ORIGINAL INSTRUCTIONS

OPERATOR'S MANUAL

Workmaster™ 25

Compact Tractor

Part number 92157408
1st edition English
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NEW HOLLAND AGRICULTURE

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1 - GENERAL INFORMATION

Note to the Owner

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

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.

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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.

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:

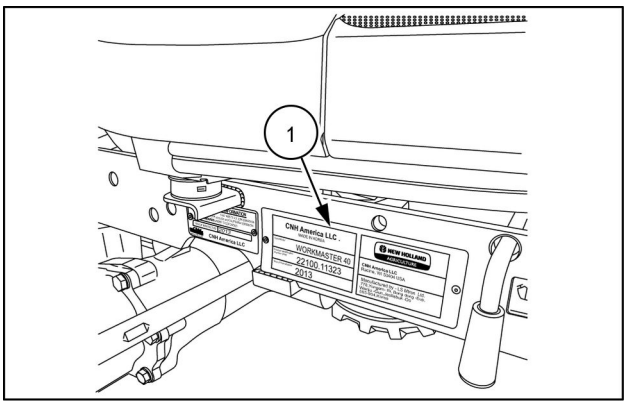
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity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

The Product Identification Plate **(1)** is located on the right-hand side of the frame, next to the hood release.

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



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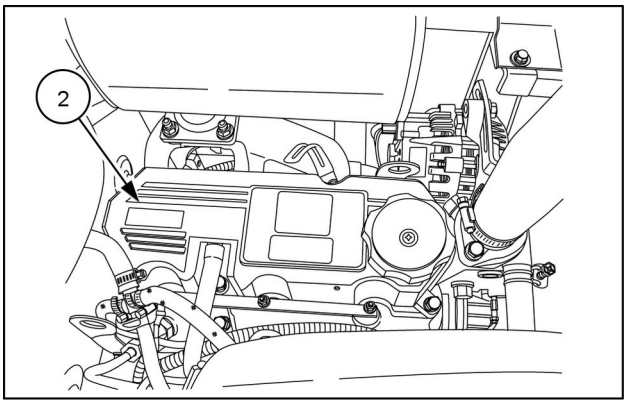
The engine identification information plate **(2)** is located on the rearward end of the engine valve cover.



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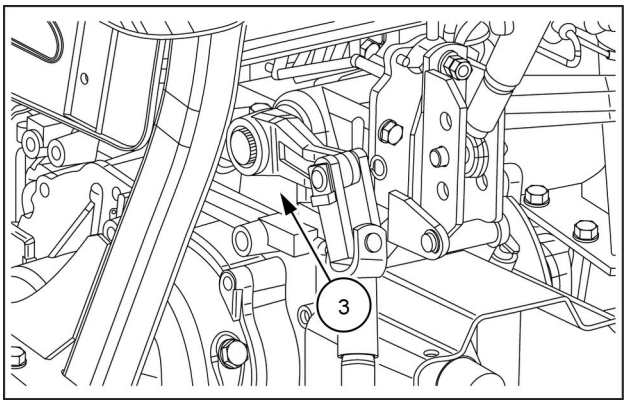
The transmission identification numbers **(3)** are located on the transmission housing, to the left of the Hydraulic Power Lift (HPL).



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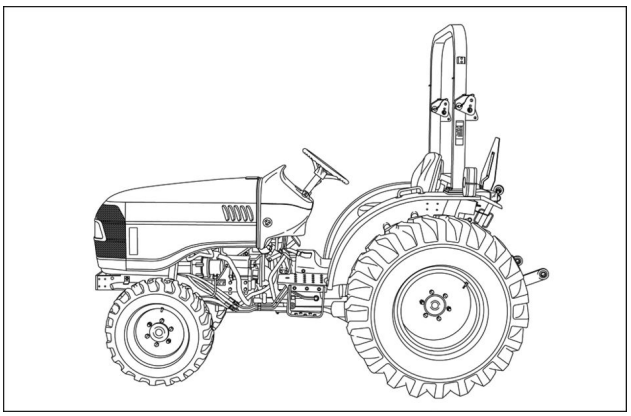
Operator's manual storage

The operator’s manual must be stored in a secure place prior to operation and it must be kept available for use by all operators.



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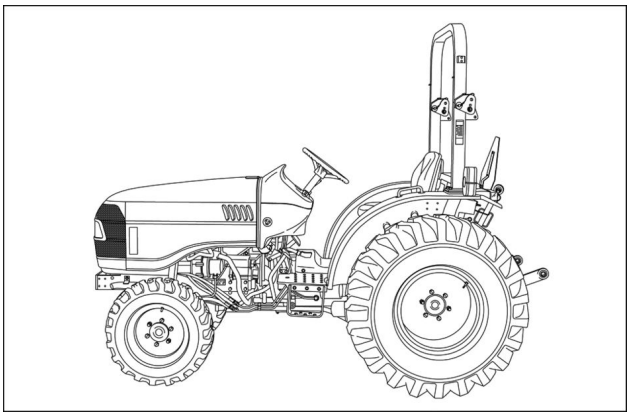
Machine orientation

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



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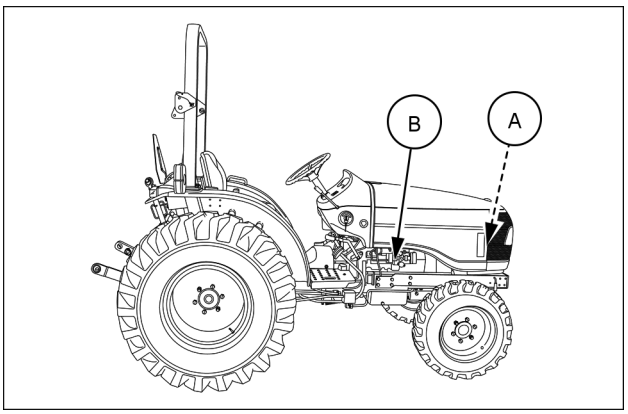
Left-hand view



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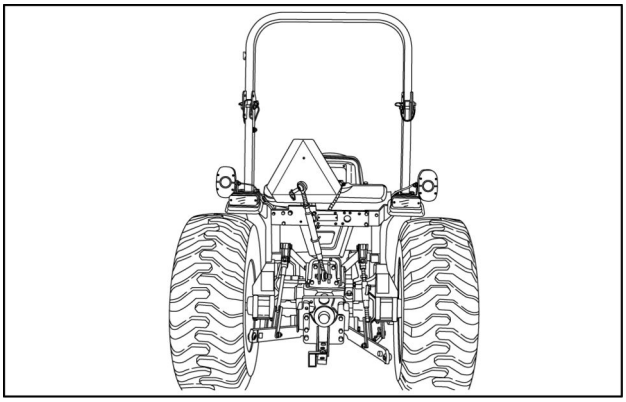
Right-hand view



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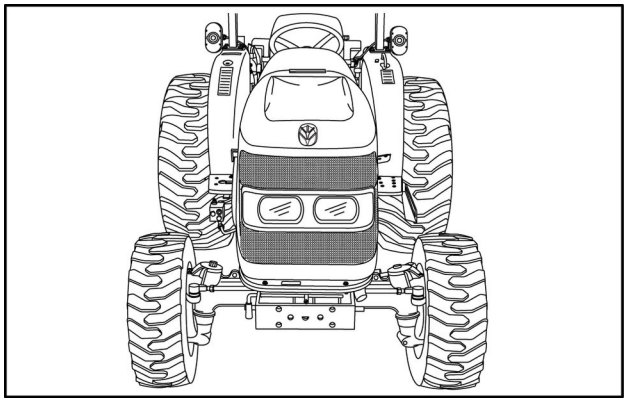
Rear view



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Front view

Emissions overview

Federal Emission Warranty Statement

The following warranty applies to the engines that have been certified to the emission regulation of the U.S. Environmental Protection Agency.

Mitsubishi Heavy Industries, Ltd. warrants to the ultimate purchaser and each subsequent purchaser that the new non-road, stationary and emergency stationary engine, including all parts of its emission-control system, meets two conditions:

1. It is designed, built, and equipped so it conforms at the time of sale to the ultimate purchaser with applicable regulation of the U.S. Environmental Protection Agency. If the vehicle in which the engine is installed is registered in the state of California, a separate California emission regulation also applies.
2. It is free from defects in materials and workmanship that may keep it from meeting these requirements.

Warranty Period

The emission warranty period is shown below.

However, if Mitsubishi Heavy Industries, Ltd.'s standard warranty period is longer than the emission warranty period, the emission warranty period extends to same as Mitsubishi Heavy Industries, Ltd.'s standard warranty period.

Below warranty period shall begin on the date the new non-road, stationary and emergency stationary engine is delivered to the ultimate purchaser.

If your engine is certified as...	And its maximum power is...	And its rated speed is...	Then its warranty period is... (whichever comes first.)	
			hours	years
Variable speed or constant speed	Less than **19 kW** (**26 Hp**)	Any speed	1500	2
Constant speed	**19 – 37 kW** (**26 – 50 Hp**)	**3000 RPM** or higher	1500	2
Constant speed	**19 – 37 kW** (**26 – 50 Hp**)	Less than **3000 RPM**	3000	5
Variable speed	**19 – 37 kW** (**26 – 50 Hp**)	Any speed	3000	5
Variable speed or constant speed	Greater than **37 kW** (**50 Hp**)	Any speed	3000	5

Warranty Parts

Mitsubishi Heavy Industries, Ltd. warrants the parts which will increase the emission of pollutants when they become defective.

The followings are examples.

A. All the engine parts relating to the systems below are included in the exhaust-gas related components:
   1. Air-induction system
   2. Fuel system
   3. Ignition system
   4. Exhaust gas recirculation systems

B. The parts below are also included in the exhaust-gas related components:
   1. After-treatment devices
   2. Crankcase ventilation valves
   3. Sensors
   4. Electronic control units

C. The parts below also included in the evaporative emission gas related components:
   1. Fuel tank
   2. Fuel cap

3. Fuel Line
4. Fuel Line Fittings
5. Clamps*
6. Pressure Relief Valves*
7. Control Valves*
8. Control Solenoids*
9. Electric Controls*
10. Vacuum Control Diaphragms*
11. Control Cables*
12. Control Linkages*
13. Purge Valves
14. Vapor Hoses
15. Liquid/Vapor Separator
16. Carbon canister
17. Canister Mounting Brackets
18. Carburetor Purge Port Connector

* Parts related to evaporation-emission-gas control system

Owner's Responsibility

*The owner of the engine is responsible for the performance of the required maintenance listed in this operation manual.

*In accordance with 40 CFR 1068.115, Mitsubishi Heavy Industries, Ltd. makes no warranties if the operator caused the problem through improper maintenance or use.

California Emission Control Warranty Statement: your Warranty Rights and Obligations

IMPORTANT

The following warranty applies to the engines that have been certified the emissions regulation of the California Air Resources Board (CARB).

The California Air Resources Board (CARB) is pleased to explain the emission control system warranty on you 2013 or later engine. In California, new off-road engines must be designed, built, and equipped to meet the State's stringent anti-smog standards. Mitsubishi Heavy Industries, Ltd. 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 and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies. Where a warrantable condition exists, Mitsubishi Heavy Industries, Ltd. will repair your off-road engine at no cost to you including diagnosis, parts, and labor.

Manufacturer's warranty coverage

The 2013 and later off-road engines are warranted for the warranty period (Same as warranty period of EPA Emission Warranty in this manual). If any emission-related part on your engine is defective, the part will be repaired or replaced by Mitsubishi Heavy Industries, Ltd.

Warranty coverage

A. The warranty period shall begin on the date the engine or equipment is delivered to an ultimate purchaser. The use of alternate fuels shall not void the warranties on any engine certified to use such fuel.

B. Mitsubishi Heavy Industries, Ltd. of each off-road compression-ignition engine shall warrant to the ultimate purchaser and each subsequent purchaser of the engine registered in the state of California that the engine is:

1. Designed, built and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2,Part 5,Division 26 of the Health and Safety Code; and.
2. Free from defects in materials and workmanship which cause the failure of a warranted part to be identical in all material respects to the parts as described in Mitsubishi Heavy Industries, Ltd.'s application for certification for a period of 5 years or 3,000 hours of operation, whichever occurs first, for all engines rated at **19 kW** (**26 Hp**) and greater, except as noted below. In the absence of a device to measure hours of use, the engine shall be warranted for a period of 5 years. For all engines rated less than **19 kW** (**26 Hp**), and for constant-speed engines rated under **37 kW** (**50 Hp**) with rated speeds higher than or equal to 3,000 min-1, the period of 2 years or 1,500 hours of operation, whichever occurs first, shall apply. In the absence of a device to measure hours of use, the engine shall be warranted for a period of 2 years.

C. The warranty on emission-related parts shall be interpreted as follows:

1. Any warranted part which is not scheduled for replacement as required maintenance in the written instructions required by Subsection (e) shall be warranted for the warranty period defined in Subsection (b) (2). If any such part fails during the period of warranty coverage, it shall be repaired or replaced by Mitsubishi Heavy Industries, Ltd. according to Subsection (4) below. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.
2. Any warranted part which is scheduled only for regular inspection in the written instructions required by Subsection (e) shall be warranted for the warranty period defined in Subsection (b) (2). A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the period of warranty coverage. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.
3. Any warranted part which is scheduled for replacement as required maintenance in the written instructions required in Subsection (e) shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by Mitsubishi Heavy Industries, Ltd. according to Subsection (4) below. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.
4. Repair or replacement of any warranted part under the warranty provisions of this article shall be performed at no charge to the owner at a warranty station.
5. Notwithstanding the provisions of Subsection (4) above, warranty services or repairs shall be provided at all Mitsubishi Heavy Industries, Ltd. distribution centers that are franchised to service the subject engines.
6. The owner shall not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.
7. Mitsubishi Heavy Industries, Ltd. shall be liable for damages to other engine components proximately caused by failure under warranty of any warranted part.
8. Throughout the engine's warranty period defined in Subsection (b) (2), Mitsubishi Heavy Industries, Ltd. shall maintain a supply of warranted parts sufficient to meet the expected demand for such parts.
9. Any replacement part, as defined in Section 1900(b) (13), Title 13, may be used in the performance of any maintenance or repairs and must be provided without charge to the owner. It is not necessary for replacement parts to be the same brand or by the same manufacturer as the original part sold with the engine. Such use shall not reduce the warranty obligations of Mitsubishi Heavy Industries, Ltd.
10. Add-on or modified parts, as defined in Section 1900(b)(1) and (b)(10), Title 13, that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty claim made in accordance with this article. Mitsubishi Heavy Industries, Ltd. shall not be liable under this article to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.
11. The Executive Officer may request and, in such case, Mitsubishi Heavy Industries, Ltd. shall provide, any documents which describe that Mitsubishi Heavy Industries, Ltd.'s warranty procedures or policies.

D. Warranted parts list.

1. Fuel metering system.
   A. Fuel injection system.
   B. Air/fuel ratio feedback and control system.
   C. Cold start enrichment system.
2. Air induction system
   A. Controlled hot air intake system.

B. Intake manifold.
C. Heat riser valve and assembly.
D. Turbocharger/supercharger systems.
E. Charged air cooling systems.

3. Exhaust gas recirculation (EGR) system
   A. EGR valve body, and carburetor spacer if applicable.
   B. EGR rate feedback and control system.
4. Air injection system
   A. Air pump or pulse valve.
   B. Valves affecting distribution of flow.
   C. Distribution manifold.
5. Catalyst or thermal reactor system
   A. Catalytic converter.
   B. Thermal reactor.
   C. Exhaust manifold.
6. Particulate controls
   A. Traps, filters, precipitators, and any other devices used to capture particulate emissions.
   B. Regenerators, oxidizers, fuel additive devices, and any other device used to regenerate or aid in the regeneration of the particulate control device.
   C. Control device enclosures and manifolding.
   D. Smoke puff limiters.
7. Advances oxides of nitrogen (NOx) controls
   A. NOx absorbers.
   B. Lean NOx catalysts.
   C. Selective catalyst reduction.
   D. Reductant (urea/fuel) containers/dispensing systems.
8. Positive crankcase ventilation (PCV) system
   A. PCV valve.
   B. Oil filler cap.
9. Miscellaneous items used in above systems
   A. Vacuum, temperature, and time sensitive valves and switches.
   B. Electronic control units, sensors, solenoids, and wiring harnesses.
   C. Hoses, belts, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware.
   D. Pulleys, belts and idlers.
   E. Emission control information labels.
   F. Any other part with the primary purpose of reducing emissions or that can increase emissions during failure without significantly degrading engine performance.

E. Mitsubishi Heavy Industries, Ltd. shall furnish with each new engine written instructions for the maintenance and use of the engine by the owner.

Owner's Warranty Responsibilities

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

*As the off-road engine owner, you should, however, be aware that our company may deny you warranty coverage if your off-road 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 California's emissions requirements.

*You are responsible for initiating the warranty process. The ARB suggests that you present your off-road engine to a Mitsubishi Heavy Industries, Ltd. dealer or distributor dealer as soon as problem exists. The warranty repairs should be completed by the dealer or distributor as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact Mitsubishi Engine North America at 1-630-268-0750.

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 and on machine safety signs, 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. The color associated with DANGER is RED.

⚠ WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury. The color associated with WARNING is ORANGE.

⚠ CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury. The color associated with CAUTION is YELLOW.

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 damage or property damage. The color associated with Notice is BLUE.*

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine damage 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 **6-5** 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 can frame or a two-posted or four-posted structure used for the protection of the operator to minimize the possibility of serious injury. The mounting structure and fasteners forming the mounting connection with the machine are part of the ROPS.

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

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

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

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

- The protective structure MUST BE REPLACED.
- The mounting or suspension for the protective structure, operator's seat and suspension, seat belts and mounting components, and wiring within the operator's protective system MUST be carefully inspected for damage.
- All damaged parts MUST BE REPLACED.

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

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

⚠ Personal Protective Equipment (PPE) ⚠

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

⚠ Do Not Operate tag ⚠

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

⚠ Hazardous chemicals ⚠

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

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

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

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

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

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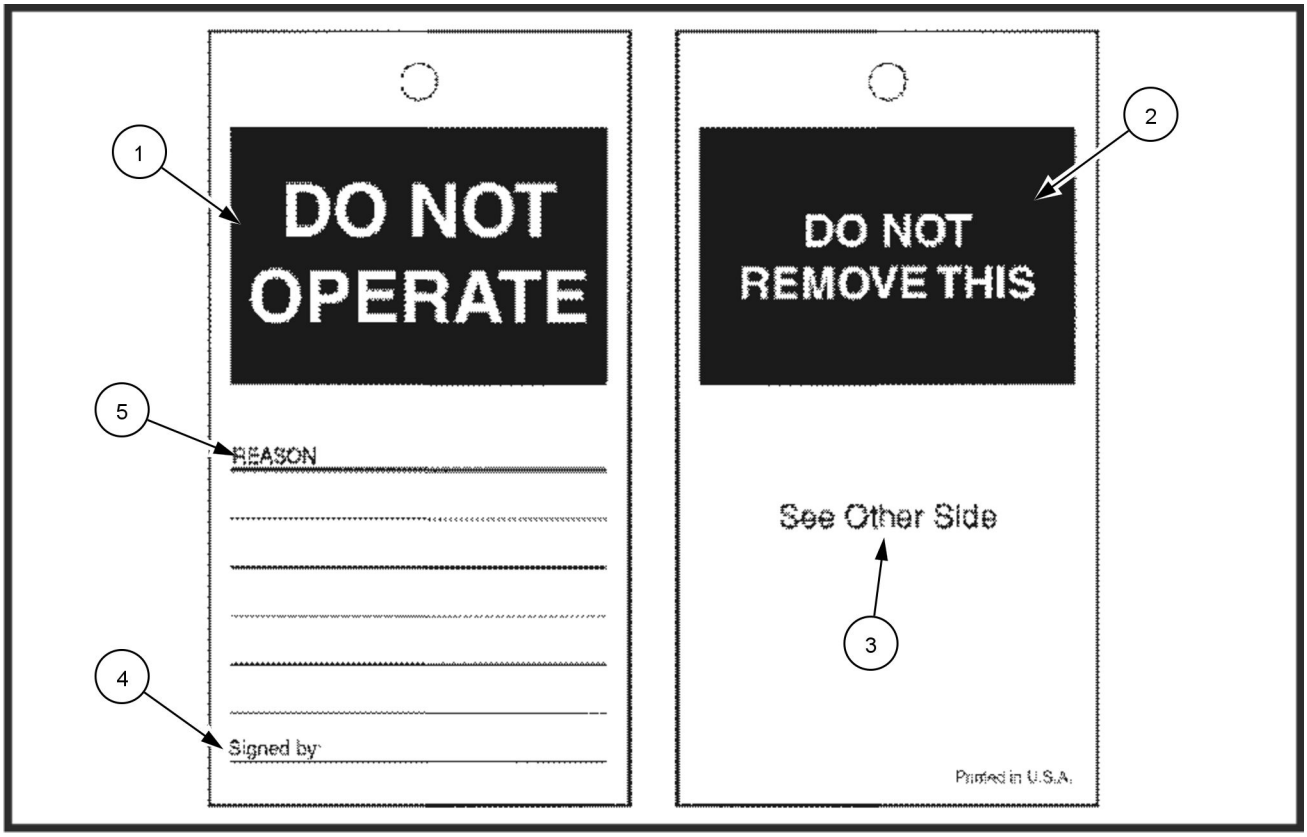
Before you service the machine, put a DO NOT OPERATE tag on the instrument panel.



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

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

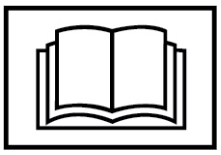
Keep all safety signs clean and legible. Clean safety signs with a soft cloth, water, and gentle detergent.

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

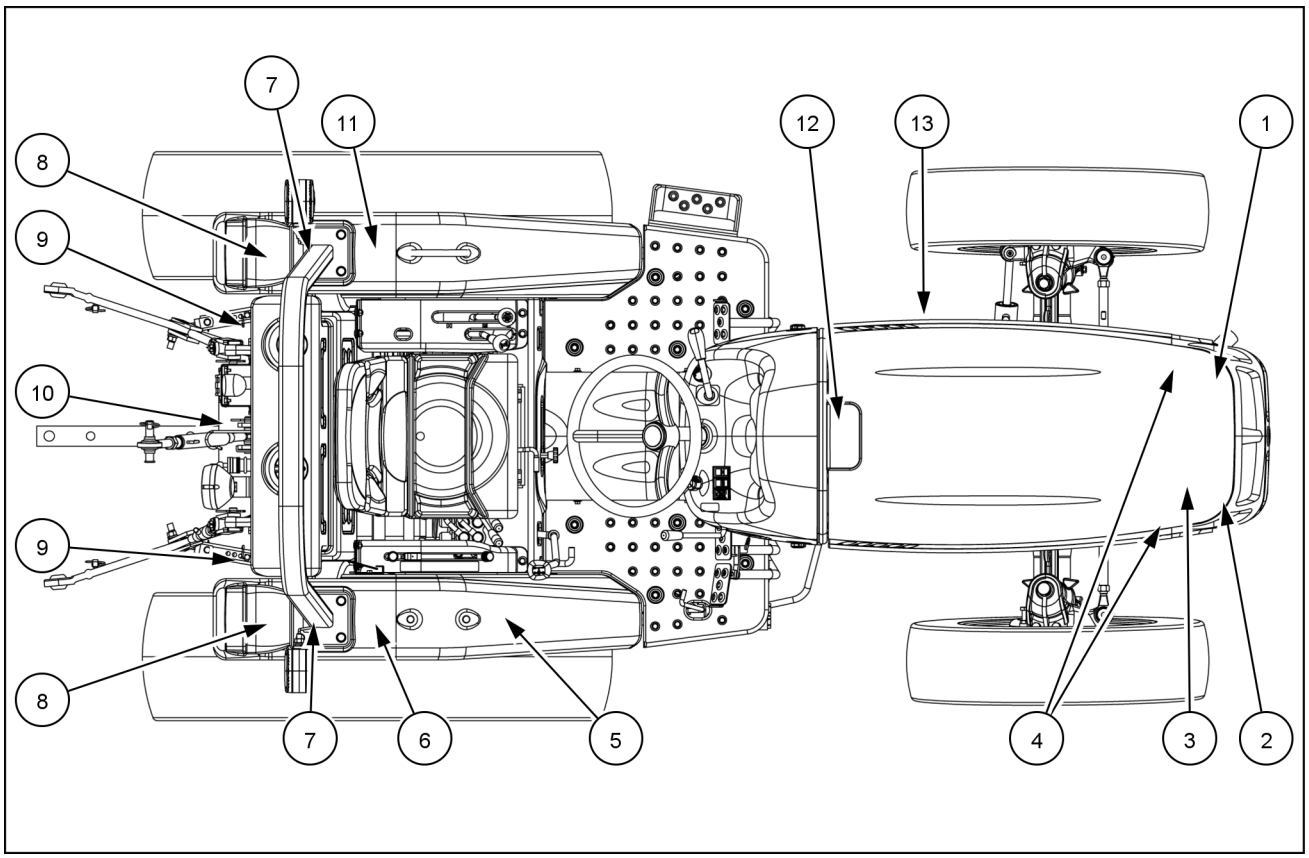
Replace all safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part you or your dealer replaces, make sure that you or your dealer install the safety sign on the new part. See your dealer for replacement safety signs.

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

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



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



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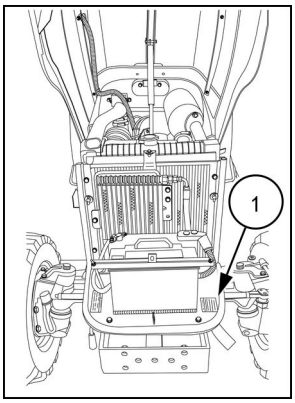
(1)
WARNING
EXPLOSIVE
Can cause blindness or severe injury, protect eyes. Sparks, flames, cigarettes can cause explosion. Tools and cable clamps can cause sparks. Do not use without instruction. Keep vents tight and level. ACID-POISON causes severe burns. Contains sulfuric acid. In the event of contact 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 2

(1) Location: Left-hand side of the battery on support plate.



NHIL17CT01425BA 3

(2)

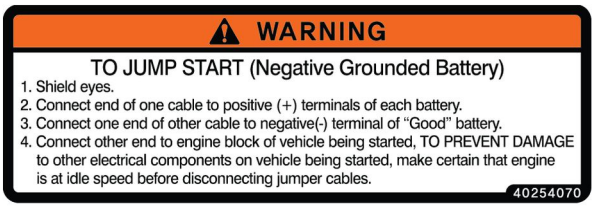
WARNING

- **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.**

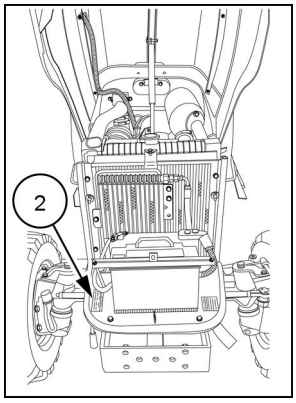
Failure to comply could result in death or serious injury.

Quantity: 1
English Part Number: MT40254070



40254070 4

(2) Location: Right -hand side of the battery on support plate.



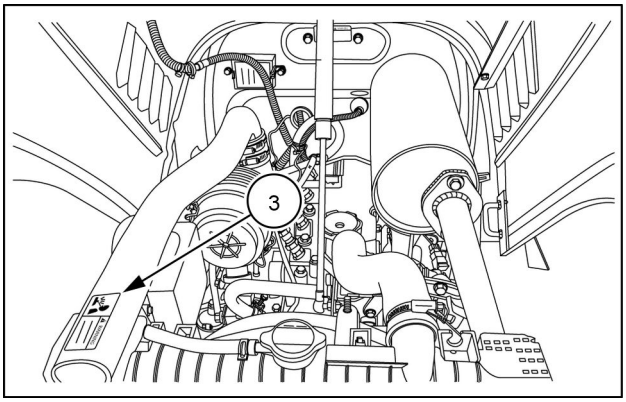
NHIL17CT01425BA 5

(3)
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 6

(3) Location: On the air cleaner intake hose.



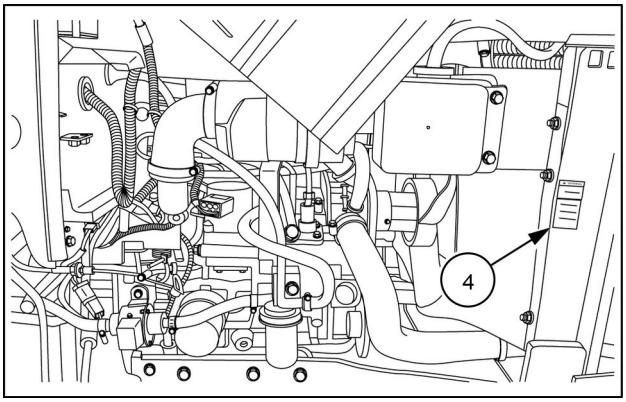
NHIL17CT01439AA 7

(4)
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 8

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



NHIL17CT01441AA 9

(5)
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:

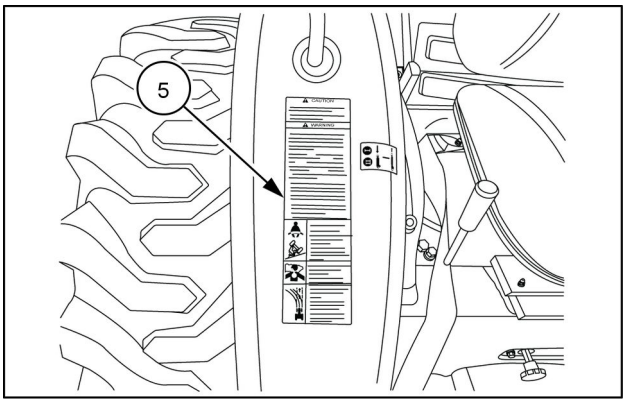
- **After first hour of operation and daily thereafter, check front and rear wheel lug nuts and bolts for proper torque.**
- **PTO-keep hands. feet and clothing away from PTO & other moving parts.**
- **Disengage PTO and shut off engine before servicing tractor or implements or attaching or detaching 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.**

40360330 10

- **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

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



NHIL12CT00845AA 11

(6)
WARNING
HIGH PRESSURE FLUID HAZARD

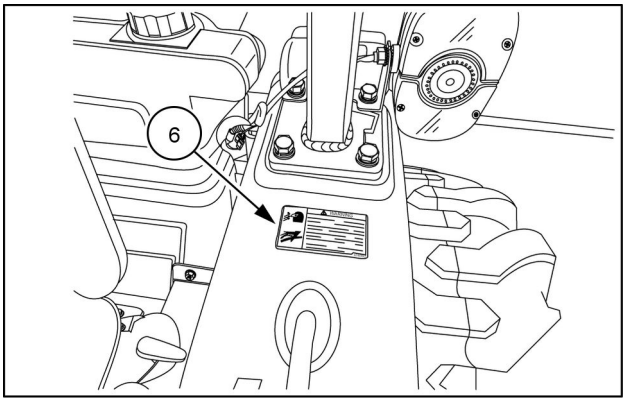
To prevent serious injury or death:

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

Quantity: 1
English part number: MT40195652

40195652 12

(6) Location: On top of the left-hand fender.



NHIL12CT00842AA 13

(7)
WARNING

To prevent serious injury or death:

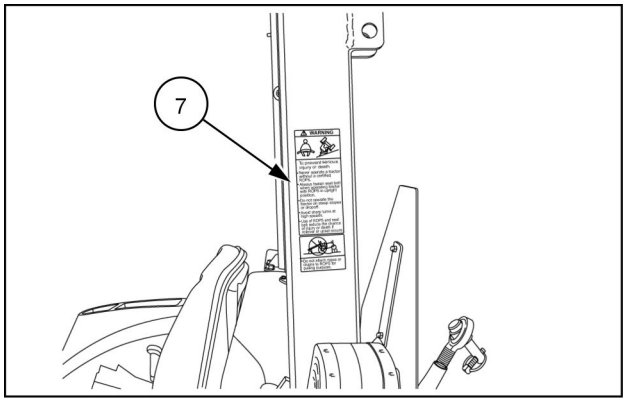
1. **Never operate a tractor without a certified ROPS.**
2. **Always fasten seat belt when operating tractor with ROPS in upright position.**
3. **Do not operate the tractor on steep slopes or drop-off.**
4. **Avoid sharp turns at high speeds.**
5. **Use of ROPS and seat belt reduce the chance of injury or death if rollover or upset occur.**
6. **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

40234561A 14

(7) Location: On the left-hand and right-hand side of the ROPS frame.



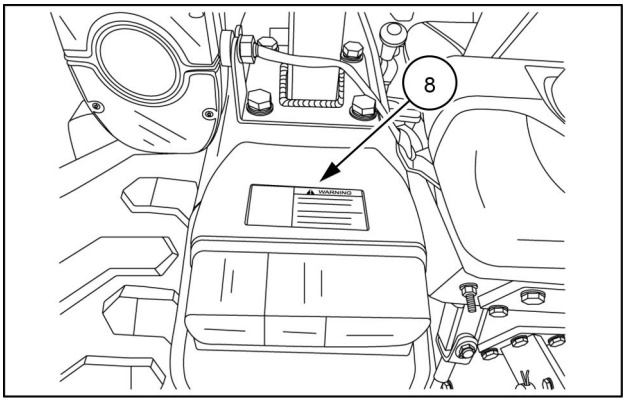
83115221 15

WARNING
(8)
Operate control only from tractor seat.
Read Operator's Manual.
Failure to comply could result in death or serious injury.

Quantity: 2
English Part Number: MT40229994

40229994 16

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



NHIL12CT00843AA 17

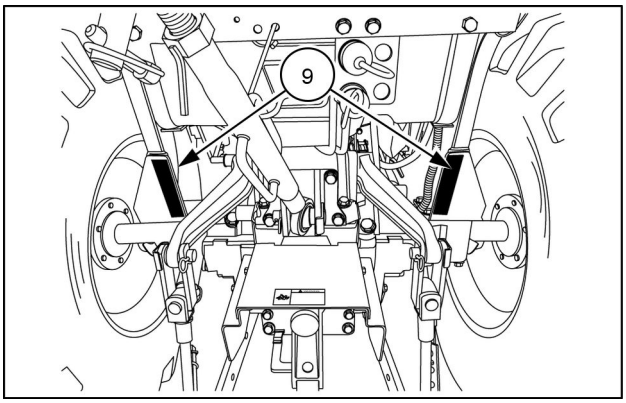
(9)
Reflective red tape

•

Quantity: 2
English Part Number: MT40310801

86547781_RED 18

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



NHIL15CT00331AA 19

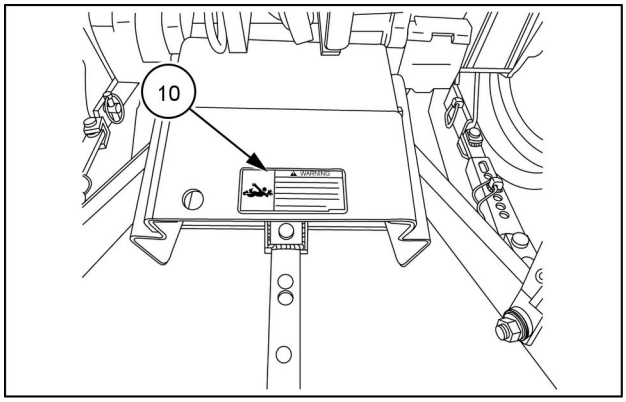
(10)
WARNING

- **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 20

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



NHIL12CT00844AA 21

(11)
WARNING
TO PREVENT DEATH OR SERIOUS INJURY

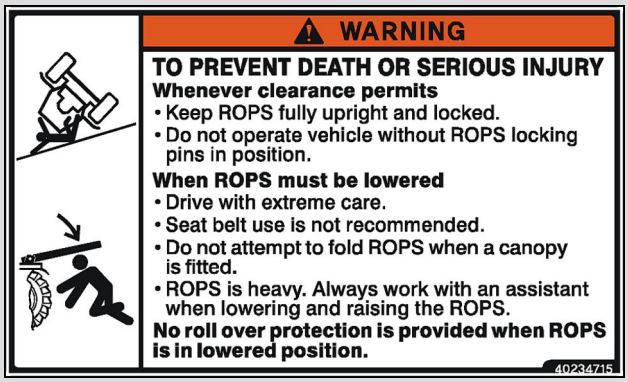
Whenever clearance permits:

- **Keep Rollover Protection Structure fully upright and locked.**
- **Do not operate vehicle without ROPS locking pins in position.**

When ROPS must be lowered:

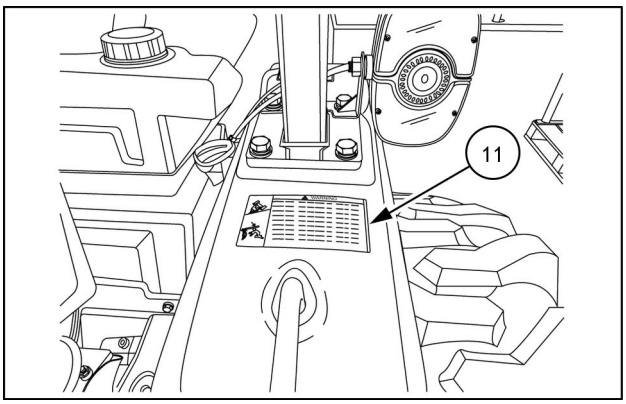
- **Drive with extreme care.**
- **Seat belt use is not recommended.**
- **Do not attempt to fold ROPS when a canopy is fitted.**
- **ROPS is heavy. Always work with an assistant when lowering and raising the ROPS.**
- **Drive with extreme care.**
- **Seat belt use is not recommended.**

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 22

(11) Location: On top of the left-hand fender.



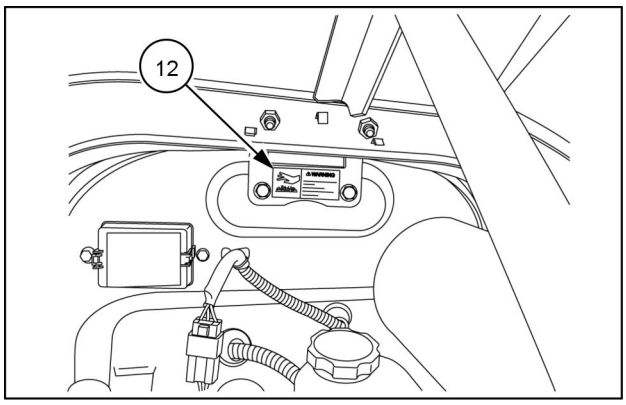
NHIL15CT00327AA 23

(12)
WARNING
To prevent serious injury or death.
Beware hot part.
Keep clear of muffler to avoid injury.

Quantity: 1
English part number: MT40239636

40239636 24

(12) Location: Under the hood, in the middle of the firewall.



