

# OPERATOR'S MANUAL

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**Boomer™ 41**

**Boomer™ 47**

**Compact Tractor**

**Part number 47578243**

1<sup>st</sup> edition English

January 2014



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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.

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)**

\_\_\_\_\_

**Date Purchased**

\_\_\_\_\_

**Engine Model**

\_\_\_\_\_

**Engine PIN**

\_\_\_\_\_

|                                                                                     |                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>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.</p> |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### **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

## IMPROVEMENTS

CNH 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.

## Biodiesel fuel

Fatty Acid Methyl Ester Biodiesel (Biodiesel Fuel) consists of a family of fuels derived from vegetable oils treated with methyl esters.

**NOTICE:** *Biodiesel Fuel blends are approved for your engine only if they comply with **EN14214** Specification Standards or **ASTM D6751**.*

**NOTICE:** *It is imperative that you check which blend is approved for your engine with your NEW HOLLAND dealer. Be aware that the use of Biodiesel Fuel that does not comply with the Standards mentioned above could lead to severe damage to the engine and fuel system of your machine. The use of fuels that are not approved may void NEW HOLLAND Warranty coverage.*

### Biodiesel Fuel Usage Conditions

**NOTICE:** *The Biodiesel Fuel must meet the fuel Specification mentioned above.*

Biodiesel Fuel must be purchased from a trusted supplier that understands the product and maintains good fuel quality. Biodiesel Fuel must be pre-blended by the supplier. Mixing Biodiesel Fuels on-site can result in incorrect mixture that can lead to problems with both engine and fuel system.

Engine performance is affected by the use of Biodiesel Fuel. There may be up to **12 %** reduction in power or torque depending on the blend used.

**NOTICE:** *DO NOT modify the engine and/or injection pump settings to recover the reduced performance.*

The reduced power must be accepted if using any Biodiesel Fuel blend.

Some modification may be required to allow your engine to run Biodiesel Fuel. Consult your dealer for complete information on these modifications.

Biodiesel Fuel has a higher cloud point than Diesel Fuel.

**NOTICE:** *The use of high Biodiesel Fuel blends are not recommended in cold weather conditions.*

With Biodiesel Fuels, it may be necessary to change the engine oil, engine oil filter and fuel filter elements more frequently than with Diesel Fuels. Biodiesel Fuel can remove rust and particles from the inside of on-site fuel storage tanks that would normally adhere to the sides of the tank. Like particle deposits that commonly occur with Diesel Fuel, these particles can become trapped by the machine fuel filters, causing blockage and shortening filter life. In cold weather, this is more likely to happen. Consult your NEW HOLLAND dealer for information on cold weather operation and proper maintenance intervals when using any Biodiesel Fuel blend.

When handling Biodiesel Fuel, care must be taken not to allow water into the fuel supply. Biodiesel Fuel will actually attract moisture from the atmosphere.

Fuel tanks must be kept as full as possible to limit the amount of air and water vapors in them. It may be necessary to drain the fuel filter water tap more frequently.

Potential oxidation and stability could be a problem with the fuel stored in the machine.

**NOTICE:** *Machines must not be stored for more than three months with Biodiesel Fuel blends in the fuel system.*

If long storage periods are necessary, the engine must run on Diesel Fuel for 20 hours to flush the Biodiesel Fuel out of the engine fuel system prior to storage.

**NOTICE:** *Biodiesel Fuel must not be stored in on-site storage tanks for more than three months.*

Any spillage of Biodiesel Fuel must be cleaned up immediately before it can cause damage to the environment and the paint finish of the machine.

Before using Biodiesel Fuel blends you should consult with your dealer to receive full information about the approved blend for your machine and any detailed conditions of its usage.

**NOTICE:** *Be aware that not fulfilling the requirements and conditions of Biodiesel Fuel usage will void your machine's NEW HOLLAND Warranty coverage.*

## Tractor intended use

This machine was designed to power and propel itself. It is intended for agricultural use to pull or carry tractor attachments or load and move materials when equipped with a front end loader with a variety of buckets.

### PROHIBITED USAGE

No parts or attachments should be fitted to this machine, which have not been released by NEW HOLLAND. They might affect machine operation, safety of the user or other people, stability or wear characteristics of the machine.

**NOTICE:** *Use only approved accessories and attachments 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.*

**NOTICE:** *DO NOT use this machine for any purpose or in any manner other than as described in the manual, decals, or other product safety information provided with the machine. These materials define the machine's intended use.*

**NOTICE:** *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!*

**NOTE:** *All persons who will be operating this machine shall possess a valid local vehicle operating permit and/or other applicable local age work permits.*

## 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:

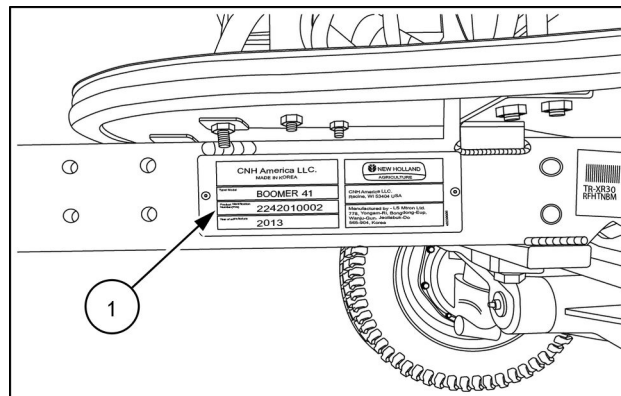
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity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

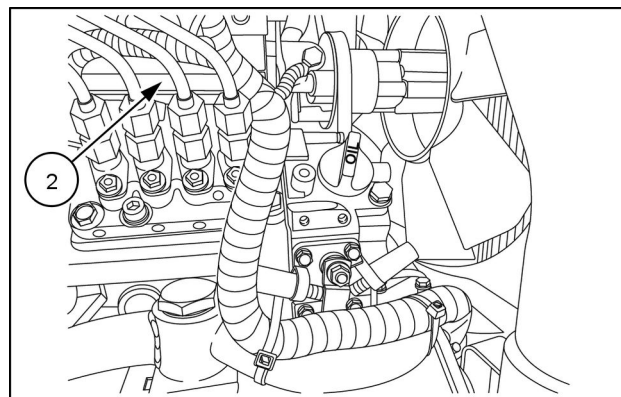
The Product Identification Plate **(1)** is located on the left-hand side of the front frame..

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



NHIL13CT01348AA 1

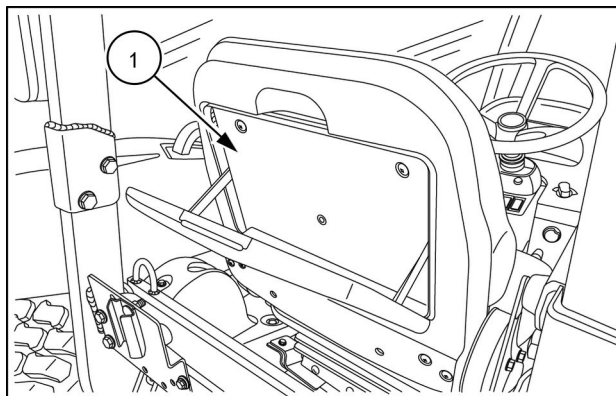
The engine identification information plate **(2)** is located on the right-hand side of the engine block, behind the fuel injection pump.



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## Operator's manual storage

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

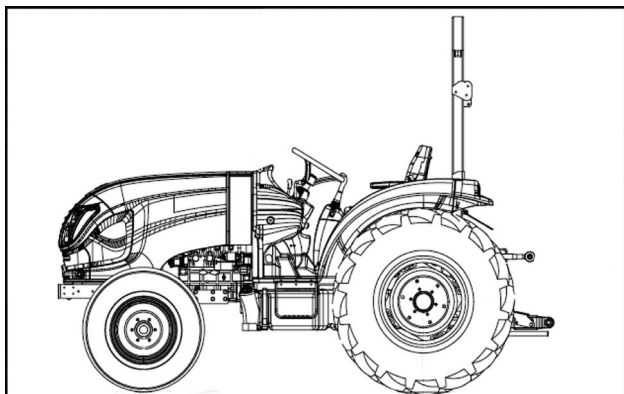


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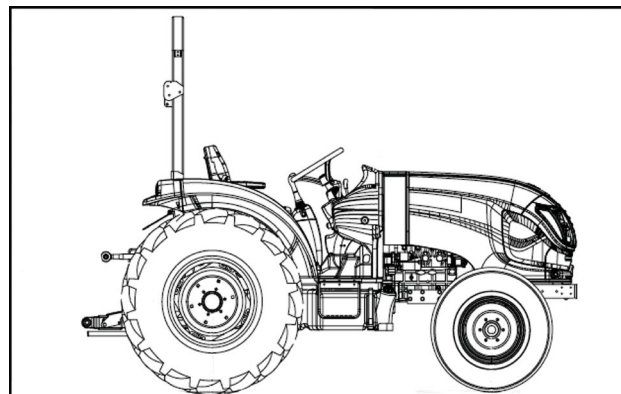


## Machine orientation

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

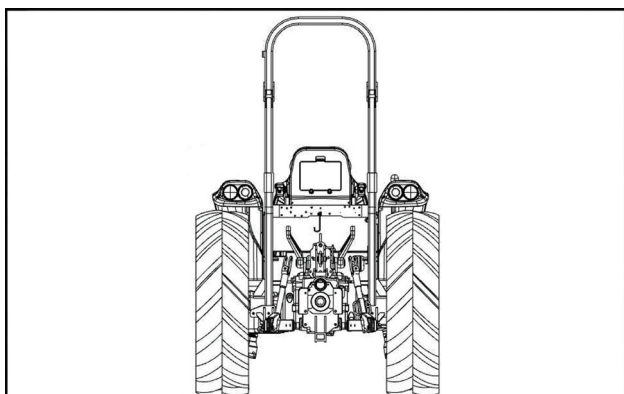


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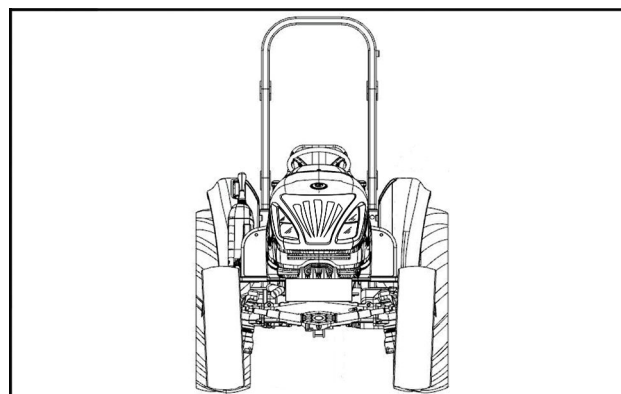
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### Left-hand view



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### Right-hand view



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### Rear view

### Front view

## Proposition 65

**CALIFORNIA  
PROPOSITION 65 WARNING**

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

Battery post, terminals and related accessories contain lead and lead compounds.

**Wash hands after handling**

BT09A213 1

## Exhaust Gas Recirculation (EGR) - Diesel Particulate Filter (DPF) exhaust treatment - Product overview

### What is Exhaust Gas Recirculation (EGR)?

Your NEW HOLLAND machine is equipped with additional components to comply with national and local exhaust emissions requirements. EGR works by recirculating a portion of the engine exhaust gasses back into the engine combustion chamber to lower combustion temperatures.

The main components of the EGR system include:

- EGR valve
- Diesel Particulate Filter (DPF)
- Diesel Oxidation Catalyst (DOC)
- Exhaust gas temperature sensors
- Differential pressure sensor
- Throttle valve actuator

### What is a Diesel Particulate Filter (DPF)?

A Diesel Particulate Filter (DPF) is a filter mounted in the exhaust stream. During normal operating conditions, the exhaust gasses pass through the porous walls of the DPF and trap Particulate Matter (PM) generated by the combustion process of the engine. When channels inside the (DPF) fill up with (PM), the system must be cleaned. The cleaning process is called regeneration.

### How does the regeneration process work?

When the (DPF) becomes restricted, the system will need to be cleaned or regenerated by raising exhaust temperatures to burn off the trapped Particulate Matter (PM). This process is usually done automatically. Burned PM will leave behind traces of ash within the (DPF). The ash must be cleaned out by a NEW HOLLAND dealer outfitted with machines specifically designed to clean (DPF) systems. See the [\[\\*\\*Link to maintenance chart\\*\\*\]](#) for service intervals.

### Automatic regeneration

When the DPF enters automatic regeneration mode, the display will indicate "DPF ON". Several conditions need to be followed to properly let the machine perform this function.

- During this mode do not idle or shut the machine down.
- Hot exhaust gasses will be generated. Use in a well ventilated area away from combustible materials.
- Use the machine under normal work scenarios until the automatic regeneration process has completed.

### Finding a Diesel Particulate Filter (DPF) cleaning facility

To find a NEW HOLLAND dealer that is fully equipped to service your DPF system, please call the number below.

New Holland Top Service: 1-866-639-4563  
[na.topservice@newholland.com](mailto:na.topservice@newholland.com)

## FEDERAL EMISSIONS WARRANTY

### WARRANTY STATEMENT

ISM warrants that your 2013 and later off-road diesel engine was designed, built and equipped to conform to applicable U.S. Environmental Protection Agency (EPA) regulations and is free from defects in materials and workmanship which cause it to fail to conform with such regulations, for the following period of operation:

- For a period of two (2) years or 1,500 hours of operation, whichever occurs first, after the date of delivery to the initial retail owner of any variable speed off-road diesel engine rated at less than **19 kW (25 Hp)** and any constant-speed off-road diesel engine rated at less than **37 kW (50 Hp)** with rated speed greater than or equal to **3,000 RPM**.
- For a period of five (5) years or 3,000 hours of operation, whichever occurs first, after the date of delivery to the initial retail owner for all other off-road diesel engines.

### WARRANTY INFORMATION

The model year, class of diesel engine, and emission application for your engine are identified on the emission control information label affixed to the right hand side of your engine's front side of timing gear case or head cover.

Any emission control system parts that are proven defective during normal use will be repaired or replaced during the warranty period. The warranty repairs and service will be performed by any authorized ISM dealer at the dealer's place of business, with no charge for parts or labor (including diagnosis).

As the engine owner, you are responsible to perform all the required maintenance listed in your owner's manual. ISM will not deny an emission warranty claim solely because you have no record of maintenance; however, a claim may be denied if your failure to perform maintenance resulted in the failure of a warranted part. Receipts covering regular maintenance should be retained in the event of questions and these receipts should be passed on to each subsequent owner of the engine.

It is recommended that replacement parts used for maintenance or repairs be ISM Service Parts to maintain the quality originally designed into your emission certified engine. The use of non-ISM parts does not invalidate the warranty on other components unless the use of such parts causes damage to warranted parts.

ISM wishes to assure that the emission control systems warranty is being properly administered. If you believe you have not received the service to which you are entitled to under this warranty, you should contact the nearest ISM Branch Office for assistance. The address and phone number of each Branch Office is in your owner's manual.

### EXCEPTIONS

Please note that Emission Warranty does not cover:

1. Systems and parts that were not first installed on the new equipment or engine as original equipment by ISM
2. Part malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, or use of nonrecommended fuels and lubricating oils.
3. Damage caused by accident, acts of nature, or other events beyond ISM's control.
4. Replacement of expendable items made in connection with scheduled maintenance.
5. Parts requiring replacement or inspection or adjustment during scheduled maintenance intervals where the part is not defective.
6. Parts which are not ISM Service Parts.
7. Loss of time, inconvenience, loss of use of equipment/engine or commercial loss.
8. Equipment with an altered or disconnected hourmeter where the hours cannot be determined.
9. Equipment normally operated outside the United States
10. Non-defective parts replaced by other than ISM dealers.

### PARTS COVERED

This emission control system warranty applies to the following emission control parts:

- Fuel Injection Pump
- Fuel Injectors
- Intake Manifold
- Exhaust Manifold
- Positive Crankcase Ventilation system parts (including PCV Valve and Oil Filler Cap)

- Turbocharger (if equipped)
- Charge air cooling system (if equipped)
- Smoke puff limiter (if equipped)
- EGR system (including EGR Valve, EGR Pipe and EGR cooler) (if equipped)
- Intake throttle valve (if equipped)
- Exhaust Aftertreatment system (if equipped)
- Aftertreatment Regeneration device (if equipped)
- Miscellaneous hoses, clamps, connectors and sealing gaskets or devices used in the above systems.

## CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

### California Air Resources Board (CARB)

### YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board and ISM (ISM) are pleased to explain the emission control system warranty on your 2013 and later engine. In California, new engines must be designed, built and equipped to meet the State's stringent anti-smog standards. ISM 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. Additional conditions and responsibilities are further outlined below. Where a warrantable condition exists, ISM will repair your engine at no cost to you including diagnosis, parts and labor.

### MANUFACTURER'S WARRANTY COVERAGE:

ISM warrants to the original owner, and to each subsequent owner, of a new, diesel engine that the emission control system of your engine:

1. Was designed, built and equipped so as to conform at the time of sale with all applicable regulations of the California Air Resources Board (CARB).
2. Is free from defects in material and workmanship that will cause such engine to fail to conform with applicable regulations for the following warranty period:
  - for variable speed engines rated under **19 kW (25 Hp)**: two (2) years or 1,500 hours of operation, whichever occurs first. In the absence of a device to measure hours of use, the engine shall be warranted for a period of two years.
  - for constant speed engines rated under **37 kW (50 Hp)** with peak power rated at **3,000 RPM** or greater: two (2) years or 1,500 hours of operation, whichever occurs first. In the absence of a device to measure hours of use, the engine shall be warranted for a period of two years.
  - for engines rated at or above **19 kW (25 Hp)**: five (5) years or 3,000 hours of operation, whichever occurs first. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.
  - for engines rated at or above **37 kW (50 Hp)**: five (5) years or 3,000 hours of operation, whichever occurs first. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

The warranty period shall begin:

- on the date the equipment is first delivered to the first retail purchaser, or;
- if the equipment is placed in service for demonstration purposes prior to sale at retail, on the date the engine is first placed in service.

The emission control systems of your new ISM engine were designed, built and tested using genuine ISM parts, and the engine is certified as being in conformity with CARB emission control regulations.

Accordingly, it is recommended that any replacement parts used for maintenance, repair or replacement of emission control systems be ISM parts. Any replacement part may be used in the performance of any maintenance or repairs, although ISM recommends that the owner obtain assurance that such parts are warranted by their manufacturer to be equivalent to genuine ISM parts. Such use shall not reduce the warranty obligations of the engine manufacturer, provided they are warranted to be equivalent to genuine ISM parts.

Any warranted part that is not scheduled for replacement, as required maintenance shall be warranted for the warranty period defined above. If any such part fails during the period of warranty coverage, it will be repaired or replaced under warranty. Any such part repaired or replaced under the warranty shall be warranted for the remaining warranty period.

Any warranted part that is scheduled only for regular inspection in the written instructions shall be warranted for the warranty period defined above. A statement in the 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 warranty shall be warranted for the remaining warranty period.

Any warranted part that is scheduled for replacement, as required maintenance 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 the engine manufacturer under warranty. Any such part repaired or replaced under warranty shall be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

Repair or replacement of any warranted part under warranty shall be performed at no charge to the owner at a warranty station.

ISM provides warranty services or repairs at all manufacturer distribution centers (warranty stations) that are franchised to service the subject engines. Please see the Customer Assistance section of this statement for help in locating such service centers.

The owner will 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.

ISM is liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

ISM is required by California regulations to maintain a supply of warranted parts sufficient to meet the expected demand for such parts during the warranty period for the engines covered by this warranty.

## **OWNER'S WARRANTY RESPONSIBILITIES:**

This engine is designed to operate on ultra-low sulfur diesel fuel only if rated >19kW, and on low sulfur or ultra-low sulfur diesel fuel only if rated <19kW. Use of any other fuel may result in this engine no longer operating in compliance with California's emissions requirements.

The purchaser is responsible for initiating the warranty process. The California Air Resources Board suggests that the engine be presented to an ISM dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

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. The engine manufacturer 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.

The emissions control parts covered by this Emission Control System Warranty are listed under "What is Covered By the Emission Warranty." As the off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. ISM recommends that you retain all receipts covering maintenance on your off-road engine, but ISM 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 ISM may deny you warranty coverage if your off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

## **Customer Assistance**

In the event that you do not receive the warranty service to which you believe you are entitled under the Emission Control System's Warranty, you should contact ISM at the address below for assistance. If you need additional assistance or information concerning the Emission Control System Warranty, contact:

IHI Shibaura Machinery Corporation  
Quality department  
1-1-1 Ishishiba , Matsumoto , Nagano,  
390-8714 , Japan  
Telephone: +81-263-25-4589

## What is Not Covered by the Emission Warranty

Please note that Emission Warranty does not cover:

1. Systems and parts that were not first installed on the new equipment or engine as original equipment by ISM
2. Part malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, or use of nonrecommended fuels and lubricating oils.
3. Damage caused by accident, acts of nature, or other events beyond ISM's control.
4. Replacement of expendable items made in connection with scheduled maintenance.
5. Parts requiring replacement, inspection or adjustment during scheduled maintenance intervals where the part is not defective.
6. Parts that are not ISM Service Parts.
7. Loss of time, inconvenience, loss of use of equipment/engine or commercial loss.
8. Equipment with an altered or disconnected hourmeter where the hours cannot be determined. Equipment normally operated outside the United States.
9. Non-defective parts replaced by other than ISM dealers.

## What is Covered by the Emission Warranty

The following is a list of systems and parts that are considered a part of the Emission Control System and are covered by the Emission Warranty for engines that were built to conform to CARB regulations:

**IMPORTANT!** This may not include expendable maintenance items. Emission related parts requiring scheduled maintenance are warranted until their first scheduled replacement point only.

## PARTS COVERED

This emission control system warranty applies to the following emission control parts.

- Fuel injection system
- Intake manifold
- Exhaust manifold
- Positive crankcase ventilation system parts (including PCV Valve and Oil Filler Cap)
- Turbocharger (if equipped)
- Charge air cooling system (if equipped)
- Smoke puff limiter (if equipped)
- EGR system (including EGR Valve, EGR Pipe and EGR cooler) (if equipped)
- Intake throttle valve (if equipped)
- Exhaust aftertreatment system (if equipped)
- Aftertreatment Regeneration Device (if equipped)
- Miscellaneous hoses, clamps, connectors and sealing gaskets or devices used in the above systems.





## 2 - SAFETY INFORMATION

### Precautionary statements

#### 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

Read this manual carefully before starting, using carrying out maintenance, refueling or performing any other type of operation on the tractor.

Read all the safety decals on the tractor and follow the instructions thereon before starting, operating, refueling or carrying out maintenance on the tractor. Promptly replace any decals that are damaged, lost or illegible. Clean the decals if they are covered by mud or debris.

The tractor must only be used by responsible personnel, trained in tractor use and authorized to operate the tractor.

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

Avoid using the tractor in unsuitable physical conditions, stop work instead.

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

Never operate the tractor under the influence of alcohol, drugs, or while 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 engine, remove key and relieve the pressure before connecting or disconnecting fluid lines.
- Make sure all components are in good condition and tighten all connections before starting the engine or pressurizing 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.
- Before removing any hydraulic tubing, check that the system is not pressurized.

Do not alter the calibration of the pressure relief valves in the various hydraulic circuits (steering, hydraulic lift, auxiliary distributors, etc.).

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 tractor while it is being operated or components are in motion.

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

Enter and leave the tractor using the steps and handles provided. 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 tractor can be struck or crushed by the tractor 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 engine in enclosed spaces as harmful exhaust gases may build up.

Before starting the tractor, be sure that all controls are in neutral or park lock position.

Before starting the engine, make sure that all attached implements are lowered to the ground.

Start the engine only from the operator's seat. If the safety start switch is bypassed, 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 operating the tractor.

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

Before leaving the tractor:

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

When, due to exceptional circumstances, you would decide to keep the engine running after leaving the operator's station, then the following precautions must be followed:

1. Bring the engine to low idle speed.

### Using the tractor

1. Select the most suitable wheel setting for the work in hand, i.e.: the setting that provides the best stability.
2. Depress the speed control pedal slowly: if engaged too quickly, especially when the tractor is getting out of a hole, ditch or operating on muddy ground or steep slopes, the tractor may overturn.

Release the speed control pedal immediately if front wheels begin to lift.

3. When traveling downhill, keep the tractor in gear. Never place shuttle shift lever in the neutral position.
4. When the tractor is moving, the operator must remain correctly seated in the driving position.
5. Never get on or off the tractor while in movement.

### General maintenance safety

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

Service tractor on a firm level surface.

Install guards and shields after servicing the tractor.

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

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

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

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 securely supported.

2. Disengage all drive systems.

### 3. **WARNING**

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

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Shift the transmission into neutral.

4. Apply the parking brake.

6. When using the brakes, press the pedal down slowly.
7. Avoid taking turns at high speeds.
8. Always use the tractor at a speed that will guarantee safe operation on the type of land being worked. When working on uneven ground, use maximum care to ensure proper stability.
9. If you have to work with the tractor on a gradient, for example on hillsides, drive at moderate speed especially when taking turns.
10. Proceed with maximum caution when working with the wheels near the edge of ditches or slopes.
11. When driving on public highways, observe the Highway Code.

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

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

Stop the engine, remove key and relieve pressure before disconnecting or connecting fluid lines.

Stop the engine and remove key before disconnecting or connecting electrical connections.

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

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

Engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when servicing such components. Allow surfaces to cool before handling or disconnecting hot components. Wear protective equipment when appropriate.

When welding, follow the instructions in the manual. Always disconnect the battery before welding on the tractor.

## **Wheels and tires**

Upon receiving your tractor, check the air pressure in the tires and check every 50 hours or weekly. Refer to the table below for tire pressure for normal operation.

Make sure tires are correctly inflated. Do not exceed recommended load or pressure. Follow 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 tire completely from 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. Ensure the rim is clean and free of rust or damage. Do not weld, braze, otherwise repair or use a damaged rim. 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 SMV emblem is visible.

Make sure brake pedal latch is engaged. Brake pedals must be locked together for road travel.

Use safety chains for trailed equipment when provided with tractor or equipment.

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

Always wash your hands after handling battery components.

Before touching any electrical components, disconnect the ground lead from the battery.

Only remove the radiator cap after the engine has been allowed to cool. With the engine switched off, use a cloth to slowly unscrew the cap and release the pressure before completely removing the cap.

When changing or storing tires, make sure they are stacked correctly and cannot roll or topple over causing personal injury.

When checking tire pressures, inspect the tires for damaged tread and side walls. Incorrect pressure will lead to early tire failure.

Do not inflate a tire that has been run flat or seriously under-inflated until it has been inspected for damage by a qualified person.

Torque wheel bolts to specification after installing the wheel. Check nut tightness daily until torque stabilizes.

Refer to 'TRACTOR BALLASTING' section, **Front wheels - Ballast** before adding ballast to the tires.

Use jack stands or other suitable blocking to support the tractor while repairing tires. Ensure the jack is placed on a firm, level surface. Ensure the jack has adequate capacity for lifting your tractor. Do not put any part of your body under the tractor or start the engine while the tractor is on the jack.

Never hit a tire or rim with a hammer.

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.

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

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

Travel speed should be such that complete control and tractor stability is maintained 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.

When driving, do not rest your feet on the brake pedals.

### **Towing**

1. To guarantee tractor stability when moving, adjust the hitching device according to the trailer or implement to be used.
2. Drive slowly when towing extremely heavy loads.
3. Do not tow trailers that are not fitted with an independent braking system.
4. If the tractor is used to tow heavy loads, always use the hitching device and never hitch loads onto the lower arms or the top link of the three-point linkage. This may result in tipping or overturning
5. When towing, do not negotiate turns with the differential lock engaged as this may prevent you from steering the tractor.

## Using implements and agricultural machinery

1. Do not connect implements or machinery that require more power than can be generated by your tractor model.
2. Never negotiate sharp turns with the power take-off under a heavy load; this may damage the universal joints on the transmission shaft connected to the power take-off.
3. Never stand between the reversing tractor and the implement when hitching.
4. When using implements that require the tractor to be stationary with the engine running, keep the shuttle lever in the neutral position, apply the hand brake and use suitable wheel chocks.
5. Do not operate tractors connected to the power take-off without first ensuring that the operating range of the tractor is free of bystanders. Also check that all rotating parts connected to the power take-off shaft are correctly protected.
6. Add some type of rear ballast when using lifting equipment fitted to the front of the tractor. Rear ballast, such as, rear wheel weights, fluid in rear tires or three-point weight box.

## Fire and explosion prevention

Fuel or oil 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 tractor.

Make sure 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 tractor especially around hot components such as engine, transmission, exhaust, battery, etc. More frequent cleaning of your tractor 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 fan, etc. More frequent cleaning of your tractor may be necessary depending on the operating environment and conditions.

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

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

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 tractor to flames, burning brush, or explosives.

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

## General battery safety

Always wear eye protection when working with batteries.

Do not create sparks or have open flame near battery.

Ventilate when charging or using in an enclosed area.

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

When welding on the tractor, disconnect both terminals of the battery.

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

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

Follow manufacturer's instructions when storing and handling 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 tractor is equipped with an operator presence system to prevent the use of some features while the operator is not in the operator's seat.

The operator presence system should never be disconnected or bypassed.

If the system is inoperable, the system must be repaired.

### **Power Take-Off (PTO)**

PTO-driven machinery can cause death or serious injury. Before working on or near the PTO shaft or servicing or clearing the driven tractor, 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 appropriate guards are in place.

Never use a spline adapter:

- 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 adapters will void the warranty of the drive shaft, and the PTO drive train of the machine and implement.
- For correct hitch geometry, see the implement operator's manual.

### **Reflectors and warning lights**

Flashing amber warning lights must be used when operating on public roads. Location and use of flashing amber warning lights is shown on **Cab controls - Control**.

### **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 that 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 belt is attached to seat, make sure 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.
- For proper seat belt use, see **Seat restraints - Operating**.

## **Operator protective structure**

Your tractor is equipped with an operator protective structure, such as: a Roll Over Protective Structure (ROPS), Falling Object Protective Structure (FOPS), or a cab with 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 tractor are part of the ROPS.

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

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 or roll over, the following MUST be performed by a qualified technician before returning the tractor to field or job-site operations:

- The protective structure MUST BE REPLACED.
- The mounting or suspension for the protective structure, operator 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, 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 tractor, attach a 'Do Not Operate' warning tag to the tractor 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 tractor 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 be taken in the event of a spill or accidental release. MSDS are available from your dealer.

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

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

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

Keep out of reach of children or other unauthorized persons.

Additional precautions are required for applied chemicals. Obtain complete information from the manufacturer or distributor of the chemicals before using 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 the tractor 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 tractor and an electric

power source occur, the following precautions must be taken:

- Stop the tractor movement immediately.
- Apply the park 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 tractor to make sure you do not make contact with the ground and the tractor at the same time.
- Do not permit anyone to touch the tractor until power has been shut off to the power lines.

## **Electrical storm safety**

Do not operate tractor 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 tractor.

## **Mounting and dismounting**

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

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

Do not jump off the tractor.

Never mount or dismount from a moving tractor.

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

Do not use the steering wheel or other controls or accessories as handholds when entering or exiting the cab or operator's platform.

Face the tractor when mounting and dismounting.

## **Working at heights**

When the normal use and maintenance of the tractor requires working at heights:

- Correctly use installed steps, ladders, and railings.
- Never use ladders, steps, or railings while the tractor is moving.

- Do not stand on surfaces which are not designated as steps or platforms.

Do not use the tractor as a lift, ladder, or platform for working at heights.

## **Lifting and overhead loads**

Never use loader buckets, forks, etc. or other lifting, handling, or digging equipment to lift persons.

Loader buckets, forks, etc. or other lifting, handling, or digging equipment and its load will change the center of gravity of the tractor. This can cause the tractor to tip on slopes or uneven ground.

Do not use raised equipment as a work platform.

Know the full area of movement of the tractor and equipment and do not enter or permit anyone to enter the area of movement while the tractor is in operation.

Load items can fall off the loader bucket or lifting equipment and crush the operator. Care must be taken when lifting a load. Use proper lifting equipment.

Never enter or permit anyone to enter the area underneath raised equipment. Equipment and/or loads can fall unexpectedly and crush persons underneath it.

Do not lift load higher than necessary. Lower loads to transport. Remember to leave appropriate clearance to the ground and other obstacles.

Do not leave equipment in raised position while parked or during service, unless securely supported. Hydraulic cylinders must be mechanically locked or supported if they are left in a raised position for service or access.

Equipment and associated loads can block visibility and cause an accident. Do not operate with insufficient visibility.

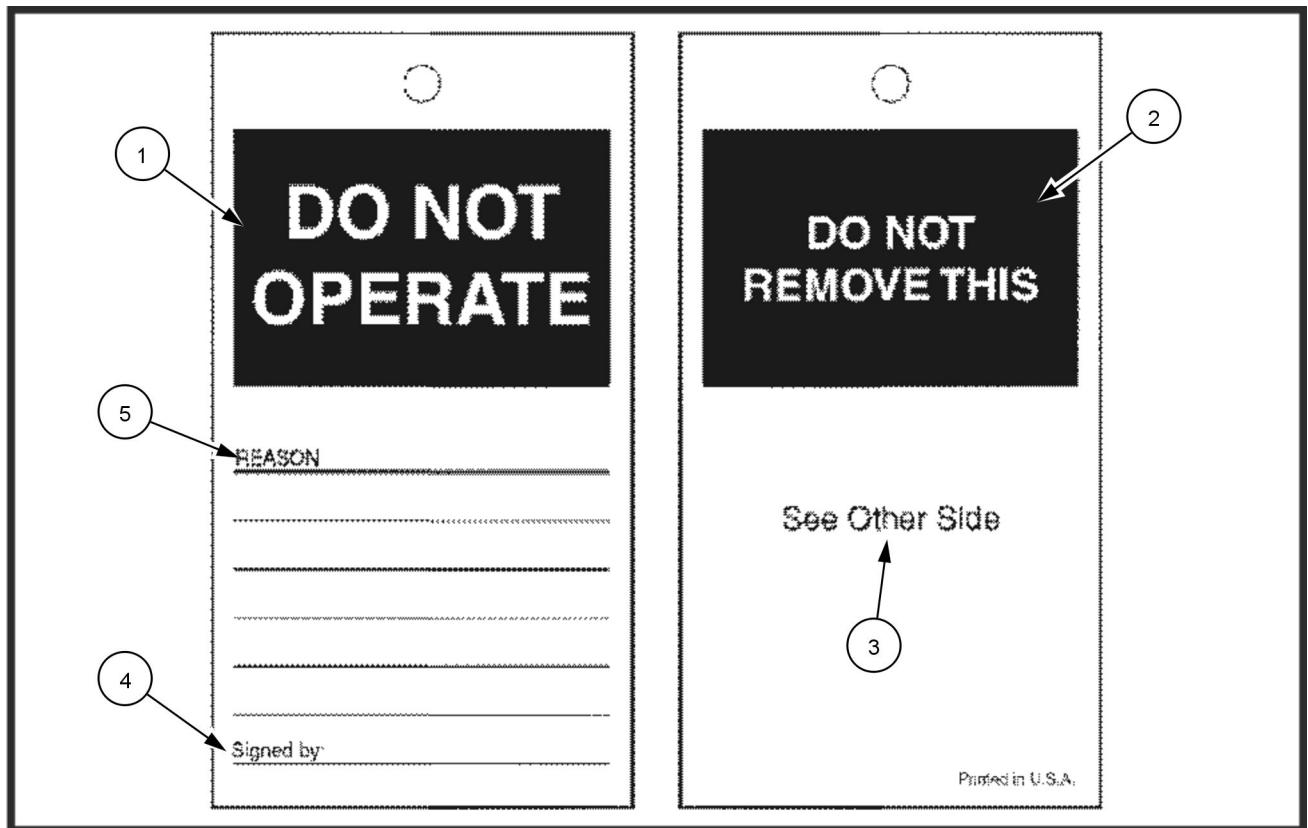
## Do not operate tag

### **⚠ 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.

W0112A

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.

## 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

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, and tip- or roll-over, the following MUST be performed by a qualified technician before returning the machine to field or job site operation:

- The protective structure MUST BE REPLACED.
- The mounting or suspension for the protective structure, operator 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 A FIRE, TIP, ROLLOVER, COLLISION, OR ACCIDENT.**

Your machine is equipped with an operator protective structure, such as a Rollover Protective Structure (ROPS), Falling Object Protective Structure (FOPS), or cab with ROPS. The protective structure is a special safety component of your machine.

A ROPS may be a cab frame or a two-posted or four-posted structure used for the protection of the operator to minimize the possibility of serious injury. The mounting structure and fasteners forming the mounting connection with the machine are part of the ROPS. The seat belt is an integral part of the ROPS.

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

## Ecology and the environment

Soil, air, and water are vital factors of agriculture and life in general. When legislation does not yet rule the treatment of some of the substances which are required by advanced technology, common sense should govern the use and disposal of products of a chemical and petrochemical nature.

**NOTICE:** *The following are recommendations which may be of assistance:*

- Become acquainted with and ensure that you understand the relative legislation applicable to your country.
- Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, antifreeze, cleaning agents, etc., with regard to their effect on man and nature and how to safely store, use and dispose of these substances.
- Agricultural consultants will, in many cases, be able to help you as well.

## HELPFUL HINTS

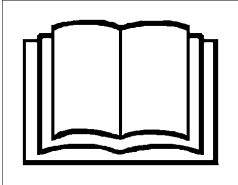
- Avoid filling tanks using cans or inappropriate pressurized fuel delivery systems which may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of them contain substances which may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when draining off used engine coolant mixtures, engine, gearbox and hydraulic oils, brake fluids, etc. Do not mix drained brake fluids or fuels with lubricants. Store them safely until they can be disposed of in a proper way to comply with local legislation and available resources.
- Modern coolant mixtures, i.e. antifreeze and other additives, should be replaced every two years. They should not be allowed to get into the soil but should be collected and disposed of properly.
- Do not open the air-conditioning system yourself. It contains gases which should not be released into the atmosphere. Your NEW HOLLAND dealer or air conditioning specialist has a special extractor for this purpose and will have to recharge the system properly.
- Repair any leaks or defects in the engine cooling or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
- Protect hoses during welding as penetrating weld splatter may burn a hole or weaken them, allowing the loss of oils, coolant, etc.

## Safety signs

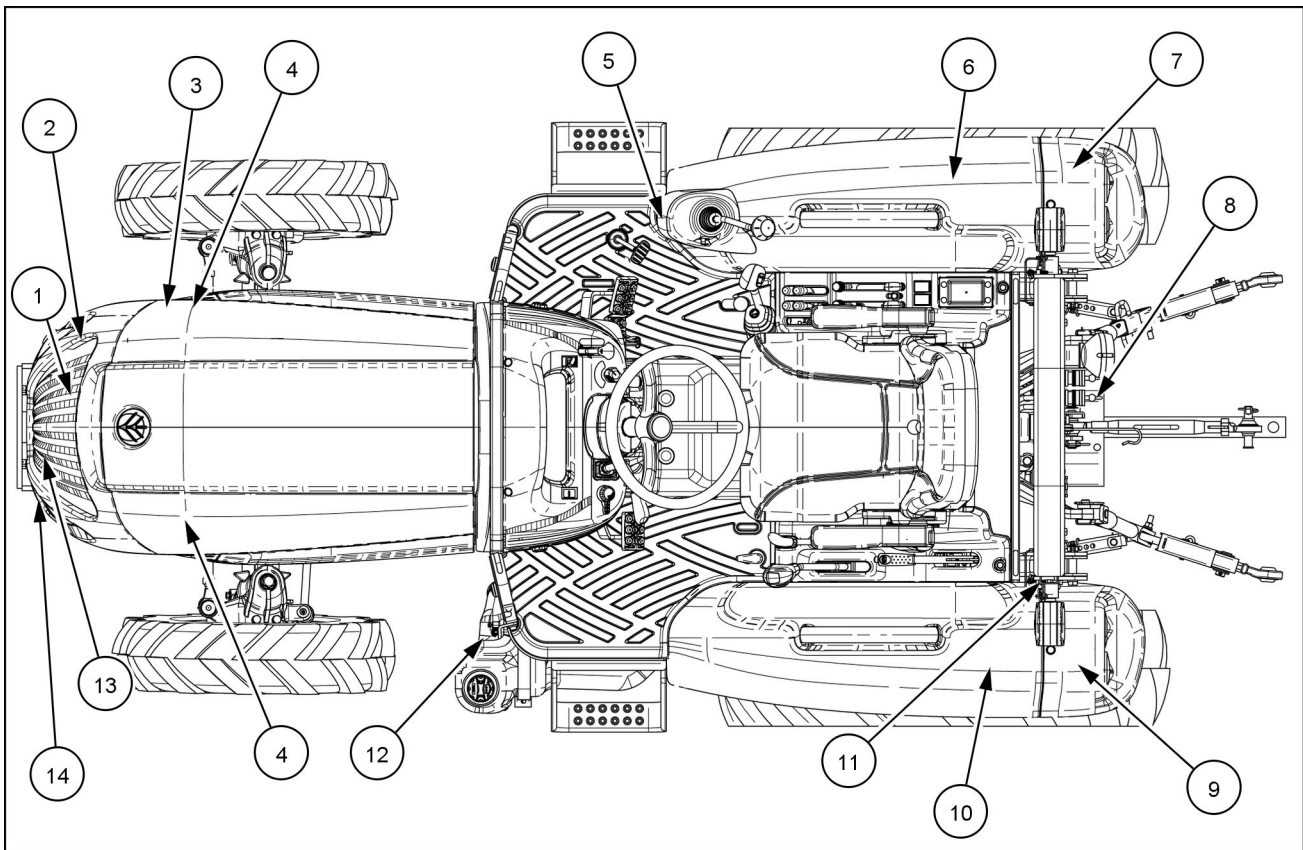
The following safety signs are placed on your machine as a guide for your safety and for those working with you. Walk around the machine and note the content and location of these safety signs before operating your machine.

Keep safety signs clean and legible. Clean safety 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 safety signs that are damaged, missing, painted over, or illegible. If a safety sign is on a part that is replaced, make sure the safety sign is installed on the new part. See your dealer for replacement safety signs.



Safety 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 a safety sign displays this symbol, refer to the appropriate page of the operator’s manual.



NHIL13CT01199FA 1

(1)  
**WARNING**

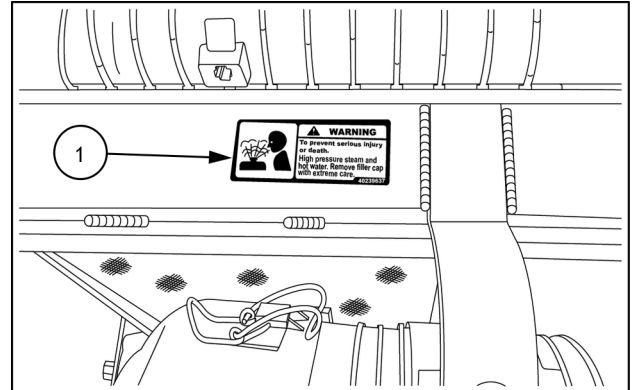
To prevent serious injury or death.  
High pressure steam and hot water.  
Remove filler cap with extreme care.  
Failure to comply could result in death or serious injury.

Quantity: 1  
English Part Number: MT40195649



40195649 2

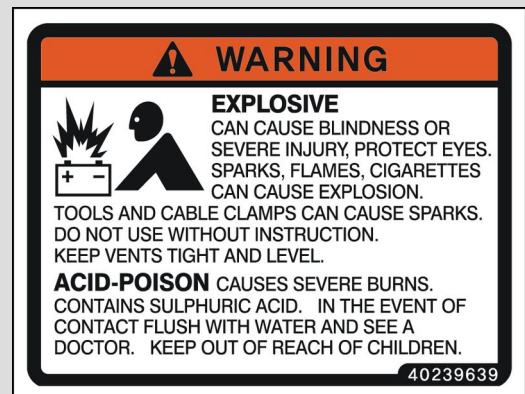
(1) Location: On top of screen frame.



NHIL13CT00990AA 3

(2)  
**WARNING**  
**EXPLOSIVE**

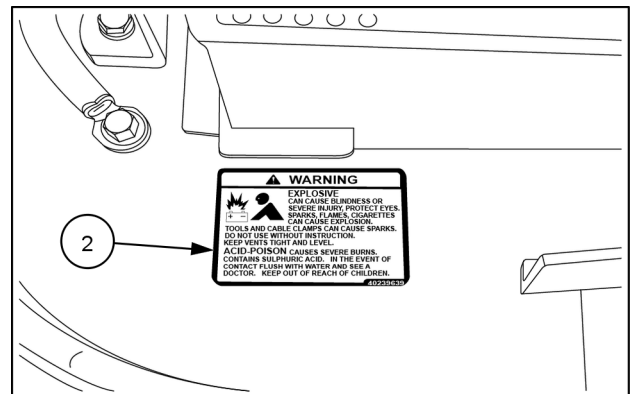
Can cause blindness or severe injury, protect eyes.  
Sparks, flames, cigarettes can cause explosion.  
Tools and cable clamps can cause sparks. Do not use without instruction. Keep vents tight and level.  
**ACID-POISON** causes severe burns. Contains sulphuric acid. In the event of contact flush with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



40239639 4

Quantity: 1  
English Part Number: MT40239639

(2) Location: On the right front edge of the battery tray.



NHIL13CT00991AA 5

(3)

**WARNING**

To prevent serious injury or death.

Beware hot part.

Keep clear of muffler to avoid injury.

Failure to comply could result in minor or moderate injury.

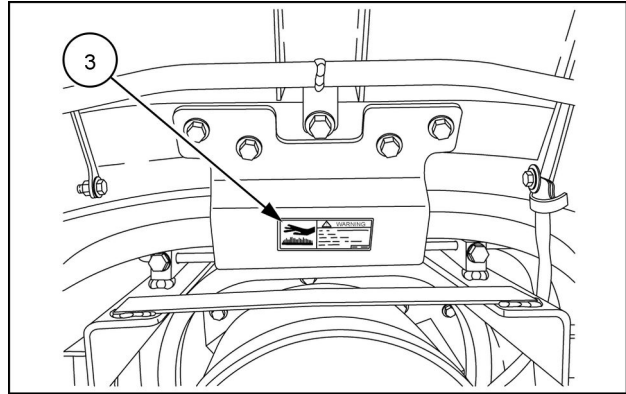


40239636 7

Quantity: 1

English Part Number: MT40239636

(3) Location: Under the hood, on top of the differential pressure sensor.



NHIL13CT01213AA 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.

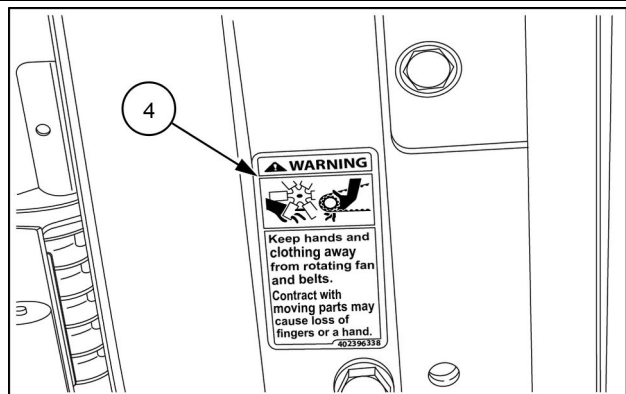


40239638 8

Quantity: 2

English Part Number: MT40239638

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



NHIL13CT00989AA 9



**(5)  
JOYSTICK LEVER USAGE  
WARNING**

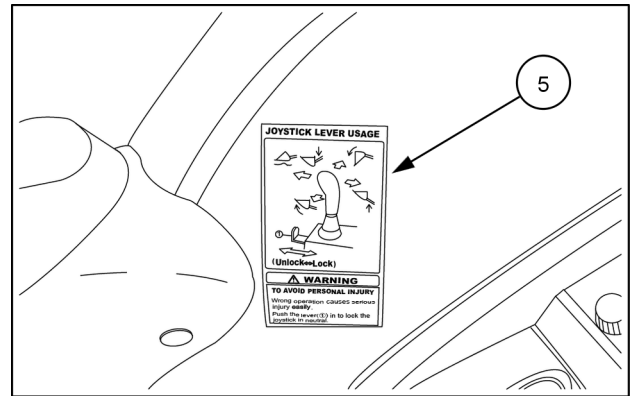
**To avoid personal injury:  
Wrong operation causes serious injury easily.  
Push the lever (1) in to lock the joystick in neutral.  
Failure to comply could result in death or serious  
injury.**

**Quantity: 1  
English Part Number: MT40194109**



40194109 10

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



NH13CT01035AA 11

(6)

**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.



40195656 12

- **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.**

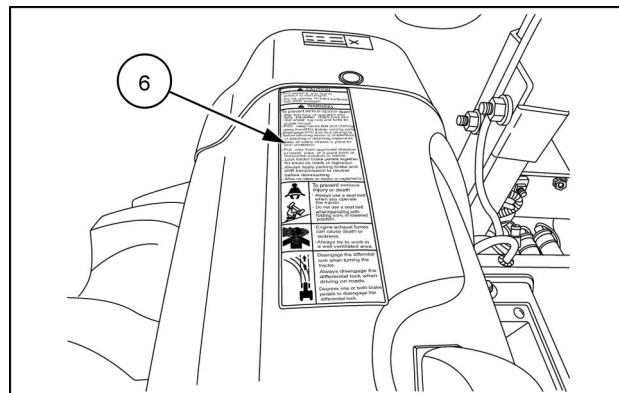
- **Disengage the differential lock when turning the tractor. Always disengage the differential lock when driving on roads.**

- **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: MT40195656**

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



NHIL13CT01200AA 13

## 2 - SAFETY INFORMATION

(7)

### WARNING

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

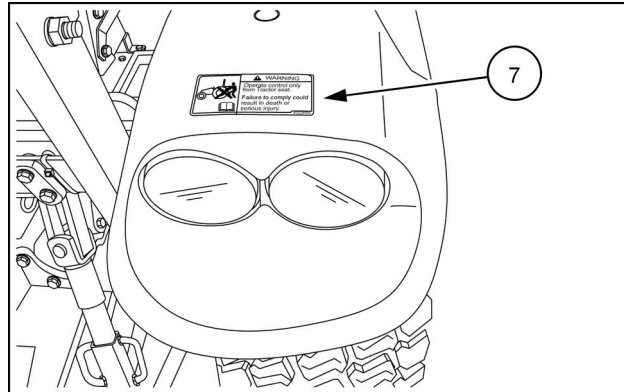
Quantity: 2

English Part Number: MT40229994



40229994 14

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



NHIL13CT01209AA 15

(8)

### WARNING

Rotating driveline contact may cause serious injury or death.

