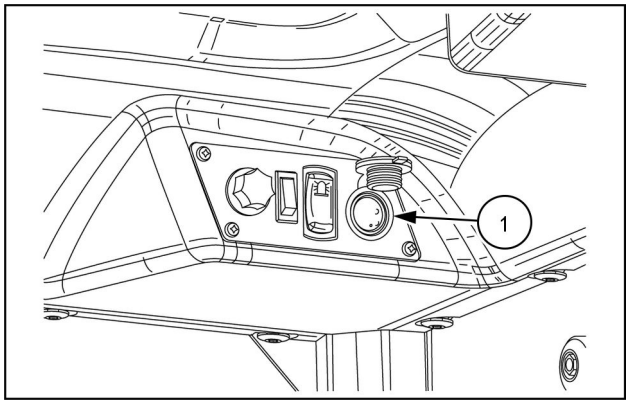
Electrical power outlet socket - Cab (If equipped)

NOTICE: *When using the electrical power outlet socket as a cigarette lighter jack, avoid touching the heating coil. The heat generated by the heating coil is very hot and it may cause a serious burn.*

A **12 V**, **8 A** auxiliary power outlet **(1)** is located inside the cab on the right-hand side control console, towards the corner of the cab. This outlet will power electrical accessories.

- When using the cigarette lighter jack (optional), push the cigarette lighter jack into the socket to heat the coil. When the coil is heated sufficiently the jack is retracted automatically, and it can be used as a substitute for a lighter.
- Electrical power outlet socket **(1)**.

NOTICE: *If the outlet socket is used as a power supply, (**12 V**), use electrical equipment with less than **8 A** of current flow.*

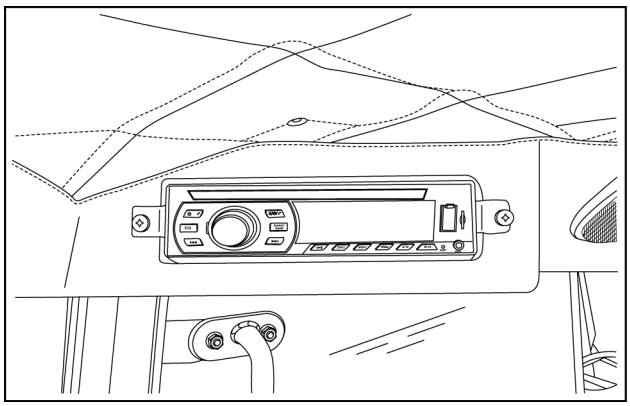


NHIL20CT01097AA 1

Audio player - Cab (If equipped)

NOTICE: *To ensure safe operation, avoid turning up the player volume too high/loud.*

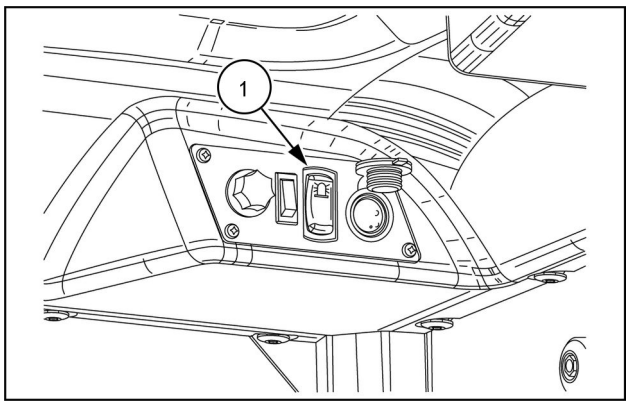
NOTICE: *Do not use a headset while driving the tractor.*



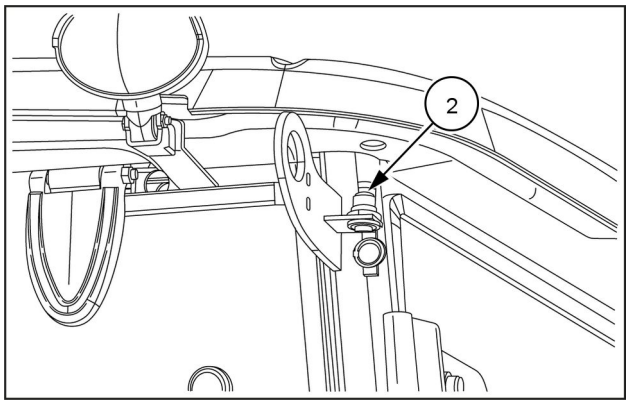
NHIL20CT01149AA 1

Beacon lamp switch - Cab (If equipped)

- The beacon lamp switch is used to turn on/off the beacon lamp **(1)**, which is connected to the electrical harness at the beacon lamp connectors **(2)**.
- The beacon connectors **(2)** are installed on the left-hand and the right-hand rear side under the cabin roof.
- Press the upper side (symbol part) of the switch when turning on the beacon lamp **(1)**.
- Beacon lamp switch (See figure **1**)
- Beacon connector (See figure **2**)



NHIL20CT01097AA 1



NHIL20CT01098AB 2

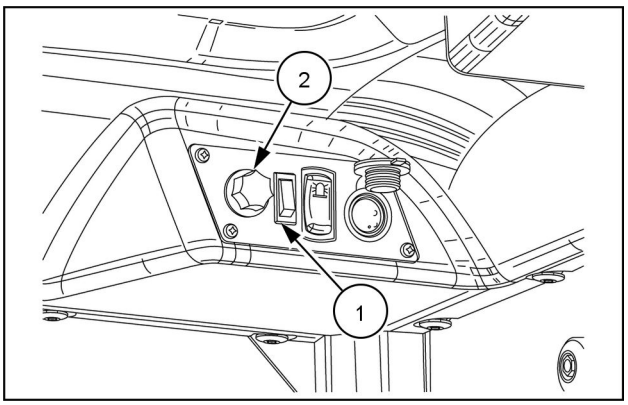
Heater control switches - Cab (If equipped)

Heater ON/OFF switch **(1)**

- It is used to turn ON/OFF the heater system.
- To turn ON the heater, press the upper part of the heater ON/OFF switch, and turn the blower control switch **(2)**, clockwise one or more positions.

Blower control switch **(2)**

- It is used to control the blower fan speed.
- By turning this blower control switch clockwise one step from the “OFF” position, the blower begins to move air.
- Turning this blower control switch step by step clockwise, the blower will turn faster.



NHIL20CT01099AA 1

Remote control levers and Quick couplers - Cab (If equipped)

⚠ WARNING

Avoid injury!
When welding, always wear proper protective equipment and welding clothing. All persons in the work area must, at minimum, wear welding goggles. Never look directly at the welding arc without welding eye protection.
Failure to comply could result in death or serious injury.

W1178A

⚠ 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

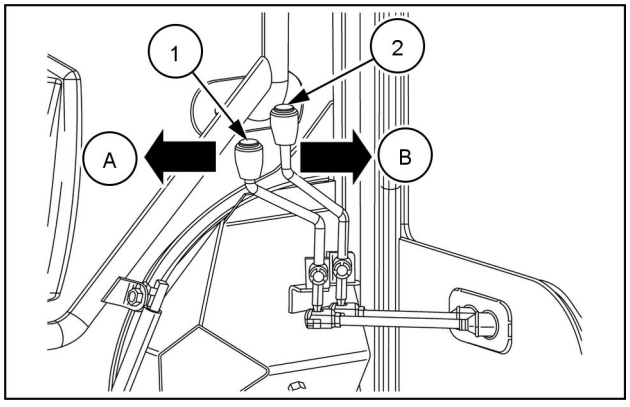
⚠ CAUTION

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

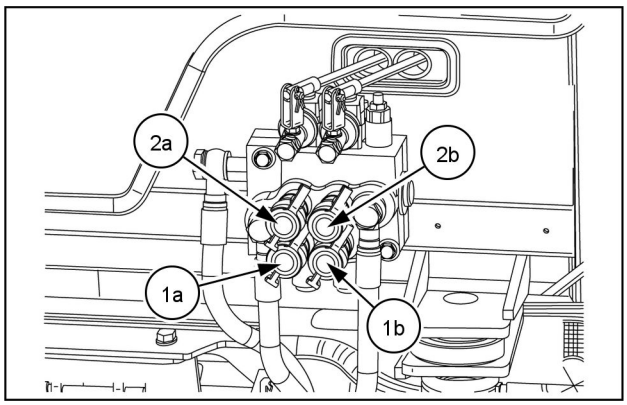
- The remote control levers are used to operate the hydraulic cylinder(s) and/or motor(s) of the implement attached to the tractor.
- If you move the remote control lever(s) backward, the hydraulic pressure works to the upper coupler(s) of the related lever(s), and the lower coupler(s) is connected to the hydraulic return line.
- Each lever of the parallel circuit remote control valve can be operated independently , and when operating the levers at the same time, the line that is under less pressure begins to work first.
- After connecting and cycling the hydraulic equipment, check the transmission oil level of the tractor.
- When releasing the lever(s) after operating fully, the lever(s) will return to the neutral position automatically.

ID	Description
1	Lever 1
2	Lever 2 (optional)
A	Forward
B	Backward



NHIL20CT01101AA 1

ID	Description
1a	Lever 1 forward
1b	Lever 2 forward
2a	Lever 1 backward
2b	Lever 2 backward



NHIL20CT01102AA 2

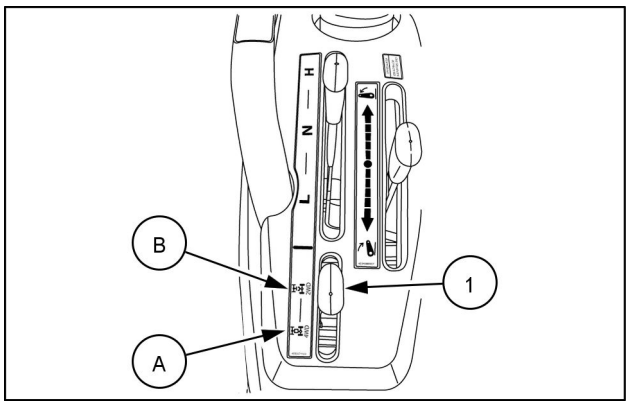
Four-Wheel Drive (4WD) lever

The location of the Four-Wheel Drive (4WD) lever **(1)** is in the right-hand rear fender.

To engage the 4WD completely stop the tractor. Move the 4WD lever forward into the “4WD” position **(A)**.

To disengage the 4WD completely stop the tractor. Move the 4WD lever rearward into the “2WD” position **(B)**.

NOTE: *Use the 4WD when additional traction is required while operating on loose soil, in wet, slippery conditions, or on slopes. For normal operation on firm soil, level hard surfaces, or when operating the tractor at high speeds, disengage the 4WD to maximize tire and drive-line life.*



NHIL17CT00450AA 1

Transmission range lever

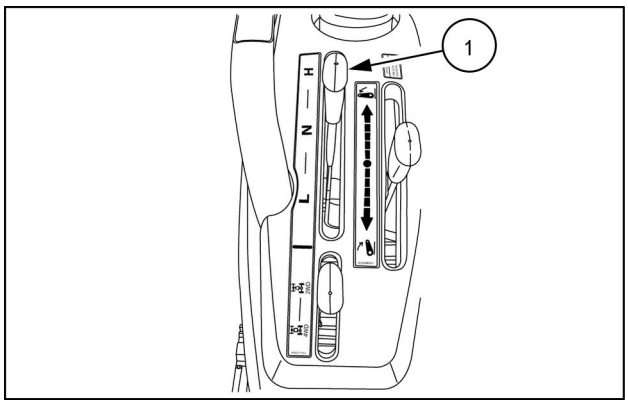
The location of the transmission range lever **(1)** is in the right-hand rear fender.

There are three transmission range lever positions.

- “H” (high)
- “N” (neutral)
- “L” (low)

For transmission range operating instructions see page **4-10**.

NOTE: *It is good practice to place the transmission range lever in “N” before starting the engine.*



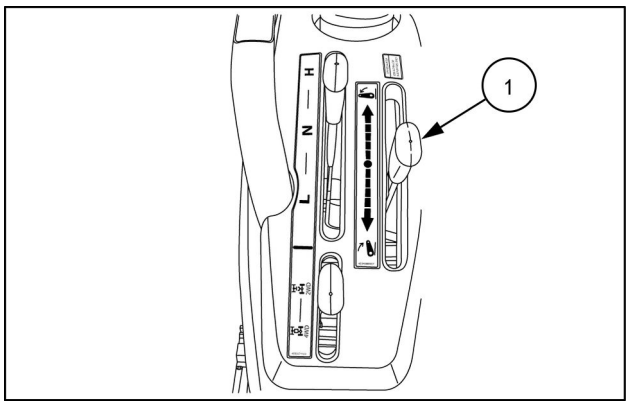
NHIL17CT00450AA 1

Hydraulic Power Lift (HPL) lever

The location of the Hydraulic Power Lift (HPL) lever **(1)** is in the right-hand rear fender.

The HPL lever controls the functions of the HPL such as raising or lowering rear and middle mounted implements.

For HPL operating instructions see page **6-10**.

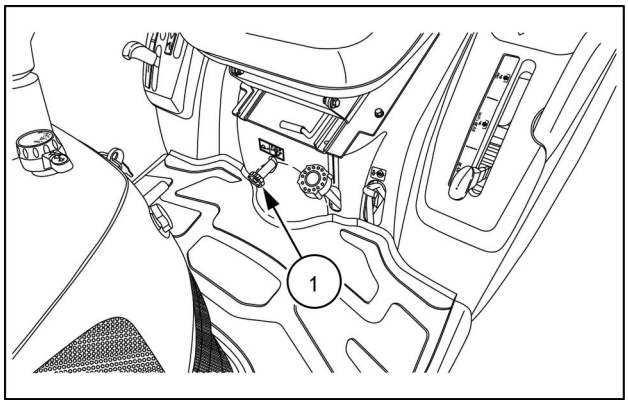


NHIL17CT00450AA 1

Rearward controls

Hydraulic Power Lift (HPL) drop rate control valve

The location of the three-point hitch drop rate control valve **(1)** is below the operator's seat.



NHIL17CT00183AA 1

The drop rate control valve (1) provides an adjustment to regulate the flow of oil from the lift cylinder. This allows the operator to slow or increase the rate of drop of the lower links.

Turn the drop rate control valve clockwise to decrease the rate of drop. Turn the valve counterclockwise to increase the rate of drop.

The drop rate control valve must be opened before the hydraulic lift control will lower. If the valve is turned all the way clockwise, the lower links raise to maximum height but cannot lower.

For most operations using a heavy mounted implement the drop rate control valve should be closed slightly to maintain better control when lowering the implement.

For three-point hitch operating instructions see page **6-10**.

Mid-mount mower deck height adjustment knob

The location of the mid-mount mower deck height adjustment knob **(1)** is below the operator's seat to the left-hand side.

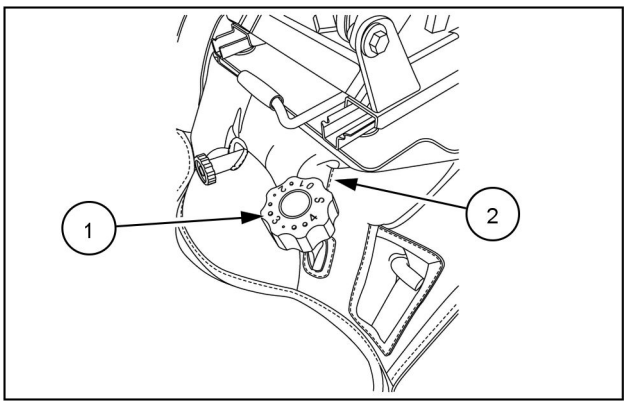
The mid-mount mower deck height adjustment knob sets the cutting height of the mid mount mower deck.

Raise the mower deck to the top of travel before adjusting the mid-mount mower deck height adjustment knob.

For HPL operating instructions see page **6-10**.

See your mower deck Operator's manual for specific mower deck adjustment instructions.

NOTE: *The white stitching **(2)**, in the sound dampening mat, corresponds to the mower deck height adjustment knob **(1)**, height position.*



NHIL21CT00072AA 1

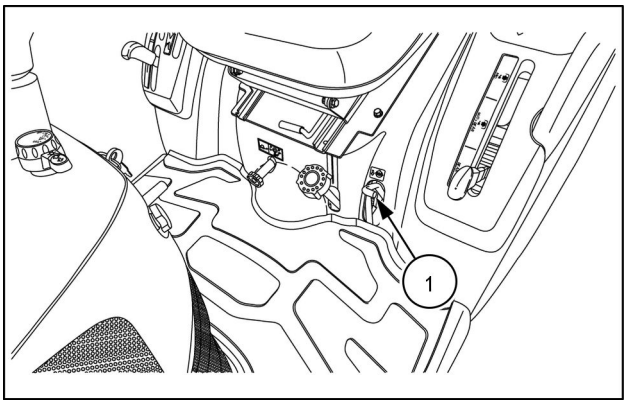
Differential lock pedal

⚠ DANGER

Steering is difficult with the differential lock engaged. An accident could result.
During field operation, use the differential lock for traction improvement but release for turning at row end. Do not drive at high speeds or on roads with the differential lock engaged.
Failure to comply will result in death or serious injury.

D0023A

The location of the differential lock pedal **(1)** is below the operator's seat to the left-hand side.



NHIL17CT00183AA 1

To apply the differential lock depress the differential lock pedal. This will cause the rear wheels to rotate at the same speed and increase rear wheel traction.

If your rear wheels begin slipping in conditions such as snow or wet surfaces release the travel pedal and depress the differential lock pedal. Then resume travel operations with increased rear wheel traction. Once you have made it through the slippery conditions release the differential lock pedal.

Turning the tractor will become difficult when the differential lock in applied. Release the differential lock pedal before attempting to turn.

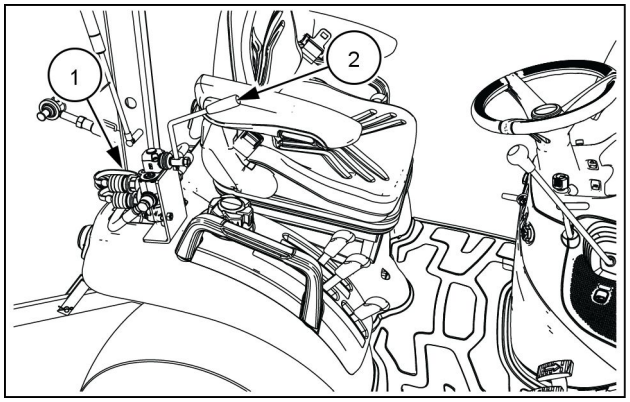
NOTE: *Depending on the operating conditions applying the differential lock may cause damage to turf grass.*

Rear remote control valve - Optional

The rear remote control valve is a Dealer Installed Accessory (DIA) kit. The rear remote control valve kit allows the installation of two **0.5 in** quick disconnect hydraulic couplers **(1)** at the rear of the tractor. The hydraulic couplers can be used to operate a double acting or single acting hydraulic cylinder on a rear mounted implement such as a log splitter or dump trailer.

NOTE: *The rear remote control valve DIA kit is not compatible if your tractor has the capability of attaching a backhoe.*

The location of the rear remote control valve operating lever **(2)** is beside the operator's seat on the right-hand side.



NHIL18CT00616AA 1

The rear remote control valve operating lever is self centering. Self centering means the control handle will return to the neutral position once the lever is released.

Pull "UP" on the lever to extend a hydraulic cylinder.

Push "DOWN" on the lever to retract a hydraulic cylinder.

NOTE: *After connecting a hydraulic cylinder for the first time, cycle the cylinder several times and check the hydraulic fluid level of the tractor. Refill the hydraulic fluid as necessary. See page* ***7-11*** *for checking and filling the hydraulic system.*

Overhead controls

Switches and work-lights - Cab (If equipped)

Work lights

⚠ 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.

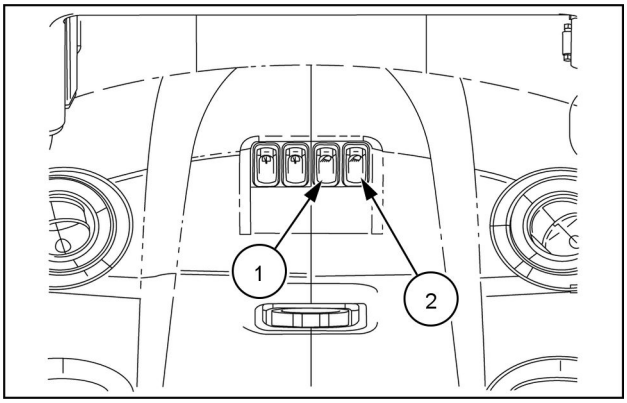
W0211A

Front work light switch **(1)** (See Figure **1**)

- This is used to turn on/off the front work lights **(1)**.(See Figure **2**)
- ON - Press the upper side (symbol part) of the switch.
- OFF - Press the lower side of the switch.
- Bulb rated capacity: **12 V 37.5 W**

Rear work light switch **(2)** (if fitted). (See Figure **1**)

- This is used to turn on/off the rear work lights **(2)**. (See Figure **2**)
- ON - Press the upper side (symbol part) of the switch.
- OFF - Press the lower side of the switch.
- Bulb rated capacity: **12 V 37.5 W**



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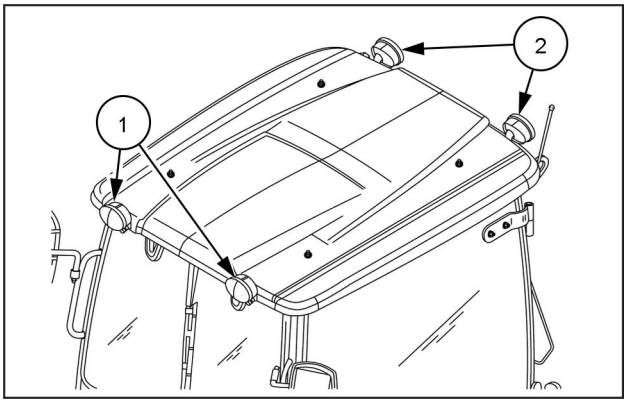

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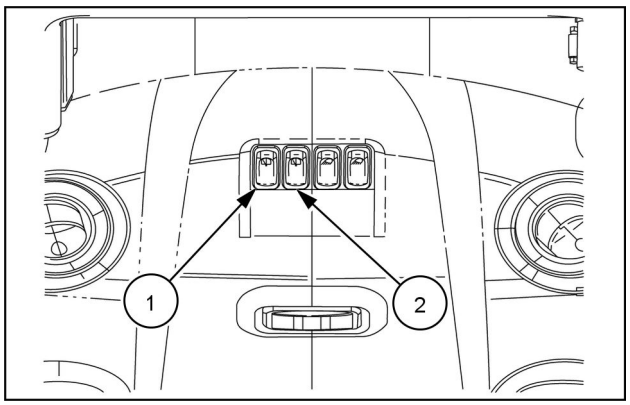
Window wiper switch - Cab (If equipped)

NOTICE: *Do not operate the wiper without windscreen washer liquid, it may cause damage to the wiper motor.*

- This switch is used to operate the front **(1)** /rear **(2)** window wiper.
- Press the upper side (symbol part) of the switch to operate only the front/rear wiper.
- If the operator presses and holds the upper side (symbol part) of the front window wiper switch **(1)** /rear **(2)** again, the washer liquid will be applied to the windows.

  NOTICE: *Use* ***CONCENTRATED WINDSCREEN WASH*** *washer liquid for the tractor in the winter time.*



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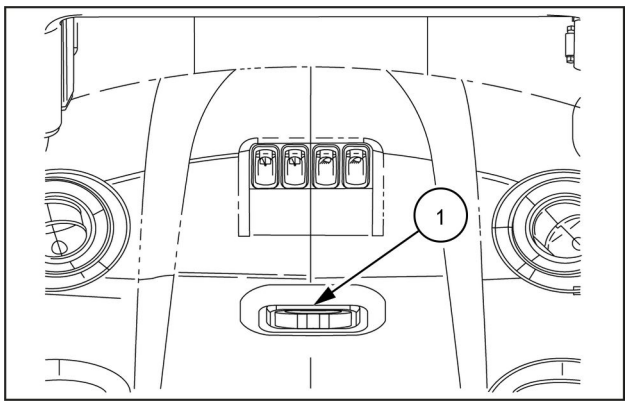
- Front window wiper switch **(1)**
- Rear window wiper switch **(2)** (if fitted)

Indoor light - Cab (If equipped)

- Press the lower side of the indoor light **(1)** to turn on the light.
- Press the lower side again to turn off the light.
- Bulb rated capacity: **12 V 10 W**



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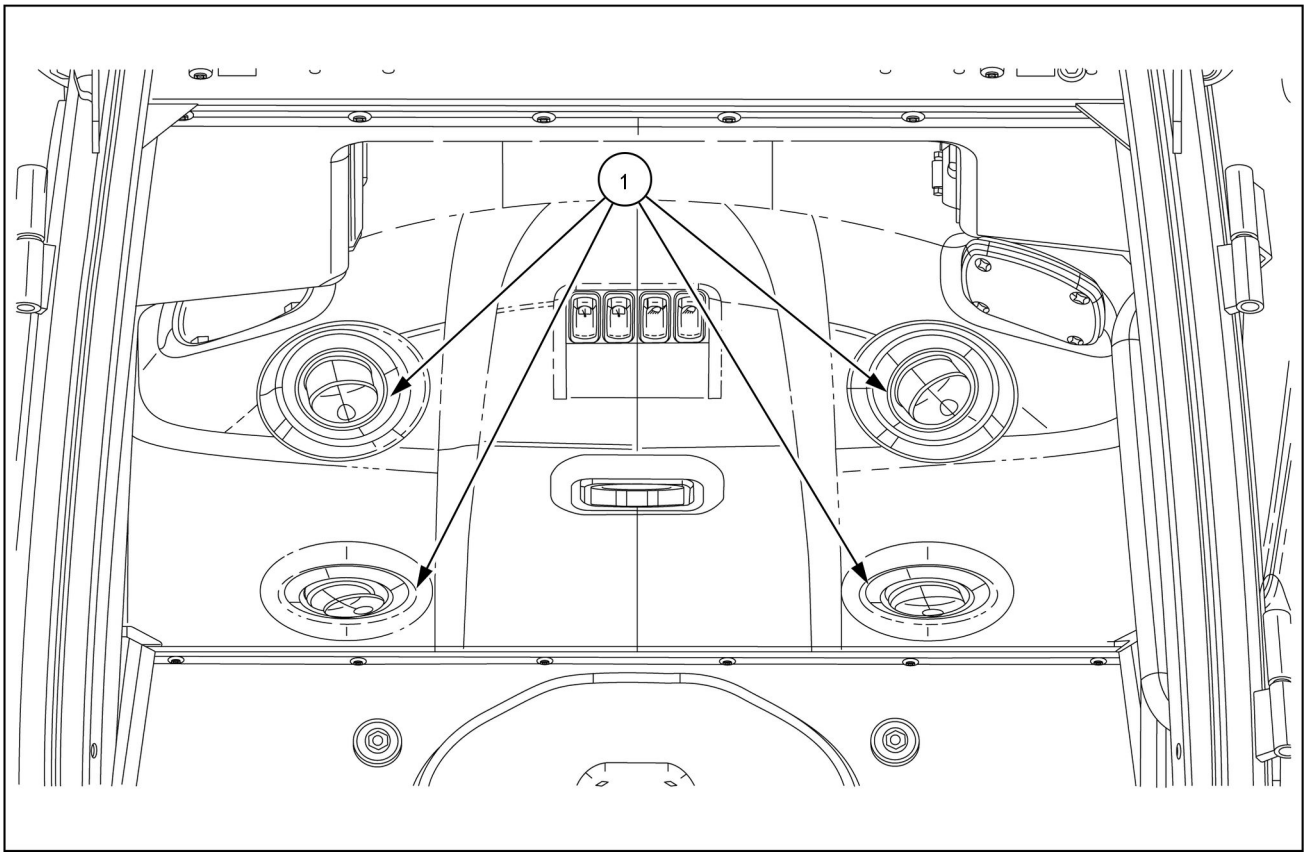
Air direction controls - Cab (If equipped)

NOTICE: *Never sleep in the cabin with the heater turned on. It may cause suffocation.*

NOTICE: *When operating in the cabin for a long time, ventilate the cabin frequently.*

- To control the air flow direction, adjust the blade angle of the blower outlets **(1)**.
- When operating the heater, always open the blower outlets **(1)**.



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Exterior controls

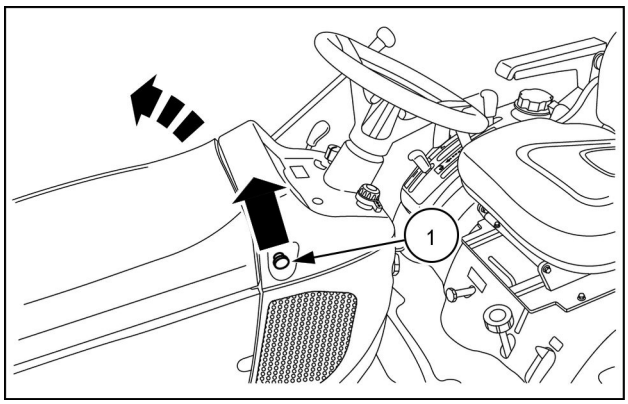
Hood release latch

⚠ WARNING

Rotating parts!
Shut off the engine before opening the engine hood.
Failure to comply could result in death or serious injury.

W1059A

1. To open the hood, simply push the button **(1)** inward.
2. The hood opens in the forward direction and is hinged at the front.
3. Grasp the rear of the hood and allow the hood to swing open.
4. A gas cylinder is attached inside to support the hood for easy access to the engine.
5. To close the hood, lay down the hood and push it down slightly to lock position.



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4 - OPERATING INSTRUCTIONS

Commissioning the unit

Engine - Running-in Procedure

Your tractor will provide long and dependable service if given proper care during the first 50-hour break-in period. During the first 50 hours of operation:

1. Avoid "lugging" the engine. Operating in high range at under heavy load may cause engine lugging, which is indicated when the engine will not respond to a throttle increase.
2. Use low range when pulling heavy loads and avoid continuous operation at high engine speeds with no load. Reduce engine speed when maximum power is not required, such as transport operations.
3. Avoid prolonged operation at either high or low engine speeds without a load on the engine.
4. Check the instruments frequently and keep the radiator and oil reservoirs filled to recommended levels. Daily checks include the engine oil level, radiator coolant level, and air cleaner.
5. After the first 50 hours of use, be sure to perform the maintenance items listed in the maintenance planning chapter. See page **7-8** for more information about maintenance planning.