NHIL12CT00850AA 25

(13)
WARNING
RUN OVER HAZARD
To prevent serious injury or death:

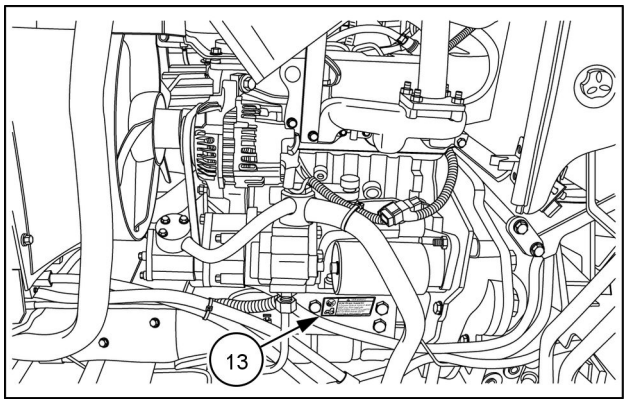
- **Start only from seat with transmission and PTO in neutral**
- **Do not short across starter terminals to start engine.**

Failure to comply could result in death or serious injury.

Quantity: 1
English part number: MT40195651

40195651 26

(13) Location: On the left-hand side of the front frame, below the engine starter.



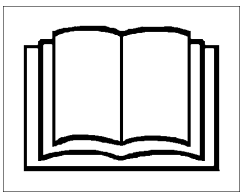
NHIL17CT01442AA 27

Instructional signs

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.

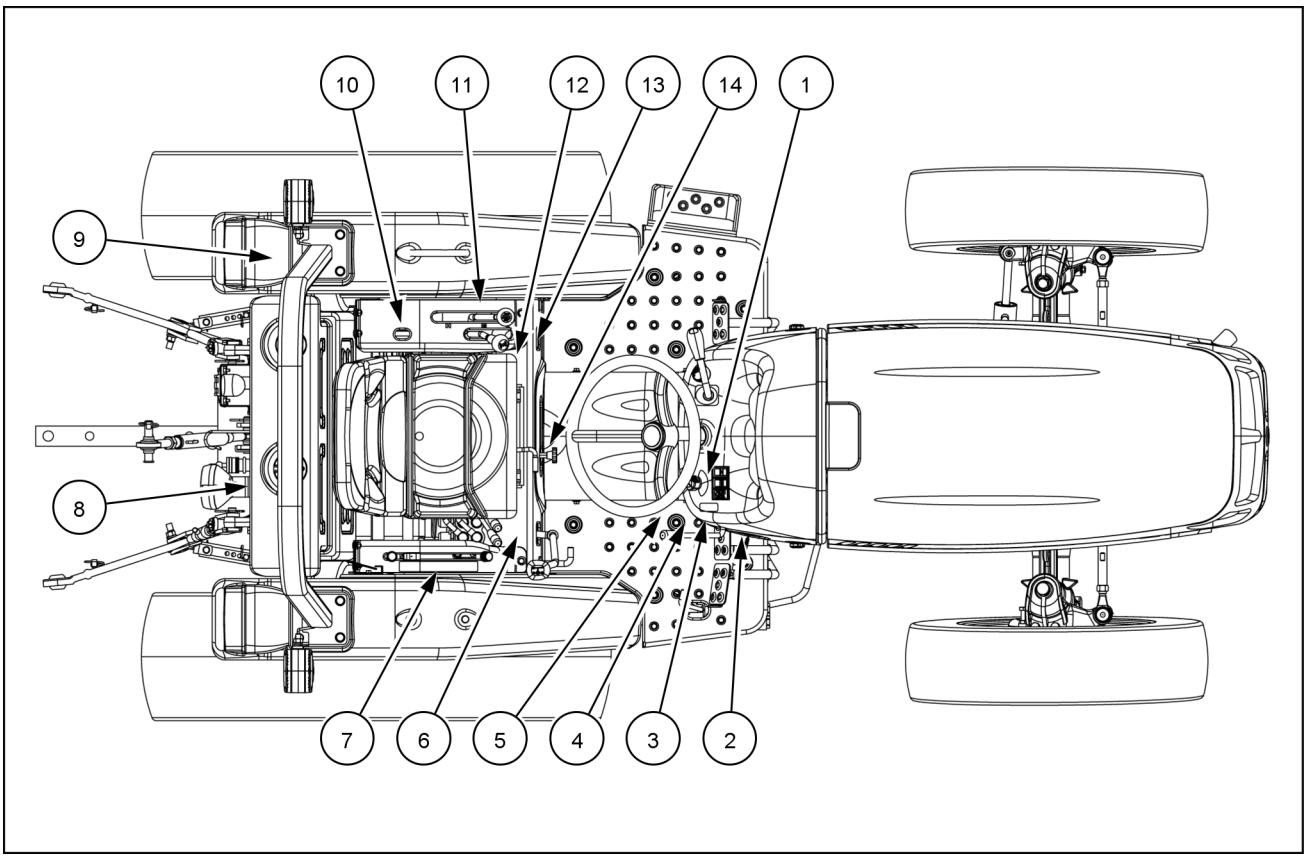
Keep instructional signs clean and legible. Clean instructional signs with a soft cloth, water, and a gentle detergent. Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety signs.

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 dealer for replacement instructional signs.



Instructional signs that display the “Read Operator’s Manual” symbol are intended to direct the operator to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When an instructional sign displays this symbol, refer to the appropriate page of the operator’s manual.

Instructional sign locations

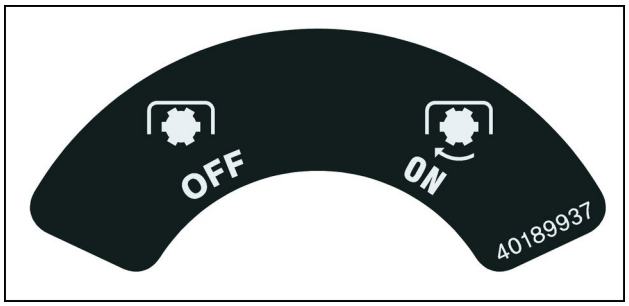


NHIL12CT00863FA 1

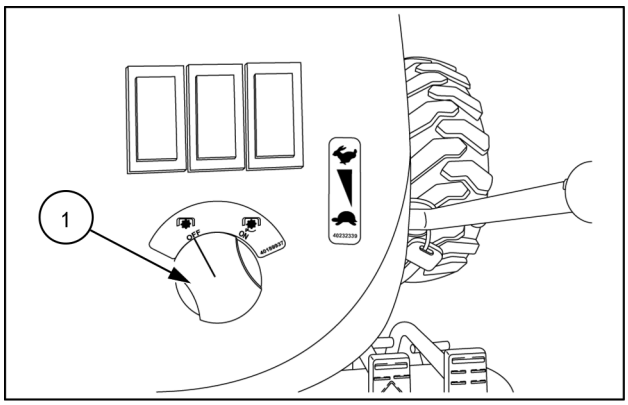
(1)
PTO Switch

- English MT40189937
- Quantity: 1

Location: Right-hand side of the dash panel.



40189937 2

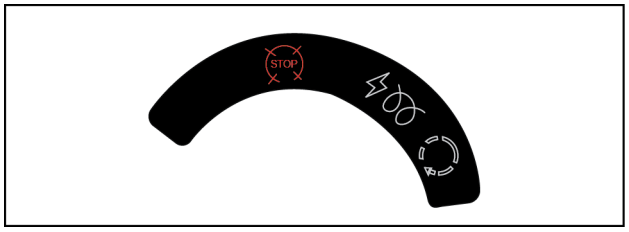


NHIL12CT00670AA 3

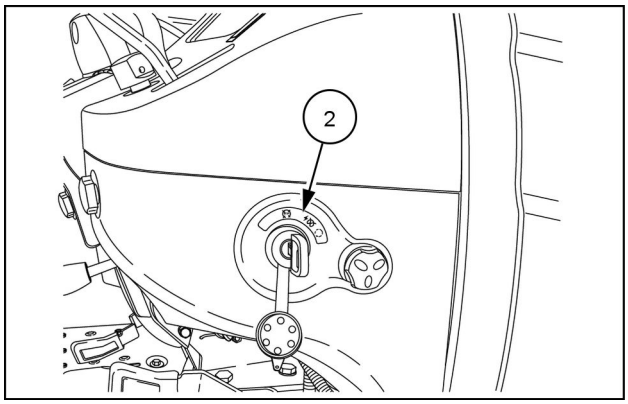
(2)
Key Switch

- English MT40008779
- Quantity: 1

Location: Right-hand side of the rear hood panel.



40008779 4

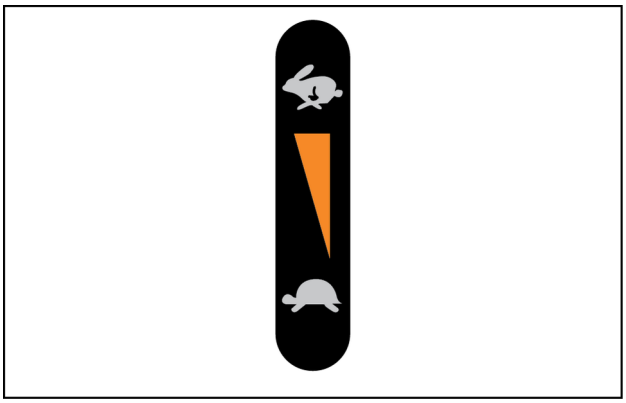


NHIL15CT00472AA 5

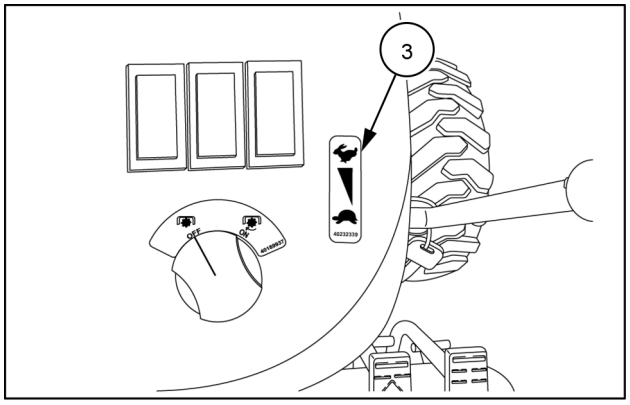
(3)
Hand Throttle Lever

- English MT40233965
- Quantity: 1

Location: On the right-hand side of the dash panel.



40233965 6



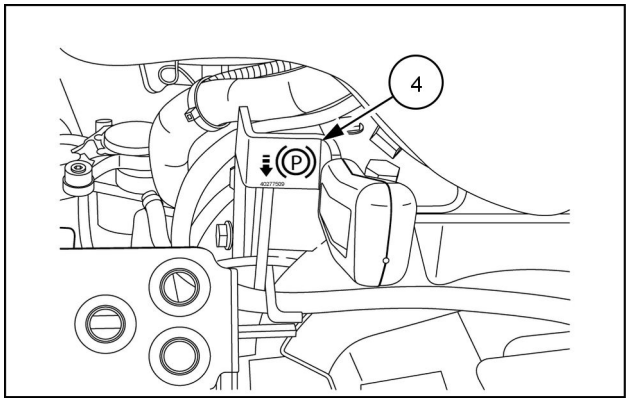
NHIL12CT00670AA 7

(4)
Park brake

- English MT40277509
- Quantity: 1

Location: On the park brake engagement lever.

40277509B 8

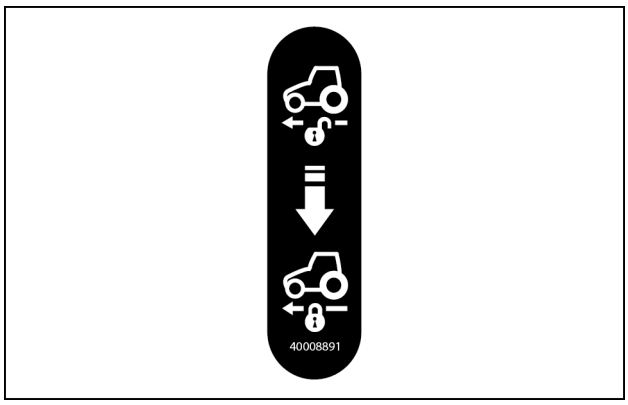


NHIL15CT00353AA 9

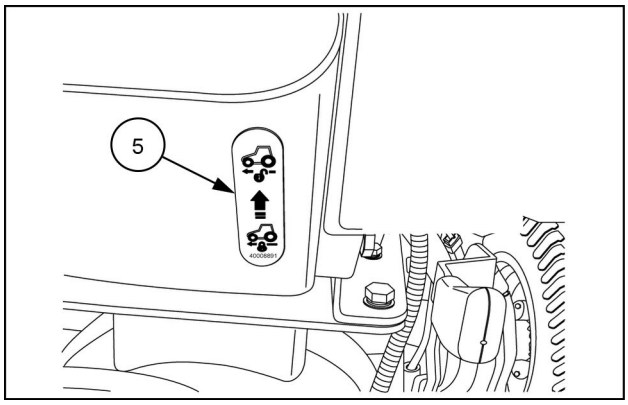
(5)
Hydrostatic Transmission (HST) cruise control

- English MT40008891
- Quantity: 1

Location: Center of the rear hood panel.



40008891C 10

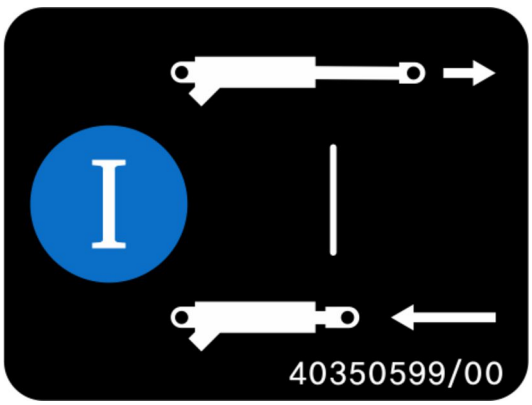


NHIL15CT00354AA 11

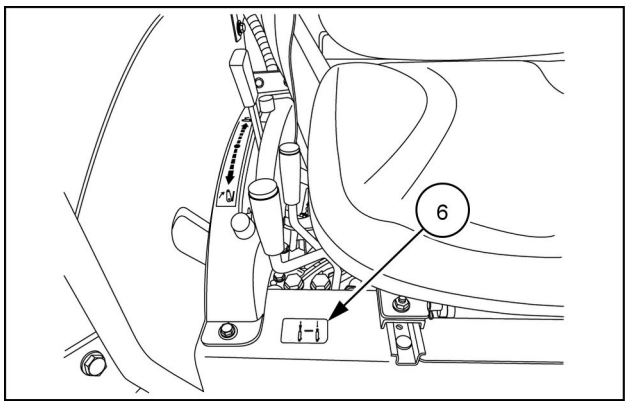
(6)
Rear remote valve(s) operation (Optional)

- English MT40350599
- Quantity: 1

Location: On the right-hand side of the platform shield below the drivers seat.



40350599-00 12

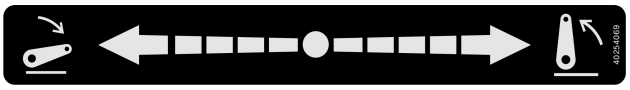


NHIL15CT00374AA 13

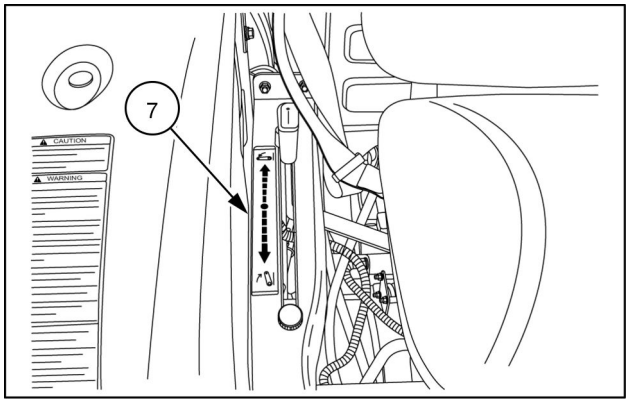
(7)
Position Control Lever

- English MT40254069
- Quantity: 1

Location: On the right-hand side control pod, next to the drivers seat and right-hand fender.



40254069-00 14

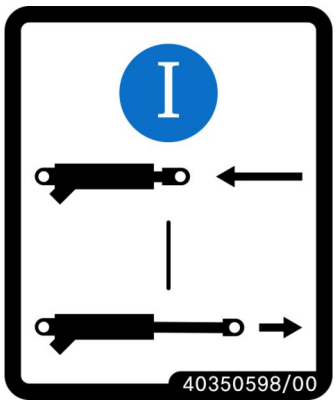


NHIL12CT00681AA 15

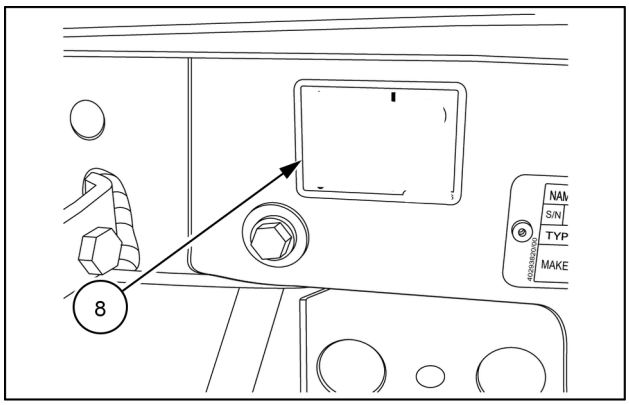
(8)
Rear remote coupler operation.

- English MT40350598
- Quantity: 1

Location : Right rear cross bar support.



40350598-00 16



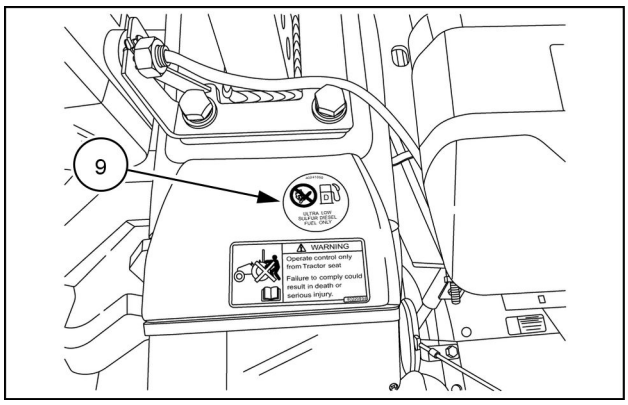
NHIL13CT01102AA 17

(9)
Fuel
Ultra low sulfur diesel fuel only

- English MT40241059
- Quantity: 1

Location: On top of the left-hand side fender.

40241059-00-1 18



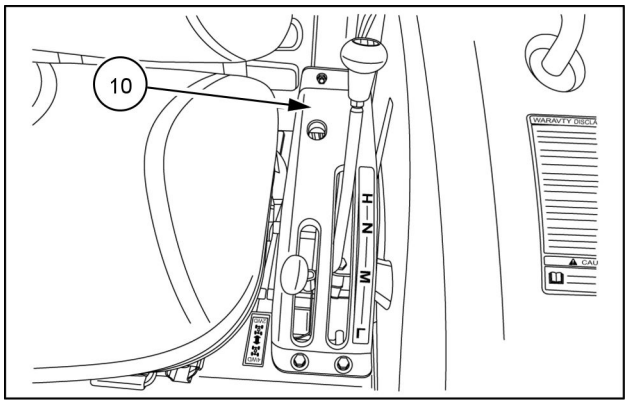
NHIL17CT00212AA 19

(10)
Mid Power Take-Off shift lever (optional)

- English MT40354732
- Quantity: 1

Location: To left side of the drivers seat.

40354732-00 20



NHIL12CT00680AA 21

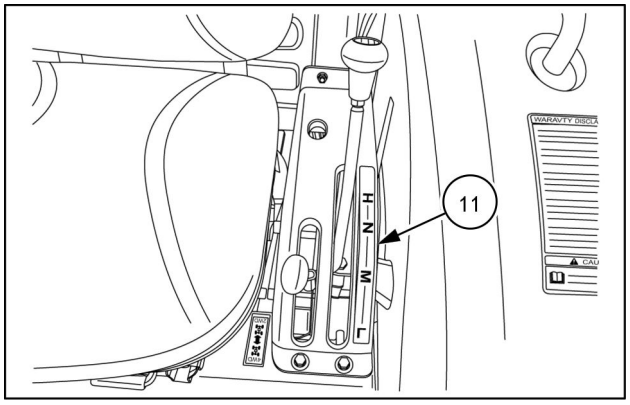
(11)
Transmission range lever

- English MT40276753 Hydrostatic Transmission (HST)
- Quantity: 1
- English MT40252478 Mechanical Transmission
- Quantity: 1

Location: To left side of the drivers seat.

40276753-00 22

40252478-00 23

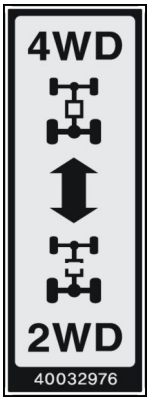


NHIL12CT00680AA 24

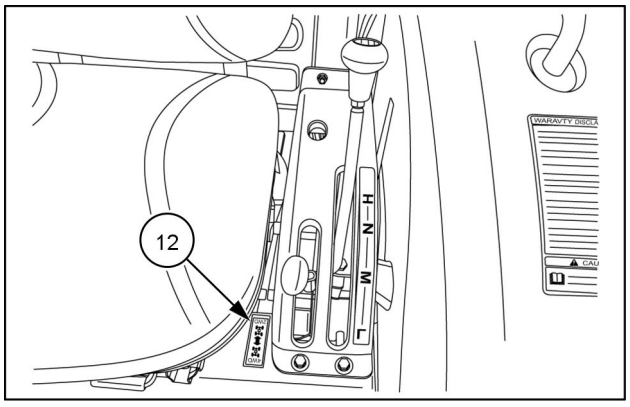
(12)
Four wheel drive engagement lever

- English MT40032976
- Quantity: 1

Location: To left side of the drivers seat.



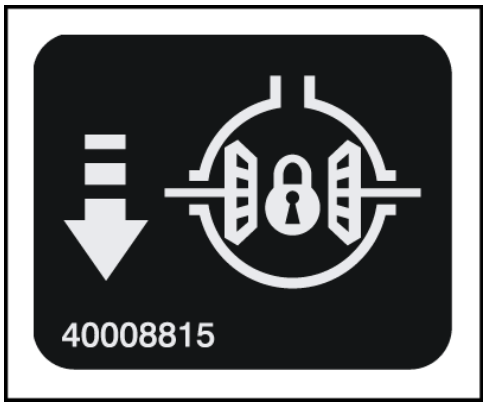
40032976 25



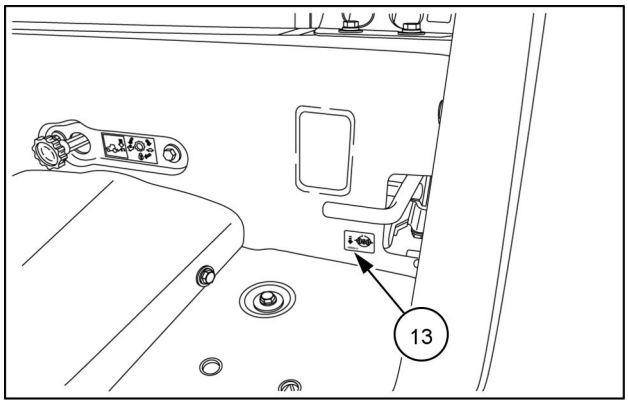
NHIL12CT00680AA 26

(13)
Differential lock

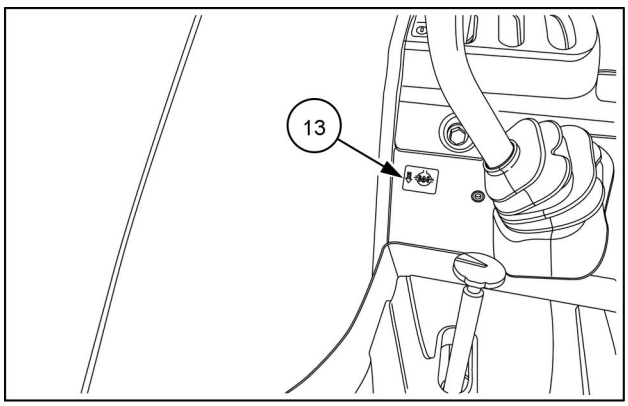
- English MT40008815
- Quantity: 1
- Location: Hydrostatic Transmission (HST) - Left-hand side of operator’s platform
- Mechanical transmission- Right-hand side of operator’s platform.



40008815 27



NHIL12CT00687AA 28

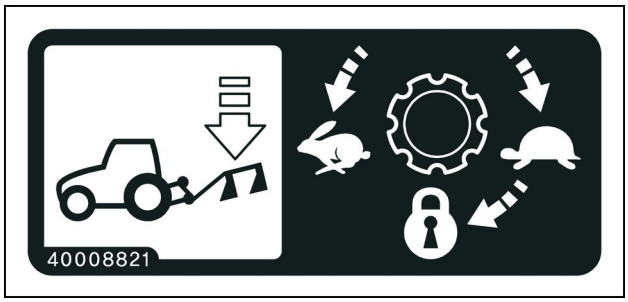


NHIL13CT01240AA 29

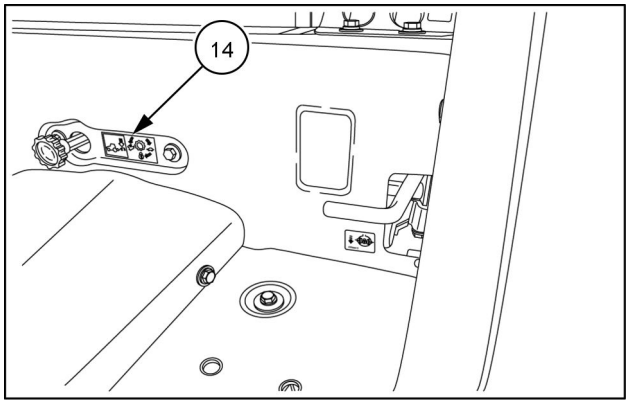
(14)
Drop Rate Control Valve

- English MT40008821

Location: Below the drivers seat.



40008821 30



NHIL12CT00687AA 31

3 - CONTROLS AND INSTRUMENTS

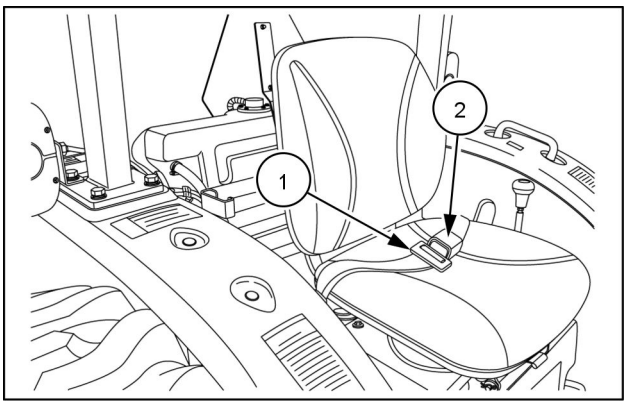
Operator's seat

Seat belt

The male end of the seat belt **(1)** is located on right -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 left-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.



NHIL12CT00690AA 1

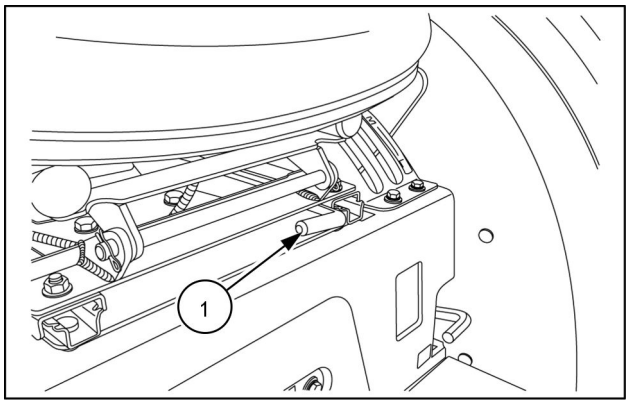
Seat controls

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.

The seat can be tilted forward for storage position.



NHIL12CT00682AA 1

Seat cleaning

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

1. 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).
2. Use a sponge or soft cloth; apply the soap solution to the part.
3. Allow the solution to soak for a few minutes to loosen the dirt.
4. Finally, rinse the part with clean water to remove the dirt, and any solution residue.

   NOTE: *If not all of the dirt comes off, repeat the procedure.*

Roll-Over Protective Structure (ROPS)

⚠ WARNING

Misuse hazard!
Your machine is equipped with an operator protective structure. 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.
Failure to comply could result in death or serious injury.

W0001B

⚠ WARNING

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 could result in death or serious injury.

W0938A

⚠ 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

⚠ WARNING

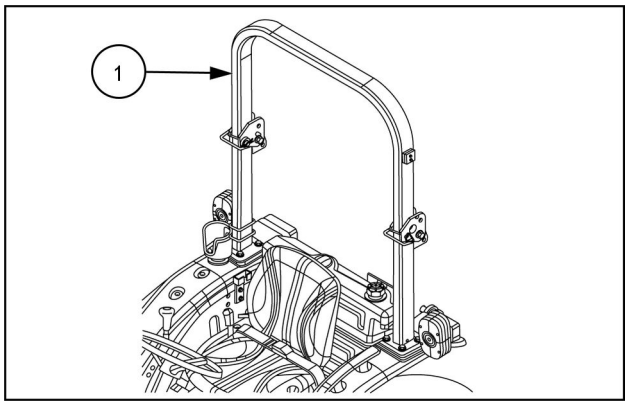
Crushing hazard!
Always wear the seat belt when operating the machine with the Roll Over Protective Structure (ROPS) in the upright position. If the ROPS is in the folded position, the seat belt should not be used. Raise the ROPS and wear the seat belt as soon as conditions allow.
Failure to comply could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

W0462A

Roll-Over Protective Structure (ROPS)

Foldable roll-bar type

1. 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.
2. 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.
3. If the ROPS is loosened or removed for any reason, make sure that all parts reinstalled correctly before operating the tractor.

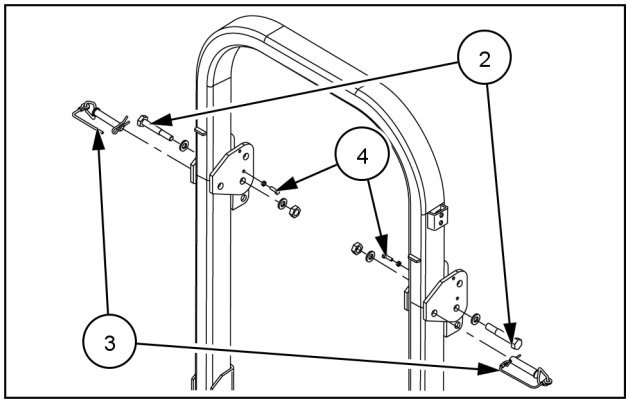


NHIL23CT00433AA 1

Foldable ROPS

To fold the upper section of the ROPS, do the following:

1. Loosen the bolts **(2)**,and **(4)** and the nuts on both sides. It is not necessary to remove them completely.

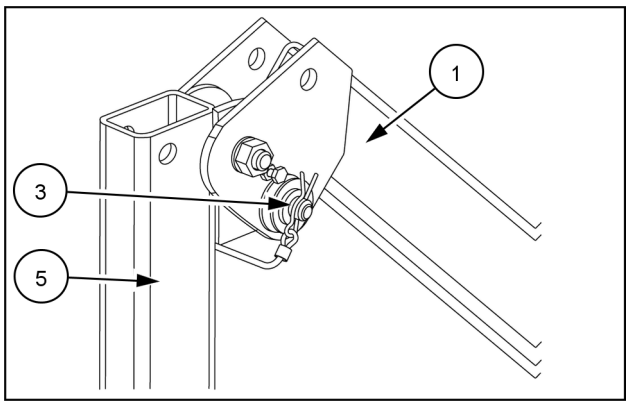


NHIL23CT00434AA 2

2. Remove the pins **(3)** on both sides and fold the upper frame backward.

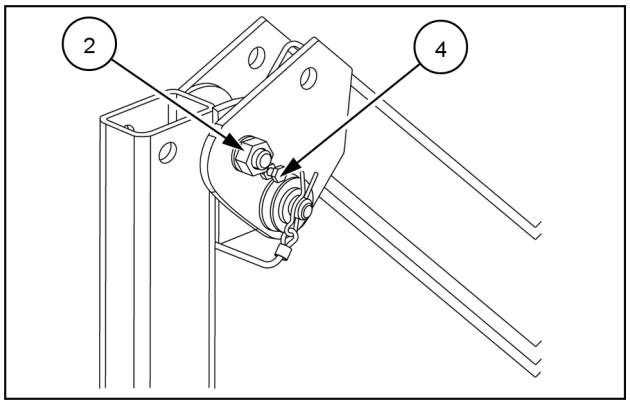
   NOTICE: *Be careful of the possibility that your body might be hurt by sudden folding due to its own weight.*

3. Align the holes of the frame **(1)** and **(5)** in line, and insert the pins **(3)** into the hole and apply the snap pins.



NHIL23CT00435AA 3

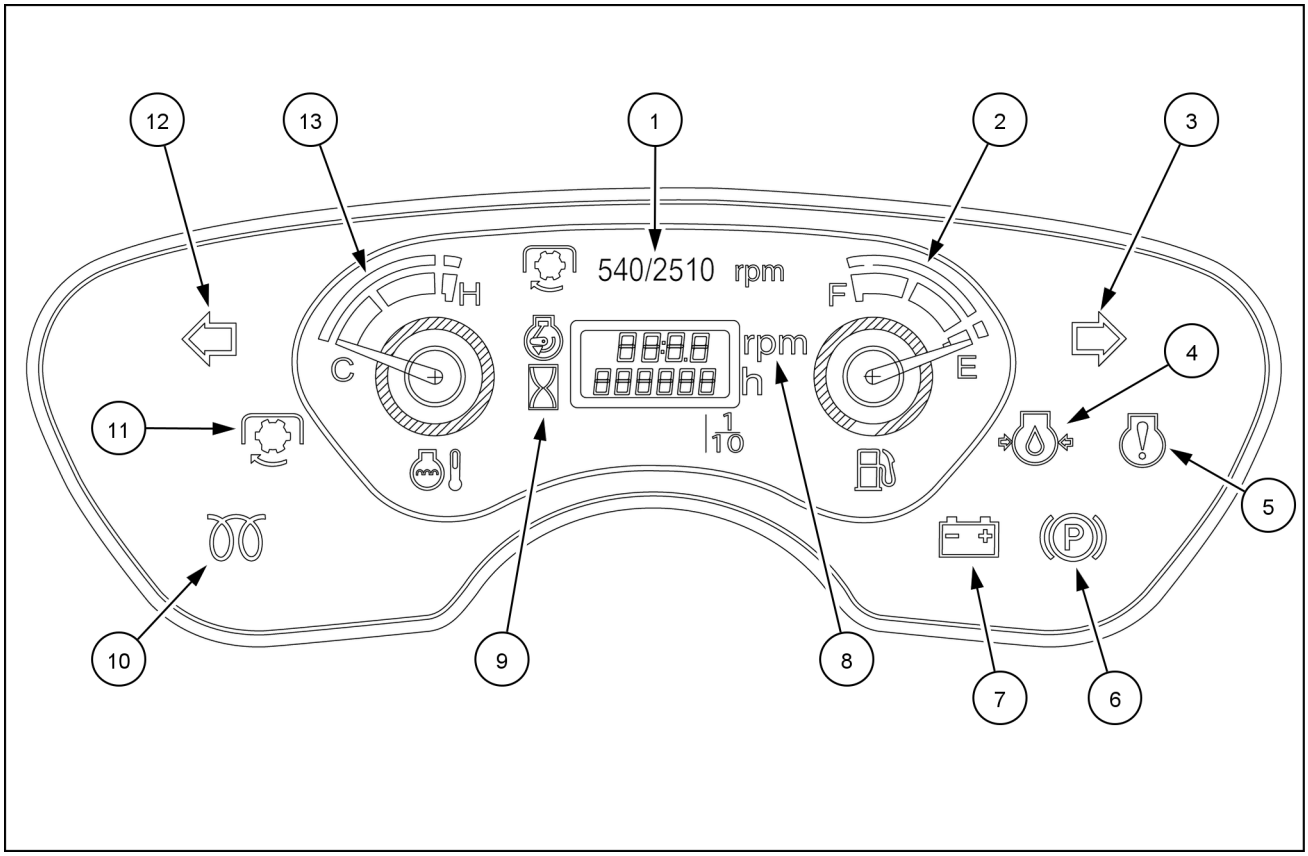
4. Fasten the bolts **(2) (4)** and nuts on both sides tightly.



NHIL23CT00435AA 4

Forward controls

Instrument cluster panel



NHIL17CT01803FA 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 **2510 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 - Operate when the multifunction switch lever is moved upwards for right turns the right arrow will flash. The flasher warning lights will also cause this to display. 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) Engine Fault Warning Light - Illuminates when the key switch is in the "ON" position and goes out when the operator starts the engine. See your NEW HOLLAND dealer if this light illuminates during operation of your tractor, this indicates a fault with the engine speed control unit.

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

(7) 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.

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

(9) 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.

(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 - Operate when the multifunction switch lever is moved downwards for left turns the left arrow will flash. The flasher warning lights will also cause this to display. 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.

Cruise control

⚠ WARNING

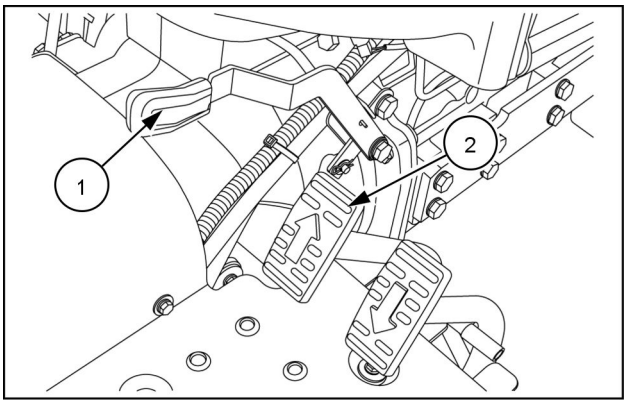
Loss of control hazard!
To maintain optimum control of the machine, do not use the cruise control at high speeds or when roading.
Failure to comply could result in death or serious injury.

W0978A

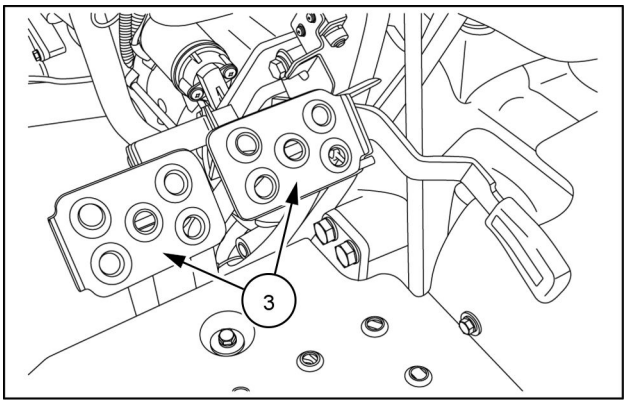
The HST cruise control lever **(1)** is located on the right -hand side of the operator's platform. It is used to maintain a constant forward speed.