Keep all driveline, tractor and equipment shields in place during operation.

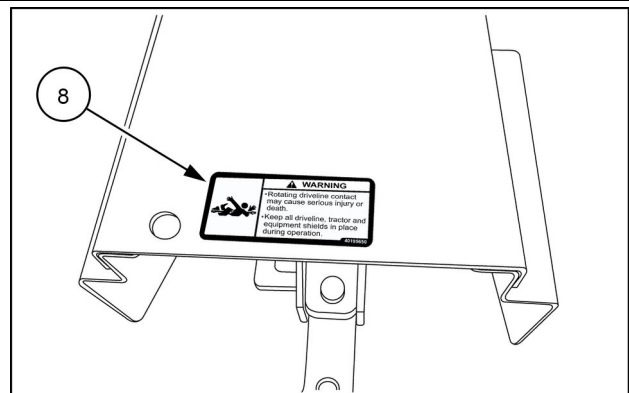
Quantity: 1

English Part Number: MT40195650



40195650 16

(8) Location: On top of the rear PTO Guard



NHIL13CT01010AA 17

**(9)**  
**WARNING**  
**HIGH PRESSURE FLUID HAZARD**  
To prevent serious injury or death

Relieve pressure on system before repairing, adjusting or disconnecting.

Wear proper hand and eye protection when searching for leaks, use wood or cardboard instead of hands.

If hydraulic fluid or fuel sinks into skin, seek medical attention immediately.

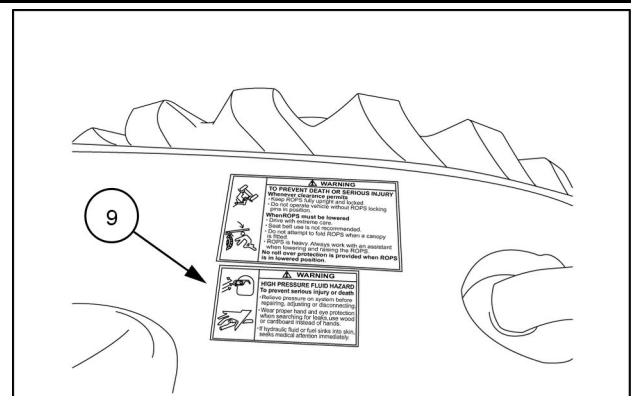
Quantity: 1

English Part Number: MT40195652



40195652 18

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



83115222 19

(10)

**WARNING**

**TO PREVENT DEATH OR SERIOUS INJURY**

Whenever clearance permits

•

Keep ROPS fully upright and locked

•

Do not operate vehicle without ROPS locking pins in position

•

When ROPS must be lowered:

•

Drive with extreme care.

•

Seat belt use is not recommended.

•

Do not attempt to fold ROPS when a canopy is fitted.

•

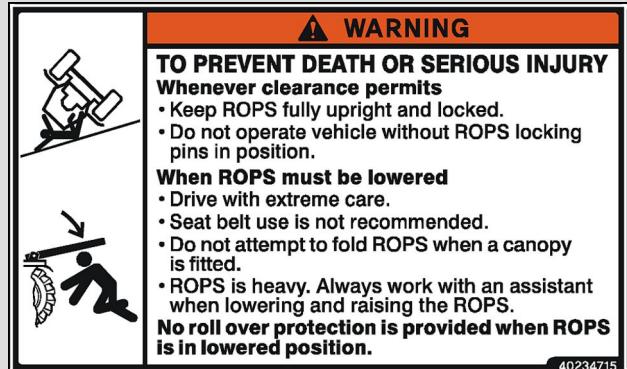
ROPS is heavy. Always work with an assistant when lowering and raising the ROPS.

No roll over protection is provided when ROPS is in lowered position

Failure to comply could result in death or serious injury

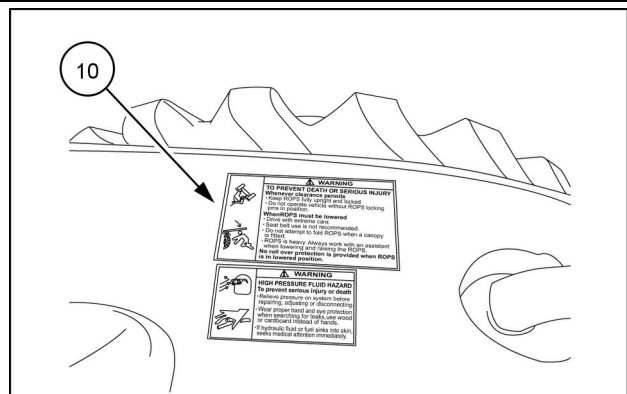
Quantity: 1

English Part Number: MT40234715



40234715 20

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



83115222 21

(11)  
**WARNING**

To prevent serious injury or death:

Never operate a tractor without a certified ROPS.

Always fasten seat belt when operating tractor with ROPS in upright position.

Do not operate the tractor on steep slopes or drop-off.

Avoid sharp turns at high speeds.

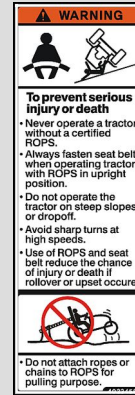
Use of ROPS and seat belt reduce the chance of injury or death if rollover or upset occur.

Do not attach ropes or chains to ROPS for pulling purpose.

Failure to comply could result in death or serious injury.

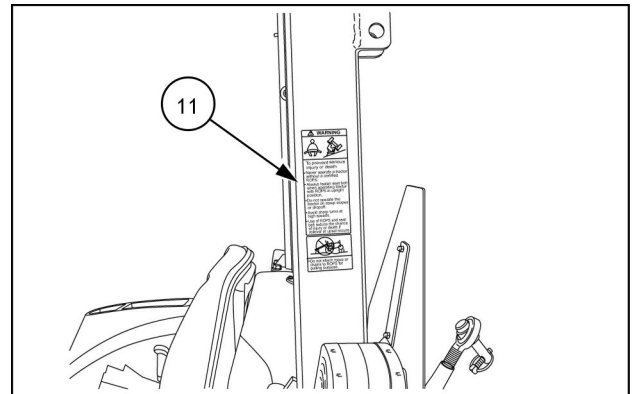
Quantity: 1

English Part Number: MT40234561



40234561 22

(11) Location: On the left-hand side of the ROPS frame.



83115221 23

(12)

**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.

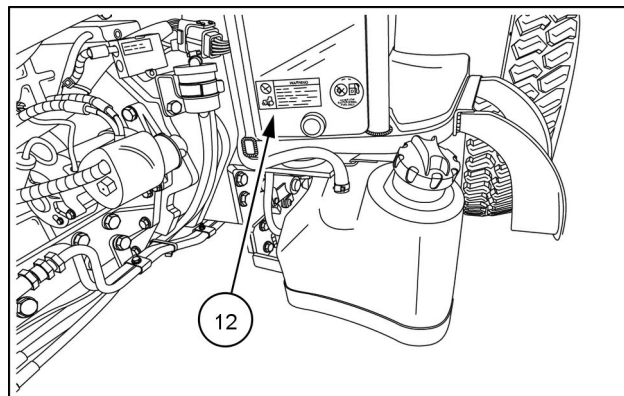
Quantity: 1

English Part Number: MT40195651



40195651 24

(12) Location: On the left-hand side of the operator's platform, at the front of the platform.



NHIL13CT01024AA 25



(13)

## 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.

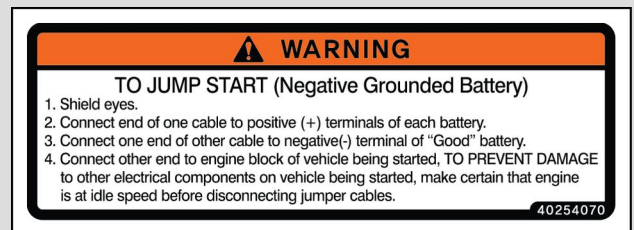
4.

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.

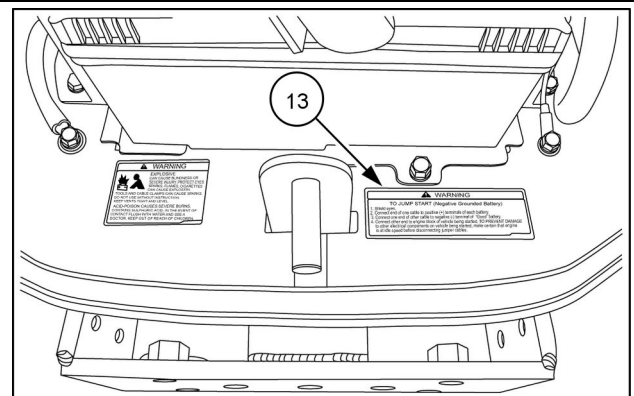
Quantity: 1

English Part Number: MT40254070

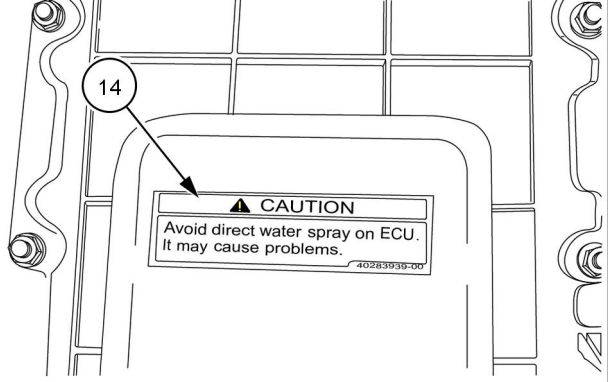


40254070 26

(13) Location: Front left side of battery cradle.

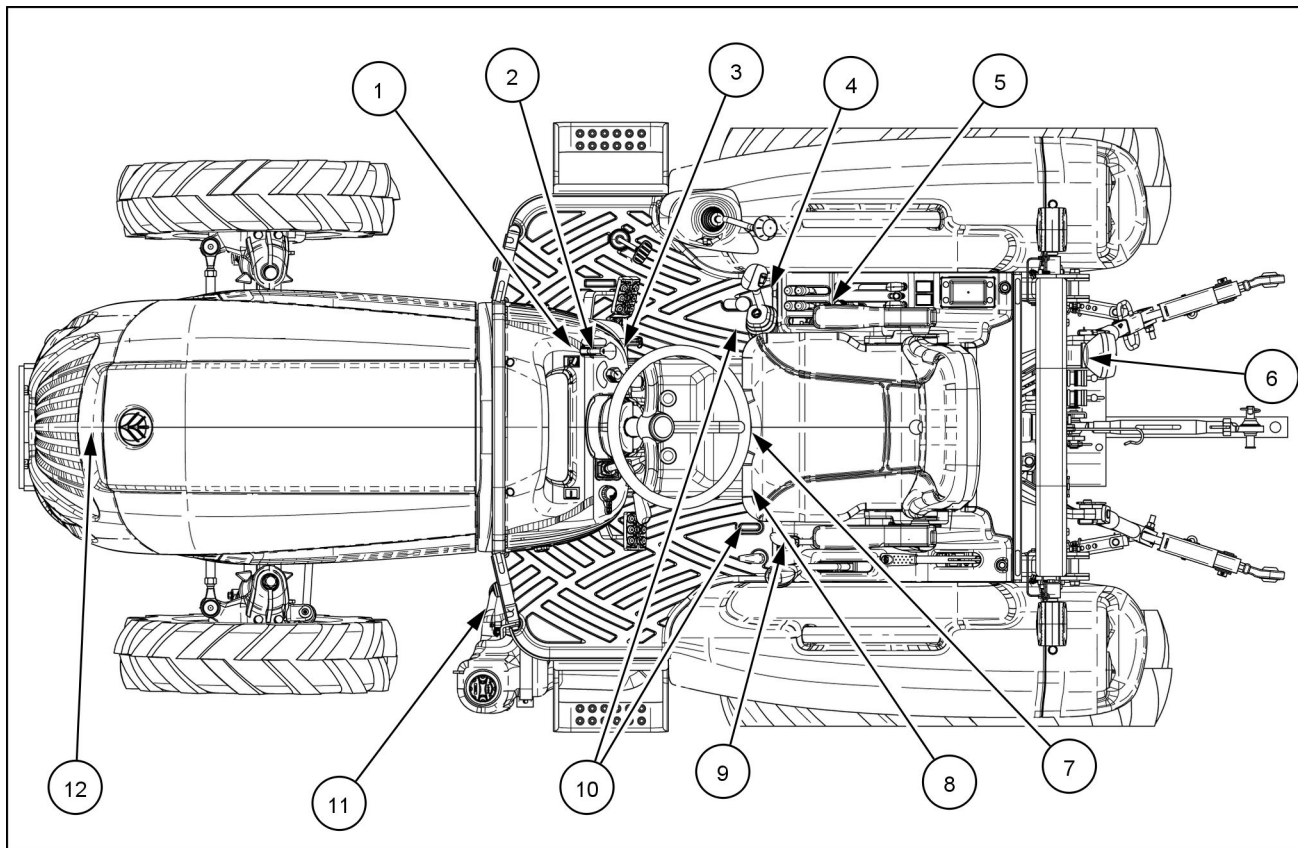


NHIL13CT01208AA 27

|                                                                                                                                                                                                                        |                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <p>(14)<br/><b>CAUTION</b><br/>Avoid direct water spray on ECU.<br/>It may cause problems.<br/>Failure to comply may result in minor to moderate injury.</p> <p>Quantity: 1<br/>English Part Number: MT40283939-00</p> |  <p>40283939 28</p>        |
| <p>(14) Location: On top face of ECU.</p>                                                                                                                                                                              |  <p>NHIL13CT00988AA 29</p> |

## Instructional signs

The following instructional signs have been placed on your tractor in the area indicated. They are intended to instruct you and those working with you. Please take this manual and walk around your tractor to note the content and location of these signs. Review the signs and operating instructions detailed in this manual with the tractor operators. Keep the signs clean and legible. If they become damaged or illegible, obtain replacements from your authorized NEW HOLLAND dealer.



NHIL13CT01199FA 1

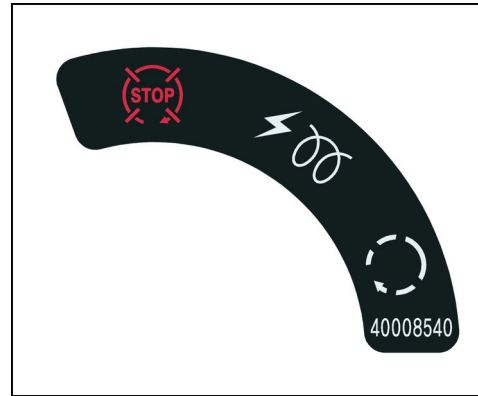
## 2 - SAFETY INFORMATION

(1)

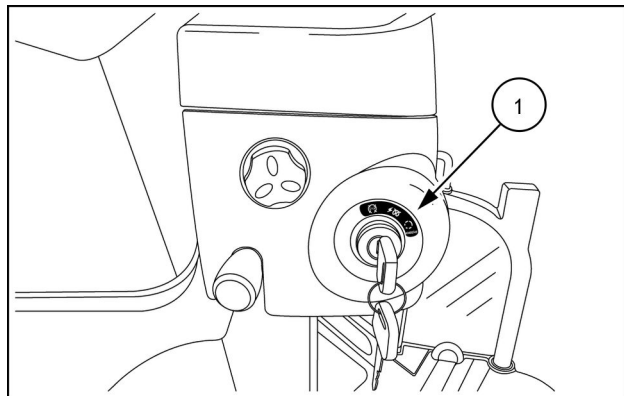
Key Switch

- English **MT40008540**

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



40008540 2



NHIL13CT01006AA 3

(2)

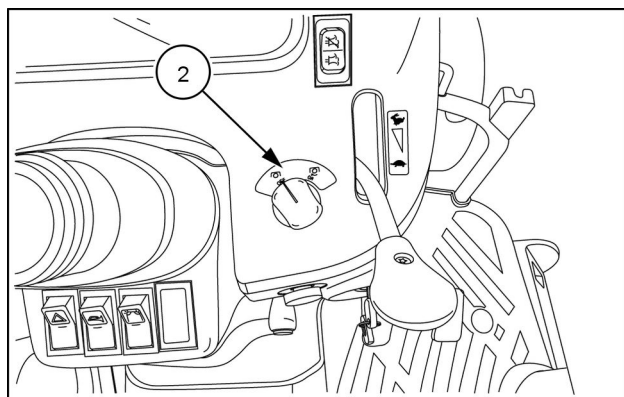
PTO Switch

- English **MT40189937**

Location: Right-hand side of the dash panel.



40189937 4



NHIL13CT01005AA 5

(3)

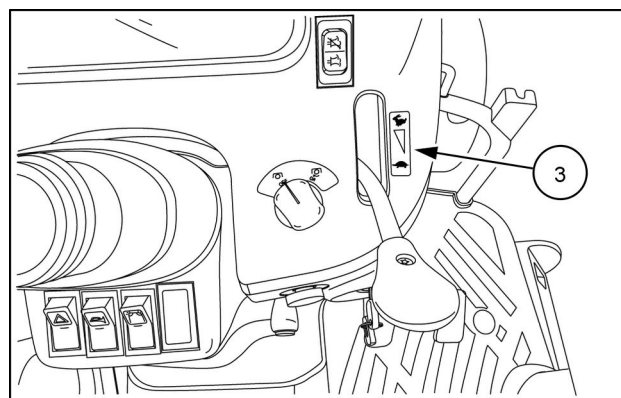
Hand Throttle Lever

- English **MT40232389**

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



40232389 6



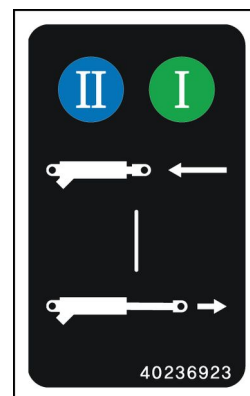
NHIL13CT01005AA 7

(4)

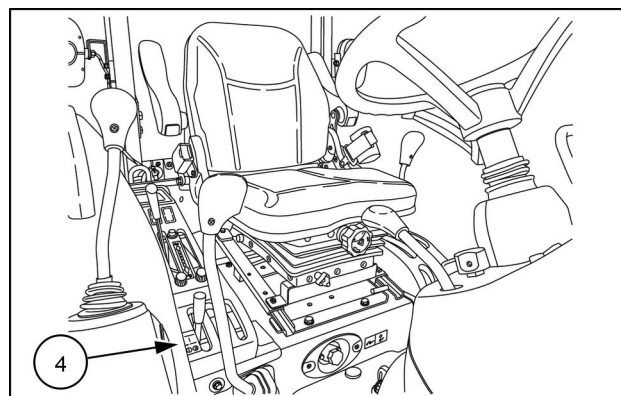
Rear remote valve operation (Optional)

- English **MT40236923**

Location : Right side pod.



40236923 8



NHIL13CT01153AA 9

(5)

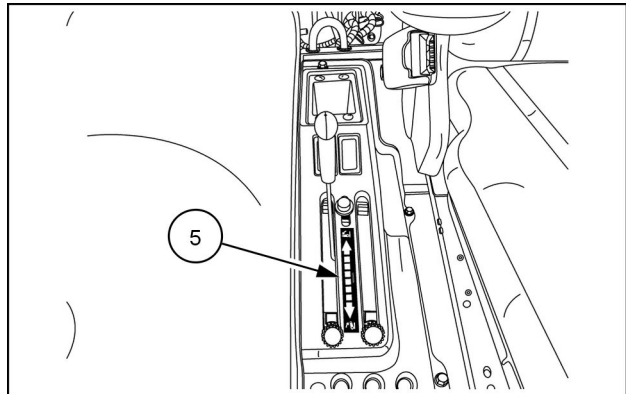
Position control lever

• English **MT40008842**

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



40008842 10



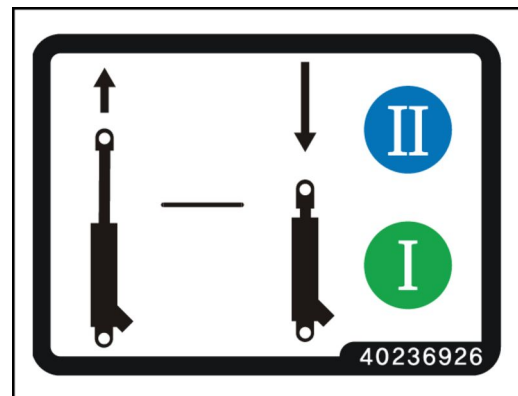
NHIL13CT01014AA 11

(6)

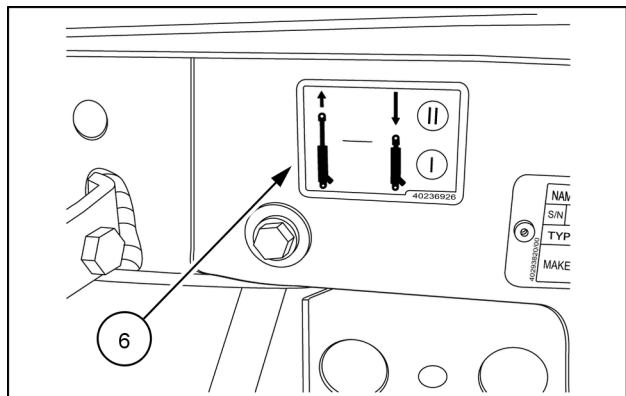
Rear remote coupler operation  
(Optional)

English **MT40236926**

Location : Right rear cross bar support.



40236926 12



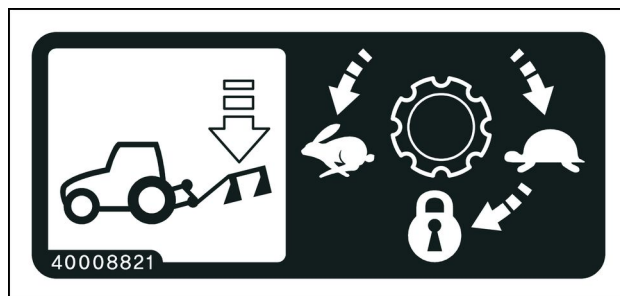
NHIL13CT01102AA 13

(7)

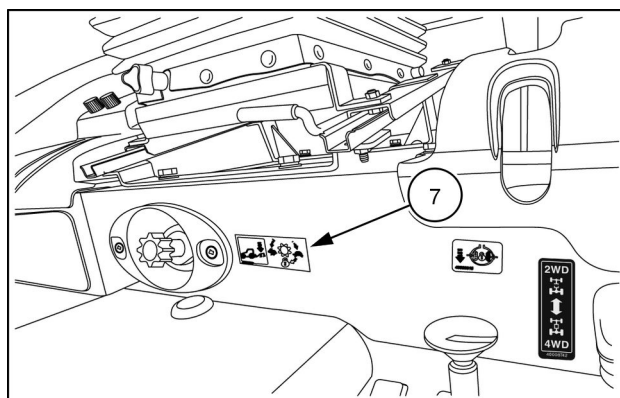
Drop rate control valve

- English **MT40008821**

Location: Below the drivers seat, near the park brake.



40008821 14



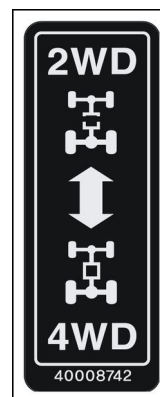
NHIL13CT01379AA 15

(8)

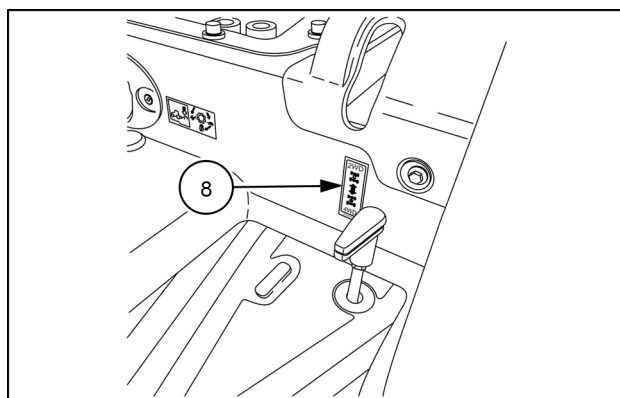
4WD lever

- English **MT40032976**

Location: On the left rear operator's platform.



40008742 16



NHIL13CT01175AA 17

(9)

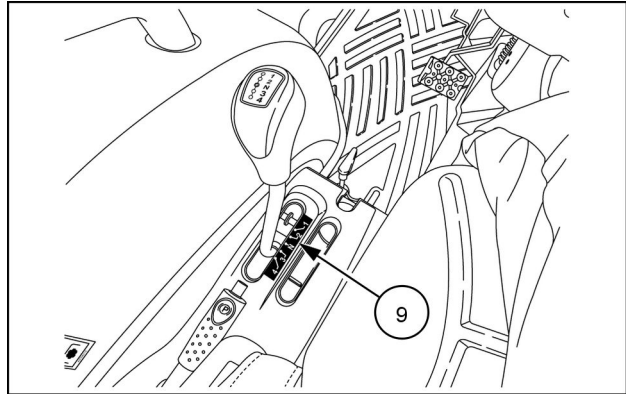
Range gear lever (Gear transmission)

- English **MT40285130**

Location: Left side control pod.



40285130 18

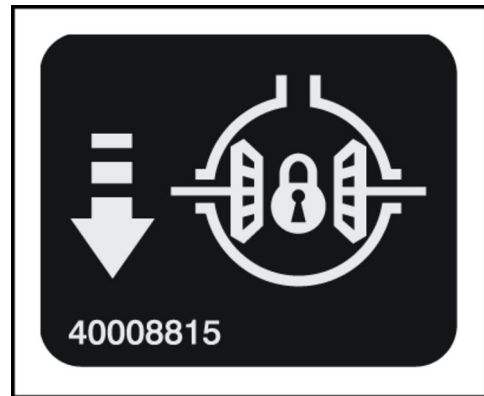


NHIL13CT01353AA 19

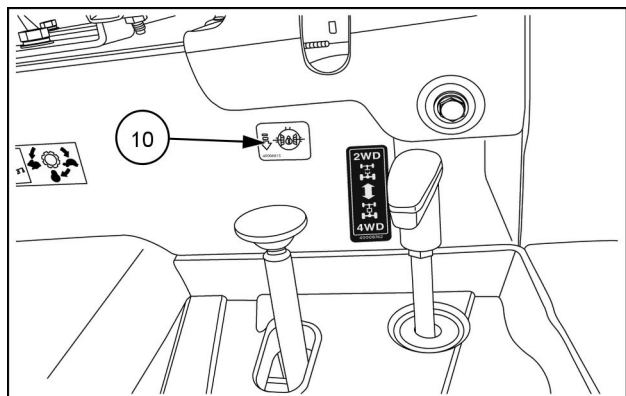
(10)

Location: HST - Left rear operator's platform.  
(Refer to figure 21).

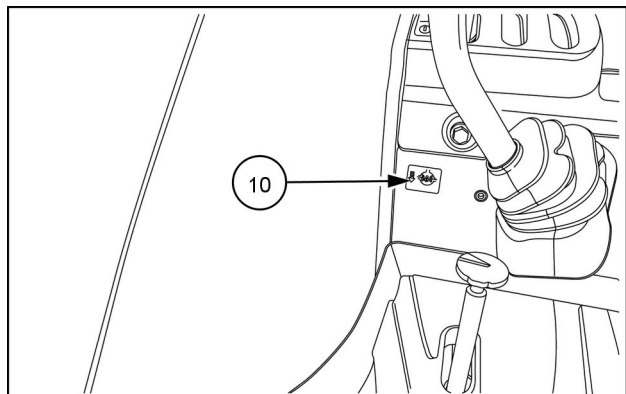
(10) Location: Mechanical - Right rear operator's platform.  
(Refer to figure 22 )



40008815 20



NHIL13CT01361AA 21



NHIL13CT01240AA 22



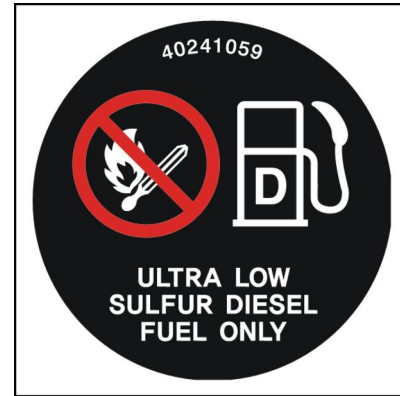
(11)

Fuel

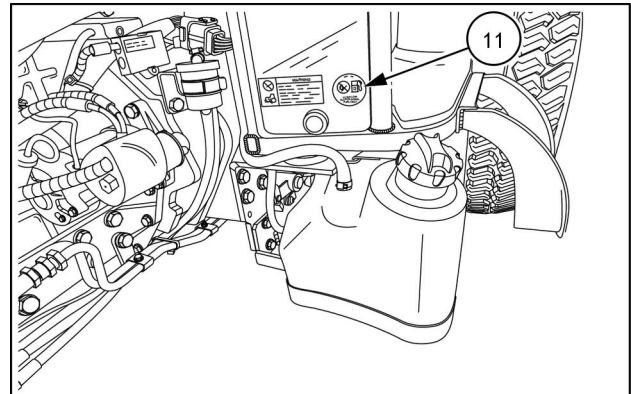
Ultra low sulfur diesel fuel only

- English **MT40241059**

Location: Left side, on platform shield above the fuel tank.



40241059 23



NHIL13CT01024AA 24

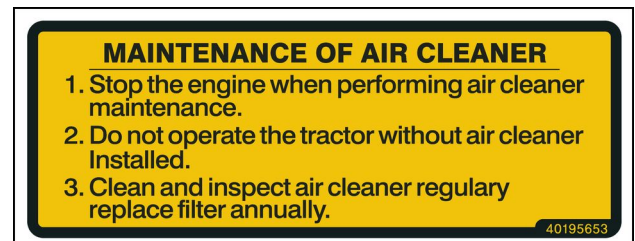
(12)

MAINTENANCE OF AIR CLEANER

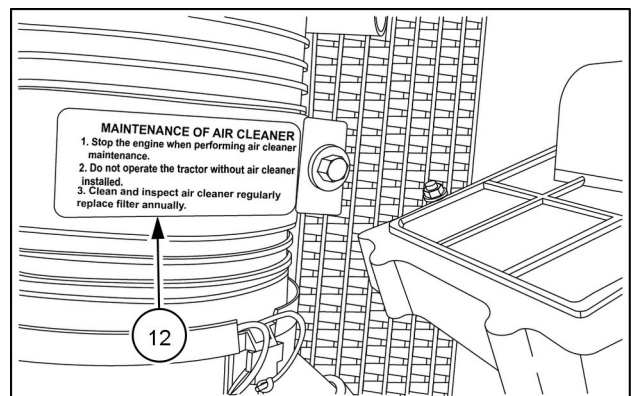
1. Stop the engine when performing air cleaner maintenance.
  2. Do not operate the tractor without air cleaner installed.
  3. Clean and inspect air cleaner regularly
- Failure to comply could result in machine damage.

- English **MT40195653**

Location: On top of the air cleaner.



40195653 25



NHIL13CT00992AA 26

## International symbols

As a guide to the operation of the machine, various universal symbols have been utilized on the instruments, controls, switches, and fuse box. The symbols are shown below with an indication of their meaning.

|                                                                                     |                              |                                                                                     |                               |                                                                                     |                             |                                                                                       |                                    |
|-------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------|------------------------------------|
|    | Thermostat starting aid      |    | Radio                         |    | PTO                         |    | Position Control                   |
|    | Alternator charge            |    | Keep alive memory             |    | Transmission in neutral     |    | Draft Control                      |
|    | Fuel level                   |    | Turn signals                  |    | Creeper gears               |    | Accessory socket                   |
|    | Automatic Fuel shut-off      |    | Turn signals -one trailer     |    | Slow or low setting         |    | Implement socket                   |
|    | Engine speed (rev/min x 100) |    | Turn signals -two trailers    |    | Fast or high setting        |    | %age slip                          |
|    | Hours recorded               |    | Front windshield wash/wipe    |    | Ground speed                |    | Hitch raise (rear)                 |
|    | Engine oil pressure          |    | Rear windshield wash/wipe     |    | Differential lock           |    | Hitch lower (rear)                 |
|   | Engine coolant temperature   |   | Heater temperature control    |   | Rear axle oil temperature   |   | Hitch height limit (rear)          |
|  | Coolant level                |  | Heater fan                    |  | Transmission oil pressure   |  | Hitch height limit (front)         |
|  | Tractor lights               |  | Air conditioner               |  | FWD engaged                 |  | Hitch disabled                     |
|  | Headlamp main beam           |  | Air filter blocked            |  | FWD dis-engaged             |  | Hydraulic and transmission filters |
|  | Headlamp dipped beam         |  | Parking brake                 |  | Warning!                    |  | Remote valve extend                |
|  | Work lamps                   |  | Brake fluid level             |  | Hazard warning lights       |  | Remote valve retract               |
|  | Stop lamps                   |  | Trailer brake                 |  | Variable control            |  | Remote valve float                 |
|  | Horn                         |  | Roof beacon                   |  | Pressurized! Open carefully |  | Malfunction! See Operator's Manual |
|                                                                                     |                              |  | Warning ! Corrosive substance |                                                                                     |                             |  | Malfunction! (alternative symbol)  |

## 3 - CONTROLS AND INSTRUMENTS

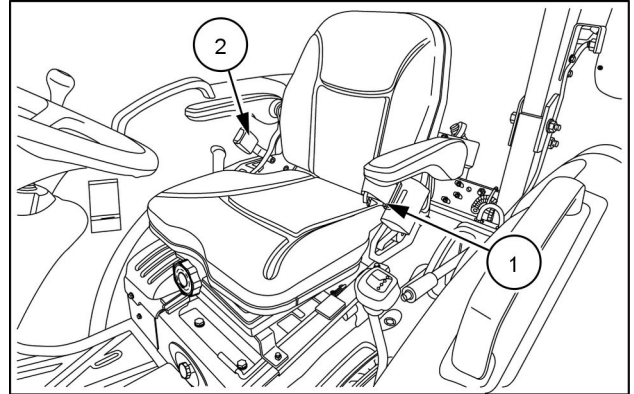
### OPERATOR'S SEAT

#### Seat belt

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

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

Replace the seat belt if it becomes damaged or worn.



NHIL13CT01165AA 1

## Seat controls

### Adjusting the tractor seat

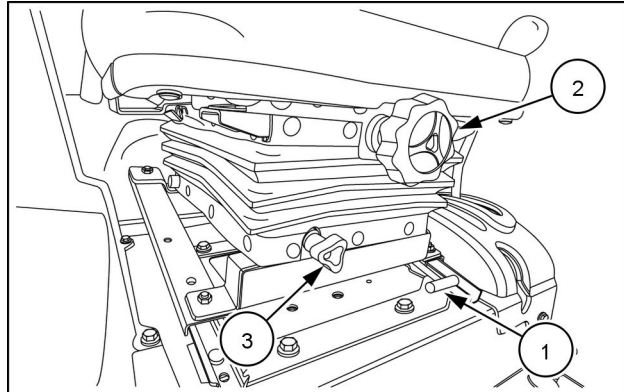
Your tractor is equipped with an adjustable suspension seat.

To move the seat forward or backwards, raise the adjustment lever (1). After the seat is adjusted, release the adjustment lever.

To adjust the seat suspension, turn the weight adjustment knob (2). Rotate the knob clockwise for a firmer ride or counter-clockwise for a softer ride.

**NOTE:** Before adjusting seat height, release tension on seat suspension by rotating knob (2) counter-clockwise.

To adjust the seat height, turn the height adjustment knob (3). Turn the knob clockwise to lower the seat and counter-clockwise to raise the seat.



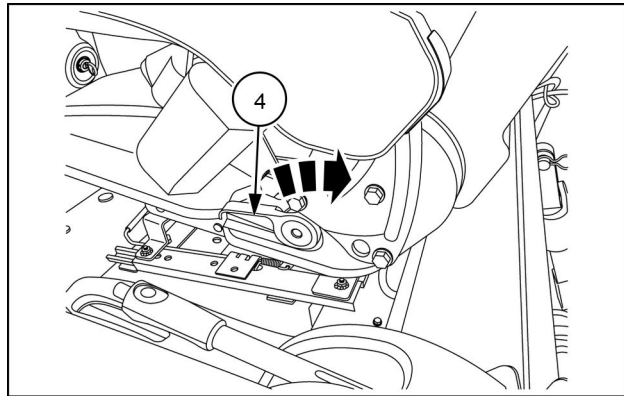
NHIL13CT01016AA 1

Rotate seat back latch (4) rearward to release latch and allow seat back (5) to tilt forward.

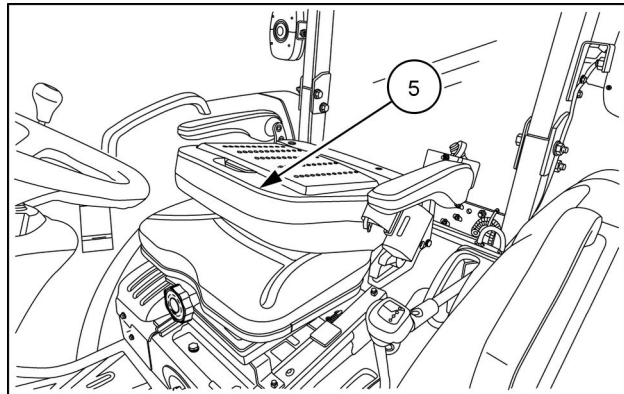
### Seat cleaning

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

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



NHIL13CT01162AA 2



NHIL13CT01164AA 3

## 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**

#### **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

### **⚠ 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!**

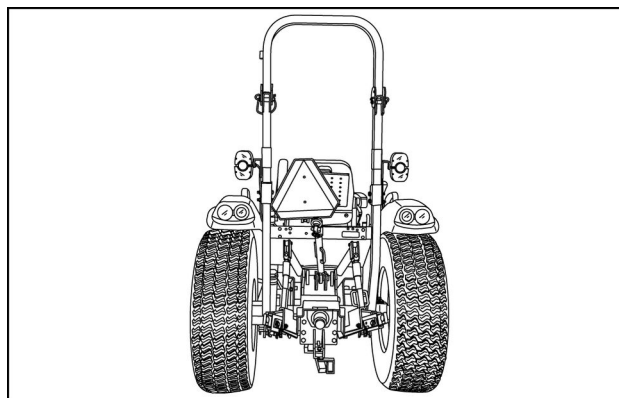
Always pull from the drawbar. **DO NOT** attach chains or ropes to the Roll Over Protective Structure (ROPS) for pulling purposes, as the machine could tip over. When driving through door openings or under low overhead objects, make sure there is sufficient clearance for the ROPS. Failure to comply could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

W0463A

A Rollover Protective Structure (ROPS) and seat belts are standard equipment on this tractor at the time of factory assembly. If the ROPS was removed by the original purchaser or has been removed, it is recommended that you equip your tractor with a ROPS and seat belts.

ROPS are effective in reducing injuries in the event of tractor overturn. Overturning a tractor without a ROPS installed can result in serious injury or death. The Rollover Protective Structure and seat belts are available from your NEW HOLLAND Dealer.

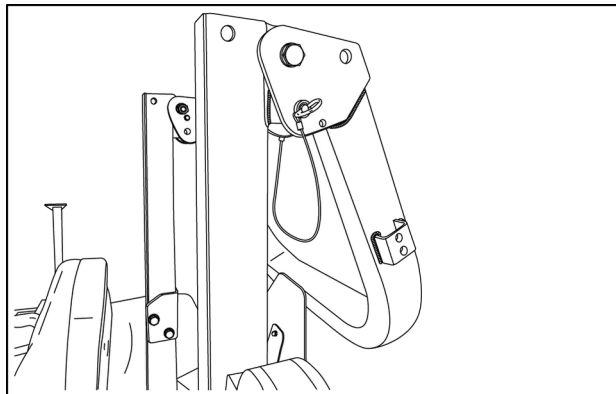
Additionally, the safety offered by the ROPS and seat belt is minimized if your seat belt is not buckled. Always use your seat belt when the ROPS is in the "UP" position, it can save your life.



NHIL13CT01167AA 1

## Foldable ROPS

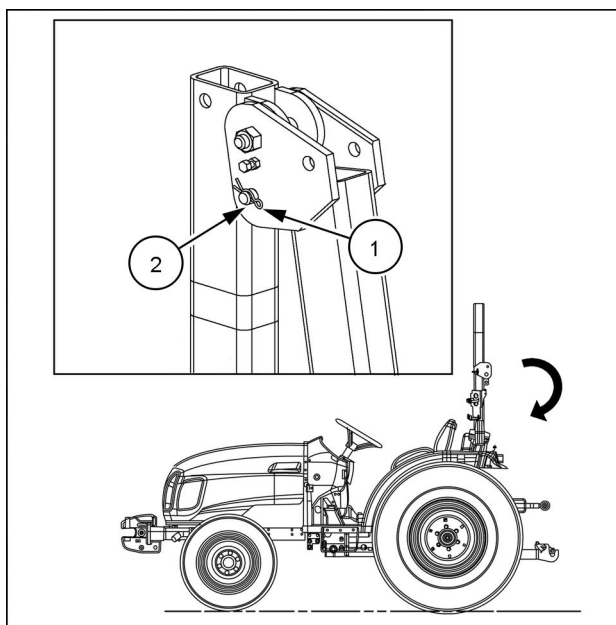
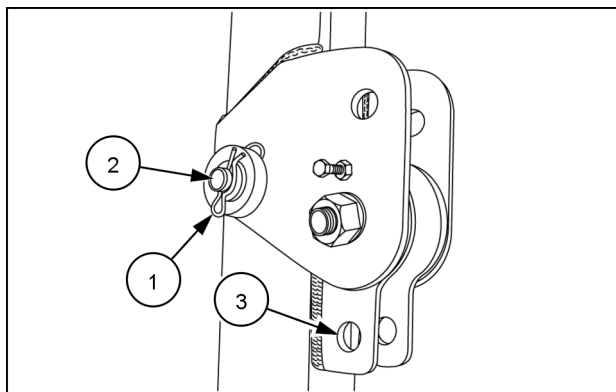
A foldable Rollover Protective Structure, is factory installed. Operate with this ROPS in the "UP" position whenever possible. Use the ROPS in the "folded" position only when absolutely necessary.



## ROPS Folding Procedure

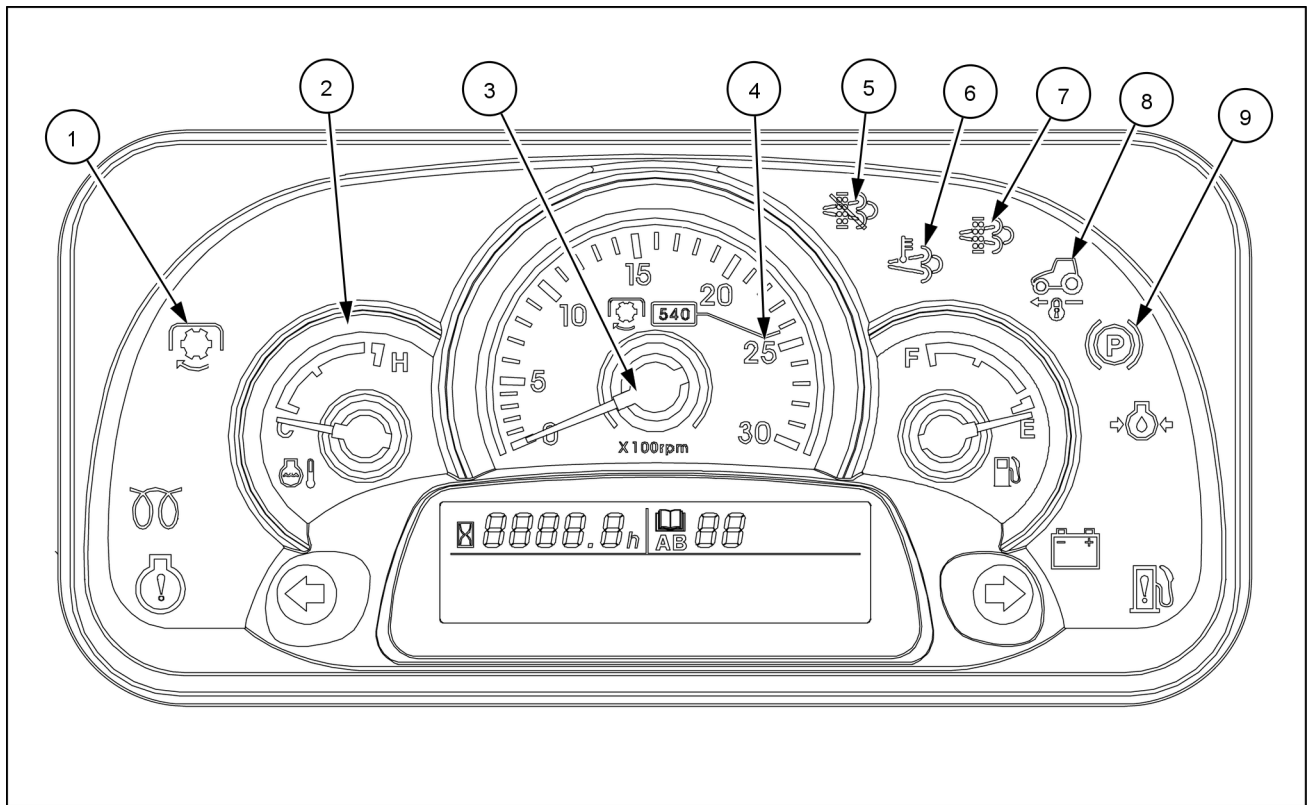
To fold the ROPS into the "DOWN" position

1. Remove retaining clip (1) from the pin (2) and remove pin from the latching bracket, on both sides of the ROPS.
2. Rotate the top part of the ROPS downward until the brackets contact the ROPS uprights.
3. Reinstall pin (2) into lower retaining hole (3).
4. Secure the pin (2) with the retaining clip (1).