Safety rules - Diesel fuel

- Use clean, quality No. 1-D or No. 2-D fuel (ASTM D975).
- Use No. 1-D fuel if the ambient temperature is expected to be lower than **4 °C** (**39 °F**) or if the tractor is to be used at an altitude exceeding **1524 m** (**5000 ft**).
- Use No. 1-2 diesel fuel with a pour point of at least **-12 °C** (**10 °F**) below the expected ambient temperature to prevent fuel flow problems in cold weather.
- Keep dirt from entering the fuel tank.
- Sulfur content of the fuel should be no more than **0.5%**.
- Sediment and water content should not exceed **0.5%**.
- Minimum cetane number is 40. Low temperature or high altitude operation may require use of fuel with a higher cetane number.
- Use properly mixed winter fuel when temperatures are extremely cold. In most areas, diesel fuel is properly blended for summer and winter grades as ambient temperatures change. In winter, use winter grade diesel fuel only. Otherwise, the fuel may cloud and block the fuel system.

Fuel Usage Safety

- UNDER NO CIRCUMSTANCES should gasoline, alcohol, or gasohol be added to diesel fuel. These combinations can create an increased fire or explosive hazard.
- Never remove the fuel cap or refuel the tractor while the engine is running or hot.
- Never smoke while refueling or anywhere near fuel.
- When filling the tank, maintain control of the nozzle.
- Do not fill the fuel tank to capacity. Allow room for expansion.
- Wipe up spills immediately.
- Always tighten the fuel cap securely.
- If the original fuel tank cap is lost, always replace it with a NEW HOLLAND approved cap. A "will-fit" cap may not be safe.
- Keep equipment properly maintained.
- Do not drive equipment near open fires.
- Never use gasoline for cleaning parts.

General specification - Biodiesel fuels

Biodiesel usage in NEW HOLLAND products

Introduction to Fatty Acid Methyl Ester (FAME) biodiesel

FAME biodiesel, called biodiesel fuel in the following section, consists of a family of fuels derived from vegetable oils treated with methyl esters.

There are two main biodiesel fuel types: Rapeseed Methyl Ester (RME) and Soybean Methyl Ester (SME). RME is a blend of rapeseed and sunflower methyl ester, and is the preferred crop in Europe. SME is the preferred crop in the United States.

Biodiesel fuel is a renewable alternative fuel source. Its use and development is promoted worldwide, especially in Europe and in the United States.

NOTICE: *Your emissions control system is compatible with up to **5%** biodiesel fuel (B20). Be aware that the use of biodiesel fuel that does not comply with the standards mentioned in this section could lead to severe damage to the engine, fuel system or aftertreatment system of your machine. The use of non-approved fuels may void NEW HOLLAND Warranty coverage.*

Biodiesel fuel can be used to run diesel engines as pure biodiesel fuel or when blended with standard diesel fuel:

- B5: indicates the blend of **5%** biodiesel and **95%** diesel fuels.
- B7: indicates the blend of **7%** biodiesel and **93%** diesel fuels.
- B20: indicates the blend of **20%** biodiesel and **80%** diesel fuels.
- B100: indicates pure biodiesel, or **100%** biodiesel fuel. Do not use.

Biodiesel fuel has several positive features in comparison with diesel fuel:

- Biodiesel fuel adds lubricity to the fuel, which is beneficial in many circumstances, particularly as sulfur and aromatics are removed from the fuel.
- Biodiesel has a greater cetane number and burns cleaner.
- Biodiesel produces less particulate matter and reduces smoke emissions.
- Biodiesel is fully biodegradable and non-toxic.

Diesel and biodiesel fuel specifications

Tier 4a diesel fuel specifications are covered by the following:

- **ASTM D975-10**, Standard Specification for Diesel Fuel Oils. (15 ppm sulfur maximum.)

Biodiesel blends are covered by:

- United States Diesel Fuel Specification **ASTM D6751-09A** allows up to **5%** biodiesel since 2009. United States fuel suppliers are allowed to use up to **5%** biodiesel fuel (B5) to supply the network.
- United States Biodiesel Fuel Specification **ASTM D7467-09A** provides specifications for diesel and biodiesel blends from B5 to B20.

Pure biodiesel (B100) specification is covered by the following requirements:

- **ASTM D6751-09A** - Standard specification for biodiesel fuel blend stock (B100) for middle distillate fuels.

  NOTE: ASTM D6751 *specification has been updated to improve the quality of biodiesel in the market place.*

Before raw oil can be converted into usable biodiesel fuel, it must undergo transesterification to remove glycerides. During the transesterification process, the oil reacts with an alcohol to separate the glycerine from the fat or vegetable oil. This process leaves behind two products: methyl ester (the chemical name for biodiesel) and glycerine (a byproduct usually sold for use in soaps or other products).

NOTICE: *Biodiesel fuels approved for use in the NEW HOLLAND equipment must be transesterified and comply with the North America Standard **ASTM D6751**.*

NOTICE: *Cold Pressed Biodiesel, Cold Pressed Oil, Straight Vegetable Oil (SVO), or more generally unrefined vegetable oils used as motor fuel, are fuels that are normally made from Rapeseed oil or similar high oil content crops. These kinds of fuel are not transesterified, so they do not fulfil the **ASTM D6751** requirements. There is no recognized quality standard available for these types of fuel. Therefore the use of Cold Pressed Biodiesel, Cold Pressed Oil, Straight Vegetable Oil (SVO), or more generally unrefined vegetable oils used as motor fuel are NOT APPROVED at any blend in any NEW HOLLAND product.*

NOTICE: *Any engine and fuel injection equipment fitted to a NEW HOLLAND vehicle found to have run with any blend of NON-APPROVED fuel (fuel not fulfilling the specification described in the requirement **ASTM D6751**) will no longer be covered for Warranty by NEW HOLLAND.*

Biodiesel fuel usage conditions

You must stringently follow the biodiesel fuel usage conditions. Incorrect application of the biodiesel fuel usage conditions could lead to severe damage to the engine, fuel injection equipment and aftertreatment system.

The main concerns related to operation with biodiesel fuels are:

- Filters and injector blockage caused by poor fuel quality.

- Wear and corrosion of internal components due to water content, which affects lubricity.
- Deterioration of some rubber sealing compounds in the fuel system.
- Biodiesel oxidation, which can lead to the formation of deposits that can harm the fuel injection system.

NOTICE: *Any problem in the engine fuel injection equipment associated with non-compliance to the following conditions for biodiesel fuel handling and maintenance will not be covered for Warranty by NEW HOLLAND.*

Purchase biodiesel fuel from a trusted supplier who understands the product and maintains acceptable fuel quality. It is highly recommended that you use biodiesel from BQ 9000 accredited suppliers to maintain the quality and consistency of the fuel. The BQ 9000 Quality Management Program is accredited by the National Biodiesel Board for producers and marketers of biodiesel fuel. See the National Biodiesel Board website at www.biodiesel.org for more information.

The use of biodiesel blends above B5 through B20 will not void the NEW HOLLAND warranty as long as the following conditions for biodiesel fuel handling and maintenance are stringently followed:

Biodiesel fuel must be pre-blended by the supplier. Mixing biodiesel fuels on-site can result in an incorrect mixture that could damage the engine and/or fuel system.

For machines using Tier 4a engines with an exhaust aftertreatment system:

1. If the biodiesel blend stock to **ASTM D6751-09A** is used, special precautions need to be taken to insure that it fully complies with the following special requirements:
   - Group I Metals content (Sodium + Potassium) is ≤ **5 mg/kg** per **EN14538** as specified in the biodiesel spec.
   - Group II Metals content (Calcium + Magnesium) is ≤ **5 mg/kg** per **EN14538** as specified in the biodiesel spec.
   - Phosphorus content lower than specified is a mandatory requirement. Phosphorus must not exceed **4 mg/kg** per **ASTM D4951**.
2. The resulting greater than B5 through B20 blend must not exceed **1 mg/kg** for Group I Metals (Sodium + Potassium) and for Group II Metals (Calcium + Magnesium).

NOTICE: For machines using Tier 4a engines with an exhaust aftertreatment system in regions where the biodiesel blend stock is supplied to the ASTM D6751-09A standard, it is essential that evidence of compliance to the special limits for Group I Metals, Group II Metals and the reduced phosphorus content specified above be obtained on every delivery of fuel from the fuel supplier. Failure to comply with this requirement can result in damage to the catalyst of the aftertreatment system which will not be covered under warranty.

NOTICE: *NEW HOLLAND may void your warranty if the problem is associated with poor fuel quality due to improper blending. It is the responsibility of the fuel supplier and/or yourself to ensure the right type of fuel and blend is delivered and used.*

Maintenance intervals

For machines using the all electronic engines with a high pressure common rail fuel system, the engine oil and filter change interval is reduced to **250 h** when using biodiesel blends greater than B5 up to B20. Please refer to the maintenance intervals specified in the Operator Manual for all engines.

Check all hoses, connections and gaskets to ensure integrity and cleanliness every 3 months or 150 hours of operation, whichever comes first.

Regular oil sampling is highly recommended to monitor for oil and engine deterioration.

NOTE: *Oil sampling kits are available from your authorized NEW HOLLAND dealer.*

When switching back from biodiesel to regular #2 diesel, all fuel filter, oil and oil filter should be changed even if this falls between routine service intervals.

Storage

The machine should not be stored for more than three months with biodiesel in the fuel system. For longer storage time, it is strongly suggested that only regular #2 diesel fuel is used.

NOTE: *If storage for longer than 3 months is necessary, the engine must be run on regular #2 diesel for a minimum of **20 h** to flush the biodiesel fuel out of the fuel system prior to storage.*

Biodiesel is highly hygroscopic and tends to collect water more than diesel fuel. This increases the risk of algae and bacteria growth which can cause severe damage to the fuel injection system. Keep the machine fuel tanks and on-site storage tanks as full as possible to limit the amount of air and water vapors inside the tank. Drain water from the tanks at least once a week.

NOTICE: *Do not use biocide additives on Tier 4a engines with an exhaust aftertreatment system.*

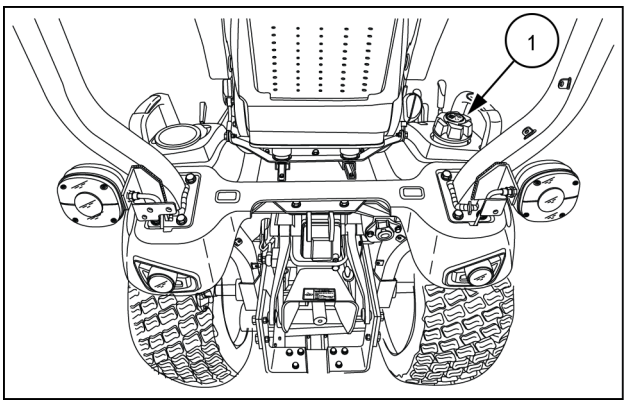
Refueling the tractor

⚠ WARNING

Fire hazard!
When handling diesel fuel, observe the following precautions:
1. Do not smoke.
2. Never fill the tank when the engine is running.
3. Wipe up spilled fuel immediately.
Failure to comply could result in death or serious injury.

W0099A

The location of the fuel tank filler cap **(1)** is on the right-hand side of the rear fender. Before removing the cap, wipe all dust and dirt from around the cap to prevent debris from falling into the tank while filling. The fuel tank capacity is **25.0 L** (**6.6 US gal**)



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There is a strainer located inside the fuel tank neck. Clean the strainer periodically. Only dispense fuel into the tank with the strainer installed.

Use an approved diesel fuel container and check the inside of the container periodically for cleanliness.

If there is no filter on the storage tank or fuel container, filter the fuel through a 100-mesh or finer screen when filling the tractor fuel tank. Keep the tractor tank as full as possible (without filling to capacity) to minimize condensation.

NOTE: *It is a good practice to fill the fuel tank at the end of each day, as this will reduce overnight condensation.*

Starting the unit

Starting the engine

⚠ WARNING

Run-over hazard!
When attempting to start the engine, always sit in the operator´s seat with the parking brake engaged and all control elements in neutral. Never attempt to start the engine while standing beside the machine.
Failure to comply could result in death or serious injury.

W0967B

Before starting the engine complete any daily maintenance items. See page **7-8** for daily maintenance items.

Perform the following operations to start the engine.

1. You must be sitting in the operator's seat.
2. Fasten your seat belt.
3. Apply the park brake. See page **3-8** for park brake information.
4. Place the Power Take–Off (PTO) switch in the "OFF" position. See page **3-8** for PTO switch information.
5. Place the PTO shift lever in the "REAR" PTO position. See page **3-8** for PTO shift lever information.
6. Place the transmission range lever in the neutral position. See page **3-8** for transmission range lever information.
7. Hydrostatic Transmission (HST) pedals are in the neutral position. See page **3-8** for HST pedal information.
8. Place the hand throttle lever at 1/4 position. See page **3-8** for hand throttle information.
9. Turn the key switch to the "ON" position. See page **3-8** for key switch information.
10. Verify the oil pressure warning indicator light and battery charge warning indicator lights are lit. See page **3-8** for instrument cluster panel information.
11. Turn the key switch to the "Preheat" position. See page **4-7** for the appropriate preheat times bases on ambient air temperature.
12. Turn the key switch to the "START" position. As soon as the engine starts release the key to allow the key to return to the "ON" position.

    NOTICE: *Do not engage the starting motor continuously for more than 10 seconds. Doing so may cause starting motor failure.*
13. Check if the oil pressure warning indicator light or the battery charge warning indicator lights are lit. Shut off the engine immediately if any of these lights are lit. See page **8-1** for troubleshooting information.

Cold starting aids

⚠ WARNING

Explosion hazard!
DO NOT use ether starting fluid. Serious engine damage, explosion, death, or serious personal injury could occur.
Failure to comply could result in death or serious injury.

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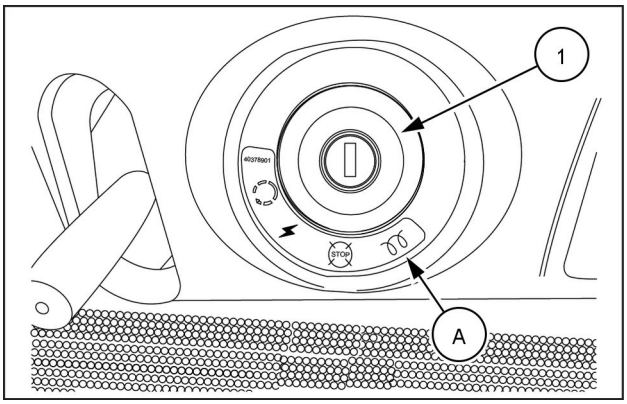
To preheat the engine, turn the key switch **(1)** to the "preheat" position **(A)**.



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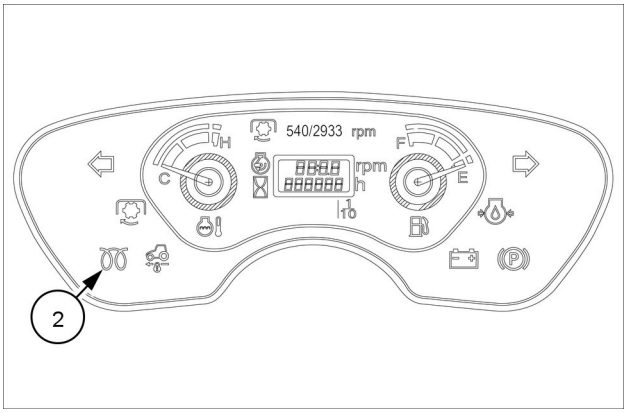
The cold start indicator light **(2)** will illuminate when the key switch is in the "preheat" position. The glow plugs heat the precombustion chambers of the engine cylinder head during this time. Use the table below for the recommended preheat times.

Preheat times	
Ambient air temperature	Time
Above **10.0 °C** (**50.0 °F**)	**4 s**
Between **0.0 – 10.0 °C** (**32.0 – 50.0 °F**)	**8 s**
Below **0.0 °C** (**32.0 °F**)	**15 s**



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NOTE: *A engine block heater is available as a Dealer Installed Accessory (DIA). This heater allows for easier starting in temperatures below* ***-12.2 °C*** *(****10.0 °F****) by warming the engine coolant.*

NOTICE: *When starting the machine after long down periods, avoid immediate use of hydraulics. It is necessary to allow time for enough lubrication of all moving parts before subjecting them to work loads, particularly if outdoor temperatures approach 0°C (32°F). Run the engine at 1300 to 1500 RPM for approximately fifteen minutes to bring the hydraulic oil up to normal operating temperature. Failure to comply could seriously damage machine.*

Starting the tractor with jumper cables

⚠ WARNING

Unexpected machine movement!
Always sit in the operator's seat to operate the machine. DO NOT bypass the key start switch. Sudden and unexpected machine movement or machine runaway could result.
Failure to comply could result in death or serious injury.

W0464A

⚠ WARNING

Explosive gas!
Batteries emit explosive hydrogen gas and other fumes while charging. Ventilate the charging area. Keep the battery away from sparks, open flames, and other ignition sources. Never charge a frozen battery.
Failure to comply could result in death or serious injury.

W0005A

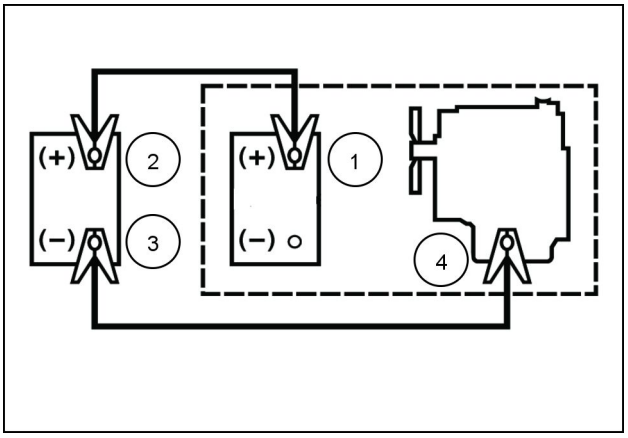
⚠ WARNING

Explosion hazard!
When jump-starting the machine, connect and disconnect the jumper cables exactly as indicated in this manual. DO NOT connect the jumper cables to the machine battery terminals. Make sure no persons are near the connecting points before starting the engine. Start the engine from the operator's seat.
Failure to comply could result in death or serious injury.

W0342A

If you must use jumper cables to start the tractor:

1. Shield your eyes.
2. Connect the red end of the jumper cable to the positive (+) battery terminal **(1)** on the tractor and connect the other red end to the positive (+) battery terminal **(2)** on the auxiliary battery.
3. Connect the black end of the jumper cable to the negative (-) battery terminal **(3)** on the auxiliary battery, then connect the other black end to a tractor frame ground or engine ground **(4)**. Finally, start the tractor by following the safe starting procedures outlined under See page **4-6** .
4. When the engine starts allow the engine to idle, and turn on all electrical equipment (lights, etc.) This will help protect the alternator from possible damage due to changes in load when disconnecting the jumper cables.
5. Disconnect the jumper cables in reverse order, disconnect the black end from the tractor frame or engine ground **(4)** then disconnect the other black end from the negative (-) battery terminal **(3)** on the auxiliary battery.
6. Disconnect the red end from the positive (+) battery terminal **(2)** on the auxiliary battery.
7. Remove the other red end from the positive (+) battery terminal **(1)** on the tractor battery.



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Stopping the unit

Stopping the engine

Perform the following operations to stop the engine.

1. Remain in the operator seat.
2. Pull the hand throttle lever rearward to the idle position.
3. Place the Power Take–Off (PTO) switch in the “OFF” position.
4. Engage the park brake.
5. Place the transmission range shift lever in the neutral position.
6. Lower all implements to the ground.
7. Turn the key to the "STOP" position to shut the engine off.

Stopping the unit - Brakes

In normal operating conditions to stop the unit simply remove your foot from the forward or reverse Hydrostatic Transmission (HST) travel pedals See page **3-8** for HST pedal information. If you are going down an incline or pulling a heavy load it may be necessary to apply the service brake. To apply the service brakes press down on the brake pedal on the left-hand side of the operator's platform. The single brake pedal will apply the brakes to both the left-hand and right-hand rear wheels. See page **3-8** for service brake information. If four wheel braking is desired engage the Four-Wheel Drive (4WD). See page **3-8** for 4WD information.

Emergency stopping

To make a emergency stop carry out the following procedures.

1. Release the Hydrostatic Transmission (HST) pedals.
2. Depress the service brake pedal.
3. Pull the hand throttle lever rearward to reduce the engine speed.

Moving the unit

Steering - Operation

Your tractor has a hydro-static steering system which provides convenience and ease of operation of the steering wheel. A non-load reaction system reduces the feedback felt by the operator when traveling over rough ground through the steering wheel.

Operating notes

- If there is too much of a load in the front bucket, it could be difficult to operate the steering wheel. In this case, reduce the size of the load or move the tractor slowly forward while turning the steering wheel in the direction of desired travel.
- Do not hold the steering wheel fully to the left or right after the front wheels have reached end of travel for more than 10 seconds. This could over heat the steering system and cause damage.
- If an abnormal sound is heard while operating the steering wheel, this means that there is some air in the steering components line. In this case, turn the steering wheel to left and right fully and hold for about 5 seconds. The air should bleed out and the abnormal noise should go away. If the sound does not go away take your tractor to your authorized NEW HOLLAND dealer.
- When operating the tractor in cold weather, the abnormal sound may be heard. In this case, warm up the tractor before using to reduce the oil viscosity.
- If the engine stops, the hydraulic power for the steering system will stop. The loss of hydraulic power will make the steering wheel difficult to turn.

Hydrostatic Transmission (HST) - Operation

The Hydrostatic Transmission (HST) provides a wide range of ground speeds given the range the operator selects and the speed of the engine.

NOTE: *Please see chapter 3 - CONTROLS AND INSTRUMENTS starting on page* ***3-1*** *if you are not familiar with the controls in the operating guidelines below.*

The operator has the following inputs to control the HST.

- Hand throttle setting or engine speed
- HST range selection
- Forward or reverse pedal application

The HST has two transmission ranges “L” range and “H” range. The table below shows the ground speeds of the tractor when the engine running at **3235 RPM**.

Range and direction	Speed
“L” range - Forward direction	**0.0 – 6.1 km/h** (**0.0 – 3.8 mph**)
“H” range - Forward direction	**0.0 – 14.6 km/h** (**0.0 – 9.1 mph**)
“L” range - Reverse direction	**0.0 – 3.7 km/h** (**0.0 – 2.3 mph**)
“H” range - Reverse direction	**0.0 – 8.8 km/h** (**0.0 – 5.5 mph**)

The operator can achieve these speeds by gradually depressing the forward or reverse HST pedals. The further the forward or reverse pedals are depressed the faster the tractor will travel in that direction.

The engine has an operating range of **1500 – 3235 RPM**. Use the hand throttle and set the engine RPM in that operating range. Light work will require less engine throttle while heavy or high travel speeds will require full throttle. Pick the engine speed that works best for the application you are performing.

The correct HST range will depend on what operation is being performed. “L” range is generally used for heavy loads or operations needing high engine speed and slow ground speeds.

Examples of operations “L” range would be appropriate

- Rototiller operation
- Pulling heavy loads
- Precision operations in close quarters
- Heavy front end loader operation
- Mowing operation on steep hills

“H” range is generally used for light loads or operations that do not require full throttle. “H” range works well for transport operations when high speed is required.

Examples of operations “H” range would be appropriate

- Transport operation
- General mowing operation
- Light front end loader operation

Transmission operation at low ambient temperatures

Warm up period

⚠ WARNING

Unexpected movement!
During the warm-up operation, do the following: Engage the parking brake, set all shift levers to their NEUTRAL positions, and place the Power Take-Off (PTO) clutch lever in the OFF position.
Failure to comply could result in death or serious injury.

W1247A

The tractor hydraulic oil also serves as the tractor transmission fluid. During cold weather operation, the hydraulic oil viscosity increases. This increase in oil viscosity restricts the oil's ability to flow and lubricate in the transmission and hydraulic circuits. The cold oil can result in abnormal noises and slower operation times due to the increased oil viscosity.

NOTE: *A warm up time at **50%** rated engine speed is recommended to assure proper vehicle functionality, transmission lubrication and operation.*

NOTE: *Do not operate the tractor under full load condition until the hydraulic oil is sufficiently warmed up.*

Ambient Temperature	Recommended Warm-Up Time
0 – 10 °C (**32 – 50 °F**)	Minimum of 5 minutes
0 – -10 °C (**32 – 14 °F**)	5 to 10 minutes
-10 – -20 °C (**14 – -4 °F**)	10 to 15 minutes
Below **-20 °C** (**-4 °F**)	More than 15 minutes

Parking the unit

Park brake - Operation

⚠ CAUTION

Unexpected machine movement!
When the machine is parked and the engine is switched off, the parking brake must be applied. Use wheel chocks if parking on a steep slope.
Failure to comply could result in minor or moderate injury.

C0014A

Once the unit is stopped apply the park brake to keep the tractor stationary.

Perform the following operations to apply the park brake.

1. Bring the unit to a full stop.
2. Depress the brake pedal.
3. Pull upward on the park brake lever.
4. Remove your foot from the brake pedal.
5. Stop the engine. See page **4-9** for instructions on stopping the engine.
6. Remove the key from the key switch.

5 - TRANSPORT OPERATIONS

Road transport

Road transport - Overview

Observe the following precautions when driving the tractor.

- Watch where you are going at all times, especially at row ends, on roads, and around trees.
- Use the hazard warning lights, road lights and Slow Moving Vehicle (SMV) sign when travelling on public roads, day or night.
- DO NOT permit anyone but the operator to ride on the tractor.
- Make sure the PTO switch is in the "OFF" position.
- If the tractor becomes stuck, back out to prevent upsetting the unit.
- Always use the drawbar for pull-type work. Do not pull from any other part of the tractor, since it may tip backward.

NOTICE: *When transporting on the highway, a safety chain with tensile strength equal to the gross weight of the implement should be connected between the tractor and the towed implement. This will control the implement in the event the hitch pin is lost. After attaching the safety chain, check its adjustment by driving the tractor to the right and to the left for a short distance. Readjust to tighten or loosen the chain as necessary. Safety chains and suitable hardware are available from your NEW HOLLAND Dealer.*

NOTE: *Procure attaching hardware locally. Check implement assembly or the Operator's Manual for attaching hardware specifications, such as bolt size and grade, chain strength, washers, lock washers, nuts, etc.*

- Reduce speed before turning quickly or applying brakes.
- To make an emergency stop, depress the service brake pedals and release the Hydrostatic Transmission (HST) pedals.
- Never apply the differential lock when turning.
- Use extreme caution and avoid hard applications of the tractor brakes when pulling heavy, towed loads at road speeds.
- Any towed vehicle with a total weight exceeding that of the towing tractor should be equipped with brakes for safe operation.
- Always sit in the driver's seat while starting or driving the tractor.
- Always check overhead clearance, especially when transporting the tractor.

Shipping transport

Carrying the tractor on a transporter

NOTICE: *Do not hook the chains around the steering cylinders, tie rods or the axles. These components will be damaged by the chain or by excessive strain.*

NOTE: *Use suitable equipment or facilities when loading and unloading the tractor.*

Transport the tractor with all four wheels on a flatbed trailer or truck. Secure the tractor as follows:

- Secure the front of the tractor at the front of the frame.
- Secure the rear of the tractor at the rear drawbar/hitch.

If the over all height of the tractor exceeds the maximum transport height, the Roll Over Protective Structure can be folded to achieve a lower over all height. See page **6-3**.

6 - WORKING OPERATIONS

General information

External lighting - Operating

⚠ 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

Your tractor has the following lighting equipment.

Turn signals **(A)**

- Use the turn signals when traveling on public roads to let others know the direction you are planning on turning to. The turn signals are visible from the front and rear of the tractor.

Hazard lights **(A)**

- Use the hazard lights when traveling on public roads. The hazard lights are visible from the front and rear of the tractor.

Headlights **(B)**

- Use the headlights when traveling on public roads. The headights are visible from the front of the tractor

Sidelights **(C)**

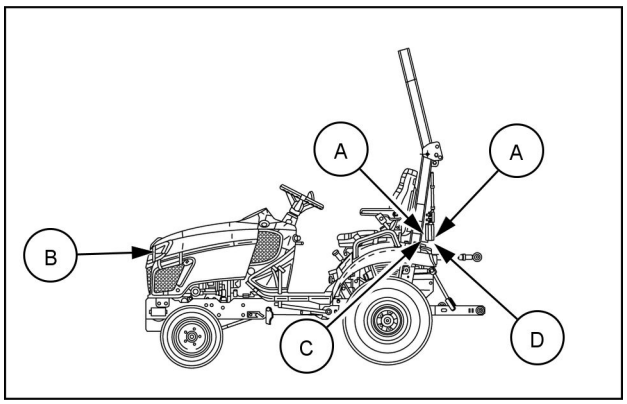
- Use the sidelights when traveling on public roads. The sidelights are visible from the front of the tractor.

Rear warning lights **(D)**

- Use the rear warning lights when traveling on public roads. The rear warning lights are visible from the rear of the tractor.

Brake lights **(D)**

- The brake lights are illuminated anytime the service brake pedal is depressed or the park brake is engaged. The brake lights are visible from the rear of the tractor.



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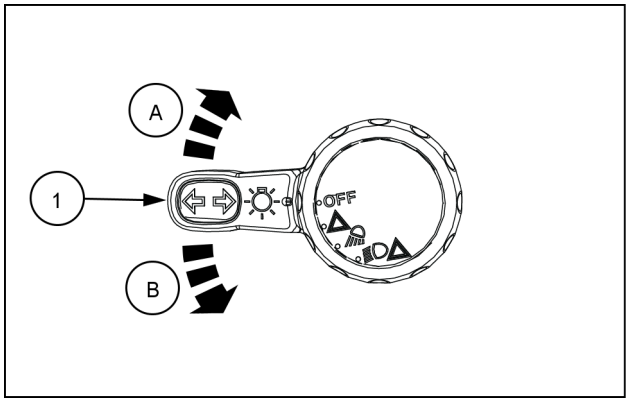
Turn signal operation

To operate the left-hand turn signal move the turn signal lever **(1)** in the counter clock-wise direction **(B)**.

