

OPERATOR'S MANUAL

WORKMASTER™ 35

WORKMASTER™ 40

Compact Tractor

Part number 47708977

2nd edition English

June 2014

Replaces part number 84604985



Contents

1 GENERAL INFORMATION

Note to the Owner	1-1
Foreword Ecology and the Environment	1-2
General specification - Biodiesel fuels	1-3
Proposition 65	1-4
Tractor intended use.....	1-5
Electro-magnetic compatibility (EMC).....	1-6
Product identification	1-7
Operator's manual storage	1-8
Machine orientation.....	1-9

2 SAFETY INFORMATION

Precautionary statements	2-1
Safety rules.....	2-2
Personal safety	2-11
Roll Over Protective Structure (ROPS) frame - Personal safety	2-12
Safety signs	2-13
Instructional signs	2-23
International symbols.....	2-29

3 CONTROLS AND INSTRUMENTS

OPERATOR'S SEAT

Seat belt	3-1
Seat controls	3-2
Roll Over Protective Structure (ROPS)	3-3

FORWARD CONTROLS

Instrument cluster	3-5
Cruise control.....	3-7
Transmission shuttle shift lever.....	3-7
Clutch pedal	3-8
Brake pedals	3-8
Foot throttle pedal	3-9
Hand throttle lever	3-9
Horn switch (optional)	3-9
PTO switch	3-10
Key switch	3-10
Differential lock pedal.....	3-11
Hydrostatic transmission (HST) foot pedals	3-12
Multifunction light switch.....	3-13

LEFT-HAND SIDE CONTROLS

Transmission range lever.....	3-14
Park brake	3-15
Four wheel drive lever.....	3-16

Mid PTO lever	3-17
---------------------	------

RIGHT-HAND SIDE CONTROLS

Hydraulic power lift (HPL)	3-18
Rear remote hydraulic valve(s)	3-19
Mid mount two spool hydraulic valve	3-20
Transmission main shift lever	3-21

EXTERIOR CONTROLS

Hood release lever	3-22
--------------------------	------

4 OPERATING INSTRUCTIONS

COMMISSIONING THE UNIT

Engine break-in procedure	4-1
Power take-off (PTO) operation	4-2
Three-point linkage	4-4
Attaching three-point equipment	4-5
Extendible drawbar	4-8
Hydraulic lift rocker	4-9
Hydraulic Power Lift (HPL) drop rate control valve	4-9

STARTING THE UNIT

Key switch	4-10
Cold starting aids	4-11
Starting the engine	4-12
Starting the tractor with jumper cables	4-15

STOPPING THE UNIT

Stopping the engine	4-16
Emergency stopping	4-17
Brakes	4-18

MOVING THE UNIT

Steering operation	4-20
Transmission operation at low ambient temperatures	4-21
Hydrostatic transmission (HST) operation	4-22
12 x 12 transmission operation	4-24

PARKING THE UNIT

Brakes and controls - Park	4-26
----------------------------------	------

5 TRANSPORT OPERATIONS

ROAD TRANSPORT

External lighting - Identification	5-1
Hazard warning light operation	5-2

Turn signal operation	5-2
Road light/work light operation	5-3
Rear work light (optional)	5-4
Driving the vehicle	5-5

SHIPPING TRANSPORT

Carrying the tractor on a transporter	5-6
---	-----

RECOVERY TRANSPORT

Towing	5-6
--------------	-----

6 WORKING OPERATIONS

GENERAL INFORMATION

Tractor ballasting	6-1
Tractor ballasting weights	6-2
Liquid ballast	6-4

7 MAINTENANCE

GENERAL INFORMATION

General information	7-1
Safety rules	7-3
Biodiesel fuel - approved blend ratio	7-3
Refueling the tractor	7-4
Consumables	7-5

MAINTENANCE CHART

Maintenance Chart	7-6
-------------------------	-----

Every 10 hours or daily

Engine oil level	7-7
Engine cooling system	7-8

After first 50 hours

Engine oil and filter	7-9
Fuel filter	7-10
Hydraulic oil filter	7-10
Hydrostatic (HST) oil filter	7-11
Roll Over Protective Structure (ROPS)	7-12
Wheels bolt/nut	7-13

Every 50 hours

Grease fittings	7-14
Transmission fluid level	7-16
Wheels and tires	7-17
Clutch pedal free play	7-19
Hydrostatic Transmission (HST) neutral adjustment	7-19

Fan belt tension	7-22
Brake pedal free play	7-23
Front axle differential oil level	7-23
Air cleaner primary element	7-24