## FORWARD CONTROLS

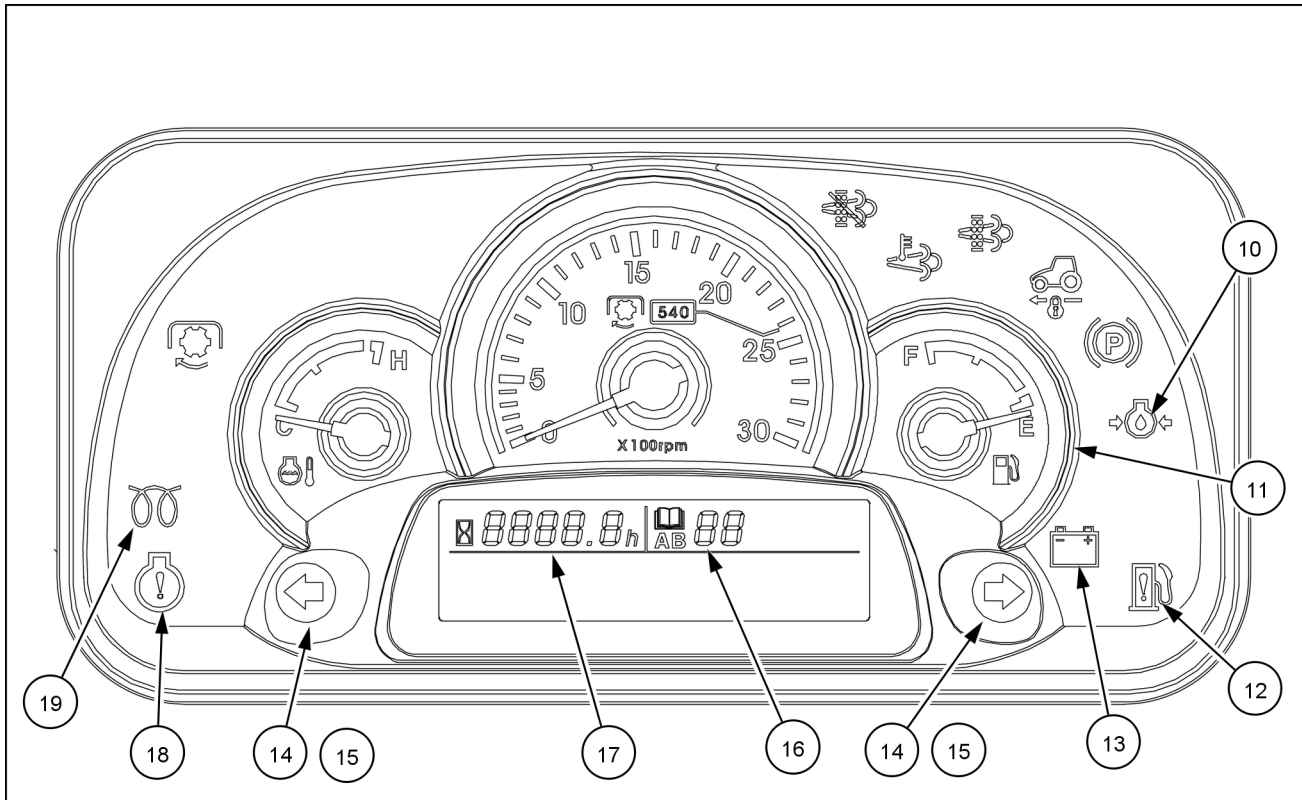
### Instrument panel



NHIL14CT00054FA 1

1. PTO Indicator Light - When either the rear or mid PTO is engaged, the indicator will be illuminated amber with the key in the "START" or "ON" positions.
2. Temperature Gauge - Indicates coolant temperature. It is activated when the key switch is turned 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.
3. Tachometer - Registers engine rpm (Revolutions Per Minute). The gauge is marked in increments of 100 and will return to zero when the engine is not running.
4. PTO Speed Indicator - Determined by the position of the needle on the tachometer. The tachometer is marked to indicate **540 RPM** of PTO. If the needle registers above the **540 RPM** mark, this indicates a dangerous over speed condition, and the engine rpm should be reduced immediately.
5. Diesel Particulate Filter (DPF) Inhibited Indicator Light - This indicator light will be illuminated when the (DPF) switch is placed in the inhibited position, to indicate the regeneration of the (DPF) is stopped.
6. Diesel Particulate Filter (DPF) Temperature Indicator Light - This indicator light will be illuminated when the engine exhaust temperature is sufficient for the regeneration of the (DPF) to start.
7. Diesel Particulate Filter (DPF) Regeneration Indicator Light - This indicator light will be illuminated either continuous or blinking, when the regeneration of the (DPF) is in operation. The regeneration is started when the (DPF) soot load is over 60% or every four hours of operation and the engine exhaust temperature is at a sufficient temperature for regeneration to start.
8. Cruise Control Indicator Light (HST only) - Illuminates amber with the key switch in the "ON" position and the cruise control rocker switch is engaged.
9. Park Brake Indicator Light - Illuminates if the park brake is engaged with the key switch rotated from the "OFF" position.

### 3 - CONTROLS AND INSTRUMENTS



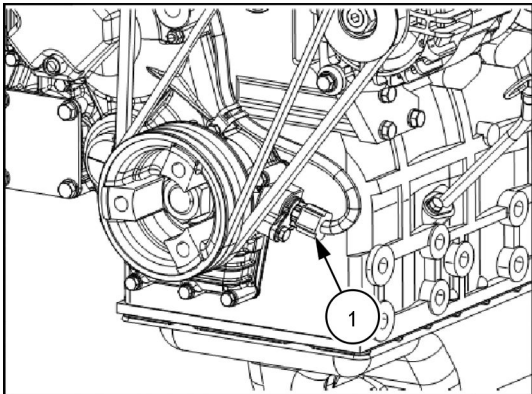
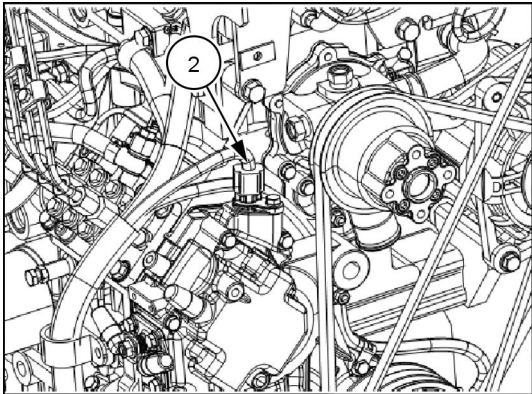
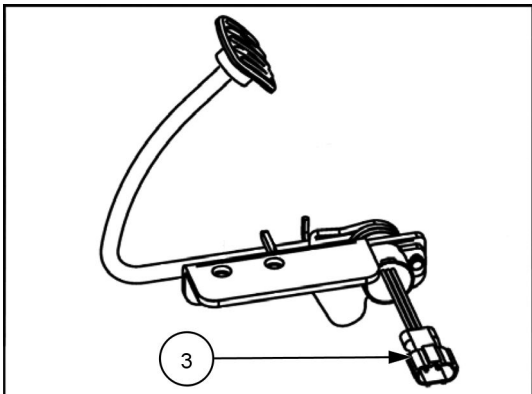
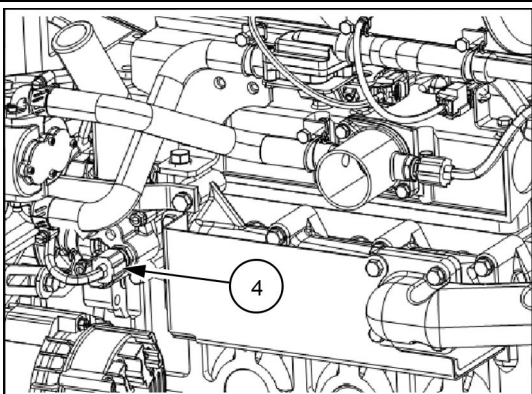
NH14CT00054FA 2

10. Engine Oil Pressure Warning Light - Illuminates with the key switch in the "ON" position and remains illuminated for a short period of time after the engine is started. The light indicates low engine oil pressure only and goes out when sufficient oil pressure is present at the oil sender. If the bulb becomes illuminated during operation, stop the tractor engine immediately and investigate the cause.
11. Fuel Gauge - Indicates the amount of diesel fuel remaining in the tank. The gauge is activated when the key switch is in the "ON" position. It will register "empty" with the key switch in the "OFF" position.
12. Fuel Filter Warning Indicator Light - Illuminates when there is a restriction or excess water in the fuel filter. When this indicator illuminates the engine will shut off automatically. Service of the fuel filter will be required.
13. Battery Charge Warning Light - Illuminates when the key switch is in the "ON" position and goes out when the engine is started. If this bulb becomes lit during operation, it indicates that the charging system is not operating normally.
14. Flasher Warning Lights - Operate when the multifunction switch is placed in the hazard or road lights position, regardless of the key switch position. Use the flasher warning lights, road lights when traveling on public roads, day or night.
15. Flasher Turn Lights - Operate when the multifunction switch lever is moved upwards for right turns the right arrow will flash and moved downwards for left turns the left arrow will flash. The key switch has to be in the "ON" or "START" positions.
16. Engine fault codes display - Displays any engine fault codes that may occur. Fault code will be displayed as AB##. See 3-7 for list of engine fault codes.
17. Hour Meter - Records the hours and portions of hours that your tractor has been operated regardless of engine RPM. Use the hour meter as a guide to determine hourly service and maintenance intervals.
18. Engine Warning Indicator Light - Illuminates when there is a fault detected in the engine control system. This indicator light will be illuminated either continuous or blinking, depending on engine fault. See 4-2 for more detail explanation of engine warning indicator light operation.
19. Cold Starting Indicator Light - Illuminates when the key switch is first turned to the "ON" position. The illumination time will vary from three to twelve seconds, depending on the ambient temperature. When the indicator light is illuminated, the glow plugs are heating the engine precombustion chambers.

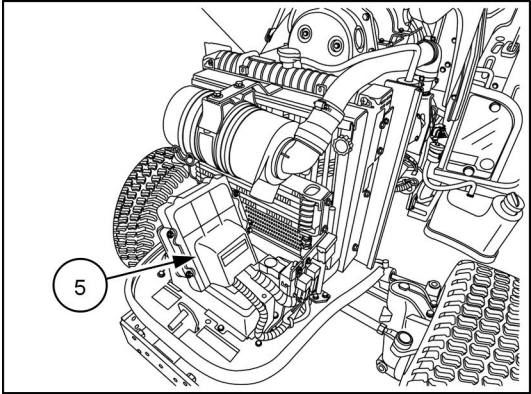
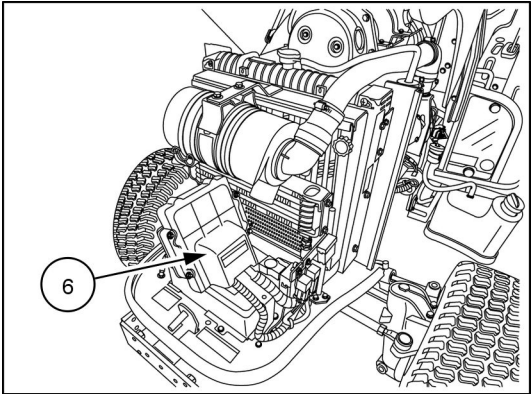
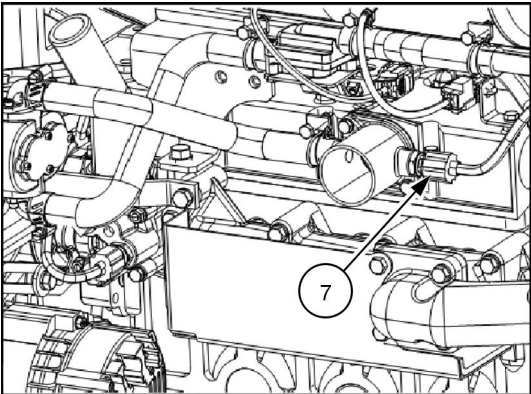
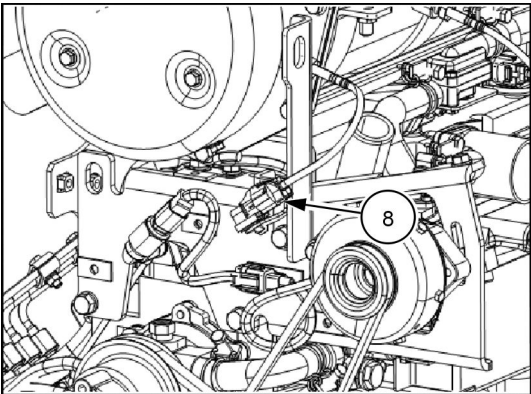


## Engine fault codes display

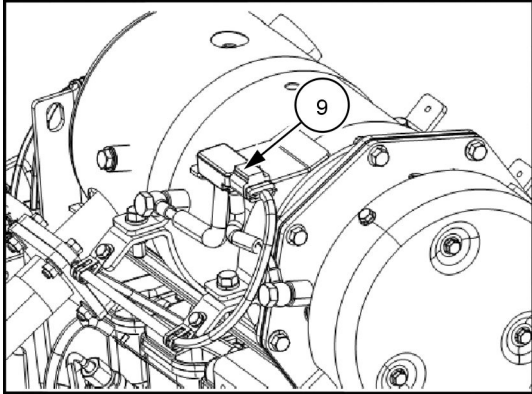
### Engine fault codes

| Fault code | Possible cause                                                               | Check                                                                                                        | Location                                                                                                                                                                                                                 |
|------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ABO2       | Main speed sensor (1)<br>Sub speed sensor (2)                                | Connector connection<br>Wiring harness for open or shorted circuit                                           |  <p>NHIL14CT00055AC 1</p>  <p>NHIL14CT00056AC 2</p> |
| AB04       | Foot throttle pedal position sensor (3)<br>(Gear transmission tractors only) | Normal sensor signal 0.2 to 4.25 volts<br>Connector connection<br>Wiring harness for open or shorted circuit |  <p>NHIL14CT00061AC 3</p>                                                                                                            |
| AB07       | Engine coolant temperature sensor (4)                                        | Normal sensor signal 0.11 to 25.4 ohms<br>Connector connection<br>Wiring harness for open or shorted circuit |  <p>NHIL14CT00057AC 4</p>                                                                                                            |

### 3 - CONTROLS AND INSTRUMENTS

| Fault code | Possible cause                                                                      | Check                                                                                                         | Location                                                                                                  |
|------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| AB09       | Engine Control Unit (ECU)<br>Barometric pressure sensor (5)<br>Located inside (ECU) | Normal sensor signal over 0.25 volts<br>Connector connection<br>Wiring harness for open or shorted circuit    | <br>NHIL13CT01160AC 5   |
| AB10       | Engine Control Unit (ECU)<br>Ambient temperature sensor (6)<br>Located inside (ECU) | Normal (ECU) temperature less than 115 °C (239 °F)                                                            | <br>NHIL13CT01160AC 6  |
| AB12       | Intake manifold temperature sensor (7)                                              | Normal sensor signal 0.08 to 4.85 volts<br>Connector connection<br>Wiring harness for open or shorted circuit | <br>NHIL14CT00058AC 7 |
| AB13       | Exhaust gas temperature sensor (8)                                                  | Normal sensor signal 164.8 to 4000 ohms<br>Connector connection<br>Wiring harness for open or shorted circuit | <br>NHIL14CT00059AC 8 |

### 3 - CONTROLS AND INSTRUMENTS

| Fault code | Possible cause                                                      | Check                                                                                                                | Location                                                                                                    |
|------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| AB14       | (DPF) differential pressure sensor (9)                              | Normal sensor signal 0.25 to 4.75 volts<br>Connector connection<br>Wiring harness for open or shorted circuit        |  <p>NHIL14CT00060AC 9</p> |
| AB15       | Battery<br>Positive (+) battery cable<br>Negative (-) battery cable | Normal battery voltage 6 to 29 volts (Instant)<br>Connector connection<br>Wiring harness for open or shorted circuit |                                                                                                             |

**NOTE:** Contact your authorized NEW HOLLAND dealer for fault code analysis.

## Cruise control

### **⚠ WARNING**

#### **Loss of control hazard!**

**To maintain optimum control of the machine, do not use cruise control at high speeds or when roading.**

**Failure to comply could result in death or serious injury.**

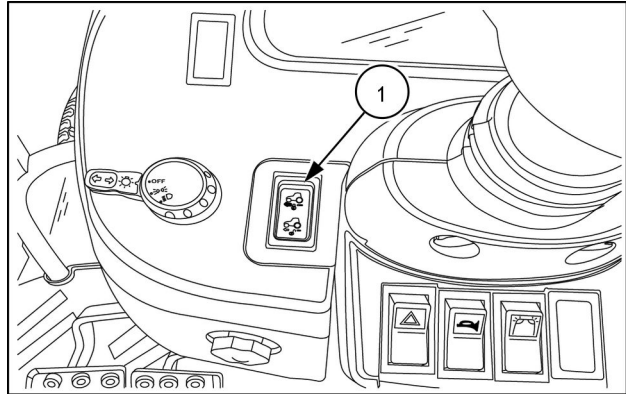
W1058H

The HST cruise control rocker switch **(1)** is located on the left-hand side of the dash panel. It is used to maintain a constant forward or reverse speed.

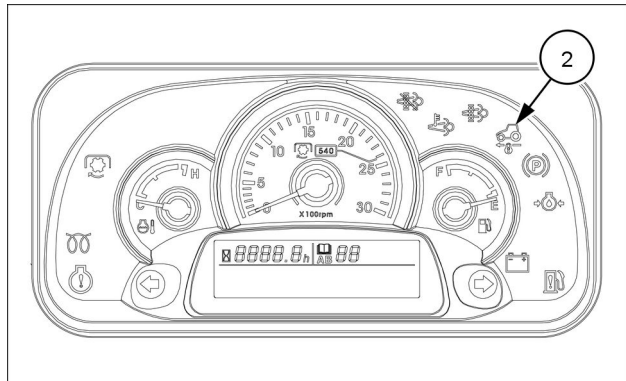
**NOTE:** The rocker switch has three positions, the top half engages the cruise control, the middle is neutral, and the bottom half will disengage the cruise control.

When the desired travel speed is reached, depress the top half of the cruise control switch. The cruise control indicator light **(2)** will illuminate on the instrument panel indicating the cruise control is engaged.

To disengage the cruise control, depress the bottom half of the switch or depress both brake pedals. The cruise control indicator light will extinguish, indicating the cruise control is off.



NHIL13CT01036AA 1



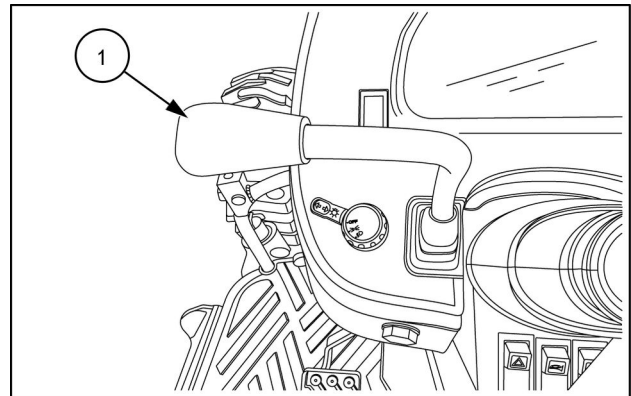
NHIL14CT00054FA 2

## Transmission shuttle shift lever

**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.

The transmission shuttle shift lever **(1)** is located on the left-hand side of the dash panel on gear transmission model tractors. 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.

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



NHIL13CT01090AA 1

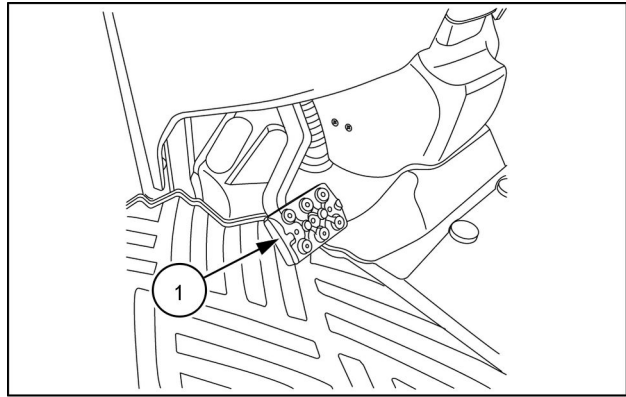
## Clutch pedal

The foot operated clutch pedal **(1)** controls the single-stage clutch and is located on the left-hand side of the operators platform.

**NOTE:** The clutch pedal is only found on gear model tractors.

Always depress the clutch pedal fully when engaging or disengaging the front-wheel drive.

To start the tractor, depress the clutch pedal fully to ensure a safe start-up.



NHIL13CT01179AA 1

## Brake pedals

### ⚠ 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.**

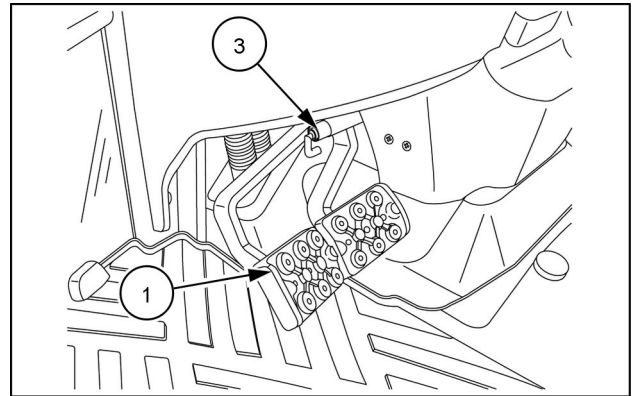
W1237A

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.

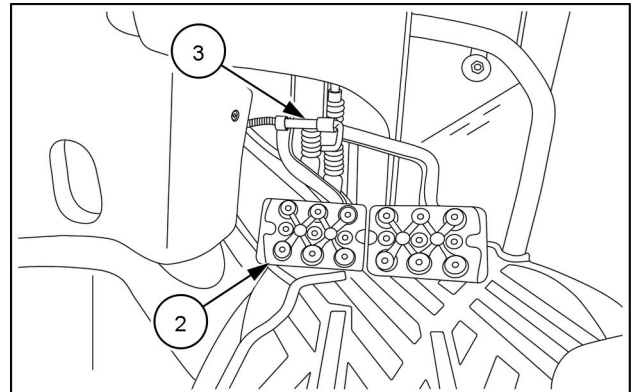
The function of the brake pedals are identical for the HST and gear model tractors except for the location of the pedals. The brake pedals **(1)** on a HST model tractor are located on the left-hand side of the operators platform and the brake pedals **(2)** on a gear model tractor are located on the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



NHIL13CT01173AA 1



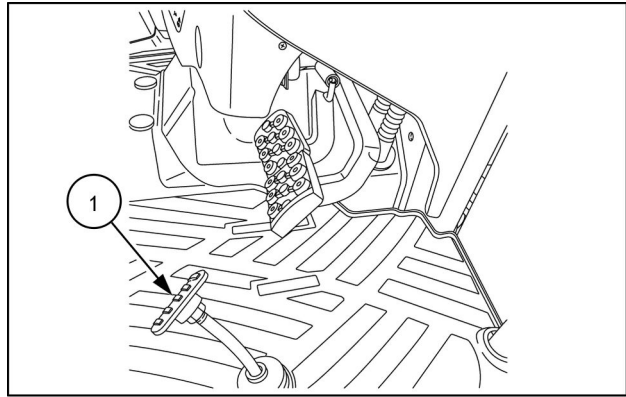
NHIL13CT01055AA 2

## Foot throttle pedal

The foot throttle pedal **(1)** located on the right-hand side of the operator's platform of gear transmission model tractors, may be used independent of the hand throttle lever to control the speed of the tractor.

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

**NOTE:** *It is recommended to use the foot throttle pedal when driving tractor on public roads.*



NHIL13CT01191AA 1

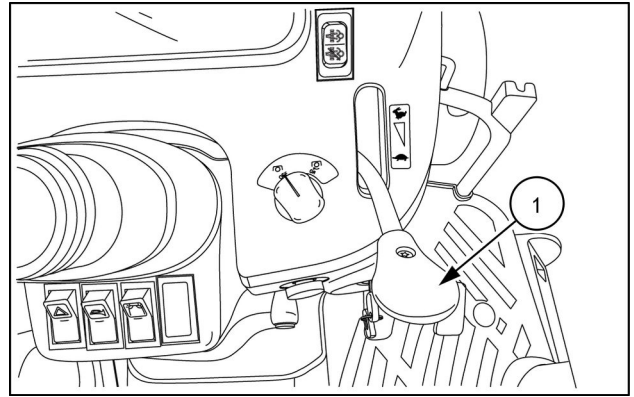


## Hand throttle lever

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.

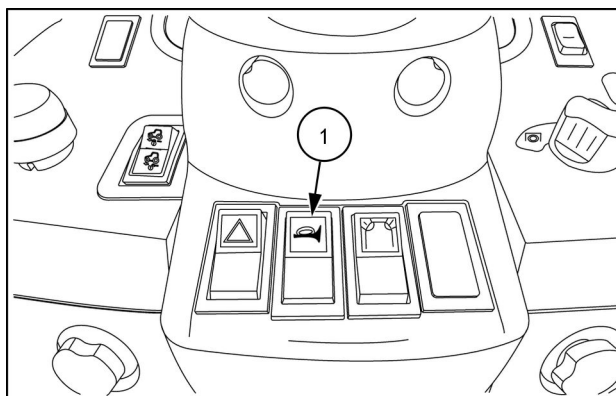


NHIL14CT01049AA 1

## Horn switch

The horn switch **(1)** is located on the center of the steering wheel shroud.

To activate the horn, place the key switch in the “ON” position and push the horn switch down.

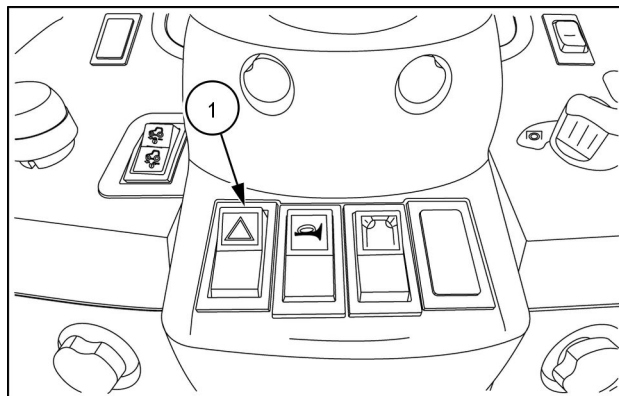


NHIL13CT01004AA 1

## Hazard light switch

The hazard light switch **(1)** is located in the center on the steering wheel shroud.

To activated the hazard lights, push down on the hazard light switch **(1)** with key switch in any position.



NHIL13CT01004AA 1

## Power Take-Off (PTO) switch

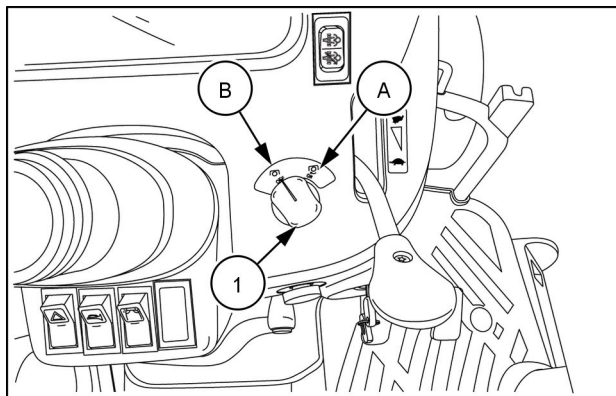
The PTO switch **(1)** is located on the right-hand side of the dash panel.

**NOTE:** To start the engine the PTO switch must be placed in the "OFF" position

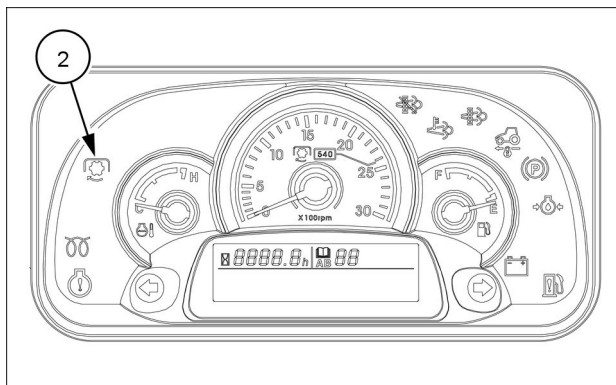
To activate the PTO, push down on the PTO switch and turn the switch to the "ON" position **(A)**.

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

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



NHIL14CT01049AA 1

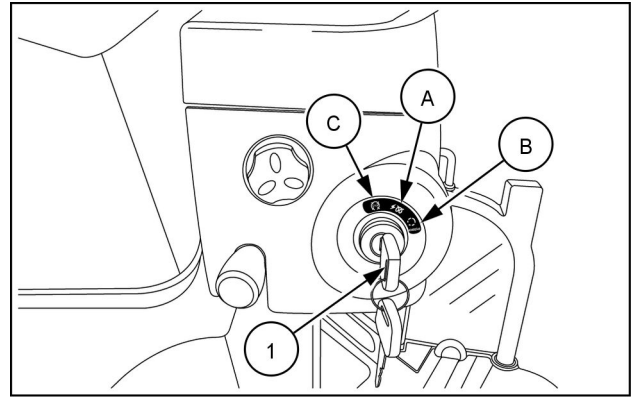


NHIL14CT00054FA 2

## Key switch

The key switch **(1)** is located on the right-hand side of the rear hood panel just below the hand throttle.

- Turning the key to the middle "ON" position **(A)** activates the warning lights, instruments, and automatic engine preheat system.
- The engine starts when the key is turned to the extreme right "START" position **(B)**. A internal spring returns the key to the middle "ON" position when released.
- Turning the key to the extreme left "STOP" position **(C)** will shut the engine off.



NHIL13CT01006AA 1

## Differential lock pedal

### ⚠ WARNING

#### Loss of control hazard!

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.

W1296A

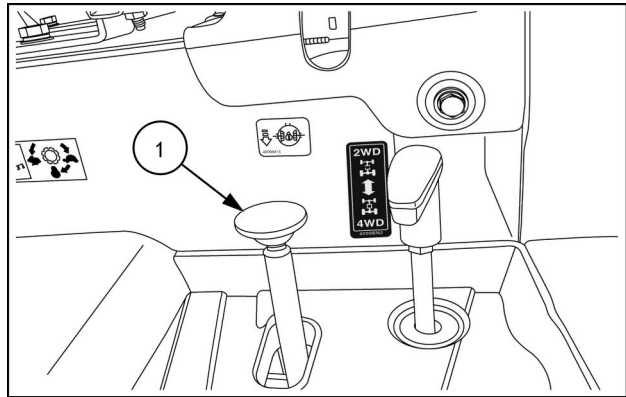
The differential lock pedal is located on the left-hand foot platform on HST models (1) and on the right-hand foot platform on gear models (2). The differential lock is used to obtain additional traction in wet or loose soil.

When the differential lock pedal is depressed, both final drive pinion gear shafts are locked together, preventing one wheel from rotating independently of the other. Whenever one wheel begins to slip in wet or loose soil, use the lock to obtain additional traction from the opposite wheel.

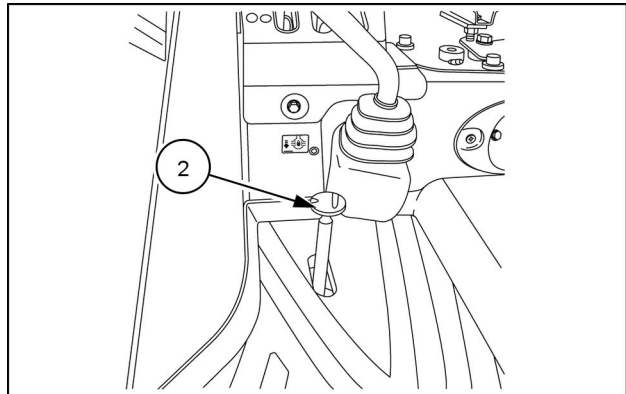
To operate the differential lock, depress and hold the pedal down until the lock is positively engaged. It is best to engage the lock while the wheels are turning slowly to minimize shock loads to the driveline. If a wheel spins at high speed, such as on ice, reduce engine speed to idle before engaging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



NHIL13CT01361AA 1



NHIL13CT01180AA 2

## Hydrostatic transmission (HST) foot pedals

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 foot platform.

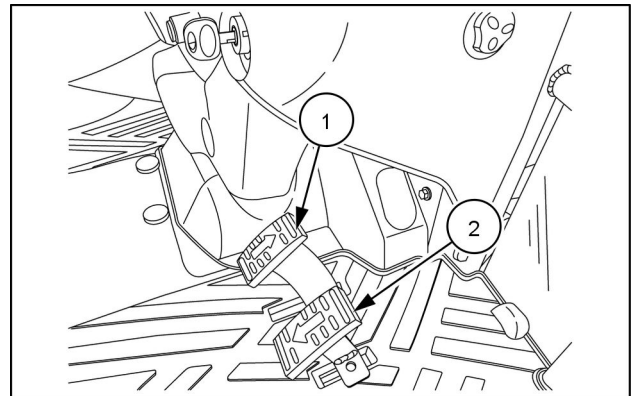
For forward travel:

- Depress the forward pedal (1) until the desired ground speed is reached.

For reverse travel:

- Depress the reverser pedal (2) until the desired ground speed is reached.

**NOTE:** Pedal will return to the neutral position when the operator's foot is removed from the pedal, unless the HST cruise control switch is placed in the "ON" position.



NHIL13CT01172AA 1

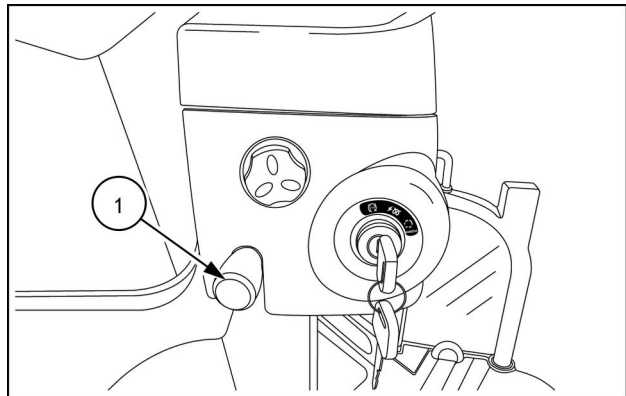
## Tilt steering lever

The tilt steering lever **(1)** is located on the right-hand side of the steering column shroud.

The tilt steering lever is used to adjust the steering wheel position.

To adjust position of steering wheel:

1. Push down on tilt steering lever **(1)** and position steering wheel as needed.
2. Pull up on tilt steering lever to lock steering wheel in place

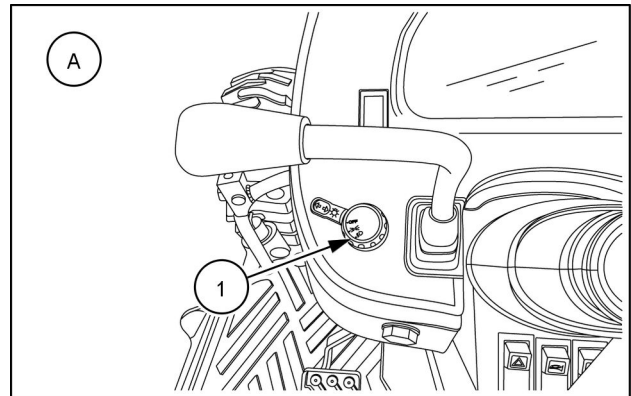


NHIL13CT01006AA 1

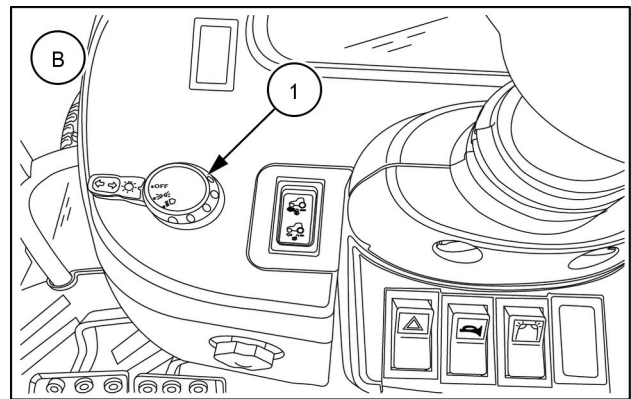


## Multifunction light switch

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, taillights and turn signals.



NHIL13CT01090AA 1



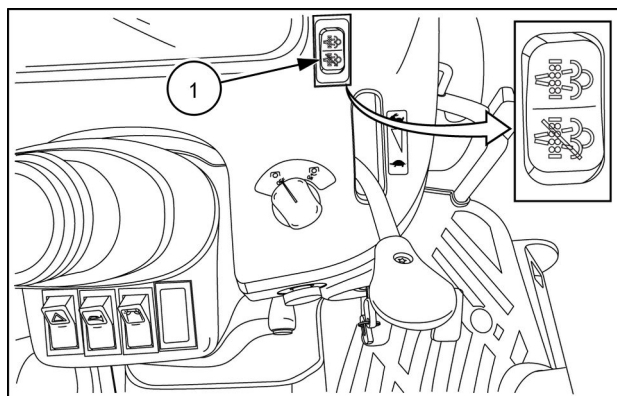
NHIL13CT01036AA 2

**(A)** GEAR MODEL

**(B)** HST MODEL

## DPF switch

The (DPF) switch **(1)** located on the right-hand side of the dash, is used to delay or stop the regeneration of the (DPF) emission system. See **4-2** for more detail explanation of operation of this switch.



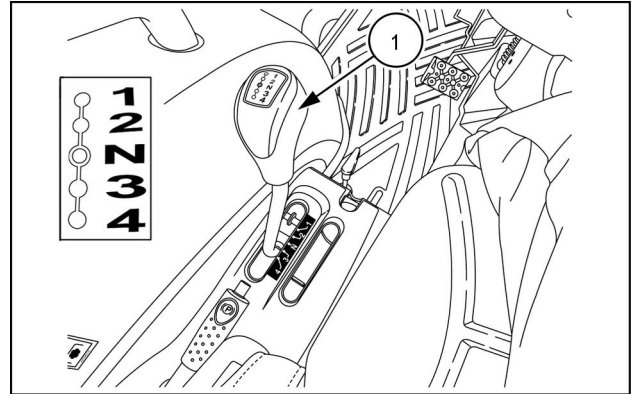
## LEFT-HAND SIDE CONTROLS

### Transmission range lever

#### Gear model

The transmission range selector lever (1) is located on the left-hand control pod. There are four speed ranges, 1, 2, 3, and 4. There is a neutral position between the 2nd and 3rd range positions.

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



NHIL13CT01354AA 1

## 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

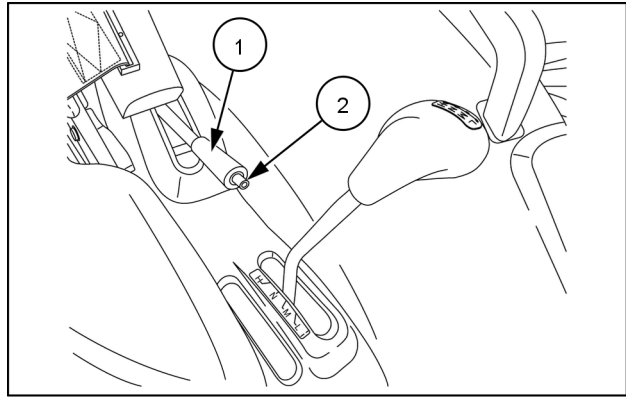
**NOTICE:** *Ensure the park brake is fully disengaged before driving the tractor.*

The park brake lever **(1)** is located on the left-hand side of the operators platform. The park brake is used to apply the rear axle brakes to prevent the tractor from moving while parked.

To engage the park brake, lock the pedals together and pull the park brake lever up while pressing the brake pedals down.

**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, push button **(2)** in the end of the park brake lever to release lever and push the lever **(1)** downward.



NHIL13CT01174AA 1

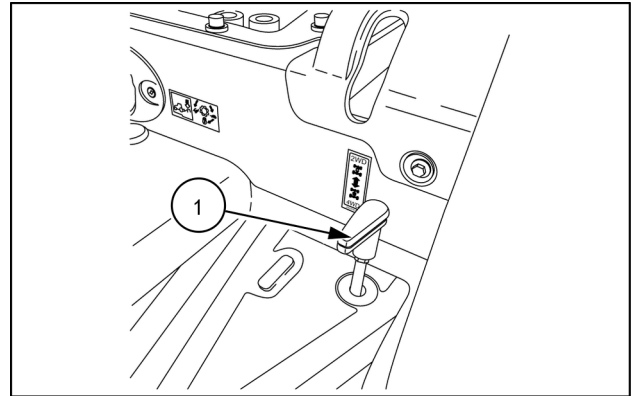
## Front-wheel drive lever

The front-wheel drive (FWD) is controlled by a handle. The handle is located on the left-hand side of operator's platform.

**NOTE:** Use front-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 front-wheel drive to maximize tire and driveline life and to economize on fuel.

### Gear model

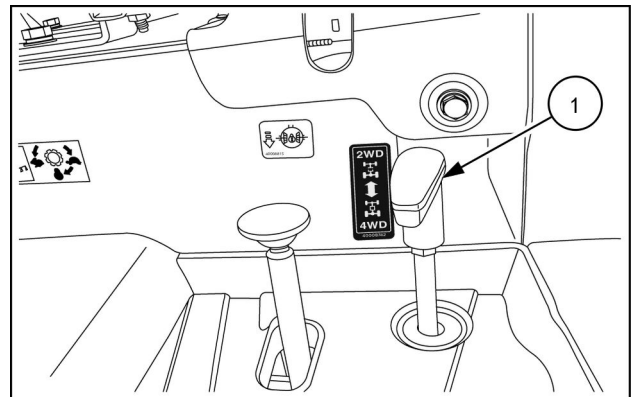
To engage the front-wheel drive on gear model tractors, stop the tractor completely, depress the clutch pedal and push the handle (1) completely downwards. To disengage the front-wheel drive, stop the tractor completely and pull the handle upwards.



NHIL13CT01175AA 1

### HST model

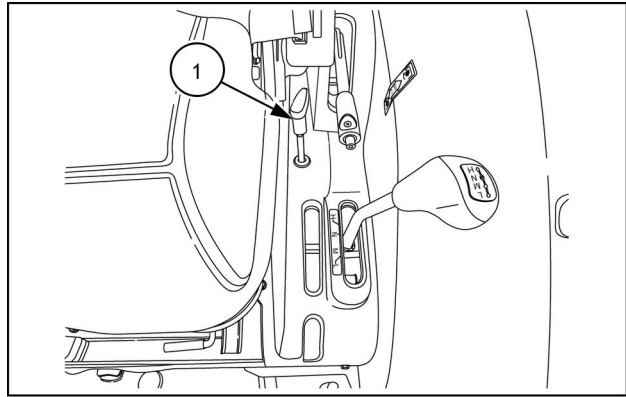
To engage the front-wheel drive on HST model tractors, stop the tractor completely and push the handle (1) completely downwards. To disengage the front-wheel drive, stop the tractor completely and pull the handle upwards.



NHIL13CT01361AA 2

## Mid Power Take Off (PTO) lever - optional

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



NHIL13CT01248AA 1

## RIGHT-HAND SIDE CONTROLS

### Hydraulic power lift (HPL)

The HPL lever (1) is located on the right-hand control pod. The lever controls the position of the two lift arms.

#### **⚠ DANGER**

**Crushing hazard!**

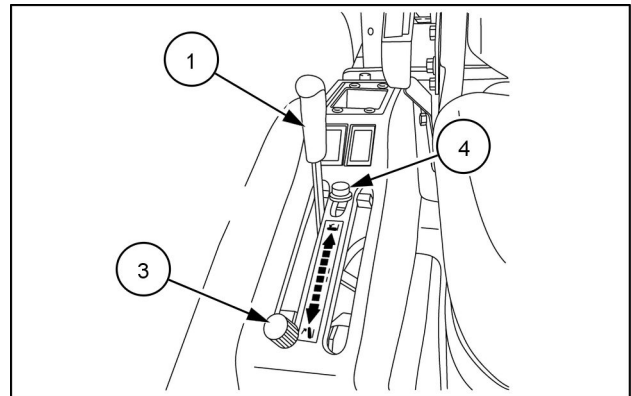
**Make sure area is clear of all persons before lowering equipment.**

**Failure to comply will result in death or serious injury.**

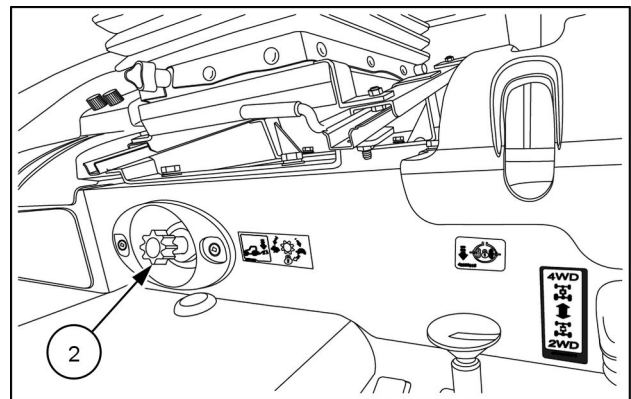
D0016A

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.



NHIL13CT01178AA 1



NHIL13CT01026AA 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.

## Draft control - optional

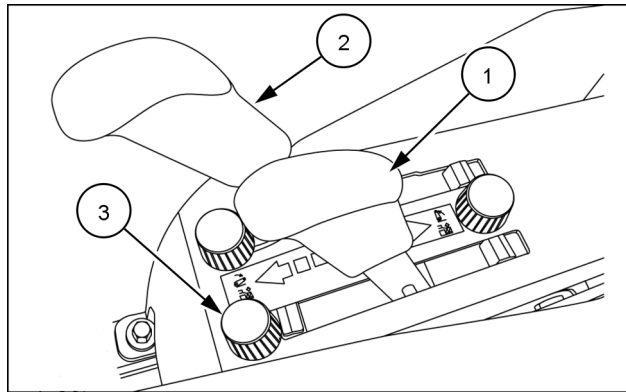
The optional draft control lever (1) will be located in the slot on the right-hand control pod, next to the position control lever (2).

The draft control lever sets the desired depth of the attached implement. Draft control is best when using implements that operate in the ground, such as plows, harrows, or cultivators. The draft loading on the implement increases and decreases as the working depth or the soil resistance changes.

To set the draft control, move the position control lever (2) to its full forward position. Then set the implement draft depth lower by moving draft control lever forward, or set it higher by moving lever rearward.

Implement depth will be promotional to draft, depending on the soil conditions. With draft control, the lift keeps the tractive effort steady automatically.

You can limit the range manual draft lever operation by moving and tightening the stop (3).



## Combined draft and position control

You can use draft and position control together to operate in draft control but prevent the implement from sinking excessively when soil conditions change. First set the draft control lever with the position control lever fully forward. Then move the position control lever back until the lift arms start to rise. The position control lever sets the lowered position of the hydraulic lift.

## Float operation

Move the draft control lever and position control lever fully forward. The three-point linkage will now be free to "float" or follow the ground contour, a feature useful for scraper blades, etc.



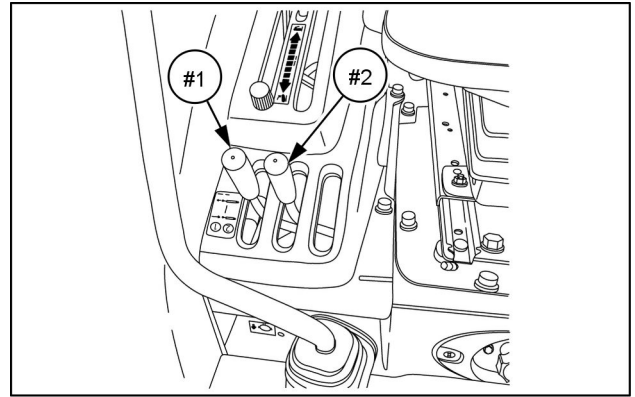
## Rear remote control valve(s) - optional

Your tractor can be equipped with one or two optional rear remote valves. The control lever(s) **(#1)** and **(#2)** is/are located in front of the right-hand control pod.

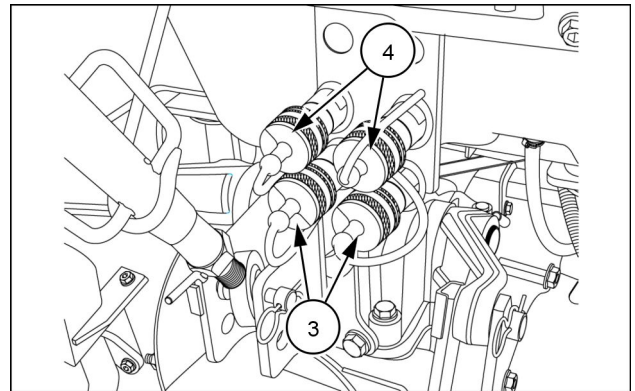
**NOTE:** *Rear remote valve kits are configured in either single spool or two spool. Once a single spool valve is installed, you CANNOT stack another single spool valve. You must purchase the two spool valve kit.*

To operate the single or two spool valve, pull the selected control lever rearward to extend the cylinder and push the control lever forward to retract the cylinder. Release the control lever to stop the cylinder in any position before it is fully extended. The lever automatically returns to neutral.

The **#1** (Green) set of couplers **(#1)** is located on bottom and the **#2** (Blue) set of couplers **(#2)** is located on top. The rear remote valves come standard with **12.7 mm (0.5 in)** female quick couplers .



NHIL13CT01177AA 1

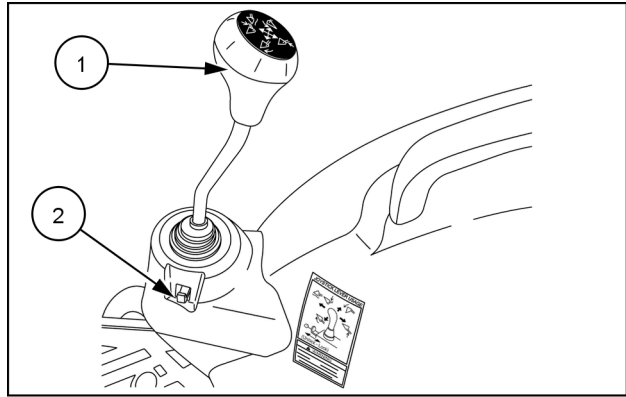


93100915 2

## Mid mount two spool control valve

The mid mount two spool control valve **(1)** is mounted to the front of the right-hand fender. This control valve is used mainly for front end loader operation, but may also be used to operate other front mounted implements.