To operate the right-hand turn signal move the turn signal lever **(1)** in the clock-wise direction **(A)**.



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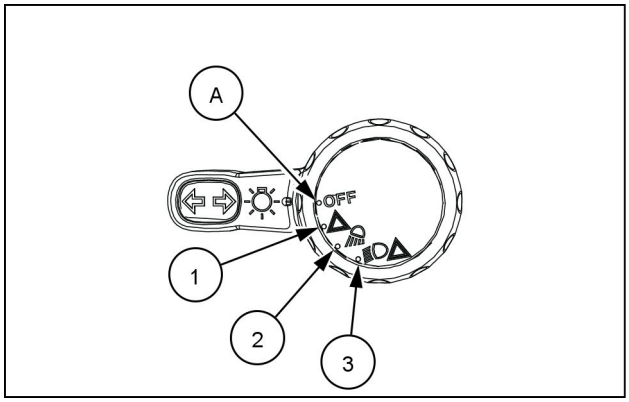
Light switch operation

Turn the light switch to the hazard position **(1)** to operate the hazard lights the sidelights and the instrument panel lights.

Turn the light switch to the work light position **(2)** to operate the headlights the sidelights and the instrument panel lights.

Turn the light switch to the road light position **(3)** to operate the headlights the sidelights the hazard lights and the instrument panel lights.

Turn the light switch to the “OFF” position **(A)** to turn off all the lights.



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Roll Over Protective Structure (ROPS) Fold up/down

⚠ DANGER

Roll-over hazard!
A folded Roll-Over Protective Structure (ROPS) does not provide roll-over protection. Do not operate the machine with the ROPS folded as a standard operating mode. Raise the ROPS immediately after low clearance use or transport.
Failure to comply will result in death or serious injury.

D0058A

⚠ DANGER

Crushing hazard!
Always wear the seat belt when operating the machine with the Roll Over Protective Structure (ROPS) in the upright position. If the ROPS is in the folded position, the seat belt should not be used. Raise the ROPS and wear the seat belt as soon as conditions allow.
Failure to comply will result in death or serious injury.

D0139A

⚠ WARNING

Machine damage can cause accidents!
While driving, make sure the Roll Over Protective Structure (ROPS) is correctly positioned to avoid any damage. The ROPS and interconnecting components are a certified system. Any damage reduces protection and weakens the structure.
Failure to comply could result in death or serious injury.

W0934A

⚠ WARNING

Avoid injury!
Always follow the procedure in this manual when you fold or unfold the Roll-Over Protective Structure (ROPS).
Failure to comply could result in death or serious injury.

W1506A

⚠ WARNING

Equipment failure could cause accident or injury!
The Roll Over Protective Structure (ROPS) and interconnecting components are a certified system. Make sure you tighten the ROPS mounting bolts to the required torque specification.
Failure to comply could result in death or serious injury.

W0935A

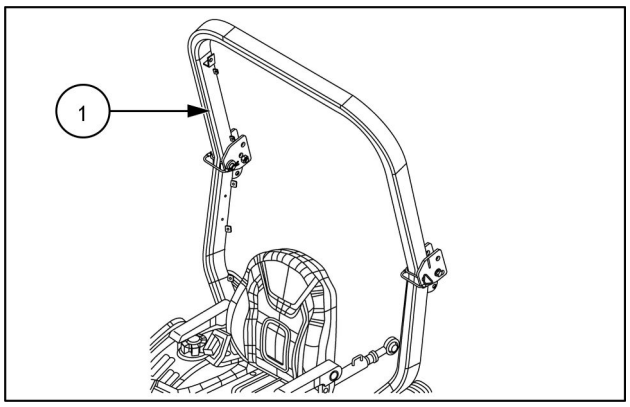
⚠ CAUTION

Heavy parts!
The Roll Over Protective Structure (ROPS) is a heavy assembly. Use caution when you fold and stand the upper ROPS frame.
Failure to comply could result in minor or moderate injury.

C0141A

Rear foldable Roll-bar type

- The Roll-Over Protective Structure (ROPS) **(1)** is integrated and certified structure for driver's safety. This structure will reduce the risk of serious injury or death when being over-turned.
- DO NOT remove, modify or repair the ROPS arbitrarily. The welding, bending, drilling, grinding, or cutting of any part of the ROPS, it can weaken the structure.
- If the ROPS is loosened or removed for any reason, make sure that all parts reinstalled correctly before operating the tractor.



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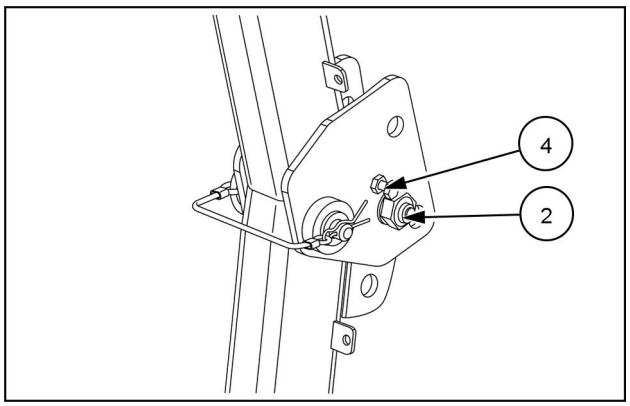
Fold ROPS down

To fold the ROPS down, do the following:

1. Loosen the bolts **(2)**, and **(4)** and nuts (both sides) loosely. (Do not remove the hardware completely)



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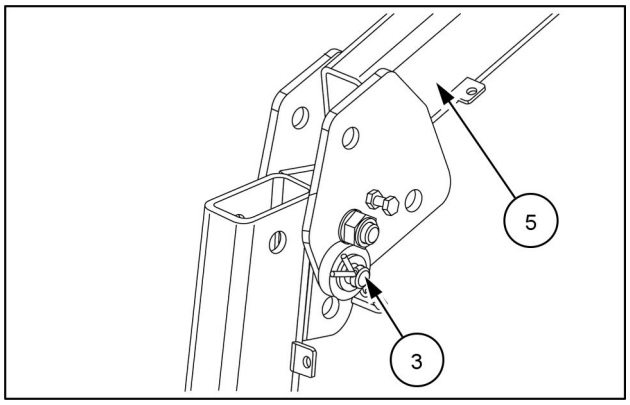
2. Remove the pins **(3)** on the both sides and fold down the upper frame **(5)** backward as shown in the image. See Figure **3**.

   NOTICE: *Be careful of the possibility that your head, hand and shoulder might be hurt by sudden folding result from the weight of the roll-bar frame*



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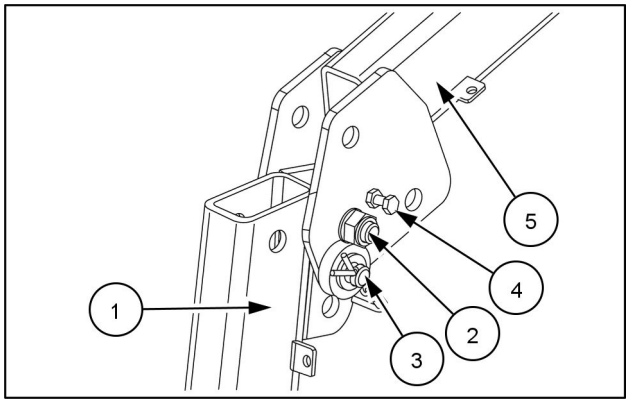
3. Align the holes of the frame **(1)** and **(5)** in line, and put the pins **(3)** into the hole to fix the roll-bar frame and apply the snap pin.
4. Fasten the bolts **(2)**, and **(4)** and nuts (both sides) tightly.



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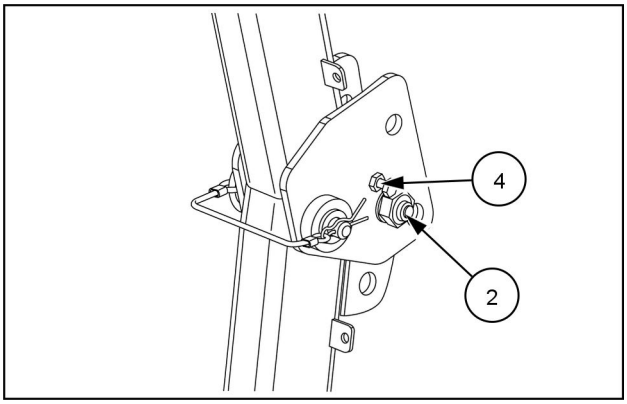
Raise ROPS to the upright position

To fold the ROPS up, do the following:

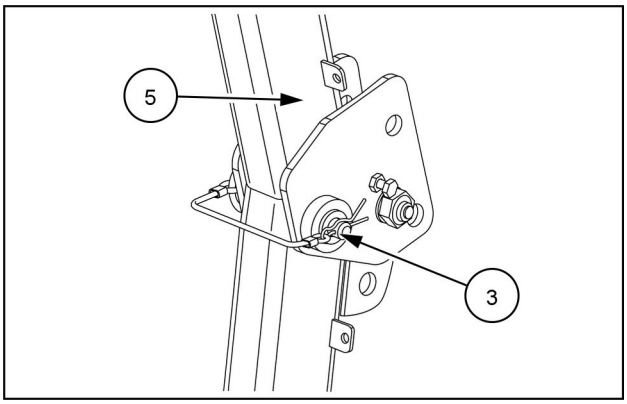
1. Unfasten the bolts **(2)**, and **(4)** and nuts (both sides) completely.



NHIL23CT00407AA 5

2. Remove the pins **(3)** on the both sides and fold down the upper frame **(5)** backward as shown. See figure **7**.

   NOTICE: *Be careful of the possibility that your head, hand and shoulder might be hurt by sudden folding result from the weight of the roll-bar frame*

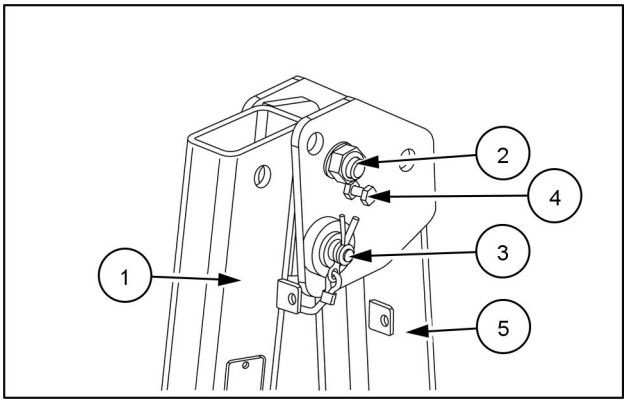


NHIL23CT00407AA 6

3. Set the holes of the frame **(1)** and **(5)** in line, and put the pins **(3)** into the hole to secure the roll-bar frame and apply the snap pin.
4. Fasten the bolts **(2) (4)** and nuts (both sides) tightly.

   NOTE: *When standing up the roll-bar upper frame, follow the same procedure reversely.*

   NOTE: *When the roll-bar upper **(5)** is fully folded, check the upper limit of 3-point linkage.*



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Ballasting the tractor

For sufficient traction and maximum performance in heavy draft operations and to counterbalance rear-mounted equipment weight should be added to the tractor in the form of cast iron weights or rear mounted ballast box. Only enough weight should be added to provide good traction and stability. Adding more weight than is needed results in unnecessary soil compaction increased rolling resistance and higher fuel consumption.

NOTE: *When adding weight to the tractor tire pressures may need to be increased. See* ***7-24*** *in this manual.*

Front end ballast may be required for stability and steering control when weight is transferred from the front wheels to the rear wheels as an implement is raised by the tractor three-point hitch.

Use the following as a general guide:

- Ballast the tractor (less implement) so that approximately one-third of the tractor weight is on the front wheels. For optimum traction tractors equipped with 4WD should be ballasted so that **40 – 45%** of machine weight is on the front wheels.
- When a rear mounted implement is raised to the transport position the front wheel reaction should be at least **20%** of tractor weight.
- Add additional front end ballast as required for stability during operation and transport. Tractor front end ballast may not always maintain satisfactory stability if the tractor is operated at high speed on rough terrain. Reduce tractor speed and exercise caution under these conditions.
- When using front-mounted equipment add weight to the rear axle to maintain good traction and stability. Front-mounted equipment varies in weight. Refer to equipment manual for ballasting.

Weighting limitations

The weighting limitations that follow are limitations only. They do not imply that the tractor should be weighted to attain the weights given. Use only enough weight to obtain good performance.

Technically maximum permissible mass

The table below is the maximum permissible mass for the tractor and it includes all implements and ballast weight. Do not exceed these mass ratings.

Technically maximum permissible mass	Mass
Front axle	**650 kg** (**1433 lb**)
Rear axle	**840 kg** (**1852 lb**)
Combined front and rear axle	**1200 kg** (**2646 lb**)

Tire load capacity

The table below is the load capacity of the tires. Do not over the load the tires. The axle rating of the tractor may be less than the capacity of the tires. Do not exceed the maximum permissible mass of the tractor.

Tire position	Tire size	Tire type	Load capacity
Front	18x8.50-10	R3 (Turf) 4 ply	**375 kg** (**827 lb**)
Front	18x8.50-10	R4 (Industrial) 4 ply	**375 kg** (**827 lb**)
Rear	26x12.0-12	R3 (Turf) 4 ply	**807 kg** (**1779 lb**)
Rear	26x12.0-12	R4 (Industrial) 4 ply	**810 kg** (**1786 lb**)

Tractor ballasting weights

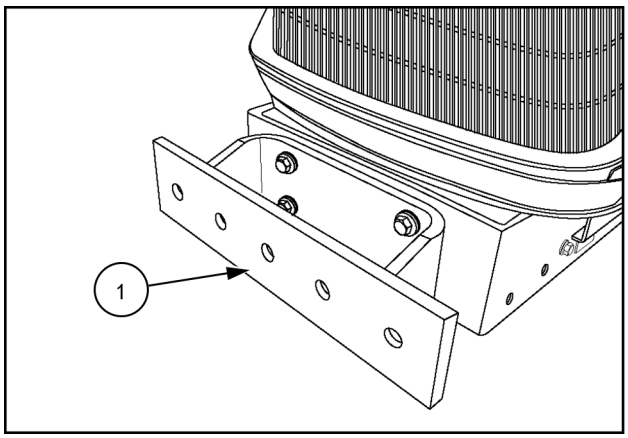
Cast iron weights (Optional)

Cast iron weights are available as accessories from your NEW HOLLAND Dealer. Weights can be mounted on the front end of the tractor or the rear of the tractor.

Front weight carrier bracket (Optional)

To mount cast iron weights on the front of the tractor an optional extension mounting bracket **(1)** 84532452 must be installed on the front of the tractor frame. When the extension bracket is installed, a maximum of five front weights can be installed.

Mounting Hardware	
Quantity	Description
4	Bolt, M12 x 40
4	Flat washer, M12



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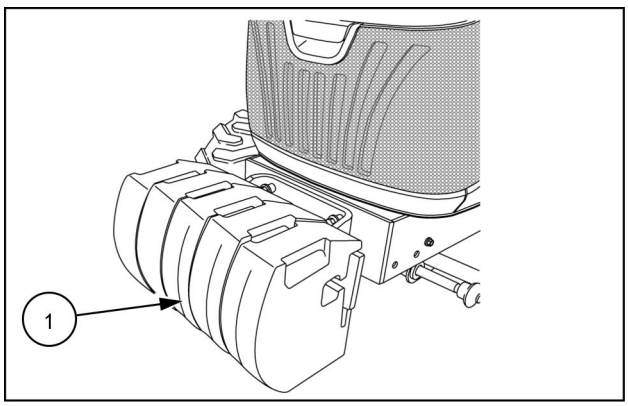
Weight options:

1. A maximum of five **27 kg** (**60 lb**) weights **(1)** for a total weight of **136 kg** (**300 lb**).

   NOTE: *The front extension mounting bracket is not compatible with grille guard.*



83115213 2

Rear wheel weights (Optional)

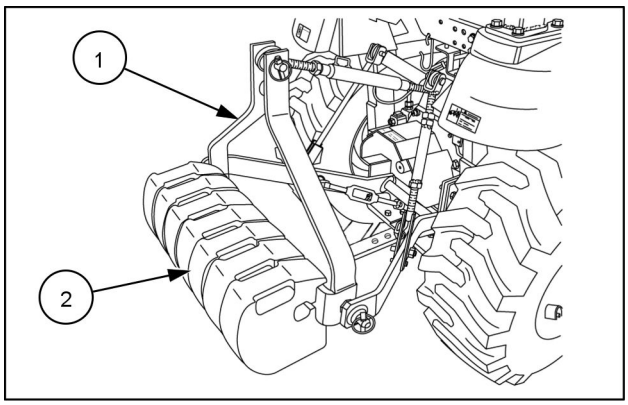
NOTE: *Rear wheel weights are not available.*

Rear counter weight bracket (Optional)

To mount cast iron weights on the rear of the tractor an optional weight bracket **(1)** must be installed on the rear three-point hitch. A maximum of seven suitcase weights **(2)** can be fitted to the bracket.

Weight options:

1. A maximum of seven **27 kg** (**60 lb**) weights for a total weight of **191 kg** (**421 lb**).

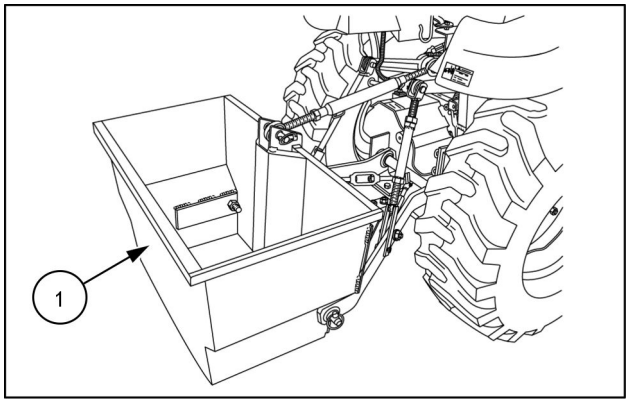


83114211 3

Ballasting box (Optional)

A category-1, three-point hitch, **227 kg** (**500 lb**) capacity ballasting box **(1)** may be purchased as extra equipment. Load with sand, gravel, or similar loose ballast as needed.

	Weight (Empty)	Weight (Loaded)
Three-Point Hitch Ballasting Box	**46 kg** (**101 lb**)	**228 kg** (**503 lb**)



83114208 4

Operator presence system

The following tables will give you an overview of the Operator presence system and how the tractor will react in different situations.

Operator presence system (start operation)

Operator	PTO* switch position	Transmission	Park Brake	Condition
Out of seat	Off	Forward / Reverse pedals in neutral	Engaged	Start
Out of seat	Off	Forward / Reverse pedals in neutral	Disengaged	Start with Alarm
In seat	Off	Forward / Reverse pedals in neutral	Engaged	Start
In seat	Off	Forward / Reverse pedals in neutral	Disengaged	Start with Alarm
In seat	On	Forward / Reverse pedals in neutral	Engaged	No start
In seat	Off	Forward / Reverse pedals depressed	Engaged	No start
In seat	Off	Forward / Reverse pedals in neutral	Engaged	No start

NOTE: *For starting the engine the PTO switch must be off, and the Forward / Reverse pedals must be in the neutral position.*

Operator presence system (run operation)

NOTE: *The following conditions are for when the engine is running and the operator gets out of the seat.*

PTO* switch position	Transmission	Park Brake	Condition
Off	Forward / Reverse pedals in neutral	Engaged	No alarm
Off	Forward / Reverse pedals in neutral	Disengaged	Alarm
On	Forward / Reverse pedals in neutral	Engaged	Alarm
On	Forward / Reverse pedals in neutral	Disengaged	Alarm
On	Forward / Reverse pedals in neutral	Engaged	Shutdown
Off	Forward / Reverse pedals in neutral	Engaged	Shutdown
Off	Forward / Reverse pedals depressed	Disengaged	Shutdown

General field operation

Hydraulic Power Lift (HPL) - Operation

The rear three-point-hitch is the implement lift and lower system built into the rear of the tractor. The rear three-point-hitch uses hydraulic power to allow the operator to effortlessly raise and lower heavy attachments with precision control. The rear three-point-hitch can be used to raise and lower three point hitch equipment, and the mid mount mower deck.

NOTE: *Please see chapter 3 - CONTROLS AND INSTRUMENTS starting on page* ***3-1*** *if you are not familiar with the controls in the operating guidelines below.*

The operator has the following inputs to control the rear three-point-hitch.

- Rear three-point-hitch lever
- Rear three-point-hitch drop rate control valve
- Mid-mount mower deck height adjustment knob

Keep the engine speed at a minimum of **1500 RPM** when using the rear three-point-hitch.

To raise an implement with the rear three-point-hitch move the rear three-point-hitch lever to the rear. Once the desired height it achieved release the rear three-point-hitch lever. The rear three-point-hitch lever is self centering. That means the rear three-point-hitch lever will return to the neutral position once the rear three-point-hitch lever is released.

NOTE: *The engine speed has a direct impact on the speed in which the rear three-point-hitch can raise. Increase the engine speed to increase the speed the rear three-point-hitch can raise an implement.*

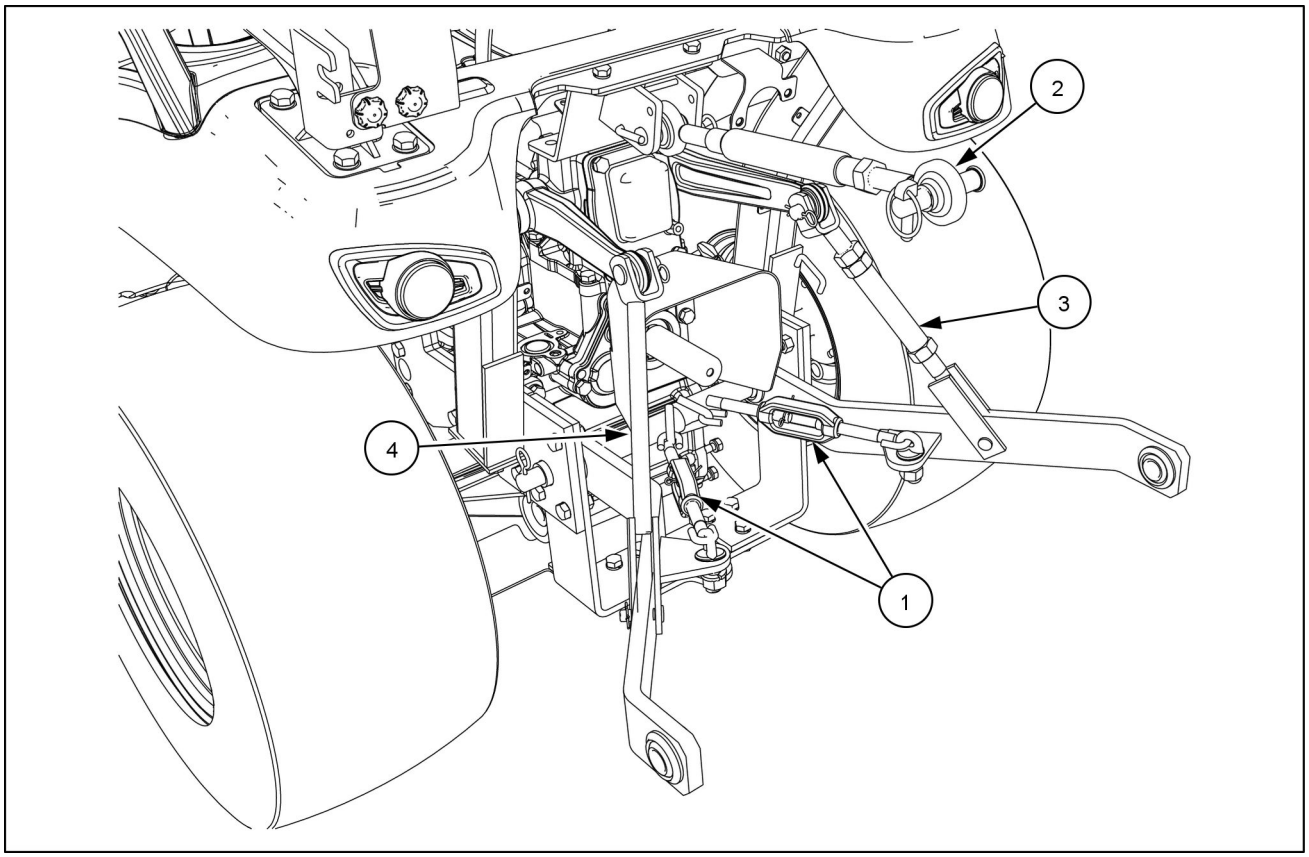
To lower an implement with the rear three-point-hitch move the rear three-point-hitch lever forward. Once the desired height it achieved release the rear three-point-hitch lever.

The rear three-point-hitch drop rate control valve controls how fast an implement will drop when the rear three-point-hitch lever is in the forward position. To increase the speed of a lowering implement, turn the rear three-point-hitch drop rate control valve clockwise as viewed from the rear of the tractor. To decrease the speed of a lowering implement, turn the rear three-point-hitch drop rate control valve counter-clockwise as viewed from the rear of the tractor. If you close the rear three-point-hitch drop rate control valve by turning the knob completely counter-clockwise the implement will not lower regardless if the rear three-point-hitch lever is in the forward position. The implement will be able to raise if the rear three-point-hitch drop rate control valve is in the closed position.

The rear three-point-hitch drop rate control valve should be adjusted based on the weight of the attached implement. If a heavy implement is mounted to the three point hitch the rear three-point-hitch drop rate control valve should be adjusted so the implement can be lowered with precision, not lowered uncontrollably. If a light implement is mounted to the three point hitch the rear three-point-hitch drop rate control valve can be adjusted so a quicker lower can be achieved. The final adjustment of the rear three-point-hitch drop rate control valve should be done to meet personal preference and match the operation being performed.

The mid-mount mower deck height adjustment knob sets the cutting height of the mower deck. The mid-mount mower deck height adjustment knob mechanically locks the mower deck linkage to a specific height and is independent of the three point hitch linkage. The mid-mount mower deck height adjustment knob can only be adjusted when the mower deck is in the fully raised position. Please refer to the mid-mount mower deck Operator’s manual for more information on setting the cutting height of the mid-mount mower deck.

Rear three-point hitch - Overview



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The rear three-point-hitch linkage is used to attach three-point mounted equipment which is usually Power Take Off (PTO) operated, such as rotary mowers, tillers, flail mowers, snowblowers, etc. The three linkage points are the two lower lift arms and the top link.

The three-point linkage has easy to adjust sway bars **(1)** to control lateral movement of the lift arms. The length of the top link **(2)** and the height of the right-hand **(3)** lift arm can be adjusted to ease the attachment of implements and to level the implement after attaching. The left-hand lift arm **(4)** is not adjustable.

Attaching three-point hitch equipment

⚠ WARNING

Entanglement hazard! Before you attach or detach equipment or change the Power Take-Off (PTO) shaft:
1) Apply the parking brake.
2) Move all controls to neutral. Put the PTO control knob in the disengaged position.
3) Stop the engine. Remove the key.
4) Wait for the PTO shaft to stop turning before you leave the cab or operator's platform.
Failure to comply could result in death or serious injury.

W1605A

NOTICE: *When attaching mounted or semi mounted implement to the three-point linkage, ensure that there is adequate clearance between the implement and the rear of the tractor. The clearances in the raised position should be checked by raising the implement carefully with the position control lever. With the implement fully raised there must be at least* ***100 mm*** *(****4 in****) clearance between the implement and the nearest part of the tractor.*

Attach implements to the tractor as follows:

1. Position the tractor so that the lower link hitch points are level with and slightly ahead of the implement hitch pins.
2. Carefully bring the tractor rearwards to match the tractor and implement hitch points.
3. Attach the left-hand lower link.
4. Adjust the right-hand lower link to the proper height of the implement and attach the right-hand link.
5. Lengthen or shorten the top link until the implement mast pin can be inserted through the mast and upper link of the implement.

To detach the implement, the following procedures will make detaching the easier and safer.

- Park the implement and tractor on a level, firm surface.
- Support the implement so that it cannot tip or fall when detached from the tractor.
- Relieve all hydraulic pressure in any remote cylinders before detaching implement.

⚠ WARNING

Crushing hazard!
Before disconnecting a lift rod from the lower link, lower the attached implement to the ground, and stop the engine. Make sure the attached implement is correctly supported and no pressure remains in the hydraulic system before removing the lift rod securing pins.
Failure to comply could result in death or serious injury.

W0034A

Left-hand lift rod adjustment

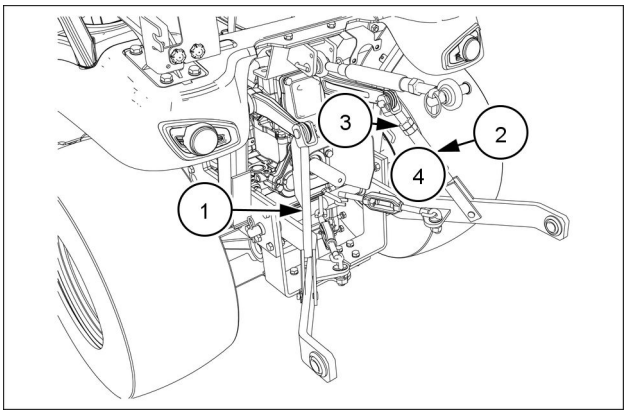
1. The left-hand lift rod **(1)** length is not adjustable.

Right-hand lift rod adjustment

NOTE: *The right-hand lift rod is readily adjustable even when connected between the lift arm and lower link.*

To lengthen or shorten the right-hand lift rod **(2)**

1. Loosen jam nut **(3)**
2. Rotate center section of lift arm **(4)** clockwise to reduce the length and counter-clockwise to increase the length
3. Tighten jam nut against center section after desired length is achieved



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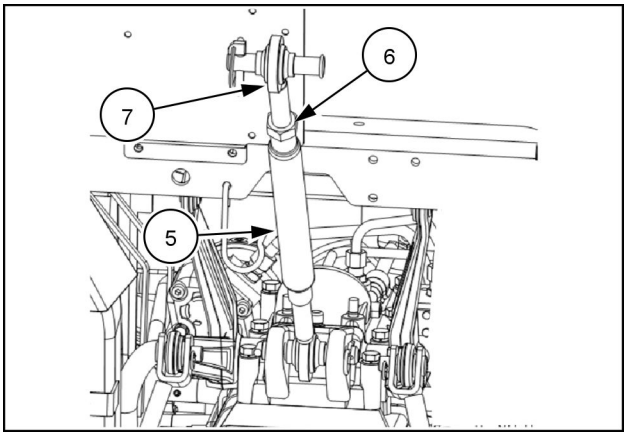
Top link adjustment

To adjust the top link **(5)** length

1. Loosen the jam nut **(6)**.
2. Hold the link end **(7)** and rotate the center section of the link to lengthen or shorten the top link.