NOTE: *The cruise control is only found on HST model tractors.*

When the desired travel speed is reached, push downwards on the cruise control engagement lever while depressing the HST forward pedal **(2)**. The engagement lever will mechanically retain the forward pedal in the desired speed location. To disengage the cruise control, depress the HST forward pedal slightly or depress both brake pedals **(3)**.



NHIL12CT00693AA 1



NHIL12CT00691AA 2

Transmission shuttle shift lever

⚠ WARNING

Equipment rolling hazard!
Firmly apply the handbrake and place the shuttle lever in the park brake position. Stop the engine before leaving the machine. The transmission will not prevent the machine from rolling when the engine is shut off.
Failure to comply could result in death or serious injury.

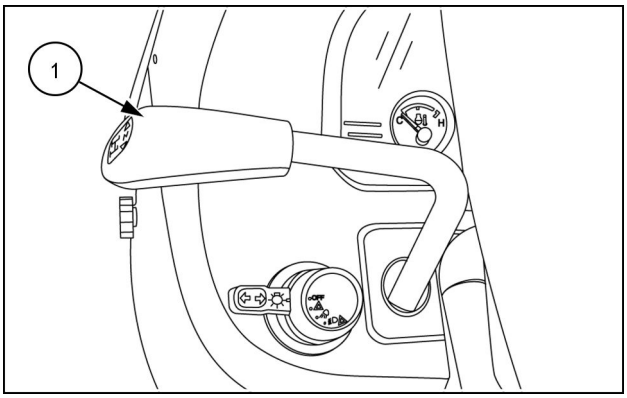
W0378A

The transmission shuttle shift lever **(1)** is located on the left-hand side of the dash panel. The shuttle shift lever is used to engage the transmission into forward or reverse mode while depressing the clutch pedal. Move the lever forward for forward travel and rearward for reverse travel.

NOTICE: *Do not attempt to operate the shuttle lever while the tractor is moving, it may cause damage to the synchromesh gear. The clutch pedal must be depressed and tractor motion stopped to operate the shuttle lever.*

NOTE: *The shuttle shift lever is only found on mechanical transmission tractors.*

NOTE: *The shuttle lever must be in the neutral (middle) position to activate the safety start system, which allows the engine to start.*



93099335 1

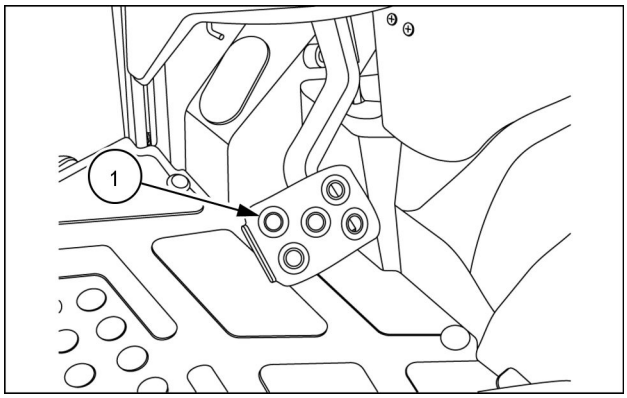
Clutch pedal

⚠ WARNING

Loss of control hazard!
Machines with four-wheel drive engaged or disengaged should not exceed 50 km/h (31 mph) where permitted. Over speeding by towing or coasting downhill with clutch depressed or transmission in neutral may cause loss of control, personal injury to the operator or bystanders, or mechanical failure. Failure to comply could result in death or serious injury.

W0454A

The clutch pedal **(1)** controls the single-stage clutch and is located on the left-hand side of the operators platform. The clutch pedal is only found on mechanical transmission model tractors.



93099348 1

Brake pedals

⚠ WARNING

Loss of control hazard!
Uneven brake force exists on left-hand and right-hand brakes. To ensure uniform brake application and maximum stopping ability, always lock the service brake pedals together before road travel. Failure to comply could result in death or serious injury.

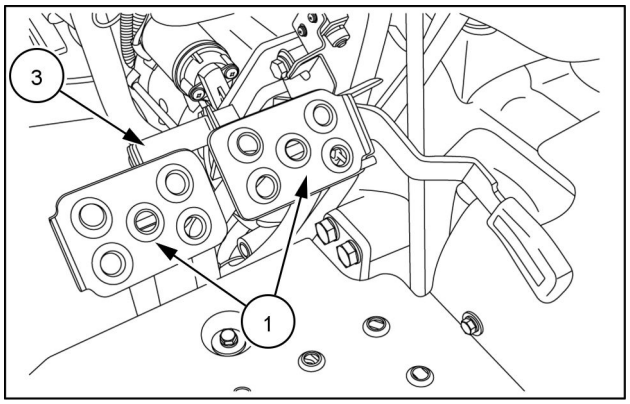
W1188A

The right brake pedal controls the braking action of the right rear wheel. The left brake pedal controls the braking action of the left rear wheel.

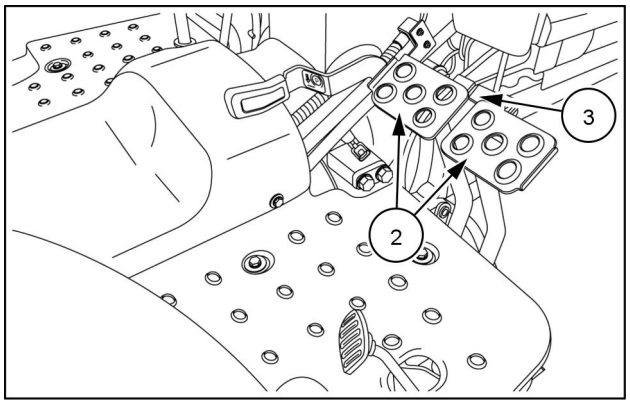
The function of the brake pedals are identical for the Hydrostatic Transmission (HST) and mechanical transmission model tractors except for the location of the pedals. The brake pedals **(1)** on a HST model tractor are located on the left-hand side of the operators platform and the brake pedals **(2)** on a mechanical transmission model tractor are located on the right-hand side of the operators platform.

Depress both pedals simultaneously to stop the tractor. To assist in making sharp turns at slow speed, depress the right or left brake pedal as required.

The brake pedal connecting pin **(3)** is used to secure the brake pedals together. Lock the pedals together whenever the tractor is operated at high speeds or when the tractor is used on the highway.



NHIL12CT00691AA 1



NHIL13CT00044AA 2

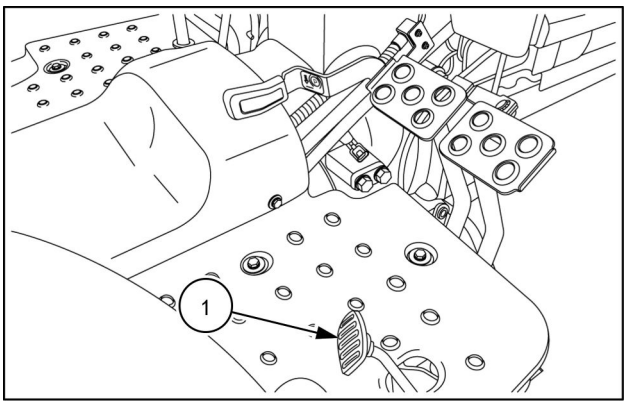
Foot throttle pedal

The foot throttle pedal **(1)** may be used independent of the hand throttle lever to control the speed of the tractor.

NOTE: *The foot throttle pedal is found only on mechanical transmission model tractors.*

NOTE: *It is recommended to use the foot throttle pedal when driving on the main road or highway.*

NOTE: *When using the foot throttle pedal, the hand throttle lever should be in the (low idle) rearward position.*

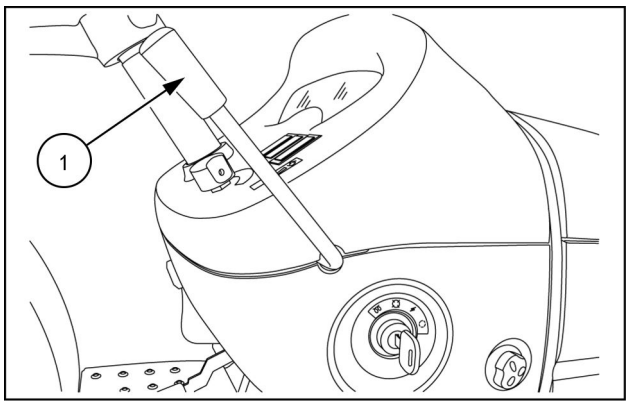


NHIL13CT00044AA 1

Hand throttle lever

The hand throttle lever **(1)** is located 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.

NOTE: *The hand throttle lever should only be used during field operation.*

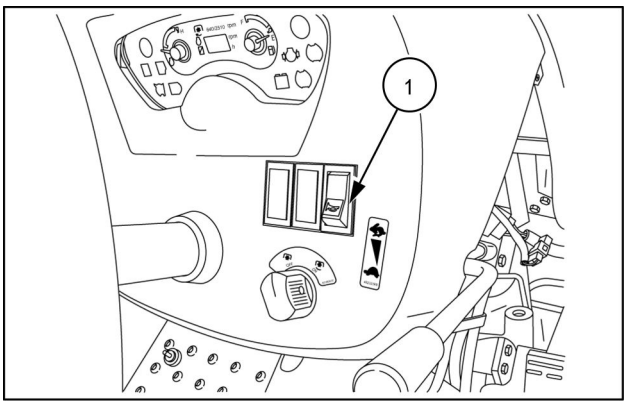


NHIL12CT00692AA 1

Horn switch (optional)

The horn switch **(1)** is located on the right-hand side of the dash panel.

To activate the horn, push the horn switch down. The horn switch can be activated with the key switch in the "ON" position.



NHIL12CT00727AA 1

Power Take-Off (PTO) switch

The PTO switch **(1)** is located on the right-hand side of the dash panel.

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

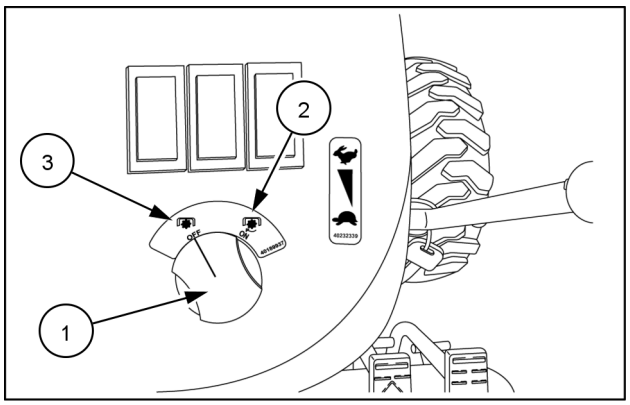
To engage the PTO, push down on the PTO switch and turn the switch to the "ON" position **(2)**.

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.*

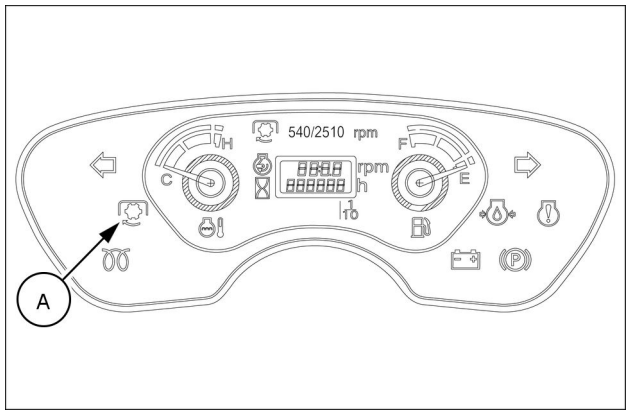
When the PTO is engaged the PTO indicator light **(A)** will be illuminated on the instrument panel.

To disengage the PTO, push down on the PTO switch and the switch will automatically return to the "OFF" position **(3)**.

For PTO operating instructions see page **3-8**.



NHIL12CT00670AA 1

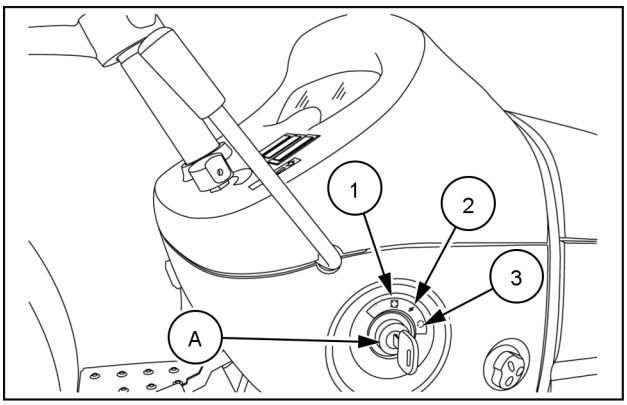


NHIL17CT01803FA 2

Key switch

The key switch **(A)** is located on the right-hand side of the rear hood panel. Turning the key to the "ON" position **(2)** activates the warning lights, instruments, and preheat system. The engine starts when the key is turned to the "START" position **(3)**. An internal spring returns the key to the "ON" position when released.

Turning the key to the "STOP" position **(1)** will shut the engine off.



NHIL12CT00692AA 1

Differential lock pedal

⚠ WARNING

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 could result in death or serious injury.

W0292A

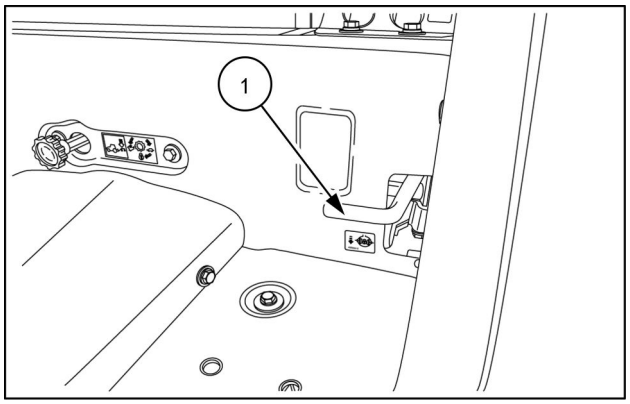
The differential lock pedal is located on the left-hand foot platform **(1)** on hydrostatic transmission models and on the right-hand foot platform **(2)** on mechanical transmission models. The differential lock is used to obtain additional traction in wet or loose soil.

When the differential lock pedal is depressed, power is split evenly between the two rear wheels. Whenever one wheel begins to slip in wet or loose soil, use the lock to obtain additional traction from the opposite wheel.

To operate the differential lock, depress and hold the pedal down until the lock is positively engaged. It is best to engage the lock while the wheels are turning slowly to minimize shock loads to the drive-line. If a wheel spins at high speed, such as on ice, reduce engine speed to idle before engaging the lock or damage may result. Release the pedal to disengage the differential lock.

NOTE: *In some instances, the lock may remain engaged after the pedal is released. This can occur if one rear wheel is turning at a faster speed than the other. The lock can be disengaged in one of two ways if this occurs:*

- Decrease the drawbar pull by raising or disengaging the implement so that neither wheel tends to slip.
- Depress the clutch pedal and rapidly apply and release a light braking load to the wheel with less traction.



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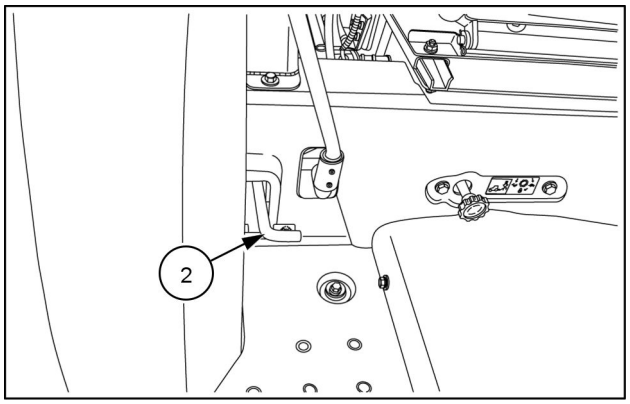
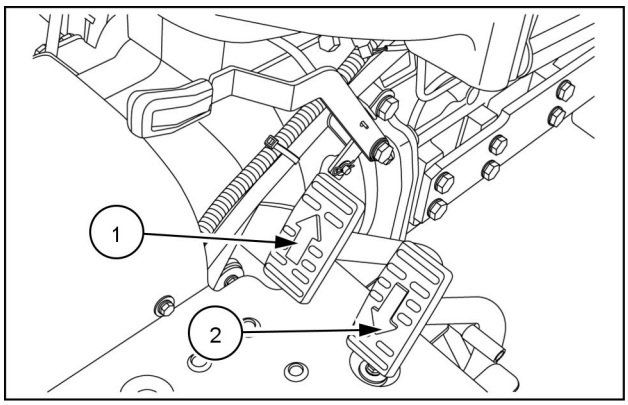


NHIL13CT00039AA 2

Hydrostatic Transmission (HST) foot pedals

The ground speed of tractors equipped with a Hydrostatic Transmission, (HST) is continuously variable, from zero to full rated speed in each range. Speed is controlled by the HST forward **(1)** and reverse **(2)** pedals located on the right-hand foot platform.

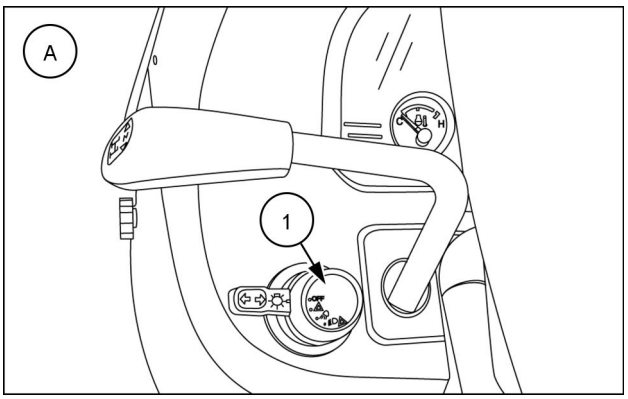
For forward travel, depress the forward pedal **(1)** until the desired ground speed is reached. For reverse travel, depress the rear pedal **(2)**. The transmission returns to neutral and the tractor stops when the pedal is released.



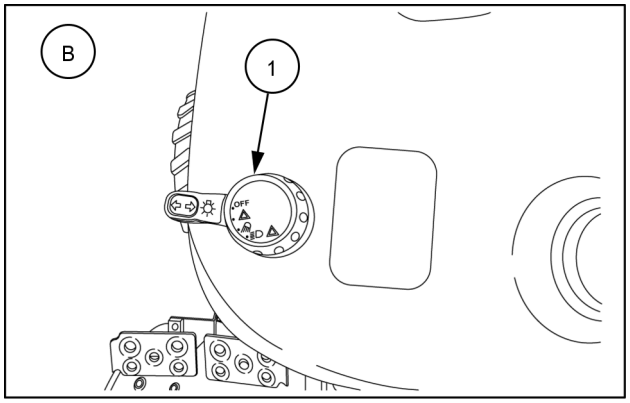
NHIL12CT00693AA 1

Multifunctional light switch

The multifunction light switch **(1)** is located on the left-hand side of the dash panel and is used to control the front road lights/work lights, side/taillights, hazard lights and turn signals.



93099335 1



NHIL12CT00669AA 2

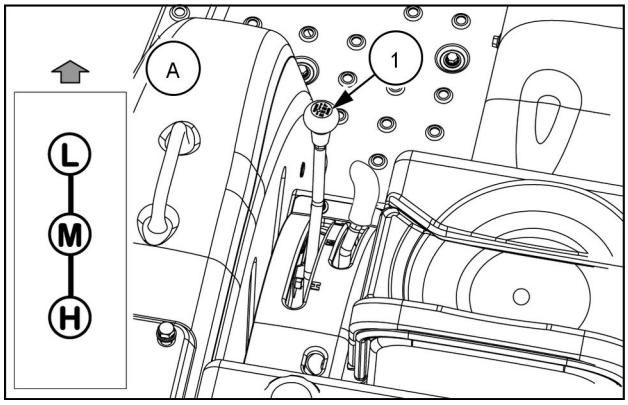
(A) Mechanical transmission model
(B) Hydrostatic Transmission (HST) model

Left-hand side controls

Transmission range lever

The transmission range selector lever **(1)** is located on the left-hand control pod. There are three speed ranges, (H) High, (M) Medium, and (L) Low. The transmission range selector lever on mechanical transmission models **(A)** do not have a (N) Neutral position.

NOTICE: *Never attempt to engage or disengage the range lever when the tractor is in motion.*



NHIL12CT01097AA 1

(A) Mechanical transmission models

Park brake lever

⚠ WARNING

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

W1011B

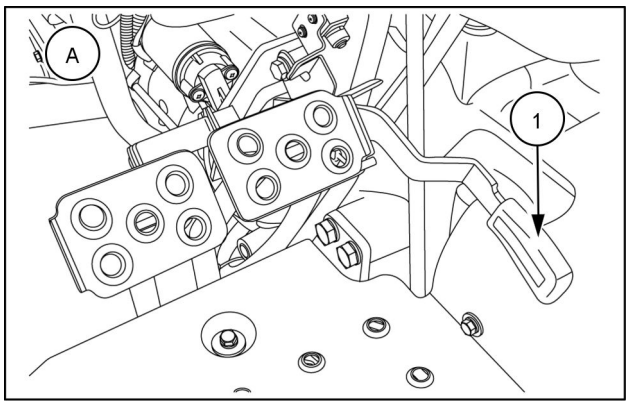
NOTICE: *Ensure the park brake is fully disengaged before driving the tractor.*

The park brake lever **(1)** is located on the left-hand side of the operators platform on HST model tractors **(A)** and on the right-hand side on mechanical transmission model tractors **(B)**. The park brake is used to secure the brake pedals together to prevent the tractor from moving while parked.

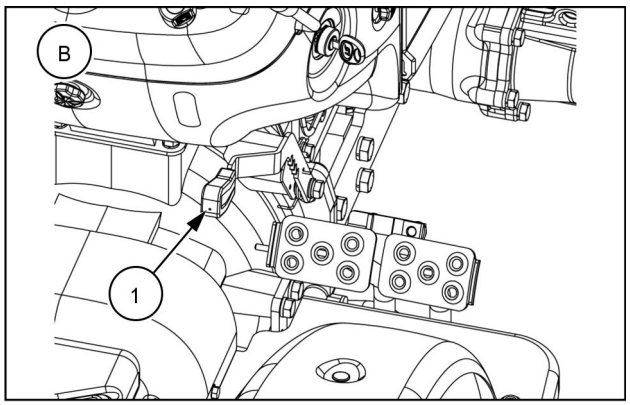
To engage the park brake, lock the pedals together and push the park brake lever downward while depressing the brake pedals.

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

To disengage the park brake, press the brake pedals down.



NHIL12CT00691AA 1



NHIL12CT00775AA 2

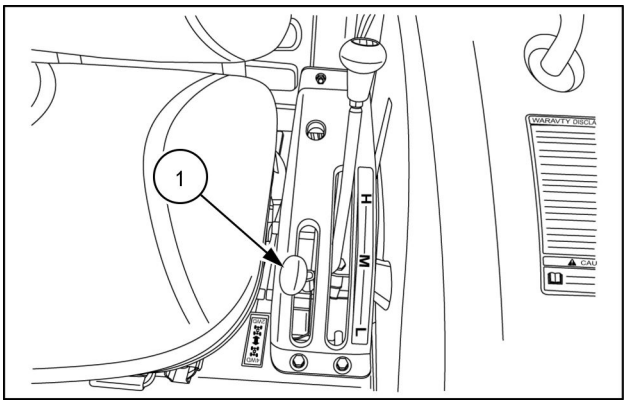
Four-Wheel Drive (4WD) lever

The four wheel drive (4WD) is controlled by a lever. The lever is located on the left-hand control pod.

NOTE: *Use four wheel drive 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 unit at high speeds, disengage the four wheel drive to maximize tire and drive-line life and to obtain better fuel economy.*

Mechanical transmission model

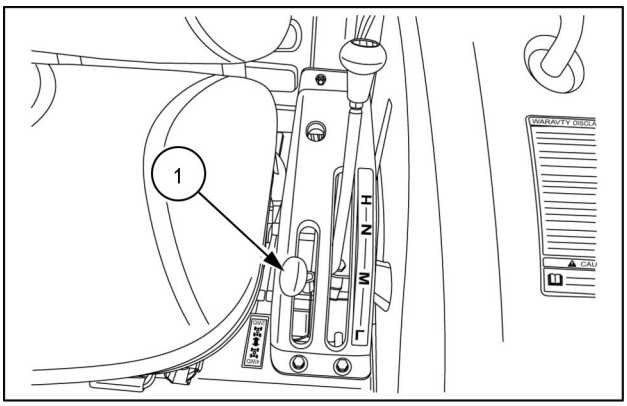
To engage the four wheel drive on mechanical transmission model tractors, stop the tractor completely, depress the clutch pedal and move the lever **(1)** completely forward. To disengage the four wheel drive, stop the tractor completely, depress the clutch pedal and pull the lever **(1)** rearward.



NHIL12CT00885AA 1

Hydrostatic Transmission (HST) model

To engage the four wheel drive on HST model tractors, stop the tractor completely and move the lever **(1)** completely forward. To disengage the four wheel drive, stop the tractor completely and pull the lever **(1)** rearward.



NHIL12CT00680AA 2

Mid Power Take-Off (PTO) lever

The mid PTO lever **(1)** is located on the left-hand control pod.

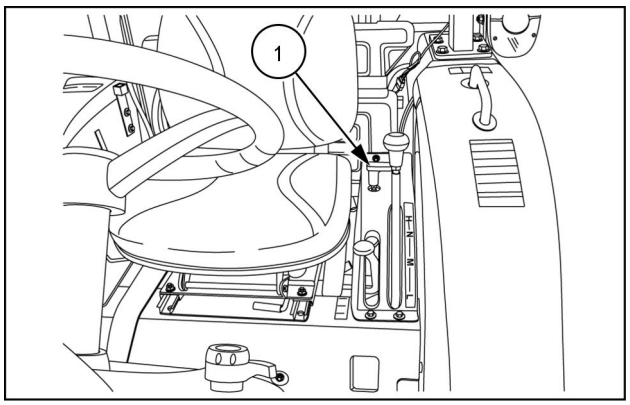
NOTE: *The mid PTO is standard equipment on Hydrostatic Transmission (HST) and optional on mechanical transmission model tractors.*

To engage the mid PTO, pull up on the mid PTO lever, push down on the PTO switch and turn the switch to the "ON" position.

NOTE: *When the mid PTO is engaged the rear PTO will also be engaged. The mid PTO cannot be engaged separately.*

To disengage the mid PTO, push down on the PTO switch and push the mid PTO lever down to the "OFF" position.

NOTE: *To start the engine the mid PTO lever must be in the down (disengaged) position and the PTO switch in the "OFF" position.*



NHIL12CT00772AA 1

Right-hand side controls

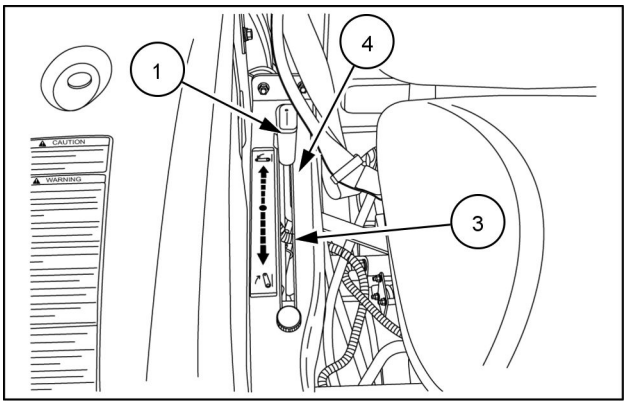
Hydraulic Power Lift (HPL) lever

⚠ DANGER

Crushing hazard!
Make sure area is clear of all persons before lowering equipment.
Failure to comply will result in death or serious injury.

D0016A

The HPL lever **(1)** is located on the right-hand control pod. This lever controls the position of the two lift arms.
To lower the lift arms, first make sure the drop rate control valve **(2)** is open, then move the HPL lever forward. To raise the lift arms, move the lever rearward. An adjustable lower stop **(3)** is located in this quadrant for returning the lever to a preset lowering position of the hitch. An adjustable upper HPL control lever height stop **(4)** prevents the control lever from exceeding the lift limit and causing the tractor hydraulic system to go over the relief valve setting.
The hydraulic lift system provides accurate, smooth, and instant hydraulic power for raising a variety of compatible equipment whenever the engine is running. The system's position control feature maintains the selected height or depth of three-point linkage equipment in relation to the tractor. When the hydraulic lift control lever is moved to a higher or lower setting in the quadrant, the system repositions the equipment to a higher or lower position and maintains the selected position.



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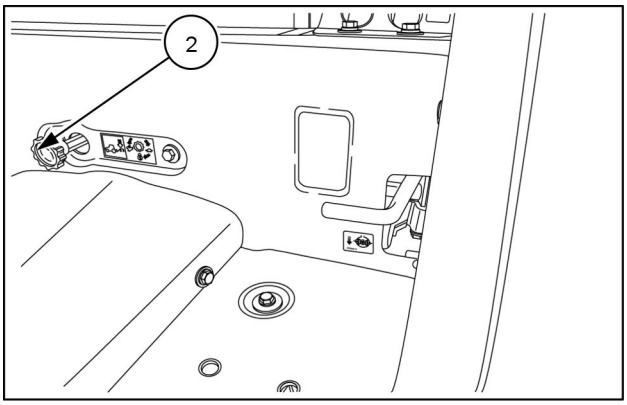


NHIL12CT00687AA 2

Position control

Position control provides easy, accurate control of the three-point linkage equipment which operated above the ground, such as sprayers, rakes, mowers etc. It also provides uniform depth when using a blade or similar equipment on ground level.

When operating in position control, there is a definite relationship between the position of the control lever in the quadrant and the position of the equipment. The lever must be moved to change the position of the equipment relative to the tractor. The system will automatically maintain the equipment in the selected position.

Rear remote control valve(s) - optional

⚠ WARNING

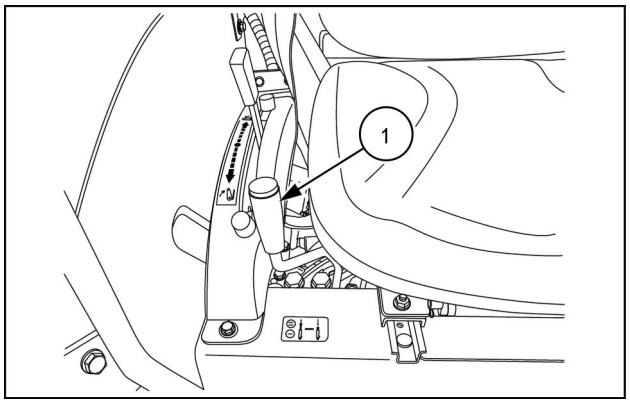
Escaping fluid!
Do not connect or disconnect hydraulic quick coupler under pressurized conditions. Make sure all hydraulic pressure is removed from the system before connecting or disconnecting hydraulic quick coupler.
Failure to comply could result in death or serious injury.

W0095B

Your tractor can be equipped with one or two optional rear remote hydraulic valves. The control lever(s) **(1)** and **(2)** is/are located right side of the seat.

NOTE: *The rear remote hydraulic valves are optional equipment.*

NOTE: *Rear remote hydraulic valve kits are configured in either single spool or two spool. Once a single spool valve is installed, you CANNOT stack another single spool valve. You must purchase the two spool valve kit.*



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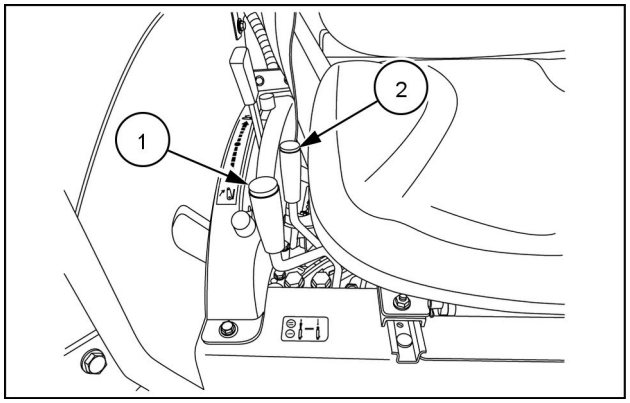
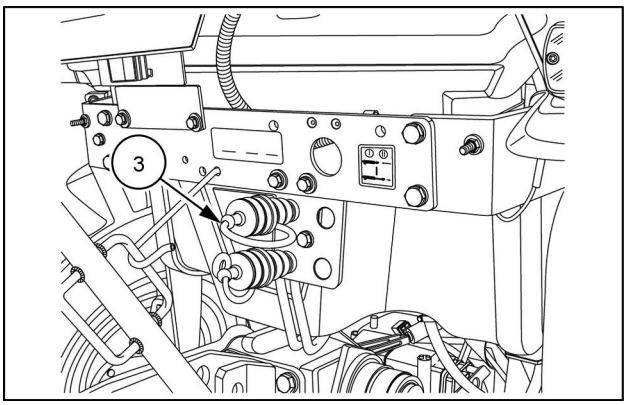


NHIL15CT00374AA 2

To operate the one spool valve, pull the selected control lever rearward to extend the cylinder and push the control lever forward to retract the cylinder. The #1 control lever (blue knob) is a detent type control valve. This valve will remain in the raise or lower position and will require the operator to manually return the control lever to the neutral position. This is useful in operating a hydraulic motor or a long stroke hydraulic cylinder. Return the control lever to neutral to stop the hydraulic motor or to hold the hydraulic cylinder in any position. This valve will not return to neutral once a hydraulic cylinder reaches the end of stroke. It is important to return the control lever to neutral when not using the control valve.

To operate the two spool valve, pull the selected control lever rearward to extend the cylinder and push the control lever forward to retract the cylinder. The #1 control lever (green knob) is a self-centering type control valve. Release the control lever to stop the cylinder in any position before it reaches full extension. The lever automatically returns to neutral. The #2 control lever (blue knob) is a detent type control valve. This valve will remain in the raise or lower position and will require the operator to manually return the control lever to the neutral position. This is useful in operating a hydraulic motor or a long stroke hydraulic cylinder. Return the control lever to neutral to stop the hydraulic motor or to hold the hydraulic cylinder in any position. This valve will not return to neutral once a hydraulic cylinder reaches the end of stroke. It is important to return the control lever to neutral when not using the control valve.

The #1 (blue) set of couplers **(3)** is located inboard and the #2 (green) set of couplers **(4)** is located outboard.
The rear remote valves come standard with **12.7 mm** (**0.5 in**) female quick couplers .



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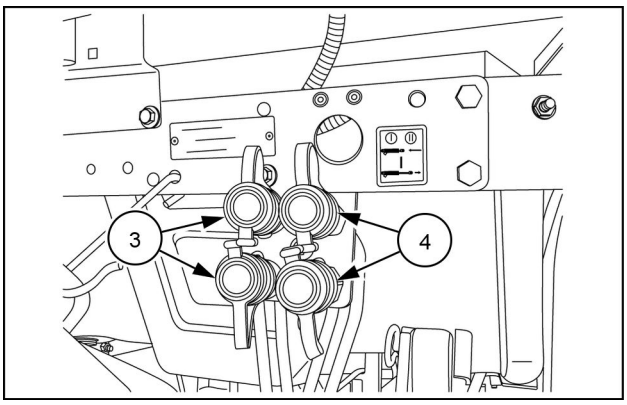


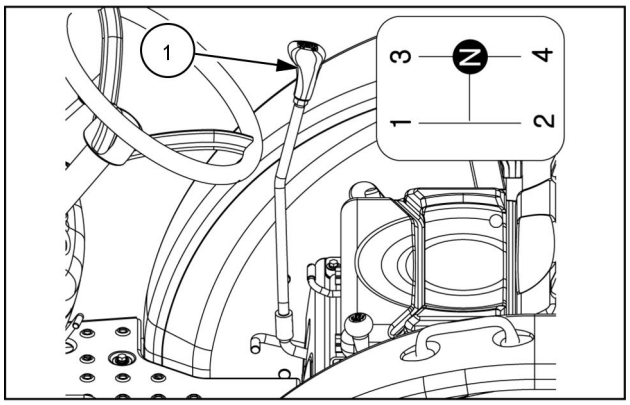
NHIL15CT00373AA 4

Transmission speed shift lever

Mechanical transmission model

The transmission main gear shift lever **(1)** is located on the right-hand side of the operators platform, and is used to select any one of the four forward or reverse gears.

NOTE: *With the combination of the shuttle shift, main shift, and range selector lever offer the operator a combination of twelve forward and twelve reverse gears.*



NHIL12CT00776AA 1

The main gear shift lever must be operated only AFTER the tractor has stopped completely. Shift the main gear shift lever by designated “H” pattern. If the main gear shift lever is operated when the tractor is in motion, damage to the transmission gears could occur.

NOTE: *The shift pattern is shown as sitting in the operators seat.*

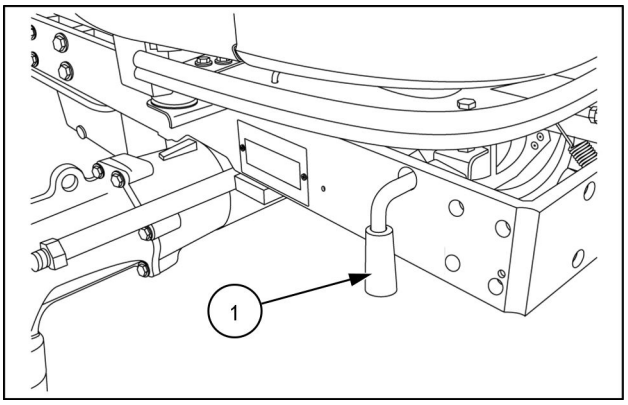
Exterior controls

Hood release lever

As viewed from the front of the tractor:

1. To raise the hood, move the latch release lever **(1)** forward and lift the hood to its fully raised position. A gas shock holds the hood in the fully raised position.
2. To close, lower the hood until it is retained by the latch mechanism.

   NOTE: *Keep latch mechanism free of dirt and debris so latch assembly will operate properly.*



NHAC13CT00045AA 1

4 - OPERATING INSTRUCTIONS

Commissioning the unit

Engine break-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 too high a gear under heavy load may cause engine lugging, which is indicated when the engine will not respond to a throttle increase.
2. Use the lower gear ratios when pulling heavy loads and avoid continuous operation at constant engine speeds. You will save fuel and minimize engine wear by selecting the correct gear ratio for a particular operation. Operating the tractor in low gear with a light load and high engine speed wastes fuel.
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, and air cleaner.
5. After the first 50 hours of use, be sure to perform the maintenance items listed in the maintenance schedule.

Power Take-Off (PTO) - Operation

Rear PTO

1. To engage the PTO, push the PTO switch **(1)** down and turn the switch to the "ON" position **(2)**.

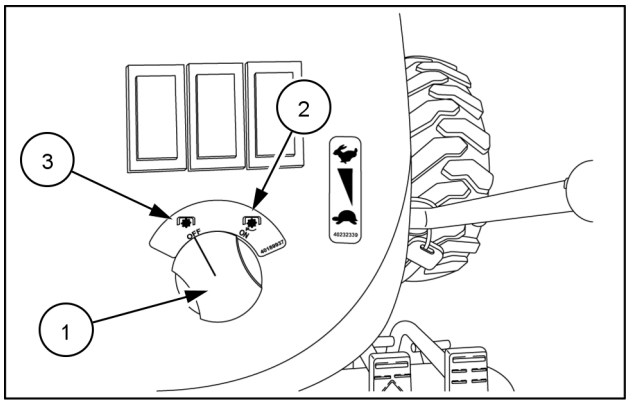
   NOTE: *When the PTO is engaged the PTO indicator light will be illuminated on the instrument panel.*

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

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

3. To disengage the PTO, push down on the PTO switch and the switch will automatically return to the "OFF" position **(3)**.