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

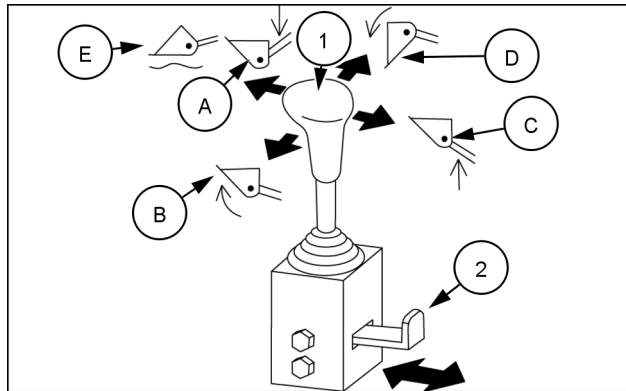


NHIL13CT01193AA 1

To operate the control valve, move the control lever **(1)** in any of the four directions.

Release the control lever to stop the cylinder in any position, the lever automatically returns to neutral.

- Move the control lever forward to lower the loader/retract cylinder **(A)**.
- Move the control lever to the left to curl the bucket/retract cylinder **(B)**.
- Move the control lever rearward to raise the loader/extend cylinder **(C)**.
- Move the control lever to the right to dump bucket/extend cylinder **(D)**.
- Move the control lever fully forward to "FLOAT" position **(E)** which allows the loader boom lift cylinders to extend or retract freely. This valve position will allow the loader to follow the ground contour during operation.



93100858 2

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

**NOTE:** Push the lockout tab **(2)** inwards to lock the valve control lever when the two-spool control valve is not used.

**NOTE:** If you move the control lever diagonally the loader and bucket will operate at the same time.

## Hydraulic hose connection

### **⚠ WARNING**

**Crushing hazard!**

**Before disconnecting the cylinders or equipment, make sure you adequately support and secure the equipment or implement.**

**Failure to comply could result in death or serious injury.**

W0243A

### **⚠ WARNING**

**Escaping fluid!**

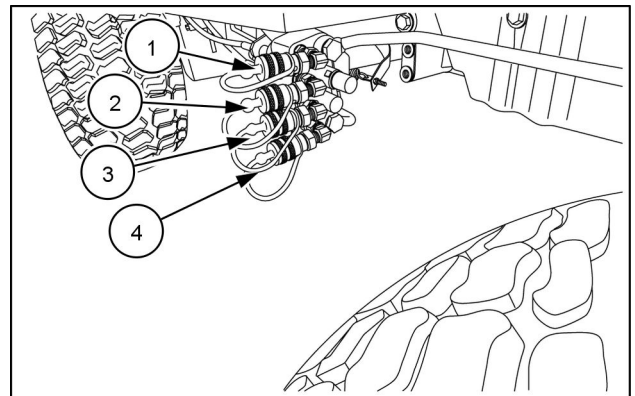
**Remote couplers must be properly mounted and securely fastened to the machine mounting bracket for proper functioning of the safety disconnect feature.**

**Failure to comply could result in death or serious injury.**

W0131A

When connecting hydraulic hoses , follow the instructions listed below.

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



NHIL13CT00921AA 3

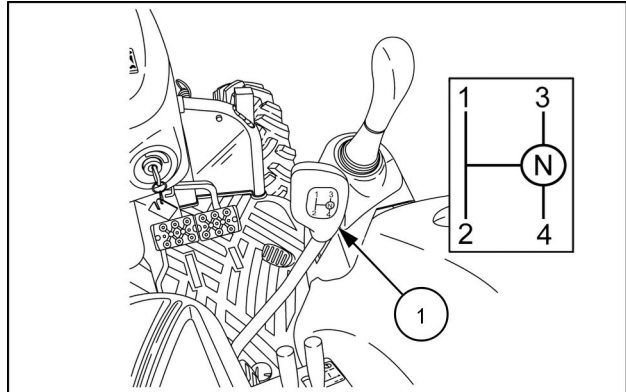
## Transmission main shift lever

### Gear 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.

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.

The transmission shift lever operates in a H-pattern. To change gears while in a selected range, depress the clutch pedal and shift the main gear shift lever into the desired gear. The tractor does not have to be stopped because the main shift gears are synchronized.



NHIL13CT01355AA 1

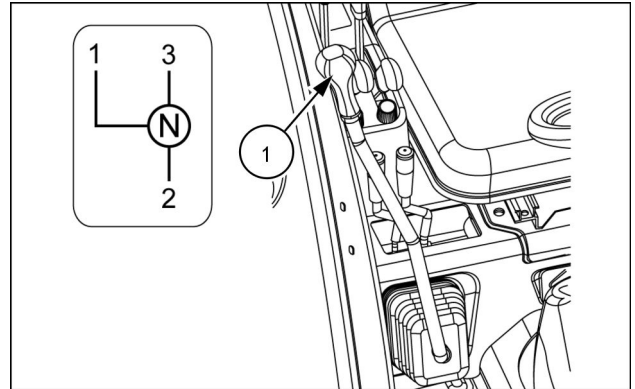
## Transmission range lever

### HST model

The transmission range shift lever (1) is located on the right-hand side of the operator's platform. The transmission range shift lever operates in a H-pattern. HST model tractors have a three range speeds and one neutral position.

**NOTE:** The shift pattern is shown as sitting in the operator's seat.

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



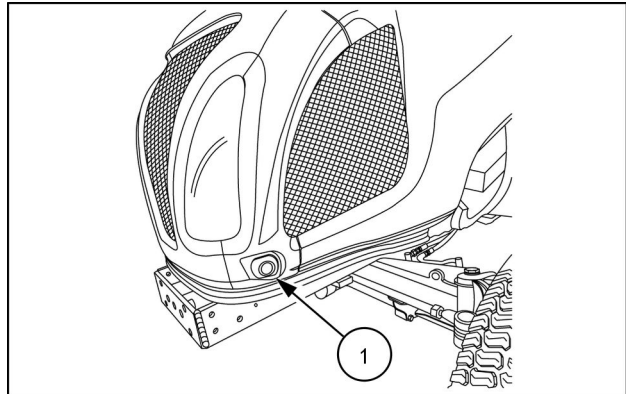
## EXTERIOR CONTROLS

### Hood release latch

The latch release button is located on the left-hand side of the tractor hood.

1. To raise the hood, push the latch release button **(1)** inward 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.



NHIL13CT01012AA 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.

## Diesel Particulate Filter (DPF) regeneration

### ⚠ CAUTION

#### Burn hazard!

During the Diesel Particulate Filter (DPF) regeneration process the exhaust stack and fixed hood area becomes extremely hot. Allow area to cool before servicing or working near the exhaust system components.

Failure to comply could result in minor or moderate injury.

C0102B

### ⚠ WARNING

#### Fire hazard!

During the Diesel Particulate Filter (DPF) forced regeneration process the exhaust stack and fixed hood area becomes extremely hot. Park the machine outside and away from combustible or highly flammable material.

Failure to comply could result in death or serious injury.

W1165B

## Definitions of system components and operations

The following terms will define the system components and operational modes.

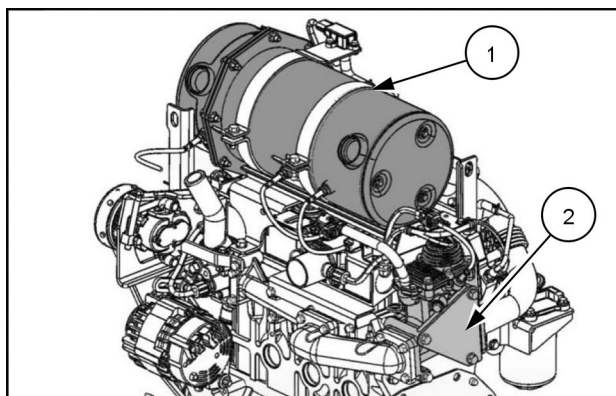
- Diesel Oxidation Catalyst (DOC) - Is a catalytic converter that reduces emission element such as hydrocarbons, carbon monoxide and unburned fuel.
- Diesel Particulate Filter (DPF) - Is a filter that captures soot from the engine exhaust.
- Burner - This component generates the required heat to burn the soot that is contained in the (DPF) during the regeneration process.
- (DPF) switch - Switch located on the right-hand side of the dash. This switch is used to stop or delay the regeneration process or to exit the inhibited regeneration mode.
- Regeneration - This is the process of burning/cleaning of the soot that is contained in the (DPF) by the burner.
- Inhibited Regeneration - The regeneration process is disabled by the use of the (DPF) switch

## Diesel Oxidation Catalyst (DOC) and Diesel Particulate Filter (DPF)

The Diesel Oxidation Catalyst (DOC) and the Diesel Particulate Filter (DPF) function is to reduce engine exhaust hydrocarbons, carbon monoxide and other toxic gases. This system converts exhaust emissions to harmless carbon dioxide and water. The (DPF) also traps Particulate Matter (PM)

To meet tier 4 emission regulations the Diesel Oxidation Catalyst and Diesel Particulate Filter **(1)** and burner **(2)** are installed on your tractor and are located under the engine hood of the tractor.

It is very important to read this operator's manual and understand the safe operation of your tractor. If you have any questions in the operation of this emission system please contact your NEW HOLLAND dealer



NHIL13CT01215AA 1



## Fuel and engine lubrication oil specifications

### Fuel specification

- Use only Ultra Low Sulfur diesel fuel (S15) in your tractor.

**NOTICE:** Use of diesel fuel other than Ultra Low Sulfur fuel may adversely affect the engine and the (DPF) performance.

### Engine oil specification

- Use only (DPF) compatible (CJ-4) oil in your tractor engine.

**NOTICE:** Use of any engine oil other than (CJ-4) may clog the (DPF) earlier than expected and fuel usage may increase.

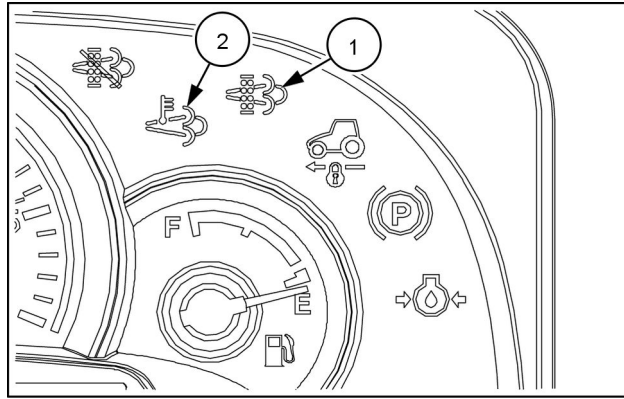
## Auto regeneration mode operation

### ⚠ WARNING

#### Fire hazard!

During the Diesel Particulate Filter (DPF) forced regeneration process the exhaust stack and fixed hood area becomes extremely hot. Park the machine outside and away from combustible or highly flammable material. Failure to comply could result in death or serious injury.

W1165B



NHIL13CT01216AA 2

In this operational mode, the operator does not have to take any actions, the system is activated automatically by the engine electronic controller.

The following conditions will activate the burner:

- Soot load of (DPF) is 60% or more of capacity.
- Every four hours of tractor operation after last regeneration.
- Engine exhaust temperature reaches designated regeneration temperature.
- (DPF) inhibited indicator light is "OFF".

**NOTE:** Duration of regeneration operation is approximately 30 to 40 minutes. During the regeneration it is normal to have a smell of burning or overheating.

During the regeneration operation, the (DPF) regeneration indicator light (1) and (DPF) temperature indicator light (2) will both be illuminated.

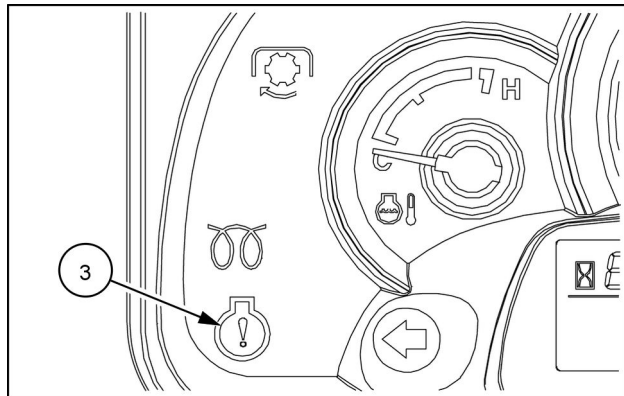
Depending on the soot rate of the (DPF) the (DPF) regeneration indicator light will show several different blinking frequencies during the regeneration process.

The engine warning indicator light (3) will blink when there is a excessive soot load in the (DPF). Stop working tractor and prepare for (DPF) regeneration.

**NOTICE:** Switching the key switch to the "OFF" position during regeneration mode is not recommended. Soot in the (DPF) will not be completely burned and may increase fuel consumption or damage to the regeneration burner. It is recommended for users to operate regeneration mode until all indicator lights are "OFF" with the key switch in the "ON" position.

**NOTE:** In case of turning off the engine during regeneration mode, the regeneration mode will resume again when restarting the engine.

**NOTICE:** After heavy work of tractor, allow tractor to run at idle for approximately five minutes to allow components in the fuel circuit to cool down. If you try to start the tractor before this cooling operation has completed, the engine will not run. This will lead to longer crank times before the engine runs.



NHIL13CT01218AA 3

## Inhibited regeneration mode operation

**NOTICE:** Only use this mode when regeneration needs to be delayed or stopped because of an operation condition that may risk a fire hazard due to high exhaust temperatures during regeneration.

**NOTE:** When the (DPF) regeneration indicator light (1) and engine warning light (2) are blinking during the regeneration process, the inhibited regeneration mode cannot be set.

The regeneration mode can be delayed or stopped by the use of the (DPF) switch (3) that is located on the right-hand side of the dash.

To set the inhibited regeneration mode:

1. Press the lower side (A) of the (DPF) switch (3) for approximately two seconds.
2. When inhibited mode is activated the (DPF) inhibited indicator light (4) will be illuminated.

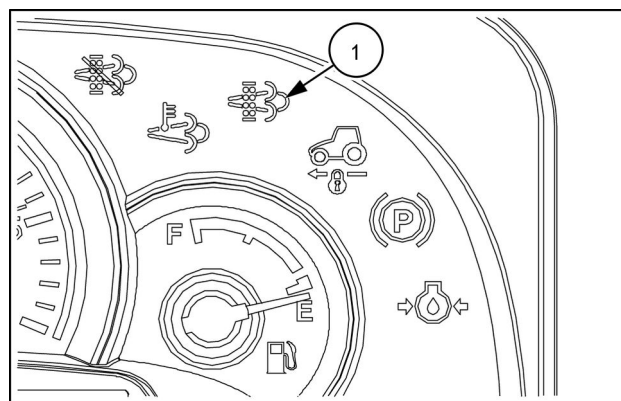
**NOTICE:** When tractor arrives at a safe regeneration location, press the upper side (B) of the (DPF) switch for approximately two seconds to return the regeneration system to the auto regeneration mode. If regeneration system is not returned to auto mode, excessive soot in the (DPF) may overload the emission system and result in a reduction of engine power or damage to the regeneration system.

**NOTICE:** If, when notified by the instrument panel (DPF) indicator lights that a regeneration of the (DPF) is needed and the operator does not proceed with a regeneration of the (DPF), the functionality of the (DPF) will be impaired. If the operator continues to ignore or interrupt the regeneration notification the (DPF) may become damaged to such an extent as to require the (DPF) to be replaced by an authorized NEW HOLLAND dealer.

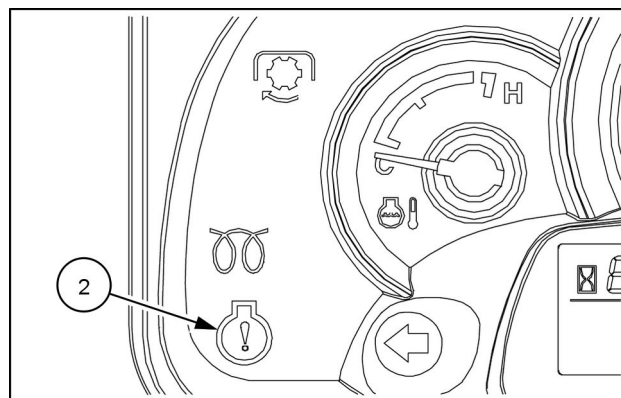
To exit the inhibited regeneration mode:

1. Press the upper side (B) of the (DPF) switch (3) for approximately two seconds.
2. When inhibited mode has been exited the (DPF) inhibited indicator light (4) will not be illuminated.

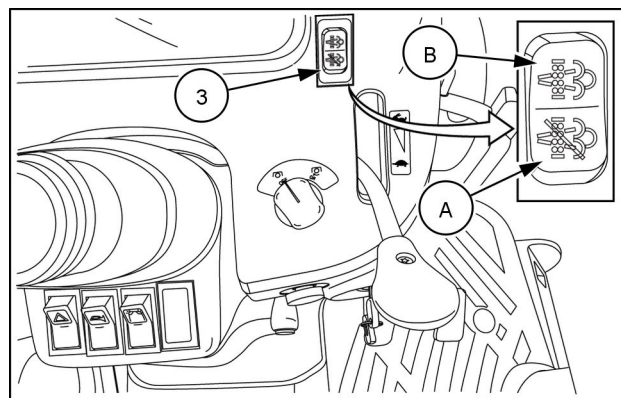
**NOTE:** If the tractor is shut off during the inhibited mode, when restarting the tractor, the regeneration system will return to the auto regeneration mode.



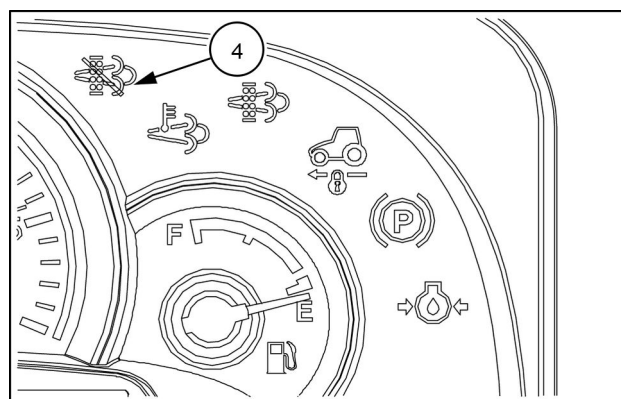
NHIL13CT01216AA 4



NHIL13CT01218AA 5



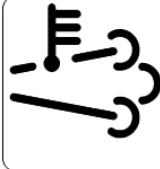
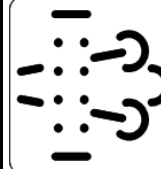
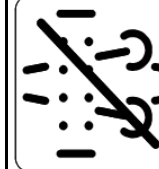
NHIL14CT00050AA 6



NHIL13CT01216AA 7

| Combination of (DPF) indicator lights on the instrument panel                                                                                                                                                                                                                                                                                                                            |                                    |                                                                                                                                                                                                                                                                                                                                         |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Indicator symbol                                                                                                                                                                                                                                                                                                                                                                         | (DPF) Regeneration Mode            | (DPF) Status and Work Restriction                                                                                                                                                                                                                                                                                                       |  |
|  OFF<br> OFF<br> OFF<br> OFF                         | No regeneration mode               | The soot load in the (DPF) is below 60%.<br>Work is possible                                                                                                                                                                                                                                                                            |  |
|  OFF<br> OFF<br> ON<br> OFF                          | Auto-regeneration preparation mode | The soot load in the (DPF) is 60-80% (DPF) will regenerate soon automatically after engine is started<br>Work is possible                                                                                                                                                                                                               |  |
|  OFF<br> OFF<br> Blink(2sec)<br> OFF                 | Auto-regeneration preparation mode | The soot load in the (DPF) is 80-100% (DPF) will regenerate soon automatically after engine is started<br>Work is possible                                                                                                                                                                                                              |  |
|  Blink(2sec)<br> OFF<br> Blink(1sec)<br> OFF         | Power limit preparation mode       | The soot load in the (DPF) is 100-140% (DPF) will regenerate soon automatically after engine is started<br>It is possible to start work after completion of auto regeneration, with all indicator lights are "OFF" and engine speed has returned to normal speed.                                                                       |  |
|  OFF<br> ON<br> ON<br> OFF                   | Auto-regeneration operation mode   | The soot load in the (DPF) is 60-80% and (DPF) is regenerating automatically<br>Work is possible                                                                                                                                                                                                                                        |  |
|  OFF<br> ON<br> Blink(2sec)<br> OFF          | Auto-regeneration operation mode   | The soot load in the (DPF) is 80-100% and (DPF) is regenerating automatically<br>Work is possible                                                                                                                                                                                                                                       |  |
|  OFF<br> ON<br> OFF<br> OFF                  | High exhaust temperature mode      | The temperature at the (DPF) outlet is over 300°C (572°F) after auto regeneration<br>The indicator light will be turned of under 300°C (572°F)<br>Work is possible                                                                                                                                                                      |  |
|  Blink(2sec)<br> ON<br> ON<br> OFF           | Power limit operation mode         | The soot load in the (DPF) is 100-140% and (DPF) is regenerating automatically.<br>Engine power is de-rated 50% and engine speed is limited to 1800 rpm.<br>Have to STOP work<br>It is possible to start work after completion of auto regeneration, with all indicator lights are "OFF" and engine speed has returned to normal speed. |  |
|  Blink(1sec)<br> OFF<br> Blink(1sec)<br> OFF | Engine shutdown mode               | The soot load in the (DPF) is over 140% and the engine has been shutdown.<br>Contact you authorized dealer immediately. If restarting the engine, the engine can run for only thirty seconds to escape an emergency.                                                                                                                    |  |

| Combination of (DPF) indicator lights on the instrument panel                     |                                                                                   |                                                                                   |                                                                                   |                                                                                                           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|  |  |  |  | (DPF) inhibited operation mode                                                                            |
| OFF                                                                               | OFF                                                                               | OFF                                                                               | ON                                                                                | Work is possible.<br>Press the (DPF) switch to auto regeneration after entering a safe regeneration area. |
|  |  |  |  | Engine shutdown mode                                                                                      |
| Blink(1sec)                                                                       | OFF                                                                               | OFF                                                                               | OFF                                                                               | Engine shut down with other problems.<br>Contact your authorized dealer.                                  |

| Indicator lights identification                                                   |                                                                                   |                                                                                   |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Engine Warning                                                                    | (DPF) Temperature                                                                 | (DPF) Regeneration                                                                | (DPF) Inhibitor                                                                     |
|  |  |  |  |

## Power Take-Off (PTO) operation

### Rear PTO

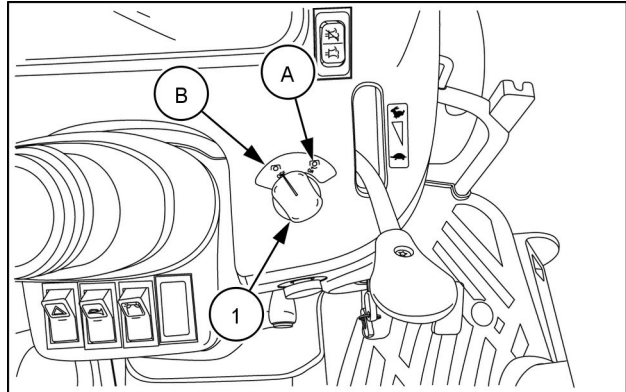
To engage the rear PTO:

1. Push the PTO switch (1) down and turn the switch to the "ON" position (A).

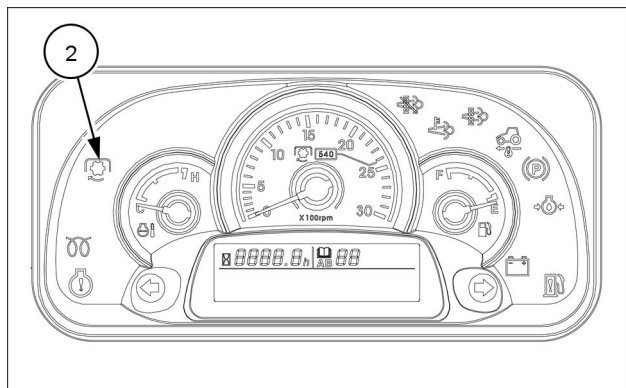
**NOTE:** When the PTO switch is in the engaged "ON" position, the PTO indicator light (2) will be illuminated on the instrument panel.

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.



NHIL13CT01005AA 1



NHIL14CT00054FA 2

To disengage the rear PTO:

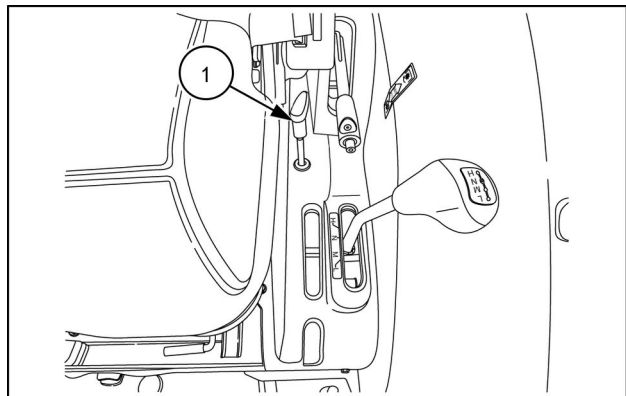
1. Push down on the PTO switch (1) and the switch will automatically return to the "OFF" position (B).

### Mid PTO (Optional)

To engage the mid PTO:

1. Pull up on the mid PTO lever (1)
2. Push down on the PTO switch (2) and turn the switch to the "ON" position (A).

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

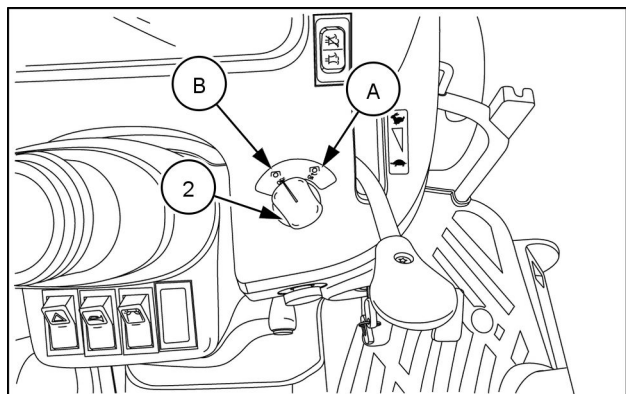


NHIL13CT01248AA 3

To disengage mid PTO:

1. Push down on the PTO switch (2) and the switch will automatically return to the "OFF" position (B).
2. Push the mid PTO lever down to the "OFF" position (1).

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



NHIL13CT01005AA 4

## 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 transmission shuttle shift lever or HST pedals 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:

1. The transmission shuttle shift lever or HST pedals in "NEUTRAL" position.
2. Park brake engaged.
3. Mid PTO in "OFF" position (if equipped).

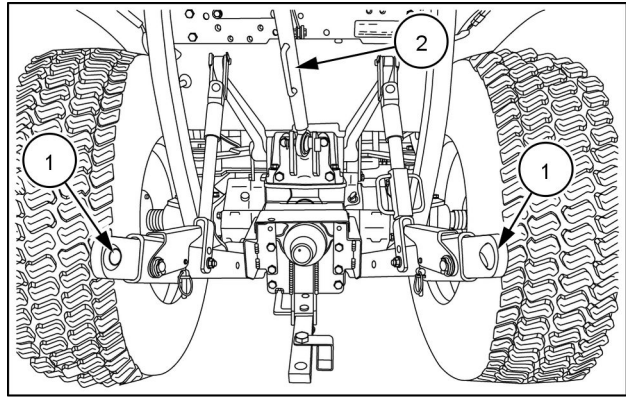
With rear PTO in "ON" position, the alarm will sound when the following conditions are present:

- Operator not in the seat.
- Park brake disengaged.



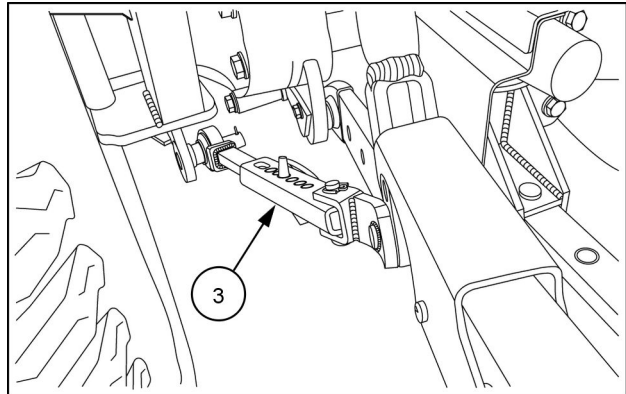
## Three-point linkage

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 **(1)** and the top link **(2)**.



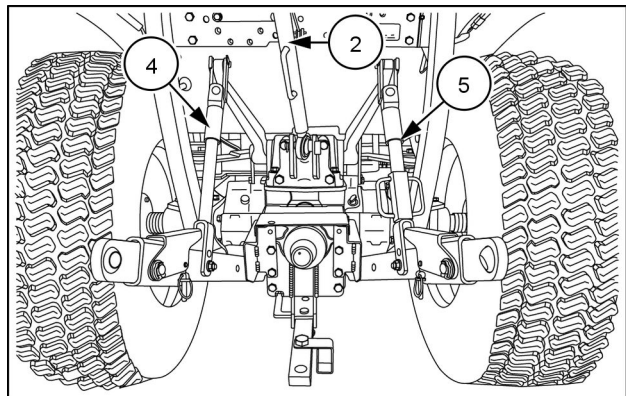
NHIL13CT01023AA 1

The three-point linkage has easy to adjust sway bars **(3)** on each side of the hitch to control lateral movement of the lift arms.



NHIL13CT01019AA 2

The length of the top link **(2)** and the height of the left-hand **(4)** and right-hand **(5)** lift arms can be adjusted to ease the attachment of implements and to level the implement after attaching.



NHIL13CT01023AA 3



## Attaching three-point 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!**

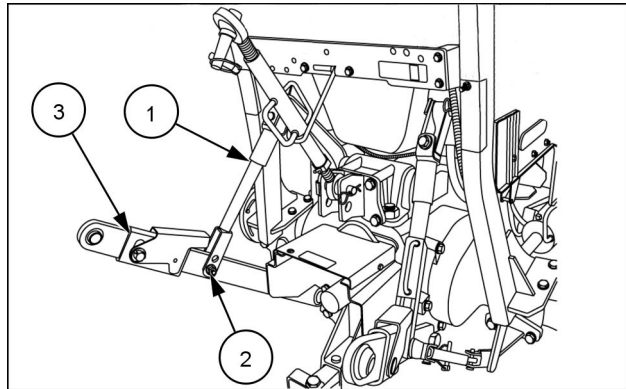
Before disconnecting a lift rod from the lower link, lower the attached implement to the ground, and stop the engine. Make sure the attached implement is correctly supported and no pressure remains in the hydraulic system before removing the lift rod securing pins.

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.

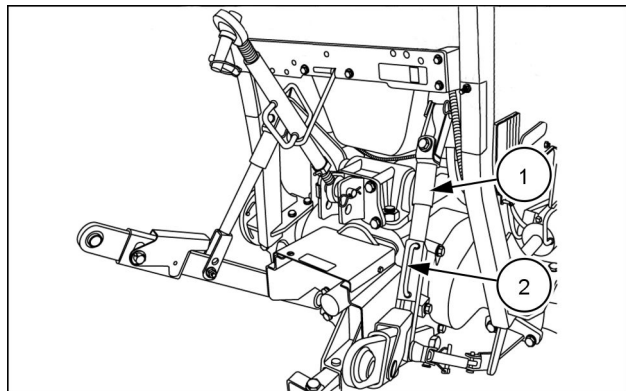


NHIL13CT01249AA 1

## Right-hand lift rod adjustment

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

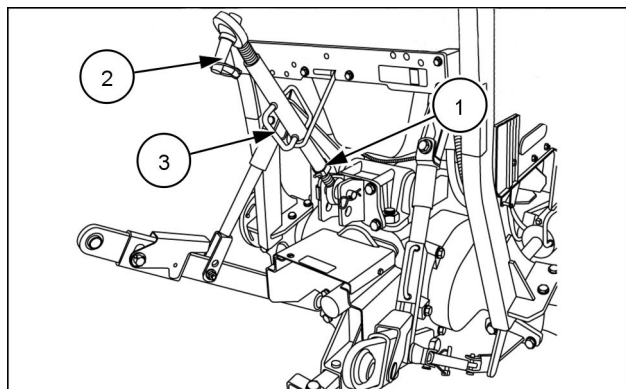
To lengthen or shorten the right-hand lift rod (1) lift the handle up (2) and rotate clockwise to reduce the length and counter-clockwise to increase the length.



NHIL13CT01249AA 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.



NHIL13CT01249AA 3

## Telescoping stabilizers and flex end links adjustment

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.

### **⚠ WARNING**

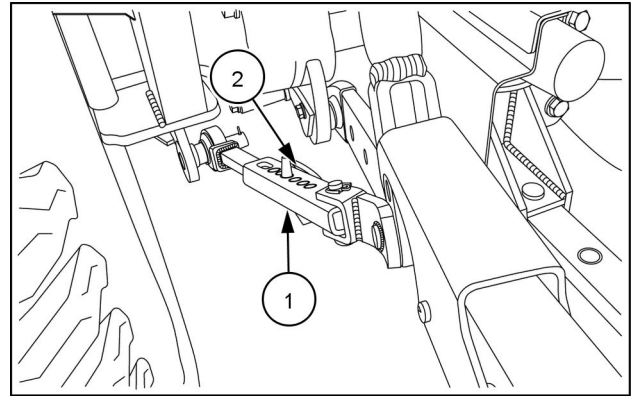
**Machine damage can cause accidents!**

**Only operate three-point equipment with both flex ends returned to the latched position.**

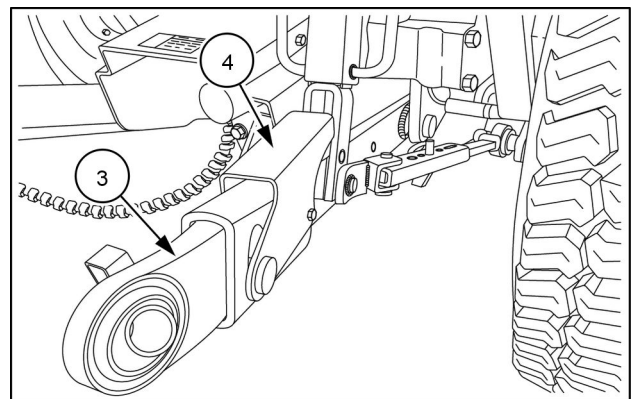
**Failure to comply could result in death or serious injury.**

W0467A

The 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.



NHIL13CT01019AA 4

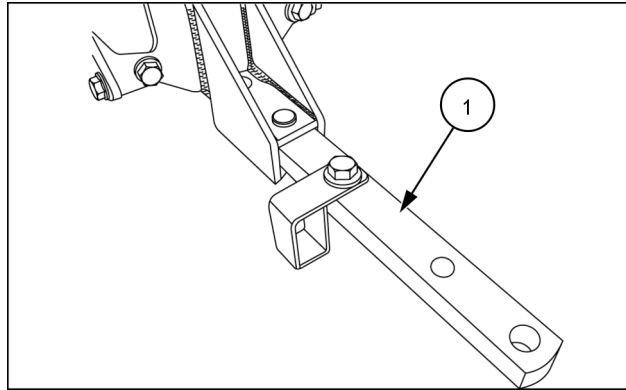


NHIL13CT01020AA 5

## Extendible drawbar

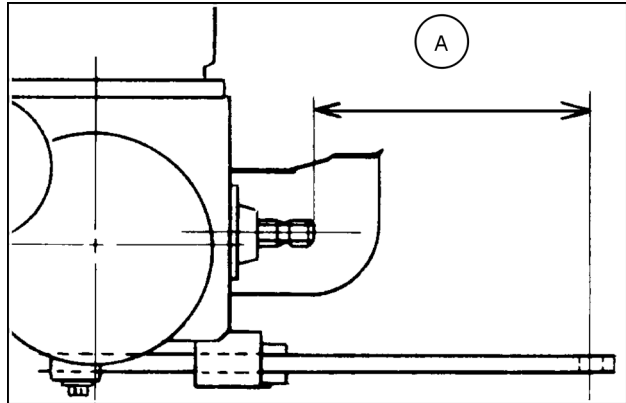
**NOTICE:** When transporting equipment on highways, a safety chain with a tensile strength equal to the gross weight of the implement should be installed between the tractor and implement hitch.

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

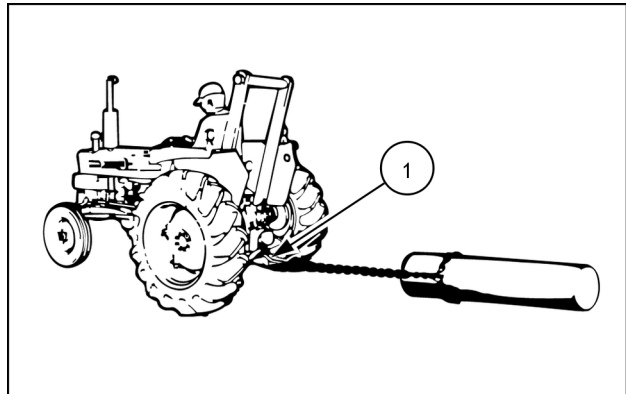
(A) 356 mm (14 in)

### **⚠ 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

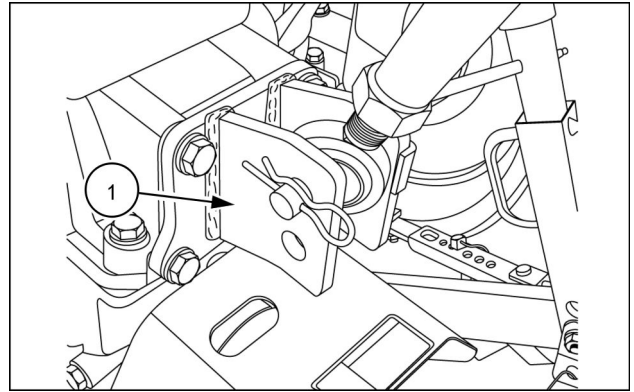


NHIL13CT00908AA 3

(1) Drawbar

## Hydraulic lift rocker

The hydraulic lift rocker (1) has two holes for attaching the upper link. Attach the link using the lower hole for light draft loads, such as mowers. Attach the link to the top hole for heavier draft loads, such as ground engaging equipment.



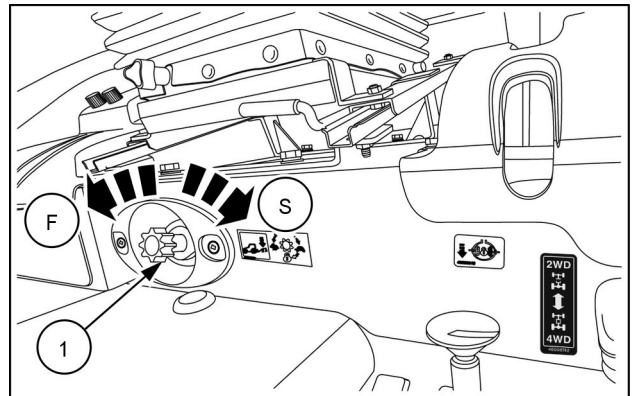
93099353 1

## 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.



NHIL13CT01379AA 1

(F) Fast  
(S) Slow

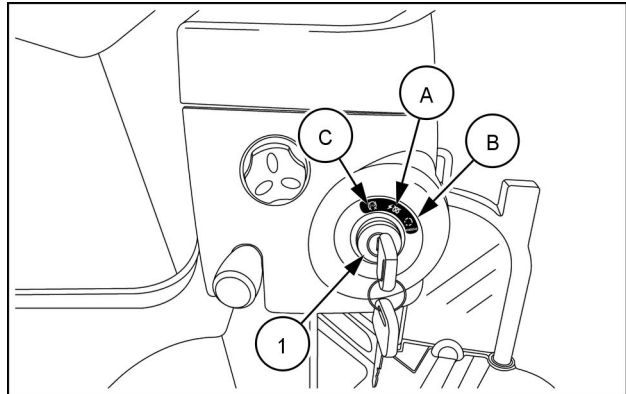
**NOTE:** The drop rate control valve needs to be adjusted accordingly to the amount of weight being carried on the rear hitch arms.

## STARTING THE UNIT

### Key switch

The key switch (1) is located on the right-hand side of the rear hood panel just below the hand throttle. Turning the key to the middle "ON" position (A) activates the lights, instruments, and preheat system. The engine starts when the key is turned to the extreme right "START" position (B). An internal spring returns the key to the middle "ON" position when released.

Turning the key to the extreme left "STOP" position (C) will shut off the engine.



NHIL13CT01006AA 1

## Cold starting aids

Your tractor has a diesel engine. Before starting a cold engine, the engine cylinder head precombustion chambers must be heated.

### **⚠ WARNING**

**Explosion hazard!**

**DO NOT use ether starting fluid. Serious engine damage, explosion, death, or serious personal injury could occur.**

**Failure to comply could result in death or serious injury.**

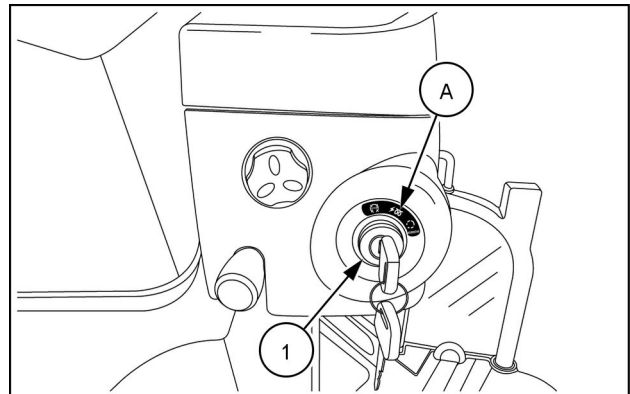
W0148A

**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 them to work loads, particularly if outdoor temperatures approach 0°C (32°F). Run the engine at 1300 to 1500 RPM for approximately fifteen minutes to bring the rear drive oil up to normal operating temperature. Failure to comply could seriously damage machine.

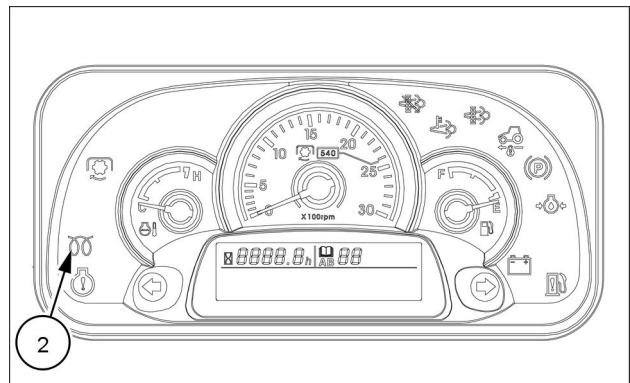
To preheat the engine, turn the key switch (1) to the middle "ON" position (A). The cold start indicator light (2) will illuminate from three to twelve seconds, depending on the ambient temperature. The glow plugs heat the precombustion chambers of the engine cylinder head during this time. After the indicator light goes off the tractor can be started.

**NOTE:** The preheat is auto-timed, when the indicator light goes off, the power to the glow plugs is also removed.

**NOTE:** A coolant immersion heater is available as a dealer installed option. This heater allows for easier starting in temperatures below -17.7 °C (0 °F) by warming the engine coolant.



NHIL13CT01006AA 1



NHIL14CT00054FA 2

## 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.

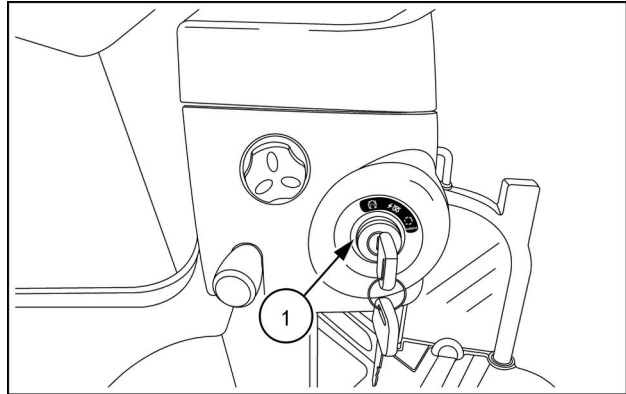
W0967B

### Gear model

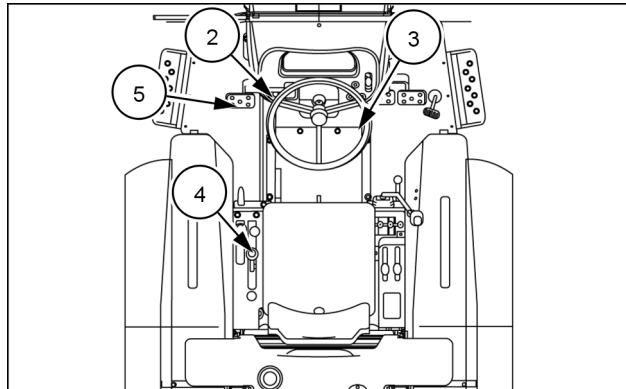
The key switch (1) allows activation of the starter motor and fuel delivery only when:

- The transmission forward/reverse shuttle lever (2) is in the neutral position.
- The PTO switch (3) is in the "OFF" position.
- The mid PTO lever (4) is in the "OFF" position (if equipped).
- The 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.



NHIL13CT01006AA 1



93100852 2

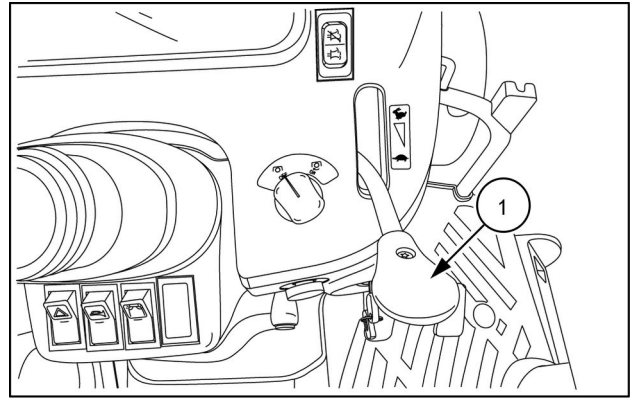


## Starting procedure (Gear model)

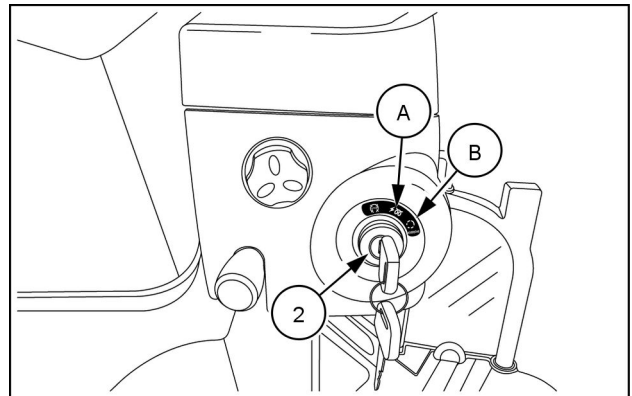
1. Push the hand throttle lever **(1)** forward to approximately the middle position.
2. Turn the key switch **(2)** to the middle "ON" position **(A)** and check if the cold start **(3)** engine oil pressure **(4)** and battery charge **(5)** indicator lights are illuminated.
3. Wait until the cold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

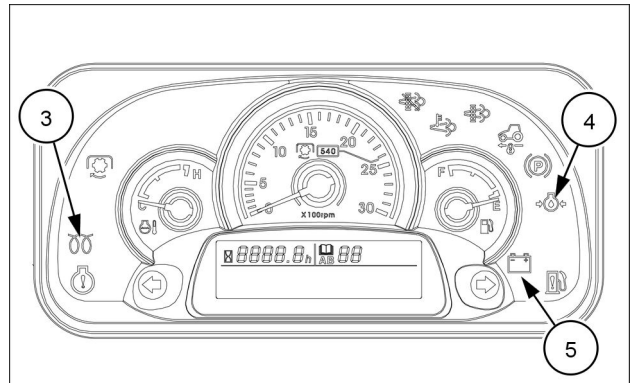
5. Check if the engine oil pressure **(4)** and battery charge **(5)** indicator lights are illuminated, the lights should be off. If any of these indicator lights are illuminated, shut off the engine immediately and check engine for possible problem.