Every 100 hours

Fuel filter water separator	7-25
-----------------------------------	------

Every 300 hours

Engine oil and filter	7-26
Fuel filter	7-26
Hydraulic oil filter	7-26
Hydrostatic (HST) oil filter	7-26
Air cleaner primary element	7-27
Fan belt tension	7-27
Wheels bolt/nut	7-27
Roll Over Protective Structure (ROPS) - Maintenance and inspection	7-27

Every 600 hours

Front axle differential fluid	7-28
Transmission and hydraulic fluid	7-29

Every 1000 hours

Air filter inner safety element	7-31
Engine coolant	7-31

As required

Fuel injection system - Bleed	7-33
Fuel injectors - Bleed	7-35
Hydrostatic Transmission (HST) neutral adjustment	7-36
Roll Over Protective Structure (ROPS) - Possible damage	7-38
Battery	7-39
Fuse identification	7-40
Maxi-fuse	7-41
Headlight	7-41
Tail/brake light bulb	7-42
Turn signal/hazard light bulb	7-43
Front wheels toe-in	7-44
Brake pedal free play	7-45
Clutch pedal free play	7-46

STORAGE

Storage of tractor	7-47
Removal of tractor from storage	7-48

8 TROUBLESHOOTING

SYMPTOM(S)

Engine - Troubleshooting	8-1
Clutch - Troubleshooting	8-2
Hydraulic service brakes - Troubleshooting	8-2
Hydraulic Lift System - Troubleshooting	8-2
Steering - Troubleshooting	8-3
Hydrostatic transmission - Troubleshooting	8-3
Electrical system - Troubleshooting	8-4

9 SPECIFICATIONS

Wheel tread settings	9-1
Tire inflation pressures	9-2
Liquid ballast	9-2
General specifications	9-3
Tractor dimensions	9-6

10 ACCESSORIES

Optional equipment	10-1
--------------------------	------

11 FORMS AND DECLARATIONS

Delivery report - Owner Copy	11-3
Delivery report - Dealer Copy	11-5

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.

Foreword 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.

General specification - Biodiesel fuels

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.

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.

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.

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

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)

This machine complies strictly with the European Regulations on electro-magnetic emissions. However, interference may arise as a result of add-on equipment which 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:

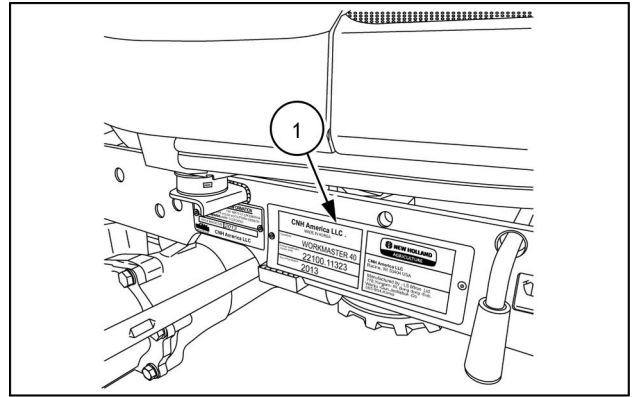
- Ensure that each piece of non- NEW HOLLAND equipment fitted to the machine bears the CE mark.
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine.
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity of electronic components.

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

Product identification

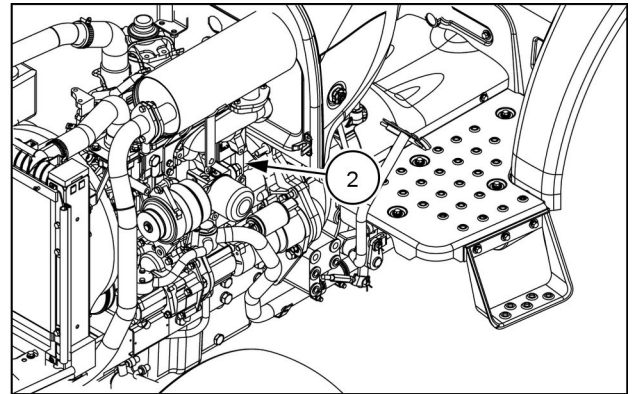
The Product Identification Plate **(1)** is located on the right-hand side of the frame, next to the hood release.