NOTE: *To obtain **540 RPM** rear PTO speed, the engine speed is **2510 RPM**.*



NHIL12CT00670AA 1

Mid PTO

Mid Power Take-Off (PTO) is standard equipment on Hydrostatic-Transmission (HST) and optional on mechanical transmission tractors.

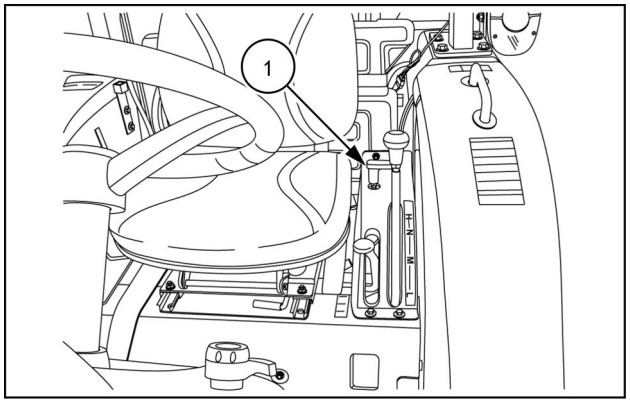
1. To engage the mid PTO, pull up on the mid PTO lever **(1)** push down on the PTO switch and turn the switch to the "ON" position.

   NOTE: *When the mid PTO is engaged the rear PTO will also be engaged. The mid PTO cannot be engaged separately.*

   NOTE: *To obtain **2000 RPM** mid PTO speed, the engine speed is **2545 RPM**.*

2. To disengage the mid PTO, push the mid PTO lever **(1)** down to the "OFF" position and , push down on the PTO switch and the switch will automatically return to the "OFF" position.

   NOTE: *To start the engine the mid PTO lever must be in the down (disengaged) position and the PTO switch in the "OFF" position.*



NHIL12CT00772AA 2

Rear PTO operation without operator present

⚠ 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

NOTICE: *The engine will shut off in approximately two seconds if the operator leaves the seat without the main transmissions shift lever/shuttle shift lever in the neutral position, HST pedals not in the neutral position or the Mid PTO lever not in the "OFF" position.*

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

To operate the rear PTO without the operator in the seat the following operations must be performed:

- Main transmission shift/Shuttle shift lever in NEUTRAL position.
- Park brake engaged.
- Mid PTO in "OFF" position (if equipped).
- Rear PTO in "ON" position.

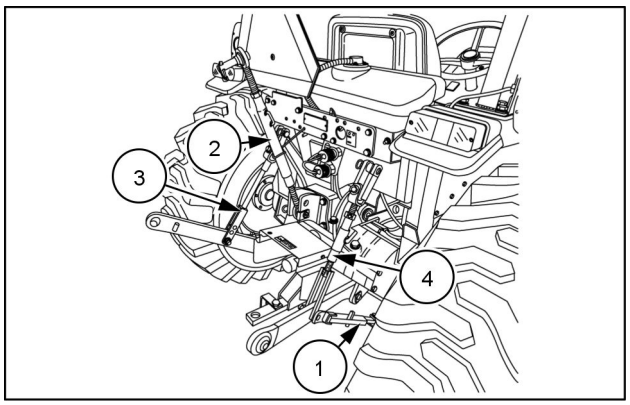
The alarm will sound when the following conditions are present:

- Rear PTO is engaged.
- Operator not in the seat.
- Park brake disengaged.

Rear three-point hitch

The tractor's three-point linkage is used to attach three-point mounted equipment which is usually 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 adjustable sway bars **(1)** to control lateral movement of the lift arms. The length of the top link **(2)** and the height of the left-hand and right-hand lift arms **(3)** and **(4)** can be adjusted to ease the attachment of implements and to level the implement after attaching.



NHIL12CT00803AA 1

Attaching three-point hitch equipment

⚠ WARNING

Entanglement hazard!
Before attaching or detaching equipment or changing the Power Take-Off (PTO) shaft: 1) Apply the parking brake. 2) Move all controls to neutral and PTO control knob to the disengaged position. 3) Stop the engine and remove the key. 4) Wait for the PTO shaft to stop turning before leaving the cab. Failure to comply could result in death or serious injury.

W0323A

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.*

Most implements can be attached 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. Carefully bring the tractor rearwards to match the tractor and implement hitch points. First attach the left-hand lower link, then by adjusting the leveling box, attach the right lower link.
2. Lengthen or shorten the top link until the implement mast pin can be inserted through the mast and upper link of the implement.
3. When detaching the implement, the procedure is the reverse of attaching. The following hints will make detaching easier and safer.

- Always park the implement on a level, firm surface.
- Implement should be supported so that it cannot tip or fall when detached from the tractor.
- Always relieve all hydraulic pressure in any remote cylinders before detaching.

Left-hand lift rod adjustment

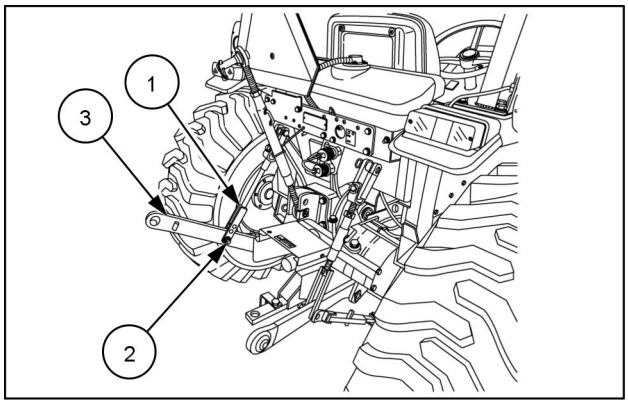
⚠ WARNING

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

NOTICE: *The left-hand lift rod* ***(1)*** *is adjustable but must be removed from the lift arm before length can be changed.*

To lengthen or shorten the left-hand lift rod **(1)** remove the bolt and nut **(2)** from the lift rod and lower link **(3)**. Rotate the top half of the lift rod clockwise to reduce the length and counter-clockwise to increase the length.

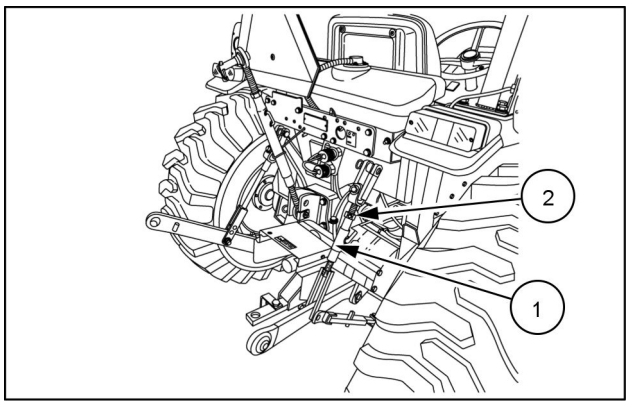


NHIL12CT00803AA 1

Right-hand lift rod adjustment

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

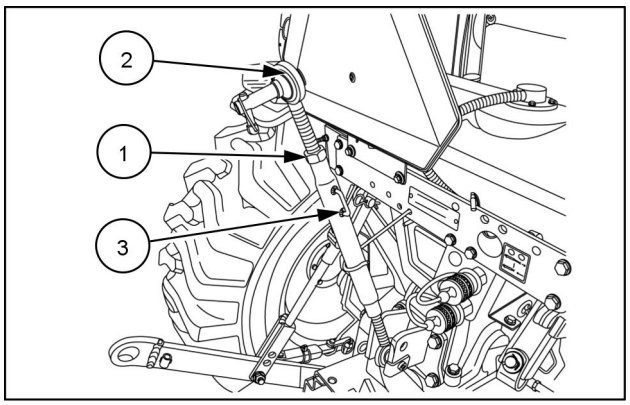
To lengthen or shorten the right-hand lift rod **(1)** loosen jam nut **(2)** and rotate lift rod clockwise to reduce the length and counter-clockwise to increase the length.



NHIL12CT00803AA 2

Top link adjustment

To adjust the top link length, loosen the jam nut **(1)**. Hold the link end **(2)** and rotate the handle **(3)** on the sleeve to lengthen or shorten the top link. After adjustment tighten the jam nut to prevent unwanted rotation of sleeve when in use.



NHIL12CT00805AA 3

Telescoping stabilizers and optional flex end links adjustment

⚠ WARNING

Machine damage can cause accidents!
Only operate three-point equipment with both flex ends returned to the latched position.
Failure to comply could result in death or serious injury.

W0467A

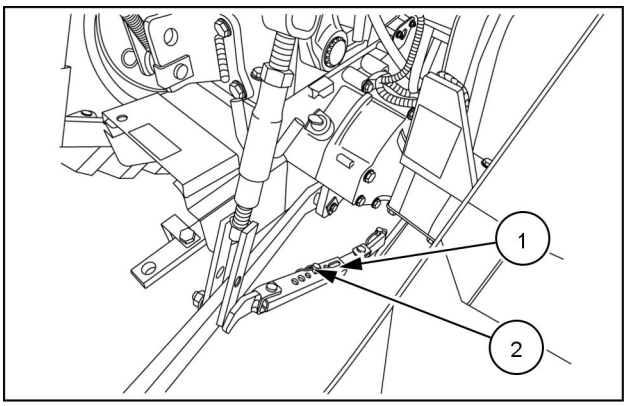
Telescoping stabilizers and fixed end links are standard equipment on the tractor, the flex end links are optional equipment.

The telescoping stabilizers **(1)** use a pin and multiple hole arrangement for easy adjustment, for side to side movement of the three-point linkage.

To adjust the stabilizer, pull the pin **(2)** and adjust the stabilizer and insert the pin into the desired hole.

NOTE: *Cycle the three point linkage through the entire travel and check for interference with the rear tires. If interference is present, adjust stabilizers as needed.*

The (optional) flex ends **(3)** on the lower lift arms are adjusted by pushing down on the clamp **(4)** and sliding the ends to the desired length. Once the implement is attached, push in on the flex ends until the ends are in the latched position in the arms.



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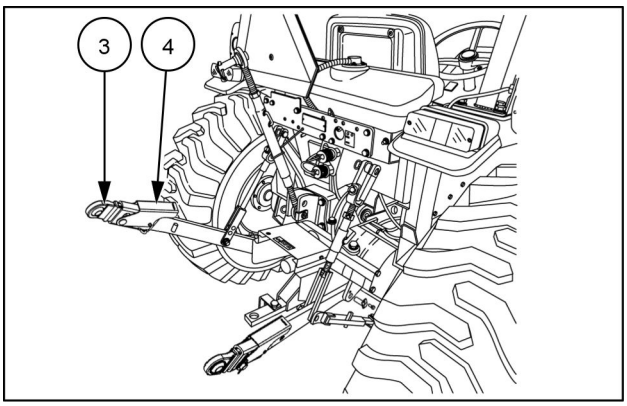


NHIL12CT00837AA 5

Drawbar - Operation

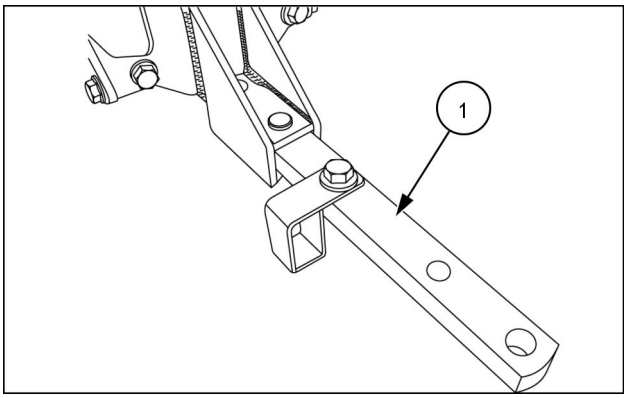
⚠ WARNING

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

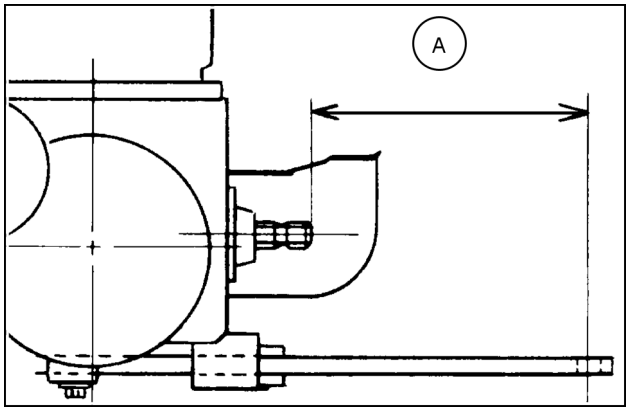
NOTICE: *When transporting equipment on highways, a safety chain with a tensile strength equal to the gross weight of the implement should be installed between the tractor and implement hitch.*

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



93100910 1

NOTICE: *The drawbar is required to provide standard rear PTO drawbar relationship.*

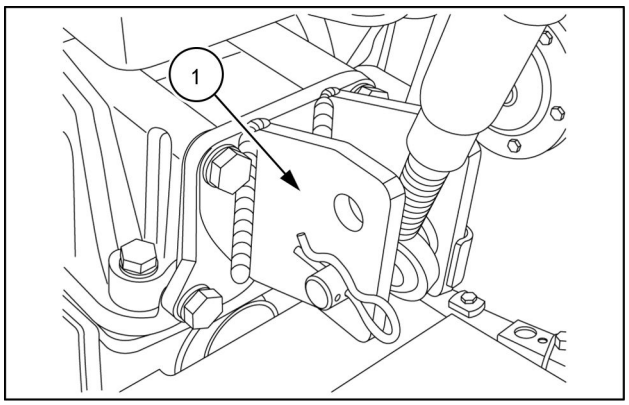


20099087 2

(A) **356 mm** (**14 in**)

Top link adjustment

The top link mounting bracket **(1)** has two holes for attaching the three-point hitch top link. Attach the top link using the lower hole for light draft loads, such as mowers. Attach the top link to the top hole for heavier draft loads, such as ground engaging equipment.



NHIL12CT00806AA 1

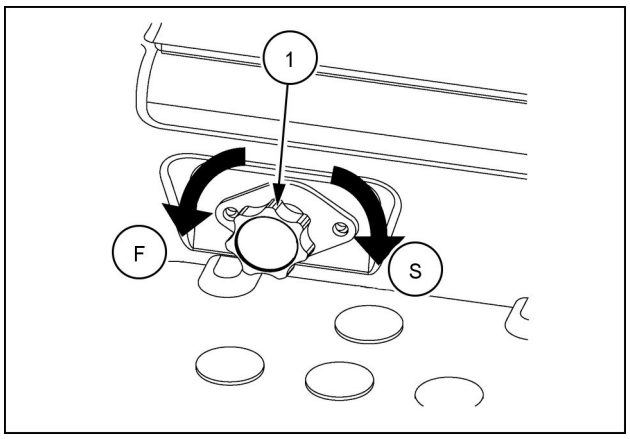
Hydraulic Power Lift (HPL) drop rate control valve

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 "IN" (clockwise) to decrease the rate of drop. Turn the valve "OUT" (counter-clockwise) 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 "IN" (clockwise), the lower links can be raised to maximum height but cannot be lowered.

NOTE: *The drop rate control valve needs to be adjusted accordingly to the amount of weight being carried on the rear hitch arms.*



200900060A 1

(F) Fast
(S) Slow

Starting the unit

Starting the engine

⚠ WARNING

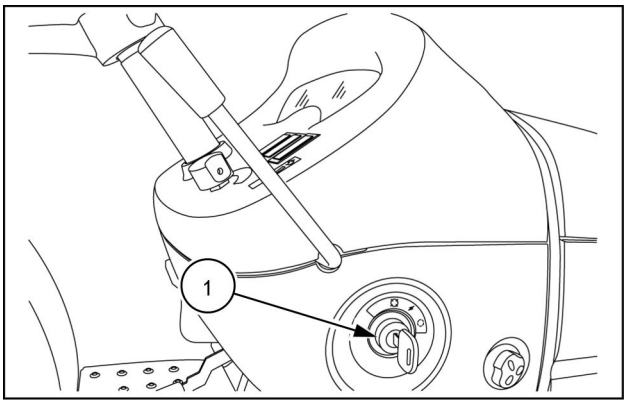
Run-over hazard!
When attempting to start the engine, always sit in the operator´s seat with the parking brake engaged and all control elements in neutral. Never attempt to start the engine while standing beside the machine.
Failure to comply could result in death or serious injury.

W0967B

Mechanical transmission tractor

The key switch **(1)** allows activation of the starter motor and fuel delivery only when:
- Shuttle lever **(2)** is in the neutral position.
- PTO switch **(3)** is in the "OFF" position.
- Mid PTO lever **(4)** is in the "OFF" position (if equipped)
- Clutch Pedal **(5)** is depressed.

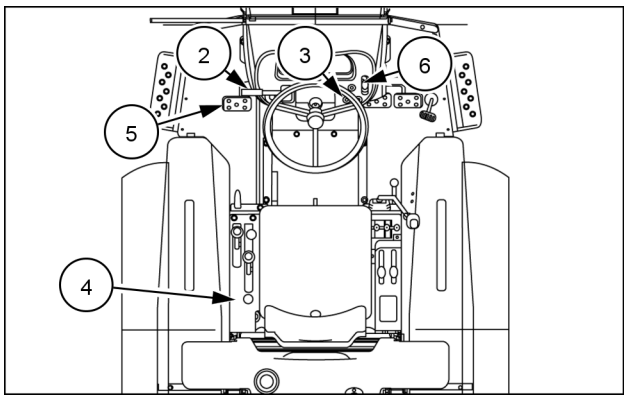
NOTE: *Although the tractor can be started with the operator out of the seat, this practice is not recommended. However, an alarm will sound if the park brake is not engaged, indicating that the operator needs to engage the park brake.*



NHIL12CT00692AA 1

1. Push the hand throttle lever **(6)** forward to about the middle position.
2. Turn the key switch to the middle "ON" position and check if the engine oil pressure, battery charge and cold start indicator lights are illuminated. .
3. Wait until the cold start indicator light goes off (approximately ten seconds).
4. Fully and turn the key to the extreme right to the "START" position. As soon as the engine starts, release the key to the middle "ON" position.

   NOTICE: *Do not engage the starting motor continuously for more than 10 seconds. Doing so may cause starting motor failure.*
5. Check if the engine oil pressure and battery charge indicator lights are illuminated, the lights should be off. If any of these indicator lights are illuminated, shut off the engine immediately and check engine for possible problem.



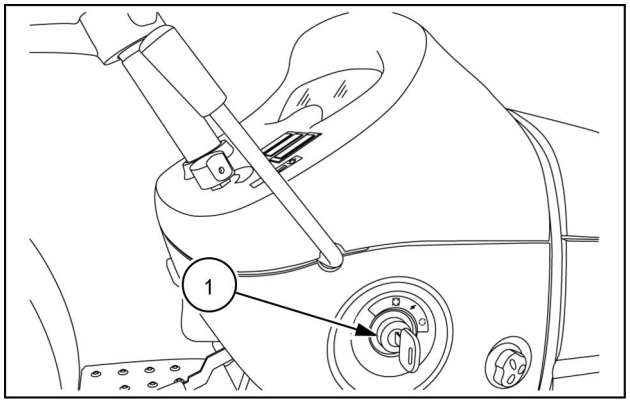
93100852 2

Hydrostatic Transmission (HST) tractor

⚠ WARNING

Run-over hazard!
Always sit in the operator's seat with the parking brake engaged when attempting to start the engine. Never attempt to start the engine while standing beside the machine.
Failure to comply could result in death or serious injury.

W0967A



NHIL12CT00692AA 3

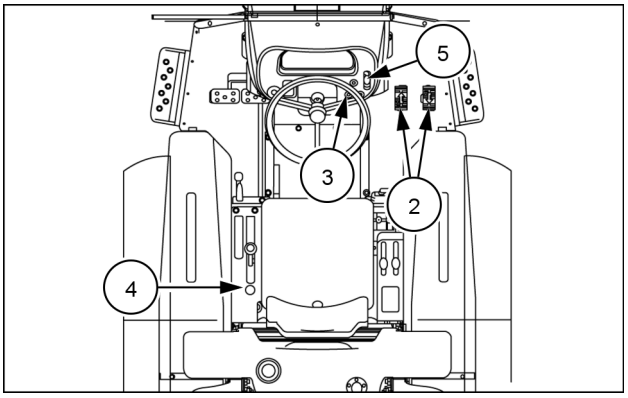
The key switch **(1)** allows activation of the starter motor and fuel delivery only when:

· HST forward/reverse pedals **(2)** are in the neutral position.

· PTO switch **(3)** is in the "OFF" position.

· Mid PTO lever **(4)** is in the "OFF" position (if equipped)

NOTE: *Although the tractor can be started with the operator out of the seat, this practice is not recommended. However, an alarm will sound if the park brake is not engaged, indicating that the operator needs to engage the park brake.*



93100853 4

1. Push the hand throttle lever **(5)** forward to about the middle position.
2. Turn the key switch to the middle "ON" position and check if the engine oil pressure, battery charge, and cold start indicator lights are on.
3. Wait until the cold start indicator light goes off (approximately ten seconds).
4. Turn the key switch to the extreme right to the "START" position. As soon as the engine starts, release the key to the middle "ON" position.

   NOTICE: *Do not engage the starting motor continuously for more than 10 seconds. Doing so may cause starting motor failure.*

5. Check if the engine oil pressure and battery charge indicator lights are illuminated, the lights should be off. If any of these indicator lights are illuminated, shut off the engine immediately and check engine for possible problem.

Cold starting aids

⚠ DANGER

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

D0085A

Your tractor requires preheating of the engine combustion chambers prior to start up.

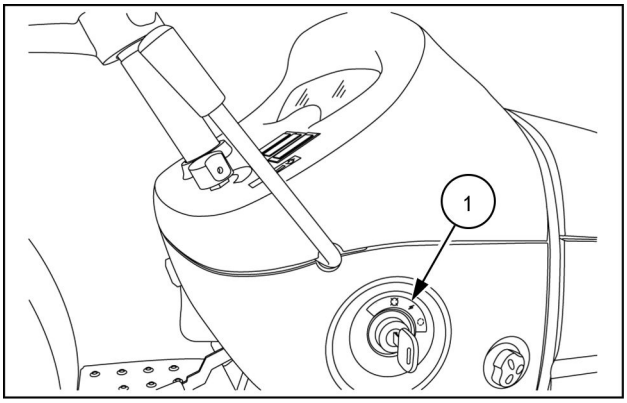
To preheat the engine, turn the key switch clockwise to the “ON” position **(1)**. The cold start indicator light **(2)** will illuminate for approximately 10 seconds. The glow plugs heat the precombustion chambers during this time. After the light goes out the tractor can be started.

If the engine fails to start after 10 seconds of cranking, repeat the preheat cycle.

NOTE: *In cold weather below* ***-12 °C*** *(****10 °F****) multiple heating cycles may be need. After 10 seconds turn the key to “OFF” and repeat the cycle.*

NOTICE: *When starting the machine after long periods, avoid immediate use of hydraulics. It is necessary to allow time for enough lubrication of all moving parts before subjecting the 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 transmission oil up to normal operating temperature. Failure to comply could result in damage to the machine.*

NOTE: *A* ***120 V*** *electric engine block heater is available as a Dealer Installed Accessory (DIA). This heater allows for easier starting in temperatures below* ***-12 °C*** *(****10 °F****) by warming the engine coolant.*



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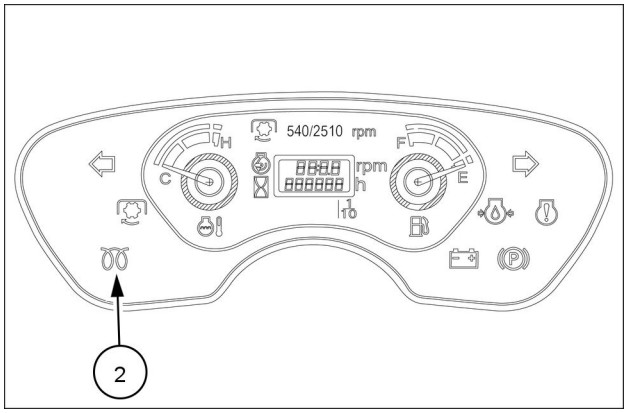


NHIL17CT01803FA 2

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

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

⚠ WARNING

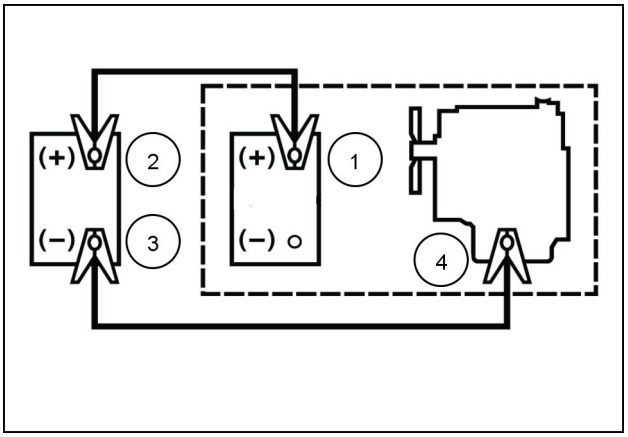
Explosive gas!
Batteries emit explosive hydrogen gas and other fumes while charging. Ventilate the charging area. Keep the battery away from sparks, open flames, and other ignition sources. Never charge a frozen battery.
Failure to comply could result in death or serious injury.

W0005A

NOTICE: *When using a auxiliary battery to start the engine ensure that the polarity of the jumper cables are correct POSITIVE to POSITIVE NEGATIVE to NEGATIVE or the alternator or battery may be damaged.*

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 **4-11** .
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. Disconnect the red end from the positive (+) battery terminal **(2)** on the auxiliary battery then remove the other red end from the positive (+) battery terminal **(1)** on the tractor battery.



20100878 1

Stopping the unit

Stopping the engine

To stop the engine, carry out the following procedures:

1. Remain in the operator seat.
2. Pull the hand throttle lever rearward to the idle position.
3. Engage the park brake.
4. Ensure all gear shift levers, range levers or shuttle shift lever are in the neutral position and the Power Take Off (PTO) switch is in the OFF position.
5. Push the Hydraulic Power Lift (HPL) control lever forward to lower implements to the ground.
6. Turn the key to the STOP position to shut the engine off.

NOTE: *When the key is turned to the STOP position and the park brake is NOT engaged, an alarm will sound. The alarm will continue to sound for approximately ten seconds or until the park brake is engaged.*

NOTE: *If the key is not left in the STOP position after the engine has stopped, the warning lights will remain on and discharge the battery.*

Service brakes

⚠ WARNING

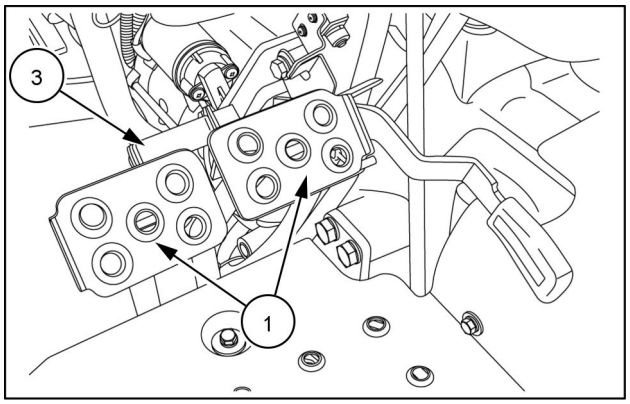
Loss of control hazard!
Always reduce the traveling speed and use the steering wheel while you make a turn. When you operate the machine at high speeds, never attempt to make sharp turns by using the turning brake pedals. If you use the individual brakes at high speeds, the machine could become machine unstable. Failure to comply could result in death or serious injury.

W1237A

Brake pedals

The right brake pedal controls the braking action of the right rear wheel. The left brake pedal controls the braking action of the left rear wheel.

The function of the brake pedals are identical for the Hydrostatic Transmission (HST) and mechanical transmission tractors except for the location of the pedals. The brake pedals **(1)** on a HST model tractor are located on the left-hand side of the operators platform and the brake pedals **(2)** on a mechanical transmission tractor are located on the right-hand side of the operators platform.



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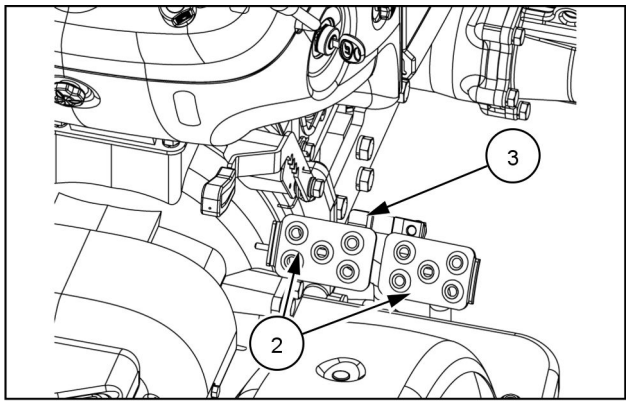
Stopping the tractor

To stop a mechanical transmission tractor, depress both brake pedals and the clutch pedal simultaneously.
To stop a HST model tractor, release the HST forward or reverse pedal and depress both brake pedals simultaneously.

NOTE: *To assist in making sharp turns at slow speed, depress the right or left brake pedal as required.*

NOTE: *Depressing the brake pedals will disengage the HST cruise control function.*



NHIL12CT00775AA 2

Brake pedal lock

The brake pedal connecting pin **(3)** is used to secure the brake pedals together. Lock the pedals together whenever the tractor is operated at high speeds or when the tractor is used on the highway.

Park brake

⚠ 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

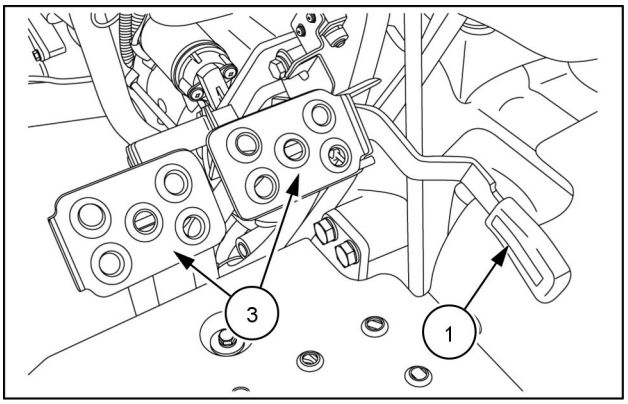
NOTICE: *Ensure the park brake is fully disengaged before driving the tractor.*

The park brake lever is located on the left-hand side of the operators platform **(1)** on HST tractors and on the right-hand side of the operator's platform **(2)** on mechanical transmission tractors. The park brake is used to secure the brake pedals to prevent the tractor from moving while parked.

To engage the park brake, lock the pedals together and push down on the park brake lever while depressing the brake pedals **(3)**.

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

To disengage the park brake, press the brake pedals down and release the park brake lever and push the lever down.



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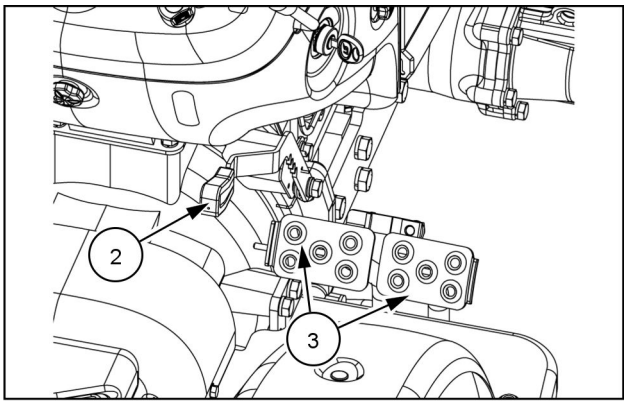


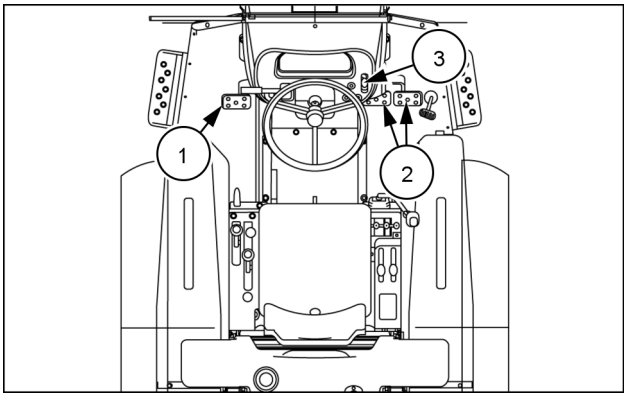
NHIL12CT00775AA 4

Emergency stopping

Mechanical transmission model

To make a emergency stop carry out the following procedures:

1. Depress the clutch pedal **(1)** and brake pedals **(2)** at the same time.
2. Pull the hand throttle lever **(3)** rearward to reduce the engine speed.

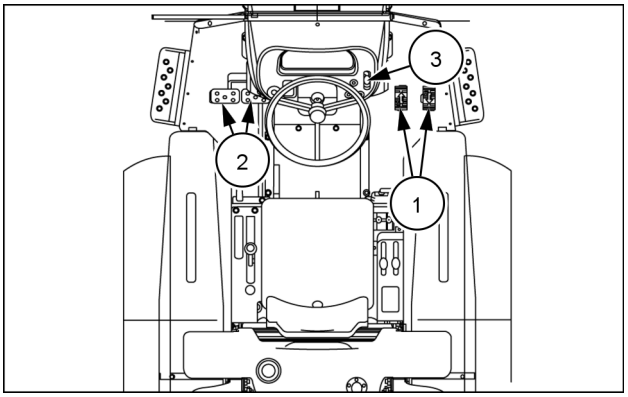


93100852 1

Hydrostatic Transmission (HST) model

To make a emergency stop carry out the following procedures:

1. Release the HST forward or reverse pedal **(1)** immediately and depress the brake pedals **(2)**.
2. Pull the hand throttle lever **(3)** rearward to reduce engine speed.



93100853 2

Moving the unit

Steering - Operation

The tractor has a hydraulic steering system which provides convenience when operating the steering wheel. A non-load reaction system keeps the steering wheel from moving when the impact of the front wheels travel over rough ground.

Operating notes

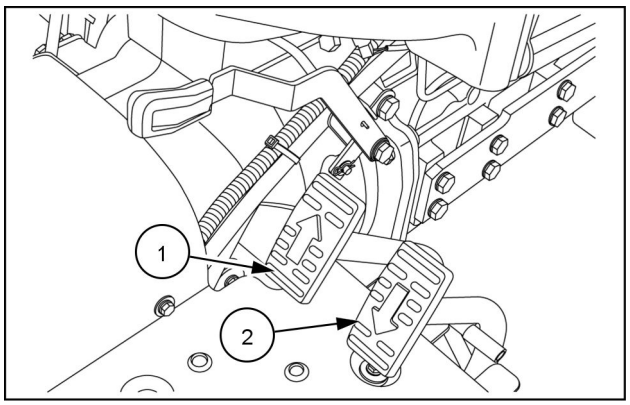
- If there is too much of a load in the front bucket, it could be difficult to operate the steering wheel. In this case, reduce the size of the load or move the tractor slowly forward while turning the steering wheel in the direction of desired travel.
- After turning the steering wheel fully, do not turn the steering wheel fully to the same direction again. Unnecessary force is applied, which could damage the steering system.

  NOTICE: *Do not hold the steering wheel fully to the left or right for more than 10 seconds, it could cause a failure in the steering system.*
- 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 you use the tractor for a long period of time while turning the steering wheel fully, the oil temperature will increase which may cause the reduction of the product life or the failure of the hydraulic steering system.

  NOTE: *If the engine stops, the hydraulic power for the steering system will stop. The loss of hydraulic power will make the steering wheel hard to turn.*

Hydrostatic Transmission (HST) - Operation

The ground speed of tractors equipped with a hydrostatic transmission is continuously variable, from zero to full rated speed in each range. Speed is controlled by the HST forward **(1)** and reverse **(2)** pedals located on the right-hand operators platform.



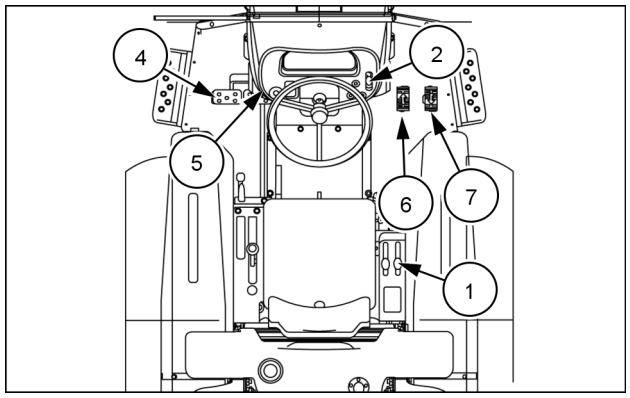
NHIL12CT00693AA 1

To operate the HST transmission, carry out the following:

1. Start the engine and pull the HPL control lever **(1)** rearward to lift the implement off the ground (if equipped).
2. Move the hand throttle lever **(2)** forward until the engine speed is above **1500 RPM**.
3. Place the range gear shift lever **(3)** in the desired range.
4. Depress the brake pedals **(4)** and disengage the park brake lever **(5)**.
5. For forward travel, depress the forward pedal **(6)** until the desired ground speed is reached. For reverse travel, depress the rear pedal **(7)**. The transmission returns to neutral and the tractor stops when the pedal is released.

   NOTE: *Depress the HST pedals slowly, fast movement of the pedals will cause the tractor to move suddenly.*

   NOTE: *To change the range speed, release the HST pedals and bring the tractor to a stop and select the desired range.*



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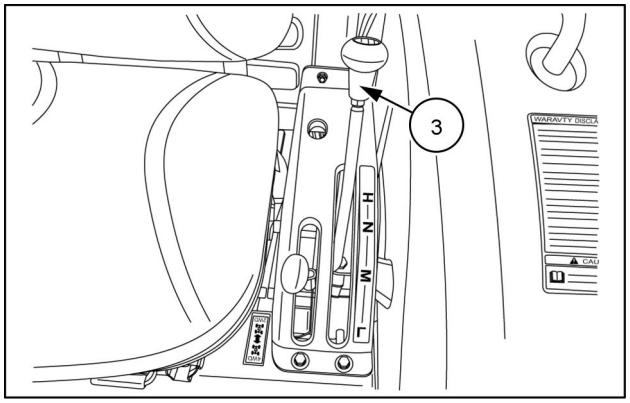

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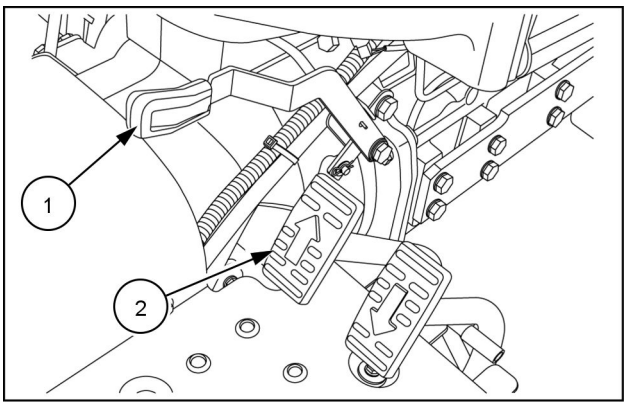
Cruise control operation

⚠ WARNING

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

W0978A

When the desired travel speed is reached, push down on cruise control lever **(1)**. The cruise control linkage will mechanically engage the HST forward pedal **(2)** and maintain the pedal at the desired position. To disengage the cruise control, **(2)** depress both brake pedals.