NHIL13CT01005AA 3



NHIL13CT01006AA 4



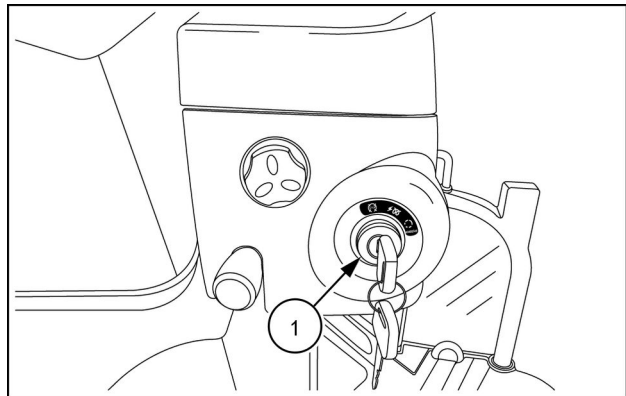
NHIL14CT00054FA 5

## HST model

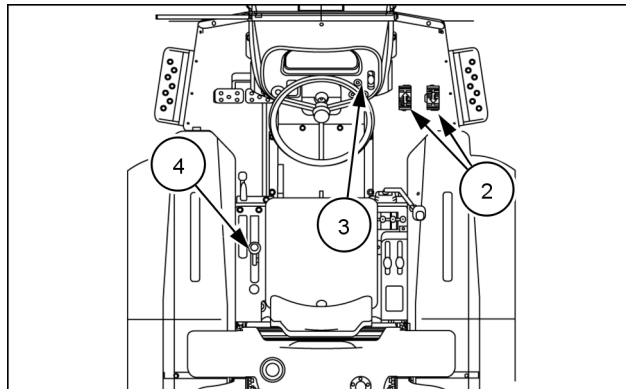
The key switch (1) allows activation of the starter motor and fuel delivery only when:

- 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.



NHIL13CT01006AA 6



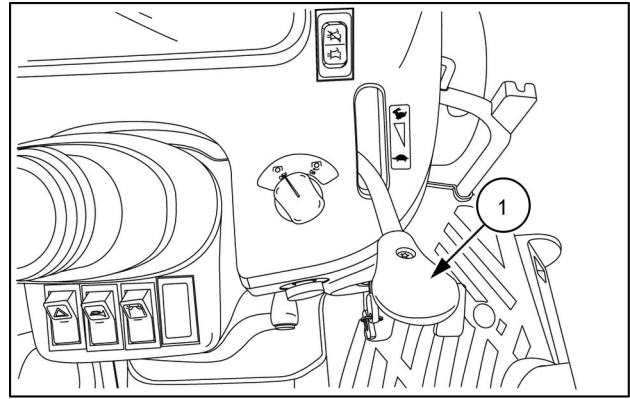
93100853 7

## Starting procedure (HST model)

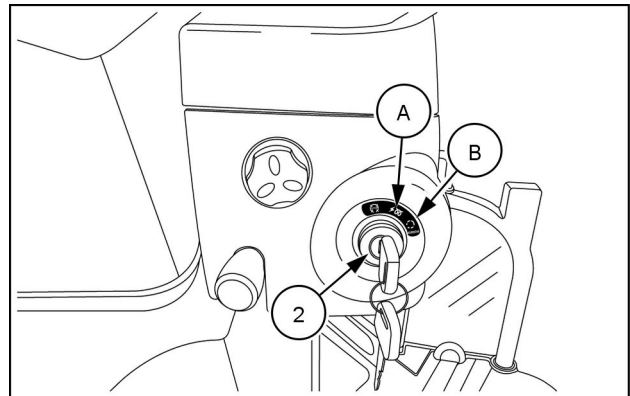
1. Push the hand throttle lever **(1)** forward to approximately the middle position.
2. Turn the key switch **(2)** to the middle "ON" position **(A)** and check if the cold start **(3)** engine oil pressure **(4)** and battery charge **(5)** indicator lights are illuminated.
3. Wait until the cold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

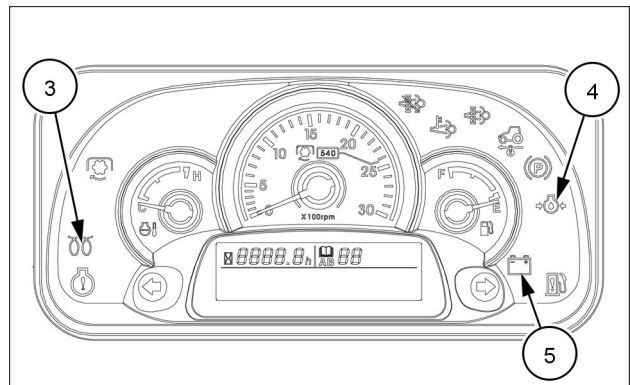
5. Check if the engine oil pressure **(4)** and battery charge **(5)** indicator lights are illuminated, the lights should be off. If any of these indicator lights are illuminated, shut off the engine immediately and check engine for possible problem.



NHIL13CT01005AA 8



NHIL13CT01006AA 9



NHIL14CT00054FA 10

### Operator presence system (start operation)

| Transmission Type | Operator    | Rear PTO | Mid PTO | Transmission          | 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 |
| Gear              | Out of Seat | Off      | Off     | Shuttle in Neutral    | Engaged    | Depressed    | Start            |
| Gear              | Out of Seat | Off      | Off     | Shuttle in Neutral    | Disengaged | Depressed    | Start with Alarm |
| Gear              | In Seat     | Off      | Off     | Shuttle in Neutral    | Engaged    | Depressed    | Start            |
| Gear              | In Seat     | Off      | Off     | Shuttle in Neutral    | Disengaged | Depressed    | Start with Alarm |

**NOTE:** For starting, if Rear PTO, Mid PTO or Transmission is engaged, tractor will not start

### 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 |
|-------------------|----------|---------|--------------------------------|------------|-----------|
| Gear/HST          | Off      | Off     | Neutral                        | Disengaged | Alarm     |
| Gear/HST          | On       | Off     | Neutral                        | Engaged    | No Alarm  |
| Gear/HST          | On       | Off     | Neutral                        | Disengaged | Alarm     |
| Gear/HST          | Off      | Off     | In Gear or HST pedal depressed | Either     | Shutdown  |
| Gear/HST          | On       | Off     | In Gear or HST pedal depressed | Either     | Shutdown  |
| Gear/HST          | On       | On      | In Gear or HST pedal depressed | Either     | Shutdown  |
| Gear/HST          | Off      | On      | Neutral                        | Either     | Shutdown  |

## Starting the tractor with jumper cables

### ⚠ WARNING

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

W0464A

### ⚠ WARNING

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

W0005A

### ⚠ WARNING

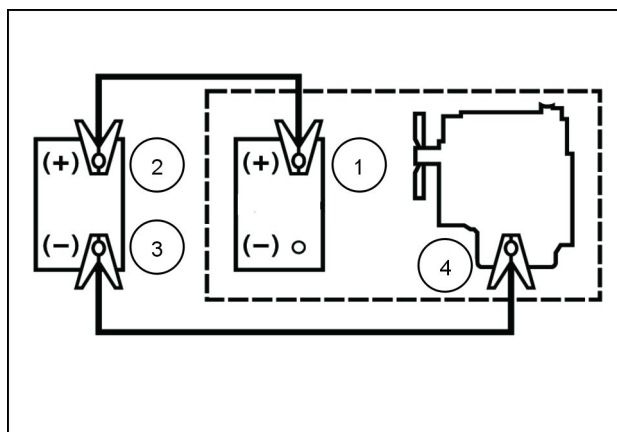
**Explosion hazard!**  
When jump-starting the machine, connect and disconnect the jumper cables exactly as indicated in this manual. **DO NOT** connect the jumper cables to the machine battery terminals. Make sure no persons are near the connecting points before starting the engine. Start the engine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

W0342A

**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 **Engine starting system - Operating**.
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 PTO switch is in the "OFF" position.
5. Push the 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.

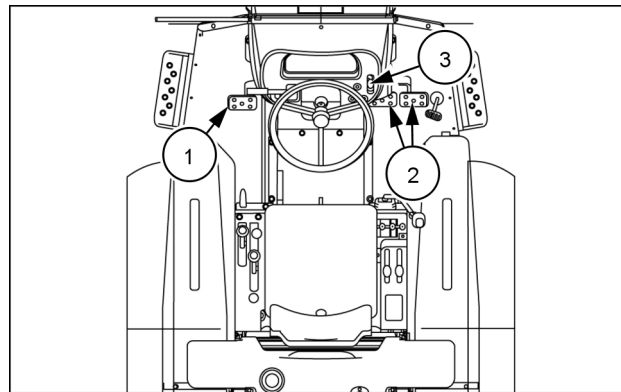
**NOTE:** If the key is not left in the "STOP" position after the engine has stopped, the warning lights will remain on and discharge the battery.

## Emergency stopping

### Gear 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.

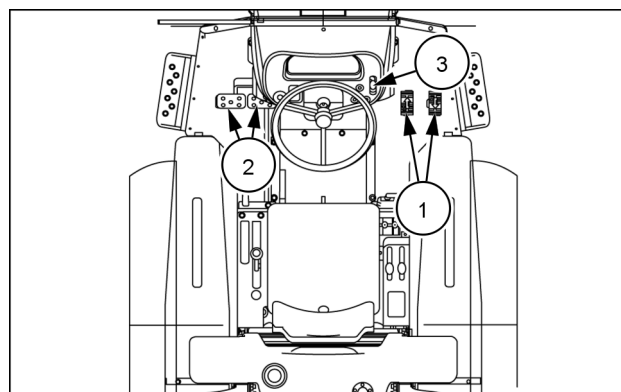


93100852 1

### 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

## Brakes

### Brake pedals

#### ⚠ WARNING

##### Loss of control hazard!

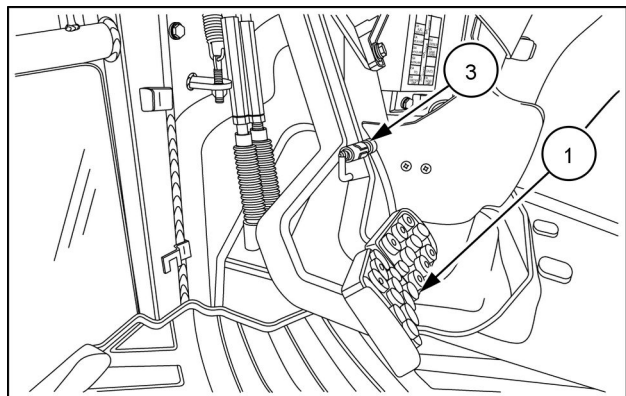
Always reduce the traveling speed and use the steering wheel while you make a turn. When you operate the machine at high speeds, never attempt to make sharp turns by using the turning brake pedals. If you use the individual brakes at high speeds, the machine could become machine unstable.

Failure to comply could result in death or serious injury.

W1237A

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 HST and gear 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 gear model tractor are located on the right-hand side of the operators platform.



NHIL13CT01243AA 1

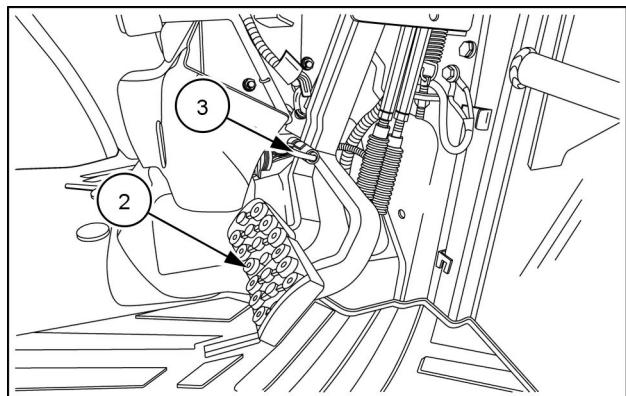
### Stopping the tractor

To stop a gear model 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.



NHIL13CT01246AA 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**

**Equipment rolling hazard!**

**Firmly apply the handbrake. 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.**

W1144A

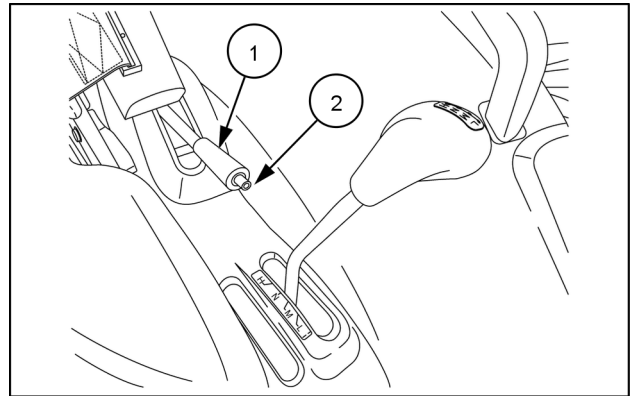
**NOTICE:** *Ensure the park brake is fully disengaged before driving the tractor.*

The park brake lever **(1)** is located on the left-hand side of the operators platform. 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 pull the park brake lever up while pressing the brake pedals down.

**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 by pushing button **(2)** inwards and push the lever **(1)** down.

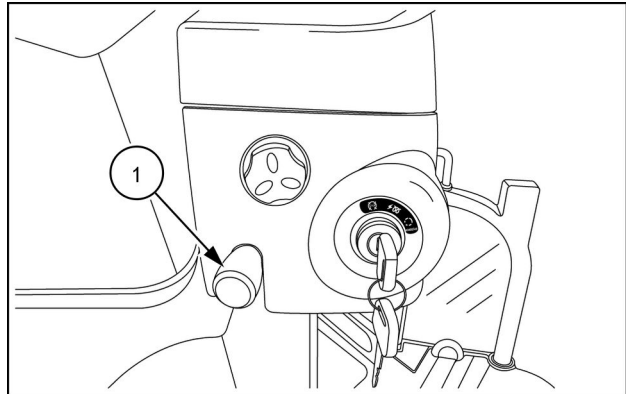


NHIL13CT01174AA 3

## MOVING THE UNIT

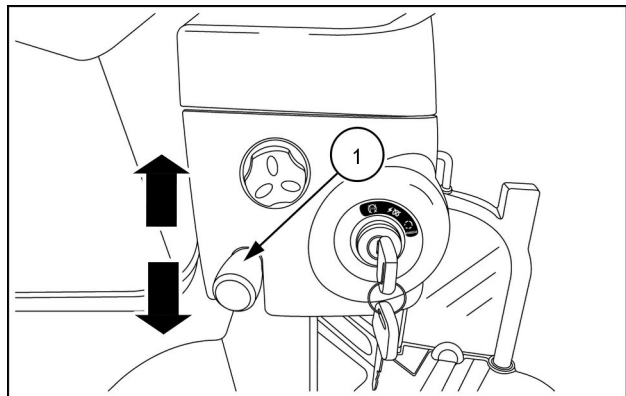
### Steering wheel adjustment

The tractor is equipped with an adjustable steering wheel which can tilt. The tilt steering lever (1) is located on the right-hand side of the steering column.



NHIL13CT01006AA 1

1. To tilt the wheel, push down on the lever (1) and move the steering wheel to the desired position.
2. Pull the lever upwards (1) to lock the steering wheel in place.
3. Use this feature to gain additional clearance when mounting and dismounting the tractor.



NHIL13CT01006AA 2

## 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. Which will make the steering wheel hard to turn.*

## Transmission operation at low ambient temperatures

### Warm up period

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.



### WARNING



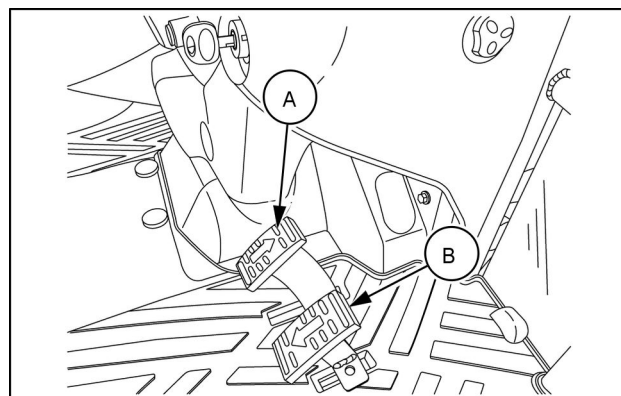
Set the park brake during warm up operation. Set all shift levers to the "NEUTRAL" positions and place the PTO clutch lever in the "OFF" position during warm up operation. Failure to comply could result in death or serious injury.

M1478

| 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     |

## Hydrostatic Transmission (HST) operation

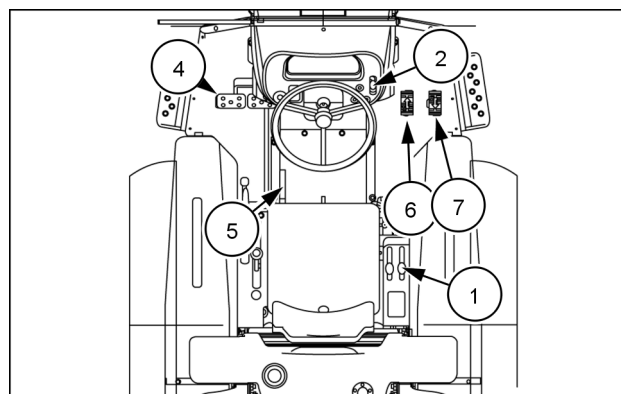
The ground speed of tractors equipped with a hydrostatic transmission is continuously variable, from zero to full rated speed in each range. Speed is controlled by the HST forward **(A)** and reverse **(B)** pedals located on the right-hand operators platform.



NHIL13CT01172AA 1

To operate the HST transmission, carry out the following:

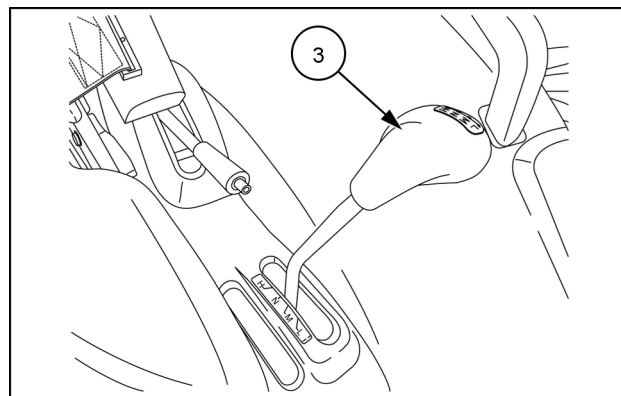
1. Start the engine and pull the HPL control lever **(1)** rearward to lift the implement off the ground .
2. Move the hand throttle lever **(2)** forward until the engine speed is above **1500 RPM**.
3. Place the range gear shift lever **(3)** in the desired range.
4. Depress the brake pedals **(4)** 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)**. Unless the HST cruise control switch is in the engaged position, the transmission returns to neutral and the tractor stops when the pedal is released.



93100853 2

**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.



NHIL13CT01174AA 3

## Cruise control operation

### ⚠ WARNING

#### Loss of control hazard!

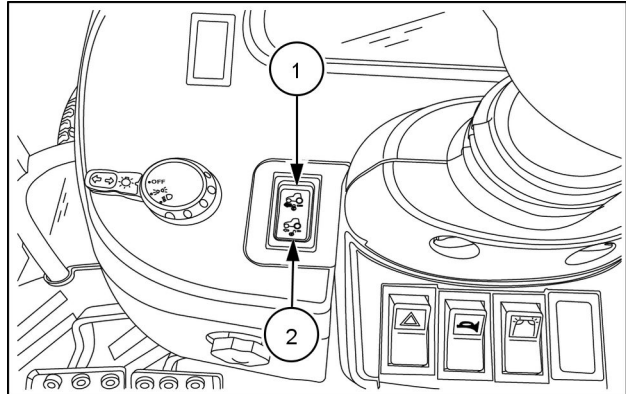
To maintain optimum control of the machine, do not use the cruise control at high speeds or when roading.

Failure to comply could result in death or serious injury.

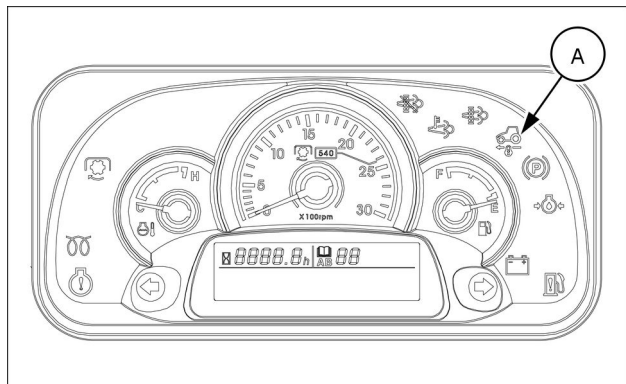
W0978A

When the desired travel speed is reached, depress the top half of the cruise control switch (1). A amber light (A) will illuminate on the instrument panel indicating the cruise control is engaged. To disengage the cruise control, depress the bottom half of the switch (2) or depress both brake pedals. The amber light will extinguish, indicating the cruise control is off.

**NOTE:** The rocker switch has three positions, the top half engages the cruise control, the middle is neutral, and the bottom half will disengage the cruise control.



NHIL13CT01036AA 4



NHIL14CT00054FA 5

## 16 x 16 Synchronized transmission operation

The 16 x 16 gear 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).

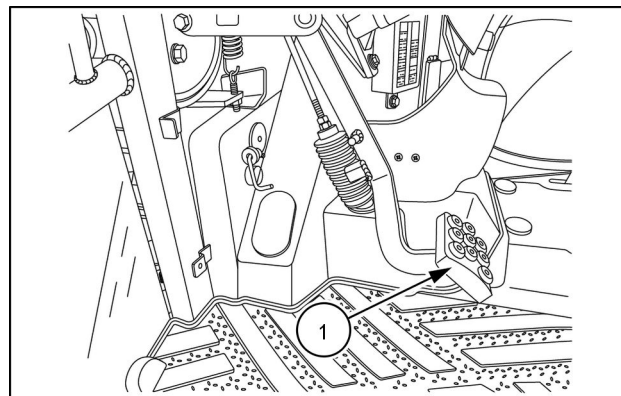
The combinations of shuttle shift, main shift, and range selector lever offer the operator a combination of sixteen forward and sixteen reverse gears.

The main transmission shift lever (3) operates in a H-pattern. To change gears while in a selected range, depress the clutch pedal and shift the main gear shift lever into the desired gear. The tractor does not have to be stopped because the main speed gears (1-4) are synchronized.

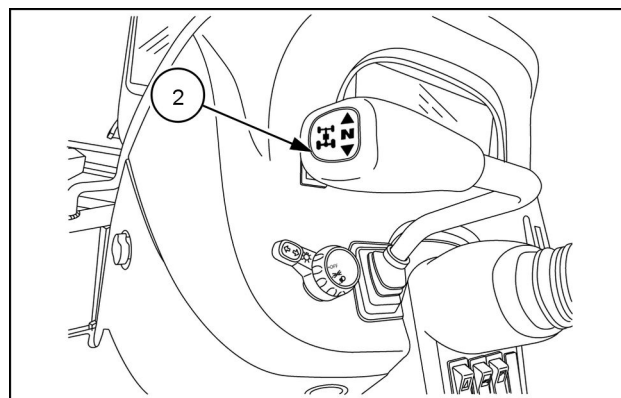
The range gear shift lever operates in a straight pattern (1-2-N-3-4) with a neutral position between second and third range.

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

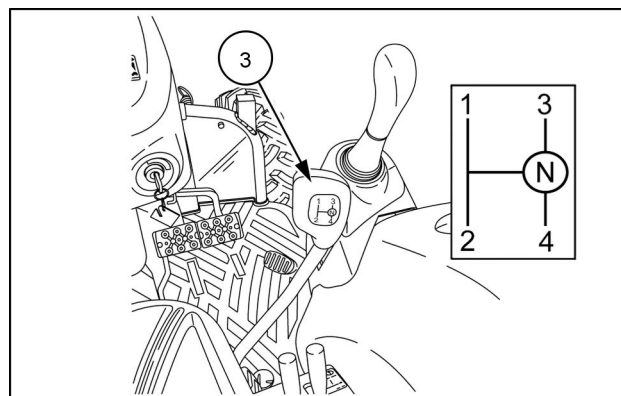
**NOTE:** The shift patterns are shown as sitting in the operators seat.



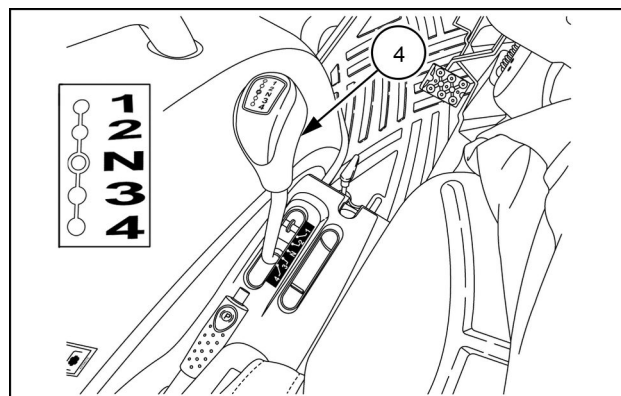
NHIL13CT01146AA 1



NHIL13CT01132AA 2



NHIL13CT01355AA 3

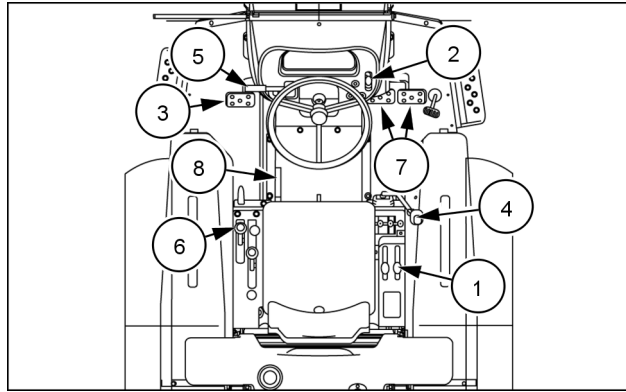


NHIL13CT01354AA 4

## 4 - OPERATING INSTRUCTIONS

To operate the 16 x 16 gear 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. 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.



93100852 5

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

**NOTE:** To change 1-4 gears depress the clutch pedal fully and shift into the desired gear and release the clutch pedal slowly.



## PARKING THE UNIT

### Brakes and controls - Park

#### Gear model

#### **⚠ 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.**

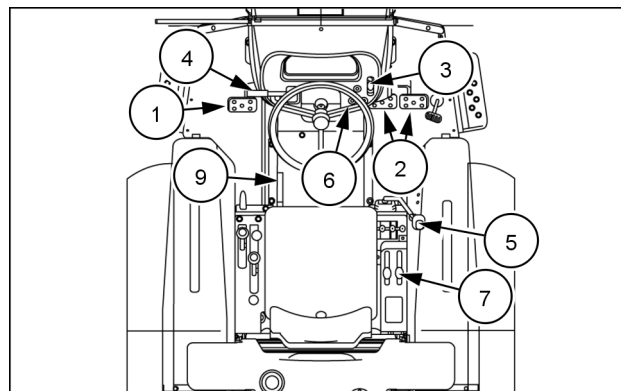
W0047A

To park the tractor carry out the following procedures:

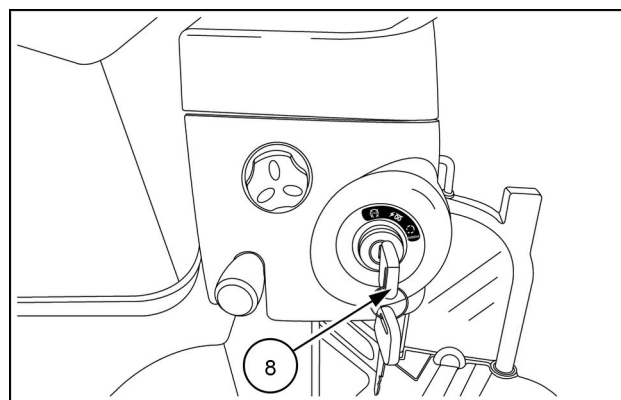
1. Depress the clutch pedal (1) and brake pedals (2). Pull the hand throttle lever (3) rearward to reduce the engine speed.

**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. Turn the key (8) to the "STOP" position.
4. Engage the park brake (9) and release the brake pedals and clutch pedal slowly.



93100852 1



NHIL13CT01006AA 2

## HST model

### **⚠ 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.**

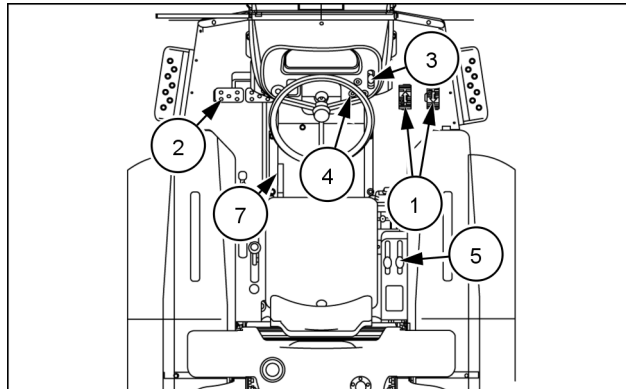
W0047A

To park the tractor carry out the following procedures:

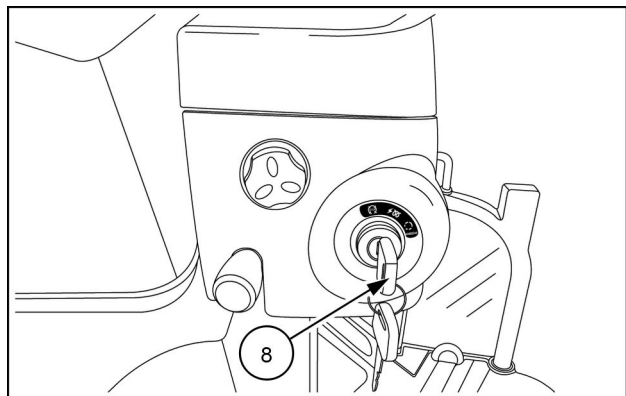
1. Release the HST forward or reverse pedal (1) slowly and depress the brake pedals (2). Pull the hand throttle lever (3) rearward to reduce the engine speed.

**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. Turn the key (6) to the "STOP" position.
4. Engage the park brake (7) and release the brake pedals slowly.



93100853 3



NHIL13CT01006AA 4

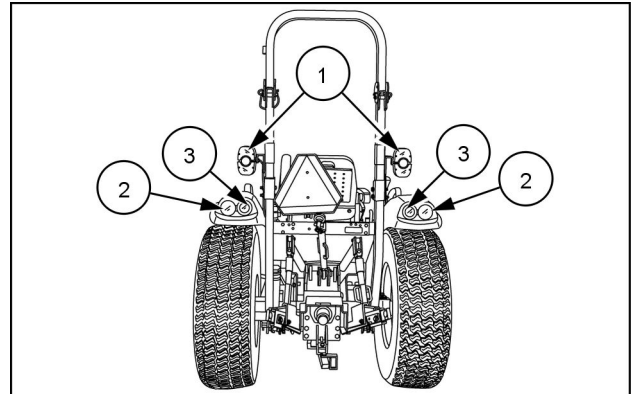
## 5 - TRANSPORT OPERATIONS

### ROAD TRANSPORT

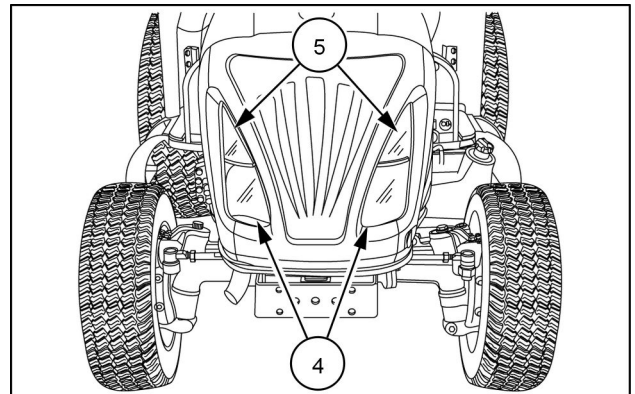
#### External lighting - Identification

Your tractor is equipped with:

- Turn signal/hazard side warning lights **(1)**.
- Rear amber warning lights **(2)**
- Rear red tail/brake lights **(3)**.
- Road lights **(4)** Work Lights **(5)**.
- Rear Work Light (Optional) mounted on the rear of the ROPS.



NHIL13CT01167AA 1

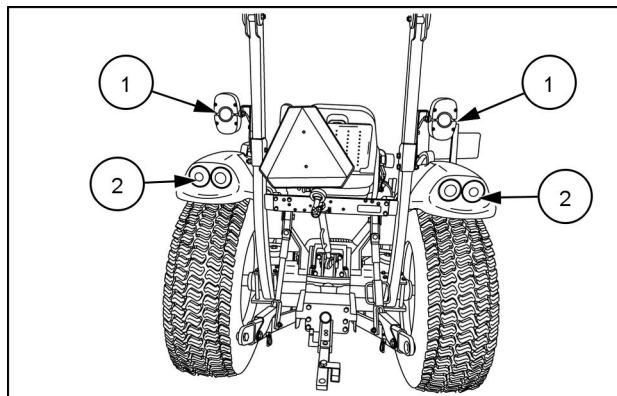


NHIL13CT01166AA 2

## Hazard warning light operation

The side hazard warning lights (1) and tail amber lights (2) are activated by hazard rocker switch (3) located in the center of the steering column shroud.

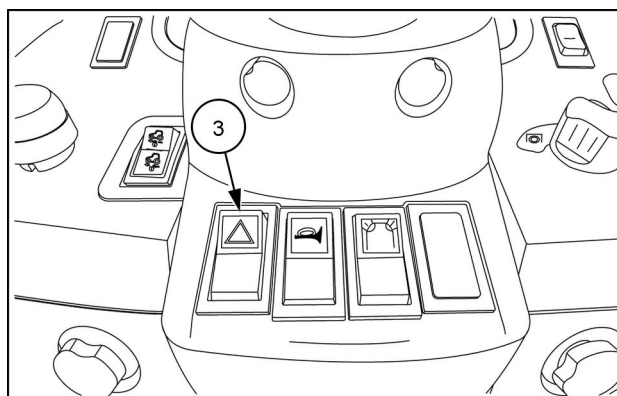
**NOTE:** The hazard lights can function with the key switch in any position.



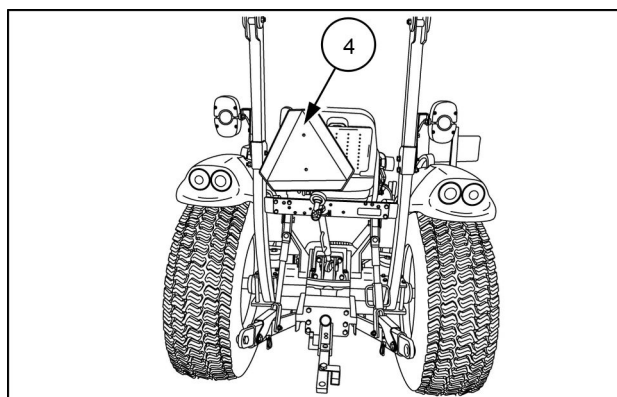
NHIL13CT01013AA 1

1. To activate the hazard lights push the rocker switch (3) down.

**NOTE:** For your protection, use the hazard warning lights, the SMV (Slow Moving Vehicle) sign (4) and road lights when traveling on public roads, day or night.



NHIL13CT01004AA 2

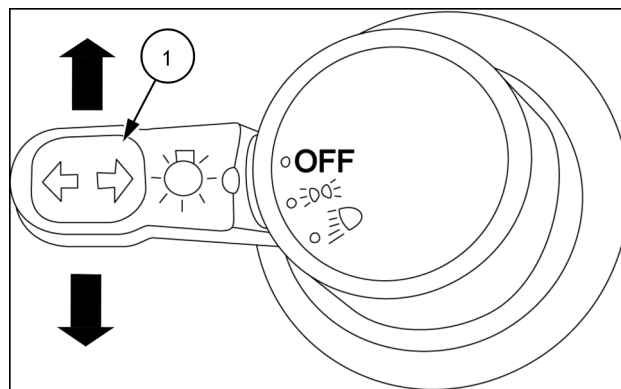


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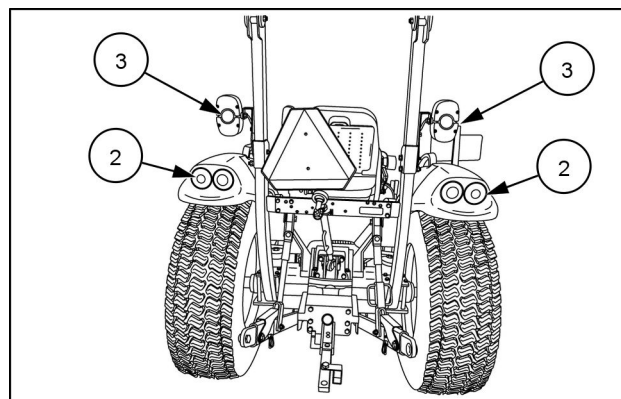
## Turn signal operation

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

1. The turn signal lights are activated by moving the multifunction switch lever **(1)** forward for right turns and rearward for left turns.
2. The key switch has to be in the "ON" position for the turn signal to operate.
3. When signaling a turn, the designated tail amber light **(2)** and side hazard light **(3)** will flash and the tail amber and side hazard lights for the opposite side of turning direction will illuminate continuously.



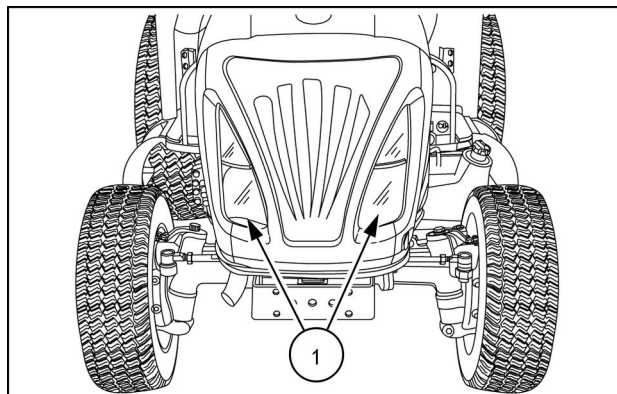
NHIL13CT00525AA 1



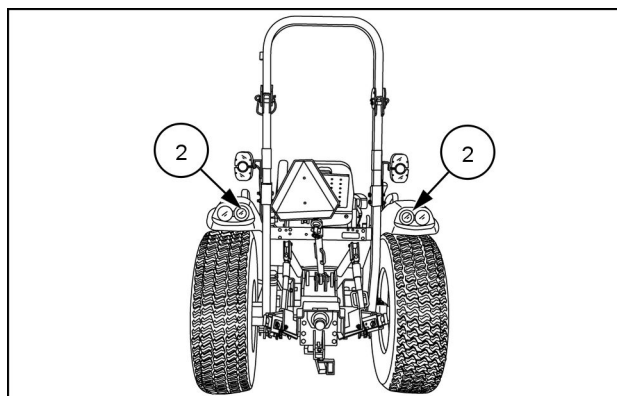
NHIL13CT01013AA 2

## Road lights operation

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



NHIL13CT01166AA 1

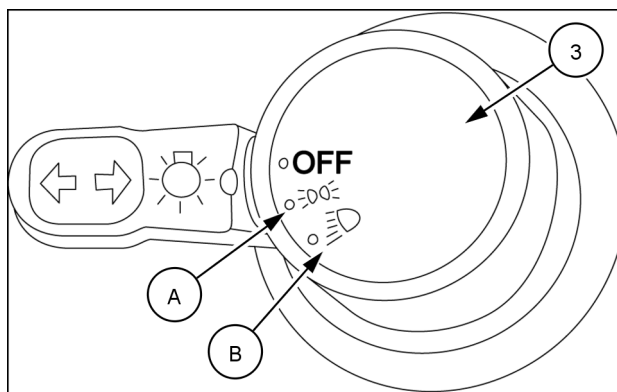


NHIL13CT01167AA 2

The multifunction light switch **(3)** is a rotary type switch that has two positions (rotating clockwise from "OFF" position), the two positions control the road lights and taillights.

- First position, **(A)** illuminates the instrument panel and taillights.
- Second position, **(B)** illuminates the instrument panel, taillights and the road lights.

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

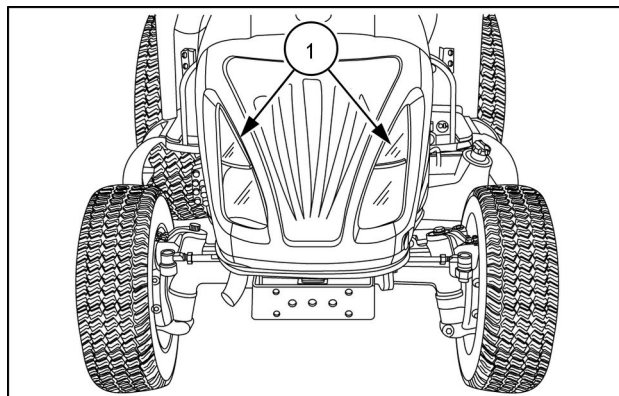


NHIL13CT00525AA 3

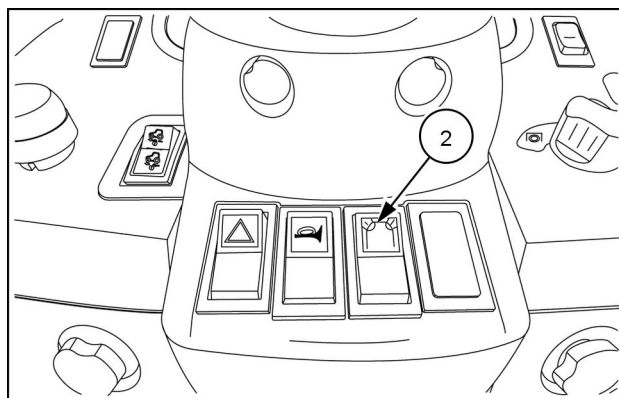
## Work lights operation

The work lights **(1)** are turned on and off using the work light switch **(2)** located on the center of the console panel. The key switch must be in the "ON" position for these lights to operate.

Depress the top part of the work light switch to illuminate the work lights.



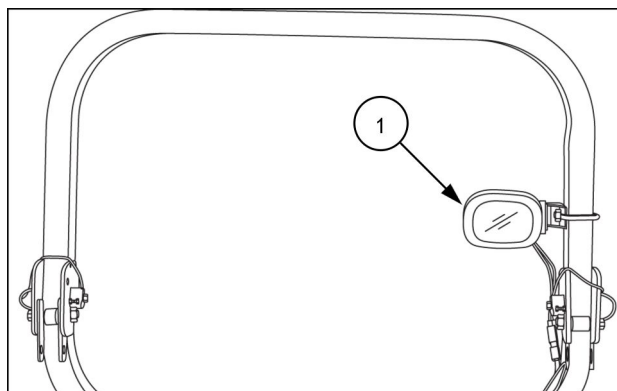
NHIL13CT01166AA 1



NHIL13CT01004AA 2

## Rear work light (optional)

The optional rear work light **(1)** is mounted to the Roll Over Protection 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.



93110379 1



## 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 (low beam), and SMV (slow moving vehicle) 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.
- To make an emergency stop, depress both brake pedals and the clutch pedal (gear model only) simultaneously

**NOTE:** When making an emergency stop while operating a HST model tractor depress both brake pedals and release the forward or reverse HST pedal.

- 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.

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

- Secure the front of the tractor at the front of the frame.

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

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

## RECOVERY TRANSPORT

### Towing

#### Towing the tractor

##### ⚠ 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

##### ⚠ 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

**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 front wheel drive, 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.

#### Towing implements

##### ⚠ WARNING

Loss of control hazard!  
Always attach or pull towed vehicles from the tractor drawbar.  
Failure to comply could result in death or serious injury.

W1013A

For towed vehicles without brake system:

- Do not exceed transport speed of **32 km/h (20 mph)**.
- Do not exceed fully loaded mass (weight) of 1.5 times the mass (weight) of the towing unit.

For towed vehicles with brake system:

- Do not exceed transport speed of **32 km/h (20 mph)**.
- Do not exceed fully loaded mass (weight) of 4.5 times the mass (weight) of the towing unit.

## 6 - WORKING OPERATIONS

### GENERAL INFORMATION

#### Tractor ballasting

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 liquid ballast, cast iron weights, or a combination of both. 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 **Wheels - Tire pressure** 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.

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 front-wheel drive 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.

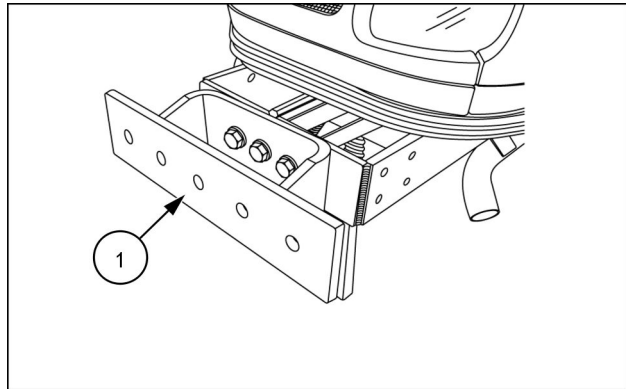
## Tractor ballasting weights

### 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.



93100896 1

Weight options:

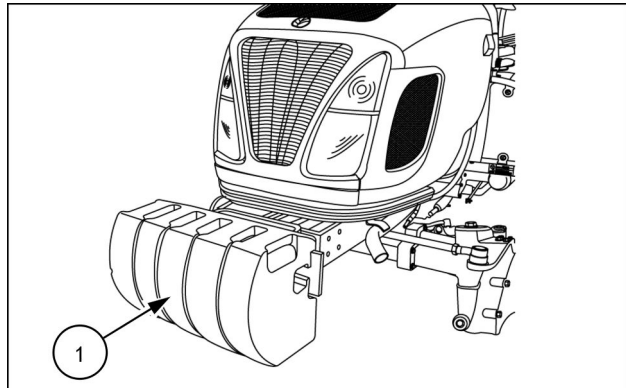
A maximum of five **27 kg (60 lb)** weights **(1)** for a total weight of **136 kg (300 lb)**.

A maximum of three **45 kg (100 lb)** weights **(2)** for a total weight of **135 kg (300 lb)**.

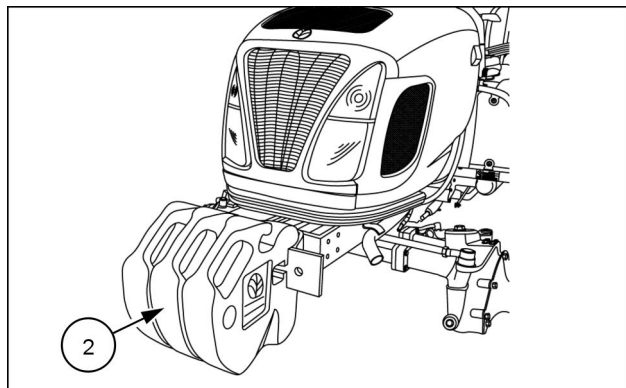
**NOTE:** The front extension mounting bracket with a maximum of three **27 kg (60 lb)** weights attached is compatible with a grille guard.

**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.



93100898 2



93100897 3

### Rear wheel weights (Optional)

Rear wheel weights are not available only for the Boomer 33/37 model tractors.

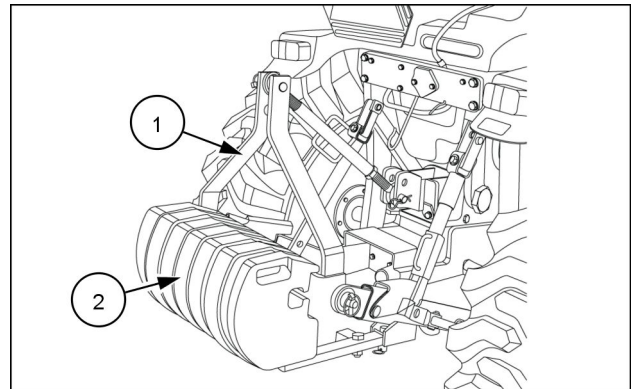
### Rear counter weight bracket (Optional)

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)**.

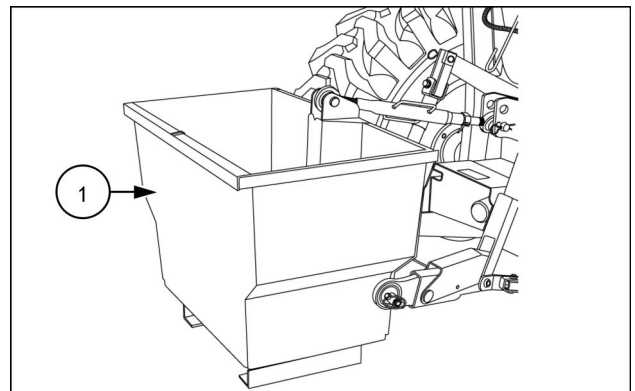


93100917 4

### 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 | <b>46 kg (101 lb)</b> | <b>228 kg (503 lb)</b> |



93100918 5

## Liquid ballast

It is a common practice to add weight to the tractor by filling the rear tires with liquid. A calcium chloride ( $\text{CaCl}_2$ ) and water solution is recommended due to its low freezing point and greater density (weight per gallon) than pure water.

Never exceed the total recommended weight for the tractor. Because special equipment is required to fill the tires, consult your NEW HOLLAND Dealer.

Tires should never be filled beyond **75 %**. At **75 %** full, the liquid will come to the valve stem when the valve stem is at its highest point at the top of the wheel.

Ballast Weights (Per Tire) 600 g/5 lb Gal Solution/ $\text{CaCl}_2$ .

| Tire Type       | Tire Size              | Approximate Added Weight |
|-----------------|------------------------|--------------------------|
| Agricultural    | 13.6-24, 4PR, R1       | <b>182 kg (400 lb)</b>   |
| Turf            | 41 x 14.00-20, 4PR, R3 | <b>157 kg (346 lb)</b>   |
| Industrial (R4) | 17.5L x 24, 6PR, R4    | <b>272 kg (600 lb)</b>   |

## 7 - MAINTENANCE

### GENERAL INFORMATION

#### General information

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, fil-

*tration of engine and hydraulic systems. See your NEW HOLLAND dealer for additional oil quantities.*

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

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

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.