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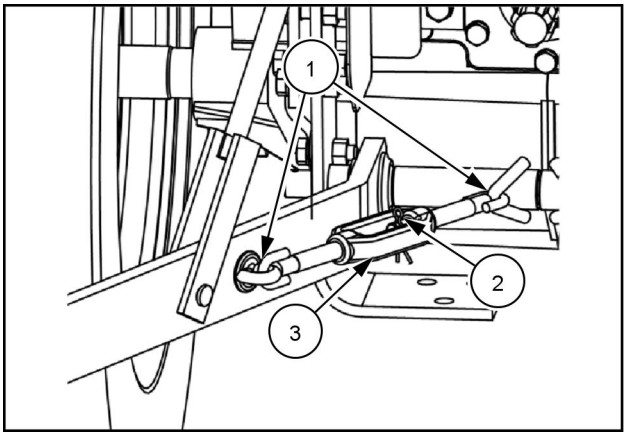
Stabilizer check links adjustment

Adjust the length of the stabilizer check links **(1)** after the implement is mounted to the tractor. Push implement side to side check for lateral movement and possible interference with rear tires.

To adjust length of stabilizer

1. Remove hairpin cotter pin **(2)** and rotate the turnbuckle **(3)** as needed.
2. Shorten the length of the stabilizer to reduce lateral movement or lengthen the stabilizer to increase the lateral movement.



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NOTICE: *Check for any interference when the three point hitch is cycled. If the three point hitch interferes with anything, adjust stabilizers as needed.*

NOTICE: *Shorten the length of the stabilizers as much as possible to limit side-to-side movement of hitch arms and implement. Excessive side-to-side movement of hitch could damage stabilizers.*

Drawbar - Operation

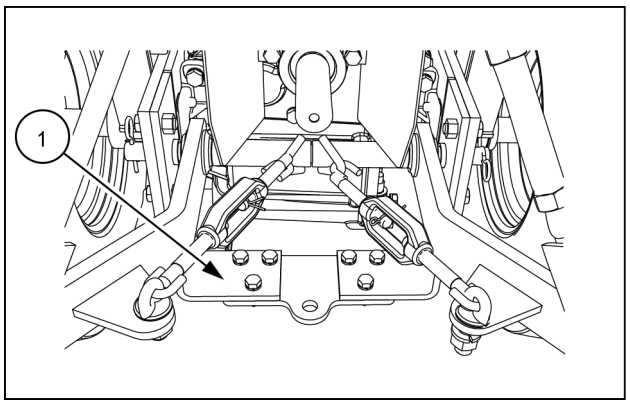
⚠ WARNING

Overturning hazard!
Always use the drawbar, pick-up hitch, or lower links in the lowered position for pull-type work. Do not pull from the lower links if they are above the horizontal position.
Failure to comply could result in death or serious injury.

W0417A

NOTICE: *When transporting equipment on highways, a safety chain with a tensile strength equal to the gross weight of the implement should be installed between the tractor and implement hitch.*

Your tractor is equipped with a fixed drawbar **(1)** for towing equipment behind the tractor.



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Power Take-Off (PTO) - Operation

⚠ DANGER

Entanglement hazard!
Make sure all people and obstructions are clear of the implement before engaging the tractor Power Take-Off (PTO).
Failure to comply will result in death or serious injury.

D0077A

Power Take-Off (PTO) operation

The PTO system is totally independent of the tractor ground speed. The following operations can be performed.

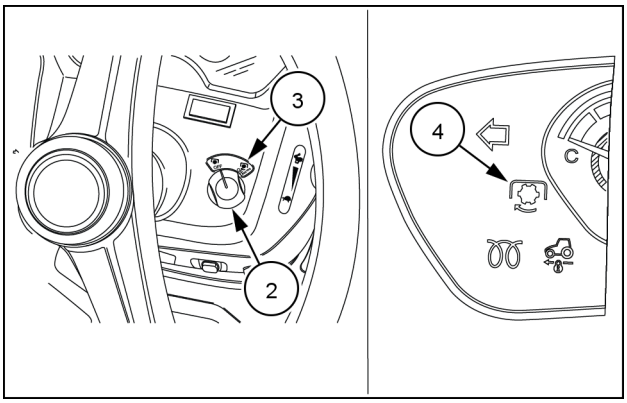
1. The tractor ground travel can be stopped without stopping the PTO.
2. Stop the PTO by disengaging the PTO clutch without stopping the tractor ground travel.

To engage the PTO perform the following.

1. Sit in the operator's seat with the seat belt latched.
2. Push the PTO switch **(2)** down and turn the switch to the ON position **(3)**.

   NOTE: *When the PTO is engaged the PTO indicator light **(4)** will be illuminated on the instrument panel.*

   NOTE: *Only engage the PTO when the engine is at low idle speed. This will reduce the shock load on the driveline of the attachment.*



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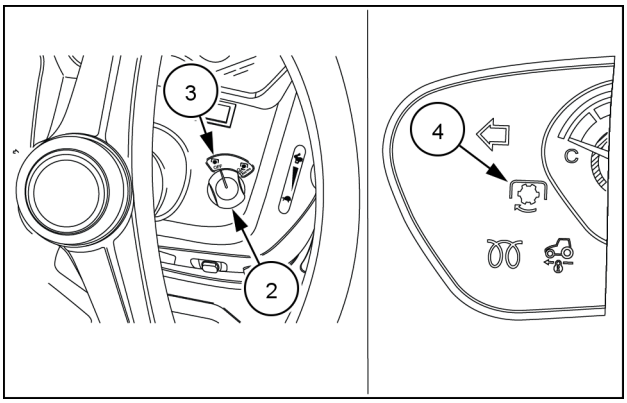
To disengage the PTO perform the following.

1. Push down on the PTO switch **(2)** and the switch will automatically return to the OFF position **(3)**.

   NOTE: *The PTO indicator light **(4)** will go out at this time.*

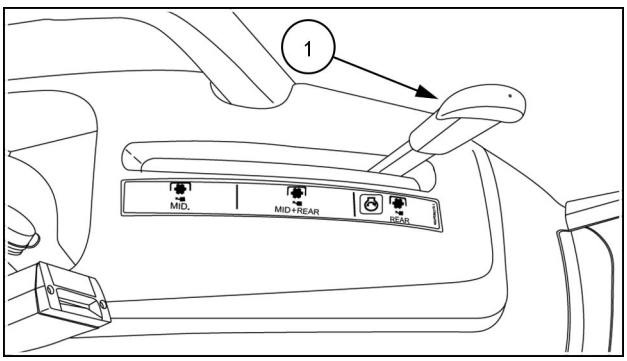


NHIL17CT00185AA 2

Rear PTO

1. To engage the rear PTO, place the PTO shift lever **(1)** in the forward position.

   NOTICE: *Never change the position of the PTO shift lever when the PTO switch is ON.*



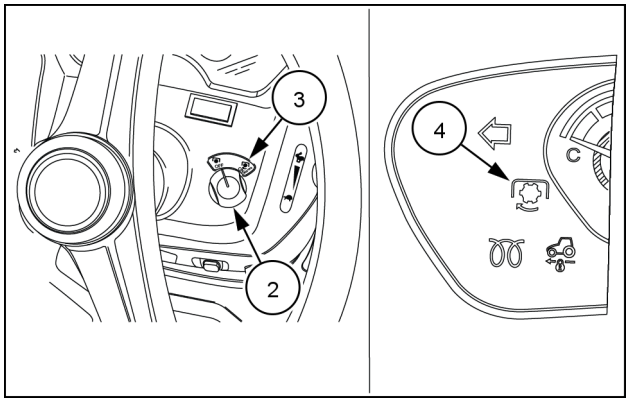
NHIL17CT01822AA 3

2. Push the PTO switch **(2)** down and turn the switch to the ON position **(3)**.

   NOTE: *When the PTO is engaged the PTO indicator light **(4)** will be illuminated on the instrument panel.*

   NOTE: *To obtain **540 RPM** rear PTO speed, the engine speed is **2933 RPM**.*

3. To disengage the rear PTO push down on the PTO switch. The switch will automatically return to the OFF position.

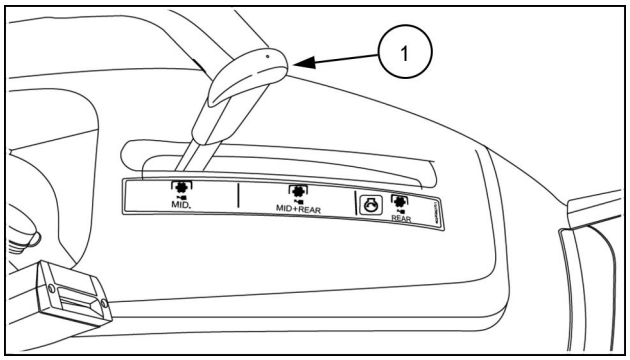


NHIL17CT00185AA 4

Mid PTO

1. To engage the mid PTO place the PTO shift lever **(1)** in the rearward position.

   NOTICE: *Never change the position of the PTO shift lever when the PTO switch is ON.*



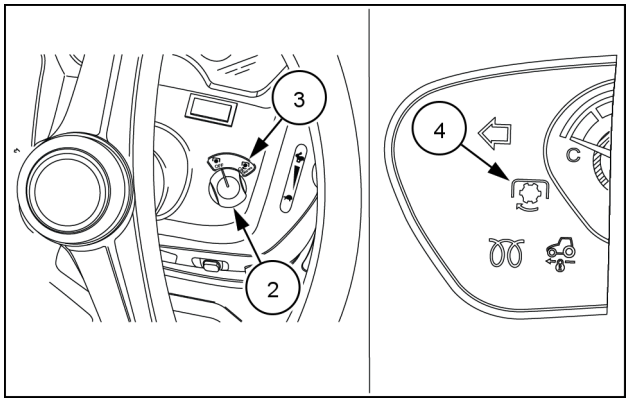
NHIL17CT01824AA 5

2. Push the PTO switch **(2)** down and turn the switch to the ON position **(3)**.

   NOTE: *When the PTO is engaged the PTO indicator light **(4)** will be illuminated on the instrument panel.*

   NOTE: *To obtain **2500 RPM** mid PTO speed, the engine speed is **2841 RPM**.*

3. To disengage the mid PTO push down on the PTO switch. The switch will automatically return to the OFF position.

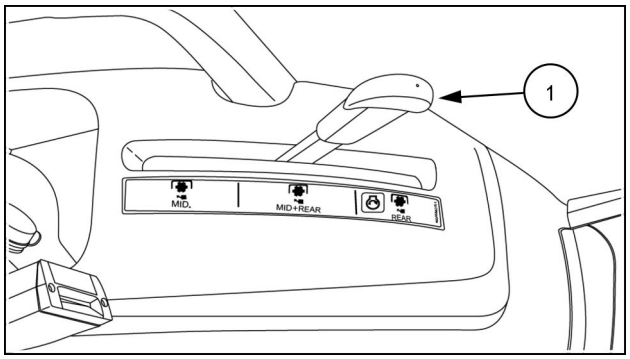


NHIL17CT00185AA 6

Mid and Rear PTO

1. To engage the mid and rear PTO place the PTO shift lever **(1)** in the middle position.

   NOTICE: *Never change the position of the PTO shift lever when the PTO switch is ON.*

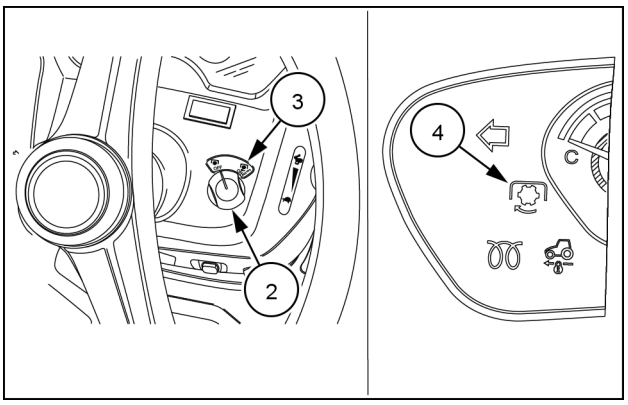


NHIL17CT01823AA 7

2. Push the PTO switch **(2)** down and turn the switch to the ON position **(3)**.

   NOTE: *When the PTO is engaged the PTO indicator light **(4)** will be illuminated on the instrument panel.*

3. To disengage the mid and rear PTO push down on the PTO switch. The switch will automatically return to the OFF position.



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Stationary rear Power Take-Off (PTO) operation

⚠ WARNING

Entanglement hazard!
Before operating stationary Power Take-Off (PTO) equipment, do the following: apply the parking brake, place all controls in the neutral position, and block all four wheels.
Failure to comply could result in death or serious injury.

W0336A

NOTE: *The engine will shut off in approximately two seconds if the operator leaves the seat without the Hydrostatic Transmission (HST) pedals not in the neutral position and the PTO shift lever not in the REAR PTO position.*

NOTE: *The Mid PTO cannot be operated without an operator present in the seat.*

Perform the following steps to operate the stationary rear PTO.

1. You must sit in the operator's seat.
2. Shift the transmission range lever in the neutral position.
3. Engage the park brake.
4. Move the PTO shift lever to the rear position.
5. Move the PTO switch to the "ON" position.
6. You will now be able to leave the seat and perform the stationary rear PTO operation.
7.

To cancel the operation of the stationary rear PTO the following operations must be performed.

1. Move the PTO switch to the "OFF" position.

7 - MAINTENANCE

General information

Safety rules

⚠ WARNING

Entanglement hazard!
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.

W0227A

⚠ 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

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: *NOTICE: While any company can perform the necessary maintenance or repairs on your equipment, NEW HOLLAND strongly recommends that you use only NEW HOLLAND dealers and products that meet 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 see **7-8**.

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

The intervals listed in the maintenance chart are guidelines to be used when operating in normal conditions. Adjust the intervals for operating in adverse environmental and working conditions. The intervals should be shortened for sandy, dusty and extremely hot operating conditions.

Always clean the area around dipsticks, fill caps, and check plugs when checking fluid levels. Failure to clean these areas may allow contamination to enter the system. Drain, flush and refill the system any time you suspect it is contaminated.

Grease fittings

NOTE: *There are not any grease zerk locations on the tractor.*

Engine cooling system - Basic instructions

Definition

Organic Acid Technology (OAT) coolant

A coolant that relies on inhibitors such as organic acid salts for corrosion and cavitation protection.

NOTICE: *You should not mix OAT coolant with conventional coolant. Mixing OAT coolant with conventional coolant will reduce the effectiveness of OAT coolant.*

NOTE: *If you need to change a machine from conventional coolant to OAT coolant or vice versa, you should follow the "Changing coolant types" procedure below to attain the full benefit of the coolant.*

Changing coolant types

To change coolant from OAT coolant to conventional coolant (or vice versa)

1. Empty the engine cooling system by draining the coolant into a suitable container.
2. Fill the system with clean water.
3. Start the engine and run for at least **30 min**.
4. Repeat Steps 1 to 3, for a total of two washes.
5. Fill the system with conventional coolant (or OAT coolant).
6. Operate the engine until it is warm. Inspect the machine for leaks.

Engine side panel remove and install

⚠ WARNING

Avoid injury!
Shut off the engine, remove the key, and make sure all machine motion stops before you service the machine.
Failure to comply could result in death or serious injury.

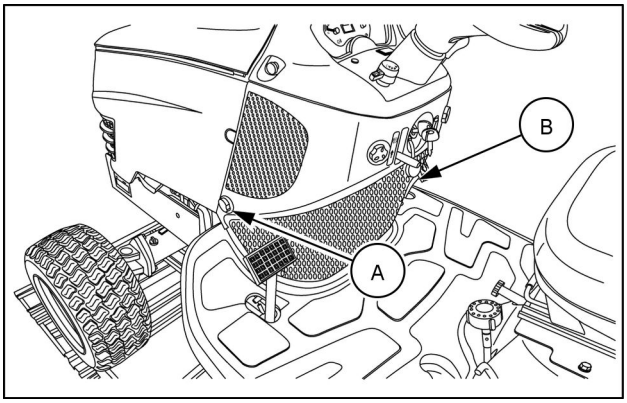
W1128B

Changing the fuel filter, bleeding the fuel system and flushing the cooling system are the only normal maintenance items requiring the removal of the engine side panels.

Remove

1. Remove the two M8 bolts with hand knob **(A)**.

   NOTE: *Left-hand side shown, right-hand side hardware **(B)** location is similar*



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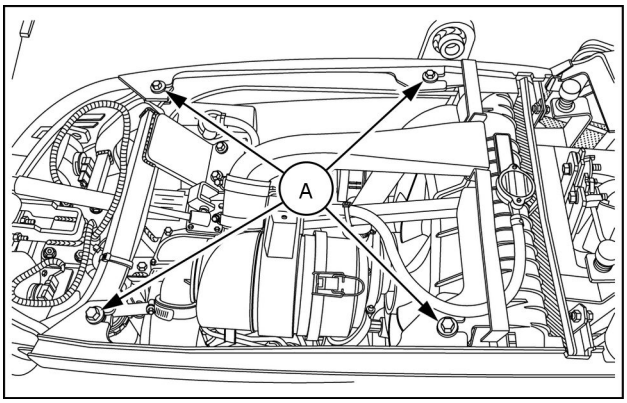
2. Remove the four bolts **(A)**.



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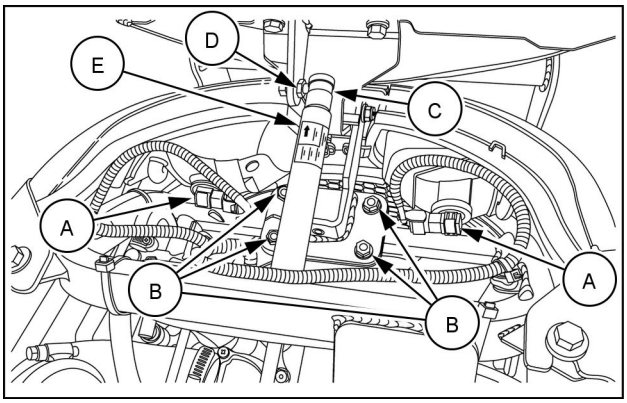
3. Disconnect the headlight wiring harness connectors **(A)**.
4. Remove the four nuts **(B)**.

   NOTE: *The hood will be loose at this point. Hold on the hood or have a helper hold the hood before performing the next step.*

5. Pry the metal clip **(C)** away from the ball stud **(D)**.
6. Remove the gas strut **(E)**.
7. Remove the hood by lifting it off the four mounting studs.

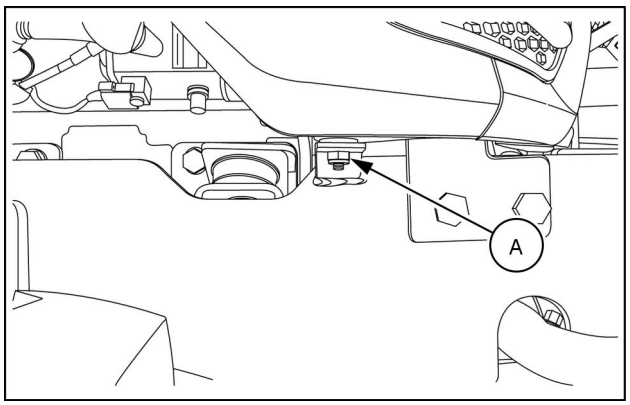


NHIL17CT01299AA 3

8. Remove the nut **(A)** on each side of the engine side panel.

   NOTE: *Right-hand side shown, left-hand side location is similar.*

9. Slide the engine side panel forward and lift upward to remove.



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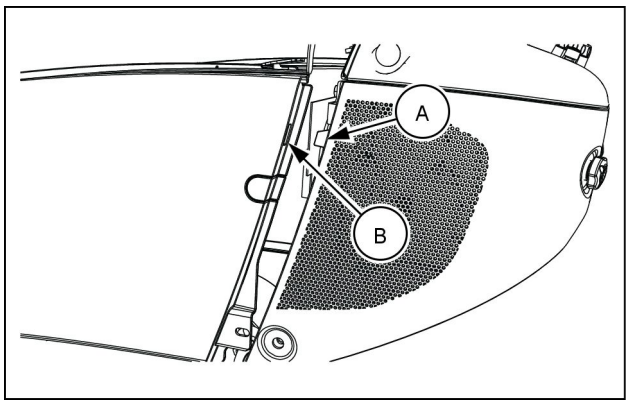
Install

1. Lower the engine side panel around the engine and slide it rearward.
2. Align the tabs in the cowl **(A)** with the slots **(B)** in the engine side panel.
3. Push the engine side panel fully reward against the cowl.
4. Verify the bolt holes **(C)** align with slots **(D)** in the engine side panel.



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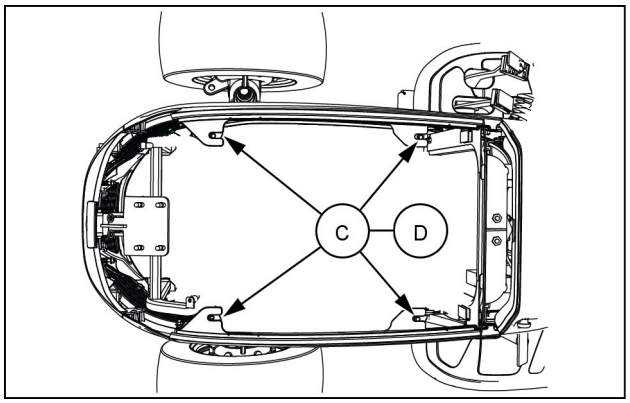
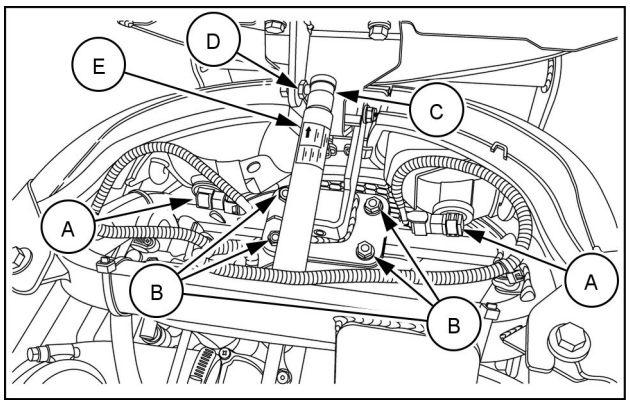


NHIL17CT00189AA 6

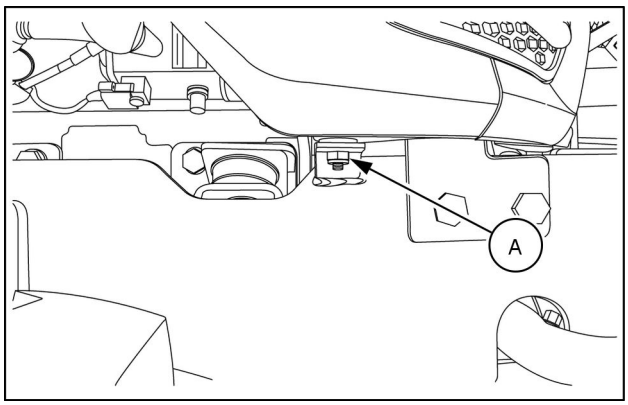
5. Install the hood by lowering it on the four mounting studs.
6. Install the gas strut **(E)**.
7. Secure the metal clip **(C)** on the gas strut.
8. Install the four nuts **(B)** and tighten.
9. Connect the headlight wiring harness connectors **(A)**.



NHIL17CT01299AA 7

10. Install the nut **(A)** on each side of the engine side panel and tighten the hardware.

    NOTE: *Right-hand side shown, left-hand side location is similar.*



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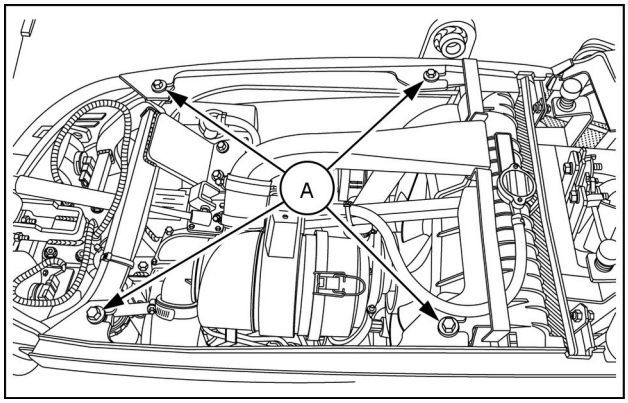
11. Install the four bolts **(A)** and tighten the hardware.



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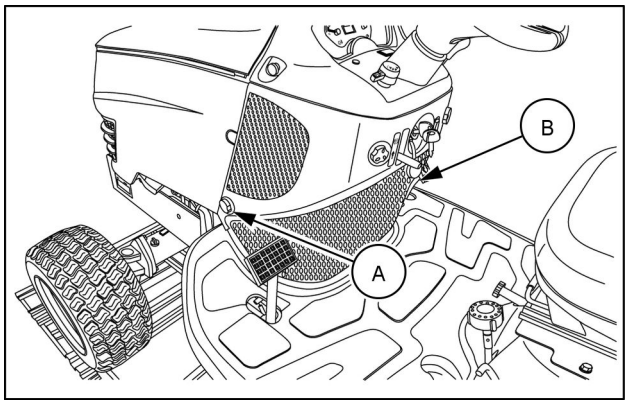
12. Install the two M8 bolts with hand knob **(A)** and tighten the hardware.

    NOTE: *Left-hand side shown, right-hand side hardware **(B)** location is similar*



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Battery location and service

⚠ WARNING

Hazardous chemicals!
Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.
Failure to comply could result in death or serious injury.

W0006A

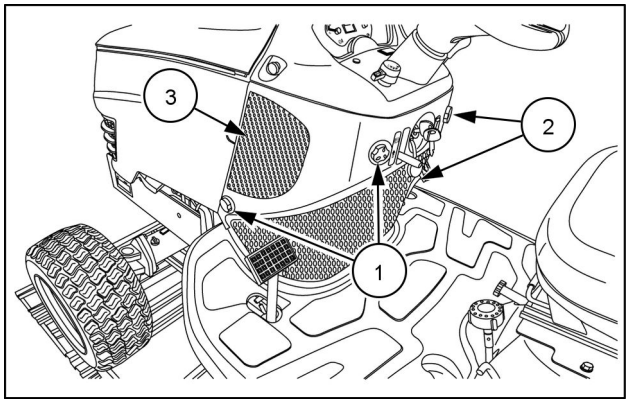
Under normal conditions the battery will not require service. If you need to locate the battery to jump start the tractor or to charge the battery follow the procedure below.

To access the battery perform the following

1. Remove the four M8 bolts with hand knob **(1)**.

   NOTE: *Left-hand side shown, right-hand side hardware* ***(2)*** *location is similar.*

2. Slide the screen panel **(3)** rearward.



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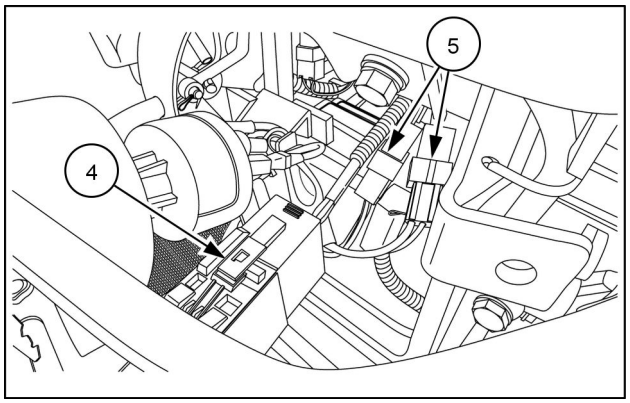
3. Disconnect the key switch wiring harness connectors **(5)** and the cruise control switch wiring harness connector **(4)**.
4. Remove the screen panel.



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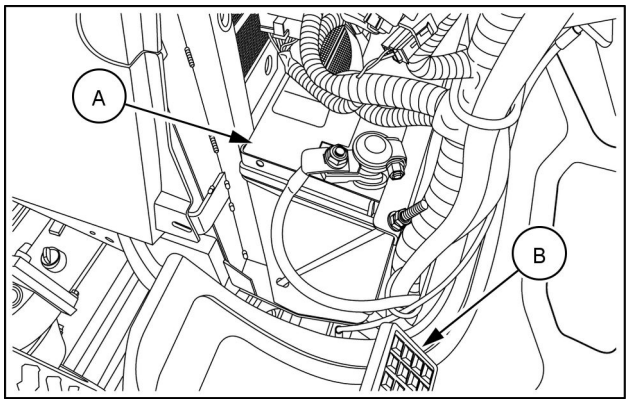
The location of the battery **(A)** is to the right-hand side of the service brake pedal **(B)**.