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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.*

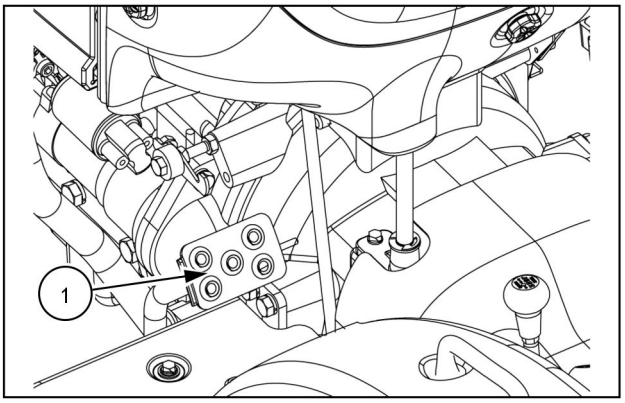
NOTE: *Do not operate the tractor under full load condition until the hydraulic oil is sufficiently warmed up.*

Ambient Temperature	Recommended Warm-Up Time
Above **0 °C** (**32 °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

12 x 12 transmission - Operation

The 12 x 12 mechanical transmission operates through the use of a clutch pedal **(1)** a forward/reverse shuttle shift lever **(2)** main transmission shift lever **(3)** and a range selector lever **(4)**.
The combinations of shuttle shift, main shift, and range selector lever offer the operator a combination of twelve forward and twelve reverse gears.

NOTE: *The shift pattern is shown as sitting in the operators seat.*



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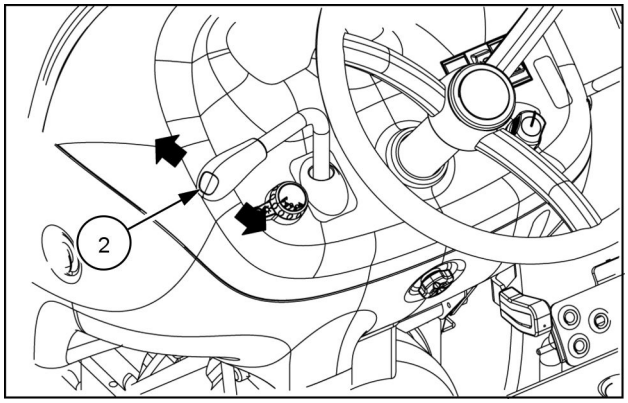

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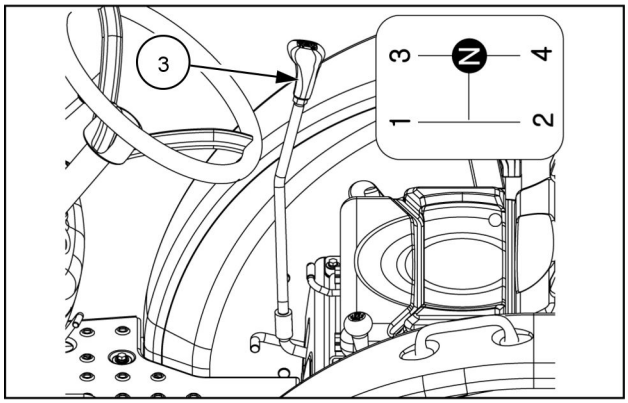

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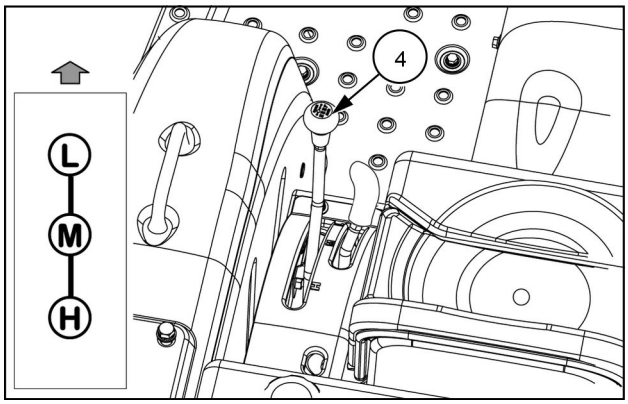

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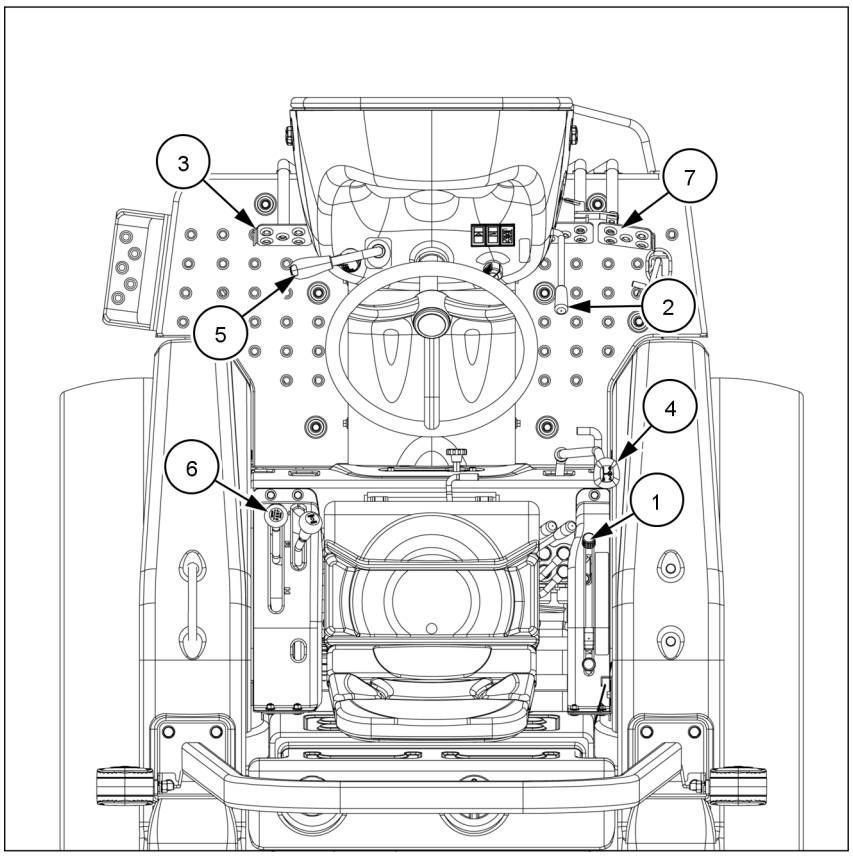

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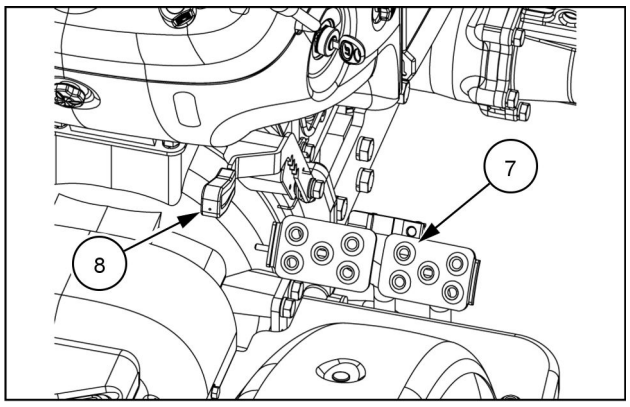
To operate the 12 x 12 mechanical transmission, carry out the following:

1. Start the engine and pull the Hydraulic Power Lift (HPL) control lever **(1)** rearward to lift the implement off the ground (if equipped).
2. Move the hand throttle lever **(2)** forward until the engine speed is above **1500 RPM**.
3. Depress the clutch pedal **(3)** fully.
4. Place the main transmission shift lever **(4)** shuttle shift lever **(5)** and range lever **(6)** into the desired position.
5. Depress the brake pedals **(7)** and disengage the park brake lever **(8)**.
6. Release the clutch pedal **(3)** slowly, and the tractor will start to move.



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NOTICE: *To change the gears depress the clutch pedal fully, and have the tractor stopped completely. The main gear shift lever and range gear shift lever must be operated only AFTER the tractor has stopped completely. Shift the main gear shift lever by designated "H" pattern. If the main gear shift lever or range gear shift lever is operated when the tractor is in motion, damage to the transmission gears could occur.*

NOTE: *Release the clutch pedal slowly, if the clutch pedal is released fast it will cause the tractor to move suddenly.*

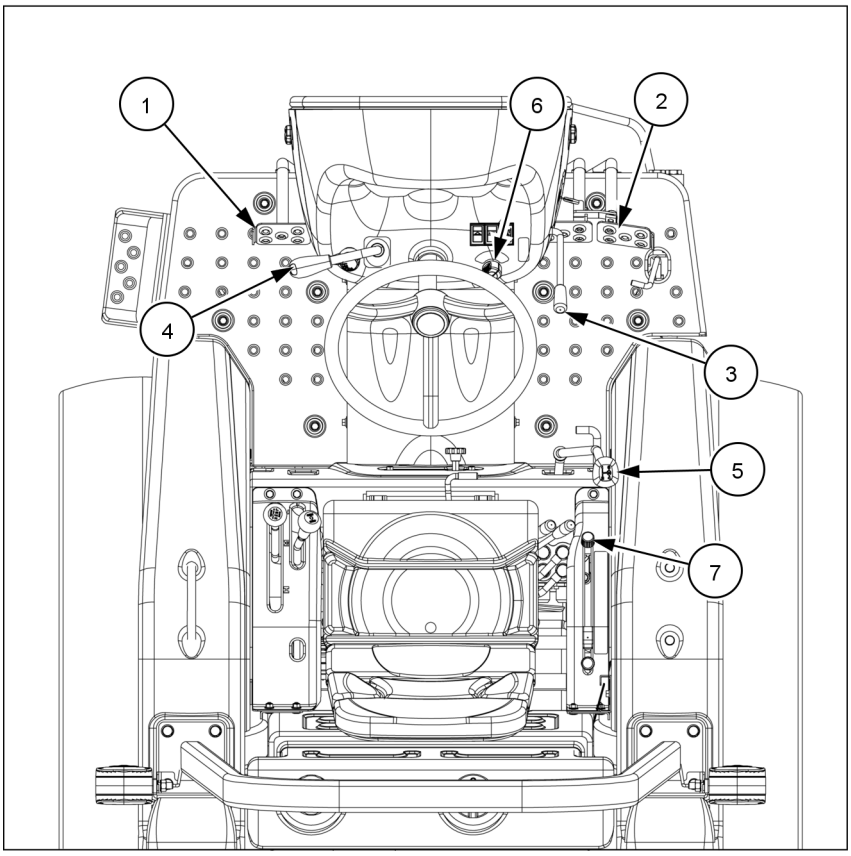
Parking the unit

Park brake - Operation

⚠ WARNING

Avoid injury! Always do the following before lubricating, maintaining, or servicing the machine.
1. Disengage all drives.
2. Engage parking brake.
3. Lower all attachments to the ground, or raise and engage all safety locks.
4. Shut off engine.
5. Remove key from key switch.
6. Switch off battery key, if installed.
7. Wait for all machine movement to stop.
Failure to comply could result in death or serious injury.

W0047A



NHIL12CT00891GA 1

Mechanical transmission model

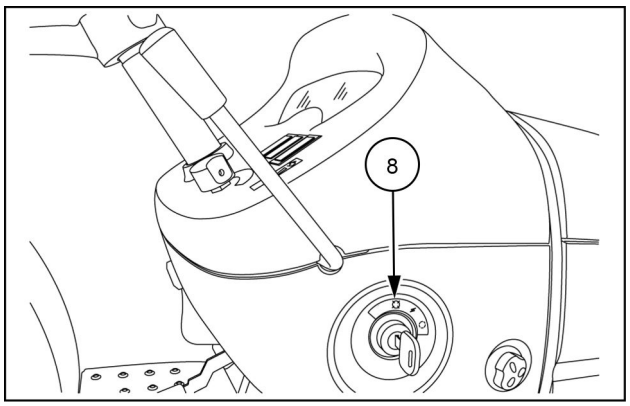
To park the tractor carry out the following procedures:

1. Depress the clutch pedal **(1)** and brake pedals **(2)**. Pull the hand throttle lever **(3)** rearward to reduce the engine speed.

   NOTE: *Park the tractor on a level surface, if it is necessary to park on a slope, place the transmission in the lowest gear and place chocks or blocks in front or behind the tires depending on the direction of the slope.*

2. Place the shuttle shift lever **(4)** main gear shift lever **(5)** in neutral and make sure the PTO switch **(6)** is in the "OFF" position.
3. Push the HPL control lever **(7)** forward to lower implements (if equipped) to the ground.

4. Turn the key **(8)** to the "STOP" position.



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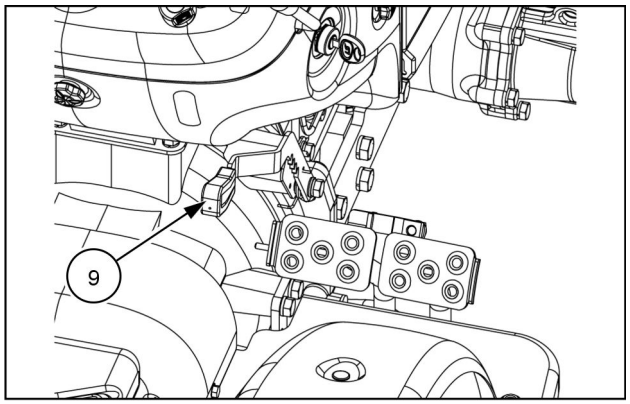
5. Engage the park brake **(9)** and release the brake pedals and clutch pedal slowly.



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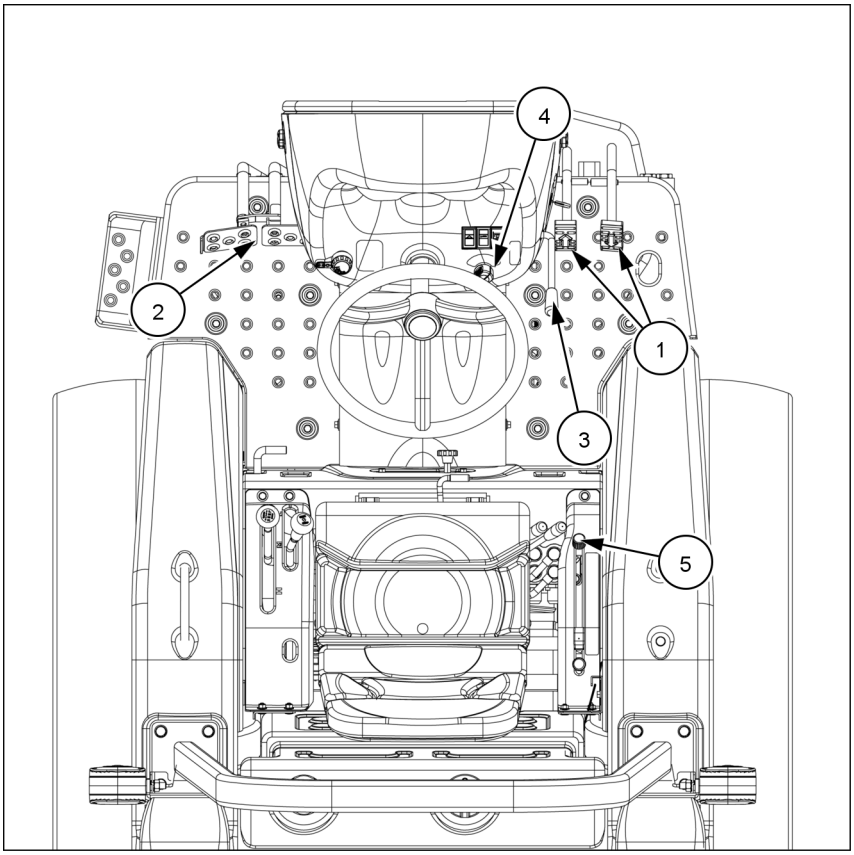
Hydrostatic Transmission (HST) model



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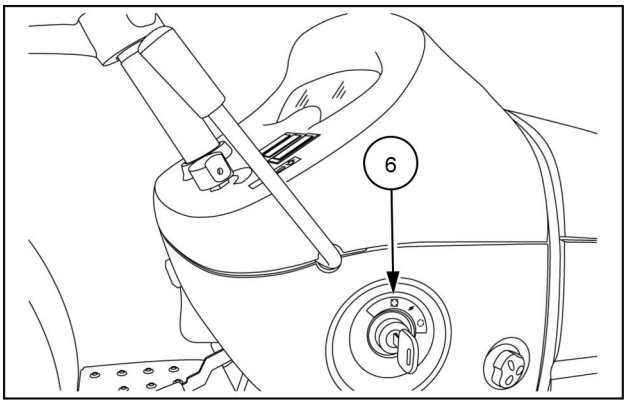
To park the tractor carry out the following procedures:

1. Release the HST forward or reverse pedal **(1)** slowly and depress the brake pedals **(2)**. Pull the hand throttle lever **(3)** rearward to reduce the engine speed.

   NOTE: *Park the tractor on a level surface, if it is necessary to park on a slope, place the range gear shift lever in the lowest gear and place chocks or blocks in front or behind the tires depending on the direction of the slope.*

2. Make sure the PTO switch **(4)** is in the "OFF" position.
3. Push the HPL control lever **(5)** forward to lower implements (if equipped) to the ground.
4. Turn the key **(6)** to the "STOP" position.



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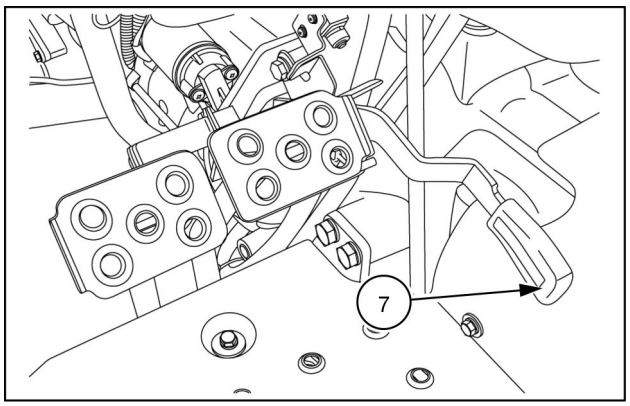
5. Engage the park brake **(7)** and release the brake pedals slowly.



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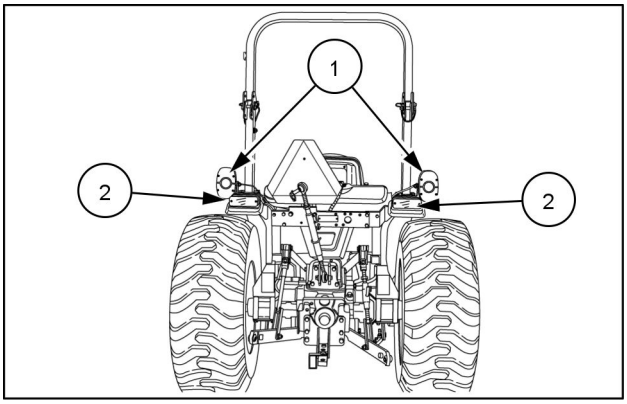
5 - TRANSPORT OPERATIONS

Road transport

External lighting - Identification

Your tractor is equipped with the following:

- Turn signal/Hazard warning lights **(1)**.
- Tail/Brake lights **(2)**.
- Road lights **(3)** Work Lights **(4)**.
- Rear Work Light (Optional) mounted on the rear of the ROPS.



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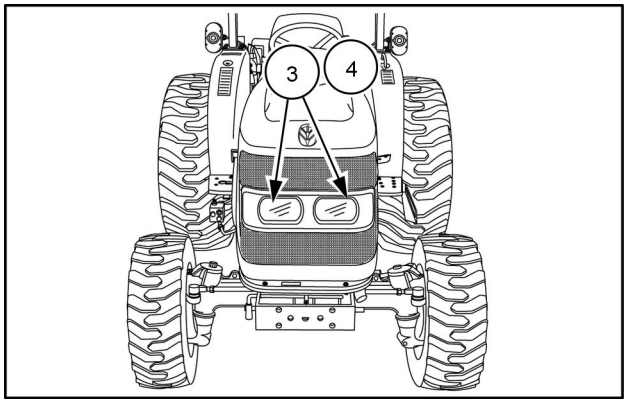

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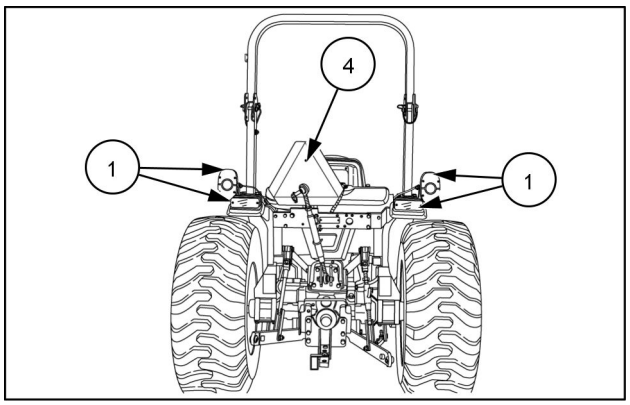
Hazard warning light - Operation

The hazard warning lights **(1)** are activated by rotating the multifunction switch located on the left-hand side of the dash panel.

NOTE: *The hazard lights can function with the key in any position.*



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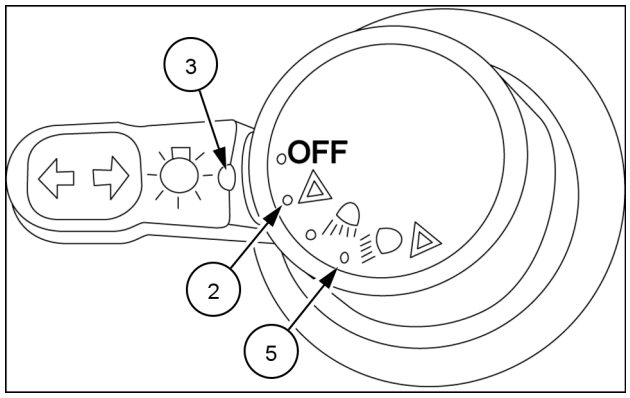
To activate the hazard lights rotate the switch until the "HAZARD" symbol **(2)** is aligned with the index mark **(3)** on the switch lever.

NOTE: *For your protection, use the hazard warning lights, the SMV (Slow Moving Vehicle) sign **(4)** and road lights (low beam) when traveling on public roads, day or night. Rotate the light switch until the "LOW BEAM" and "HAZARD" symbols **(5)** are aligned with the index mark **(3)** on the switch lever.*



93099370 2

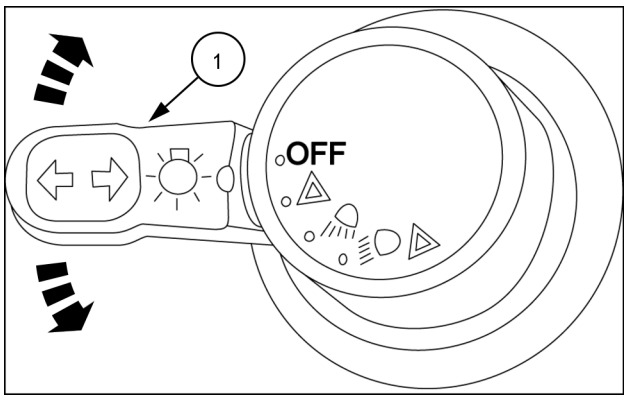
Turn signal - Operation

The turn signal lights are activated by moving the multi-function switch lever **(1)** forward for right turns and down for left turns. The key has to be in the "ON" position for the turn signal to operate.

NOTE: *The multifunction switch is located on the left-hand side of the dash panel.*

When signaling a turn, the designated side amber light and hazard light **(2)** will flash.

NOTE: *If the flashing hazard warning lights are operated at the same time when the turn signal is activated, the hazard light for the opposite side of turning direction will stop flashing and illuminate continuously.*



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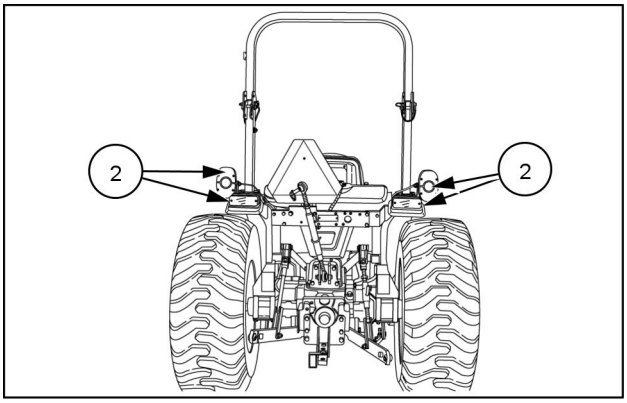

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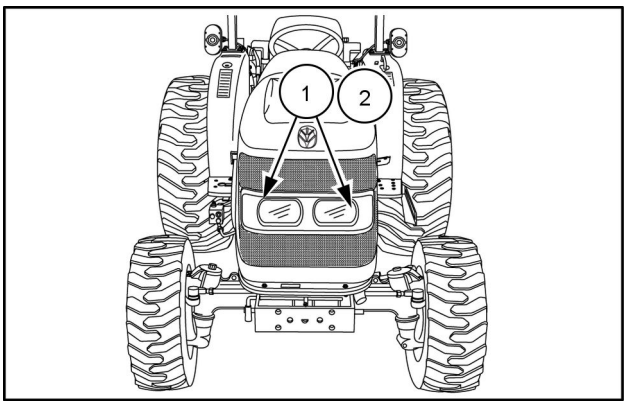
Road light/work light - Operation

The road lights **(1)** work lights **(2)** and taillights **(3)** are turned on and off using the multifunction light switch located on the left-hand side of the dash panel. The key must be in the "ON" position for these lights to operate.



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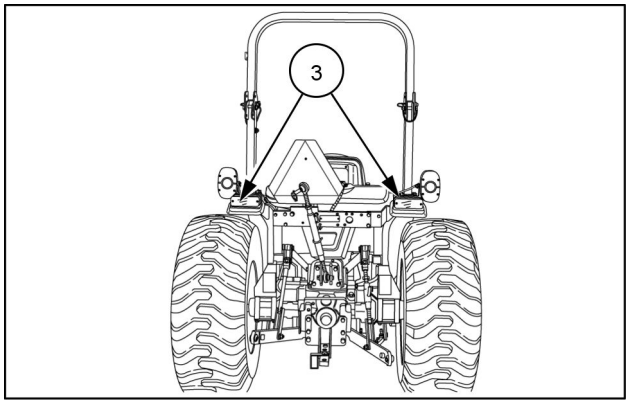

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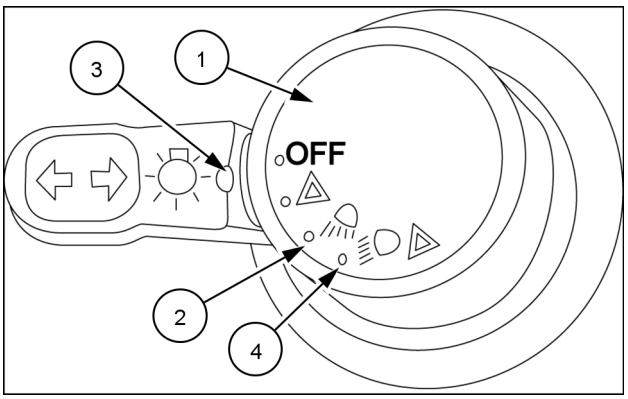
The multifunction light switch **(1)** is a rotary type switch that has four positions (rotating clockwise from "OFF" position), three of these positions control the road lights, work lights, hazard lights, and taillights.

- To operate the work lights, rotate the multifunction switch until the "WORK LIGHT" symbol **(2)** is aligned with the index mark **(3)** on the switch lever. The instrument panel, side/taillights, road lights, and work lights will come ON.
- To operate the road lights and hazard lights, rotate the multifunction switch until the "LOW BEAM" and "HAZARD" symbols **(4)** are aligned with the index mark **(3)** on the switch lever. The instrument panel, side/taillights, road lights (low beam), and hazard warning lights will come ON.

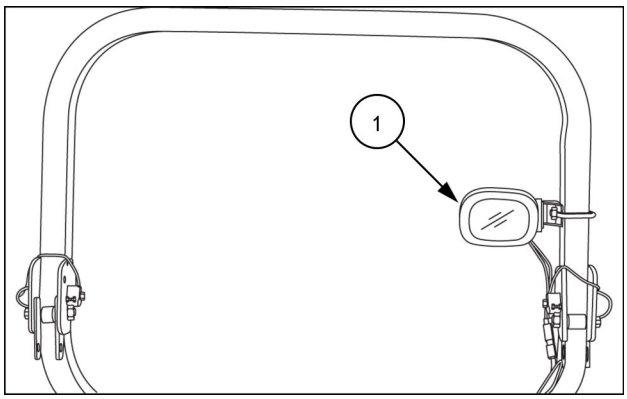


93099370 3

NOTE: *For your protection, use the hazard warning lights, road lights (low beam), and (slow moving vehicle) SMV sign when traveling on public roads, day or night.*

Rear work light (optional)

The optional rear work light **(1)** is mounted to the Roll Over Protective Structure (ROPS) and is operated by a switch located on the light. The work light can be mounted to the ROPS, facing forward or rearward.



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Driving the vehicle

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.
- Lock the brake pedals together when travelling on public roads.
- Make sure the PTO switch is in the "OFF" position.
- Keep the tractor in gear when going downhill. Use a low gear to maintain control with minimum braking.
- 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.*

- Engage the clutch slowly when driving out of a ditch, gully, or up a steep hillside. Immediately disengage the clutch if the front wheels should rise off the ground.
- Reduce speed before turning quickly or applying brakes.
- When making an emergency stop while operating a Hydrostatic Transmission (HST) model tractor depress both brake pedals and release the forward or reverse HST pedal.
- To make an emergency stop, depress both brake pedals and the clutch pedal (mechanical transmission model only) simultaneously
- 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 could 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:

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

Recovery transport

Towing the tractor for recovery

Towing the tractor

⚠ WARNING

Hazard to bystanders!
Do not use cables or rope to tow the machine. If the cable or rope breaks or slips, it may whip back with enough force to cause serious injury. When using a chain, attach the chain with the hook's open side facing UP. If the hook slips, it will drop down instead of flying up.
Failure to comply could result in death or serious injury.

W0441A

⚠ WARNING

Unexpected machine movement!
Never attempt to start the machine by towing. The machine could start unexpectedly.
Failure to comply could result in death or serious injury.

W0941A

⚠ WARNING

Transport hazard!
Do not tow the machine on public roads. Towing could cause a safety hazard for other vehicles using the roadway.
Failure to comply could result in death or serious injury.

W1012A

NOTICE: *If it is necessary to tow the tractor all gear levers must be moved to the neutral position before stopping the engine otherwise damage to transmission components may occur during towing.*

Use a strong chain when towing the tractor. Tow the tractor from the rear using only the drawbar. Tow the tractor from the front using the tow pin in the front weights or front support. Have an operator steer and brake the tractor. If possible run the engine to provide lubrication to the transmission and power steering.

Place the transmission gearshift levers in neutral disengaged the 4WD differential lock and park brake to tow the tractor. Do not exceed **20 km/h** (**12 mph**).

NOTE: *The tractor should only be towed a short distance such as out of a building. Do not tow on roadways or as a method of transport.*

6 - WORKING OPERATIONS

General information

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* ***7-23*** *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	**1163 kg** (**2564 lb**)
Rear axle	**1755 kg** (**3869 lb**)
Combined front and rear axle	**2508 kg** (**5529 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.

Front tire inflation pressures and load capacity				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at Minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	7-14, 4PR, R1	**41 – 248 kPa** (**6 – 36 psi**)	**160 kg** (**353 lb**)	**449 kg** (**990 lb**)
Turf (R3)	25 x 8.50-14, 4PR, R3	**34 – 152 kPa** (**5 – 22 psi**)	**251 kg** (**553 lb**)	**599 kg** (**1321 lb**)
Industrial (R4)	25 x 8.50-14, 6PR, R4	**207 – 345 kPa** (**30 – 50 psi**)	**716 kg** (**1579 lb**)	**966 kg** (**2130 lb**)

Rear tire inflation pressures and load capacity				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	11.2-24, 4PR, R1	**83 – 124 kPa** (**12 – 18 psi**)	**454 kg** (**1001 lb**)	**1152 kg** (**2540 lb**)
Turf (R3)	41 x 14.00-20, 4PR, R3	**69 – 172 kPa** (**10 – 25 psi**)	**825 kg** (**1819 lb**)	**1397 kg** (**3080 lb**)
Industrial (R4)	43 x16-20, 4PR, R4	**138 kPa** (**20 psi**)	**2059.0 kg** (**4539.3 lb**)	**2059.0 kg** (**4539.3 lb**)

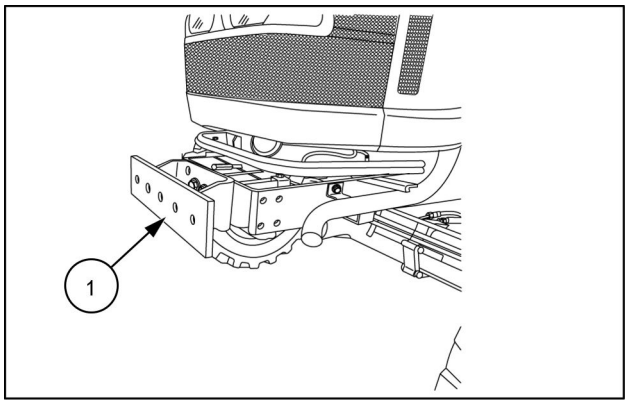
Tractor ballasting weights

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, rear of the tractor and on the rear wheels.

Front weight carrier bracket - Optional

To mount cast iron weights on the front of the tractor an optional extension mounting bracket **(1)** 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.



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Weight options:

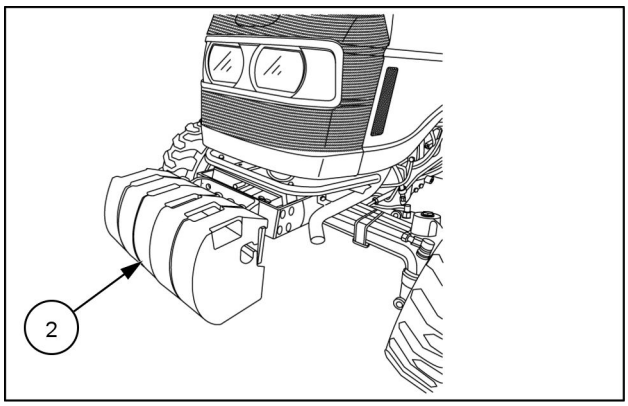
A maximum of five **27 kg** (**60 lb**) weights **(2)** for a total weight of **136 kg** (**300 lb**) .

A maximum of three **45 kg** (**100 lb**) weights **(3)** for a total weight of **135 kg** (**300 lb**) .

NOTE: *The front extension mounting bracket with a maximum of three* ***27 kg*** *(****60 lb****) weights attached is compatible with a grille guard.*

NOTE: *The front extension mounting bracket with* ***45 kg*** *(****100 lb****) weights is not compatible with a grille guard.*

NOTE: *The front extension mounting bracket is not compatible with a loader installed.*



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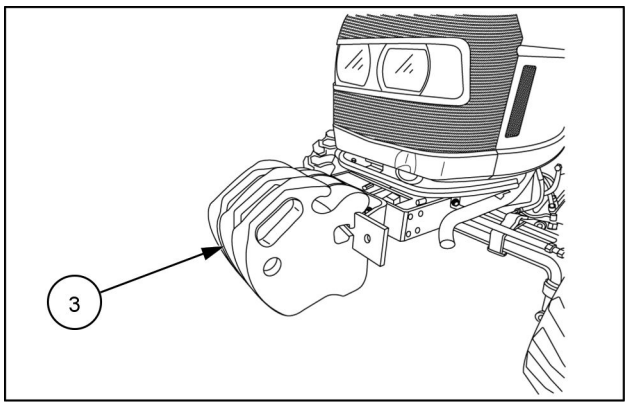

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Rear wheel weights - Optional

Cast iron rear wheel weights are not available

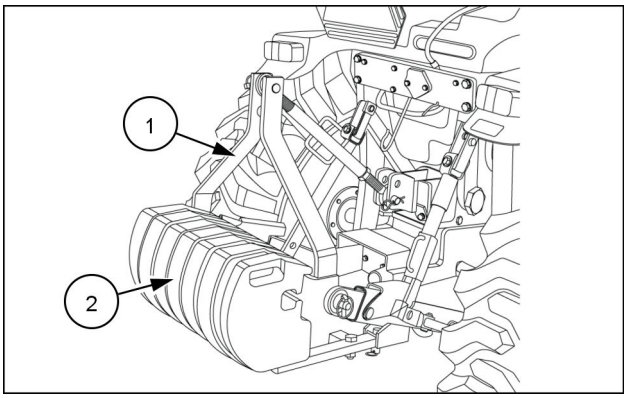
Rear counter weight bracket - Optional

To mount cast iron weights on the rear of the tractor an optional weight bracket **(1)** must be installed on the rear 3-point hitch. A maximum of seven suitcase weights **(2)** can be fitted to the bracket.

Weight options:

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

A maximum of two **27 kg** (**60 lb**) weights, and five **45 kg** (**100 lb**) weights, for a total weight of **282 kg** (**622 lb**).