#### 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 leaving the operator's position. Never adjust, lubricate, clean, or unplug machine with the engine running. Failure to comply could result in death or serious injury.

W0227A

#### WARNING

Illustrations in this manual may show protective shielding open or removed to better illustrate a particular feature or adjustment. Replace all shields before operating the machine.

Failure to comply could result in death or serious injury.

W0012A

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 **NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE**.



## Safety rules diesel fuel

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

## Fuel Usage Safety

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

## Biodiesel fuel

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.

W0099A

The fuel tank filler cap (1) is located at the front left-hand side of the operator's platform of the tractor.

**NOTICE:** Before removing the cap, wipe all dust and dirt from around the cap to prevent debris from falling into the tank while filling.

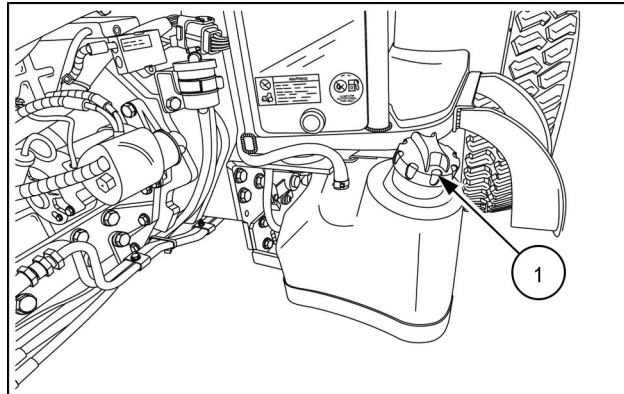
There is a strainer (2) located inside the fuel tank neck. Clean strainer periodically. Only dispense fuel into the tank with the strainer installed.

Use an approved fuel container and check the inside of the container periodically for cleanliness. Fuel tank capacity is **40.0 l (10.5 US gal)**.

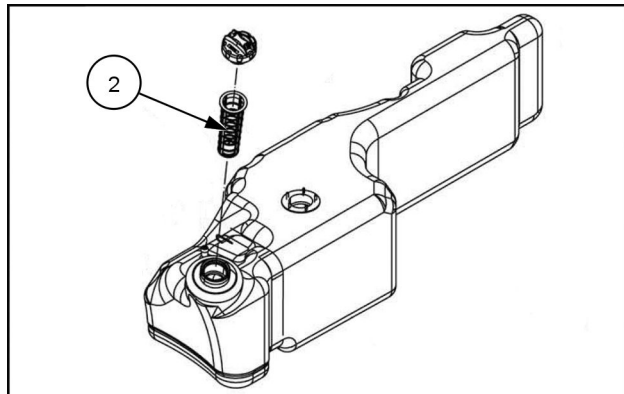
**NOTE:** The fuel cap is a vented-type. Use only an approved NEW HOLLAND replacement cap to prevent fuel system-related problems.

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.



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## Consumables

| Lubricant                  | Type and Description                                            | Part Number | Container Size      |
|----------------------------|-----------------------------------------------------------------|-------------|---------------------|
| Engine Oil<br>API CJ-4     | NEW HOLLAND AMBRA<br>MASTERGOLD™ ENGINE OIL<br>SAE 10W-30 CJ-4  | 9613313     | 0.946 l (1 US qt)   |
|                            |                                                                 | 86641052    | 3.785 l (1 US gal)  |
|                            |                                                                 | 9673508     | 18.93 l (5 US gal)  |
|                            | NEW HOLLAND AMBRA<br>MASTERGOLD™ ENGINE OIL<br>SAE 15W-40 CJ-4  | 86641081    | 0.946 l (1 US qt)   |
|                            |                                                                 | 86641082    | 3.785 l (1 US gal)  |
|                            |                                                                 | 86641083    | 18.93 l (5 US gal)  |
| Transmission/Hydraulic Oil | NEW HOLLAND AMBRA<br>MULTI G 134™ HYDRAULIC<br>TRANSMISSION OIL | 9624451     | 18.93 l (5 US gal)  |
|                            | TUTELA F200A<br>MULTI-SEASON                                    | B17805      | 18.93 l (5 US gal)  |
| Front Axle/Gear Oil        | NEW HOLLAND AMBRA<br>HYPOIDE 90                                 | B80901      | 0.946 l (1 US qt)   |
|                            |                                                                 | B80903      | 9.46 l (2.5 US gal) |
| Grease                     | NEW HOLLAND AMBRA<br>GR-9 MULTI-PURPOSE<br>GREASE               | 73340211    | Tube 14 oz          |
| Coolant                    | Ethylene Glycol Coolant                                         | NA          | NA                  |

## MAINTENANCE CHART

### Maintenance Chart

| Maintenance action                                | Grease       |  |  |  | Cleaning    |  |  |  | Page no. |
|---------------------------------------------------|--------------|--|--|--|-------------|--|--|--|----------|
|                                                   | Tighten      |  |  |  | Drain fluid |  |  |  |          |
|                                                   | Replace      |  |  |  | Bleed       |  |  |  |          |
|                                                   | Change fluid |  |  |  | Adjust      |  |  |  |          |
|                                                   | Check        |  |  |  | Test        |  |  |  |          |
|                                                   |              |  |  |  |             |  |  |  |          |
| Every 10 hours or daily                           |              |  |  |  |             |  |  |  |          |
| Engine oil level                                  |              |  |  |  |             |  |  |  | 7-7      |
| Engine cooling system                             |              |  |  |  |             |  |  |  | 7-9      |
| After first 50 hours                              |              |  |  |  |             |  |  |  |          |
| Engine oil and filter                             |              |  |  |  |             |  |  |  | 7-10     |
| Pre-fuel filter                                   |              |  |  |  |             |  |  |  | 7-12     |
| Fuel filter                                       |              |  |  |  |             |  |  |  | 7-13     |
| Hydraulic oil filter                              |              |  |  |  |             |  |  |  | 7-14     |
| Hydrostatic (HST) oil filter                      |              |  |  |  |             |  |  |  | 7-15     |
| Roll Over Protective Structure (ROPS)             |              |  |  |  |             |  |  |  | 7-16     |
| Wheels bolt/nut                                   |              |  |  |  |             |  |  |  | 7-17     |
| Every 50 hours                                    |              |  |  |  |             |  |  |  |          |
| Grease fittings                                   |              |  |  |  |             |  |  |  | 7-18     |
| Transmission fluid level                          |              |  |  |  |             |  |  |  | 7-19     |
| Clutch pedal free play                            |              |  |  |  |             |  |  |  | 7-19     |
| Brake pedal free play                             |              |  |  |  |             |  |  |  | 7-20     |
| Hydrostatic transmission (HST) neutral adjustment |              |  |  |  |             |  |  |  | 7-20     |
| Engine belts                                      |              |  |  |  |             |  |  |  | 7-21     |
| Tires and wheels                                  |              |  |  |  |             |  |  |  | 7-22     |
| Front axle differential oil level                 |              |  |  |  |             |  |  |  | 7-23     |
| Air cleaner                                       |              |  |  |  |             |  |  |  | 7-24     |
| Every 100 hours                                   |              |  |  |  |             |  |  |  |          |
| Fuel filter                                       |              |  |  |  |             |  |  |  | 7-25     |
| Every 300 hours                                   |              |  |  |  |             |  |  |  |          |
| Engine oil and filter                             |              |  |  |  |             |  |  |  | 7-26     |
| Hydraulic filter                                  |              |  |  |  |             |  |  |  | 7-26     |
| Hydrostatic (HST) oil filter                      |              |  |  |  |             |  |  |  | 7-26     |
| Pre-fuel filter                                   |              |  |  |  |             |  |  |  | 7-26     |
| Engine belts                                      |              |  |  |  |             |  |  |  | 7-26     |
| Wheels bolt/nut                                   |              |  |  |  |             |  |  |  | 7-26     |
| Air cleaner primary element                       |              |  |  |  |             |  |  |  | 7-27     |
| Every 500 hours                                   |              |  |  |  |             |  |  |  |          |
| Fuel filter                                       |              |  |  |  |             |  |  |  | 7-28     |
| Every 600 hours                                   |              |  |  |  |             |  |  |  |          |
| Front axle differential fluid                     |              |  |  |  |             |  |  |  | 7-29     |
| Transmission fluid                                |              |  |  |  |             |  |  |  | 7-30     |
| Every 1000 hours                                  |              |  |  |  |             |  |  |  |          |
| Air cleaner inner element                         |              |  |  |  |             |  |  |  | 7-31     |
| Engine coolant                                    |              |  |  |  |             |  |  |  | 7-32     |

## 7 - MAINTENANCE

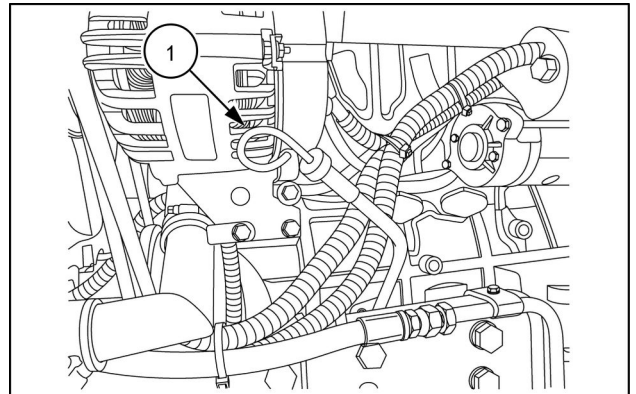
| Maintenance action                                | Grease       |  |  |  | Cleaning    |  |  |      |
|---------------------------------------------------|--------------|--|--|--|-------------|--|--|------|
|                                                   | Tighten      |  |  |  | Drain fluid |  |  |      |
|                                                   | Replace      |  |  |  | Bleed       |  |  |      |
|                                                   | Change fluid |  |  |  | Adjust      |  |  |      |
|                                                   | Check        |  |  |  | Test        |  |  |      |
|                                                   |              |  |  |  | Page no.    |  |  |      |
| General maintenance                               |              |  |  |  |             |  |  |      |
| Fuel injection system                             |              |  |  |  |             |  |  | 7-33 |
| Hydrostatic transmission (HST) neutral adjustment |              |  |  |  |             |  |  | 7-35 |
| Engine belts                                      |              |  |  |  |             |  |  | 7-36 |
| Roll Over Protective Structure (ROPS) frame       |              |  |  |  |             |  |  | 7-37 |
| Battery                                           |              |  |  |  |             |  |  | 7-37 |
| Alternator                                        |              |  |  |  |             |  |  | 7-38 |
| Fuses                                             |              |  |  |  |             |  |  | 7-39 |
| Maxi-fuse                                         |              |  |  |  |             |  |  | 7-40 |
| Headlight bulb                                    |              |  |  |  |             |  |  | 7-40 |
| Tail/brake light bulb                             |              |  |  |  |             |  |  | 7-41 |
| Turn signal/hazard light bulb                     |              |  |  |  |             |  |  | 7-41 |
| Wheels bolt/nut                                   |              |  |  |  |             |  |  | 7-43 |
| Front wheels toe-in                               |              |  |  |  |             |  |  | 7-43 |
| Brake pedal free play                             |              |  |  |  |             |  |  | 7-44 |
| Clutch pedal free play                            |              |  |  |  |             |  |  | 7-45 |

### Every 10 hours or daily

### Engine oil level

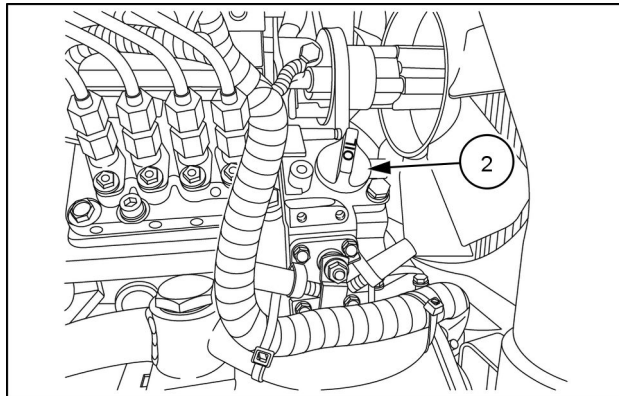
**NOTE:** Check the engine oil level daily or after every 10 hours of operation.

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



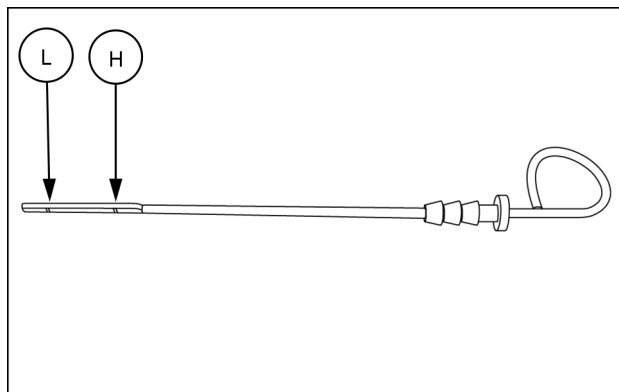
NHIL13CT01134AA 1

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



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3. Add enough oil so that the level registers between the **(L)** low and the **(H)** high marks on the dipstick. Do not overfill.



93100903 3

## Engine cooling system

### Cooling system

The tractor engine must operate at the correct temperature to obtain maximum efficiency and service life. This is dependent on the cooling system.

Always fill the system with a 50/50 solution of ethylene glycol antifreeze and water.

### Checking the coolant level

#### **⚠ WARNING**

##### **Burn hazard!**

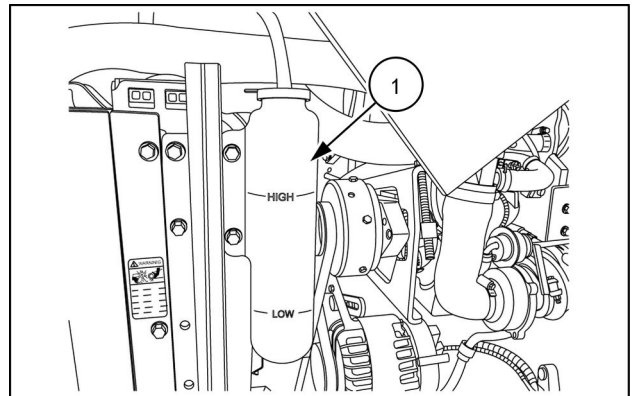
Hot coolant can spray and scald if you remove the radiator or deaeration tank cap while the system is hot. To remove the cap: allow the system to cool, turn the cap to the first notch, and wait for all pressure to release. Remove the cap only after all pressure has released.

Failure to comply could result in death or serious injury.

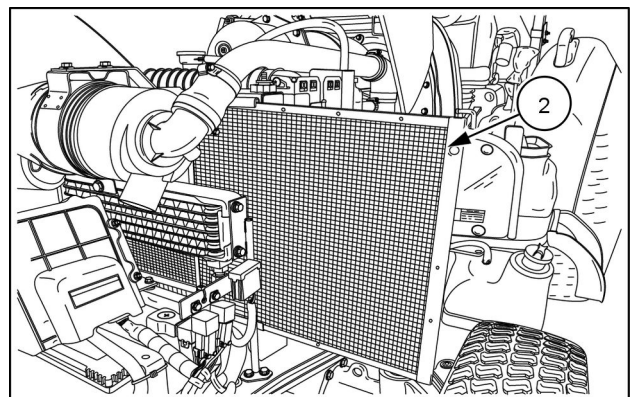
W0367A

**NOTE:** Check the coolant level daily or after every 10 hours of operation. The engine should be cold when coolant level is checked.

1. Visually inspect the coolant level in the coolant recovery reservoir (1) the coolant level should be between the "LOW" and "HIGH" lines located on the side of the reservoir.
2. If the coolant level is not between the "LOW" and "HIGH" lines, add a water/antifreeze solution 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.
3. Keep the radiator fins clear of chaff or dirt to allow free air movement.
4. Check and clean front radiator screen (2) every 10 hours of operation.



NHIL13CT01235AA 1



NHIL13CT00994AA 2

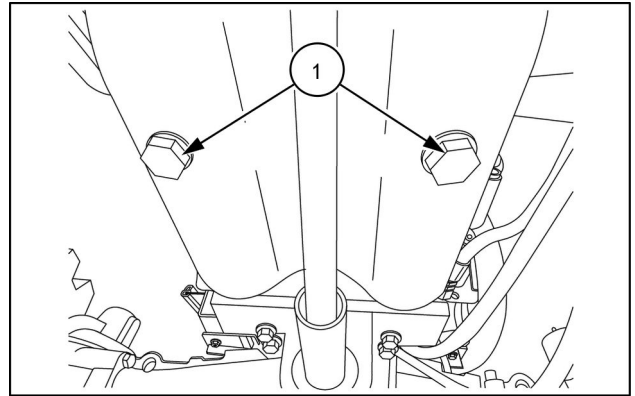
## After first 50 hours

### Engine oil and filter

**NOTE:** Change the engine oil and filter after the first 50 hours of operation, then every 300 hours thereafter. If the tractor is operated for extended periods of time at maximum rated power and speed, or under other types of continuous, severe operating conditions, the engine oil and filter should be changed at 200 hour intervals following the initial oil change.

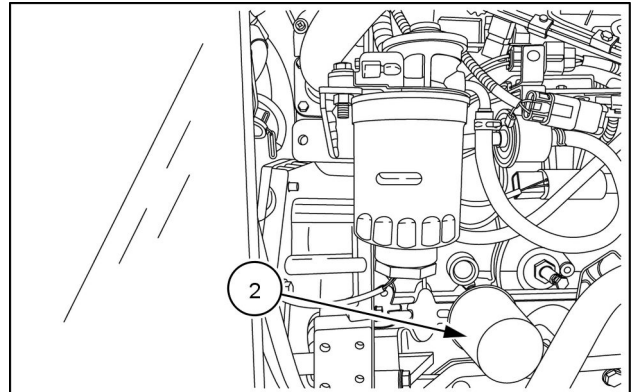
To change the engine oil:

1. Place a suitable container beneath the drain opening to catch the used oil. With the tractor engine off but at normal operating temperature, remove the two drain plugs, **(1)**, located on both sides of the engine oil pan. Reinstall the plugs after all of the oil has been drained.



NHIL13CT01142AA 1

2. Next, place a container below the oil filter, **(2)**, to catch the used oil and unscrew the oil filter. Discard the used oil and filter.
3. Coat the gasket on the new filter with a film of clean oil. Screw the filter into place until the gasket contacts its mating surface, then turn the filter approximately three-quarters of a turn by hand. Do not overtighten.

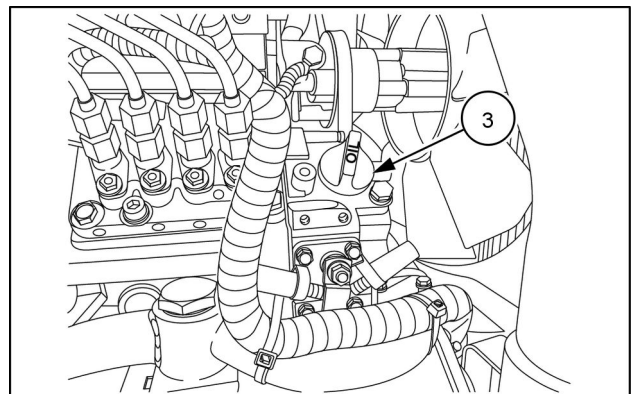


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4. Add the proper type and level of new oil at fill port **(3)**, then start the engine and check the filter for leaks.

**NOTE:** Oil Capacity, with filter 5.7 l (6.0 US qt)

**NOTICE:** Use of any engine oil other than (CJ-4) may clog the (DPF) earlier than expected and fuel usage may increase.



NHIL13CT01118AA 3



Recommended Oils

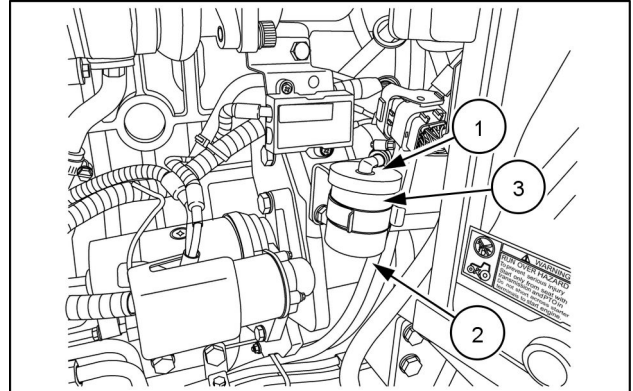
| Ambient Temp (°F)            | Recommended Oil                                         |
|------------------------------|---------------------------------------------------------|
| -23.3 - 49 °C (-10 - 120 °F) | NEW HOLLAND AMBRA MASTERGOLD™ HSP ENGINE OIL SAE 10W-30 |
| -12 - 49 °C (10 - 120 °F)    | NEW HOLLAND AMBRA MASTERGOLD™ HSP ENGINE OIL SAE 15W-40 |
| Oil Specification API CJ-4   |                                                         |

## Pre-fuel filter

**NOTE:** Change the pre-fuel filter after the first 50 hours of operation, then following every 300 operating hours thereafter.

**NOTICE:** In extreme dusty/dirty environments, it is recommended to visually inspect the pre-fuel filter every 100 hours of operation for contamination and replacement at every 200 hours.

1. Close off the fuel inlet hose (1) and outlet hose (2) at the fuel filter.
2. Remove the pre-fuel filter (3) from the retaining clip.
3. Install new fuel filter into retaining clip. .
4. Reinstall inlet and outlet hoses onto the filter.
5. To bleed the fuel system and injection pump see **Fuel injection system - Bleed**

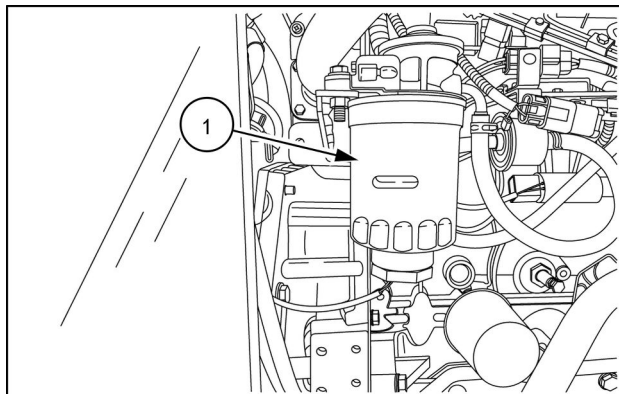


NHIL13CT01161AA 1

**NOTE:** There is not a fuel shutoff valve in the fuel system. To stop the fuel flow from the fuel tank, the fuel inlet hose to the fuel filter has to be removed from the fuel filter base and a plug installed or the fuel hose needs to be crimped shut to shutoff the fuel flow.

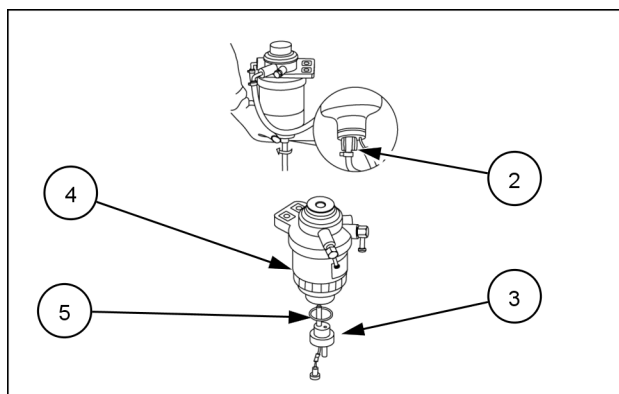
## Fuel filter

**NOTE:** Change the diesel fuel filter **(1)** after the first 50 hours of operation, then following every 500 operating hours thereafter.

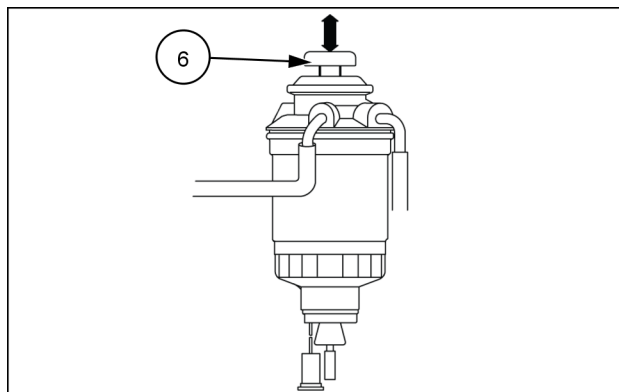


NHIL13CT01068AA 1

1. Loosen fuel filter drain plug **(2)** and drain fuel from the filter.
2. Disconnect the electrical connector from the fuel filter sensor **(3)**.
3. Remove the fuel filter element **(4)** from the filter base
4. Remove the fuel filter sensor **(3)** from the original element and install sensor with O-ring **(5)** onto new element.
5. Install new element onto the filter base.
6. Connect electrical connector to the fuel filter sensor.
7. Tighten fuel filter drain plug.
8. Bleed the air from the fuel filter, by pressing the manual fuel feed pump **(6)** several times. The manual feed pump will bleed the air back to the fuel tank. There is no need to open any bleed ports in the fuel system.



93100920 2



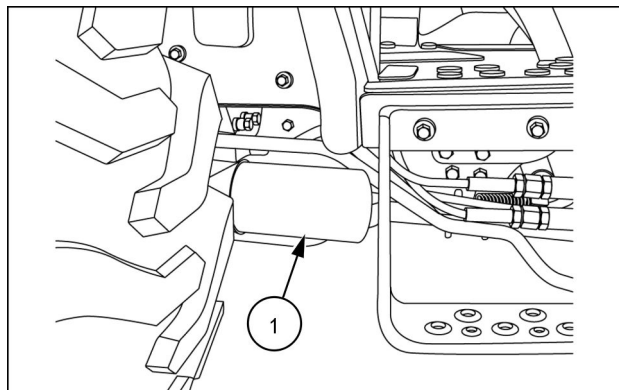
NHIL13CT01251AA 3

## Hydraulic oil filter - Hydraulic system

**NOTE:** Replace the hydraulic system oil filter after the first 50 hours of operation, and then following every 300 hours of operation thereafter.

The hydraulic system uses a spin-on type oil filter **(1)**, located on the right-hand side of the tractor underneath the operator's platform. To replace the filter :

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.

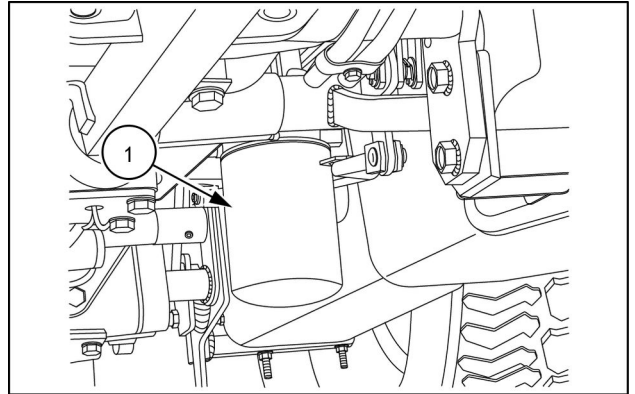


93100934 1

## Hydrostatic (HST) oil filter

**NOTE:** Change the hydrostatic (HST) system oil filter after the first 50 hours of operation, and then following every 300 hours of operation thereafter.

The hydrostatic system uses a spin-on type oil filter **(1)**, located on the left-hand side of the tractor underneath the operator's platform.



NHIL13CT01245AA 1

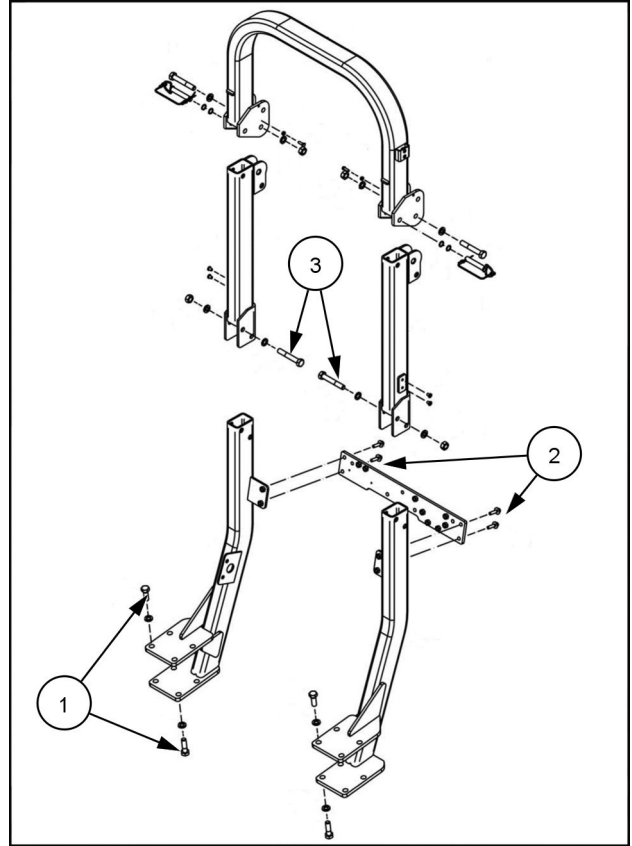
To replace the filter:

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.

## Roll Over Protective Structure (ROPS)

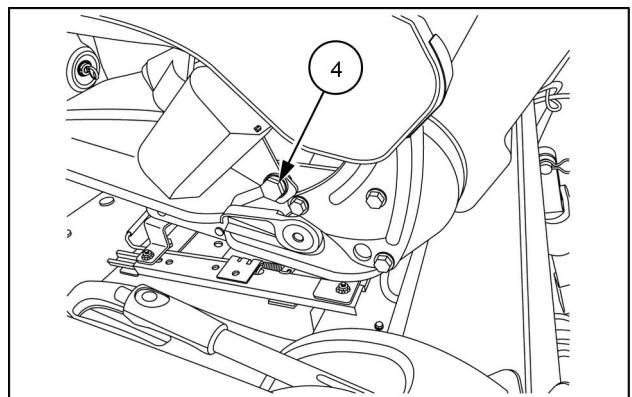
**NOTE:** *Inspect the ROPS after the first 50 hours of operation. Following the initial inspection, the ROPS should be checked after every 300 hours of operation or every six months, whichever comes first.*

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 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 mid portion mounting bolts **(3)**. Tighten the **M14** bolts to the correct torque of **147 N·m (108 lb ft)** if necessary.



NHIL13CT01280BA 1

4. Inspect the operator's seat and the mounting parts for the seat belt. Tighten the M10 bolts **(4)** to the correct torque of **54 N·m (40 lb ft)** if necessary and replace any parts that show wear or damage.



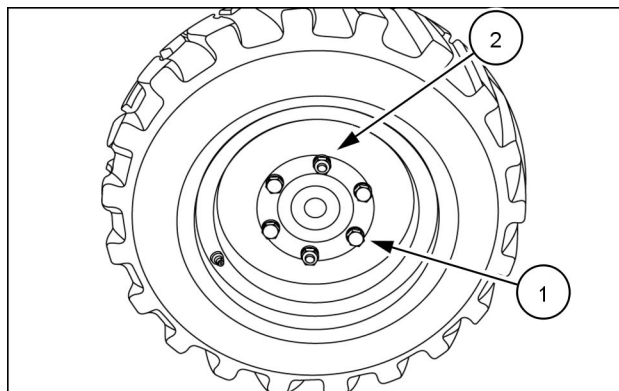
NHIL13CT01162AA 2

## Wheels bolt/nut

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)**



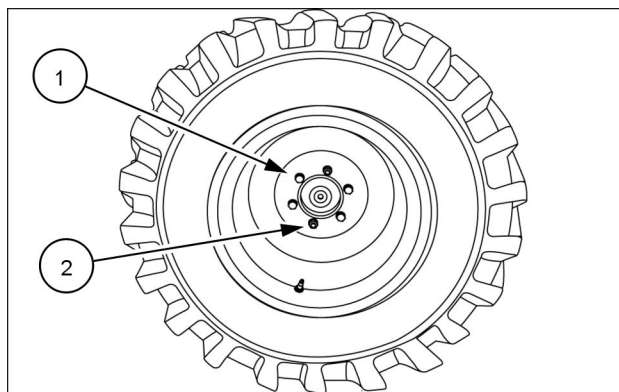
93100874 1

### 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 300 hours



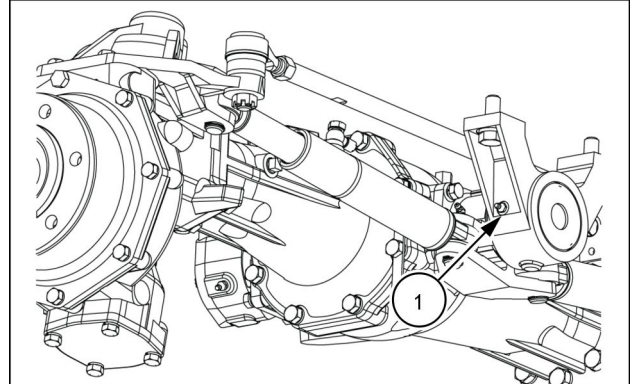
93100875A 2

## Every 50 hours

### Grease fittings

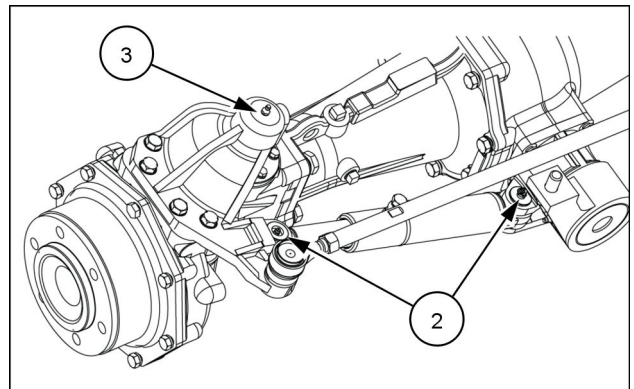
**NOTE:** After every 50 hours of normal operation, apply a good quality grease to the lubrication points listed below (refer to the Recommended Lubricants chart). When operating under extremely dirty conditions, lubricate more frequently than every 50 hours.

- Front Axle Pivot (1)



93100922 1

- Power Steering Cylinder (2) and steering arms (3) (left and right)

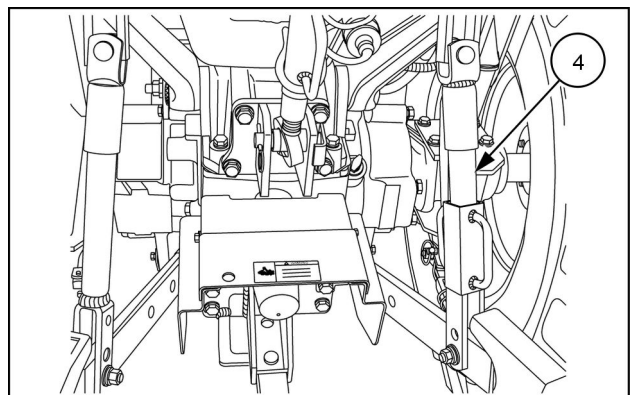


93100921 2

- 3-Point Linkage (4)

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 apply new grease to fittings.
3. Wipe away any excess grease.



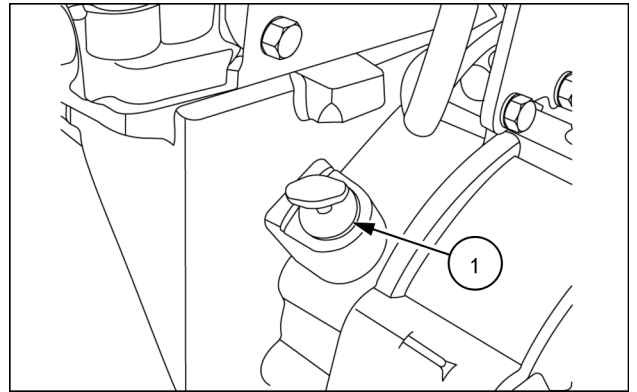
NHIL12CT010120A 3



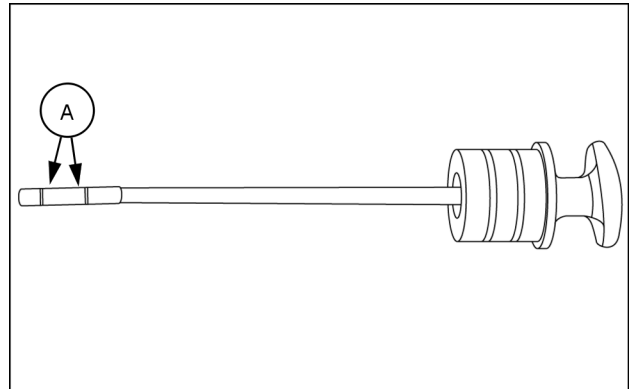
## Transmission fluid level

**NOTE:** Check the transmission, rear axle, and hydraulic system oil level after every 50 hours of operation.

1. With the engine off and the tractor standing level, check the oil level using the dipstick (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 **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil through the dipstick hole. Do not fill above the dipstick full mark.
3. Reinstall the dipstick.



93099360 1



93100904 2

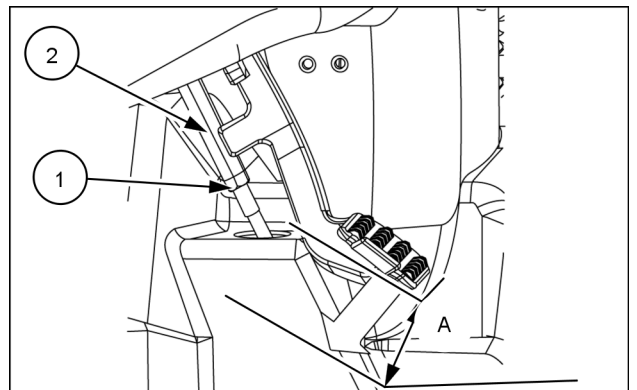
## Clutch pedal free play

**NOTE:** Check clutch pedal free travel after every 50 hours of operation.

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.

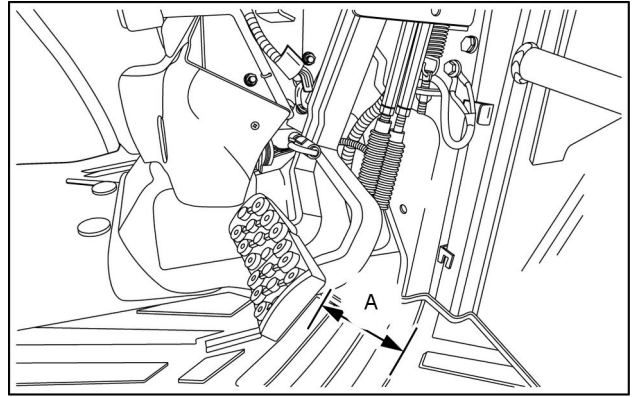


93100862 1

## Brake pedal free play

To check brake pedal free play:

1. Depress brake pedal(s) until a resistance is felt.
2. Measure the brake pedal travel from the at rest position to the position **(A)** that resistance is felt.
3. Brake pedal free play specification is **50.0 - 60.0 mm (1.96 - 2.36 in)**
4. If measured free play is more than the specification see **7-44** for adjustment procedure.

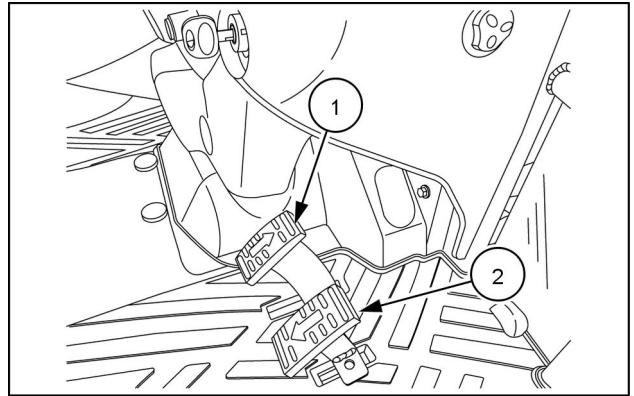


NHIL13CT01246AA 1

**NOTE:** Brake pedal free play should be equal for both pedals.

## Hydrostatic transmission (HST) neutral adjustment

1. During the operation of the tractor, when the operator's foot is removed from the forward **(1)** or reverse **(2)** HST pedal, the tractor should stop and the rear wheels should not rotate.
2. If the rear wheels rotate with the HST pedals in the neutral position, the HST control linkage needs to be adjusted.
3. To adjust HST control linkage see **7-35**



NHIL13CT01172AA 1

## Engine belts

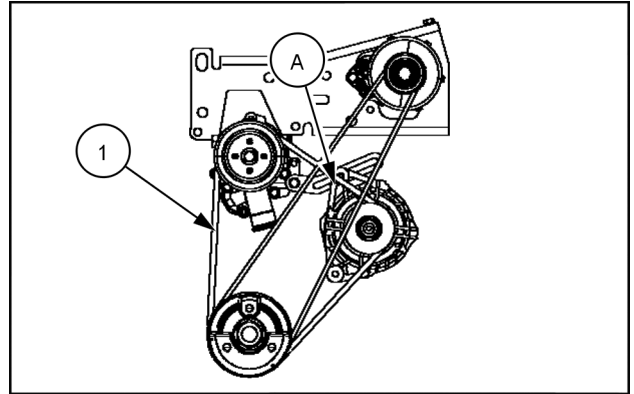
**NOTE:** Check the condition of the fan and air pump belts after every 50 hours of operation. Check belt tension after every 300 hours of operation.

### Fan and alternator belt

The belt- **(1)** that drives the cooling fan and alternator is located at the front of the engine.

When **5 kg (11 lb)** of pressure is applied midway between the belt pulleys, a correctly tightened belt will deflect **5 mm (0.2 in)** at point **(A)**.

If the fan belt is slipping, fan efficiency is lowered, resulting in the engine running too hot. or the alternator not charging. 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.



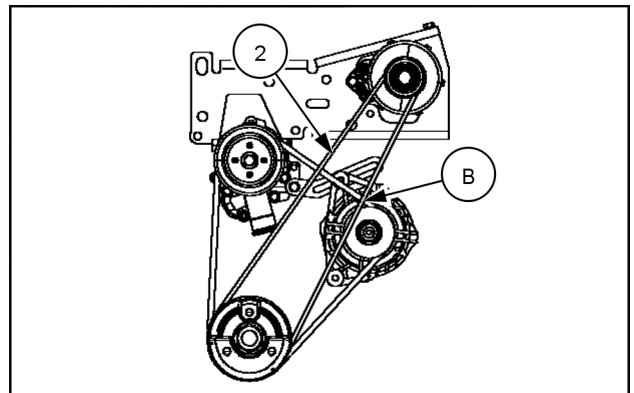
NHIL13CT01234AA 1

### Air pump belt

The belt **(2)** that drives the engine air pump is located at the front of the engine.

When **5 kg (11 lb)** of pressure is applied midway between the belt pulleys, a correctly tightened belt will deflect **10 mm (0.4 in)** at point **(A)**.

If the air pump belt is slipping, pump efficiency is lowered. Resulting in the (DPF) burning not operating at a high enough temperature or difficulty in starting burner. If the belt is too tight, the life of the pump bearing will be shortened. If the fan belt shows signs of cracking or fraying, install a new one.



NHIL13CT01234AA 2

## Tires and wheels

**NOTE:** Check tire pressure after every 50 hours of operation or weekly.

Tire inflation pressure affects the amount of weight a tire can carry. Check the air pressure in your tractor tires, then locate the tires in the **9-2** chart found in this manual. If necessary, adjust the tire pressure, being careful not to over-inflate or under inflate. Observe the following guidelines:

### **WARNING**

#### **Explosion hazard!**

**A tire can explode during inflation. Properly seat the tire before inflating. Never increase air pressure beyond 240 kPa (35 psi) to seat the bead on the wheel rim. Never use force on a partially or fully inflated tire. Do not exceed the inflation pressure recommended by the tire manufacturer. Failure to comply could result in death or serious injury.**

W0456A

- 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.

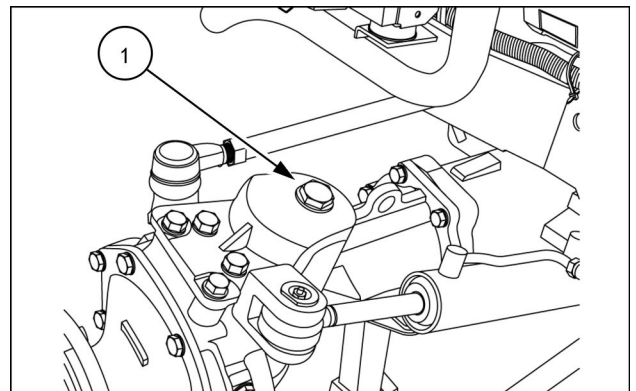
If you must inflate or service tires, follow these safety precautions to avoid injury or fatality:

- 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 **6-2**, **6-2**, **6-4**, and **9-3**.

## Front axle differential oil level

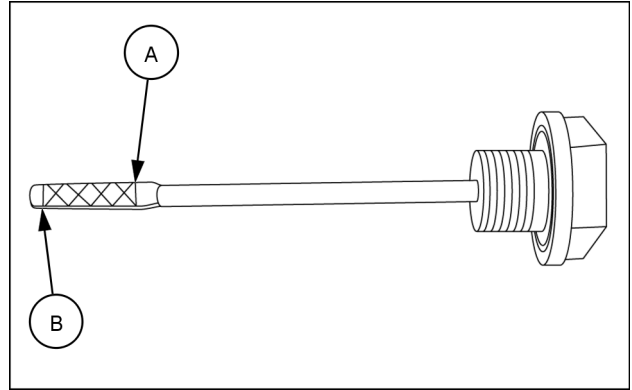
**NOTE:** Check the front axle differential case and final reduction gear case oil level after every 50 hours of operation.

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 **NEW HOLLAND AMBRA HYPOIDE 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 - Primary element

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

1. Pull the primary 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 primary element using low air pressure (**2 Kg/cm<sup>2</sup> (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 primary element.
4. Reinstall the primary element by inserting it into the canister and pushing on the end of the element until it is seated against the canister.

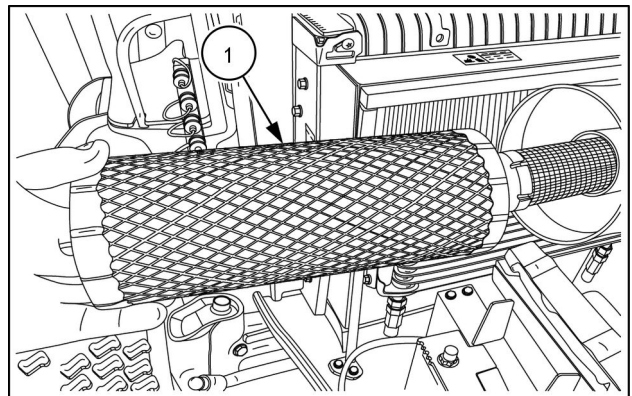
**NOTE:** Place a light inside the element to check for paper leaks or for bonding of the paper to the end plate. If any leaks are found, replace the element.

**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.



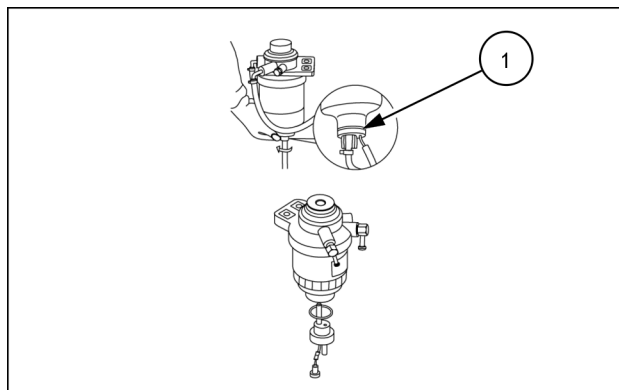
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## Every 100 hours

### Fuel filter

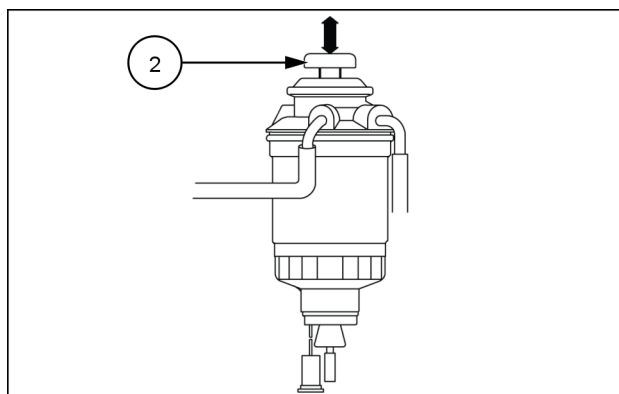
**NOTE:** The fuel filter should be drained after every 100 hours of operation.

1. Make sure there is adequate fuel in the fuel tank. Loosen filter drain plug **(1)** and drain water from inside of the filter.