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Consumables

Lubricant	Type and Description	Container Size
Engine Oil	**SAE 10W-30 CI-4 ENGINE OIL**	**0.946 l** (**1 US qt**)
		3.785 l (**1 US gal**)
		18.93 l (**5 US gal**)
	SAE 15W-40 CI-4/CH-4 ENGINE OIL	**0.946 l** (**1 US qt**)
		3.785 l (**1 US gal**)
		18.93 l (**5 US gal**)
Transmission/Hydraulic Oil	**MULTIGRADE 134™ (SAE 10W-30)**	**18.93 l** (**5 US gal**)
	HYDRAULIC TRANSMISSION OIL - PREMIUM - SYNTHETIC	**18.93 l** (**5 US gal**)
	MULTI-SEASON HYDRAULIC TRANSMISSION OIL SAE 0W-20	**18.93 l** (**5 US gal**)
Front Axle/Gear Oil	**HYPOID GEAR OIL EP SAE 80W-90**	**9.46 l** (**2.5 US gal**)
Grease	**MULTI-PURPOSE GREASE EP / AW / NLGI 2**	Tube **14 oz**
Coolant	Ethylene Glycol Coolant Concentrate (Optional) **EXTENDED LIFE OAT COOLANT/ANTIFREEZE**	**3.785 l** (**1 US gal**) **9.46 l** (**2.5 US gal**) **3.785 l** (**1 US gal**)

Maintenance planning

Maintenance chart

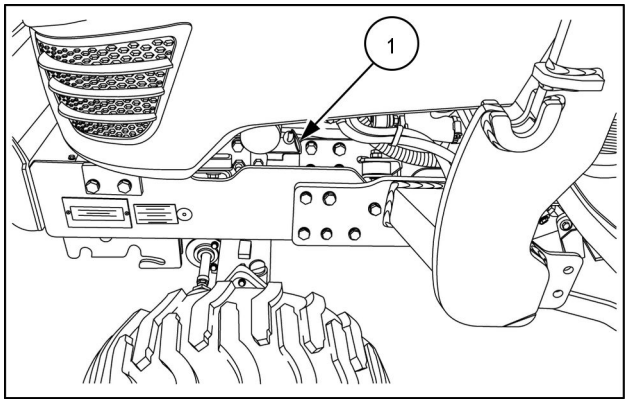
Maintenance action	Check	Cleaning	Change fluid	Replace	Test	Adjust	Bleed	Tighten	Page no.
Every 8 hours or daily									
Engine lubrication system - Check	x								**7-9**
Engine cooling system - Check	x								**7-10**
Transmission - Check	x								**7-11**
Radiator screen cleaning		x							**7-12**
After the first 50 hours of operation									
Engine - Change fluid			x						**7-13**
Fuel filters - Replace				x					**7-14**
Pre-filter - Replace				x					**7-15**
Hydraulic oil suction filter - Replace				x					**7-16**
Hydrostatic Transmission (HST) oil filter - Replace				x					**7-17**
Roll Over Protective Structure (ROPS) frame - Check	x								**7-18**
Wheel hardware - Check							x		**7-19**
Every 50 hours									
Transmission - Check	x								**7-11**
Mechanical service brakes - Check	x								**7-21**
Hydrostatic transmission (HST) neutral adjustment - Check	x								**7-22**
Belt - Check	x								**7-23**
Tire pressure - Check	x								**7-24**
Front axle differential fluid level - Check	x								**7-25**
Air cleaner - Cleaning		x							**7-26**
Every 250 hours									
Engine - Change fluid			x						**7-13**
Hydraulic oil suction filter - Replace				x					**7-16**
Hydrostatic Transmission (HST) oil filter - Replace				x					**7-17**
Roll Over Protective Structure (ROPS) frame - Check	x								**7-18**
Wheel hardware - Check							x		**7-19**
Front wheels toe-in - Check	x								**7-32**
Air cleaner - Replace				x					**7-33**
Every 500 Hours									
Front axle differential fluid - Change			x						**7-34**
Transmission - Change fluid			x						**7-35**
Fuel filters - Replace				x					**7-14**
Pre-filter - Replace				x					**7-15**
Every 1000 hours									
Engine valve clearance - Check and adjust	x								**7-38**
Every two years									
Engine cooling system - Drain fluid - And flush			x						**7-38**
General maintenance									
Fuel injection system - Bleed							x		**7-39**
Belt - Adjust						x			**7-41**
Battery - Test					x				**7-42**
Fuses - Check	x								**7-43**
Main fuse - Check				x					**7-44**
Headlight - Replace				x					**7-45**
Turn signal and hazard bulb - Replace				x					**7-46**
Wheel hardware - Check							x		**7-19**

Every 8 hours or daily

Engine lubrication system - Check

NOTE: *Check the engine oil level daily or after every 10 hours of operation.*

1. After the engine has been stopped for a period of time and with the tractor standing level, check the oil level using the dipstick **(1)**.



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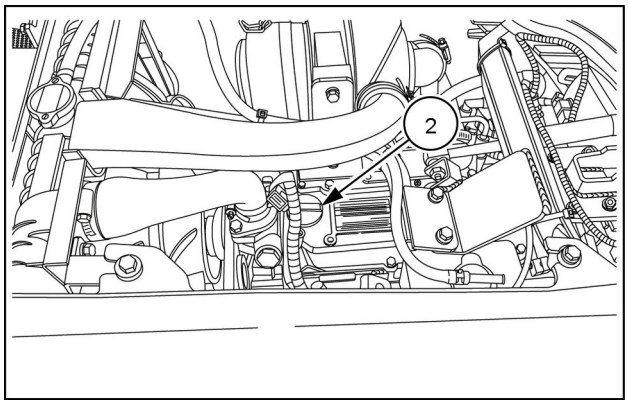
2. If the oil level is low, remove the filler cap **(2)** add oil through the filler hole.



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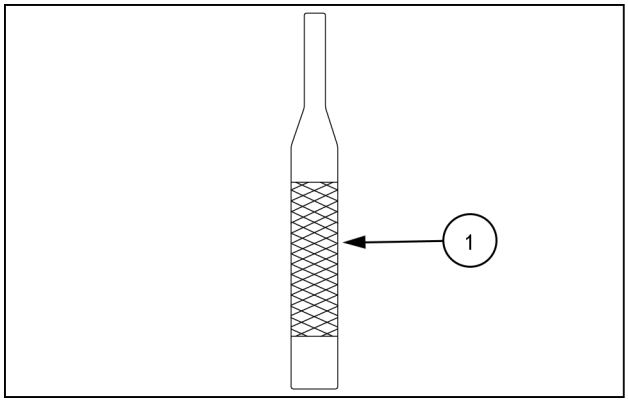
3. Add enough oil so the level of oil registers in the cross-hatch area **(1)** on the dipstick. Do not overfill.



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Ambient Temp (°F)	Recommended Oil
-12 – 49 °C (10 – 120 °F)	**SAE 15W-40 CI-4/CH-4 ENGINE OIL**
-23.3 – 49 °C (-10 – 120 °F)	**SAE 10W-30 CI-4 ENGINE OIL**
-29 – 16 °C (-20 – 60 °F)	**ENGINE OIL SAE 5W-30**

Engine cooling system - Check

⚠ WARNING

Burn hazard!
Hot coolant can spray and scald if you remove the radiator or deaeration tank cap while the system is hot. To remove the cap: allow the system to cool, turn the cap to the first notch, and wait for all pressure to release. Remove the cap only after all pressure has released.
Failure to comply could result in death or serious injury.

W0367A

Cooling system

The tractor engine must operate at the correct temperature to obtain maximum efficiency and service life. This is dependent on the cooling system.
Only check the cooling system when the engine is “OFF” and the cooling system is cool. Never add coolant to a hot cooling system. Never remove the radiator cap when the cooling system is hot.
Always fill the system with a 50/50 solution of **IAT COOLANT 11 – CLASSIC** antifreeze and water.

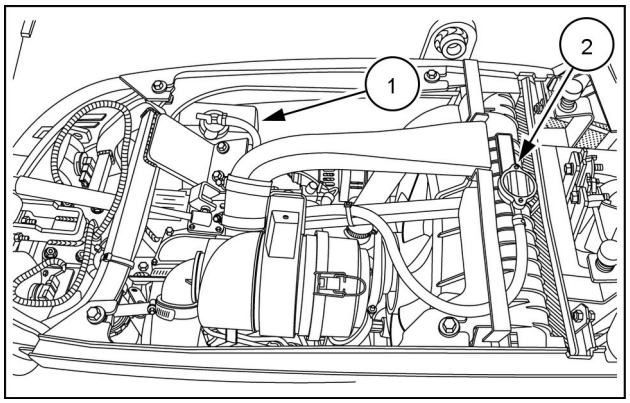
NOTE: *Your tractor was shipped with conventional ethylene glycol coolant. If you wish to change to a different coolant type see page* ***7-2****.*

Checking the coolant level

1. Only check the coolant level when the engine is cold.
2. Visually inspect the coolant level in the coolant recovery tank **(1)**. The coolant level should be at the full mark on the tank.
3. If the coolant level is below the full mark, add a 50/50 antifreeze/water solution as necessary, to the recovery tank.

NOTICE: *The cooling system already contains antifreeze, add only an antifreeze solution of the correct water/antifreeze mixture. Pure water will dilute the solution and weaken its protection.*

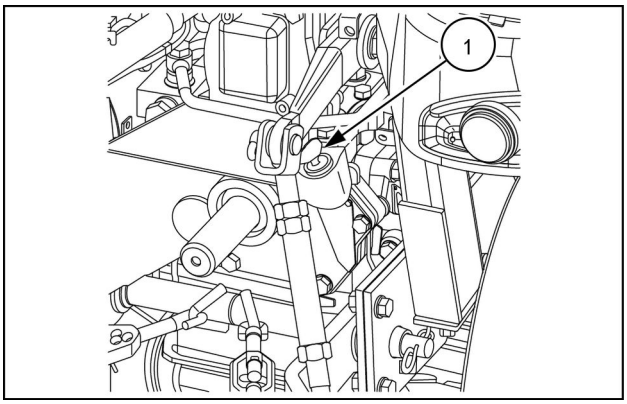
4. If there is not coolant in the coolant recovery reservoir remove the cap **(2)** from the radiator.
5. Add enough coolant to the radiator so the coolant level is even with the bottom of the filler neck.
6. Install the radiator cap.



NHIL17CT01297AA 1

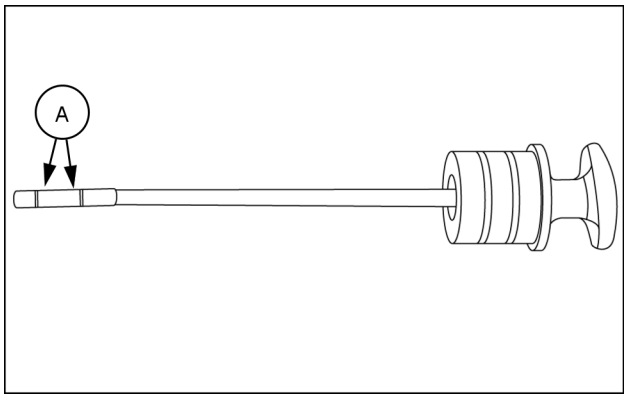
Transmission - Check

1. With the engine off and the tractor standing level check the oil level using the dipstick **(1)**.



NHIL17CT01273AA 1

2. The oil is at the correct level when it reads between the two marks **(A)** on the dipstick. If the level is low, add **MULTIGRADE 134™ (SAE 10W-30)** hydraulic oil through the dipstick hole. Do not fill above the dipstick full mark.
3. Reinstall the dipstick.



93100904 2

Radiator screen cleaning

⚠ WARNING

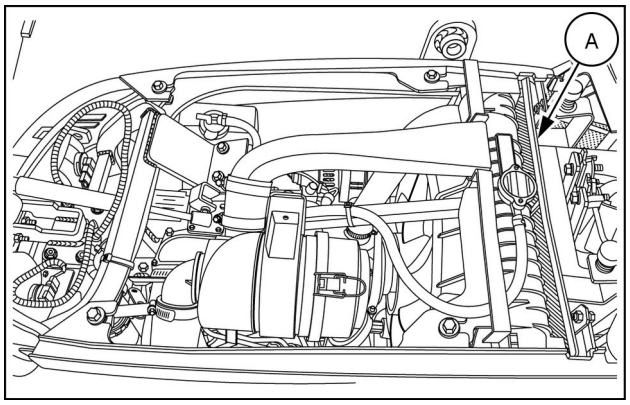
Avoid injury!
Shut off the engine, remove the key, and make sure all machine motion stops before you service the machine.
Failure to comply could result in death or serious injury.

W1128B

Clean the radiator screen daily before starting work. If you observe the engine coolant temperature gauge approaching the red or “H” range while operating the mower deck inspect the condition of the radiator screen. Shut off the engine before servicing the radiator screen.

To clean the radiator screen perform the following.

1. Shut off the engine.
2. Remove the key.
3. Apply the park brake.
4. Open the hood.
5. Remove the radiator screen **(A)**.
6. Remove the debris from the radiator screen.
7. Install the radiator screen.
8. Close the hood.



NHIL17CT01297AA 1

After the first 50 hours of operation

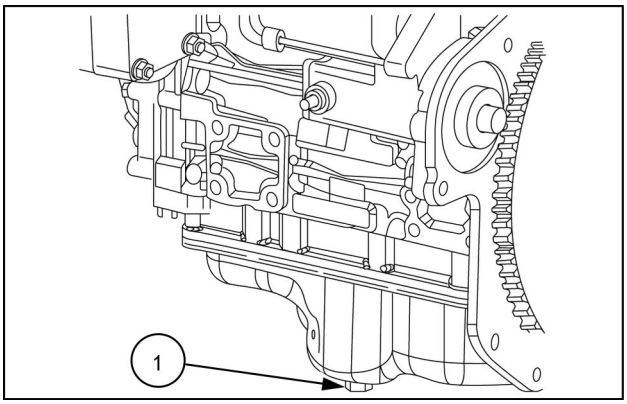
Engine - Change fluid

Changing the engine oil and filter

NOTE: *Change the engine oil and filter after the first 50 hours of operation, then every 250 hours thereafter. If the tractor is operated for extended periods of time at maximum rated power and speed, or under other types of continuous, severe operating conditions, the engine oil and filter should be changed at 200 hour intervals following the initial oil change.*

To change the engine oil:

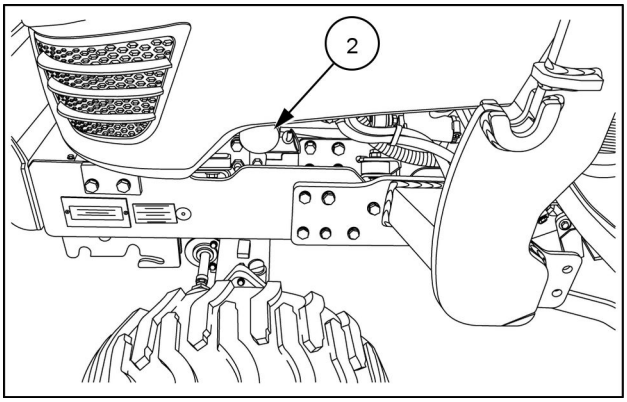
1. Place a suitable container beneath the drain opening to catch the used oil.
2. With the tractor engine off but at normal operating temperature, remove the drain plug **(1)**.
3. Install the drain plug after all of the oil has been drained.



NHIL17CT01275AA 1

4. Place a container below the oil filter, **(2)** to catch the oil contained in the filter.
5. Remove the oil filter from the engine.
6. Coat the gasket on the new filter with a film of clean oil.
7. Install the filter onto the engine until the gasket contacts its mating surface, then turn the filter approximately three-quarters of a turn by hand. Do not overtighten.
8. Add the proper type and level of new oil, then start the engine and check the filter for leaks.

NOTE: *Oil Capacity, with filter **2.9 L** (**3.1 US qt**)*



NHIL17CT01296AA 2

Ambient Temp (°F)	Recommended Oil
-12 – 49 °C (**10 – 120 °F**)	**SAE 15W-40 CI-4/CH-4 ENGINE OIL**
-23.3 – 49 °C (**-10 – 120 °F**)	**SAE 10W-30 CI-4 ENGINE OIL**
-29 – 16 °C (**-20 – 60 °F**)	**ENGINE OIL SAE 5W-30**
Oil Specification API CF-4 or CH-4	

NOTE: *Tractors are originally shipped with (15W40) oil.*

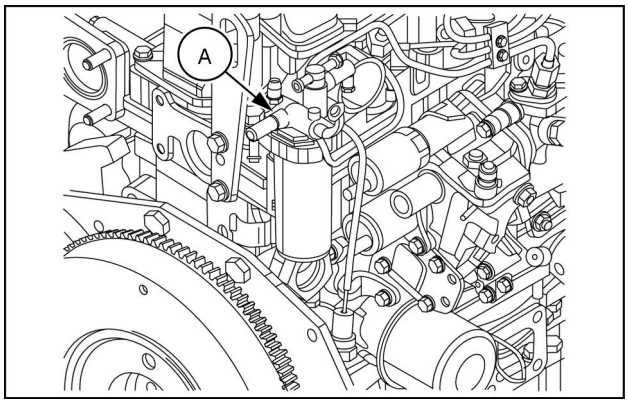
Fuel filters - Replace

⚠ CAUTION

Fuel vapors are explosive and flammable.
Do not smoke while handling fuel. Keep fuel away from flames or sparks. Shut off engine and remove key before servicing. Always work in a well-ventilated area. Clean up spilled fuel immediately. Failure to comply could result in minor or moderate injury.

C0195A

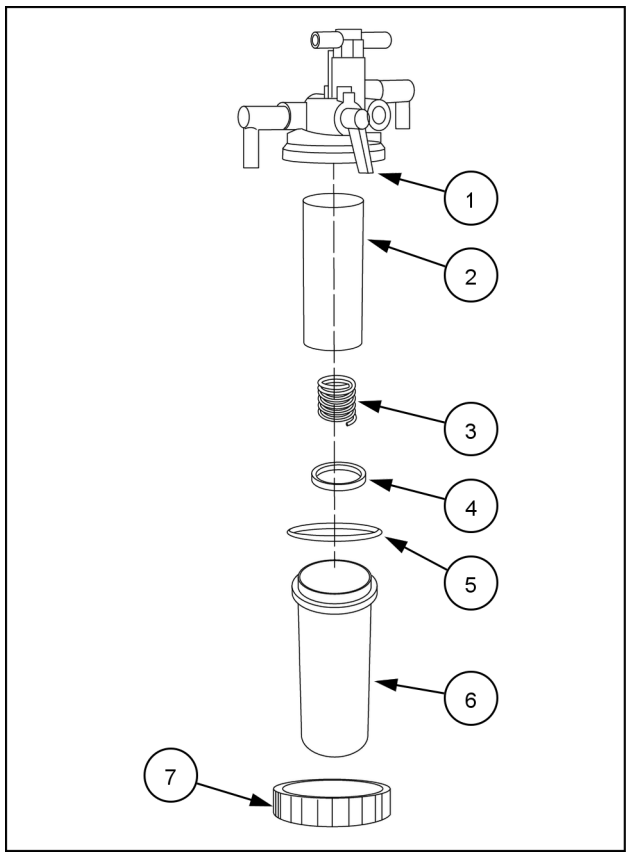
Prior operation:
Remove the engine side panel. See page **7-3**.



NHIL17CT01282AA 1

The location of the fuel filter (A) is on the right-hand side of the engine.

1. Close the fuel shut off valve by turning the fuel valve lever **(1)** one quarter turn in the clock-wise direction.
2. Place a suitable drain pan below the fuel filter bowl **(6)**.
3. Loosen the metal ring **(7)** and remove it from the fuel filter housing.
4. Remove the fuel filter bowl **(6)**.
5. Remove the fuel filter element **(2)**.
6. Install a new fuel filter element.
7. Clean any dirt or water found in the bottom of the fuel filter bowl. Keep the water indicator ring **(4)** in the bottom of the fuel filter bowl.
8. Inspect the O-ring **(5)** and replace if necessary.
9. Install the fuel filter bowl being careful to align the spring **(3)** to the bottom of the fuel filter element.
10. Install the metal ring and tighten by hand.
11. Open the fuel shut valve by tuning the fuel valve lever one quarter turn counter clock-wise.
12. Bleed the fuel injection system as described in **7-39**.



NHIL17CT01381BA 2

Pre-filter - Replace

⚠ CAUTION

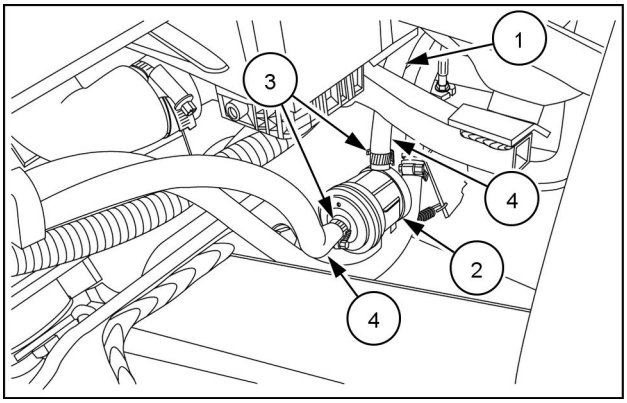
Fuel vapors are explosive and flammable.
Do not smoke while handling fuel. Keep fuel away from flames or sparks. Shut off engine and remove key before servicing. Always work in a well-ventilated area. Clean up spilled fuel immediately. Failure to comply could result in minor or moderate injury.

C0195A

1. Using a suitable tool such as pinch off pliers close the fuel line **(1)** before the fuel pre-filter **(2)**.

NOTE: *There is no fuel shut off valve at the fuel tank. Fuel will drain from the fuel tank if the fuel line is not closed off before removing the pre-filter.*

2. Place a suitable container below the pre-filter.
3. Loosen the two hose clamps **(3)**.
4. Remove the two fuel hoses **(4)** from the pre-filer.
5. Remove the pre-filter by pulling upward.



NHIL17CT01295AA 1

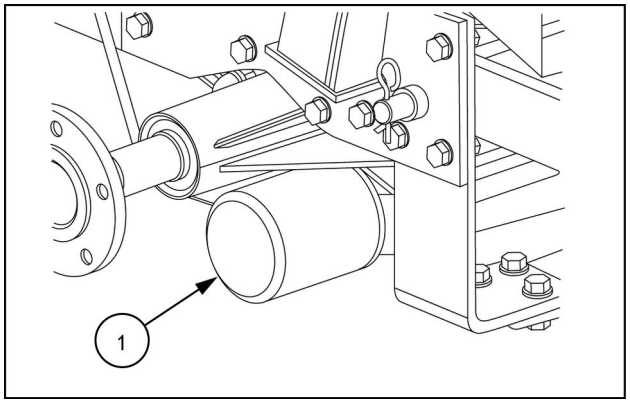
6. Install a new pre-filter.
7. Connect the two fuel hoses.
8. Tighten the two hose clamps.
9. Remove the pinch-off pliers.
10. Bleed the fuel injection system as described in **7-39**.

Hydraulic oil suction filter - Replace

NOTE: *Replace the hydraulic system oil filter after the first 50 hours of operation, and then following every 250 hours of operation thereafter.*

The hydraulic system uses a spin-on type oil filter, located on the left side of the tractor between the rear axle housing and drawbar support. To replace the filter **(1)**:

1. Unscrew the used oil filter and discard.
2. Coat the gasket on the new filter with a film of clean oil. Screw the filter into place until the gasket contacts the sealing surface, then tighten the filter by hand approximately three-quarters of a turn. Do not overtighten.
3. Start the engine and check the filter for leaks.
4. Stop the engine and check the hydraulic system oil level. Add oil if necessary.



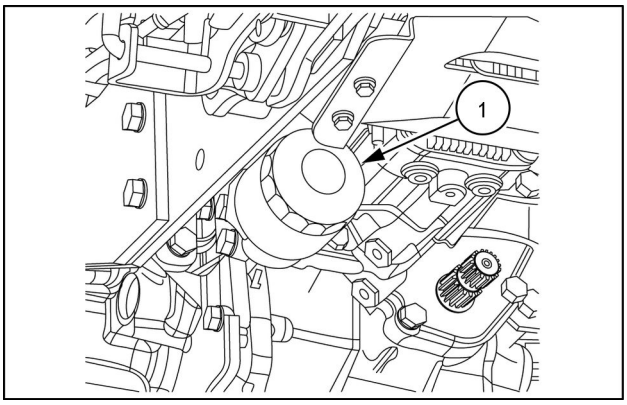
NHIL17CT01277AA 1

Hydrostatic Transmission (HST) oil filter - Replace

The Hydrostatic Transmission (HST) system uses a spin-on type oil filter, located on the right-side of the tractor underneath the operator's platform.

To replace the filter **(1)**:

1. Unscrew the used oil filter and discard.
2. Coat the gasket on the new filter with a film of clean oil. Screw the filter into place until the gasket contacts the sealing surface, then tighten the filter by hand approximately three-quarters of a turn. Do not overtighten.
3. Start the engine and check the filter for leaks.
4. Stop the engine and check the hydraulic system oil level. Add oil if necessary.

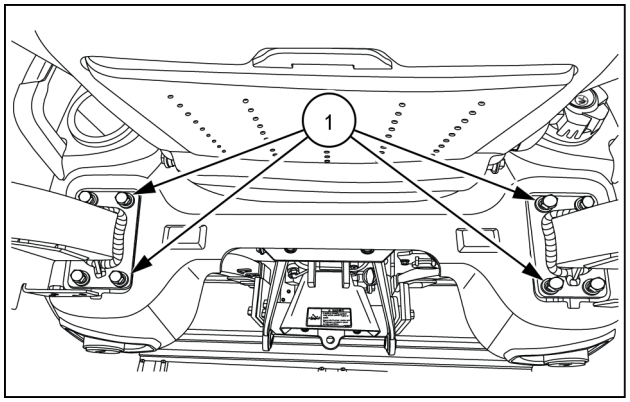


NHIL17CT01278AA 1

Roll Over Protective Structure (ROPS) frame - Check

NOTE: *Inspect the Roll Over Protective Structure (ROPS) after the first 50 hours of operation. Following the initial inspection, the ROPS should be checked after every 250 hours of operation or every six months, whichever comes first.*

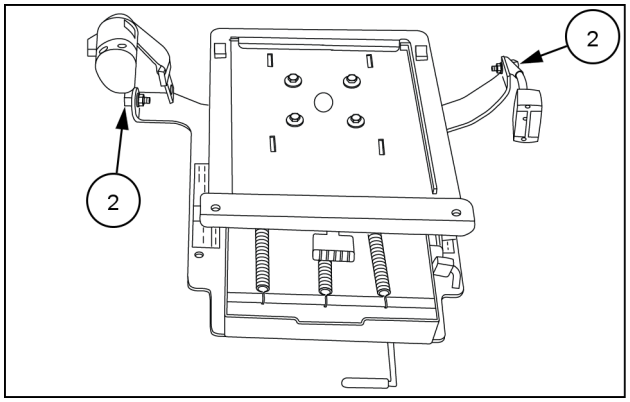
1. Check the torque of the Roll Over Protective Structure (ROPS) bottom portion mounting bolts **(1)**. Torque the M12, bolts to **76 N·m** (**56 lb ft**) if necessary.



NHIL17CT00457AA 1

Seat belt mounting bolts

1. Inspect the operator's seat and the mounting parts for the seat belt **(2)**.
2. Tighten the bolts **(1)** to **61 N·m** (**45 lb ft**).
3. Replace any parts that show wear or damage.



NHIL17CT00200AA 2

Wheel 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

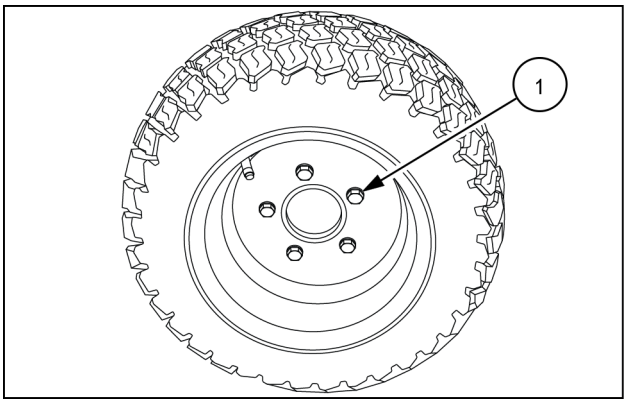
Tighten the wheel bolts **(1)** to the specified torque any time you remove the wheel assembly from the tractor or loosen the wheel bolts.

Check and tighten wheel bolts **(1)** to proper torque specifications after the following hours of use:

- First 50 hours
- Every 250 hours

Front wheel hardware tightening torque.

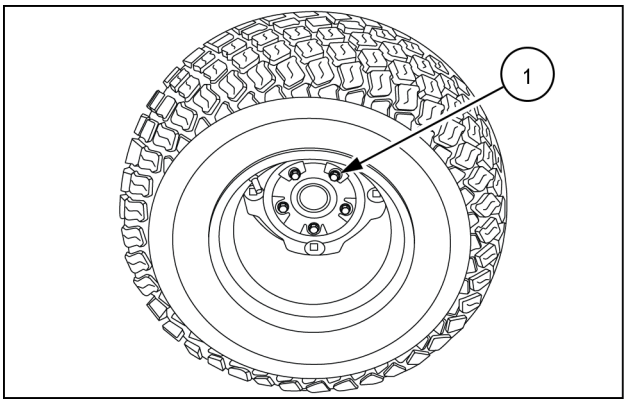
- **47 N·m** (**35 lb ft**)



NHIL17CT00199AA 1

Rear wheel hardware tightening torque.

- **65 N·m** (**48 lb ft**)

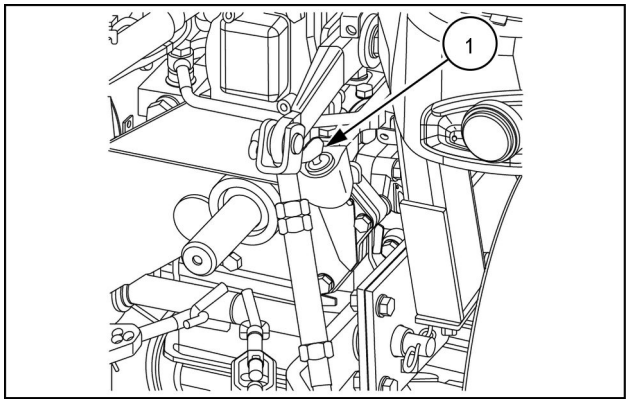


NHIL17CT00198AA 2

Every 50 hours

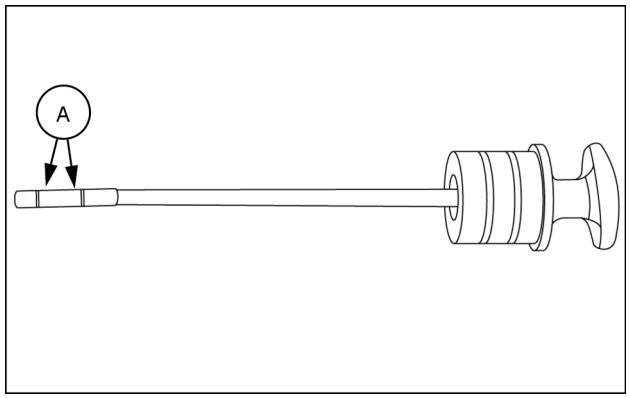
Transmission - Check

1. With the engine off and the tractor standing level check the oil level using the dipstick **(1)**.



NHIL17CT01273AA 1

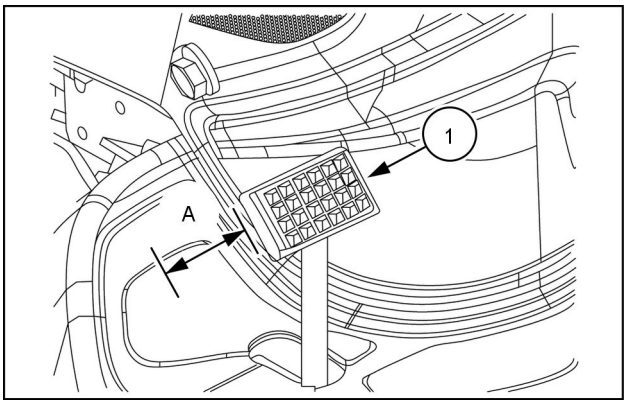
2. The oil is at the correct level when it reads between the two marks **(A)** on the dipstick. If the level is low, add **MULTIGRADE 134™ (SAE 10W-30)** hydraulic oil through the dipstick hole. Do not fill above the dipstick full mark.
3. Reinstall the dipstick.