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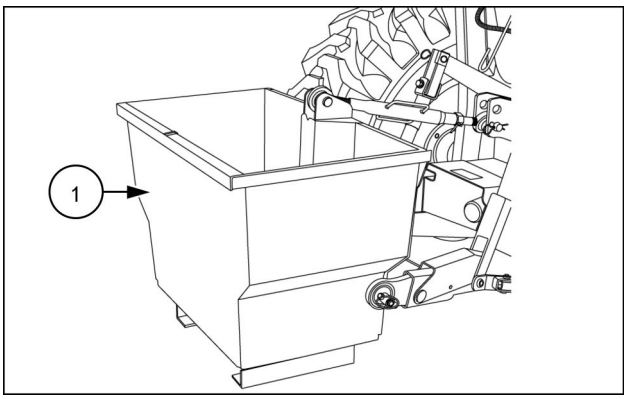
Ballasting box - Optional

A category-1, 3-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)
3-Point Hitch Ballasting Box	**46 kg** (**101 lb**)	**228 kg** (**503 lb**)



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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)

Transmission Type	Operator	Rear PTO*	Mid PTO*	Transmis-sion	Park Brake	Clutch Pedal	Condition
HST**	Out of Seat	Off	Off	HST pedals in Neutral	Engaged	NA	Start
HST	Out of Seat	Off	Off	HST pedals in Neutral	Disengaged	NA	Start with Alarm
HST	In Seat	Off	Off	HST pedals in Neutral	Engaged	NA	Start
HST	In Seat	Off	Off	HST pedals in Neutral	Disengaged	NA	Start with Alarm
Mechanical	Out of Seat	Off	Off	Shuttle in Neutral	Engaged	Depressed	Start
Mechanical	Out of Seat	Off	Off	Shuttle in Neutral	Disengaged	Depressed	Start with Alarm
Mechanical	In Seat	Off	Off	Shuttle in Neutral	Engaged	Depressed	Start
Mechanical	In Seat	Off	Off	Shuttle in Neutral	Disengaged	Depressed	Start with Alarm

NOTE: *For starting the engine the PTO switch must be off, the mid PTO must be off, the clutch pedal must be depressed (mechanical transmission) and the Forward / Reverse pedals must be in the neutral position (HST).*

Operator presence system (run operation)

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

Transmission Type	Rear PTO	Mid PTO	Transmission	Park Brake	Condition
Mechanical/HST	Off	Off	Neutral	Disengaged	Alarm
Mechanical/HST	On	Off	Neutral	Engaged	Alarm
Mechanical/HST	On	Off	Neutral	Disengaged	Alarm
Mechanical/HST	Off	Off	In Gear or HST pedal depressed	Either	Shutdown
Mechanical/HST	On	Off	In Gear or HST pedal depressed	Either	Shutdown
Mechanical/HST	On	On	In Gear or HST pedal depressed	Either	Shutdown
Mechanical/HST	OFF	On	Neutral	Either	Shutdown

* Power Take-Off (PTO)

** Hydrostatic Transmission (HST)

7 - MAINTENANCE

General information

General information

⚠ WARNING

Illustrations in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment.
Replace all shields before operating the machine.
Failure to comply could result in death or serious injury.

W0012A

⚠ WARNING

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

Failure to comply could result in death or serious injury.

W1197A

⚠ WARNING

Entanglement hazard!
Disengage the Power Take-Off (PTO), turn off the engine, and remove the key. Wait for all movement to stop before you leave the operator's position. Never adjust, lubricate, clean, or remove a blockage of crop material when the engine is on.
Failure to comply could result in death or serious injury.

W0227B

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

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

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

Regular lubrication is the best insurance against delays and repairs. Proper lubrication will extend machine life. Refer to the chart on page **7-8** for lubricants and service intervals.

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

The intervals listed in the Lubrication 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

Wipe dirt from fittings before greasing.

Pump fresh grease into fitting to adequately lubricate the component and force out any contamination from the grease passage.

Wipe off excess grease.

Use a grease gun containing clean high grade of **MULTI-PURPOSE GREASE EP / AW / NLGI 2**.

Safety rules

- 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.

Biodiesel fuels

The use of biodiesel blends meeting Specification Standards ASTM 6751 or EN14214 are approved for your engine up to B5 (**5%** blend ratio). It is highly recommended to use biodiesel fuel from accredited suppliers to maintain quality and consistency of the fuel.

Biodiesel does not have a long term stability and should not be left in engines or stored for more than four months. If your machine is stored for long term, engine should be flushed, prior to storage, by running for a minimum of 30 minutes with conventional diesel fuel.

Biodiesel fuel has a higher cloud point than conventional diesel fuels and is not recommended in winter months. Consult your fuel dealer for winter fuel requirements for your area.

Biodiesel fuel attracts moisture and may contain a higher content of water. It may be necessary to drain the fuel filter water trap more frequently.

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.

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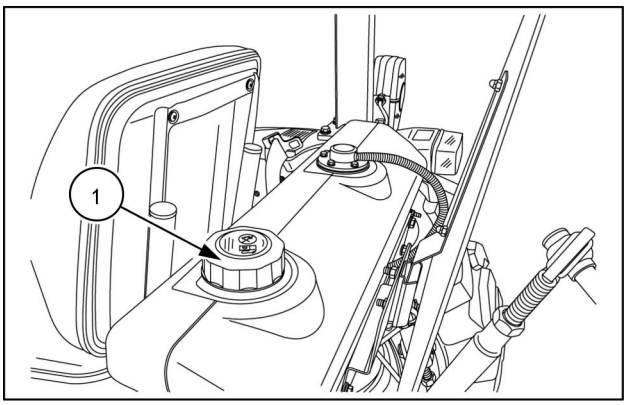

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The fuel tank filler cap **(1)** is located at the left rear corner of the tractor. Before removing the cap, wipe all dust and dirt from around the cap to prevent debris from falling into the tank while filling.

Use an approved fuel container and check the inside of the container periodically for cleanliness. Fuel tank capacity is **28.0 l** (**7.4 US gal**).

NOTE: *The fuel cap is a vented-type. Use only an approved NEW HOLLAND replacement cap to prevent fuel system-related problems.*

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.*

Consumables

Lubricant	Type and Description	Container Size
Engine Oil	**SAE 10W-30 CF-4 ENGINE OIL**	**0.946 l** (**1 US qt**)
	ENGINE OIL FULL SYNTHETIC SAE 0W-40	**0.946 l** (**1 US qt**)
	SAE 15W-40 CF-4/SG ENGINE OIL	**0.946 l** (**1 US qt**)
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**	**0.946 l** (**1 US qt**)
		9.46 l (**2.5 US gal**)
Grease	**MULTI-PURPOSE GREASE EP / AW / NLGI 2**	Tube **14 oz**
Coolant	**IAT COOLANT 11 – CLASSIC**	**3.785 l** (**1 US gal**)
	EXTENDED LIFE OAT COOLANT/ ANTIFREEZE	**3.785 l** (**1 US gal**)

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.

Maintenance planning

Maintenance chart

Maintenance action	Check	Cleaning	Change fluid	Replace	Tighten	Test	Bleed	Drain fluid	Adjust	Grease	Page no.
Every 8 hours or daily											
Engine lubrication system - Check	x										**7-9**
Engine cooling system - Check	x										**7-10**
Transmission - Check	x										**7-12**
Radiator screen cleaning		x									**7-13**
After first 50 hours											
Engine lubrication system - Change fluid			x								**7-14**
Fuel filters - 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											
Machine fittings - Grease									x		**7-20**
Transmission - Check	x										**7-12**
Tire pressure - Check	x										**7-23**
Clutch Pedal Free Play - Check										x	**7-27**
Hydrostatic transmission (HST) neutral adjustment - Check	x										**7-28**
Belt - Check	x										**7-29**
Mechanical service brakes - Check										x	**7-30**
Front axle differential fluid level - Check	x										**7-31**
Air cleaner - Outer element - Cleaning		x									**7-32**
Every 250 hours											
Engine lubrication system - Change fluid			x								**7-14**
Fuel filters - Replace				x							**7-15**
Hydraulic oil suction filter - Replace				x							**7-16**
Hydrostatic Transmission (HST) oil filter - Replace				x							**7-17**
Air cleaner - Outer element - Replace				x							**7-37**
Wheel hardware - Check					x						**7-19**
Roll Over Protective Structure (ROPS) frame - Check	x										**7-18**
Every 500 hours											
Front axle and differential fluid - Change			x								**7-40**
Transmission - Change fluid			x								**7-42**
Air cleaner - Inner element - Replace				x							**7-43**
Valves - Check	x										**7-44**
Every two years											
Engine cooling system - Drain fluid								x			**7-45**
As required											
Fuel injection system - Bleed							x				**7-46**
Roll Over Protective Structure (ROPS) frame - Replace - Possible damage				x							**7-47**
Battery - Test						x					**7-48**
Fuses - Check	x										**7-49**
Main fuse - Check				x							**7-50**
Headlight - Replace				x							**7-51**

Maintenance action	Check	Cleaning	Change fluid	Replace	Tighten	Test	Bleed	Drain fluid	Adjust	Grease	Page no.
Tail light and brake light bulb - Replace				x							**7-52**
Turn signal and hazard bulb - Replace				x							**7-53**
Front wheels toe-in - Check										x	**7-55**
Belt - Adjust										x	**7-56**

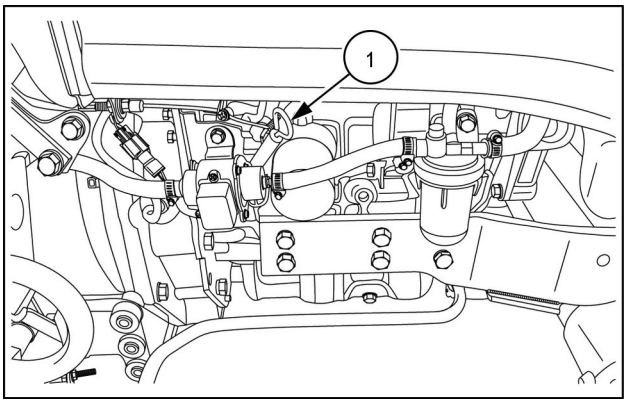
Every 8 hours or daily

Engine lubrication system - Check

1. Before starting the tractor check the oil level using the dipstick **(1)**.

NOTE: *The dipstick is only accurate if the tractor is not running and sitting on a level surface.*

2. Remove the dipstick from the engine.
3. Wipe the dipstick with a lint-free cloth.
4. Insert the dipstick in the engine.
5. Remove the dipstick and read the oil level
6. The oil level should be between the **(L)** and **(H)**. See figure **3**
7. If the oil level is low, remove the filler cap **(2)** add oil through the filler hole.



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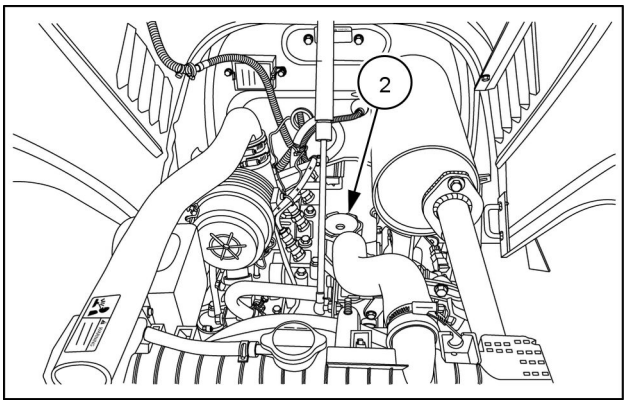
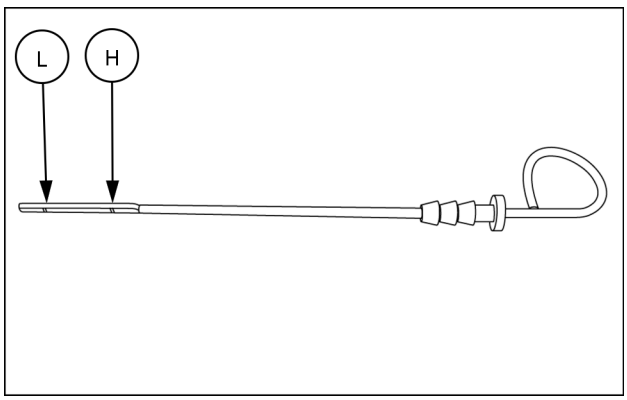


NHIL17CT01439AA 2

8. Add enough oil so that the level registers between the two marks on the dipstick. Do not overfill.



93100903 3

Engine cooling system - Check

Cooling system

⚠ WARNING

Hot liquid under pressure!
Scalding can result from fast removal of the radiator cap. Check and service the engine cooling system according to the maintenance instructions in this manual.
Failure to comply could result in death or serious injury.

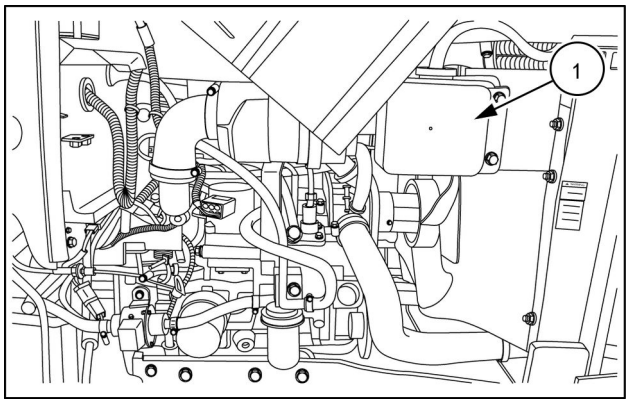
W0163A

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 ethylene glycol antifreeze and water.

Checking the coolant level

1. Visually inspect the coolant level in the coolant recovery reservoir **(1)** the coolant level should be between the "LOW" and "FULL" lines located on the side of the reservoir.
2. If the coolant level is not between the "LOW" and "FULL" lines, add coolant as necessary. The cooling system already contains antifreeze, add only antifreeze solution of the correct water/antifreeze mixture. Pure water will dilute the solution and weaken its protection.



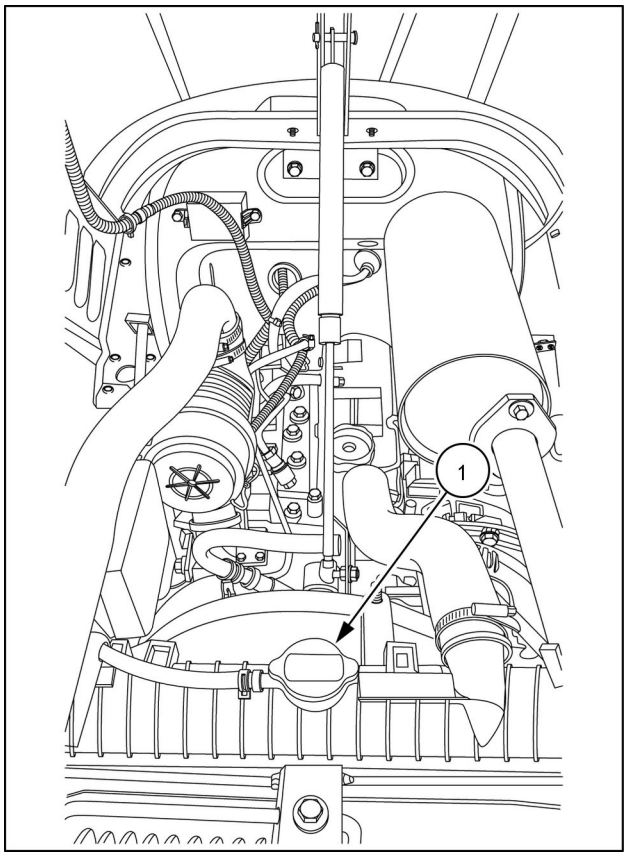
NHIL17CT01441AA 1

3. If there is not coolant in the coolant recovery reservoir remove the cap **(2)** from the radiator.

NOTE: *Only remove the radiator cap when the cooling system is cool.*

4. Add enough coolant to the radiator so the coolant level is even with the bottom of the filler neck.

5. Install the radiator cap.

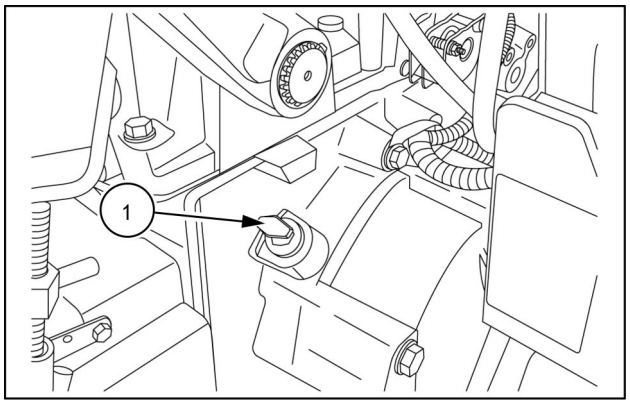


NHIL17CT01424BA 2

Transmission - Check

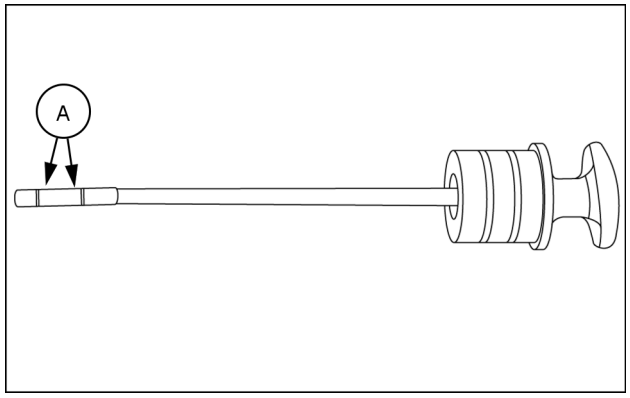
NOTE: *The transmission, rear axle and hydraulic system share a common sump..*

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



NHIL12CT00684AA 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

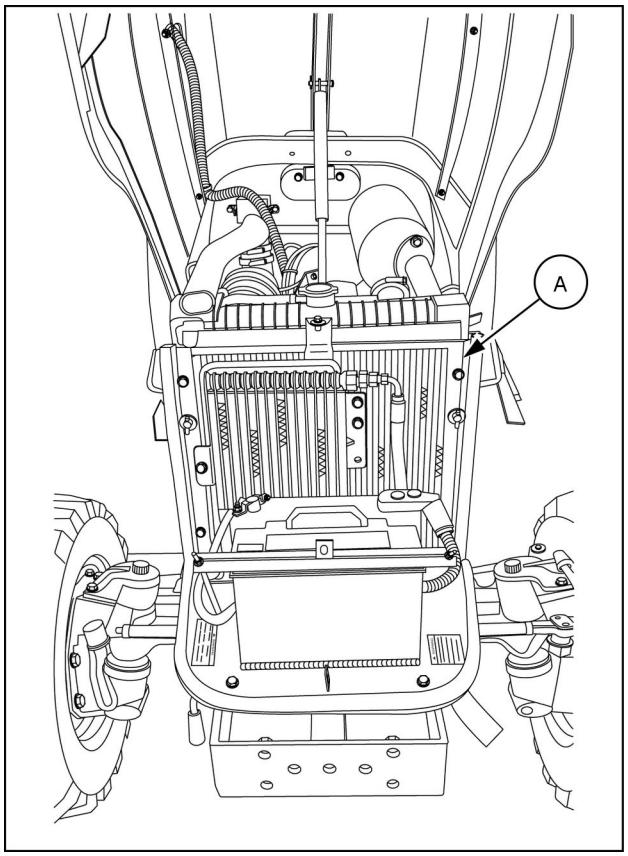
Avoid injury!
Shut off the engine, remove the key, and make sure all machine motion stops before you service the machine.
Failure to comply could result in death or serious injury.

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 tractor 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.



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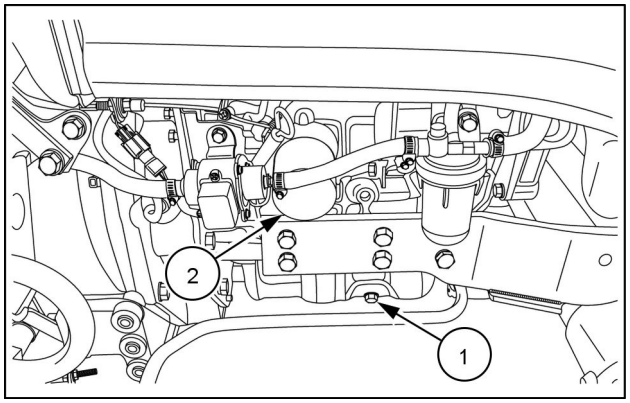
After first 50 hours

Engine lubrication system - Change fluid

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 once the oil has drained from the engine.
4. Place a container below the oil filter, **(2)** to catch the used oil and unscrew the oil filter.
5. Discard the used oil and oil filter.
6. Coat the gasket on the new oil filter with a film of clean oil.
7. Screw the filter in place 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.



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NOTE: *Oil Capacity, with filter* ***4.2 L (4.4 US qt)***

Recommended Oils

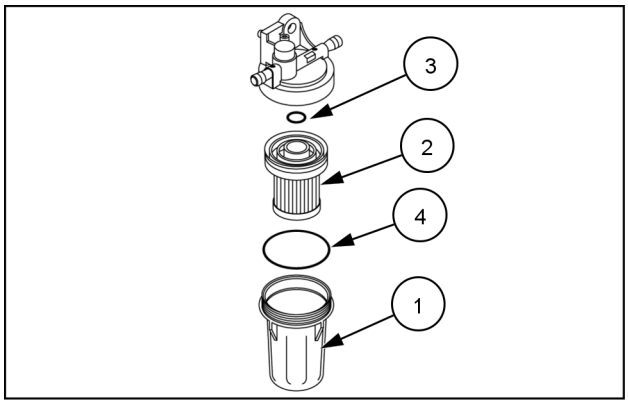
Ambient Temp (°F)	Recommended Oil
-35 – 50 °C (**-31 – 122 °F**)	**ENGINE OIL FULL SYNTHETIC SAE 0W-40**
-23.3 – 49 °C (**-10 – 120 °F**)	**SAE 10W-30 CI-4 ENGINE OIL**
-12 – 49 °C (**10 – 120 °F**)	**SAE 15W-40 CI-4/CH-4 ENGINE OIL**
Oil Specification API CF-4 or CG-4	

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

Fuel filters - Replace

NOTE: *There is not a fuel shutoff valve on the fuel tank. To stop the fuel flow from the fuel tank, remove the fuel inlet hose at the fuel filter base and plug it, or clamp the fuel hose to stop the fuel flow.*

1. Close off the fuel inlet hose to the fuel filter.
2. Remove the sediment bowl **(1)** by rotating the bowl from the base.
3. Open fuel inlet hose, to drain any remaining water from the tank.
4. Pull element with plastic base from fuel filter housing **(2)** and install a new element.
5. Inspect the O-rings **(3)** and **(4)** and replace if necessary.
6. Install and securely tighten the sediment bowl.
7. Open the fuel inlet hose, so fuel will flow to the filter.
8. Bleed the fuel system. See page **7-46**.

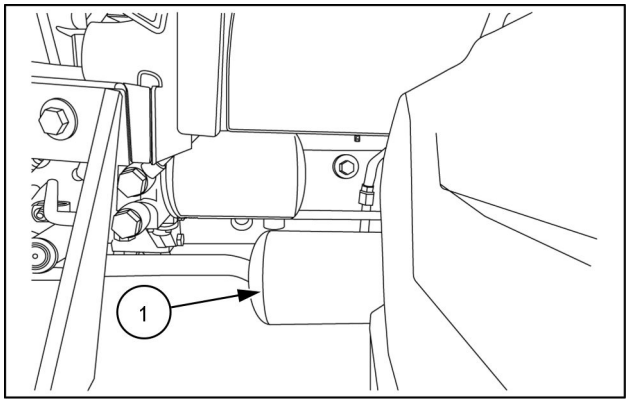


20100919A 1

Hydraulic oil suction filter - Replace

The hydraulic system uses a spin-on type oil filter, located on the left 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.



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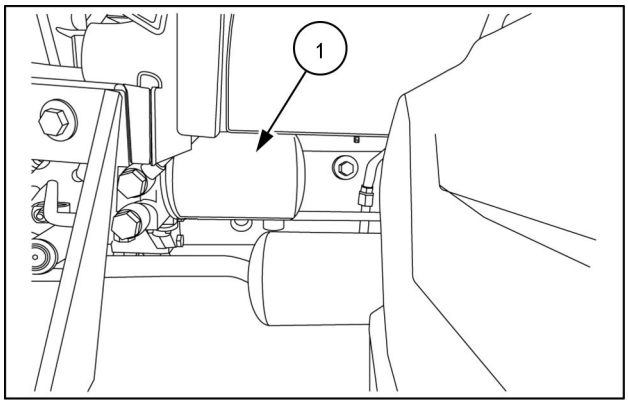
Hydrostatic Transmission (HST) oil filter - Replace

The hydrostatic system uses a spin-on type oil filter, located on the left 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.



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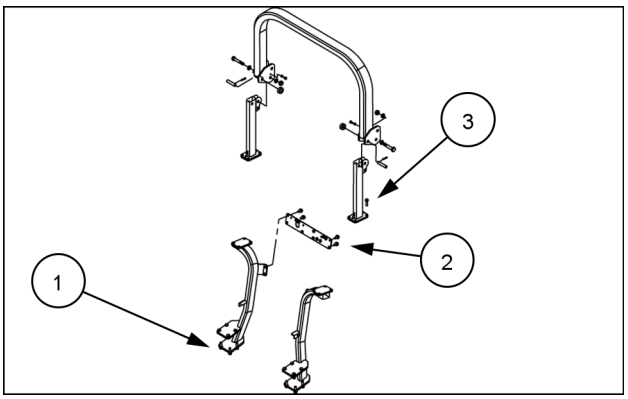
Roll Over Protective Structure (ROPS) frame - Check

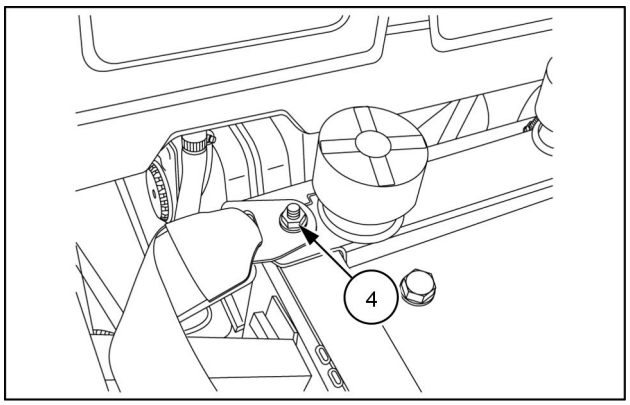
Maintenance and inspection

1. Check the torque of the ROPS bottom portion mounting bolts, **(1)**. Tighten the M14, bolts to the correct torque of **147 N·m** (**108 lb ft**) if necessary.
2. Check the torque of the Roll Over Protective Structure (ROPS) cross brace mounting bolts **(2)**. Tighten the M10 bolts to the correct torque of **60 N·m** (**41 lb ft**) if necessary.
3. Check the torque of the ROPS top portion mounting bolts **(3)**. Tighten the M12, bolts to the correct torque of **83 N·m** (**61 lb ft**) if necessary.



230100876 1

4. Inspect the operator's seat and the mounting parts for the seat belt. Tighten the bolts **(4)** to the correct torque of **28 N·m** (**21 lb ft**) if necessary and replace any parts that show wear or damage.



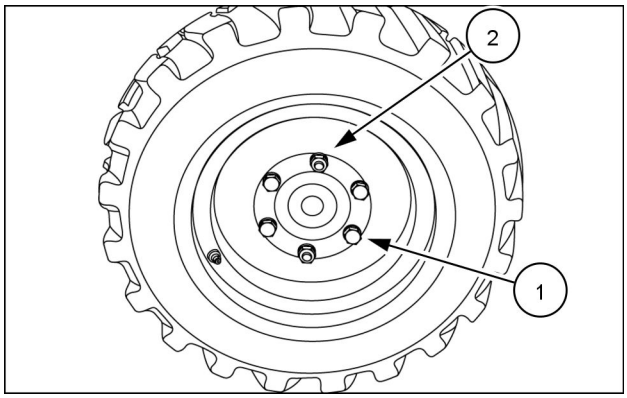
NHIL12CT00838AA 2

Wheel hardware - Check

Tighten the wheel bolts **(1)** and nuts **(2)** to the specified torque any time the wheel assembly is removed from the tractor or the wheel bolts are loosened.

Front Wheel Torque

- **176 – 196 N·m** (**130 – 145 lb ft**)



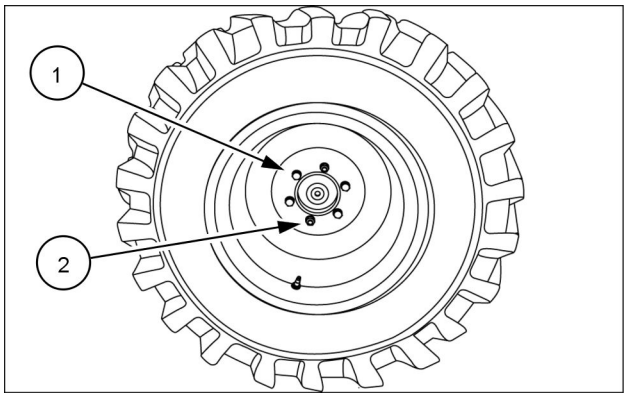
93100874 1

Rear Wheel Torque

- **176 – 196 N·m** (**130 – 145 lb ft**)

NOTICE: *Check and tighten wheel bolts* ***(1)*** *and nuts* ***(2)*** *to proper torque specifications after the following hours of use:*

- First 5 hours
- First 50 hours
- Every 250 hours

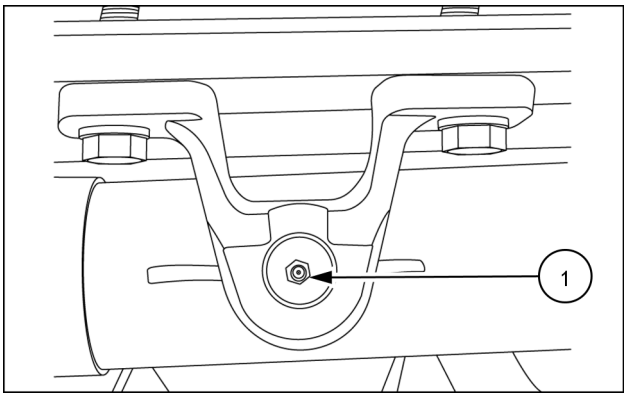


93100875A 2

Every 50 hours

Machine fittings - Grease

1. To lubricate these points:
    1. Wipe away all old grease and dirt from the lubrication fittings to prevent dirt or foreign material from entering as new grease is applied.
    2. Use a grease gun to pump in the new grease. Apply pressure until clean grease oozes from each lubrication point.
    3. Wipe away any excess grease.
2. Front Axle Pivot **(1)**



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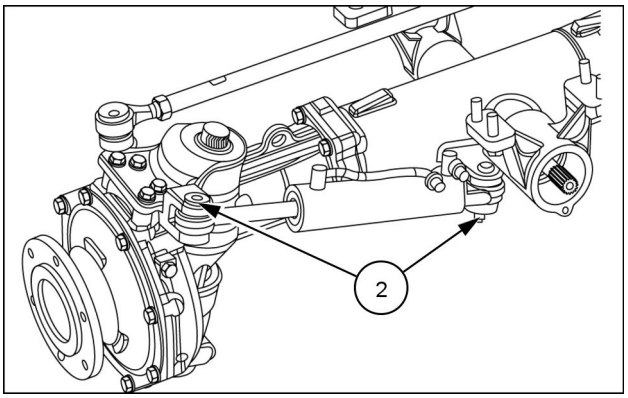
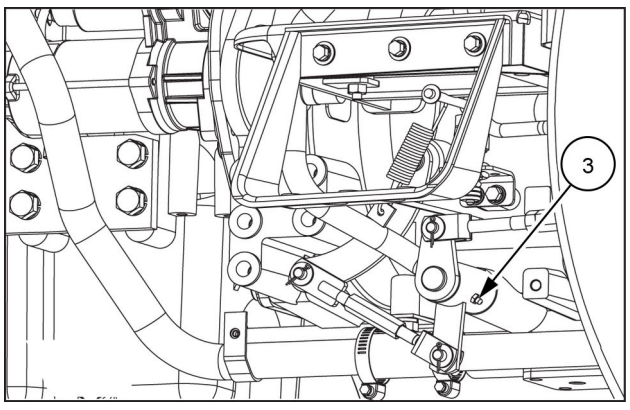
3. Power Steering Cylinder **(2)**



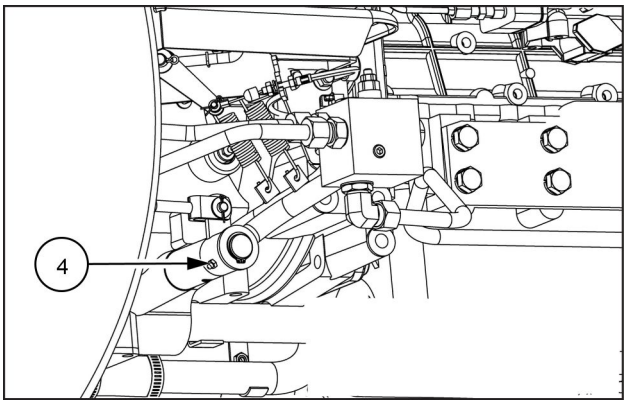
93100864 2

4. Clutch Pedal Shaft **(3)** (Mechanical transmission)



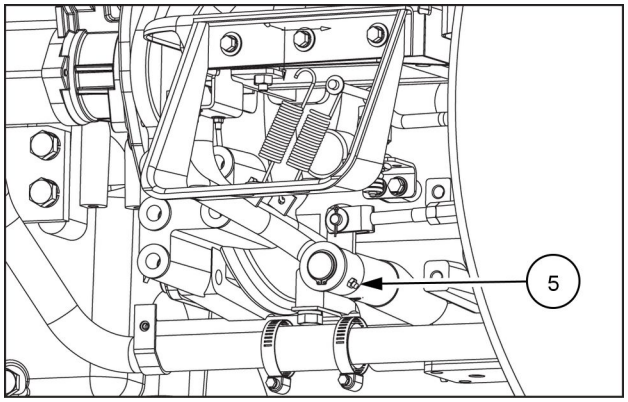
NHIL13CT00158AA 3

5. Brake pedals shaft **(4)** (Mechanical transmission)



NHIL13CT00157AA 4

6. Brake pedals shaft **(5)** (Hydrostatic transmission)



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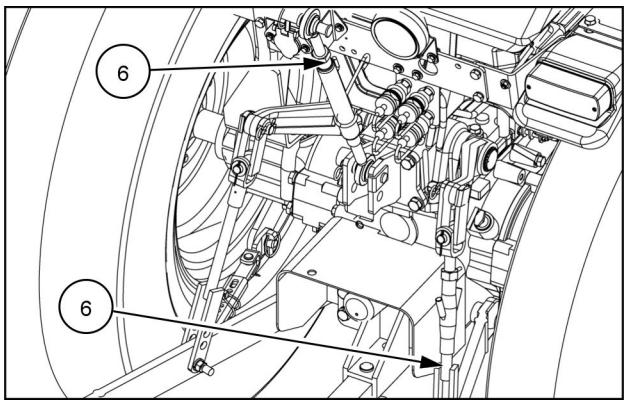
7. 3-Point Linkage **(6)** oil threads

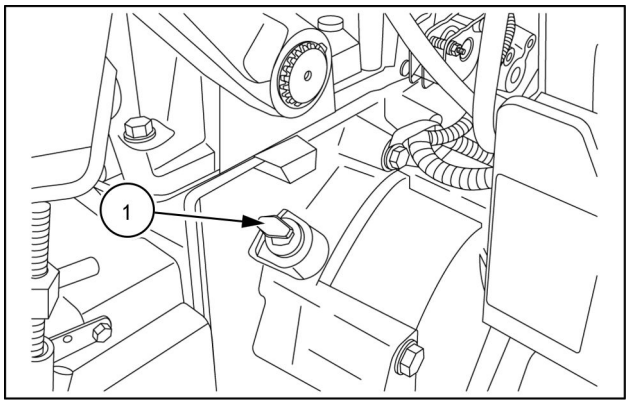


NHIL12CT00821AA 6

Transmission - Check

NOTE: *The transmission, rear axle and hydraulic system share a common sump..*

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



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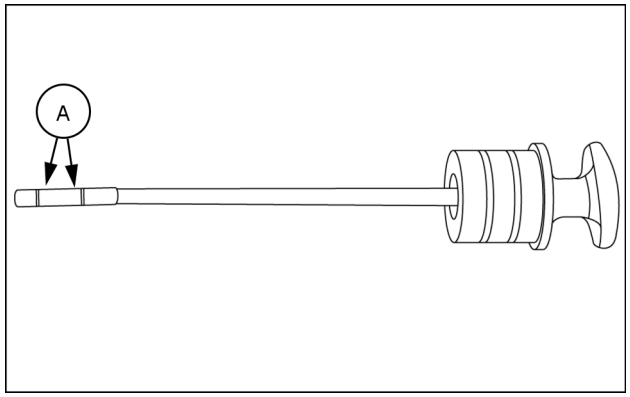
2. The oil is at the correct level when it reads between the two marks **(A)** on the dipstick. If the level is low, add **MULTIGRADE 134™ (SAE 10W-30)** hydraulic oil through the dipstick hole. Do not fill above the dipstick full mark.
3. Reinstall the dipstick.



93100904 2

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 **6-1** for tire and tractor ballasting information.

Tire inflation pressures

Front tire inflation pressures				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at Minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	7-14, 4PR, R1	**41 – 248 kPa** (**6 – 36 psi**)	**160 kg** (**353 lb**)	**449 kg** (**990 lb**)
Turf (R3)	25 x 8.50-14, 4PR, R3	**34 – 152 kPa** (**5 – 22 psi**)	**251 kg** (**553 lb**)	**599 kg** (**1321 lb**)
Titan Industrial (R4)	25 x 8.50-14, 6PR, R4	**207 – 345 kPa** (**30 – 50 psi**)	**965 kg @ 10.0 km/h** (**5.0 mph**)	**965 kg @ 10.0 km/h** (**5.0 mph**)

Rear tire inflation pressures				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	11.2-24, 4PR, R1	**83 – 124 kPa** (**12 – 18 psi**)	**454 kg** (**1001 lb**)	**1152 kg** (**2540 lb**)
Turf (R3)	41 x 14.00-20, 4PR, R3	**69 – 172 kPa** (**10 – 25 psi**)	**825 kg** (**1819 lb**)	**1397 kg** (**3080 lb**)
Titan Industrial (R4)	43 x16-20, 4PR, R4	**138 kPa** (**20 psi**)	**2059.0 kg** (**4539.3 lb**)	**2059.0 kg** (**4539.3 lb**)

NOTE: *Do not under inflate or overinflate tires. Do not exceed maximum inflation pressure listed.*

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.
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W0109A

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- 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.
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Tire inflation pressures

Front tire inflation pressures				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at Minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	7-14, 4PR, R1	**41 – 248 kPa (6 – 36 psi)**	**160 kg (353 lb)**	**449 kg (990 lb)**
Turf (R3)	25 x 8.50-14, 4PR, R3	**34 – 152 kPa (5 – 22 psi)**	**251 kg (553 lb)**	**599 kg (1321 lb)**
Titan Industrial (R4)	25 x 8.50-14, 6PR, R4	**207 – 345 kPa (30 – 50 psi)**	**965 kg @ 10.0 km/h (5.0 mph)**	**965 kg @ 10.0 km/h (5.0 mph)**
Tiron Industrial (R4)	25 x 8.50-14, 6PR, R4	**350.0 kPa (50.0 psi)**	**965 kg @ 20.0 km/h (10.0 mph)**	**965 kg @ 20.0 km/h (10.0 mph)**

Rear tire inflation pressures				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	11.2-24, 4PR, R1	**83 – 124 kPa (12 – 18 psi)**	**454 kg (1001 lb)**	**1152 kg (2540 lb)**
Turf (R3)	41 x 14.00-20, 4PR, R3	**69 – 172 kPa (10 – 25 psi)**	**825 kg (1819 lb)**	**1397 kg (3080 lb)**
Titan Industrial (R4)	43 x16-20, 4PR, R4	**138 kPa (20 psi)**	**2059.0 kg (4539.3 lb)**	**2059.0 kg (4539.3 lb)**
Tiron Industrial (R4)	43 x16-20, 6PR, R4	**210 kPa (30 psi)**	**1687.0 kg (3720.0 lb)**	**1687.0 kg (3720 lb)**

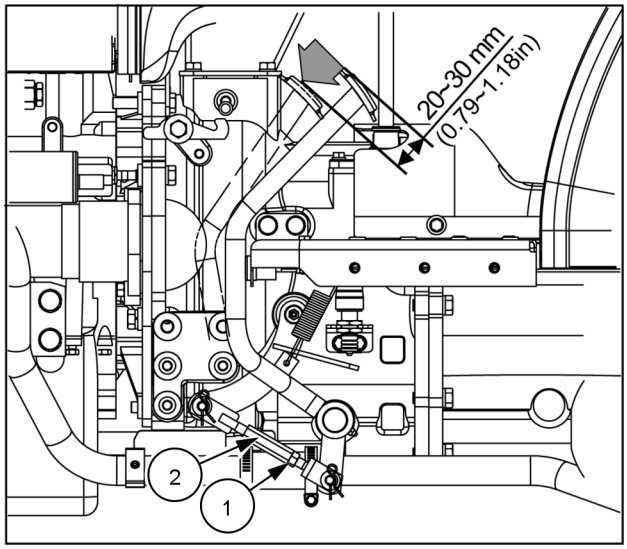
NOTE: *Do not under inflate or overinflate tires. Do not exceed maximum inflation pressure listed.*

Clutch Pedal Free Play - Check

Clutch pedal free travel should be maintained at A = **20 – 30 mm** (**0.79 – 1.18 in**).
To adjust the clutch pedal:

1. Loosen lock nut **(1)** and rotate adjuster **(2)**
2. Tightening the adjuster will decrease the free play travel and loosening the adjuster will increase the free play travel.
3. Tighten the lock nut when the correct free play travel is obtained
4. Check clutch for disengagement when clutch pedal is fully depressed.