93100920 1

2. Tighten drain plug when only fuel flows from the filter base.
3. Bleed the air from the fuel filter, by pressing the manual fuel feed pump **(2)** several times. The manual feed pump will bleed the air back to the fuel tank. There is no need to open any bleed ports in the fuel system.



NHIL13CT01251AA 2

## **Every 300 hours**

### **Engine oil and filter**

See 7-10

### **Hydraulic filter**

See 7-14

### **Hydrostatic (HST) oil filter - HST system**

See 7-15 .

### **Pre-fuel filter**

See 7-12

### **Engine belts**

See 7-21

### **Wheels bolt/nut**

See 7-17



## Air cleaner primary element

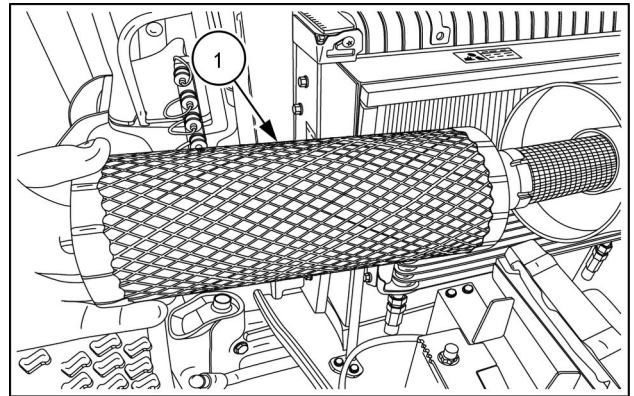
**NOTE:** Replace the primary element after every 300 hours of service. Extremely dusty conditions may require more frequent service intervals.

1. Pull the primary 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 primary 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.

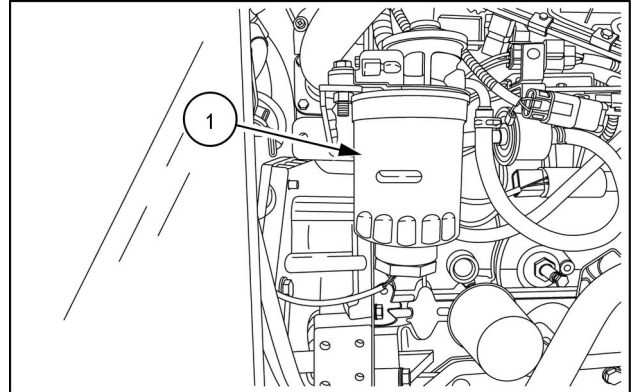


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## Every 500 hours

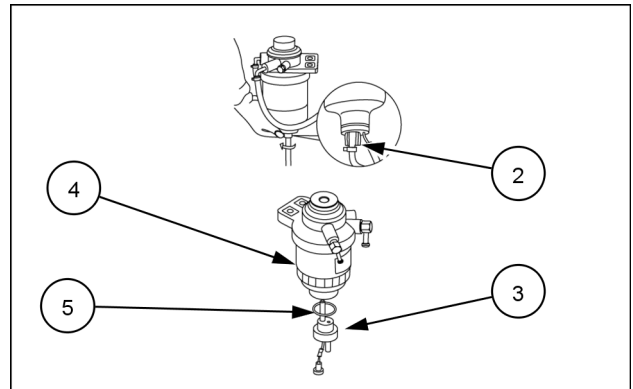
### Fuel filter

**NOTE:** Change the diesel fuel filter (1) after the first 50 hours of operation, then following every 500 operating hours thereafter.

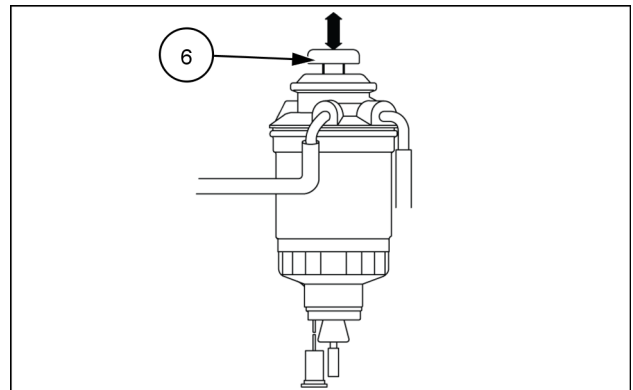


NHIL13CT01068AA 1

1. Loosen fuel filter drain plug (2) and drain fuel from the filter.
2. Disconnect the electrical connector from the fuel filter sensor (3).
3. Remove the fuel filter element (4) from the filter base
4. Remove the fuel filter sensor (3) from the original element and install sensor with O-ring (5) onto new element.
5. Install new element onto the filter base.
6. Connect electrical connector to the fuel filter sensor.
7. Tighten fuel filter drain plug.
8. Bleed the air from the fuel filter, by pressing the manual fuel feed pump (6) several times. The manual feed pump will bleed the air back to the fuel tank. There is no need to open any bleed ports in the fuel system.



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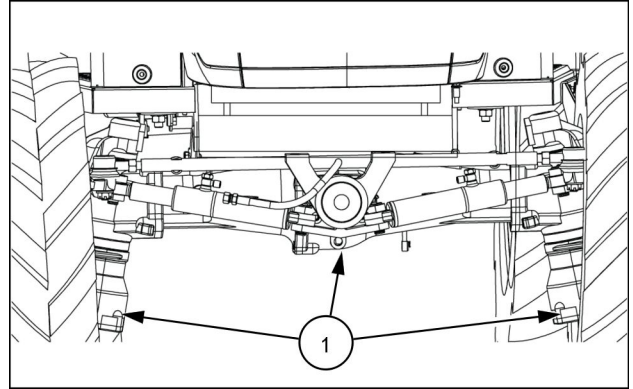
## Every 600 hours

### Front axle differential fluid

#### Changing front axle differential and final reduction gear case oil

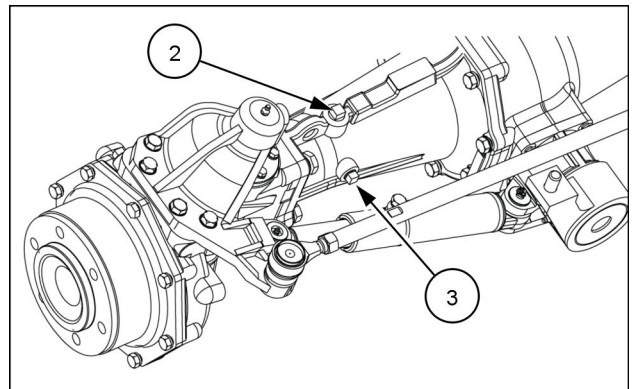
**NOTE:** The front axle differential case and final reduction gear case oil should be changed after every 600 operating hours.

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)**. After the oil has drained, reinstall the drain plugs and discard the used oil.



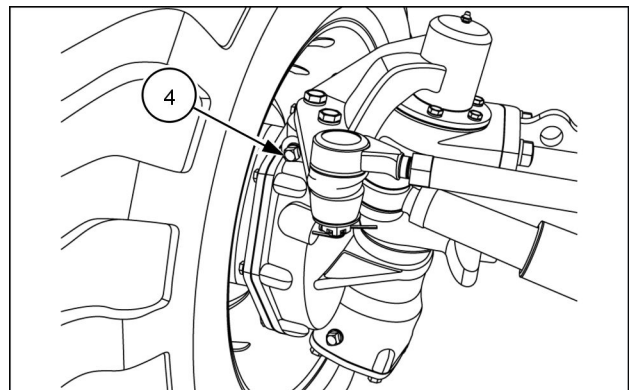
93100925 1

2. Remove the filler plug **(2)** and check plugs **(3)**.
3. Fill the axle with **NEW HOLLAND AMBRA HYPOIDE 90** oil until the oil flows out of the oil level check plug port **(3)**. Reinstall the filler and check plugs, hand tight only.



93100921 2

4. Raise the front axle until both wheels are off the ground.
5. Tilt axle until stops are contacted.
6. Slowly and momentarily remove plug **(4)** 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.
7. Lower axle back to the ground.
8. Recheck oil level at check plug port **(3)**, add oil if needed until the oil flows out of the oil level check plug port.
9. After correct oil level is achieved, tighten all plugs.



93110427 3

**NOTE:** Approximate fluid capacity for the front axle housing is **8.0 l (8.4 US qt)**.

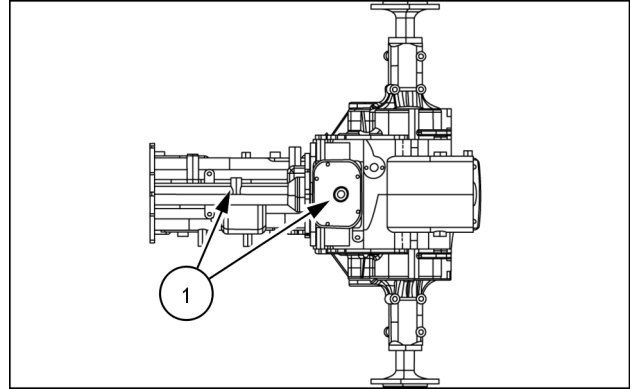
## Transmission fluid

### Changing the transmission, rear axle and hydraulic system oil level

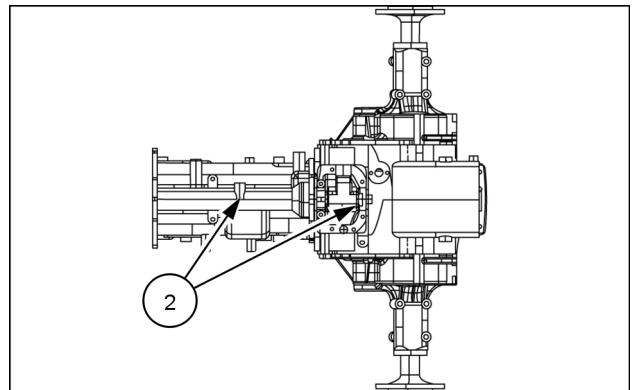
**NOTE:** Change the transmission, rear axle, and hydraulic system oil after every 600 hours of operation.

**NOTE:** During cold weather operation, tractor hydraulic oil can be changed to **NEW HOLLAND AMBRA F200A HYDRAULIC FLUID**. The F200A oil is a multi-viscosity oil which has improved flow characteristics in low temperatures and can be used year round.

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



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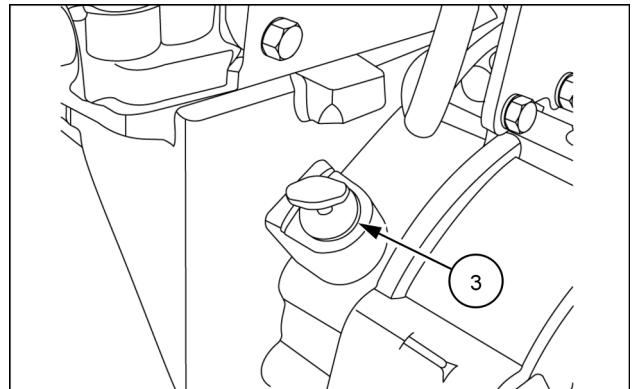
2. Remove the dipstick **(3)** and fill with **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil. The transmission is filled to the correct level when the oil registers between the two marks on the dipstick.

Capacity:

- Gear transmission ..... **43.0 l (11.4 US gal)**
- HST transmission ..... **43.0 l (11.4 US gal)**

3. 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

## Every 1000 hours

### Air cleaner inner element

**NOTE:** For maximum engine protection and air cleaner service life, install a new inner safety element every third primary element change or after every 1000 hours of operation, whichever comes first.

The air cleaner inner safety element (1) cannot be cleaned. It must be replaced once it becomes partially clogged. A clogged element will cause an air restriction resulting in a loss of engine power or excessive black exhaust smoke.

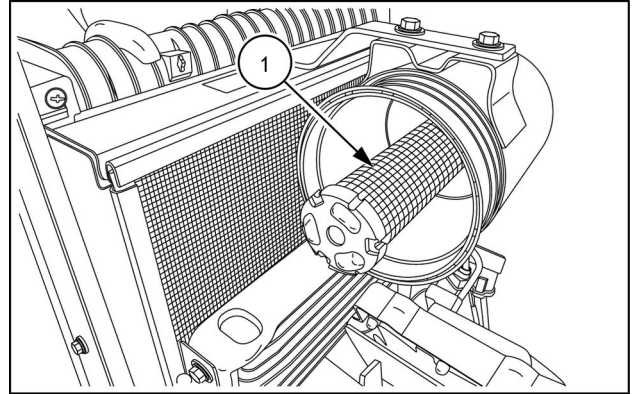
**NOTE:** Conduct a visual inspection of the inner safety element by placing a light inside the element. Little or no light will shine through the element if it is partially clogged.

To remove the inner safety element, pull it out of the canister body.

To install the new element, push it into the canister until seated.

**NOTICE:** Clean any dirt from the canister before installing the inner safety element. Check element inner diameter seals for damage and replace the safety element if seal damage is present.

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



NHIL13CT00997AA 1

## Engine coolant

### ⚠ WARNING

**Hot liquid under pressure!**

**Never remove the filler cap or the recovery tank cap while the engine is running or the coolant is hot. Let the system cool. Turn the filler cap to the first notch and allow any pressure to escape, and then remove the filler cap. Loosen the recovery tank cap slowly to allow any pressure to escape.**

**Failure to comply could result in death or serious injury.**

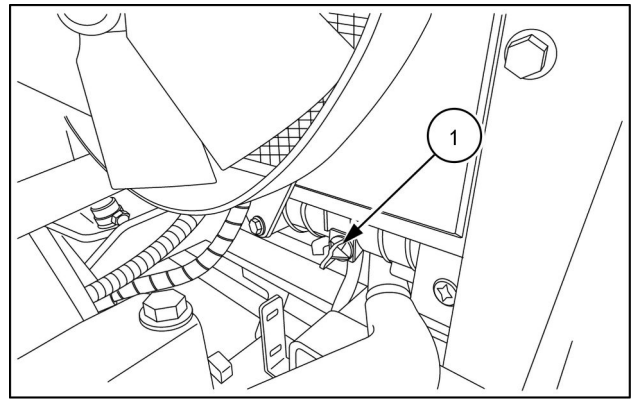
W0296A

### Draining and flushing the cooling system

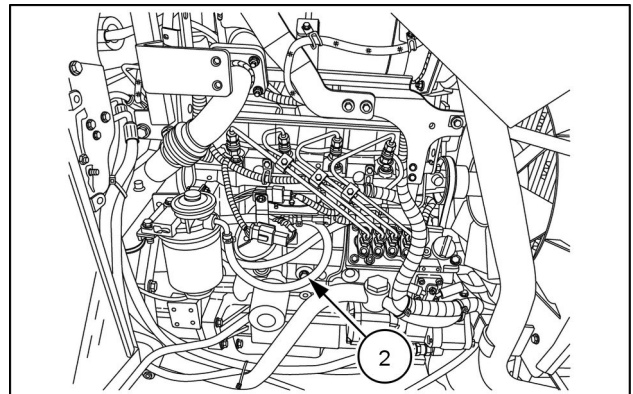
**NOTE:** Drain and flush the radiator and engine block every 1000 hours of usage or 24 months, whichever comes first. Refill with a 50/50 mixture of permanent antifreeze and clear water.

To drain the cooling system:

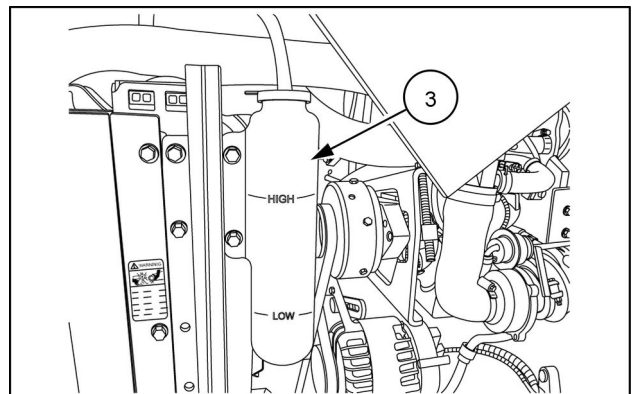
1. Use a suitable receptacle to catch the used coolant. Remove the radiator cap and open the drain valve (1) on the left- side of radiator to drain the radiator and drain plug (2) on right side of engine block to drain engine block.
2. After the coolant has drained, place a water hose in the radiator filler neck and run water through the system. When water is flowing from the block drain plug port start the engine. When the water flowing from the block port 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 and block port.
3. Close the radiator drain valve and reinstall the block drain plug. Slowly refill the system with a 50/50 solution of ethylene glycol antifreeze and water. Fill until the coolant level is approximately **4 cm (1.6 in)** below the bottom of the filler neck. Do not fill beyond this level.
4. Clean the radiator cap and cap seal and install the cap.
5. Add coolant to the coolant reservoir (3) until fluid level is between the "LOW" and "HIGH" lines on the side of the reservoir.
6. Run the engine until normal operating temperature is reached, then stop the engine. Recheck the coolant level when the engine is cold and add additional coolant as necessary.



NHIL13CT01051AA 1



NHIL13CT01095AA 2



NHIL13CT01235AA 3

**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:** Cooling system capacity is **7.5 L (2.0 US gal)**

## General maintenance

### Fuel injection system - Bleed

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.

#### **⚠ WARNING**

##### **Escaping fluid!**

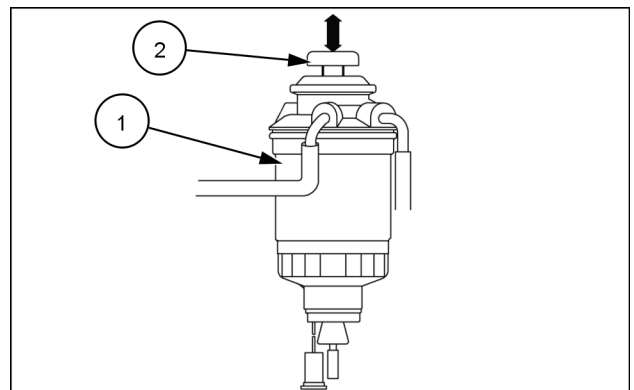
Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight 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.

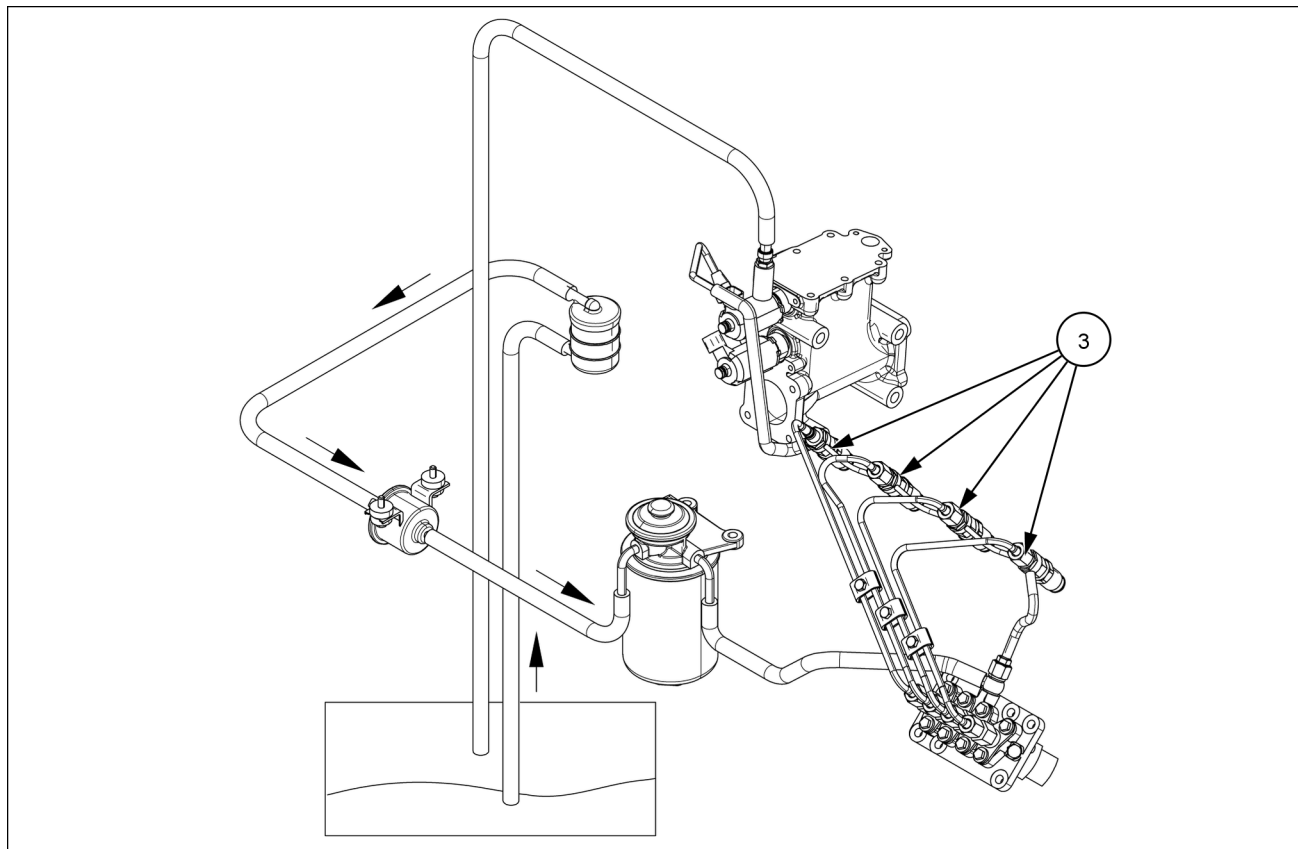
W0178A

To bleed the fuel system:

1. Make sure there is adequate fuel in the fuel tank.
2. Place key switch in the "ON" position.
3. Bleed the air from the fuel filter **(1)**, by pressing the manual fuel feed pump **(2)** several times. The manual feed pump will bleed the air back to the fuel tank. There is no need to open any bleed ports in the fuel system.



NHIL13CT01251AA 1



NHIL13CT01357FA 2

## Bleeding the injector lines

Bleed the injector lines if:

- The tractor has run out of fuel.
- New injectors have been installed.
- The injection pump has been removed for service repairs.

To bleed the injector lines:

1. Loosen the injector line fittings **(3)** at the injectors, one at a time.
2. Move the hand throttle control lever to its wide open position.
3. Crank the engine until air-free fuel flows from each connection, then tighten the fittings to **24 - 29 N·m (18 - 21 lb ft)**.

**NOTICE:** If air is not purged from the system, repeat the above procedures. Do not crank the engine continuously for more than 30 seconds as this may cause starting motor failure.



## Hydrostatic transmission (HST) neutral adjustment

### Checking HST return to "NEUTRAL"

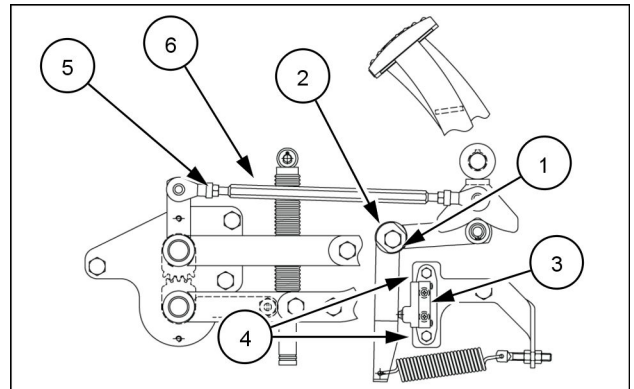
1. Place range gear in "LOW" range and engine speed at high idle position.
2. Drive tractor in forward and reverse, remove foot from HST pedal. Tractor should stop and rear wheels should not rotate when pedals are at "NEUTRAL" position.
3. If rear wheels rotate when HST pedals are in the "NEUTRAL" position, the HST control linkage needs to be adjusted.

### Adjusting "NEUTRAL" setting of HST control linkage

1. Park the tractor on level hard surface, with the engine turned off.

**NOTE:** Before raising the rear wheels, install chocks between the front axle and engine frame to prevent the front of the tractor from oscillating side to side.

2. Raise the rear tires off the ground and support axles, with safety stands.
3. Place the 4WD control lever in the "2WD" position.
4. The forward and reverse pedals should be at the same height. Adjust pedal height by loosening bolt (1) and rotating shaft (2) as needed. After height adjustment is obtained, hold shaft (2) in place when tightening bolt (1).



93100877 1

5. After pedal height adjustment, is completed, check that HST neutral switch (3) is depressed when the pedals are in the "NEUTRAL" position. If switch is not depressed, loosen bolts (4) and adjust position of switch so that switch is depressed. Tighten bolts after adjustment is completed.
6. Start the tractor, place the range gear in "LOW" range and engine speed at high idle.
7. Depress both forward and reverse pedals separately. Release pedals and check if rear wheels rotate when pedals return to the "NEUTRAL" position.
8. If rear wheels rotate when pedals are at the "NEUTRAL" position, adjust HST linkage by loosening jam nuts (5) and rotating rod (6) until wheels do not rotate. Tighten jam nuts after adjustment is completed.
9. Remove tractor from safety stands, when adjustment is completed.

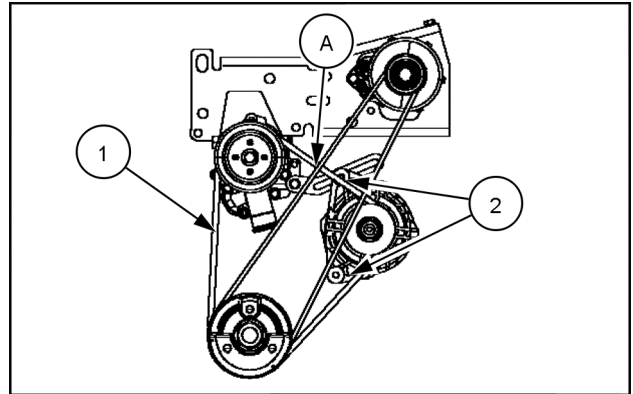
## Engine belts

### Fan and alternator belt

The belt- **(1)** that drives the cooling fan and alternator is located at the front of the engine.

When **5 kg (11 lb)** of pressure is applied midway between the belt pulleys, a correctly tightened belt will deflect **5 mm (0.2 in)** .at point **(A)**.

If the fan belt is slipping, fan efficiency is lowered, resulting in the engine running too hot. or the alternator not charging. 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.



NHIL13CT01234AA 1

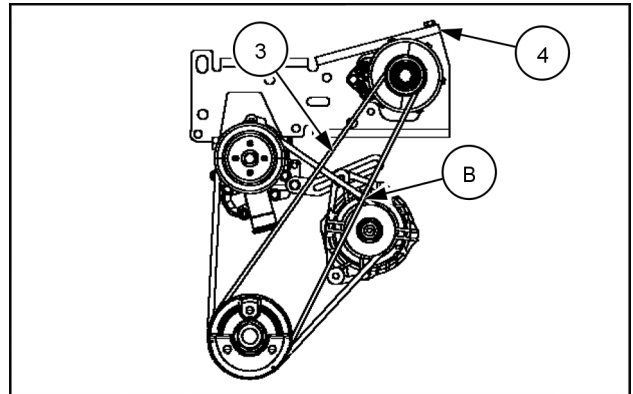
To adjust fan and alternator belt tension:

1. Loosen the two bolts **(2)** on the alternator , using a prybar, pull the alternator away from the engine to apply tension to belt.
2. When proper belt tension is achieved, tighten the two alternator bolts.

### Air pump belt

The belt **(3)** that drives the engine air pump is located at the front of the engine.

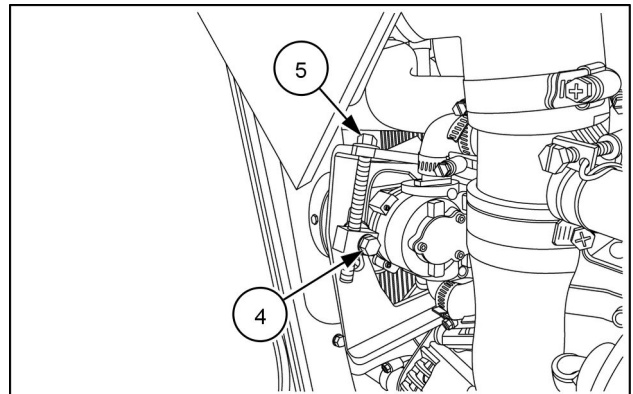
When **5 kg (11 lb)** of pressure is applied midway between the belt pulleys, a correctly tightened belt will deflect **10 mm (0.4 in)** .at point **(B)**.



NHIL13CT01234AA 2

To adjust air pump belt tension:

1. Loosen air pump mounting bolt **(4)**.
2. Rotate adjustment bolt **(5)** clockwise to tighten or counterclockwise to loosen the belt tension.
3. When proper belt tension is achieved, tighten air pump mounting bolt.



NHIL13CT01244AA 3

**NOTE:** If the air pump belt is slipping, pump efficiency is lowered. Resulting in the (DPF) burning not operating at a high enough temperature or difficulty in starting burner. If the belt is too tight, the life of the pump bearing will be shortened. If the fan belt shows signs of cracking or fraying, install a new one.

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

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.

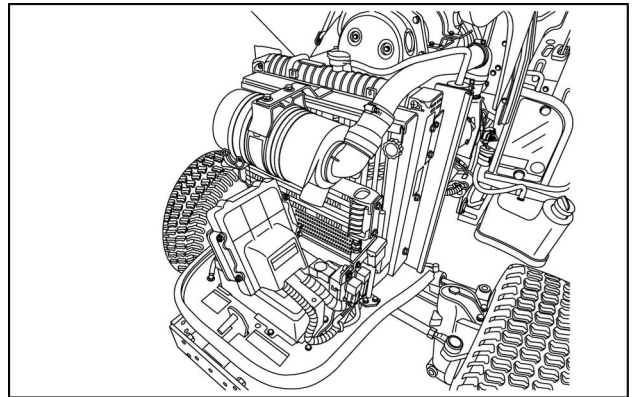
**NOTICE:** Do not attempt to weld or straighten the ROPS.

## Battery

The tractor is equipped with a BCI group 34, **12 V** battery 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.



NHIL13CT01160AA 1

## Alternator

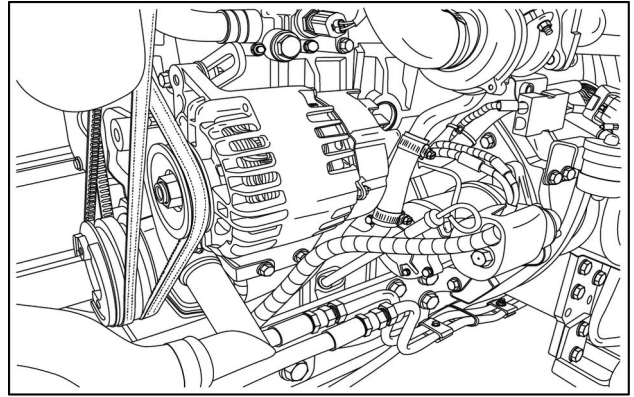
The tractor's **85 A** alternator is belt-driven from the engine crankshaft pulley. It is important that belt slippage does not occur, or the charging system will be affected. To adjust the belt, see **7-36**.

Other than belt adjustment, the only alternator maintenance required is to periodically inspect the terminals to ensure they are clean and tight. The alternator cooling fan should also be cleaned periodically.

When working on or checking the alternator, adhere to following precautions or alternator damage may occur:

- Do not **UNDER ANY CIRCUMSTANCES** short the field terminal of the alternator to ground.
- Do not disconnect the alternator output lead or battery cables while the alternator is operating.
- Do not remove the alternator from the tractor without first disconnecting the negative (-) battery cable. When removing the battery, disconnect the negative (-) cable first.
- To install a battery, **MAKE SURE** that the positive (+) cable is connected first and that the negative terminal is connected to ground. Reverse polarity will destroy the rectifier diodes in the alternator.

If the battery charge warning light illuminates, indicating that the alternator is not charging the battery, check the fan belt and the wiring connections. If these items are in satisfactory condition and the warning light continues to indicate no charge, consult your New Holland Dealer.

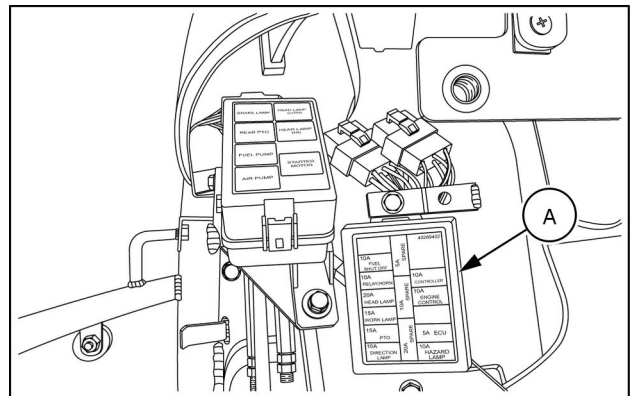


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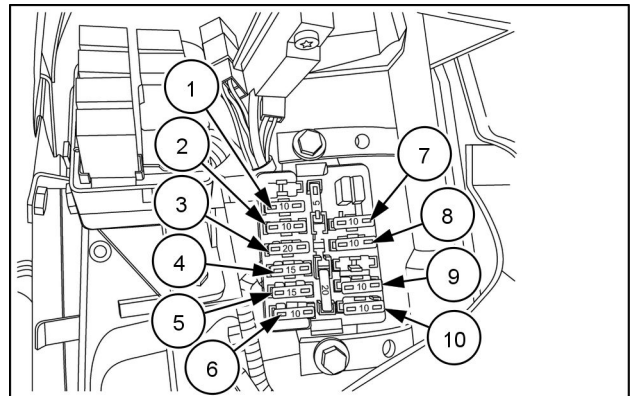
## Fuses

The fuse block **(A)** is located on the left-hand side of the steering column, underneath shrouding.

**NOTICE:** Always replace blown fuses with the size specified for that circuit.



NHIL13CT01000AA 1



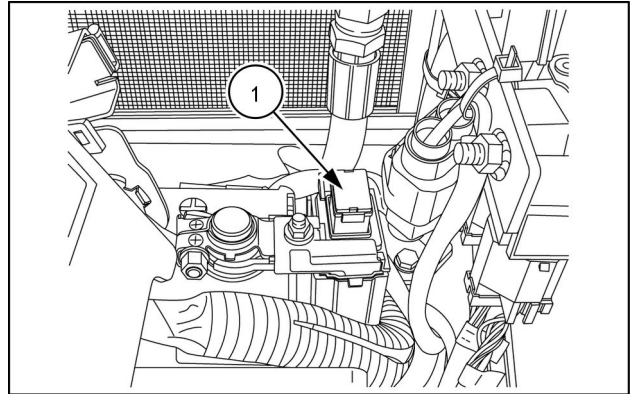
NHIL13CT01343AA 2

From top to bottom the fuse block contains the following fuses:

| Fuse # | Fuse Size | Circuit Protected                                                                                |
|--------|-----------|--------------------------------------------------------------------------------------------------|
| 1      | 10 A      | Fuel shut off, Fuel pump, Engine air pump, Engine start relay Engine controller, Glow plug relay |
| 2      | 10 A      | Horn                                                                                             |
| 3      | 20 A      | Road lights, Brake lights, (DPF) burner igniter                                                  |
| 4      | 15 A      | Front work lights,                                                                               |
| 5      | 15 A      | PTO, Fuel filter sensor                                                                          |
| 6      | 10 A      | Turn signals                                                                                     |
| 7      | 10 A      | Safety controller, Cruise control, Instrument panel, (DPF) switch                                |
| 8      | 10 A      | Engine controller (ECU), Diagnostic plug                                                         |
| 9      | 10 A      | Spare circuit                                                                                    |
| 10     | 10 A      | Hazard lights                                                                                    |

## Maxi-fuse

The main fuse is a **100 A** fuse (1) located beside the battery positive (+) terminal. This fuse protects the tractor's entire electrical system.



NHIL13CT01247AA 1

To replace the main fuse:

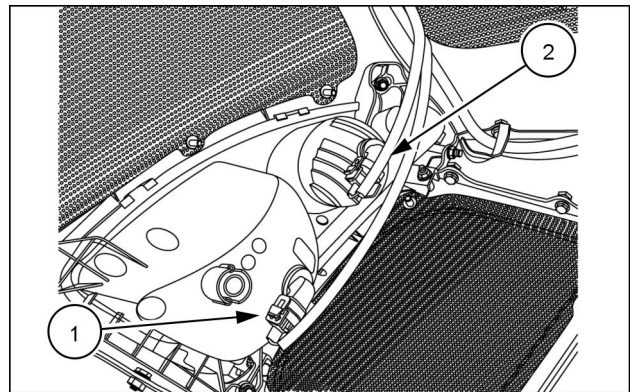
1. Remove the old fuse from the fuse holder and replace.

**NOTICE:** Always replace this fuse with a **100 A** fuse; DO NOT increase amperage rating.

## Headlight bulb

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

1. Open the tractor hood.
2. Bulb Removal:
  - Work (1) and Road lights (2). Turn bulb assembly ¼ turn and remove bulb from holder.
3. Bulb Replacement:
  - Road and Work lights: Insert bulb assembly into slots and turn ¼ turn clockwise to secure.
4. Rotate the socket counter-clockwise a quarter turn and remove the socket from the housing.
5. Remove the bulb assembly from the harness.
6. Place a new bulb in the socket, then reinstall the socket in the housing.



93100884 1

**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:

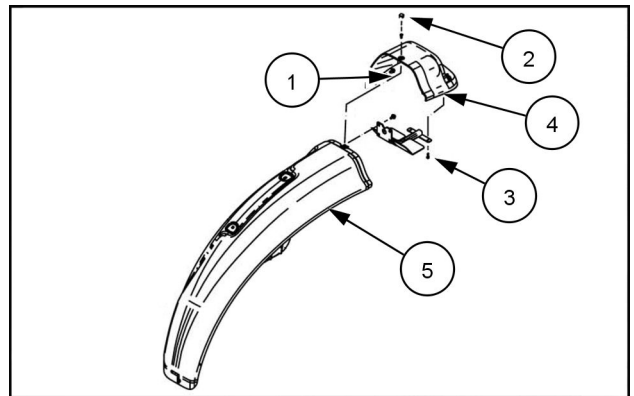
Work lights (upper) : Bulb size 894, **37.5 W**, Halogen.

Road lights (lower) : Bulb size 886, **50 W**, Halogen.

## Tail/brake light bulb

To replace a taillight bulb:

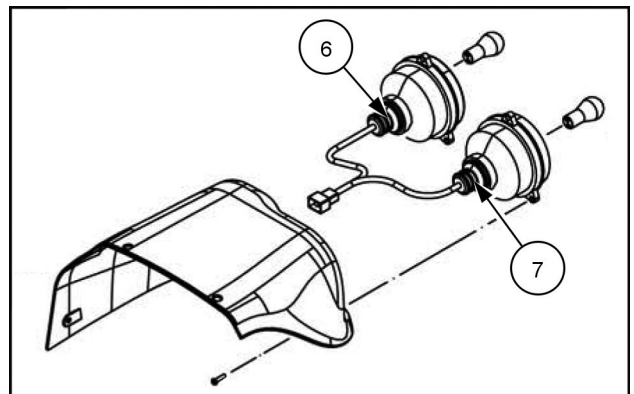
1. Remove the **M6x16mm** bolts (1), the plastic retainer (2) and two **M5** screws (3) that retain the taillight housing (4) to the rear fender (5).



NHIL13CT01279AA 1

2. Push in on the brake/tail light bulb (6) or turn signal bulb (7) 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 (6) with a dual filament 21W/5W bulb. and turn signal bulb (7) with a single filament 21W bulb.



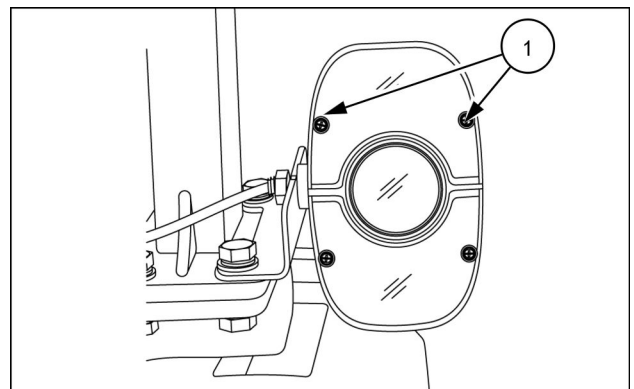
NHIL13CT01278AA 2

4. Reinstall the taillight housing to the rear fender.

## Turn signal/hazard light bulb

To replace the top flasher light bulb:

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

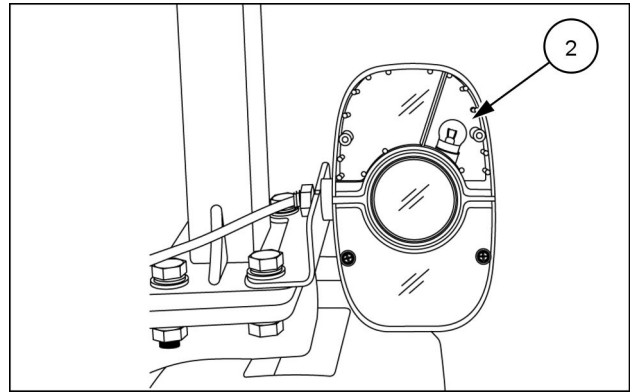


93100885 1

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

**NOTE:** Replace with a P21 watt bulb.

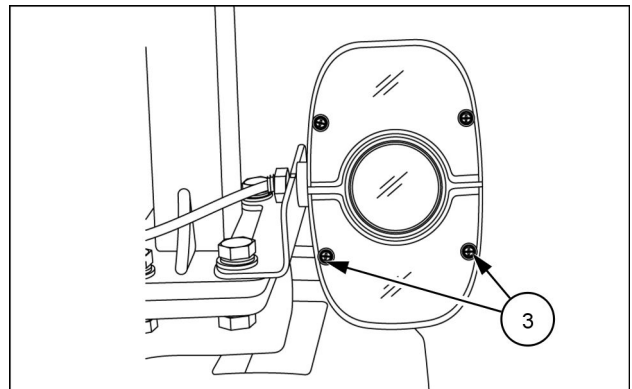
3. Insert the new bulb into the socket and turn it clockwise until the bulb locks into place.
4. Install lenses and retaining screws.



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.

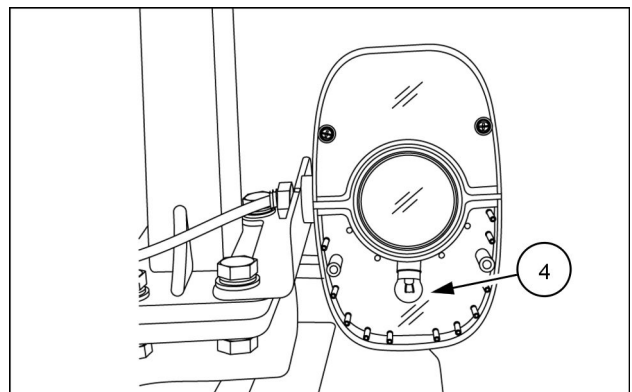


93100885 3

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

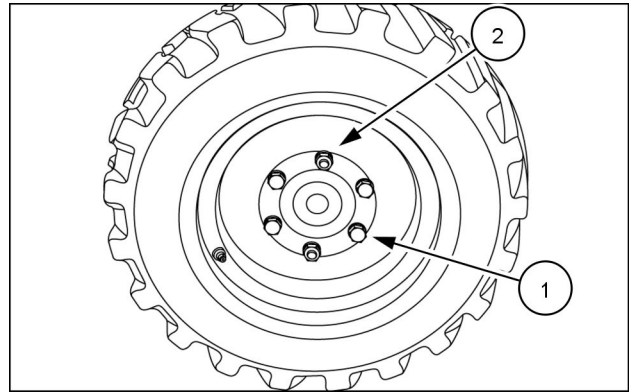


## Wheels bolt/nut

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)**



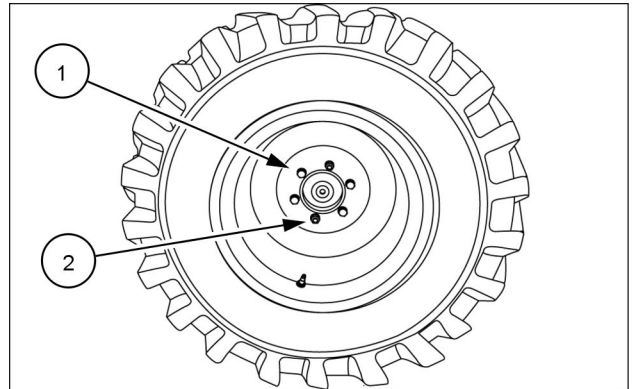
93100874 1

### 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 300 hours

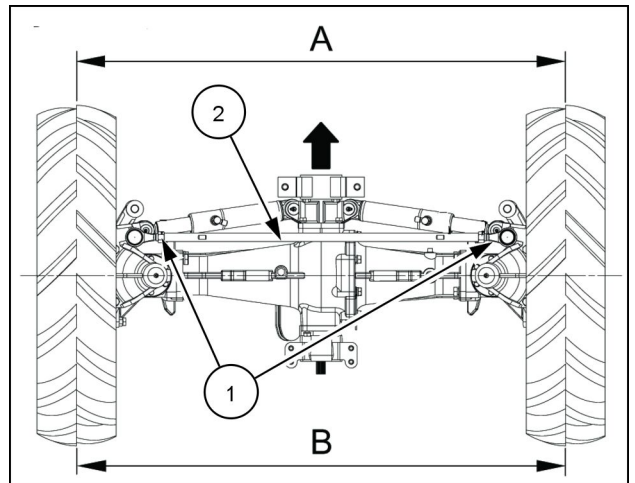


93100875A 2

## Front wheels toe-in

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.

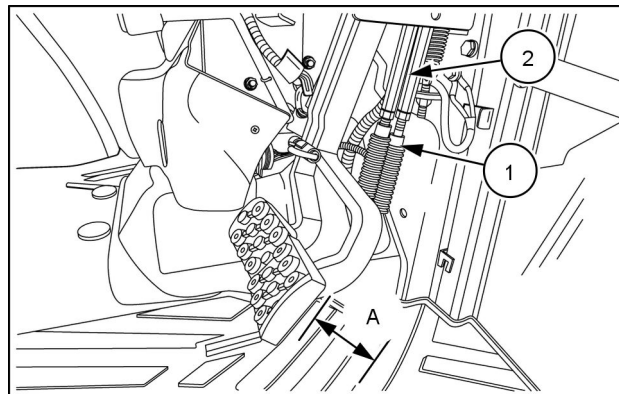


20100932 1

## Brake pedal free play

Whenever brake pedal travel becomes excessive, pedal free play should be adjusted.

1. Loosen the locknut (1) and rotate the brake rod (2) until there is (A) = 50 - 60 mm (1.96 - 2.36 in) of pedal free play. Lengthening the rod increases free play. Shortening the rod decreases free play.



NHIL13CT01246AA 1

**NOTE:** *Adjust both pedals equally*

2. Test drive the tractor to make sure the braking action of both rear wheels is equal. Readjust as necessary.

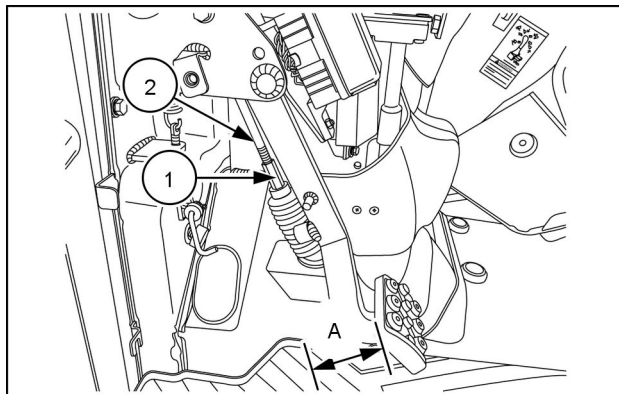
## Clutch pedal free play

**NOTE:** Check clutch pedal free travel after every 50 hours of operation.

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.



NHIL13CT01275AA 1

## STORAGE

### Storing the tractor

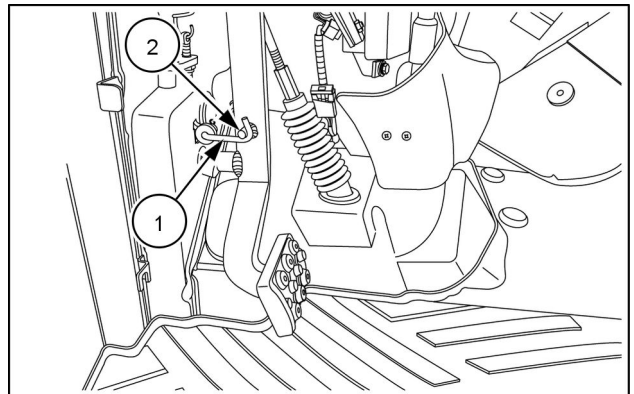
Below is a list of protective measures which should be taken if your tractor is to be stored for an extended period of time:

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.