93100904 2

Mechanical service brakes - Check

1. Check the free travel of the brake pedal **(1)**. The brake pedal should travel **70.0 – 90.0 mm** (**2.8 – 3.5 in**) **(A)** before the brake pedal becomes firm.
2. If the brake pedal travel is more than **90.0 mm** (**3.5 in**) the brakes require adjustment. Contact your NEW HOLLAND dealer.



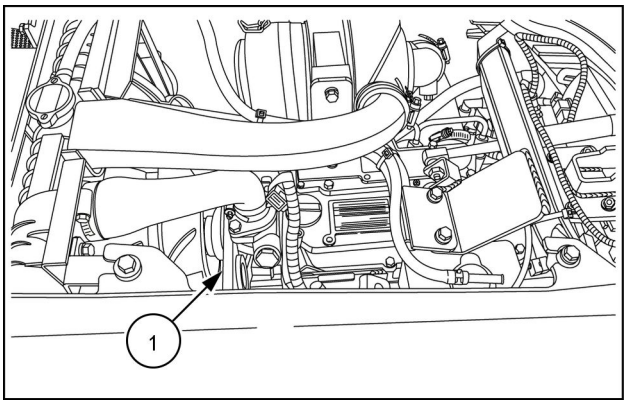
NHIL17CT01269AA 1

Hydrostatic transmission (HST) neutral adjustment - Check

1. Start the tractor on a smooth level surface.
2. Release the park brake.
3. Set the engine speed to **3000 RPM**.
4. Select “L” transmission range.
5. Completely depress the forward travel pedal.
6. Release the forward travel pedal.
7. The tractor should slow down and come to a complete stop. If it does not stop make note of that condition.
8. Perform the same operation for reverse.
9. The tractor should slow down and come to a complete stop once the forward and reverse pedals are released. Contact your NEW HOLLAND dealer for neutral adjustment if your tractor does not come to a complete stop.

Belt - Check

1. Check the condition of fan belt **(1)** for signs of cracking or fraying.
2. If wear is indicated, replace belt.
3. See page **7-41** for belt adjustment.



NHIL17CT01298AA 1

Tire pressure - Check

⚠ WARNING

Explosion hazard!
Always maintain correct tire pressure as indicated in this manual. DO NOT inflate tires above the recommended pressure. Excessive pressure could result in tire failure.
Failure to comply could result in death or serious injury.

W0109A

Tire inflation pressure affects the amount of weight a tire can carry. Check the air pressure in your tractor tires and adjust the tire pressure, being careful not to overinflate or under inflate. Observe the following guidelines:

- Do not inflate a tire above the maximum pressure shown on the tire. If the tire is not marked, do not exceed the maximum pressure shown in the Tire Inflation chart found in this manual.
- Do not reinflate a tire that has been run flat or seriously under inflated until the tire has been inspected for damage by a qualified person.
- When checking tire pressure, inspect the tire for damaged sidewalls and tread cuts. Neglected damage leads to early tire failure.

If you must inflate or service tires, follow these safety precautions to avoid injury or fatality:

- Make sure the rim is clean and free of rust.
- Lubricate both tire beads and rim flanges with soap solution. Do not use oil or grease.
- Use a clip-on tire chuck with a remote hose and gauge. This allows the operator to stand clear of the tire while inflating.
- NEVER INFLATE TO OVER **241 kPa** (**35 psi**) TO SEAT BEADS. If beads have not been seated by the time pressure reaches **241 kPa** (**35 psi**), deflate the assembly, reposition the tire on the rim, relubricate both tire bead and rim flanges, and reinflate. Inflation beyond **241 kPa** (**35 psi**) with unseated beads may break the bead or rim with explosive force sufficient enough to cause serious injury.
- After seating the beads, adjust inflation pressure to recommended operating pressure.
- Do not inflate a tire unless the rim is mounted on the tractor or is secured so that it will not move if the tire or rim should suddenly fail.
- Do not weld, braze, otherwise repair, or use a damaged rim.
- Never attempt tire repairs on a public road or highway.
- Use jack stands or other suitable blocking to support the tractor while repairing tires.
- Ensure jack has adequate capacity to lift your tractor.
- Place jack on a firm, level surface.
- Do not place any part of your body beneath the tractor or start the engine while the tractor is on the jack.
- Before adding ballast to the tires, refer to page **6-6** for tire and tractor ballasting information.

Tire inflation pressures

Front tires

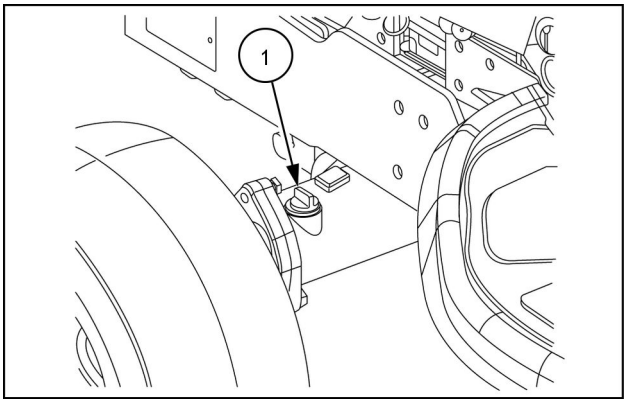
Tire size	Tire thread type	Inflation pressure
18x8.50-10 4PR	R4	**152 kPa** (**22 psi**)
18x8.50-10 4PR	R3	**152 kPa** (**22 psi**)

Rear tires

Tire size	Tire thread type	Inflation pressure
26x12.0-12 4PR	R4	**138 kPa** (**20 psi**)
26x12.0-12 4PR	R3	**138 kPa** (**20 psi**)

Front axle differential fluid level - Check

1. Place the tractor on a flat level surface with the engine off.
2. Check the front axle differential oil level using the dipstick **(1)** located on the left-hand side of the front axle.



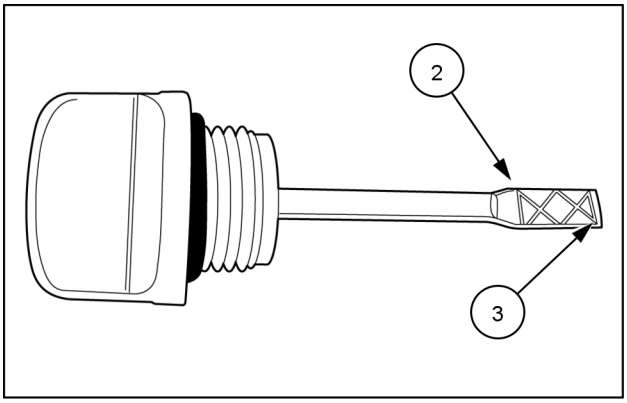
NHIL17CT01274AA 1

3. The oil level is correct when the oil is between the upper **(2)** and lower **(3)** hash marks on the dipstick.

NOTE: *When checking oil level, screw the dipstick completely into the housing.*

4. If the oil level is low, add **HYPOID GEAR OIL EP SAE 80W-90** oil through the dipstick port. Do not fill beyond the upper mark of the dipstick.
5. Install the dipstick.

NOTE: *If the oil level is very low it will take several minutes for the oil level to stabilize once oil is added.*



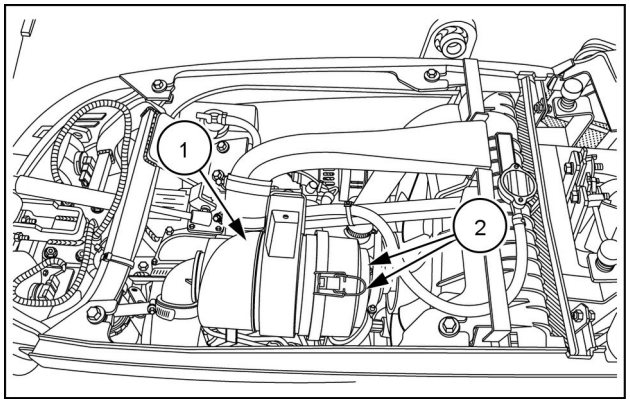
83114157 2

Air cleaner - Cleaning

NOTE: *Clean the filter element after every 50 hours of service. Extremely dusty conditions may require more frequent service intervals.*

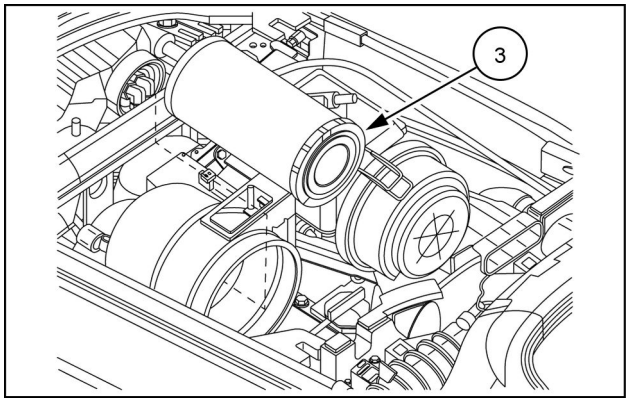
The air cleaner **(1)** is accessed by opening the tractor hood.
The air cleaner assembly contains one element.

1. To remove the filter element, release the clips **(2)** on the end cap.



NHIL17CT01297AA 1

2. Remove the end cap from the air cleaner body to expose the filter element **(3)**.
3. Pull the filter element **(3)** from the canister. Clean any loose dirt from the canister and inspect the end of the canister for dirt which may prevent the new element from sealing properly.
4. Clean the filter element using low air pressure (**2 Kg/cm²** (**30 psi**) or less). Blow dust from the inside to the outside of the element (opposite to normal air flow through element).



NHIL17CT01267AA 2

NOTICE: *Be careful not to rupture the filter element. Maintain a safe distance between the air nozzle and the filter element when directing air up and down the clean air side of the element pleats.*

NOTICE: *Place a light inside the element to check for paper leaks or for bonding of the paper to the end plate. If any leaks are found, replace the element.*

5. After cleaning the filter element, check the inner diameter seals for damage. If damage is present, replace the element.
6. Reinstall the filter element by inserting it into the canister and pushing on the end of the element until it is seated against the canister.

NOTE: *If filter element is not inserted far enough into canister, the end cap cannot be installed.*

7. Place the end cap onto the canister body, push in on the end cap to seat it against the canister. Lock the clips and verify the end cap is secure.

NOTICE: *Never tap the filter element with hard objects or against a hard surface. This may dent or break the element end cap seals.*

NOTICE: *Failure to obtain a good seal between element and the canister may cause major engine damage.*

Every 250 hours

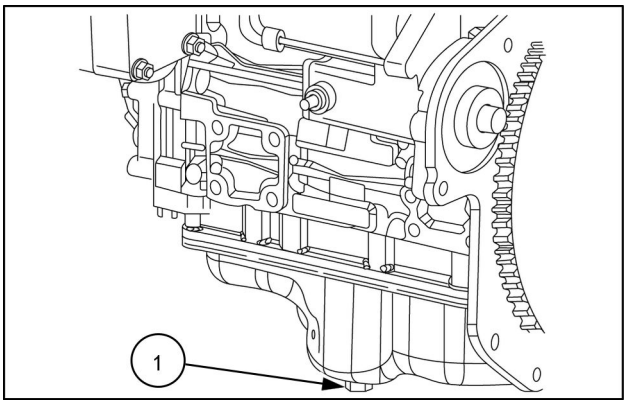
Engine - Change fluid

Changing the engine oil and filter

NOTE: *Change the engine oil and filter after the first 50 hours of operation, then every 250 hours thereafter. If the tractor is operated for extended periods of time at maximum rated power and speed, or under other types of continuous, severe operating conditions, the engine oil and filter should be changed at 200 hour intervals following the initial oil change.*

To change the engine oil:

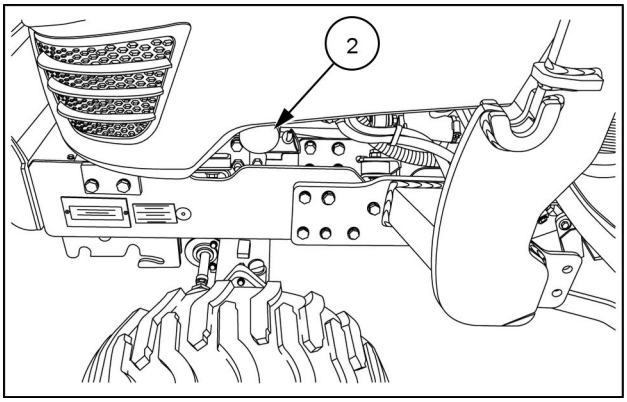
1. Place a suitable container beneath the drain opening to catch the used oil.
2. With the tractor engine off but at normal operating temperature, remove the drain plug **(1)**.
3. Install the drain plug after all of the oil has been drained.



NHIL17CT01275AA 1

4. Place a container below the oil filter, **(2)** to catch the oil contained in the filter.
5. Remove the oil filter from the engine.
6. Coat the gasket on the new filter with a film of clean oil.
7. Install the filter onto the engine until the gasket contacts its mating surface, then turn the filter approximately three-quarters of a turn by hand. Do not overtighten.
8. Add the proper type and level of new oil, then start the engine and check the filter for leaks.

NOTE: *Oil Capacity, with filter **2.9 L** (**3.1 US qt**)*



NHIL17CT01296AA 2

Ambient Temp (°F)	Recommended Oil
-12 – 49 °C (**10 – 120 °F**)	**SAE 15W-40 CI-4/CH-4 ENGINE OIL**
-23.3 – 49 °C (**-10 – 120 °F**)	**SAE 10W-30 CI-4 ENGINE OIL**
-29 – 16 °C (**-20 – 60 °F**)	**ENGINE OIL SAE 5W-30**
Oil Specification API CF-4 or CH-4	

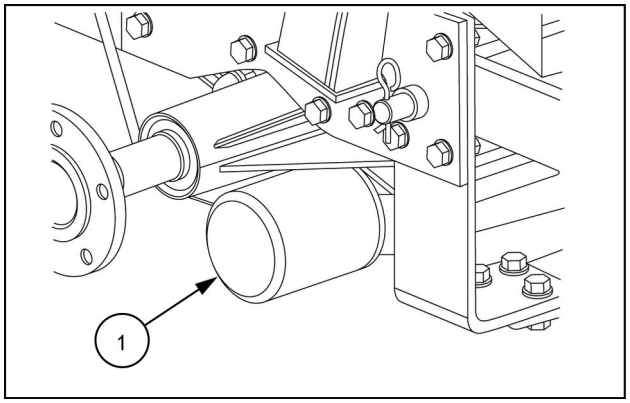
NOTE: *Tractors are originally shipped with (15W40) oil.*

Oil filter - Replace

NOTE: *Replace the hydraulic system oil filter after the first 50 hours of operation, and then following every 250 hours of operation thereafter.*

The hydraulic system uses a spin-on type oil filter, located on the left side of the tractor between the rear axle housing and drawbar support. To replace the filter **(1)**:

1. Unscrew the used oil filter and discard.
2. Coat the gasket on the new filter with a film of clean oil. Screw the filter into place until the gasket contacts the sealing surface, then tighten the filter by hand approximately three-quarters of a turn. Do not overtighten.
3. Start the engine and check the filter for leaks.
4. Stop the engine and check the hydraulic system oil level. Add oil if necessary.



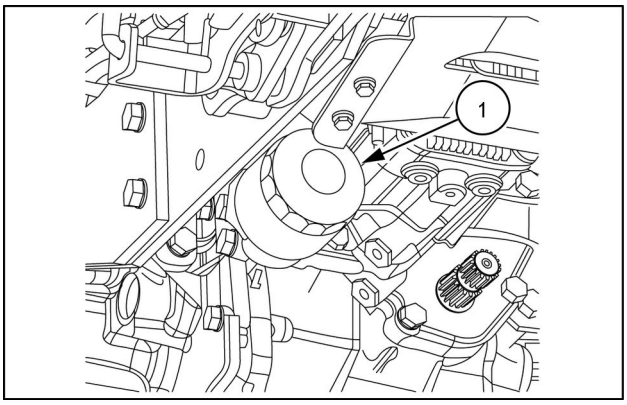
NHIL17CT01277AA 1

Oil filter - Replace

The Hydrostatic Transmission (HST) system uses a spin-on type oil filter, located on the right-side of the tractor underneath the operator's platform.

To replace the filter **(1)**:

1. Unscrew the used oil filter and discard.
2. Coat the gasket on the new filter with a film of clean oil. Screw the filter into place until the gasket contacts the sealing surface, then tighten the filter by hand approximately three-quarters of a turn. Do not overtighten.
3. Start the engine and check the filter for leaks.
4. Stop the engine and check the hydraulic system oil level. Add oil if necessary.

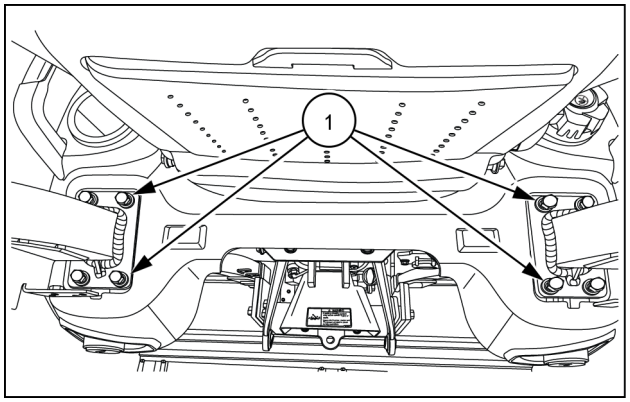


NHIL17CT01278AA 1

Roll Over Protective Structure (ROPS) frame - Check

NOTE: *Inspect the Roll Over Protective Structure (ROPS) after the first 50 hours of operation. Following the initial inspection, the ROPS should be checked after every 250 hours of operation or every six months, whichever comes first.*

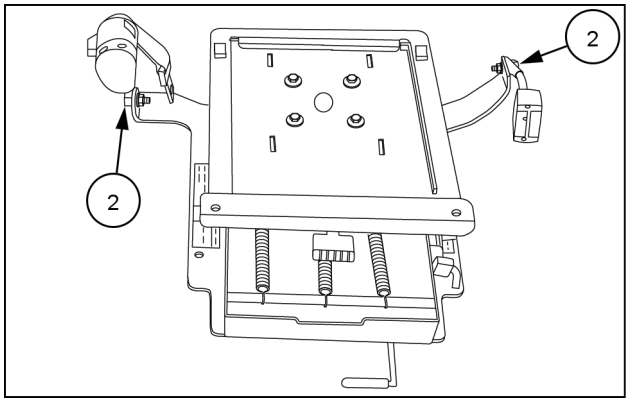
1. Check the torque of the Roll Over Protective Structure (ROPS) bottom portion mounting bolts **(1)**. Torque the M12, bolts to **76 N·m** (**56 lb ft**) if necessary.



NHIL17CT00457AA 1

Seat belt mounting bolts

1. Inspect the operator's seat and the mounting parts for the seat belt **(2)**.
2. Tighten the bolts **(1)** to **61 N·m** (**45 lb ft**).
3. Replace any parts that show wear or damage.



NHIL17CT00200AA 2

Front wheels - Tighten

⚠ 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

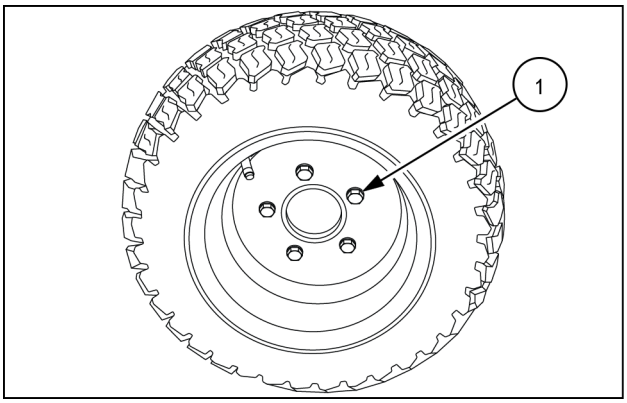
Tighten the wheel bolts **(1)** to the specified torque any time you remove the wheel assembly from the tractor or loosen the wheel bolts.

Check and tighten wheel bolts **(1)** to proper torque specifications after the following hours of use:

- First 50 hours
- Every 250 hours

Front wheel hardware tightening torque.

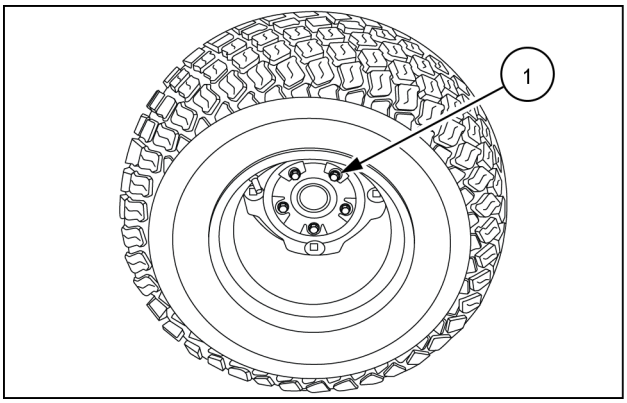
- **47 N·m** (**35 lb ft**)



NHIL17CT00199AA 1

Rear wheel hardware tightening torque.

- **65 N·m** (**48 lb ft**)



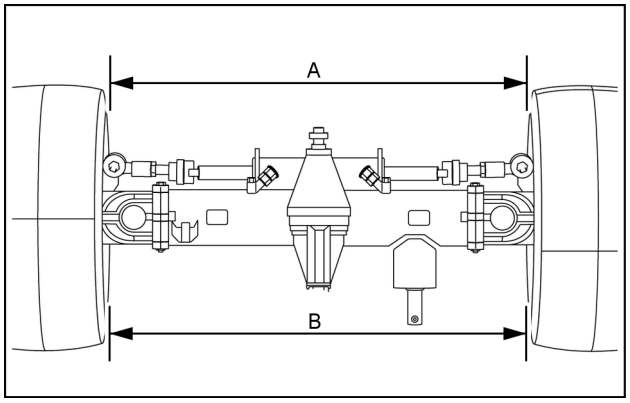
NHIL17CT00198AA 2

Front wheels toe-in - Check

Front wheel toe-in adjustments were made on your tractor at the factory. Normally, the wheels maintain their toe-in however, an occasional check should be made.

To check toe-in:

1. With the front wheels in the straight ahead position, mark the front of the wheels (not the tires) **(A)** at wheel hub height.
2. Measure and record the distance between the front of the wheels at the marks, then push the tractor forward or backward until the marks are at wheel hub height on the rear of the wheel.
3. Measure and record the distance between the marks at the rear of the wheels **(B)**.
4. The difference between the dimensions recorded in Step **2** and Step **3** should be **0 – 8 mm** (**0 – 0.31 in**) toe-in. The distance between the marks on the wheels should be greater at the rear than at the front. Toe in formula is: B - A = **0 – 8.0 mm** (**0 – 0.31 in**). See your NEW HOLLAND dealer if your tractor requires adjustment.

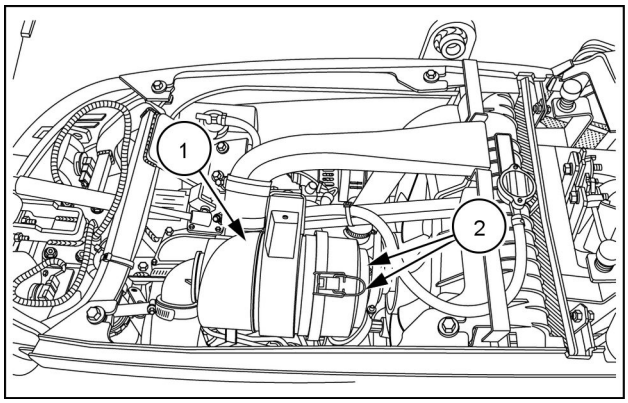


NHIL17CT01264AA 1

Air cleaner - Replace

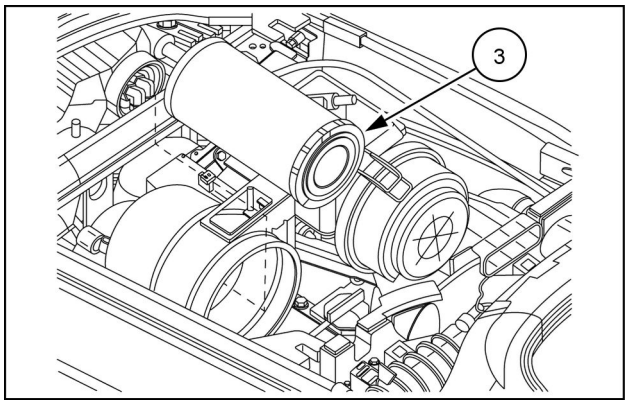
The air cleaner **(1)** is accessed by opening the tractor hood.
The air cleaner assembly contains one element.

1. To remove the filter element, release the clips **(2)** on the end cap.



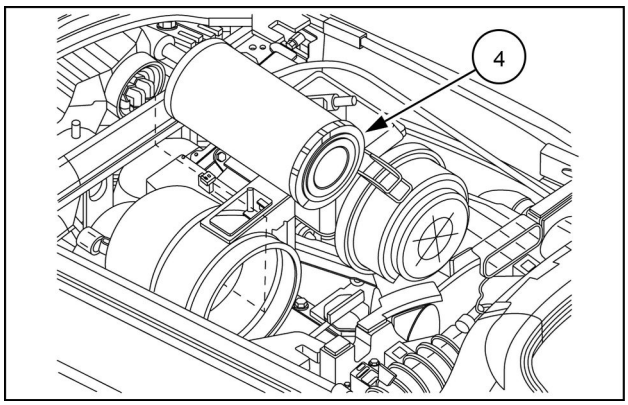
NHIL17CT01297AA 1

2. Remove the end cap from the air cleaner body to expose the filter element **(3)**.
3. Pull the filter element **(3)** from the canister. Clean any loose dirt from the canister and inspect the end of the canister for dirt which may prevent the new element from sealing properly.



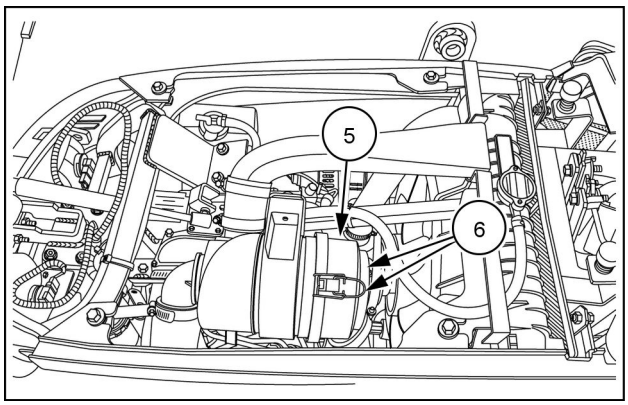
NHIL17CT01267AA 2

4. Install the new filter element **(4)** by inserting it into the canister and pushing on the end of the element until it is seated against the canister.



NHIL17CT01267AA 3

5. Place the end cap **(5)** onto the canister body, push in on end cap, and retain end cap to filter canister with the two clips **(6)**.

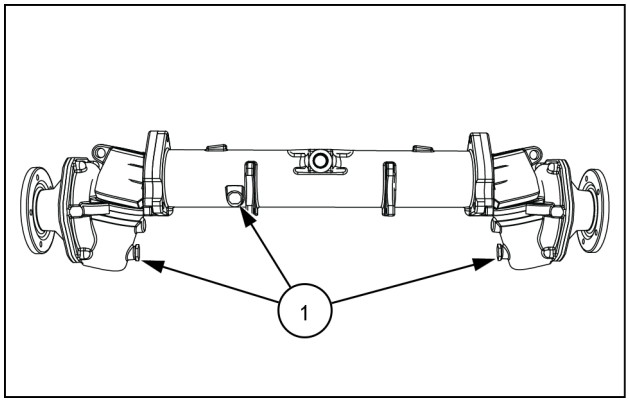


NHIL17CT01297AA 4

Every 500 Hours

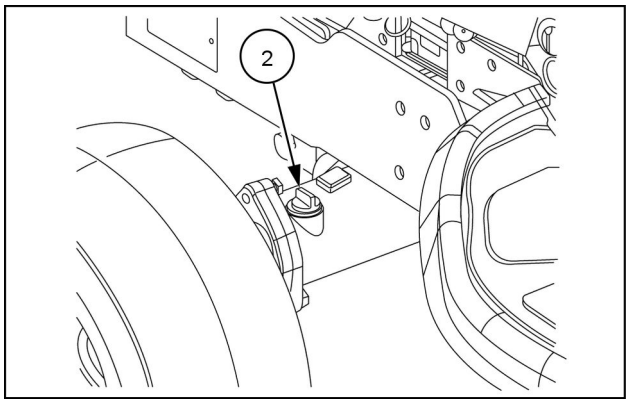
Front axle differential fluid - Change

1. Place a suitable container beneath the oil plugs.
2. With the oil at normal operating temperature remove the drain plugs **(1)** to drain the oil.
3. After the oil has drained reinstall the drain plugs.
4. Discard the used oil.