NOTE: *Contact your NEW HOLLAND dealer with any questions you have concerning this procedure.*



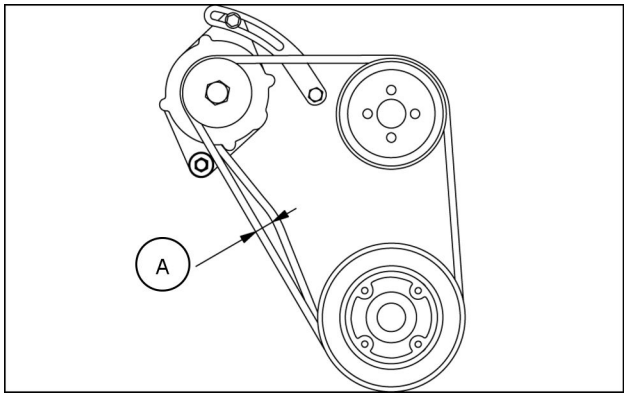
NHIL12CT00783AA 1

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 **2500 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. A belt-driven fan located at the front of the engine draws air through the fins of the radiator to lower the temperature of the radiator coolant.
2. When **10 kg** (**22 lb**) of pressure is applied midway **(A)** between the belt pulleys, a correctly tightened belt will deflect **10 – 12 mm** (**0.4 – 0.5 in**).
3. If the fan belt is slipping, fan efficiency is lowered, resulting in the engine running too hot. If the belt is too tight, the life of the alternator bearing will be shortened. If the fan belt shows signs of cracking or fraying, install a new one.
4. If the belt requires adjustment see page **7-56** for this procedure.



93100870 1

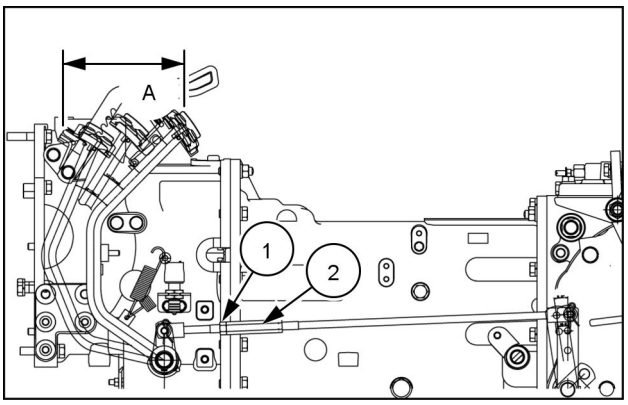
Mechanical service brakes - Check

Whenever brake pedal travel becomes excessive, or if the travel of one pedal is unequal to that of the other, each pedal should be adjusted.

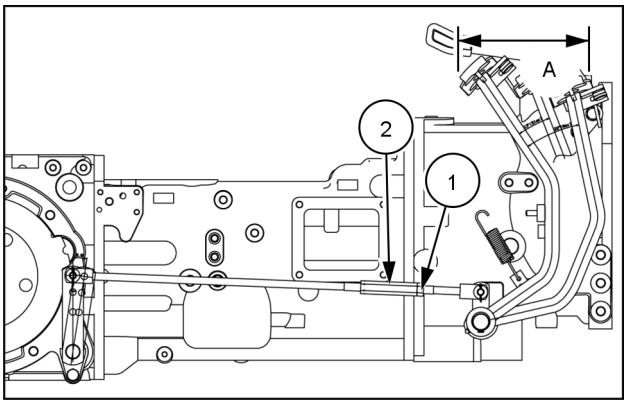
1. Loosen the locknut **(1)** and rotate the brake rod **(2)** until there is **(A)** = **50 – 60 mm** (**1.97 – 2.36 in**) of pedal free play. Lengthening the rod increases free play. Shortening the rod decreases free play.
2. Test drive the tractor to make sure the braking action of both rear wheels is equal. Readjust as necessary.

NOTE: *Note Hydrostatic transmission tractors are shown in figure **1** and mechanical transmission tractors are shown in figure **2**.*

NOTE: *Contact your NEW HOLLAND dealer with any questions you have concerning this procedure.*



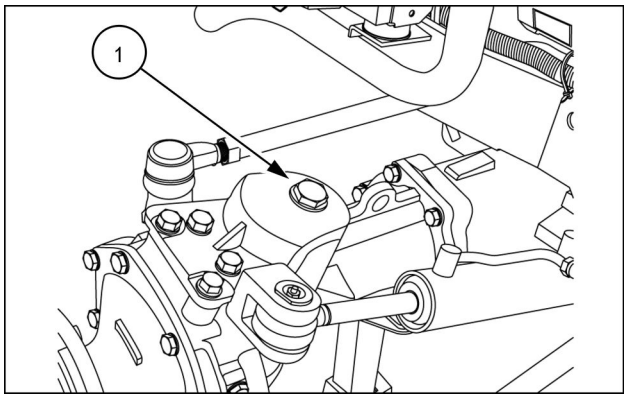
NHAC13CT00055AA 1



NHAC13CT00139AA 2

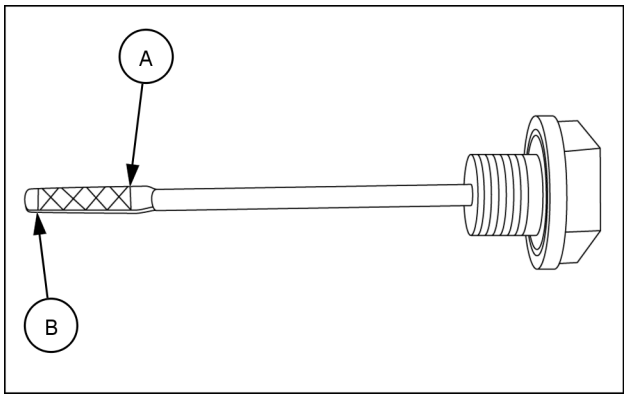
Front axle differential fluid level - Check

1. With the tractor standing level and the engine off, check the front axle oil level using the dipstick **(1)**. located on the left side of axle.



93100889 1

2. The oil is at the correct level when it reads between the upper **(A)** and the lower **(B)** marks of the dipstick.
3. If capacity is low, add **HYPOID GEAR OIL EP SAE 80W-90** oil through the combined dipstick/filler plug. Do not fill beyond the dipstick full mark, or the front axle and differential housing will be overfilled.
4. Install the dipstick/filler plug.



93100902 2

Air cleaner - Outer element - Cleaning

1. Pull the outer element **(1)** 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.
2. Clean the outer 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).

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.*

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

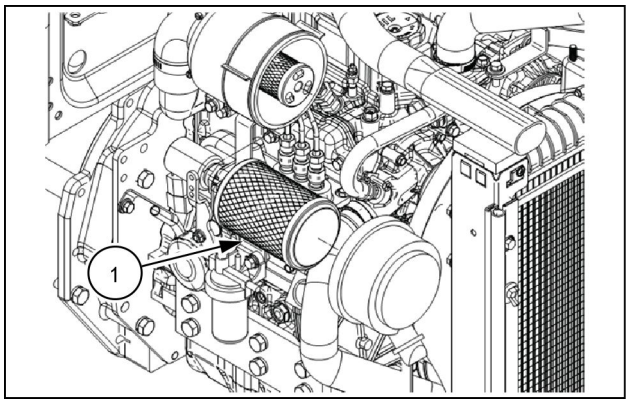
NOTE: *Place a light inside the element to check for paper leaks or for bonding of the paper to the end plate. If any leaks are found, replace the element.*

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

5. Place the end cap onto the canister body, push in on end cap, and rotate clockwise. Make sure the end cap is locked in place and not loose.

NOTICE: *Never tap the 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 elements and the canister may cause major engine damage.*

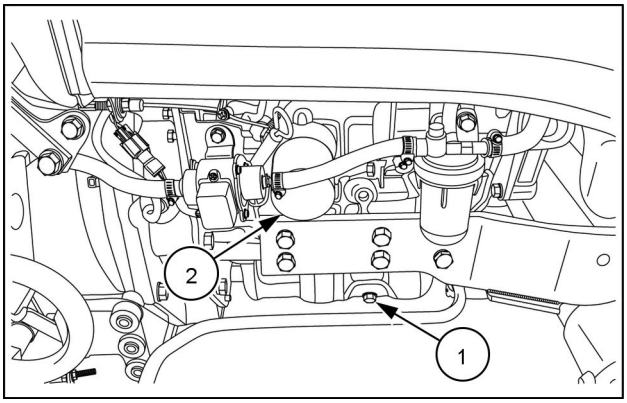


NHIL17CT01804FA 1

Every 250 hours

Engine lubrication system - Change fluid

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 once the oil has drained from the engine.
4. Place a container below the oil filter, **(2)** to catch the used oil and unscrew the oil filter.
5. Discard the used oil and oil filter.
6. Coat the gasket on the new oil filter with a film of clean oil.
7. Screw the filter in place 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.



NHIL17CT01436AA 1

NOTE: *Oil Capacity, with filter* ***4.2 L*** *(****4.4 US qt****)*

Recommended Oils

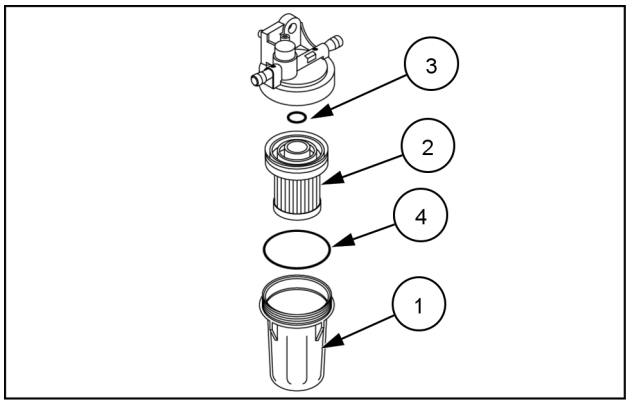
Ambient Temp (°F)	Recommended Oil
-35 – 50 °C (**-31 – 122 °F**)	**ENGINE OIL FULL SYNTHETIC SAE 0W-40**
-23.3 – 49 °C (**-10 – 120 °F**)	**SAE 10W-30 CI-4 ENGINE OIL**
-12 – 49 °C (**10 – 120 °F**)	**SAE 15W-40 CI-4/CH-4 ENGINE OIL**
Oil Specification API CF-4 or CG-4	

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

Fuel filters - Replace

NOTE: *There is not a fuel shutoff valve on the fuel tank. To stop the fuel flow from the fuel tank, remove the fuel inlet hose at the fuel filter base and plug it, or clamp the fuel hose to stop the fuel flow.*

1. Close off the fuel inlet hose to the fuel filter.
2. Remove the sediment bowl **(1)** by rotating the bowl from the base.
3. Open fuel inlet hose, to drain any remaining water from the tank.
4. Pull element with plastic base from fuel filter housing **(2)** and install a new element.
5. Inspect the O-rings **(3)** and **(4)** and replace if necessary.
6. Install and securely tighten the sediment bowl.
7. Open the fuel inlet hose, so fuel will flow to the filter.
8. Bleed the fuel system. See page **7-46**.

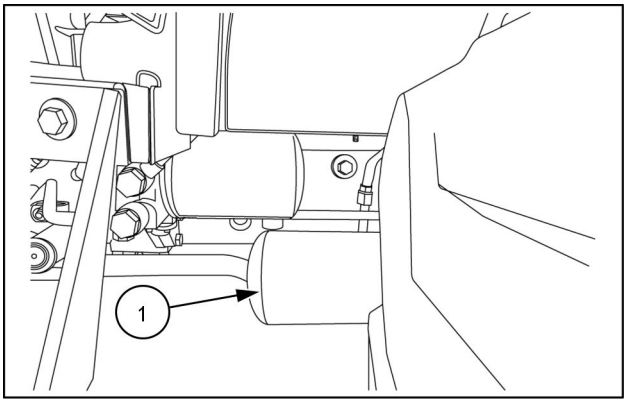


20100919A 1

Oil filter - Replace

The hydraulic system uses a spin-on type oil filter, located on the left 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.

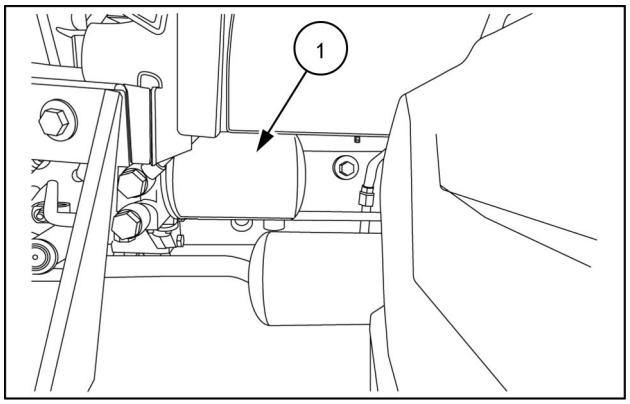


NHIL12CT00686AA 1

Oil filter - Replace

The hydrostatic system uses a spin-on type oil filter, located on the left 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.



NHIL12CT00686AA 1

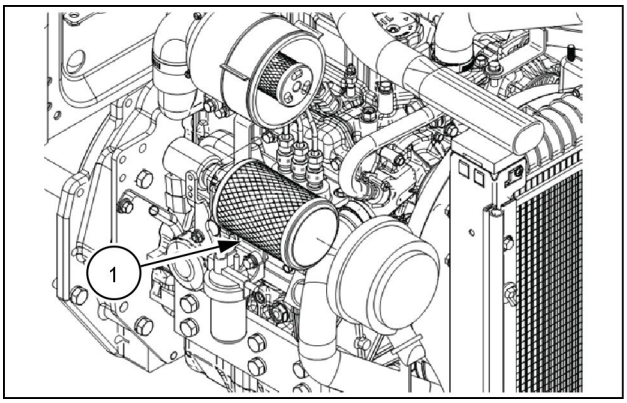
Air cleaner - Outer element - Replace

1. Pull the outer element **(1)** 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.
2. Install the new outer element by inserting it into the canister and pushing on the end of the element until it is seated against the canister.

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

3. Place the end cap onto the canister body, push in on end cap, and rotate clockwise. Make sure the end cap is locked in place and not loose.

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



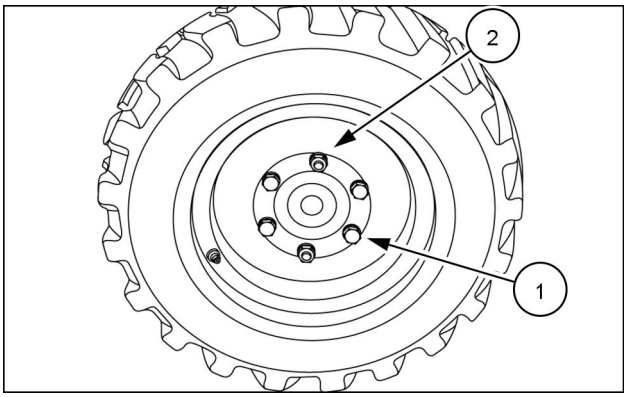
NHIL17CT01804FA 1

Front wheels - Tighten

Tighten the wheel bolts **(1)** and nuts **(2)** to the specified torque any time the wheel assembly is removed from the tractor or the wheel bolts are loosened.

Front Wheel Torque

- **176 – 196 N·m** (**130 – 145 lb ft**)



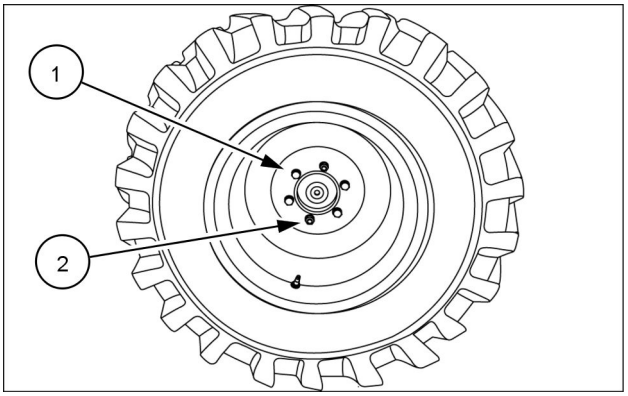
93100874 1

Rear Wheel Torque

- **176 – 196 N·m** (**130 – 145 lb ft**)

NOTICE: *Check and tighten wheel bolts* ***(1)*** *and nuts* ***(2)*** *to proper torque specifications after the following hours of use:*

- First 5 hours
- First 50 hours
- Every 250 hours

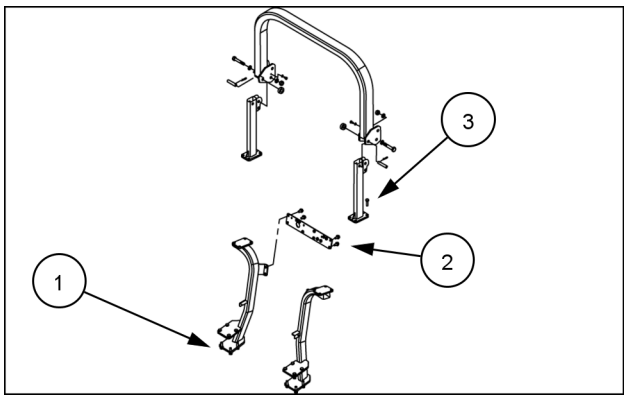


93100875A 2

Roll Over Protective Structure (ROPS) frame - Check

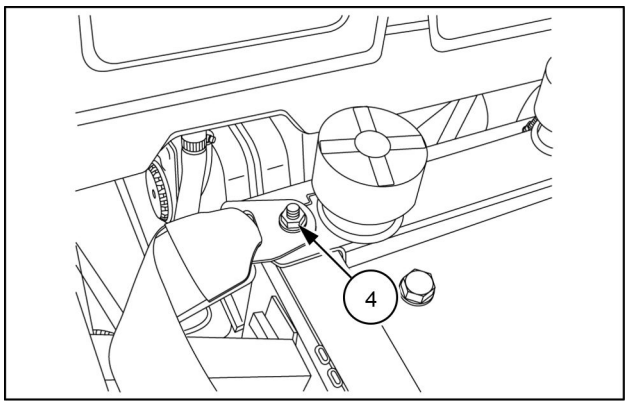
Maintenance and inspection

1. Check the torque of the ROPS bottom portion mounting bolts, **(1)**. Tighten the M14, bolts to the correct torque of **147 N·m** (**108 lb ft**) if necessary.
2. Check the torque of the Roll Over Protective Structure (ROPS) cross brace mounting bolts **(2)**. Tighten the M10 bolts to the correct torque of **60 N·m** (**41 lb ft**) if necessary.
3. Check the torque of the ROPS top portion mounting bolts **(3)**. Tighten the M12, bolts to the correct torque of **83 N·m** (**61 lb ft**) if necessary.



230100876 1

4. Inspect the operator's seat and the mounting parts for the seat belt. Tighten the bolts **(4)** to the correct torque of **28 N·m** (**21 lb ft**) if necessary and replace any parts that show wear or damage.

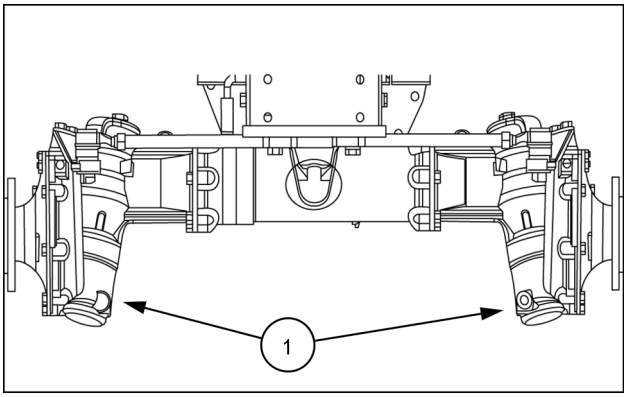


NHIL12CT00838AA 2

Every 500 hours

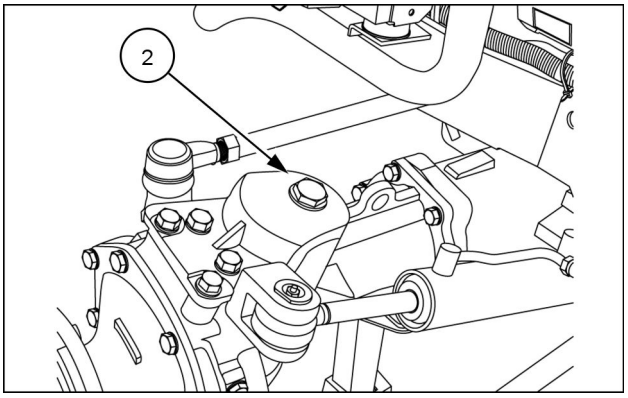
Front axle and differential fluid - Change

1. Place a suitable container beneath the oil plugs. With the oil at normal operating temperature, drain the oil by removing the drain plugs **(1)**.
2. After the oil has drained, install the drain plugs and discard the used oil.



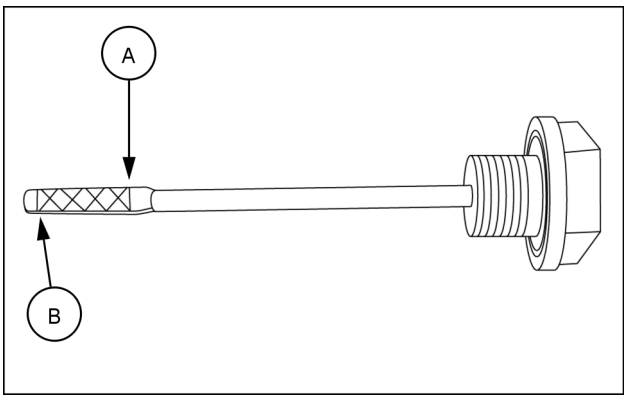
93100868 1

3. Remove the dipstick/filler plug **(2)**.



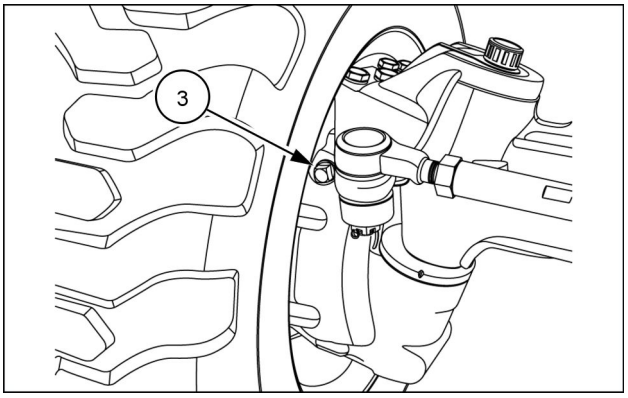
93100889 2

4. Fill the axle with **HYPOID GEAR OIL EP SAE 80W-90** oil until the oil level is between the upper mark **(A)**, and the lower mark **(B)** of the dipstick. Reinstall the dipstick/filler plug.
5. Raise the front axle until both wheels are off the ground.
6. Tilt axle until stops are contacted.



93100902 3

7. Slowly and momentarily remove plug **(3)** from the lower side final drive housing. This will allow any air that is trapped in the lower housing to escape, so that the correct oil level can be achieved. Reinstall plug and tilt axle the opposite direction. Repeat this procedure for the other final drive housing.
8. Lower axle back to the ground.
9. Check the oil level at the dipstick, and add oil if needed until the oil level is between the upper and lower marks of dipstick.
10. After correct oil level is achieved, tighten all of the drain plugs.

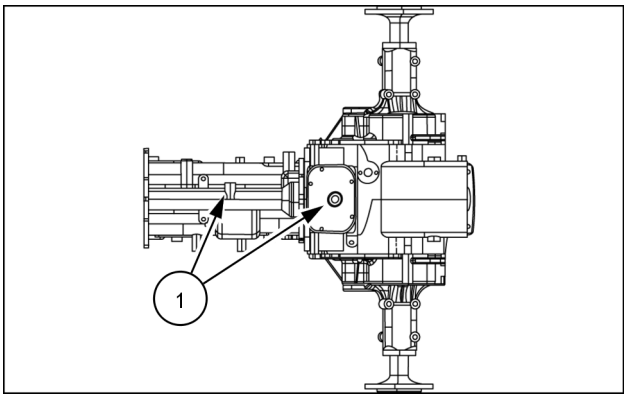


93110428 4

NOTE: *Approximate fluid capacity for the front axle housing is* ***5.5 l*** *(****5.8 US qt****).*

Transmission - Change fluid

1. Place a suitable container beneath the transmission plugs **(1)** (without Mid PTO) and **(2)** (With Mid PTO) to catch the used oil.
2. With the oil at normal operating temperature, drain the system by removing the transmission drain plugs.
3. Reinstall the plugs once the oil has drained.
4. Discard the used oil.



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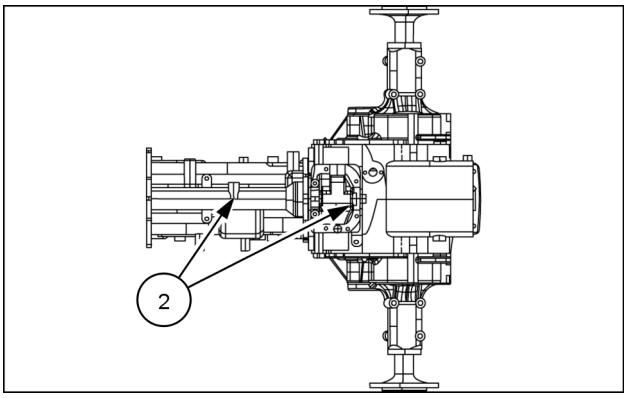


93100872 2

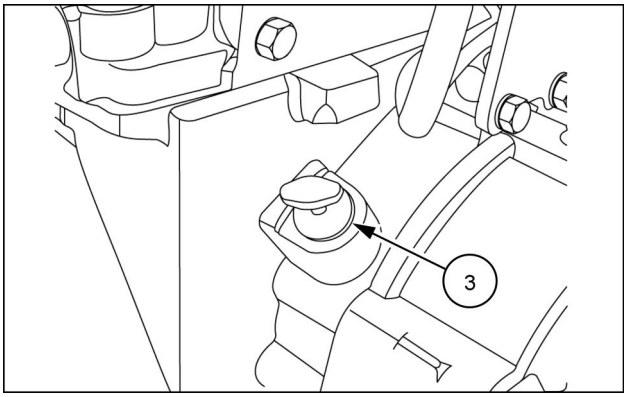
5. Remove the dipstick **(3)** and fill with **MULTIGRADE 134™ (SAE 10W-30)** hydraulic oil. The transmission is filled to the correct level when the oil registers between the two marks on the dipstick.

   Capacity:

   - Mechanical transmission ..... **32.0 L** (**8.5 US gal**)
   - Hydrostatic transmission ..... **32.0 L** (**8.5 US gal**)

6. Reinstall 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*



93099360 3

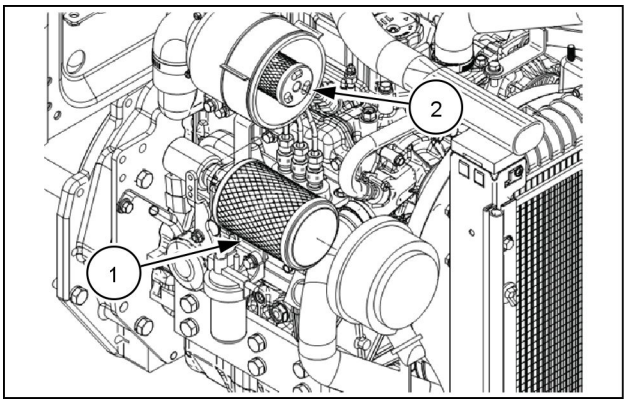
Air cleaner - Inner element - Replace

1. Pull the outer element **(1)** 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.
2. Pull the inner element **(2)** from the canister
3. Install the new inner element by inserting it into the canister and pushing on the end of the element until it is seated against the canister.
4. Install the outer element by inserting it into the canister and pushing on the end of the element until it is seated against the canister.

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

5. Place the end cap onto the canister body, push in on end cap, and rotate clockwise. Make sure the end cap is locked in place and not loose.

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



NHIL17CT01804FA 1

Valves - Check

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

Every two years

Engine cooling system - Drain fluid

Draining and flushing the cooling system

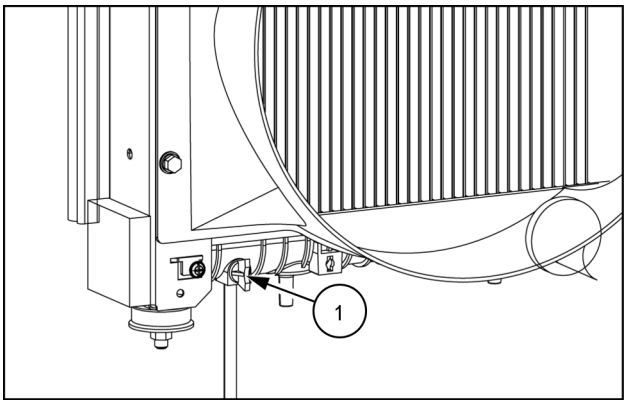
⚠ WARNING

Burn hazard!
Always remove the recovery tank cap BEFORE you remove the filler cap. Never remove either cap while the engine is running or the coolant is hot. Stop the engine and let the system cool. Using a thick cloth, loosen the cap slowly and allow the pressure to escape.
Failure to comply could result in death or serious injury.

W0361A

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 left-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. Close the radiator drain valve.
7. Remove the engine block coolant drain plug **(2)**. This plug is located to the right-hand side of the engine near the clutch housing.
8. Allow all the water to drain from the engine block.
9. Install the engine block coolant drain plug.
10. Slowly refill the system with a 50/50 solution **IAT COOLANT 11 – CLASSIC** and water. Fill until the coolant level is even with the bottom of the filler neck. Do not fill beyond this level.
11. Clean the radiator cap and reinstall the cap.
12. Run the engine until normal operating temperature is reached, then stop the engine.
13. Recheck the coolant level when the engine is cold and add additional coolant as necessary.



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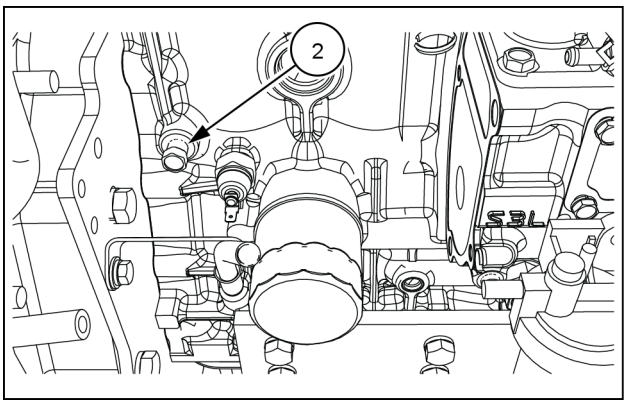


NHIL17CT01805AA 2

NOTICE: *Never run the engine when the cooling system is empty. Do not add cold water or cold antifreeze solution if the engine is hot.*

NOTE: EXTENDED LIFE OAT COOLANT/ANTIFREEZE *is an approved optional long life coolant. See page* ***7-7*** *for use of optional coolant.*

As required

Fuel injection system - Bleed

⚠ WARNING

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

W0178A

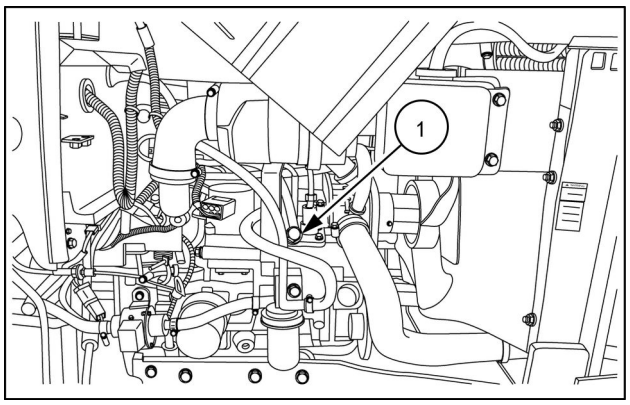
Bleed the fuel system if:

- It 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.
- The injection pump has been removed and reinstalled.

To bleed the fuel system:

1. Make sure there is adequate fuel in the fuel tank.
2. Loosen the air-bleed bolt **(1)** from the fuel injection pump.
3. Turn the key to the “ON” position.
4. Tighten the air-bleed bolt once the fuel flowing from the air-bleed bolt is free of air bubbles.
5. Torque the air-bleed bolt to **8.0 N·m** (**70.8 lb in**).
6. Advance the hand throttle lever to the half-throttle position.
7. Start the tractor and check for fuel leaks.
8. If the tractor fails to start or starts then shuts off perform the bleed procedure again..

   NOTE: *Please contact your NEW HOLLAND dealer if you have any problems or questions concerning this procedure.*



NHIL17CT01441AA 1

Roll Over Protective Structure (ROPS) frame - Replace - Possible damage

⚠ 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

⚠ 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

⚠ WARNING

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 could result in death or serious injury.

W0462A

If the unit has rolled over or the ROPS has been in some other type of accident (such as hitting an overhead object during transport), the ROPS must be replaced to retain the best protection.

Following an accident, check the ROPS, the operator's seat, and the seat belt and seat belt mountings for possible damage. Before operating the machine, replace all damaged parts.

NOTICE: *Do not attempt to weld or straighten the ROPS.*

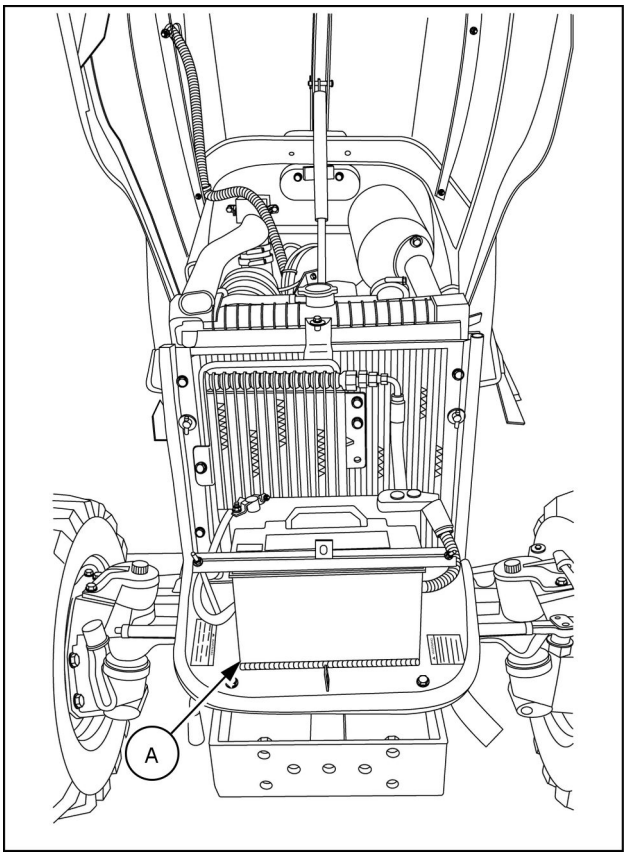
Battery - Test

⚠ WARNING

Explosion hazard!
If battery electrolyte is frozen, attempting to charge the battery or jump-start the engine can cause the battery to explode. Always keep batteries at full charge to prevent frozen battery electrolyte. Never charge a frozen battery.
Failure to comply could result in death or serious injury.

W0203A

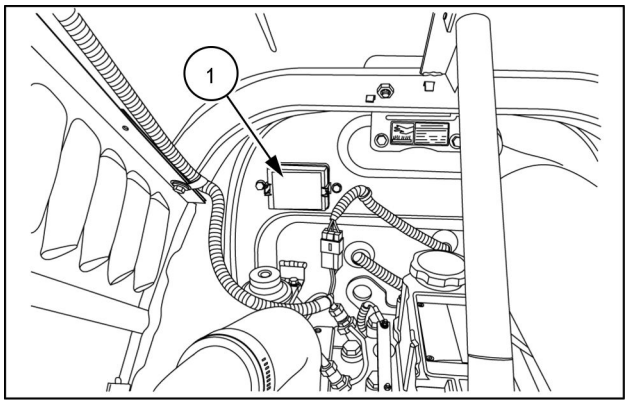
The tractor is equipped with a BCI group 34, **12 V** battery **(A)** with a minimum cold cranking ability of **660 A** at **-18 °C** (**0 °F**).
Make sure the battery connections are tight and free of corrosion. A solution of baking soda and water may be used to wash the outside surface and terminals 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.