**NOTE:** The left side cover has to be removed to gain access to the clutch pedal latch.



NHIL13CT01276AA 1

## Removal of tractor from storage

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, power steering reservoir, the common sump (for the hydraulic lift, transmission, and rear axle), and the optional 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 antifreeze and clear 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<br>86109141-DS | 16 oz Spray<br>1 US qt |
| CNH Dark Gray           | B96104<br>B96105           | 16 oz Spray<br>1 US qt |
| Bianco White (Wheels)   | 9624698-DS<br>9624699-DS   | 16 oz Spray<br>1 US qt |
| Med Gloss Black         | 94792-DS<br>9624700-DS     | 16 oz Spray<br>1 US qt |



## 8 - TROUBLESHOOTING

### SYMPTOM(S)

#### Engine - Troubleshooting

| Problem                                                                             | Possible Cause                                                     | Correction                                            |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------|
| <b>The start motor does not rotate with the key switch in the (START) position.</b> | 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                       |
| <b>The start motor rotates but the engine does not start</b>                        | 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 |
| <b>Engine speed is irregular</b>                                                    | 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                 |
| <b>Engine speed is more than maximum rated high idle speed</b>                      | Governor malfunction                                               | Repair injection pump as needed                       |
| <b>Engine stops suddenly during operation</b>                                       | 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                               |
| <b>Engine stops at low speed</b>                                                    | 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                        |
| <b>Engine overheating</b>                                                           | 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               |
| <b>The color of exhaust smoke is white</b>                                          | Low engine operating temperature                                   | Allow engine to obtain higher operating temperature   |
|                                                                                     | Engine burning engine oil                                          | Repair engine as needed                               |
|                                                                                     | Engine coolant entering engine exhaust                             | Repair engine as needed                               |
| <b>The color of exhaust gas is black.</b>                                           | 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                       |
| <b>Low engine power</b>                                                             | 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                           |

## 8 - TROUBLESHOOTING

| Problem                                                                               | Possible Cause                                         | Correction                                                            |
|---------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------|
| <b>Instrument panel engine oil pressure indicator light is "ON" during operation.</b> | 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                                                    |
| <b>Instrument panel battery charging indicator is "ON" during operation.</b>          | 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                                   |
| <b>Diesel Particulate Filter (DPF) and burner not functioning properly</b>            | Excessive soot build up in (DPF)                       | Start regeneration of (DPF) system                                    |
|                                                                                       | Air pump not working                                   | Check air pump belt tension and electrical current to air pump clutch |
|                                                                                       | Burner not igniting                                    | Defective burner injector, contact authorized dealer                  |
|                                                                                       | Burner not igniting                                    | Defective burner ignitor, contact authorized dealer                   |
|                                                                                       | Burner not igniting                                    | Insufficient fuel supply to burner, check clogged fuel pre-filter.    |
|                                                                                       | Engine Control Unit (ECU) not functioning properly     | Contact authorized dealer for electronic diagnosis                    |
|                                                                                       | Excessive soot load in Diesel Particulate Filter (DPF) | Contact authorized dealer                                             |
| <b>Engine will only run for approximately thirty seconds</b>                          | Excessive soot load in Diesel Particulate Filter (DPF) | Contact authorized dealer                                             |

## Clutch - Troubleshooting

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

## Hydraulic service brakes - Troubleshooting

| Problem                                                  | Possible Cause                                   | Correction                                            |
|----------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|
| <b>Brake does not work or only one side works.</b>       | Incorrect brake pedal free play                  | Adjust brake pedal free play to correct specification |
|                                                          | Brake disc lining worn or broken                 | Replace brake discs as needed                         |
| <b>After engaging brake pedal, pedal will not return</b> | 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                 |

## Hydraulic Lift System - Troubleshooting

| Problem                                   | Possible Cause                       | Correction        |
|-------------------------------------------|--------------------------------------|-------------------|
| <b>The 3-point linkage will not raise</b> | Lack of transmission / hydraulic oil | Add oil as needed |



## 8 - TROUBLESHOOTING

| Problem                                                                                      | Possible Cause                                     | Correction                                                                      |
|----------------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|
|                                                                                              | Air in the hydraulic suction pipe                  | Tighten the hydraulic filter and check all hydraulic suction connections        |
|                                                                                              | Hydraulic filter clogged                           | Replace hydraulic filter                                                        |
|                                                                                              | 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           |
| <b>Oil leakage</b>                                                                           | Connecting part loosened                           | Tighten                                                                         |
|                                                                                              | Oil seal damaged                                   | Replace                                                                         |
|                                                                                              | Pipe cracked                                       | Replace                                                                         |
| <b>The 3-point linkage does not move down when control handle is moved to down position.</b> | 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                                    |

## Steering - Troubleshooting

| Problem                                                                         | Possible Cause                                              | Correction                                                                   |
|---------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>Hydraulic steering system does not work</b>                                  | 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                                   |
| <b>Excessive steering wheel effort</b>                                          | 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 |
| <b>Cylinder movement not as smooth as steering wheel</b>                        | 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                                                    |
| <b>Front wheels turn the opposite direction to the steering wheel direction</b> | Incorrect assembly of steering gear                         | Repair steering gear as needed                                               |
|                                                                                 | Incorrect assembly of steering hoses                        | Assemble steering hoses correctly                                            |
| <b>Oil leakage of steering pump, steering unit, cylinder</b>                    | Seal damaged                                                | Replace seal                                                                 |
| <b>Abnormal noise</b>                                                           | 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                                                                                         |
|----------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>When operating HST pedal, tractor does not move.</b>              | 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                                                                |
| <b>Tractor is still moving when HST pedal is in neutral position</b> | 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                                                                     |
| <b>HST power is low</b>                                              | 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                                                                             |
| <b>Abnormal noise</b>                                                | Engine speed is too low                             | Set engine speed over 1500 RPM                                                                     |
|                                                                      | Oil temperature is too low                          | Run engine to warm up the oil                                                                      |
|                                                                      | Hydraulic oil filter clogged                        | Replace the HST filter                                                                             |
|                                                                      | Oil shortage                                        | Add transmission oil as needed                                                                     |

## Electrical system - Troubleshooting

| Problem                               | Possible Cause                                      | Correction                                                        |
|---------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------|
| <b>Battery does not charge</b>        | 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                                                   |
| <b>Headlights are dim</b>             | Battery charge is low                               | Charge or replace battery                                         |
|                                       | Faulty headlight wiring or faulty ground connection | Check and repair wiring as needed                                 |
| <b>Headlights will not illuminate</b> | 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            |
| <b>Turn signal lights do not work</b> | 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        |
| <b>Cold start aid not working</b>     | 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 |

8 - TROUBLESHOOTING

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| Problem | Possible Cause    | Correction                              |
|---------|-------------------|-----------------------------------------|
|         | 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)<br>9.5-16 | Front-Wheel Drive | <b>1263 mm (49.7 in)</b> | Not Adjustable                     |
| Turf, (R3)<br>28 x 8.50-15   | Front-Wheel Drive | <b>1209 mm (47.6 in)</b> | Not Adjustable<br>(Dished In Only) |
| Industrial (R4)<br>12 x 16.5 | Front-Wheel Drive | <b>1392 mm (54.8 in)</b> | Not Adjustable<br>(Dished In Only) |

**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)<br>13.6-24  | Front-Wheel Drive | <b>1094 - 1266 mm<br/>(43.1 - 49.8 in)</b> | Adjustable by switching -<br>Dish in or dish out |
| Turf, (R3)<br>41 x 14.00-20    | Front-Wheel Drive | <b>1135 mm (44.7 in)</b>                   | Not adjustable<br>(Dish In Only)                 |
| Industrial, (R4)<br>17.5L x 24 | Front-Wheel Drive | <b>1320 mm (52.0 in)</b>                   | Not adjustable<br>(Dish In Only)                 |

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

## Tire inflation pressures

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 Inflation Pressures | Maximum load capacity at (Minimum inflation pressure) |
| Agricultural (R1)              | 9.5-16, 4PR, R1       | 55 - 179 kPa (8 - 26 psi)       | 375 kg (825 lb)                                       |
| Turf (R3)                      | 28 x 8.50-15, 4PR, R3 | 55 - 152 kPa (8 - 22 psi)       | 386 kg (850 lb)                                       |
| Industrial (R4)                | 12 x 16.5, 6PR, R4    | 55 - 221 kPa (8 - 32 psi)       | 1098 kg (2420 lb)                                     |

| REAR TIRE INFLATION PRESSURES |                        |                                 |                                                       |
|-------------------------------|------------------------|---------------------------------|-------------------------------------------------------|
| Tire Type                     | Tire Size              | Recommended Inflation Pressures | Maximum load capacity at (Minimum inflation pressure) |
| Agricultural (R1)             | 13.6-24, 4PR, R1       | 83 - 124 kPa (12 - 18 psi)      | 850 kg (1870 lb)                                      |
| Turf (R3)                     | 41 x 14.00-20, 4PR, R3 | 83 - 97 kPa (12 - 14 psi)       | 825 kg (1819 lb)                                      |
| Industrial (R4)               | 17.5L x 24, 6PR, R4    | 83 - 138 kPa (12 - 20 psi)      | 2080 kg (4580 lb)                                     |

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

## Liquid ballast

### Rear tire liquid

Ballast Weights (Per Tire) 600 g/5 lb Gal Solution/CaCl<sub>2</sub>.

| Tire Type       | Tire Size                 | Approximate Added Weight |
|-----------------|---------------------------|--------------------------|
| Agricultural    | 13.6-24,<br>4PR, R1       | <b>182 kg (400 lb)</b>   |
| Turf            | 41 x 14.00-20,<br>4PR, R3 | <b>157 kg (346 lb)</b>   |
| Industrial (R4) | 17.5 x 24,<br>6PR, R4     | <b>272 kg (600 lb)</b>   |

## General specifications

|                                                   | Model<br>- Boomer 41<br>Hydrostatic/Gear                                                            | Model<br>- Boomer 47<br>Hydrostatic/Gear                                                            |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Engine</b>                                     |                                                                                                     |                                                                                                     |
| Type                                              | Diesel                                                                                              | Diesel                                                                                              |
| Model                                             | N844L-F-30                                                                                          | N844L-F-34                                                                                          |
| Emission level (tier)                             | 4                                                                                                   | 4                                                                                                   |
| Aspiration                                        | Natural                                                                                             | Natural                                                                                             |
| Engine gross horsepower                           | <b>30 kW (40.2 Hp)</b>                                                                              | <b>34 kW (45.6 Hp)</b>                                                                              |
| Cylinders                                         | 4                                                                                                   | 4                                                                                                   |
| Bore                                              | <b>84 mm (3.3 in)</b>                                                                               | <b>84 mm (3.3 in)</b>                                                                               |
| Stroke                                            | <b>100 mm (3.93 in)</b>                                                                             | <b>100 mm (3.93 in)</b>                                                                             |
| Displacement                                      | <b>2.216 L (135 in³)</b>                                                                            | <b>2.216 L (135 in³)</b>                                                                            |
| Compression ratio                                 | 23.3:1                                                                                              | 23.3:1                                                                                              |
| Firing order                                      | 1-3-4-2                                                                                             | 1-3-4-2                                                                                             |
| Low idle speed                                    | <b>1000 - 1100 RPM (1000 - 1100 RPM)</b>                                                            | <b>1000 - 1100 RPM (1000 - 1100 RPM)</b>                                                            |
| Maximum speed :                                   |                                                                                                     |                                                                                                     |
| High Idle                                         | <b>2800 - 2850 RPM (2800 - 2850 RPM)</b>                                                            | <b>2800 - 2850 RPM (2800 - 2850 RPM)</b>                                                            |
| Rated                                             | <b>2600 RPM</b>                                                                                     | <b>2600 RPM</b>                                                                                     |
| Valve clearance (cold)                            |                                                                                                     |                                                                                                     |
| Intake                                            | <b>0.2 mm (0.008 in)</b>                                                                            | <b>0.2 mm (0.008 in)</b>                                                                            |
| Exhaust                                           | <b>0.2 mm (0.008 in)</b>                                                                            | <b>0.2 mm (0.008 in)</b>                                                                            |
| Block type                                        |                                                                                                     |                                                                                                     |
|                                                   | Cast iron                                                                                           | Cast iron                                                                                           |
| Lubrication                                       |                                                                                                     |                                                                                                     |
|                                                   | Pressure Feed by oil pump                                                                           | Pressure Feed by oil pump                                                                           |
| <b>Capacities</b>                                 |                                                                                                     |                                                                                                     |
| Fuel tank                                         | <b>40 L (10.5 US gal)</b>                                                                           | <b>40 L (10.5 US gal)</b>                                                                           |
| Cooling system                                    | <b>7.5 L (2.0 US gal)</b>                                                                           | <b>7.5 L (2.0 US gal)</b>                                                                           |
| Engine crankcase:                                 |                                                                                                     |                                                                                                     |
| With Filter                                       | <b>5.7 L (6.0 US qt)</b>                                                                            | <b>5.7 L (6.0 US qt)</b>                                                                            |
| Rear axle & transmission<br>(Includes hydraulics) |                                                                                                     |                                                                                                     |
| Gear                                              | <b>43.0 L (11.4 US gal)</b>                                                                         | <b>43.0 L (11.4 US gal)</b>                                                                         |
| HST                                               | <b>43.0 L (11.4 US gal)</b>                                                                         | <b>43.0 L (11.4 US gal)</b>                                                                         |
| Front axle                                        | <b>8.0 l (8.4 US qt)</b>                                                                            | <b>8.0 l (8.4 US qt)</b>                                                                            |
| <b>Cooling system</b>                             |                                                                                                     |                                                                                                     |
| Type                                              | Pressurized liquid with recirculating bypass                                                        | Pressurized liquid with recirculating bypass                                                        |
| Water pump:                                       |                                                                                                     |                                                                                                     |
| Type                                              | Centrifugal                                                                                         | Centrifugal                                                                                         |
| Drive                                             | V-Belt                                                                                              | V-Belt                                                                                              |
| Belt deflection                                   | <b>10 - 13 mm (0.4 - 0.5 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys</b> | <b>10 - 13 mm (0.4 - 0.5 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys</b> |
| Fan diameter:                                     | <b>405 mm (15.9 in)</b>                                                                             | <b>405 mm (15.9 in)</b>                                                                             |
| Thermostat:                                       |                                                                                                     |                                                                                                     |
| Start to open                                     | <b>82 °C (179.6 °F)</b>                                                                             | <b>82 °C (179.6 °F)</b>                                                                             |
| Fully open                                        | <b>95 °C (203 °F)</b>                                                                               | <b>95 °C (203 °F)</b>                                                                               |
| Radiator cap                                      | <b>90 kPa (13 psi)</b>                                                                              | <b>90 kPa (13 psi)</b>                                                                              |
|                                                   |                                                                                                     |                                                                                                     |
|                                                   |                                                                                                     |                                                                                                     |



|                                                   | Model<br>- Boomer 41<br>Hydrostatic/Gear                    | Model<br>- Boomer 47<br>Hydrostatic/Gear                    |
|---------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| <b>Electrical system</b>                          |                                                             |                                                             |
| Alternator:                                       | <b>12 V</b> , Heavy Duty, <b>85 A</b>                       | <b>12 V</b> , Heavy Duty, <b>85 A</b>                       |
| Battery:                                          | <b>12 V</b> , w/ negative ground, 80 / 660 cca BCI Group 34 | <b>12 V</b> , w/ negative ground, 80 / 660 cca BCI Group 34 |
| Starting motor:                                   | Solenoid pre-engaged reduction                              | Solenoid pre-engaged reduction                              |
| Cold - start aid:                                 | Glow plug                                                   | Glow plug                                                   |
| <b>Fuel system</b>                                |                                                             |                                                             |
| Fuel type                                         | Diesel                                                      | Diesel                                                      |
| Type of fuel to use if above <b>-7 °C (19 °F)</b> | No. 2-Diesel, Cetane rating: minimum 40                     | No. 2-Diesel, Cetane rating: minimum 40                     |
| Type of fuel to use if below <b>-7 °C (19 °F)</b> | No. 1-Diesel, Cetane rating: minimum 40                     | No. 1-Diesel, Cetane rating: minimum 40                     |
| Sulphur content (Maximum) :                       | No. 1-Diesel                                                | <b>0.3 %</b>                                                |
| Sulphur content (Maximum) :                       | No. 2-Diesel                                                | <b>0.3 %</b>                                                |
| Injection pump:                                   |                                                             |                                                             |
| Type:                                             | In-line                                                     | In-line                                                     |
| Timing:                                           | <b>16 - 17.5 ° (16 - 17.5 °)</b> BTDC                       | <b>16 - 17.5 ° (16 - 17.5 °)</b> BTDC                       |
| <b>Gear Transmission</b>                          |                                                             |                                                             |
| Clutch                                            |                                                             |                                                             |
| Type                                              | Dry disc                                                    | Dry disc                                                    |
| Number of clutches                                | 1                                                           | 1                                                           |
| Number of plates                                  | 1                                                           | 1                                                           |
| Material                                          | Organic                                                     | Organic                                                     |
| Plate diameter                                    | <b>275 mm (10.8 in)</b> Transmission 12x12 Trans            | <b>275 mm (10.8 in)</b> Transmission 12x12 Trans            |
| Plate surface area                                | <b>33949 mm² (52.6 in²)</b>                                 | <b>33949 mm² (52.6 in²)</b>                                 |
| Method of operation                               | Foot-Mechanical                                             | Foot-Mechanical                                             |
| Pedal : Free-travel                               | <b>19 - 30 mm (0.75 - 1.2 in)</b>                           | <b>19 - 30 mm (0.75 - 1.2 in)</b>                           |
| <b>HST Transmission</b>                           |                                                             |                                                             |
| Gear box                                          |                                                             |                                                             |
| Type                                              | HST                                                         | HST                                                         |
| Number of range gears and speeds                  | 3                                                           | 3                                                           |
| Range synchronization                             | None                                                        | None                                                        |
| Number of gear levers                             | 1                                                           | 1                                                           |
| Cruise control offering                           | STD                                                         | STD                                                         |
| Cruise control type                               | Electro - magnetic                                          | Electro - magnetic                                          |
| High pressure relief valve setting                | <b>37266 kPa (5405 psi)</b>                                 | <b>37266 kPa (5405 psi)</b>                                 |
| Trans/rear axle oil capacity                      | <b>43 L (11.4 US gal)</b>                                   | <b>43 L (11.4 US gal)</b>                                   |
| <b>Service brake</b>                              |                                                             |                                                             |
| Type                                              | Wet disc                                                    | Wet disc                                                    |
| Actuation                                         | Mechanical                                                  | Mechanical                                                  |
| Number of plates - per axle                       | 2                                                           | 2                                                           |
| Total number pf Plates                            | 4                                                           | 4                                                           |
| Disc lining diameter OD                           | <b>223 mm (8.78 in)</b>                                     | <b>223 mm (8.78 in)</b>                                     |
| Disc lining diameter ID                           | <b>174 mm (6.85 in)</b>                                     | <b>174 mm (6.85 in)</b>                                     |
| Lining type (Material)                            | Paper                                                       | Paper                                                       |

## 9 - SPECIFICATIONS

|                                                        | Model<br>- Boomer 41<br>Hydrostatic/Gear                      | Model<br>- Boomer 47<br>Hydrostatic/Gear                      |
|--------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Service brake pedal parking lock                       | Yes                                                           | Yes                                                           |
| <b>Parking Brake</b>                                   |                                                               |                                                               |
| Type                                                   | Latch                                                         | Latch                                                         |
| Location                                               | Seat side                                                     | Seat side                                                     |
| Actuation                                              | Mechanical                                                    | Mechanical                                                    |
| Lever latching                                         | Cable activated                                               | Cable activated                                               |
| <b>Steering</b>                                        |                                                               |                                                               |
| Type                                                   | Power                                                         | Power                                                         |
| Turns lock-to-lock:                                    |                                                               |                                                               |
| FWD                                                    | 3.92 L to R<br>3.30 R to L                                    | 3.92 L to R<br>3.30 R to L                                    |
| Front wheel                                            |                                                               |                                                               |
| Toe-in                                                 | 0 - 5 mm (0 - 0.20 in)                                        | 0 - 5 mm (0 - 0.20 in)                                        |
| Turning radius w/o brakes:                             |                                                               |                                                               |
| FWD                                                    | 3462 mm (136 in) Left turn<br>3462 mm (136 in) Right turn     | 3462 mm (136 in) Left turn<br>3462 mm (136 in) Right turn     |
| Steering system relief valve setting                   | 145 Kg/cm <sup>2</sup> (2062 psi)                             | 145 Kg/cm <sup>2</sup> (2062 psi)                             |
| Maximum pump flow                                      | 15.9 L/min (4.20 US gpm) Gear,<br>19.9 L/min (5.3 US gpm) HST | 15.9 L/min (4.20 US gpm) Gear,<br>19.9 L/min (5.3 US gpm) HST |
| <b>Power Take - Off (Rear)</b>                         |                                                               |                                                               |
| Type                                                   | Independent                                                   | Independent                                                   |
| Clutch type                                            | Wet disc                                                      | Wet disc                                                      |
| Clutch material asbestos free (Yes or No)              | Yes                                                           | Yes                                                           |
| Number of plates                                       | 7                                                             | 7                                                             |
| Plate diameter                                         | 90.0 mm (3.5 in)                                              | 90.0 mm (3.5 in)                                              |
| Plate surface area                                     | 3145.0 mm <sup>2</sup> (4.9 in <sup>2</sup> )                 | 3145.0 mm <sup>2</sup> (4.9 in <sup>2</sup> )                 |
| Actuation                                              | Switch                                                        | Switch                                                        |
| Master shield type (Fixed or Flip up)                  | Flip up                                                       | Flip up                                                       |
| Number of splines                                      | 6                                                             | 6                                                             |
| Shaft size:                                            | 35 mm (1.4 in)                                                | 35 mm (1.4 in)                                                |
| Engine Speed for 540 RPM Rear PTO Operation            | 2409 RPM - HST Transmission<br>2409 RPM - Gear Transmission   | 2409 RPM - HST Transmission<br>2409 RPM - Gear Transmission   |
| PTO Horsepower observed                                | 22.1 kW (29.8 Hp) - HST<br>23.5 kW (31.6 Hp) - Gear           | 26.1 kW (35.0 Hp) - HST<br>27.8 kW (37.3 Hp) Gear             |
| <b>Mid PTO (optional)</b>                              |                                                               |                                                               |
| Type                                                   | Independent                                                   | Independent                                                   |
| Clutch type                                            | Wet disc                                                      | Wet disc                                                      |
| Number of plates                                       | 7                                                             | 7                                                             |
| Actuation                                              | Manual lever                                                  | Manual lever                                                  |
| Direction of rotation (As viewed from rear of tractor) | Clockwise                                                     | Clockwise                                                     |

9 - SPECIFICATIONS

|                                                   | Model<br>- Boomer 41<br>Hydrostatic/Gear                                                        | Model<br>- Boomer 47<br>Hydrostatic/Gear                    |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Number of splines                                 | 15                                                                                              | 15                                                          |
| Shaft size:                                       | 25.0 mm (1.0 in)                                                                                | 25.0 mm (1.0 in)                                            |
| Engine speed for<br>2000 RPM Mid PTO<br>operation | 2563 RPM - HST Transmission<br>2563 RPM - Gear Transmission                                     | 2563 RPM - HST Transmission<br>2563 RPM - Gear Transmission |
| <b>Hydraulic lift system</b>                      |                                                                                                 |                                                             |
| Type                                              | Open center                                                                                     | Open center                                                 |
| Pump type                                         | Gear                                                                                            | Gear                                                        |
| Pump capacity at full<br>throttle                 | 33.3 L/min (8.8 US gpm) (Gear<br>transmission)<br>29.9 L/min (7.9 US gpm) (HST<br>transmission) |                                                             |
| System relief valve setting                       | 16671 kPa (2418 psi)                                                                            | 16671 kPa (2418 psi)                                        |
| Pump location                                     | Engine mounted                                                                                  | Engine mounted                                              |
| <b>Transmission speeds (Hydrostatic)</b>          |                                                                                                 |                                                             |
|                                                   | ( 2600 RPM Engine rated speed with<br>12.4-24 Rear tires)                                       | ( 2600 RPM Engine rated speed with<br>12.4-24 Rear tires)   |
| Gear position:                                    |                                                                                                 |                                                             |
| Low                                               | 0 - 4.65 km/h (0 - 2.89 mph)                                                                    | 0 - 4.65 km/h (0 - 2.89 mph)                                |
| Mid                                               | 0 - 10.49 km/h (0 - 6.52 mph)                                                                   | 0 - 10.49 km/h (0 - 6.52 mph)                               |
| High                                              | 0 - 24.10 km/h (0 - 14.98 mph)                                                                  | 0 - 24.10 km/h (0 - 14.98 mph)                              |
| Reverse low                                       | 0 - 4.65 km/h (0 - 2.89 mph)                                                                    | 0 - 4.65 km/h (0 - 2.89 mph)                                |
| Reverse mid                                       | 0 - 10.49 km/h (0 - 6.52 mph)                                                                   | 0 - 10.49 km/h (0 - 6.52 mph)                               |
| Reverse high                                      | 0 - 24.10 km/h (0 - 14.98 mph)                                                                  | 0 - 24.10 km/h (0 - 14.98 mph)                              |
| <b>Transmission speeds (Gear)</b>                 |                                                                                                 |                                                             |
| Gear position: forward                            |                                                                                                 |                                                             |
| Range 1, 1st gear                                 | 1.07 km/h (0.067 mph)                                                                           | 1.07 km/h (0.067 mph)                                       |
| Range 1, 2nd gear                                 | 1.27 km/h (0.79 mph)                                                                            | 1.27 km/h (0.79 mph)                                        |
| Range 1, 3rd gear                                 | 1.49 km/h (0.93 mph)                                                                            | 1.49 km/h (0.93 mph)                                        |
| Range 1, 4th gear                                 | 2.00 km/h (1.24 mph)                                                                            | 2.87 km/h (1.78 mph)                                        |
| Range 2, 1st gear                                 | 2.43 km/h (1.51 mph)                                                                            | 2.43 km/h (1.51 mph)                                        |
| Range 2, 2nd gear                                 | 2.88 km/h (1.79 mph)                                                                            | 2.88 km/h (1.79 mph)                                        |
| Range 2, 3rd gear                                 | 3.38 km/h (2.10 mph)                                                                            | 3.38 km/h (2.10 mph)                                        |
| Range 2, 4th gear                                 | 4.53 km/h (2.82 mph)                                                                            | 4.53 km/h (2.82 mph)                                        |
| Range 3, 1st gear                                 | 5.37 km/h (3.33 mph)                                                                            | 5.37 km/h (3.33 mph)                                        |
| Range 3, 2nd gear                                 | 6.36 km/h (3.95 mph)                                                                            | 6.36 km/h (3.95 mph)                                        |
| Range 3, 3rd gear                                 | 7.48 km/h (4.65 mph)                                                                            | 7.48 km/h (4.65 mph)                                        |
| Range 3, 4th gear                                 | 10.02 km/h (6.22 mph)                                                                           | 10.02 km/h (6.22 mph)                                       |
| Range 4, 1st gear                                 | 13.89 km/h (8.63 mph)                                                                           | 13.89 km/h (8.63 mph)                                       |
| Range 4, 2nd gear                                 | 16.47 km/h (10.24 mph)                                                                          | 16.47 km/h (10.24 mph)                                      |
| Range 4, 3rd gear                                 | 19.36 km/h (12.03 mph)                                                                          | 19.36 km/h (12.03 mph)                                      |
| Range 4, 4th gear                                 | 25.93 km/h (16.11 mph)                                                                          | 25.93 km/h (16.11 mph)                                      |
| Gear Position: Reverse                            |                                                                                                 |                                                             |
| Range 1, 1st gear                                 | 0.97 km/h (0.60 mph)                                                                            | 0.97 km/h (0.60 mph)                                        |
| Range 1, 2nd gear                                 | 1.15 km/h (0.72 mph)                                                                            | 1.15 km/h (0.72 mph)                                        |
| Range 1, 3rd gear                                 | 1.36 km/h (0.84 mph)                                                                            | 1.36 km/h (0.84 mph)                                        |
| Range 1, 4th gear                                 | 1.82 km/h (1.13 mph)                                                                            | 1.82 km/h (1.13 mph)                                        |
| Range 2, 1st gear                                 | 2.20 km/h (1.37 mph)                                                                            | 2.20 km/h (1.37 mph)                                        |
| Range 2, 2nd gear                                 | 2.61 km/h (1.62 mph)                                                                            | 2.61 km/h (1.62 mph)                                        |
| Range 2, 3rd gear                                 | 3.07 km/h (1.91 mph)                                                                            | 3.07 km/h (1.91 mph)                                        |

9 - SPECIFICATIONS

|                    | Model<br>- Boomer 41<br>Hydrostatic/Gear | Model<br>- Boomer 47<br>Hydrostatic/Gear |
|--------------------|------------------------------------------|------------------------------------------|
| Range 2, 4th gear  | 4.11 km/h (2.56 mph)                     | 4.11 km/h (2.56 mph)                     |
| Range 3, 1st gear  | 4.87 km/h (3.03 mph)                     | 4.87 km/h (3.03 mph)                     |
| Range 3, 2nd gear  | 5.78 km/h (3.59 mph)                     | 5.78 km/h (3.59 mph)                     |
| Range 3,, 3rd gear | 6.79 km/h (4.22 mph)                     | 6.79 km/h (4.22 mph)                     |
| Range 3, 4th gear  | 9.09 km/h (5.65 mph)                     | 9.09 km/h (5.65 mph)                     |
| Range 4, 1st gear  | 12.61 km/h (7.83 mph)                    | 12.61 km/h (7.83 mph)                    |
| Range 4, 2nd gear  | 14.95 km/h (9.29 mph)                    | 14.95 km/h (9.29 mph)                    |
| Range 4, 3rd gear  | 17.57 km/h (10.92 mph)                   | 17.57 km/h (10.92 mph)                   |
| Range 4, 4th gear  | 23.53 km/h (14.62 mph)                   | 23.53 km/h (14.62 mph)                   |

### CAST IRON WEIGHTS

|                                         |                                                        |                                                        |
|-----------------------------------------|--------------------------------------------------------|--------------------------------------------------------|
| Front End:                              |                                                        |                                                        |
| With weight extension bracket installed | (5) weights @ <b>26 kg (60 lb)</b> each                | (5) weights @ <b>26 kg (60 lb)</b> each                |
| With weight extension bracket installed | Optional (3) weights @ <b>45 kg (100 lb)</b> each      | Optional (3) weights @ <b>45 kg (100 lb)</b> each      |
| Rear Wheel:                             |                                                        |                                                        |
| Ag. Tires                               | (4) weights (2) per wheel @ <b>45 kg (100 lb)</b> each | (4) weights (2) per wheel @ <b>45 kg (100 lb)</b> each |
| Turf Tires                              | NA                                                     | NA                                                     |
| R-4 Tires                               | (4) weights (2) per wheel @ <b>45 kg (100 lb)</b> each | (4) weights (2) per wheel @ <b>45 kg (100 lb)</b> each |

### Drawbars

|            |          |          |
|------------|----------|----------|
| Adjustable | Standard | Standard |
|------------|----------|----------|

### Tires

|               |                        |                        |
|---------------|------------------------|------------------------|
| Front :       |                        |                        |
| Agricultural: | 13.6 x 24, R1          | 13.6 x 24, R1          |
| Turf:         | 28 x 8.50 - 15 TL, R3  | 28 x 8.50 - 15 TL, R3  |
| Industrial:   | 12-16.5 6PR TL, R4     | 12-16.5 6PR TL, R4     |
| Rear :        |                        |                        |
| Agricultural  | 13.6 x 24 , 4PR, R1    | 13.6 x 24 , 4PR, R1    |
| Turf          | 41 x 14.00-20, 4PR, R3 | 41 x 14.00-20, 4PR, R3 |
| Industrial    | 17.5L X 24. 6PR TL, R4 | 17.5L X 24. 6PR TL, R4 |

### Wheel bolt torques

|                              |                                        |                                        |
|------------------------------|----------------------------------------|----------------------------------------|
| Front wheel --- Disc-to-Hub: |                                        |                                        |
| FWD                          | <b>176 - 196 N·m (130 - 145 lb ft)</b> | <b>176 - 196 N·m (130 - 145 lb ft)</b> |
| Rear Wheel --- Disc-to Axle  | <b>176 - 196 N·m (130 - 145 lb ft)</b> | <b>176 - 196 N·m (130 - 145 lb ft)</b> |

### ROPS attaching bolt torques

|                   |                                       |                                       |
|-------------------|---------------------------------------|---------------------------------------|
| ROPS to rear axle | <b>132 - 147 N·m (97 - 108 lb ft)</b> | <b>132 - 147 N·m (97 - 108 lb ft)</b> |
| Seat belt         | <b>49 - 54 N·m (36 - 40 lb ft)</b>    | <b>49 - 54 N·m (36 - 40 lb ft)</b>    |

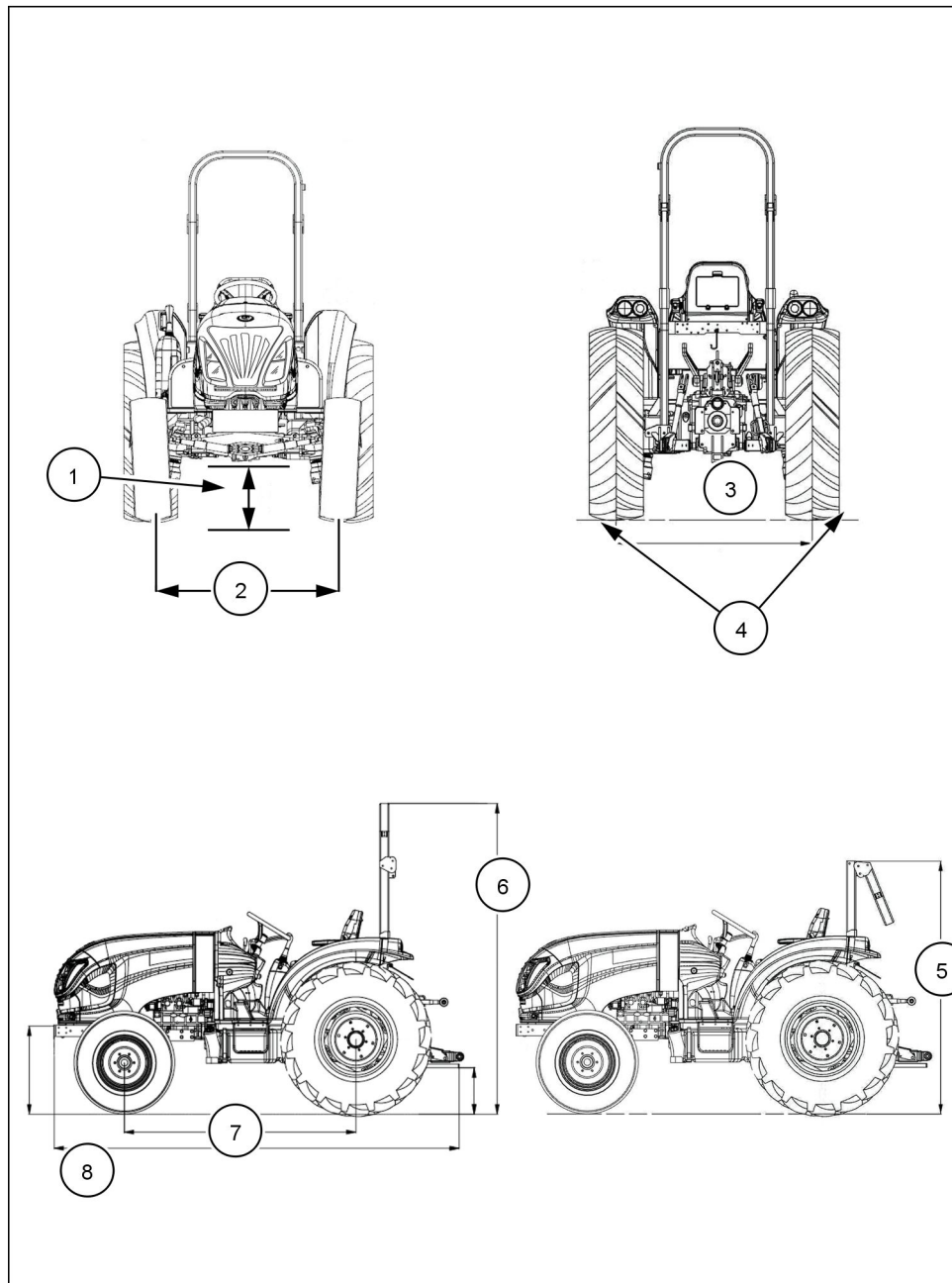
## Tractor dimensions

|                                                        | Boomer 41                       | Boomer 47                       |
|--------------------------------------------------------|---------------------------------|---------------------------------|
| <b>(1) - MINIMUM GROUND CLEARANCE (under drawbar):</b> |                                 |                                 |
| Ag. Tires:<br>13.6 - 24                                | 363 mm (14.3 in)                | 363 mm (14.3 in)                |
| Turf Tires:<br>41 x 14.00-20                           | 286.5 mm (11.3 in)              | 286.5 mm (11.3 in)              |
| Ind. Tires:<br>17.5L x 24 6PR                          | 423 mm (16.7 in)                | 423 mm (16.7 in)                |
| <b>WHEEL TREAD SETTINGS:</b>                           |                                 |                                 |
| <b>(2)-FRONT:</b>                                      |                                 |                                 |
| Ag. Tires:<br>9.5 x 16 4 PR                            | 1266 mm (49.7 in)               | 1266 mm (49.7 in)               |
| Turf Tires:<br>28 x 8.50-14 4 PR (Dished In Only)      | 1209 mm (50.0 in)               | 1209 mm (50.0 in)               |
| Ind. Tires:<br>12 x 16.5 6PR (Dished In Only)          | 1386 mm (54.6 in)               | 1386 mm (54.6 in)               |
| <b>(3)-REAR:</b>                                       |                                 |                                 |
| Ag. Tires:<br>13.6-24 4 PR                             | 1094 - 1266 mm (43.1 - 49.8 in) | 1094 - 1266 mm (43.1 - 49.8 in) |
| Turf Tires:<br>41 x 14.00-20                           | 1266 mm (49.8 in)               | 1266 mm (49.8 in)               |
| Ind. Tires:<br>17.5 L x 24 6PR<br>(Dished In Only)     | 1320 mm (52.0 in)               | 1320 mm (52.0 in)               |
| <b>(4) - WIDTH:</b>                                    |                                 |                                 |
| <b>Rear Axle - Outside to Outside of tire:</b>         |                                 |                                 |
| Ag. Tires:<br>13.6-24 (Dished Out)                     | 1608 mm (63.3 in)               | 1608 mm (63.3 in)               |
| Turf Tires:<br>41 x 14.00-20 (Dished Out)              | 1618 mm (63.7 in)               | 1618 mm (63.7 in)               |
| Ind. Tires:<br>17.5L x 24 (Dish In)                    | 1754 mm (69.1 in)               | 1754 mm (69.1 in)               |
| <b>(5) - Top of ROPS - Folding: Down position</b>      |                                 |                                 |
| Ag. Tires:<br>13.6 - 24                                |                                 |                                 |
| Down Position                                          | 1936 mm (76.2 in)               | 1936 mm (76.2 in)               |
| Turf Tires:<br>41 x 14.00-20                           |                                 |                                 |
| Down Position                                          | 1860 mm (73.2 in)               | 1860 mm (73.2 in)               |
| Ind. Tires:<br>17.5 x 24 6PR                           |                                 |                                 |
| Down Position                                          | 1996 mm (78.6 in)               | 1996 mm (78.6 in)               |
| <b>(6) - Top of ROPS - Folding: Up position</b>        |                                 |                                 |
| Ag. Tires:<br>13.6 - 24                                |                                 |                                 |
| Up Position                                            | 2407 mm (94.8 in)               | 2407 mm (94.8 in)               |
| Turf Tires:<br>41 x 14.00-20                           |                                 |                                 |
| Up Position                                            | 2331 mm (91.8 in)               | 2331 mm (91.8 in)               |
| Ind. Tires:<br>17.5L x 24 6 PR                         |                                 |                                 |
| Up Position                                            | 2467 mm (97.1 in)               | 2467 mm (97.1 in)               |

9 - SPECIFICATIONS

|                                       | Boomer 41          | Boomer 47          |
|---------------------------------------|--------------------|--------------------|
| <b>(7) - WHEEL BASE:</b>              |                    |                    |
| FWD                                   | 1858 mm (73.2 in)  | 1858 mm (73.2 in)  |
| <b>(8) - LENGTH:</b>                  |                    |                    |
| FWD:                                  | 3253 mm (128.1 in) | 3253 mm (128.1 in) |
| <b>WEIGHT With ROPS / less tires:</b> |                    |                    |
| HST (FWD)                             | 1583 kg (3490 lb)  | 1583 kg (3490 lb)  |
| GEAR (FWD)                            | 1553 kg (3424 lb)  | 1553 kg (3424 lb)  |
|                                       |                    |                    |

## 9 - SPECIFICATIONS



NHIL13CT01346HA 1



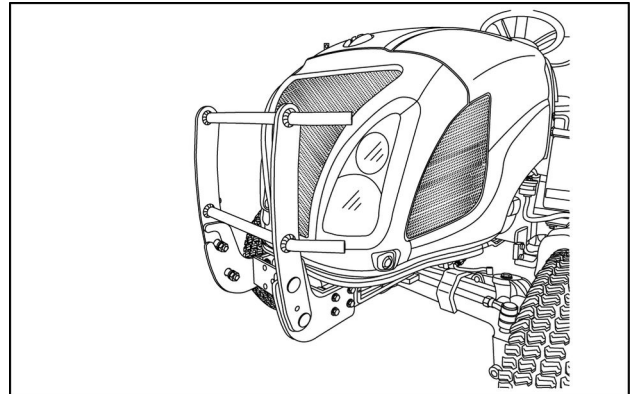


## 10 - ACCESSORIES

### Optional equipment

#### Grille guard

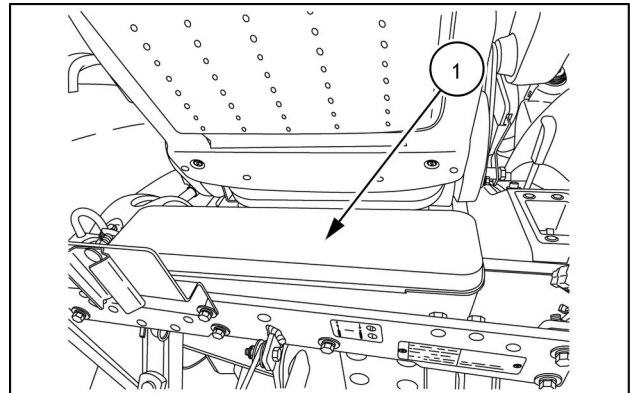
An optional pivoting front grille guard provides protection to the front of the tractor. The grille guard is compatible with a front end loader or a maximum of three **27 kg (60 lb)** weights with front weight bracket.



NHIL13CT01277AA 1

#### Tool box

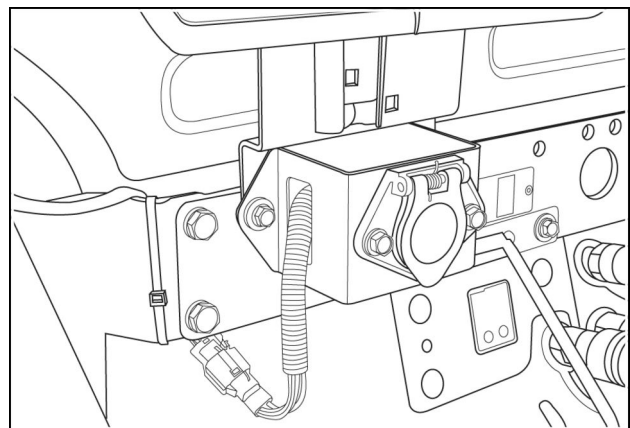
The tool box **(1)** is an optional attachment and is located behind the seat and between the ROPS uprights.



NHIL13CT01073AA 2

#### Trailer electrical socket

A 7-pin trailer socket is an optional attachment and is located behind the seat on the left side of the ROPS cross-brace.



93103752 3



## **11 - FORMS AND DECLARATIONS**



## Delivery report - owner copy

### Check and adjust as required

#### Boomer 41, Boomer 47

##### Inoperative service checks

1. ☐ Tire Pressure
2. ☐ Air Cleaner Element & Hose Connections
3. ☐ Radiator Coolant Level
4. ☐ Fan Belt Tension
5. ☐ Battery Cleanliness, Vent Openings,  
Electrolyte Level, & Charge
6. ☐ Engine Oil Level
7. ☐ Transmission & Rear Axle Oil Level
8. ☐ Front Axle & Final Reduction  
Gear Case Oil Level (FWD)
9. ☐ Hydraulic Lift Control Drop Rate Adjustment
10. ☐ Top Link (present)
11. ☐ Brake Adjustment
12. ☐ Wheel Bolt Torque -  
Front and Rear **176 - 196 N·m (130 - 145 lb ft)**
13. ☐ Front Wheel Toe-in
14. ☐ Fuel Level
15. ☐ Seat Function

##### Safety items check

1. ☐ Seat Belts Installed
2. ☐ Seat Belt Bolt Torque - **54 N·m (40 lb ft)**
3. ☐ PTO Shield Installed
4. ☐ SMV Emblem Installed
5. ☐ Safety Decals Installed
6. ☐ Neutral Start Switches Operation
7. ☐ Park Brake Operation
8. ☐ Flashing Lights/Tail Lights Operation
9. ☐ Operator's Manual (present)

##### Operative service checks

All operating checks are to be performed with tractor at normal operating temperature.

1. ☐ Lights & Instruments for Proper Operation  
& Fuel Shut Down with Key Switch Off
  2. ☐ Fluid & Oil Leaks
  3. ☐ Maximum No-load High & Idle Speed  
Adjustments  
**Boomer 33/37 - (Max: 2800 RPM, Idle: 970 RPM)**
  4. ☐ PTO Engagement & Disengagement
  5. ☐ Selector Lever for HPL Control
  6. ☐ FWD-Drive Lever Operation
  7. ☐ Operation of HST
  8. ☐ Explain safe operation of (DPF) emission system
- 

Dealer Representative's  
Signature \_\_\_\_\_

Date \_\_\_\_\_

"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 \_\_\_\_\_



## Delivery report - dealer copy

### Check and adjust as required

#### Boomer 41, Boomer 47

##### Inoperative service checks

1. ☐ Tire Pressure
2. ☐ Air Cleaner Element & Hose Connections
3. ☐ Radiator Coolant Level
4. ☐ Fan Belt Tension
5. ☐ Battery Cleanliness, Vent Openings, Electrolyte Level, & Charge
6. ☐ Engine Oil Level
7. ☐ Transmission & Rear Axle Oil Level
8. ☐ Front Axle & Final Reduction Gear Case Oil Level (FWD)
9. ☐ Hydraulic Lift Control Drop Rate Adjustment
10. ☐ Top Link (present)
11. ☐ Brake Adjustment
12. ☐ Wheel Bolt Torque - Front and Rear **176 - 196 N·m (130 - 145 lb ft)**
13. ☐ Front Wheel Toe-in
14. ☐ Fuel Level
15. ☐ Seat Function

##### Safety items check

1. ☐ Seat Belts Installed
2. ☐ Seat Belt Bolt Torque - **54 N·m (40 lb ft)**
3. ☐ PTO Shield Installed
4. ☐ SMV Emblem Installed
5. ☐ Safety Decals Installed
6. ☐ Neutral Start Switches Operation
7. ☐ Park Brake Operation
8. ☐ Flashing Lights/Tail Lights Operation
9. ☐ Operator's Manual (present)

##### Operative service checks

All operating checks are to be performed with tractor at normal operating temperature.

1. ☐ Lights & Instruments for Proper Operation & Fuel Shut Down with Key Switch Off
  2. ☐ Fluid & Oil Leaks
  3. ☐ Maximum No-load High & Idle Speed Adjustments  
**Boomer 33/37 - (Max: 2800 RPM, Idle: 970 RPM)**
  4. ☐ PTO Engagement & Disengagement
  5. ☐ Selector Lever for HPL Control
  6. ☐ FWD-Drive Lever Operation
  7. ☐ Operation of HST
  8. ☐ Explain safe operation of (DPF) emission system
- 

Dealer Representative's  
Signature \_\_\_\_\_

Date \_\_\_\_\_

"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 \_\_\_\_\_





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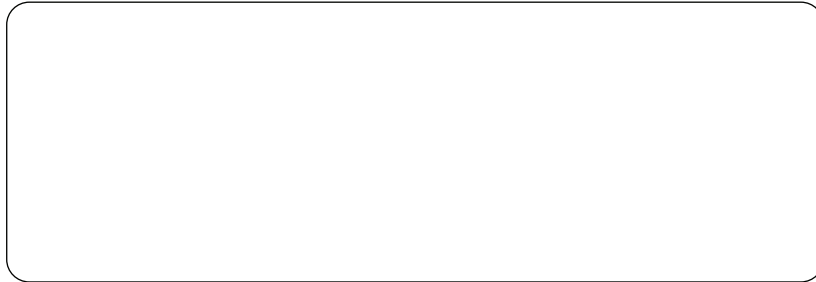
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Dealer's stamp



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