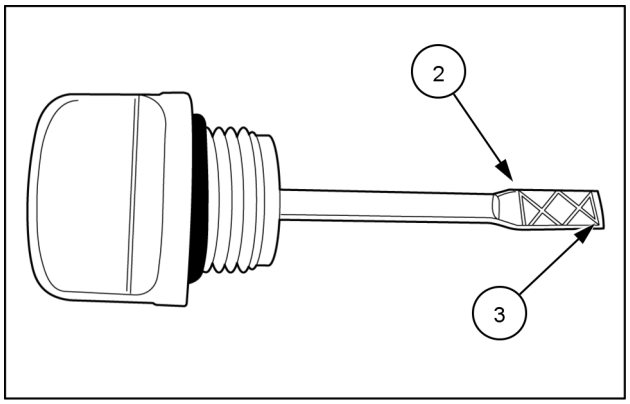
NHIL17CT00201AA 1

5. Remove the dipstick/filler plug **(2)**
6. Fill the axle with **HYPOID GEAR OIL EP SAE 80W-90**. Approximate fluid capacity for the front axle housing is **2.0 L** (**2.1 US qt**) .



NHIL17CT01274AA 2

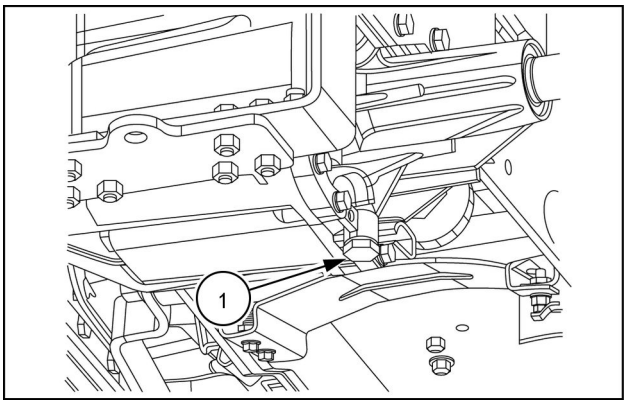
7. The oil level is correct when the oil is between the upper **(2)** and lower **(3)** hash marks on the dipstick.
8. Drive the tractor a short distance.
9. Recheck oil level at dipstick. Add oil if needed until oil level is between the upper and lower hash marks on the dipstick.



83114157 3

Transmission - Change fluid

1. Place a suitable container with a minimum capacity of **15.1 L** (**4.0 US gal**) beneath the transmission / rear axle drain plug **(1)** to catch the used oil.
2. Drain the system by removing the transmission drain plug **(1)**. Reinstall the plug after the oil has drained.



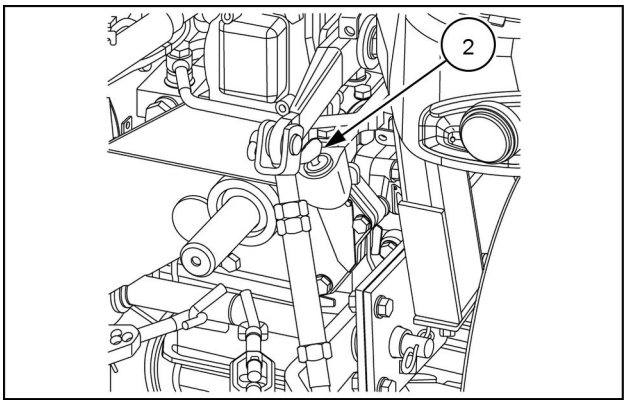
NHIL17CT01281AA 1

3. Remove the dipstick **(2)** and fill with **MULTIGRADE 134™ (SAE 10W-30)** hydraulic oil. The transmission is filled to the correct level when the oil registers between the two marks **(A)** on the dipstick.

NOTE: *During cold weather operation the tractor hydraulic oil can be changed to* ***MULTI-SEASON HYDRAULIC TRANSMISSION OIL SAE 0W-20*** *The* ***MULTI-SEASON HYDRAULIC TRANSMISSION OIL SAE 0W-20*** *oil is a multi-viscosity oil which has improved flow characteristics in low temperatures and can be used year round.*

Transmission fluid capacity:

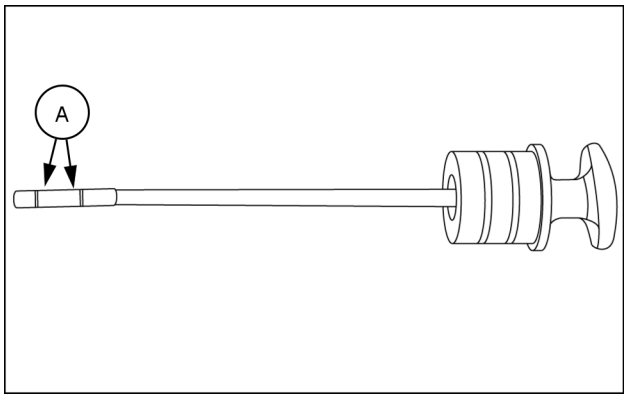
- **12.5 L** (**3.3 US gal**)



NHIL17CT01273AA 2

4. Install the dipstick.

NOTICE: *There is a common sump for the transmission, rear axle, and hydraulic system. Therefore, extra care should be taken to keep the oil clean.*



93100904 3

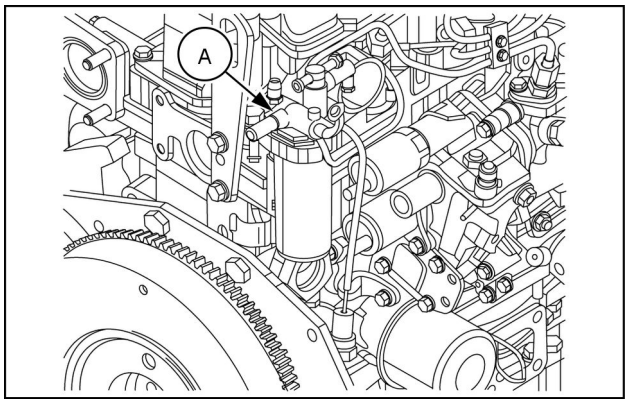
Fuel filters - Replace

⚠ CAUTION

Fuel vapors are explosive and flammable.
Do not smoke while handling fuel. Keep fuel away from flames or sparks. Shut off engine and remove key before servicing. Always work in a well-ventilated area. Clean up spilled fuel immediately. Failure to comply could result in minor or moderate injury.

C0195A

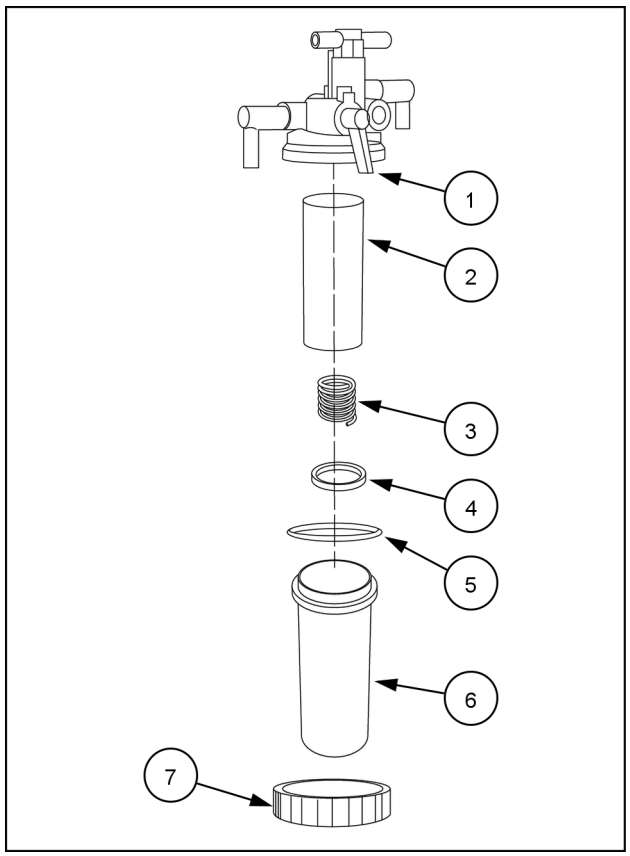
Prior operation:
Remove the engine side panel. See page **7-3**.



NHIL17CT01282AA 1

The location of the fuel filter (A) is on the right-hand side of the engine.

1. Close the fuel shut off valve by turning the fuel valve lever **(1)** one quarter turn in the clock-wise direction.
2. Place a suitable drain pan below the fuel filter bowl **(6)**.
3. Loosen the metal ring **(7)** and remove it from the fuel filter housing.
4. Remove the fuel filter bowl **(6)**.
5. Remove the fuel filter element **(2)**.
6. Install a new fuel filter element.
7. Clean any dirt or water found in the bottom of the fuel filter bowl. Keep the water indicator ring **(4)** in the bottom of the fuel filter bowl.
8. Inspect the O-ring **(5)** and replace if necessary.
9. Install the fuel filter bowl being careful to align the spring **(3)** to the bottom of the fuel filter element.
10. Install the metal ring and tighten by hand.
11. Open the fuel shut valve by tuning the fuel valve lever one quarter turn counter clock-wise.
12. Bleed the fuel injection system as described in **7-39**.



NHIL17CT01381BA 2

Pre-filter - Replace

⚠ CAUTION

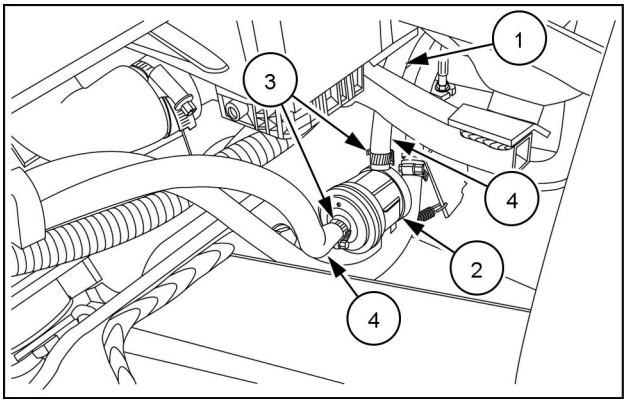
Fuel vapors are explosive and flammable.
Do not smoke while handling fuel. Keep fuel away from flames or sparks. Shut off engine and remove key before servicing. Always work in a well-ventilated area. Clean up spilled fuel immediately. Failure to comply could result in minor or moderate injury.

C0195A

1. Using a suitable tool such as pinch off pliers close the fuel line **(1)** before the fuel pre-filter **(2)**.

NOTE: *There is no fuel shut off valve at the fuel tank. Fuel will drain from the fuel tank if the fuel line is not closed off before removing the pre-filter.*

2. Place a suitable container below the pre-filter.
3. Loosen the two hose clamps **(3)**.
4. Remove the two fuel hoses **(4)** from the pre-filer.
5. Remove the pre-filter by pulling upward.



NHIL17CT01295AA 1

6. Install a new pre-filter.
7. Connect the two fuel hoses.
8. Tighten the two hose clamps.
9. Remove the pinch-off pliers.
10. Bleed the fuel injection system as described in **7-39**.

Every 1000 hours

Engine valve clearance - Check and adjust

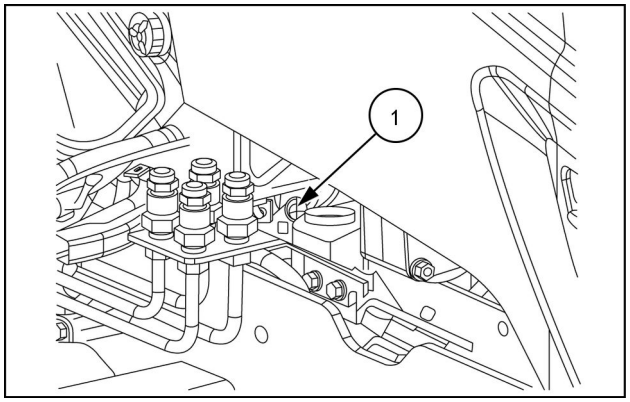
Contact your NEW HOLLAND dealer to schedule this service for your tractor.

Every two years

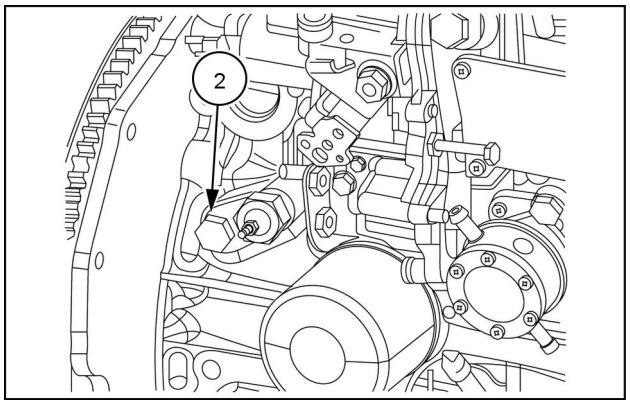
Engine cooling system - Drain fluid - And flush

To drain the cooling system:

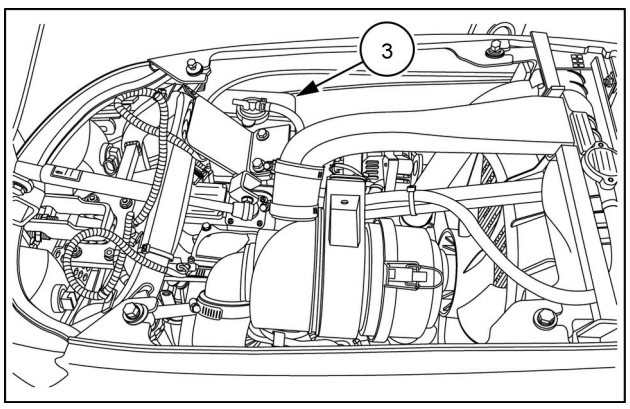
1. Use a suitable receptacle to catch the used coolant.
2. Remove the radiator cap and open the drain valve **(1)** on the right-hand side of radiator to drain the coolant.
3. After the coolant has drained, place a water hose in the radiator filler neck and run water through the system.
4. When water is flowing from the radiator drain valve, start the engine.
5. When the water flowing from drain valve is free from coloration and sediment, stop the engine and remove the hose. Allow all water to drain from the system through the radiator drain valve.
6. Remove the engine block drain plug **(2)** on the left-hand side of the tractor. Allow the engine block to drain.
7. Install the engine block drain plug.
8. Close the radiator drain valve.
9. Slowly refill the system with a 50/50 solution **IAT COOLANT 11 – CLASSIC** and water through the radiator filler neck. Fill until the coolant level is approximately even with the bottom of the filler neck.
10. Clean the radiator cap and reinstall the cap.
11. Run the engine until normal operating temperature is reached, then stop the engine.
12. Recheck the coolant level when the cooling system is cold and add additional coolant as necessary.
13. Verify the coolant over-flow tank **(3)** has the proper level.



NHIL17CT01284AA 1



NHIL17CT01285AA 2



NHIL17CT01301AA 3

NOTE: *See page* ***7-2*** *for information on changing engine coolant types.*

General maintenance

Fuel injection system - Bleed

⚠ WARNING

Fire hazard!
Leaking fuel could cause a fire. DO NOT perform the bleed procedure while the engine is hot.
Failure to comply could result in death or serious injury.

W1119A

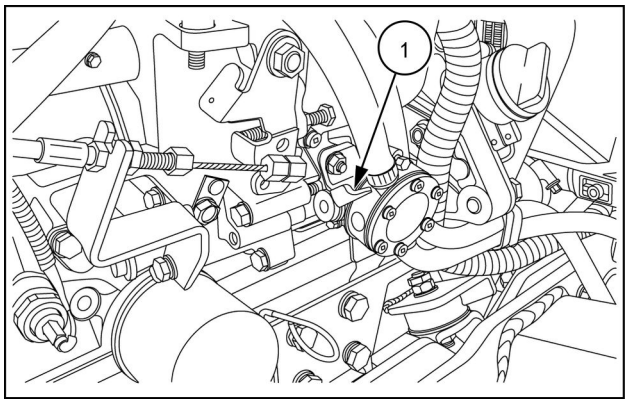
Prior operation:
Remove the engine side panel. See page **7-3**.

Bleed the fuel system if:

- The fuel tank has been drained.
- A new filter element has been installed.
- The tractor has run out of fuel.
- The lines leading to or from the filter have been disconnected.

To bleed the fuel system:

1. Make sure there is adequate fuel in the fuel tank.
2. Locate the hand primer lever **(1)** on the left-hand side of the engine.

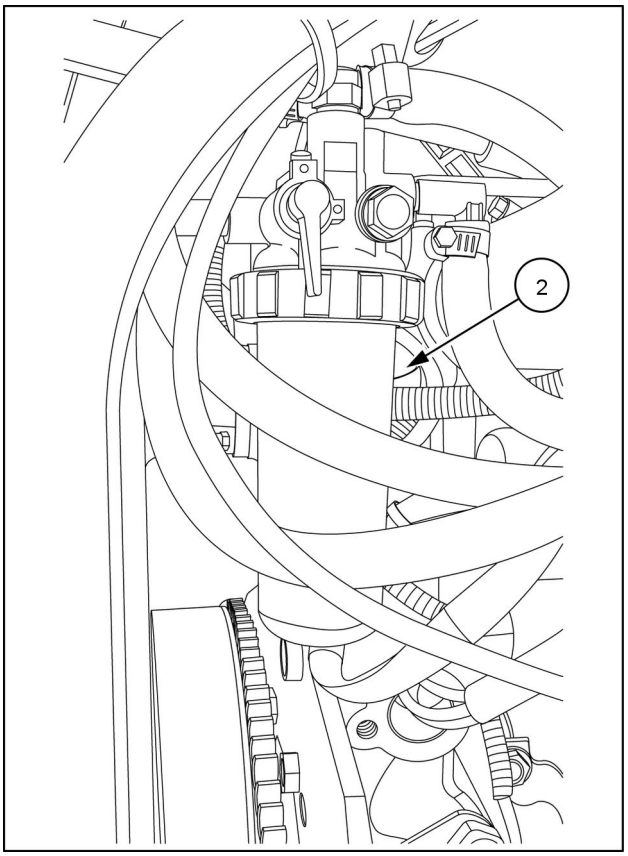


NHIL17CT01305AA 1

3. Operate the hand primer lever until air-free fuel flows into the fuel filter bowl **(2)**.
4. Continue operating the hand primer lever until the fuel filter bowl is full of air-free fuel.
5. Operate the hand primer lever for an additional 20 strokes.
6. Start the engine and place throttle to 3/4 position.

NOTICE: *Do not operate the starter for more than **30 s** at a time. Allow the starter to cool for **3 min** between starting attempts. Failure to allow the starter to cool may result in starter damage.*

7. Run the engine until the engine operates smoothly.
8. If the engine fails to start or shuts off shortly after start up perform the bleeding process again.



NHIL17CT01304BA 2

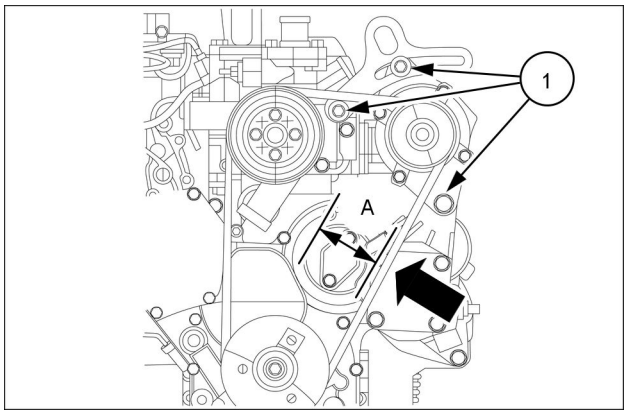
Belt - Adjust

⚠ WARNING

Maintenance hazard!
The engine must be OFF when you loosen or tighten alternator mounting bolts.
Failure to comply could result in death or serious injury.

W1096A

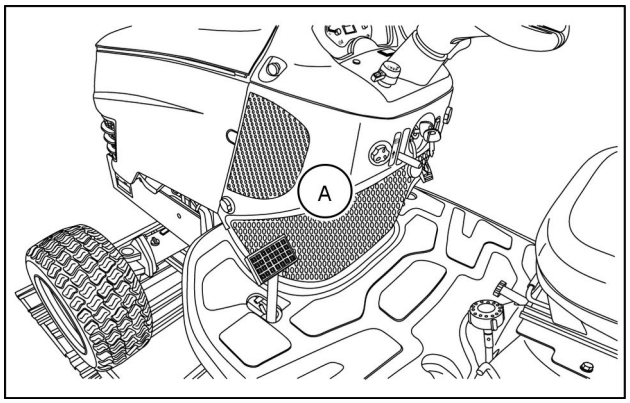
1. Loosen the alternator mounting bolts **(1)**.
2. Pry the alternator away from the engine and tighten the mounting bolts.
3. Recheck belt deflection **(A)** when **10 kg** (**22 lb**) of pressure is applied midway between the belt pulleys. A correctly tightened belt will deflect **10.0 – 14.0 mm** (**0.4 – 0.6 in**).



NHIL17CT01279FA 1

Battery - Test

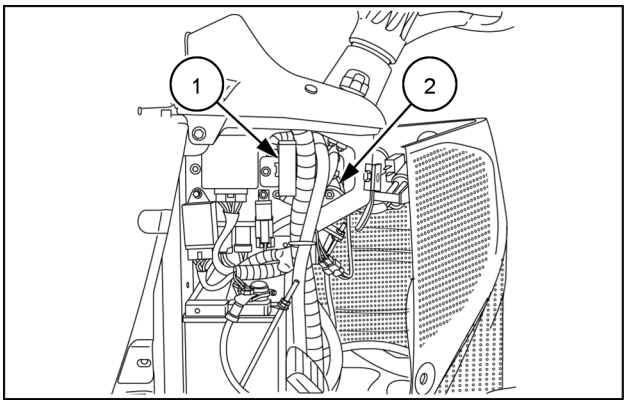
The tractor is equipped with a BCI group 45, **12 V** battery **(A)** with a minimum cold cranking ability of **430 A** at **-18 °C** (**0 °F**).
See page **7-3** for instructions to locate the batter.
Make sure the battery connections are tight and free of corrosion. A solution of baking soda and water may be used to wash the outside surface and terminals of the battery when necessary. However, make sure the solution does not get inside the battery. After cleaning, wash the battery with clean water, then apply a small amount of petroleum jelly to the terminals to prevent corrosion.
In freezing temperatures, a good battery charge must be maintained. If the battery becomes discharged or run down, the electrolyte becomes weak and may freeze, causing damage to the case. If you must add water, use distilled water. Add the water just before using the tractor so that the water will mix with the electrolyte during the charging process, thus preventing the water from freezing.
To determine the battery charge, check the specific gravity of the electrolyte.



NHIL17CT00474AA 1

Fuses - Check

The location of the fuse block **(1)** is behind the screen panel on the left-hand side.
The location of the in-line **30 A** fuse **(2)** for the stop solenoid circuit is behind the screen panel. Always replace blown fuses with the size specified for that circuit.



NHIL17CT02190AA 1

The fuse block contains the following fuses (top to bottom):

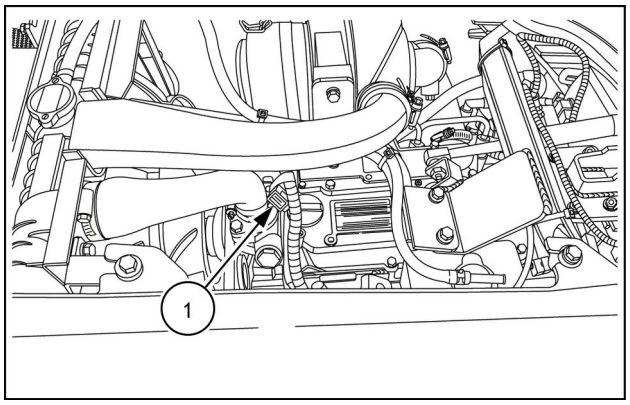
Fuse #	Fuse Size	Circuit Protected
F1	**30 A**	Driver Sol
F2	**15 A**	Head/Harz
F3	**10 A**	Power Soket
F4	**10 A**	Sol/Inst/PTO
F5	**10 A**	Work/Brake
F6	**10 A**	Turn signal

Main fuse - Check

The location of the **40 A** main fuse **(1)** is above the engine near the oil fill cap. This fuse protects the tractor's entire electrical system.
To replace the main fuse:

1. Remove the old fuse from the fuse holder and replace.

NOTICE: *Always replace this fuse with a **40 A** fuse do not increase the amperage rating. If your tractor continues to blow this fuse see your NEW HOLLAND dealer for assistance.*

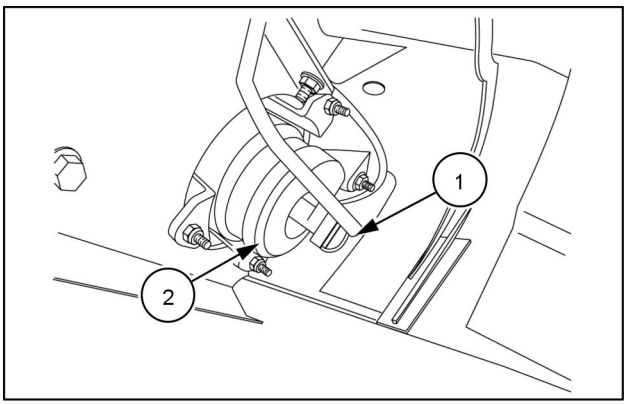


NHIL17CT01298AA 1

Headlight - Replace

Bulb removal

1. Open the tractor hood.
2. Remove wire harness connector **(1)** from rear of light.
3. Remove rubber boot **(2)**
4. Remove retaining ring and bulb from housing.



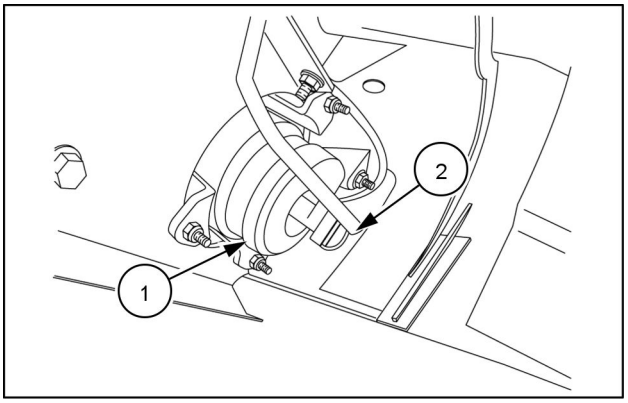
83114179 1

Bulb installation

NOTICE: *Be careful not to touch the bulb with bare fingers. Oil from the fingers can shorten the life of bulb. Use protective cloth or glove when installing bulb.*

NOTE: *Replacement bulbs are:*
Bulb size H4 ***55/60 W****, Halogen*

1. Place bulb into housing matching tabs on bulb with slots in housing.
2. Install retaining ring into housing.
3. Install rubber boot **(1)**.
4. Connect wire harness connector **(2)** to bulb terminals.



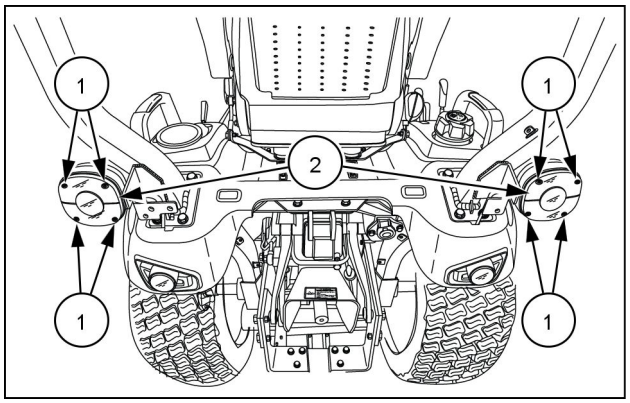
83114179 2

Turn signal and hazard bulb - Replace

1. Remove the four screws **(1)** retaining the taillight lens **(2)** and remove the lens.
2. Push in on the bulb and rotate the bulb clockwise in the socket to remove the old bulb.
3. Insert the new bulb into the socket and turn the bulb in a clockwise direction until tightened.

NOTE: *Replace the turn signal / hazard bulb with a* ***21 W*** *bulb.*

NOTICE: *The side lights warning lights and brake light bulbs can not be replaced. If any of these light functions fail the complete light assembly must be replaced.*



NHIL17CT00184AA 1

Front wheels - Tighten

⚠ 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

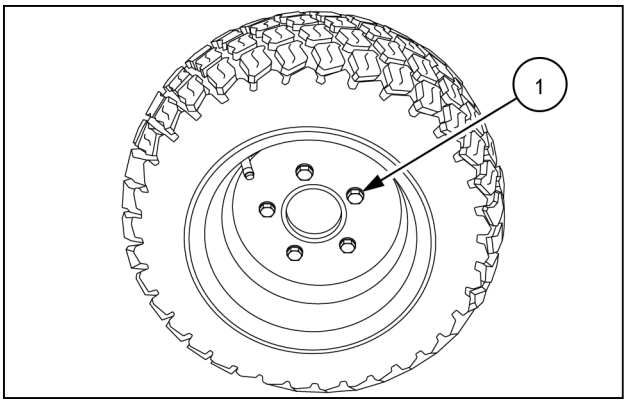
Tighten the wheel bolts **(1)** to the specified torque any time you remove the wheel assembly from the tractor or loosen the wheel bolts.

Check and tighten wheel bolts **(1)** to proper torque specifications after the following hours of use:

- First 50 hours
- Every 250 hours

Front wheel hardware tightening torque.

- **47 N·m** (**35 lb ft**)



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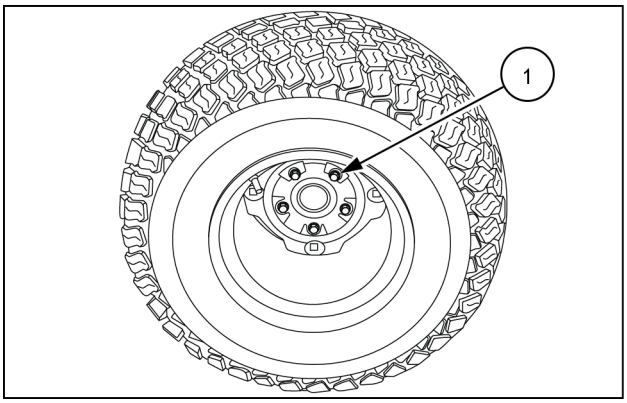
Rear wheel hardware tightening torque.