NHIL17CT01425BA 1

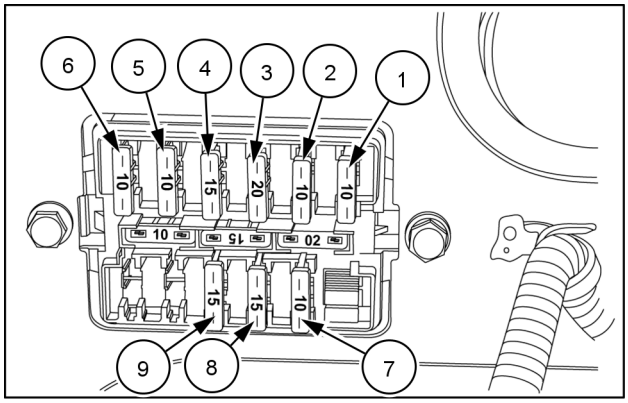
Fuses - Check

The fuse block **(1)** is located on the right-hand side of the engine firewall. Always replace blown fuses with the size specified for that circuit.



NHIL12CT00676AA 1

From right to left the fuse block contains the following fuses:

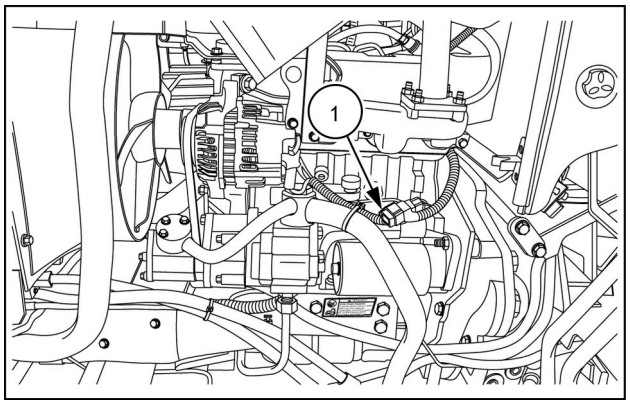


NHIL12CT00685AA 2

Fuse #	Fuse Size	Circuit Protected
1	**10 A**	Engine, Alternator
2	**10 A**	Instrument panel, Glow plugs relay, Horn, Brake lights
3	**20 A**	Head lights relay
4	**15 A**	Rear work light (optional)
5	**10 A**	PTO
6	**10 A**	Safety controller
Bottom Row		
7	**10 A**	Spare
8	**15 A**	Turn signals
9	**15 A**	Hazard lights, Headlights switch, Position lights

Main fuse - Check

The main fuse **(1)** is a **50 A** fuse and it is located on the left-hand side of the engine and positioned above the stater. This fuse protects the tractor's entire electrical system.



NHIL17CT01442AA 1

To replace the main fuse:

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

NOTICE: *Always replace this fuse with a* ***50 A*** *fuse; DO NOT increase amperage rating.*

Headlight - Replace

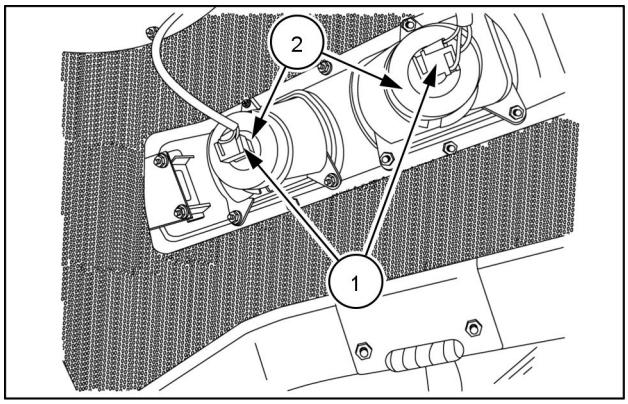
If head lamps, fail to operate, the bulb must be replaced. To change the bulb:

1. Open the tractor hood.
2. Disconnect wire harness connector **(1)** from the headlight bulb.
3. Remove rubber boot **(2)** to reveal headlight retainer.
4. Release the two tabs that retain the bulb to the housing.
5. Remove the bulb from the housing. .
6. Place a new bulb in the housing, then reinstall the retainer in the housing.

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 dual* ***55/60 W*** *filament halogen : (H4 U 37R).*

7. Reinstall rubber boot and wire harness connector.

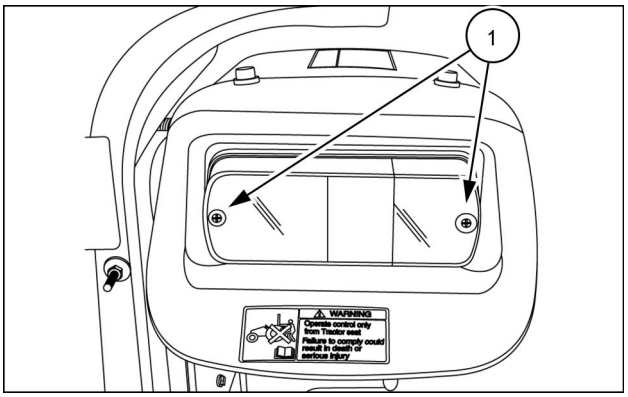


NHIL12CT00834AA 1

Tail light and brake light bulb - Replace

To replace a taillight bulb:

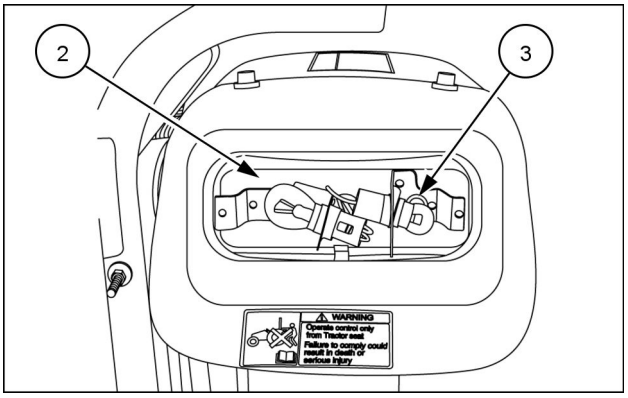
1. Remove the two screws **(1)** retaining the taillight lens and remove the lens.



93100887 1

2. Push in on the brake/tail light bulb **(2)** or turn signal bulb **(3)** and rotate counter-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 brake/tail bulb with a P21/5 watt bulb. and turn signal bulb with a R10 watt bulb*

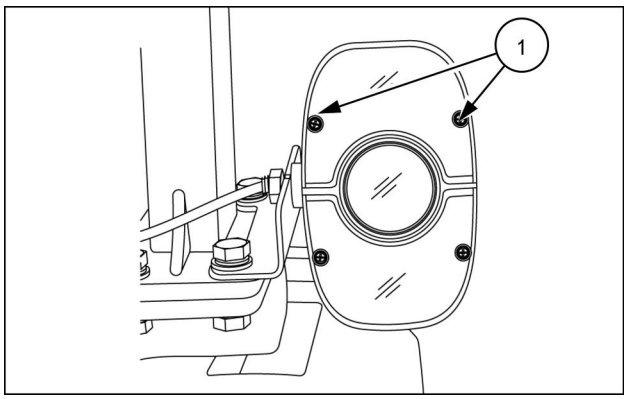


93100888 2

Turn signal and hazard bulb - Replace

To replace the top flasher light bulb:

1. Remove the two screws **(1)** retaining the top flasher light lenses and remove the lenses.

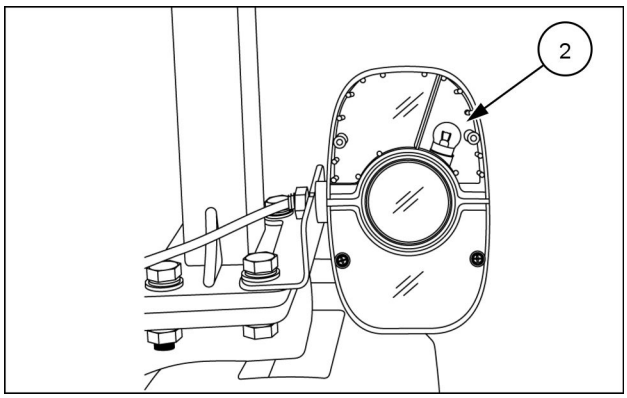


93100885 1

2. Push in on the bulb **(2)** and rotate bulb counter-clockwise in socket to remove.

NOTE: *Replace with a P21 watt bulb.*

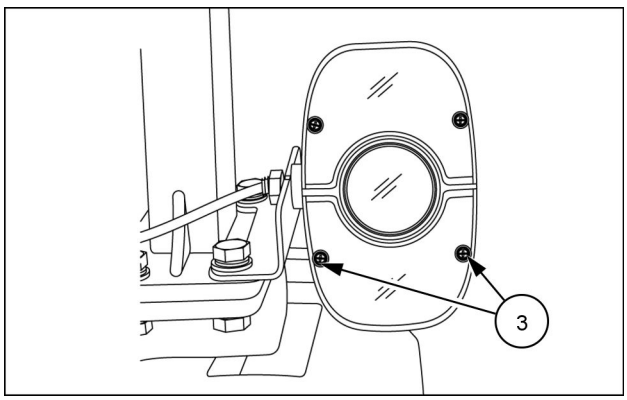
3. Insert the new bulb into the socket and turn it clockwise until the bulb locks into place.
4. Install lenses and retaining screws.



93100894 2

To replace the bottom flasher light bulb:

5. Remove the two screws **(3)** retaining the top flasher light lenses and remove the lenses.

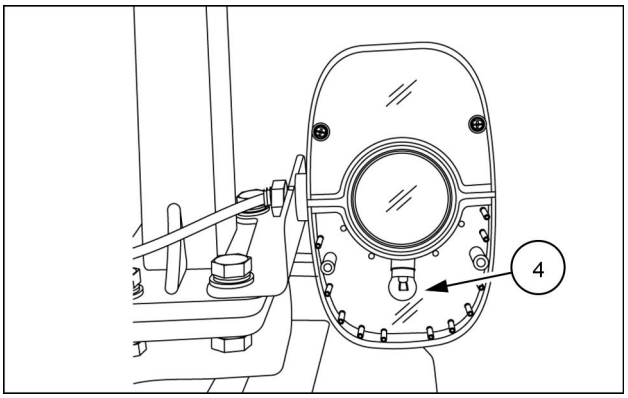


93100885 3

6. Push in on the bulb **(4)** and rotate bulb counter-clockwise in socket to remove.

NOTE: *Replace with a R10 watt bulb.*

7. Insert the new bulb into the socket and turn it clockwise until the bulb locks into place.
8. Install lenses and retaining screws.

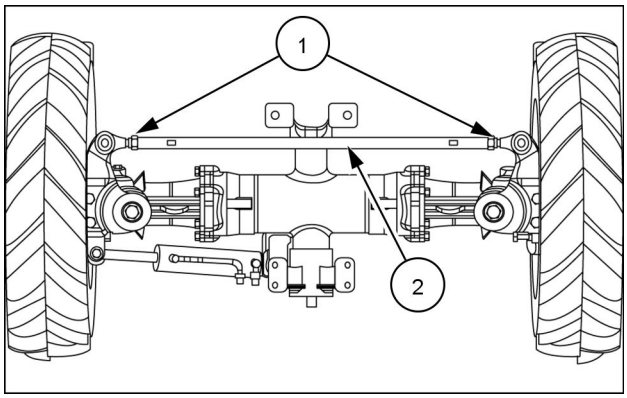


93100886 4

Front wheels toe-in - Check

If toe-in is not correct, adjust as follows:

1. Loosen the tie rod locknuts **(1)**.
2. Adjust the tie rod tube assembly **(2)** as required to give **0 – 5 mm** (**0 – 0.2 in**) toe-in.
3. After the correct toe-in is obtained, tighten the tie rod locknuts.



93100867 1

Belt - Adjust

To adjust fan belt tension:

⚠ WARNING

Rotating parts!
The engine is running. Keep clear of rotating fans and belts.
Failure to comply could result in death or serious injury.

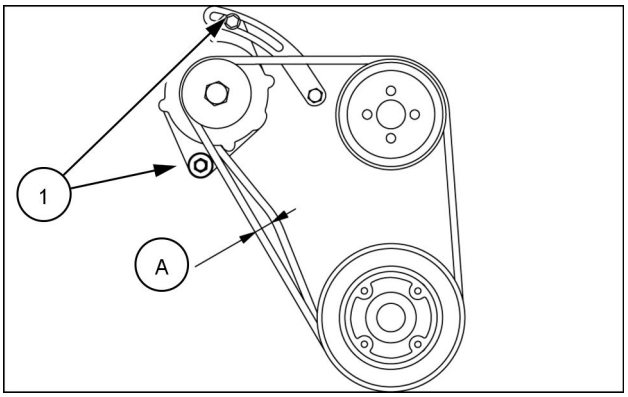
W0275A

⚠ 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 – 12 mm** (**0.4 – 0.5 in**).



93100870 1

Storage

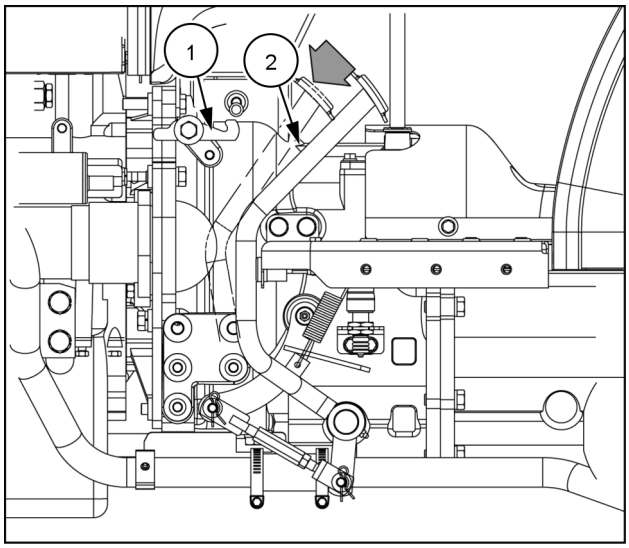
Storing the tractor

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 permanent antifreeze and clear 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.
10. Depress the clutch pedal, engage the latch **(1)** with the pin **(2)** located on the clutch pedal. When the clutch pedal is locked in this position, the clutch disc will be separated from the flywheel.



NHIL12CT00828AA 1

Removing the tractor from 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.	Low battery charge	Charge or replace
	Loose battery or starter cable terminals	Tighten the terminal
	Key switch faulty	Repair or replace switch
	Safety start switch not completing circuit	Depress clutch pedal fully
	PTO safety switch is not in "OFF" position	Place PTO switch in "OFF" position
	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 shutoff valve on fuel filter in closed position	Open the valve
	Fuel shutoff solenoid on fuel injection pump stuck in off position	Check solenoid for proper operation, repair as needed
Engine speed is irregular	Air in fuel system	Bleed the fuel system
	Fuel filter clogged	Clean or replace the filter
	Injection nozzle clogged	Repair or replace nozzle
	Fuel leakage	Repair fuel system
	Irregular fuel injection	Repair or replace fuel injection pump
Engine stops suddenly during operation	Fuel shortage	Add fuel and bleed air from fuel system
	Faulty fuel injector	Repair or replace injector
	Faulty fuel injection pump	Repair or replace injection pump
	Internal parts of engine seized due to lack of lubrication	Repair engine as needed
Engine speed is more than maximum rated high idle speed	Fault with the engine speed control unit.	See your NEW HOLLAND dealer for service.
Engine stops at low speed	Faulty injection pump	Repair or replace injection pump as needed
	Engine valve gap is not correct	Adjust the gap
	Low fuel injector pressure	Repair fuel injector as needed
Low engine power	Fuel injector nozzle clogged	Repair injector as needed
	Carbon accumulation on valve seat	Repair valve and seats as needed
	Incorrect valve gap adjustment	Adjust valve gap to correct amount
	Incorrect fuel injection timing	Check and adjust fuel injection timing as needed
	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

Problem	Possible Cause	Correction
	Engine burning engine oil	Repair engine as needed
	Engine coolant entering engine exhaust	Repair engine as needed
The color of exhaust gas is black.	Air filter clogged	Clean or replace engine air filter
	Excessive fuel supply	Repair fuel injection pump as needed
	Faulty fuel injector	Repair or replace fuel injector
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
	Faulty engine oil pump	Repair oil pump as needed
	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 fault icon is illuminated on the instrument panel.	Electrical fault with the engine speed control unit.	See your NEW HOLLAND dealer for service.
Engine overheating	Lack of coolant	Add coolant as needed
	Fan belt slipping or belt is broken	Adjust belt tension or replace belt
	Dirt attached to the radiator or prescreen	Clean radiator fins or screen as needed

Clutch - Troubleshooting

Problem	Possible Cause	Correction
Clutch slips	Incorrect adjustment of clutch pedal free play	Adjust the pedal free play correctly
	Clutch disc lining worn or broken	Replace clutch disc
Clutch does not release	Excessive clutch pedal free play	Adjust the pedal free play
	Clutch disc damaged	Repair or replace clutch disc

Mechanical service brakes - Troubleshooting

Problem	Possible Cause	Correction
After engaging brake pedal, pedal will not return	Return spring damaged	Replace the spring
	Lack of lubrication in brake shaft linkage parts	Clean and lubricate linkage as needed
	Damaged internal brake parts	Repair internal brake parts as needed
Brake does not work or only one side works.	Incorrect brake pedal free play	Adjust brake pedal free play to correct specification
	Brake disc lining worn or broken	Replace brake discs as needed
	Left/right pedal free play is different	Adjust both brake pedal free play to same specification

Regulated/Low pressure system - Troubleshooting

Problem	Possible Cause	Correction
The three-point linkage will not raise	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
	Faulty hydraulic pump	Check pump for proper flow replace pump if needed
	Faulty control valve	Check hydraulic control valve and linkage for proper operation repair as needed
	Faulty hydraulic lift cylinder	Repair lift cylinder as needed
	Faulty hydraulic relief valve	Check hydraulic system for correct pressure setting, repair as needed
The three-point linkage does not move down when control handle is moved to down position.	Down speed control valve locked in closed position	Turn the knob counterclockwise, to open valve
	Control valve failure	Repair or replace valve
	Hydraulic lift cylinder damaged	Repair cylinder as needed
	Lift shaft moving parts damaged	Repair or replace lift shaft parts as needed
Oil leakage	Connecting part loosened	Tighten
	Oil seal damaged	Replace
	Pipe cracked	Replace
If lever is placed on raising position, relief valve sounds off.	Incorrect upper limit of position control lever	Adjust the upper limit of position control lever

Steering - Troubleshooting

Problem	Possible Cause	Correction
Hydraulic steering system does not work	Faulty power steering pump	Replace pump if needed
	Steering unit damaged or worn	Repair or replace unit as needed
	Steering cylinder piston seal damaged or worn	Repair cylinder as needed
	External oil leakage of oil tubes or hoses	Repair or replace tubes or hoses as needed
Excessive steering wheel effort	Steering unit: Spline and column spline does not align	Check mounted condition of steering unit and column
	Steering unit: Spool and sleeve damaged by foreign material	Replace steering unit
	Steering unit: Excessive tightening torque of end cap bolt	Apply proper torque of end cap hardware
	Pump: Low flow	Increase engine RPM, to increase pump flow
	Faulty power steering pump	Check pump , repair or replace if needed
	Power steering relief valve: pressure setting low	Check power steering relief valve pressure adjust to proper pressure setting
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	Repair cylinder as needed
Front wheels turn the opposite direction to the steering wheel direction	Incorrect assembly of steering gear	Repair steering gear as needed
	Incorrect assembly of steering hoses	Assemble steering hoses correctly
Oil leakage of steering pump, steering unit, cylinder	Seal damaged	Replace seal
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.	HST high pressure relief valve pressure setting low	Check HST pressure and repair as needed
	HST charge pressure valve faulty	Check HST charge pressure and repair as needed
	HST Filter clogged	Replace HST filter
	HST pump faulty	Repair or replace HST pump
	HST control linkage worn or damaged	Repair or replace linkage as needed
Tractor is still moving when HST pedal is in neutral position	Incorrect neutral adjustment of HST linkage	Adjust neutral position of HST linkage
	HST pedal linkage damaged	Replace damaged linkage parts as needed
	HST control arm clamp bolt loose	Tighten control arm clamp bolt
HST power is low	Oil shortage	Add transmission oil as needed
	Air in HST circuit	Check and repair the hydraulic suction line
	Transmission oil temperature is too high	Shut down tractor to cool the transmission oil, and restart after oil temperature has been reduced
	HST internal parts worn	Repair HST transmission as needed
	HST filter clogged	Replace the HST filter
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	Check and repair wiring as needed
Battery does not charge	Incorrect wiring	Check battery terminals and ground for corrosion
	Faulty Alternator	Test alternator repair or replace as needed
	Incorrect fan belt tension or broken belt	Adjust fan belt tension or replace belt
	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
Horn does not sound	Horn switch failure	Replace horn switch
	Faulty wiring connection	Check horn wiring connection, repair as needed
	Blown fuse	Check for cause, replace fuse with correct size
	Faulty horn	Check horn , replace if needed
Turn signal lights do not work	Light bulb burnt out	Replace bulb, with correct size
	Faulty wiring connection	Check wiring connections, repair as needed
	Blown fuse	Check the cause, replace fuse with correct size
	Faulty turn signal switch	Check switch for proper function, replace switch if needed

Problem	Possible Cause	Correction
Cold start aid not working	Faulty connection of glow plug wiring	Check and repair glow plug wiring as needed.
	Blown fuse	Check for cause and replace fuse with correct size .
	Glow plug relay or safety controller faulty	Check relay and controller for proper function, replace as needed
	Faulty glow plugs	Check and replace glow plugs as needed.

9 - SPECIFICATIONS

Wheel tread settings

NOTE: *Tread settings are measured from center of tire to center of tire.*

Front wheel settings

Tire Type	Tractor Model	Setting	NOTE
Agricultural, R1 7-14	Front-Wheel Drive	**1068 mm** (**42 in**)	Not Adjustable
Turf, R3 25 x 8.50-14 (Dished In Only)	Front-Wheel Drive	**1159 mm** (**45.6 in**)	Not Adjustable
Industrial (R4) 25 x 8.50-14 (Dished In Only)	Front-Wheel Drive	**1159 mm** (**45.6 in**)	Not Adjustable

NOTICE: *Never attempt to widen the tread setting by reversing front wheels on a front-wheel drive system.*

NOTE: *Torque front wheel bolts and nuts to* ***176 – 196 N·m (130 – 145 lb ft)****.*

Rear wheel settings

Tire Type	Tractor Model	Setting	NOTE
Agricultural, R1 11.2-24	Front-Wheel Drive	**1041 – 1374 mm** (**41.0 – 54.1 in**)	Adjustable by switching - Dish in or dish out
Turf, R3 41 x 14.00-20	Front-Wheel Drive	**1208 mm** (**47.5 in**)	Not adjustable Dish In Only
Industrial, (R4) 43 x 16-20 (Dished In Only)	Front-Wheel Drive	**1283 mm** (**50.5 in**)	Not adjustable- Dish In Only

NOTE: *Torque rear wheel bolts and nuts to .* ***176 – 196 N·m (130 – 145 lb ft)***

Tire inflation pressures

⚠ WARNING

Explosion hazard!
When inflating tires, use a clip-on air chuck with a gauge, remote valve, and hose long enough to allow you to stand to one side and NOT in front of or over the wheel assembly. Keep others out of the DANGER AREA. Never inflate a tire beyond the maximum allowable pressure printed on the tire. Failure to comply could result in death or serious injury.

W0059A

Tire pressure must be considered when adding weights, implements, or attachments to the tractor or damage to the tractor may occur.

The chart below outlines tire inflation pressures.

Front tire inflation pressures				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at Minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	7-14, 4PR, R1	**41 – 248 kPa (6 – 36 psi)**	**160 kg (353 lb)**	**449 kg (990 lb)**
Turf (R3)	25 x 8.50-14, 4PR, R3	**34 – 152 kPa (5 – 22 psi)**	**251 kg (553 lb)**	**599 kg (1321 lb)**
Industrial (R4)	25 x 8.50-14, 6PR, R4	**207 – 345 kPa (30 – 50 psi)**	**716 kg (1579 lb)**	**966 kg (2130 lb)**

Rear tire inflation pressures				
Tire Type	**Tire Size**	**Recommended air pressure**	**Maximum load capacity at minimum inflation pressure**	**Maximum load capacity at maximum inflation pressure**
Agricultural (R1)	11.2-24, 4PR, R1	**83 – 124 kPa (12 – 18 psi)**	**454 kg (1001 lb)**	**1152 kg (2540 lb)**
Turf (R3)	41 x 14.00-20, 4PR, R3	**69 – 172 kPa (10 – 25 psi)**	**825 kg (1819 lb)**	**1397 kg (3080 lb)**
Industrial (R4)	43 x16-20, 4PR, R4	**138 kPa (20 psi)**	**2059.0 kg (4539.3 lb)**	**2059.0 kg (4539.3 lb)**
Titan Industrial (R4)	43 x16-20, 4PR, R4	**138 kPa (20 psi)**	**2059.0 kg (4539.3 lb)**	**2059.0 kg (4539.3 lb)**

NOTE: *Do not under inflate or overinflate tires. Do not exceed maximum inflation pressure listed.*

General specifications

	Model Workmaster™ 25 Hydrostatic/Mechanical
ENGINE	
Type	Diesel
Model	S3L2-W461GT
Engine Gross Horsepower	**18.2 kW** (**24.7 Hp**)
Cylinders	3
Bore	**78.00 mm** (**3.07 in**)
Stroke	**92.00 mm** (**3.62 in**)
Displacement	**1.318 L** (**80.429 in³**)
Compression Ratio	22.0:1
Firing Order	1-3-2
Low Idle Speed	**970 RPM**
Maximum Speed:	
High Idle	**2700 RPM**
Rated	**2500 RPM**
Valve Clearance (Cold)	
Intake	**0.25 mm** (**0.010 in**)
Exhaust	**0.25 mm** (**0.010 in**)
CAPACITIES	
Fuel Tank	**28.0 l** (**7.4 US gal**)
Cooling System	**4.9 L** (**1.3 US gal**)
Engine Crankcase:	
With Filter	**4.2 L** (**4.4 US qt**)
Rear Axle & Transmission (Includes Hydraulics)	
Mechanical	**32.0 L** (**8.5 US gal**)
HST	**32.0 L** (**8.5 US gal**)
Front Axle	**6.5 L** (**6.9 US qt**)
COOLING SYSTEM	
Type	Pressurized Liquid with Recirculating Bypass
Water Pump:	
Type	Centrifugal
Drive	V-Belt
Belt Deflection	**10 – 12 mm** (**0.4 – 0.47 in**) when **10 kg** (**22 lb**) pressure is applied midway between belt pulleys
Thermostat:	
Start to Open	**76.5 °C** (**170 °F**)
Fully Open	**90 °C** (**194 °F**)
Radiator Cap	**90 kPa** (**13 psi**)
ELECTRICAL SYSTEM	
Alternator	**12 V**, Heavy Duty, **50 A**
Battery	**12 V**, w/ negative ground, 660 cca BCI Group 34
Starting Motor	Solenoid Pre-Engaged Reduction
FUEL SYSTEM	
Fuel Type	Diesel
Type of Fuel to Use if Above **4 °C** (**40 °F**)	No. 2-Diesel, Cetane Rating: Minimum 40

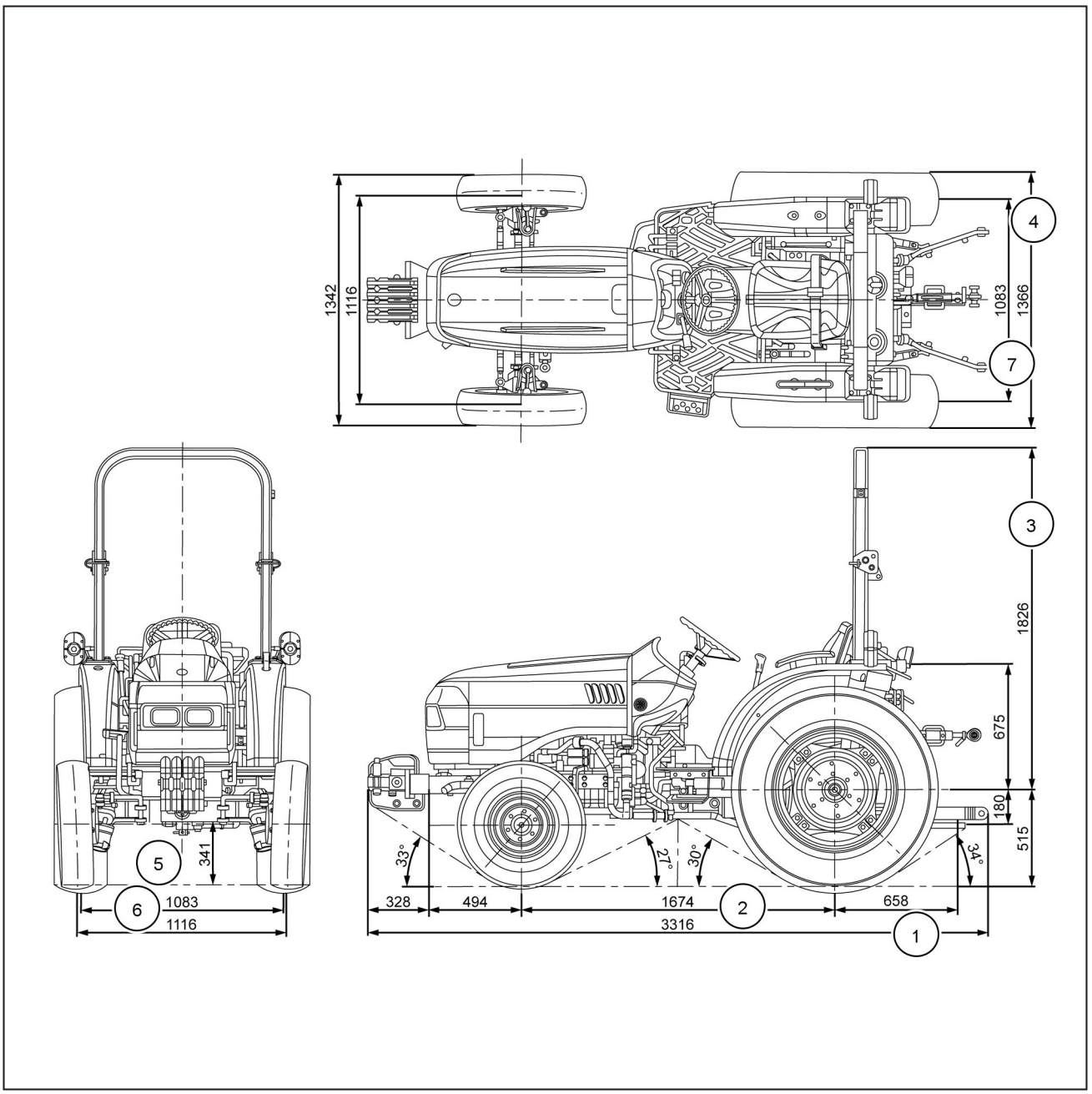
	Model Workmaster™ 25 Hydrostatic/Mechanical
Type of Fuel to Use if Below **4 °C** (**40 °F**)	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:	
Type	Inline
Timing	**16°** BTDC
CLUTCH	
Type	**240 mm** (**9.4 in**) - Transmission 12x12 Trans
Pedal Free-Travel	**20 – 30 mm** (**0.79 – 1.2 in**)
BRAKES	
Type	Wet Disc
2 Disc per Side	**223 mm** (**8.78 in**) x **174 mm** (**6.85 in**)
STEERING	
Type	Power
Turns Lock-to-Lock:	
FWD	3.92 L to R 3.30 R to L
Front Wheel	
Toe-In	**0 – 5 mm** (**0 – 0.20 in**)
Turning Radius w/o Brakes:	
FWD	**3047 mm** (**120 in**) Left turn **3297 mm** (**129.8 in**) Right turn
Steering System Relief Valve Setting	**11720 kPa** (**1700 psi**)
POWER TAKE-OFF	
Type	Independent
Shaft Size:	
Rear PTO	**35 mm** (**1.4 in**)
Mid PTO	**25.4 mm** (**1 in**)
Engine Speed for **540 RPM** Rear PTO Operation	**2510 RPM** - HST Transmission **2510 RPM** - Mechanical Transmission
Engine Speed for **2000 RPM** Mid PTO Operation	**2545 RPM** - HST **2545 RPM** - Mechanical
Horsepower PTO Observed	**12.8 kW** (**17.3 Hp**) - HST **14.3 kW** (**19.4 Hp**) - Mechanical
Direction of Rotation (As viewed from rear of tractor)	
Rear PTO	Clockwise
Mid PTO	Clockwise
HYDRAULIC LIFT SYSTEM	
Type	Open Center
Pump Type	Mechanical
Pump Capacity	**30.0 L/min** (**7.9 US gpm**)
System Relief Valve Setting	**16671 kPa** (**2418 psi**)

	Model Workmaster™ 25 Hydrostatic/Mechanical
TRANSMISSION SPEEDS (Hydrostatic transmission)	
	(**2500 RPM** Engine Rated Speed with 11.2-24 Rear Tires)
Range Position:	
Low	**0 – 5.03 km/h** (**0 – 3.13 mph**)
Mid	**0 – 10.28 km/h** (**0 – 6.39 mph**)
High	**0 – 23.07 km/h** (**0 – 14.33 mph**)
Reverse Low	**0 – 3.77 km/h** (**0 – 2.34 mph**)
Reverse Mid	**0 – 7.71 km/h** (**0 – 4.79 mph**)
Reverse High	**0 – 17.36 km/h** (**0 – 10.79 mph**)
TRANSMISSION SPEEDS (Mechanical transmission model)	
	(**2500 RPM** Engine Rated Speed with 11.2-24 Rear Tires)
Mechanical Position: Forward	
Range Low, 1st speed	**1.14 km/h** (**0.71 mph**)
Range Low, 2nd speed	**1.66 km/h** (**1.03 mph**)
Range Low, 3rd speed	**2.15 km/h** (**1.34 mph**)
Range Low, 4th speed	**2.66 km/h** (**1.65 mph**)
Range Mid, 1st speed	**3.11 km/h** (**1.93 mph**)
Range Mid, 2nd speed	**4.53 km/h** (**2.81 mph**)
Range Mid, 3rd speed	**5.88 km/h** (**3.65 mph**)
Range Mid, 4th speed	**7.25 km/h** (**4.50 mph**)
Range High 1st speed	**9.50 km/h** (**5.90 mph**)
Range High, 2nd speed	**13.85 km/h** (**8.61 mph**)
Range High, 3rd speed	**17.97 km/h** (**11.17 mph**)
Range high, 4th speed	**22.17 km/h** (**13.78 mph**)
Mechanical Position: Reverse	
Range Low, 1st speed	**1.08 km/h** (**0.67 mph**)
Range Low, 2nd speed	**1.58 km/h** (**0.98 mph**)
Range Low, 3rd speed	**2.05 km/h** (**1.27 mph**)
Range Low, 4th speed	**2.53 km/h** (**1.57 mph**)
Range Mid, 1st speed	**2.95 km/h** (**1.83 mph**)
Range Mid, 2nd speed	**4.31 km/h** (**2.68 mph**)
Range Mid, 3rd speed	**5.59 km/h** (**3.47 mph**)
Range Mid, 4th speed	**6.89 km/h** (**4.28 mph**)
Range High 1st speed	**9.04 km/h** (**5.62 mph**)
Range High, 2nd speed	**13.18 km/h** (**8.19 mph**)
Range High, 3rd speed	**17.10 km/h** (**10.63 mph**)
Range high, 4th speed	**21.09 km/h** (**13.10 mph**)
FRONT END WEIGHTS	
With weight extension bracket installed	(5) weights @ **26 kg** (**60 lb**) each
With weight extension bracket installed	Optional (3) weights @ **45 kg** (**100 lb**) each
DRAWBARS	
Extendable	Standard
REAR WHEEL WEIGHTS	
	NA

	Model Workmaster™ 25 Hydrostatic/Mechanical
TIRES	
FRONT	
Agricultural:	7-14, 6PR, R1
Turf:	25 x 8.50-14, 4PR, R4
Industrial:	25 x 8.50-14, 6PR, R4
REAR:	
Agricultural	11.2-24, 4PR, R1
Turf	41 x 14.00-20, 4PR, R3
Titan Industrial	43 x 16-20, 4PR, R4
WHEEL BOLT TORQUES	
Front Wheel --- Disc-to-Hub:	
FWD	**176 – 196 N·m** (**130 – 145 lb ft**)
Rear Wheel --- Disc-to Axle	**176 – 196 N·m** (**130 – 145 lb ft**)
ROPS ATTACHING BOLT TORQUES	
ROPS to Rear Axle	**132 – 147 N·m** (**97 – 108 lb ft**)
Seat Belt	**49 – 54 N·m** (**36 – 40 lb ft**)

Tractor dimensions

	Workmaster™ 25
(1) - LENGTH:	
FWD:	
	3316 mm (**131 in**)
(2) - WHEEL BASE:	
FWD	**1674 mm** (**66.0 in**)
(3) - TOP of ROPS - Folding:	
Ind. Tires: 43 x 16-20	
Up Position	**2341 mm** (**92 in**)
Down Position	**1732 mm** (**68.2 in**)
(4) - WIDTH:Rear Axle Outside to Outside of Tire	
Ind. Tires: 43 x 16-20	
Dished In (Only)	**1366 mm** (**54 in**)
(5) - MINIMUM GROUND CLEARANCE (under drawbar):	
Ind. Tires: 43 x 16-20	**341 mm** (**13 in**)
WHEEL TREAD SETTINGS:	
(6)-FRONT:	
Ind. Tires: 25 x 8.50-14 (Dished In Only)	**1116 mm** (**44 in**)
(7)-REAR:	
Ind. Tires: 43 x 16-20 (Dished In Only)	**1083 mm** (**43 in**)
WEIGHT:	
Hydrostatic transmission model	**1120 kg** (**2469 lb**)
Mechanical transmission model	**1104 kg** (**2434 lb**)



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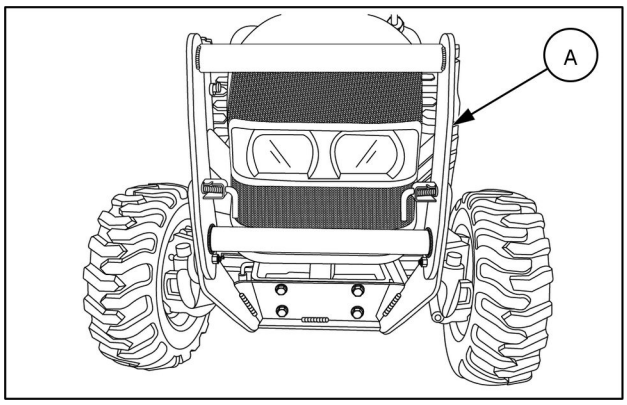
10 - ACCESSORIES

Optional equipment

Grille guard

The optional pivoting grille guard **(A)** provides protection to the front-end of the tractor. The grille guard is compatible with the front end loader. The grille guard cannot be used with the front weight carrier.



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11 - 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 **9-2**.

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

☐ Front wheels toe-in, See **7-55** 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**9-3**

☐ 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) and 12x12 mechanical shuttle transmission

☐ 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: _____

Product Identification Number (PIN): _____

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

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- ☐ 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) and 12x12 mechanical shuttle transmission
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5. OTHER

Check for proper installation of the following items.

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- ☐ Engine belts tension adjustment
- ☐ Battery fully charged
- ☐ Top link
- ☐ Draw bar

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

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Owner's Signature _____ Date _____

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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