- **65 N·m** (**48 lb ft**)



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Storage

Storage - Storing

Below is a list of protective measures which should be taken if your tractor is to be stored for an extended period of time:

1. Thoroughly clean the tractor. Use touch up paint where necessary to prevent rust.
2. Check the tractor for worn or damaged parts. Install new parts as required.
3. Raise the lift arms hydraulically to their fullest raised position so that the lift piston is in a fully extended position. This fills the cylinder with oil and protects the cylinder wall surfaces from corrosion.
4. Lubricate the tractor.
5. Fill the fuel tank with No. 1 diesel fuel.

NOTICE: *Do not use No. 2 diesel fuel for winter storage because of wax separation and setting at low temperature.*

6. Open the drain valve of the radiator and engine block. Flush the system, close the drain valves, and fill with a 50/50 solution of **IAT COOLANT 11 – CLASSIC** and water.
7. Remove the battery and clean it thoroughly. Be sure that it is fully charged and that the electrolyte is at the proper level. Store the battery in a cool, dry place above freezing temperature, and charge it periodically during storage.
8. Place blocking under the tractor axles to remove the weight from the tires.
9. Cover the exhaust pipe opening.

Storage - Check

Tractors which have been placed in storage should be completely serviced in the following manner before using:

1. Inflate the tires to the recommended pressures and remove the blocking.
2. Check the oil level in the engine crankcase, transmission / hydraulic fluid and the front-wheel drive axle.
3. Install a fully charged battery and remove the exhaust cover if other than a rain cap.
4. Check the cooling system for the proper level 50/50 solution of **IAT COOLANT 11 – CLASSIC** and water.
5. Start the engine and allow it to idle a few minutes. Ensure the engine is receiving lubrication and that each control is functioning correctly.
6. Drive the tractor without a load and check to make sure it is operating satisfactorily.

Touch-up paint

The following New Holland paints are recommended for touch-up paint repairs.

Color	Part No.	Amount
New Holland Bright Blue	86109144-DS 86109141-DS	**16 oz** Spray **1 US qt**
CNH Dark Gray	B96104 B96105	**16 oz** Spray **1 US qt**
Bianco White (Wheels)	9624698-DS 9624699-DS	**16 oz** Spray **1 US qt**
Med Gloss Black	94792-DS 9624700-DS	**16 oz** Spray **1 US qt**

8 - TROUBLESHOOTING

Symptom(s)

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.

Engine - Troubleshooting

Problem	Possible Cause	Correction
The start motor does not rotate with the key switch in the (START) position.	Safety start switch not completing circuit	Verify the forward or reverse pedals are in neutral
	PTO safety switches not completing circuit	Verify the Power Take-Off (PTO) shift lever is in “rear” position and the PTO switch is in the “off” position
	Low battery charge	Charge or replace
	Loose battery or starter cable terminals	Tighten the terminal
	Key switch faulty	Repair or replace switch
	Starter motor faulty	Repair or replace starter motor
The start motor rotates but the engine does not start	Low battery charge	Charge or replace battery
	Air in fuel system	Bleed out the air
	Fuel filter clogged	Clean or replace the filter
	Fuel injection pump not operating correctly	See your NEW HOLLAND dealer for service
Engine speed is irregular	Air in fuel system	Bleed the fuel system
	Fuel filter clogged	Clean or replace the filter
	Injection nozzle clogged	See your NEW HOLLAND dealer for service
	Fuel leakage	Check for fuel leaks and replace fuel lines as needed
	Irregular fuel injection	See your NEW HOLLAND dealer for service
Engine stops suddenly during operation	Fuel shortage	Add fuel and bleed air from fuel system
	Faulty fuel injector	See your NEW HOLLAND dealer for service
	Faulty fuel injection pump	See your NEW HOLLAND dealer for service
	Internal parts of engine seized due to lack of lubrication	See your NEW HOLLAND dealer for service
Engine speed is more than maximum rated high idle speed	Governor malfunction	See your NEW HOLLAND dealer for service
Engine stops at low speed	Faulty injection pump	See your NEW HOLLAND dealer for service
	Engine valve gap is not correct	See your NEW HOLLAND dealer for service
	Low fuel injector pressure	See your NEW HOLLAND dealer for service
Low engine power	Fuel injector nozzle clogged	See your NEW HOLLAND dealer for service

Problem	Possible Cause	Correction
	Carbon accumulation on valve seat	See your NEW HOLLAND dealer for service
	Incorrect valve gap adjustment	See your NEW HOLLAND dealer for service
	Incorrect fuel injection timing	See your NEW HOLLAND dealer for service
	Lack of fuel supply	Check fuel system for restriction
	Air filter clogged	Clean or replace air filter
The color of exhaust smoke is white	Low engine operating temperature	Allow engine to obtain higher operating temperature
	Engine burning engine oil	See your NEW HOLLAND dealer for service
	Engine coolant entering engine exhaust	See your NEW HOLLAND dealer for service
The color of exhaust gas is black.	Air filter clogged	Clean or replace engine air filter
	Excessive fuel supply	See your NEW HOLLAND dealer for service
	Faulty fuel injector	See your NEW HOLLAND dealer for service
Instrument panel engine oil pressure indicator light is "ON" during operation.	Lack of engine oil	Add engine oil as needed
	Low viscosity of engine oil	Replace oil with proper viscosity type
	Faulty pressure switch	Replace switch
	Engine oil filter clogged	Replace the filter
Instrument panel battery charging indicator is "ON" during operation.	Bad electrical connection	Check battery terminals, ground, and repair as needed
	Faulty alternator	Repair or replace alternator as needed
	Faulty battery	Replace battery
	Incorrect fan belt tension or belt broken	Adjust belt tension or replace belt
Engine overheating	Radiator screen covered in grass	Clean radiator screen or fins as needed
	Lack of coolant	Add coolant as needed
	Fan belt slipping or belt is broken	Adjust belt tension or replace belt

Mechanical service brakes - Troubleshooting

Problem	Possible Cause	Correction
After engaging brake pedal, pedal will not return	Return spring damaged	Replace the spring
	Damaged internal brake parts	See your NEW HOLLAND dealer for service
Brake does not work or only one side works.	Incorrect brake pedal free play	See your NEW HOLLAND dealer for service
	Brake disc lining worn or broken	See your NEW HOLLAND dealer for service

Regulated/Low pressure system - Troubleshooting

Problem	Possible Cause	Correction
The three-point linkage will not raise	Engine speed too low	Increase the engine speed to at least **1500 RPM**
	Three point hitch is over loaded	Reduce the load on the three point hitch
	Lack of transmission / hydraulic oil	Add oil as needed
	Air in the hydraulic suction pipe	Tighten the hydraulic filter and check all hydraulic suction connections
	Hydraulic filter clogged	Replace hydraulic filter

Problem	Possible Cause	Correction
The three-point linkage does not move down when control handle is moved to down position.	Rate of drop control valve locked in closed position	Turn the knob counterclockwise, to open valve
	Lift shaft moving parts damaged	See your NEW HOLLAND dealer for service
Oil leakage	Connecting part loosened	Tighten
	Oil seal damaged	See your NEW HOLLAND dealer for service
	Pipe cracked	See your NEW HOLLAND dealer for service

Steering - Troubleshooting

Problem	Possible Cause	Correction
Hydraulic steering system does not work	Steering unit damaged or worn	See your NEW HOLLAND dealer for service
	Steering cylinder piston seal damaged or worn	See your NEW HOLLAND dealer for service
	External oil leakage of oil tubes or hoses	See your NEW HOLLAND dealer for service
Excessive steering wheel effort	Front axle is over loaded	Reduce the load on the front axle
	Faulty power steering pump	See your NEW HOLLAND dealer for service
	Power steering relief valve: pressure setting low	See your NEW HOLLAND dealer for service
Cylinder movement not as smooth as steering wheel	Air in steering line if not used for a long time	Bleed air in steering system
	Air in suction tube	Check suction tube, repair as needed
	Cylinder piston seal damaged	See your NEW HOLLAND dealer for service
Oil leakage of steering pump, steering unit, cylinder	Seal damaged	See your NEW HOLLAND dealer for service
Abnormal noise	Lack of oil	Add oil as needed
	Restriction of oil flow in suction line	Replace filter
	Air in system	Bleed air from system

Hydrostatic transmission - Troubleshooting

Problem	Possible Cause	Correction
When operating HST pedal, tractor does not move.	Park brake is engaged	Release park brake
	HST range is in “N”	Place HST range in “L” or “H” range
	HST Filter clogged	Replace HST filter
	HST control linkage worn or damaged	See your NEW HOLLAND dealer for service
Tractor is still moving when HST pedal is in neutral position	Incorrect neutral adjustment of HST linkage	See your NEW HOLLAND dealer for service
	HST pedal linkage damaged	See your NEW HOLLAND dealer for service
HST power is low	Tractor is over loaded	Reduce load from the tractor
	Oil shortage	Add transmission oil as needed
	Air in HST circuit	Check and repair the hydraulic suction line
	HST filter clogged	Replace the HST filter

Problem	Possible Cause	Correction
	HST internal parts worn	See your NEW HOLLAND dealer for service
Abnormal noise	Engine speed is too low	Set engine speed over **1500 RPM**
	Oil temperature is too low	Run engine to warm up the oil
	HST oil filter clogged	Replace the HST filter
	Oil shortage	Add transmission oil as needed

Electrical system - Troubleshooting

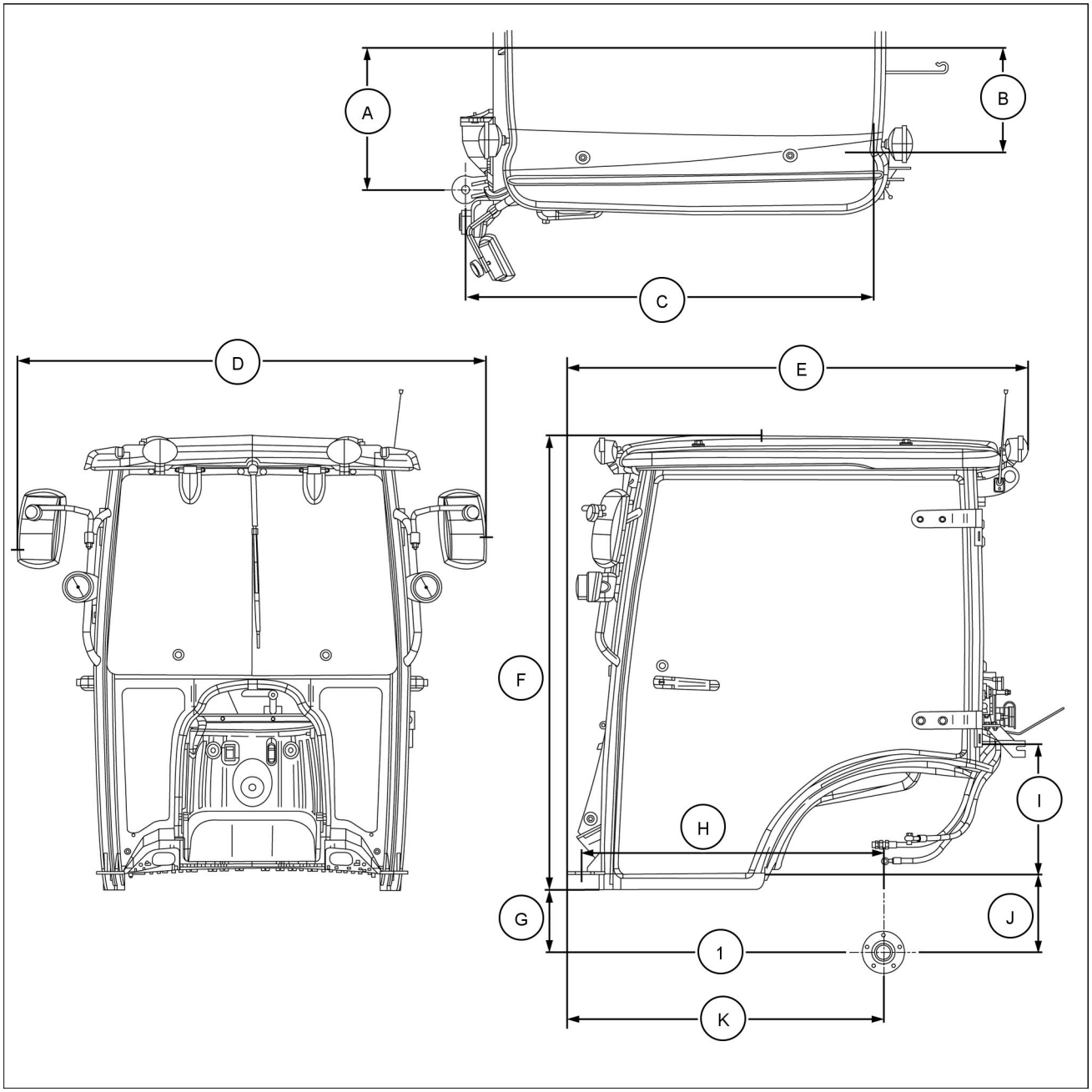
Problem	Possible Cause	Correction
Headlights are dim	Battery charge is low	Charge or replace battery
	Faulty headlight wiring or faulty ground connection	See your NEW HOLLAND dealer for service
Battery does not charge	Incorrect wiring	Check battery terminals and ground for corrosion
	Incorrect fan belt tension or broken belt	Adjust fan belt tension or replace belt
	Faulty Alternator	See your NEW HOLLAND dealer for service
	Faulty battery	Replace battery
Headlights will not illuminate	Light bulb burnt out	Replace bulb as needed
	Blown Fuse	Check the cause and replace fuse with correct size
	Faulty wiring connection	Check headlight wiring connection, repair as needed
	Faulty light switch	Check switch for proper function and replace if needed
Turn signal lights do not work	Light bulb burnt out	Replace bulb, with correct size
	Faulty wiring connection	See your NEW HOLLAND dealer for service
	Blown fuse	Check the cause, replace fuse with correct size
	Faulty turn signal switch	Check switch for proper function, see your NEW HOLLAND dealer for service
Cold start aid not working	Faulty connection of glow plug wiring	See your NEW HOLLAND dealer for service
	Blown fuse	Check for cause and replace fuse with correct size .
	Glow plug relay or safety controller faulty	See your NEW HOLLAND dealer for service
	Faulty glow plugs	See your NEW HOLLAND dealer for service

9 - SPECIFICATIONS

Machine specifications and dimensions - Cab (If equipped)

Dimension and specification of cabin (MT1CA2)

Description	MT1CA2
Weight	**185 kg** (**408 lb**)
Work lamps	**12 V 37.5 W**
Indoor light	**12 V 10 W**
Front turn signal lights / Side lights	**12 V 21 W** / **5 W**



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ID	Description	ID	Description
1	Rear axle center line	F	**1538 mm** (**61 in**)
A	**479 mm** (**19 in**)	G	**122 mm** (**5 in**)
B	**354 mm** (**14 in**)	H	**1023 mm** (**40 in**)
C	**1384 mm** (**54 in**)	I	**440 mm** (**17 in**)
D	**1586 mm** (**62 in**)	J	**175 mm** (**7 in**)
E	**1560 mm** (**61 in**)	K	**1069 mm** (**42 in**)

Dimension of complete vehicle - Cab (If equipped)

- When applying;
  Front tire : 8.5x10 4PR,
  Rear tire : 12x12 4PR.

ID	Description	ID	Description
A	**1153 mm** (**45 in**)	F	**106 mm** (**4 in**)
B	**916 mm** (**36 in**)	G	**340 mm** (**13 in**)
C	**880 mm** (**35 in**)	H	**1425 mm** (**56 in**)
D	**1187 mm** (**47 in**)	I	**311 mm** (**12 in**)
E	**1661 mm** (**65 in**)	J	**2579 mm** (**102 in**)

Tractor general specifications

Boomer™ 25 Compact	
Engine	
Type	Diesel
Model	3TNV80F
Emission level (tier)	Tier 4B (final)
Aspiration	Indirect swirl chamber
Engine gross horsepower	**18.4 kW** (**24.7 Hp**) @ **3000 RPM**
Cylinders	3
Bore	**80 mm** (**3.15 in**)
Stroke	**84 mm** (**3.3 in**)
Displacement	**1115 cm³** (**68.0 in³**)
Compression ratio	23.0:1
Firing order	1-3–2
Low idle speed	**1320 RPM**
Maximum speed:	
High Idle	**3235 RPM**
Rated	**3000 RPM**
Block type:	
	Cast iron
Lubrication:	
	Forced lubrication type
Pump	Trochoid gear pump

Capacities	
Fuel tank	**25 L** (**6.6 US gal**)
Cooling system capacity	**3.3 L** (**3.49 US qt**)
Engine crankcase:	
With Filter	**2.9 L** (**3 US qt**)
Rear axle & transmission (Includes hydraulics)	
HST	**12.5 L** (**3 US gal**)
Front axle	**2.0 L** (**0.5 US gal**)

Cooling system	
Type	Pressurized liquid with recirculating bypass
Water pump:	
Type	Centrifugal
Drive	V-Belt
Cooling system capacity	**3.3 L** (**3.49 US qt**)
Belt deflection	**10 – 14 mm** (**0.39 – 0.55 in**) when **10 kgf** (**22 lbf**) pressure is applied midway between belt pulleys
Fan diameter	**330 mm** (**13 in**)
Thermostat:	
Start to open	**82 °C** (**179.6 °F**)
Fully Open	**95 °C** (**203 °F**)
Radiator cap	**90 kPa** (**12.8 psi**)

Electrical system	
Alternator	**12 V**, Heavy duty, **40 A**
Battery	**12 V**, **45 A·h**
Starting motor	**12 V** electric solenoid
Cold - start aid	Glow plug

Fuel system	
Fuel type	Diesel
Type of fuel to use if above **-7 °C** (**19 °F**)	No. 2-Diesel, Cetane rating: minimum 40
Type of fuel to use if below **-7 °C** (**19 °F**)	No. 1-Diesel, Cetane rating: minimum 40
Sulphur content (Maximum) :	No. 1-Diesel
Sulphur content (Maximum) :	No. 2-Diesel
Injection pump :	
Type	In-line pump
Timing	**30°**

Hydrostatic Transmission (HST)	
Number of range gears and speeds	2
Range synchronization	None
Number of gear levers	1
Cruise control offering	Standard
Cruise control type	Electrical
High pressure relief valve setting	**16603 kPa** (**2408 psi**)
Trans/rear axle oil capacity	**12.5 L** (**3.3 US gal**)
Control	Forward / reverse ,individual pedal
Differential lock type	Mechanical, foot operated

Service brake	
Type	Multi-disc wet
Actuation	Mechanical; one suspended pedal
Number of plates - per axle	2
Total number of Plates	4
Disc lining diameter OD	**108 mm** (**4.25 in**)
Disc lining diameter ID	**65 mm** (**2.56 in**)
Disc thickness	**3.4 mm** (**0.1338 in**)
Lining type (Material)	Paper
Service brake pedal parking lock	Yes
Minimum wear thickness	**0.4 mm** (**0.0157 in**)
Stator disc thickness	**2.0 mm** (**0.0787 in**)

Park brake	
Type	Latch
Location	Below dash panel
Actuation	Mechanical
Number of plates	4
Lever latching	Cable activated

Steering	
Type	Central support, bevel gear type
Turns lock-to-lock:	
FWD	2.86 L to R 2.89 R to L
Front wheel	
Toe-in	**0 – 8 mm** (**0 – 0.314 in**)
Camber	**2°**
Steering angle	Inner **54°**, Outer **44°**
Front axle oscillation	**0 +/- 7°**
Turning radius w/o brakes:	
FWD	**2400 mm** (**94 in**) Left turn **2400 mm** (**94 in**) Right turn

Steering	
Steering system relief valve setting	**8329 – 8825 kPa** (**1208 – 1280 psi**)
Maximum pump flow	**8 L/min** (**2.1 US gpm**) HST

Power Take-Off (PTO) (Rear)	
Type	Independent
Clutch type	Wet disc
Clutch material, asbestos free (Yes or No)	Yes
Number of plates	5
Plate diameter	**79.0 mm** (**3.1 in**)
Plate surface area	**1685.0 mm²** (**2.6 in²**)
Activation	Electro-hydraulic
Selector	Rear / mid / rear + mid
Number of splines	6
Shaft size:	**34.9 mm** (**1/38 in**)
Engine speed for **540 RPM** rear PTO operation	**2933 RPM**
PTO Horsepower observed	**12.8 kW** (**17.2 Hp**) - HST

Mid Power Take-Off (PTO)	
Type	Independent
Clutch type	Wet disc
Number of plates	6
Actuation	Switch
Selector	Rear / mid / rear + mid
Direction of rotation (As viewed from rear of tractor)	Clockwise
Number of splines	15
Shaft size:	**25.0 mm** (**0.98 in**)
Engine speed for **2500 RPM** mid PTO operation	**2841 RPM**

Hydraulic lift system	
Category	One
Type	Open center
Pump type	Gear
Pump capacity	**25 L/min** (**6.6 US gpm**)
System relief valve setting	**12997 – 13500 kPa** (**1885 – 1958 psi**)
Control type	Lift - hold - lower
Drop rate control valve	Standard
Mower cut height control	Standard
Lift capacity at ball end	**450 kg** (**992 lb**)
Lift capacity at **24 in** behind	**330 kg** (**728 lb**)
Rear hitch point	Standard
Unbrake towable mass	**800 kg** (**1764 lb**)
Independent brake, towable mass	**1600 kg** (**3527 lb**)

Loader valve	
	Standard with float

Transmission speeds (Hydrostatic)	
	(**3235 RPM** Engine speed with 26 x 12.0–12 Rear tires)
Gear position:	
“L” Forward	**0.0 – 6.1 km/h** (**0.0 – 3.8 mph**)
“H” Forward	**0.0 – 14.6 km/h** (**0.0 – 9.1 mph**)
“L” Reverse	**0.0 – 3.7 km/h** (**0.0 – 2.3 mph**)
“H” Reverse	**0.0 – 8.8 km/h** (**0.0 – 5.5 mph**)

Drawbars	
Adjustable	Optional
Unbrake towable mass	**800 kg** (**1764 lb**)
Independent brake, towable mass	**1600 kg** (**3527 lb**)

Tires	
Front :	
Turf:	18x 8.50-10, 4PR, R3
Industrial:	18x 8.50-10, 4PR, R4
Rear :	
Turf	26 x 12.0–12, 4PR, R3
Industrial	26 x 12.0–12, 4PR, R4

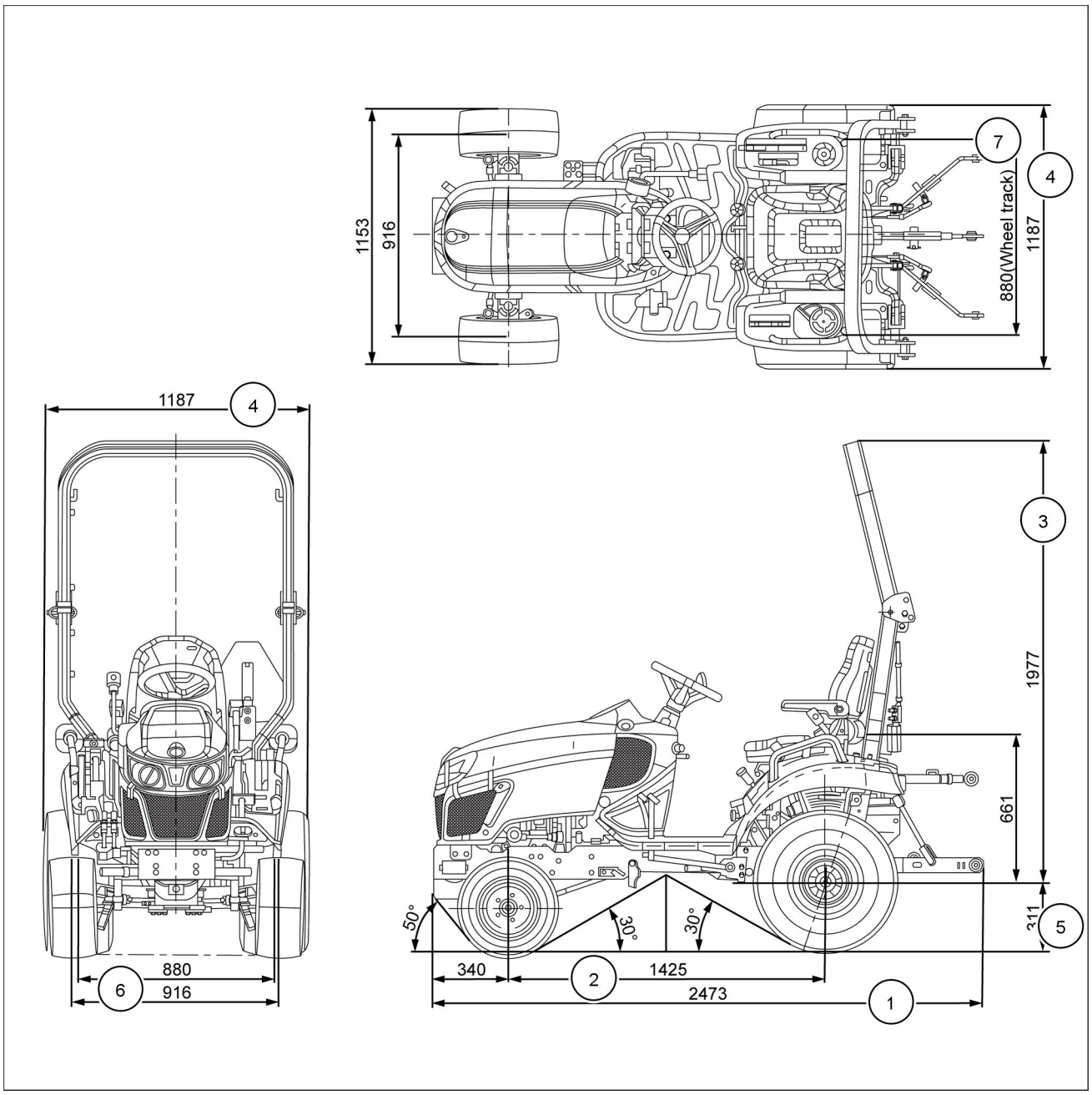
Wheel bolt torques	
Front wheel --- disc-to-hub:	
FWD	**65 N·m** (**48 lb ft**)
Rear wheel --- disc-to axle	**65 N·m** (**55 lb ft**)

Roll Over Protective Structure (ROPS) attaching bolt torques	
ROPS to rear axle	**76 N·m** (**56 lb ft**)
Seat belt	**61 N·m** (**45 lb ft**)

Tractor dimensions - Roll Over Protective Structure (ROPS)

	Workmaster 25S
(1) - LENGTH:	
	2473 mm (**97.4 in**)
(2) - WHEEL BASE:	
	1425 mm (**56.1 in**)
(3) - Top of ROPS - Folding:	
Tires: 26 x 12.0–12, 4PR	
Up Position	**2288 mm** (**90 in**)
Down Position	**1626 mm** (**64 in**)
(4) - WIDTH:	
Rear Axle - Outside to Outside of tire:	
Tires: 26 x 12.0–12, 4PR	**1187 mm** (**47 in**)
(5) - MINIMUM GROUND CLEARANCE (rear axle center line):	
Tires: 26 x 12.0–12, 4PR	**306 mm** (**12 in**)

	Workmaster 25S
WHEEL TREAD SETTINGS:	
(6)-FRONT:	
Tires: 26 x 12.0–12, 4PR	**880.0 – 916.0 mm** (**34.6 – 36.1 in**) **916 mm** (**36 in**)
(7)-REAR:	
Tires: 26 x 12.0–12, 4PR	**880 mm** (**35 in**)
WEIGHT	
with fluids and without an operator	**1175 kg** (**2590 lb**)



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10 - 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 care installed correctly and operating properly.

- ☐ Seat Belts Installed
- ☐ PTO shield installed
- ☐ Slow Moving Vehicle (SMV) emblem installed
- ☐ Safety decals installed
- ☐ Operator presence system/safety interlock system for cranking circuit operation
- ☐ Park brake operation
- ☐ Hazard lights/tail lights operation
- ☐ All lights operation
- ☐ Operator's Manual (present)

2. FLUID LEVELS and LUBRICATION

Check and top off as necessary.

- ☐ Engine oil level
- ☐ Radiator coolant level
- ☐ Front axle oil level
- ☐ Transmission & rear axle oil level
- ☐ Lubricate/grease the entire machine
- ☐ Fuel level
- ☐ Wipe off excess grease or oil.

3. WHEELS AND TIRES

- ☐ Check and inflate tire air pressure to correct pressure. See **7-24**.

☐ Torque the wheel lug bolts to specification. See **7-19**.

☐ Front wheels toe-in, See **7-32** for correct specification, Adjust if necessary.

4. OPERATIONAL CHECKS

Perform all operating checks with the tractor at normal operating temperature.

☐ Indicator Lights and gauges for proper operation

☐ Key switch operation

☐ Maximum no-load high and idle speeds, See**4-3**

☐ PTO engagement and disengagement

☐ Three point hitch operation

☐ Hydraulic lift control drop rate adjustment

☐ Four Wheel Drive (4WD) operation

☐ Operation and adjustment of brakes

☐ Hydrostatic transmission (HST)

☐ No fluid or oil leaks

5. OTHER

Check for proper installation of the following items.

☐ Air cleaner element & hose connections

☐ Engine belts tension adjustment

☐ Battery fully charged

☐ Top link

☐ Draw bar

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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- ☐ Indicator Lights and gauges for proper operation
- ☐ Key switch operation
- ☐ Maximum no-load high and idle speeds, See**4-3**
- ☐ PTO engagement and disengagement
- ☐ Three point hitch operation
- ☐ Hydraulic lift control drop rate adjustment
- ☐ Four Wheel Drive (4WD) operation
- ☐ Operation and adjustment of brakes
- ☐ Hydrostatic transmission (HST)
- ☐ No fluid or oil leaks

5. OTHER

Check for proper installation of the following items.

- ☐ Air cleaner element & hose connections
- ☐ Engine belts tension adjustment
- ☐ Battery fully charged
- ☐ Top link
- ☐ Draw bar

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

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Dealer's stamp

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Availability of some models and equipment builds varies according to the country in which the equipment is being used. For exact information about any particular product, please consult your New Holland dealer.

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