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



NHIL14CT00524AA 1

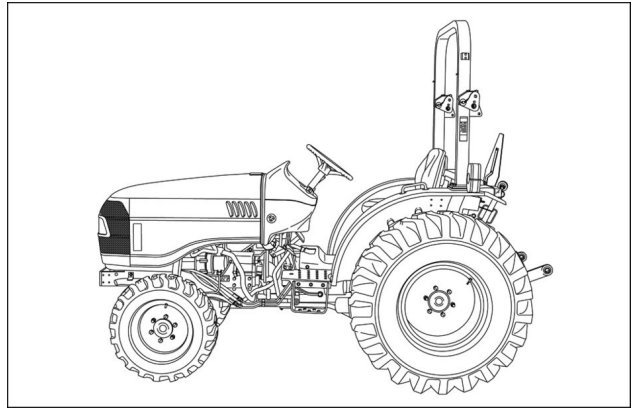
The engine identification information **(2)** is located on the left side of the engine block. The identification number is stamped into the engine block.



NHIL12CT00893AA 2

Operator's manual storage

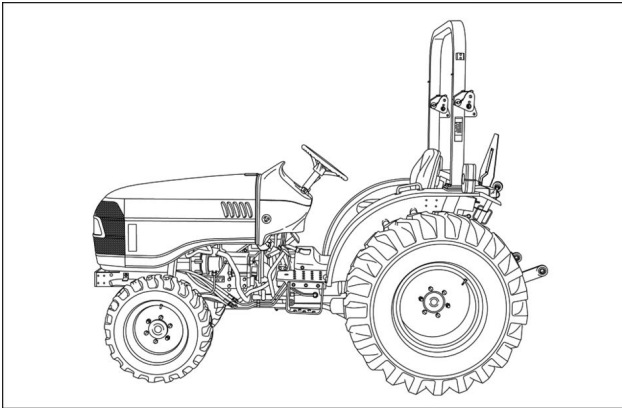
The operator's manual must be stored in a secure place prior to operation and it must be kept available for use by all operators.



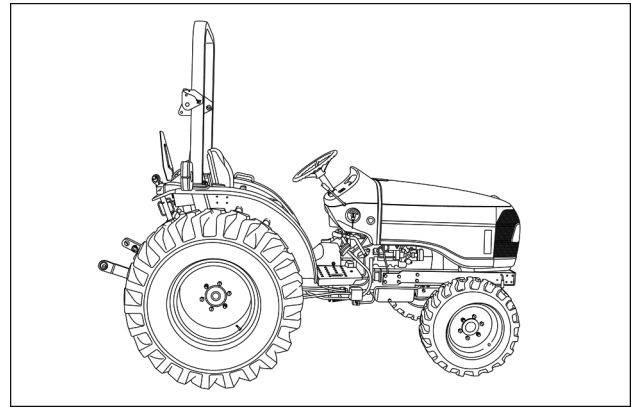
NHIL14CT00515AA 1

Machine orientation

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

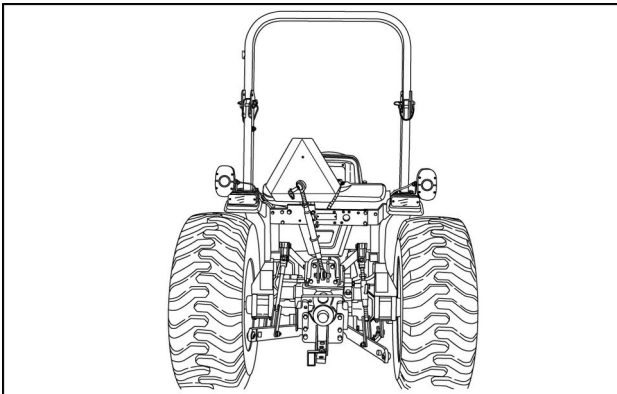


NHIL14CT00515AA 1



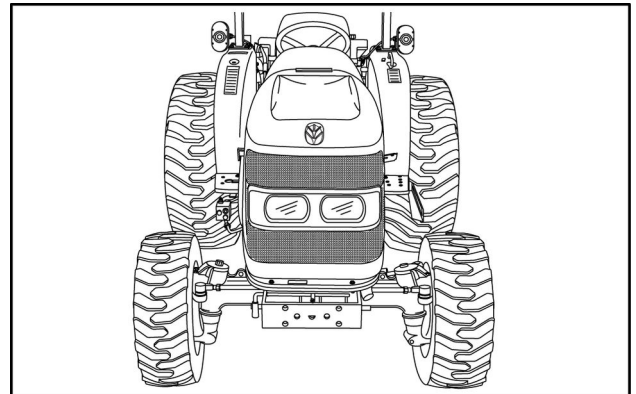
NHIL14CT00516AA 2

Left-hand view



NHIL12CT00671AA 3

Right-hand view



NHAC13CT00138AA 4

Rear view

Front view

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.

W0113A

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, **6-1** 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.

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

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.

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.

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.

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.

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

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

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

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.

Personal safety

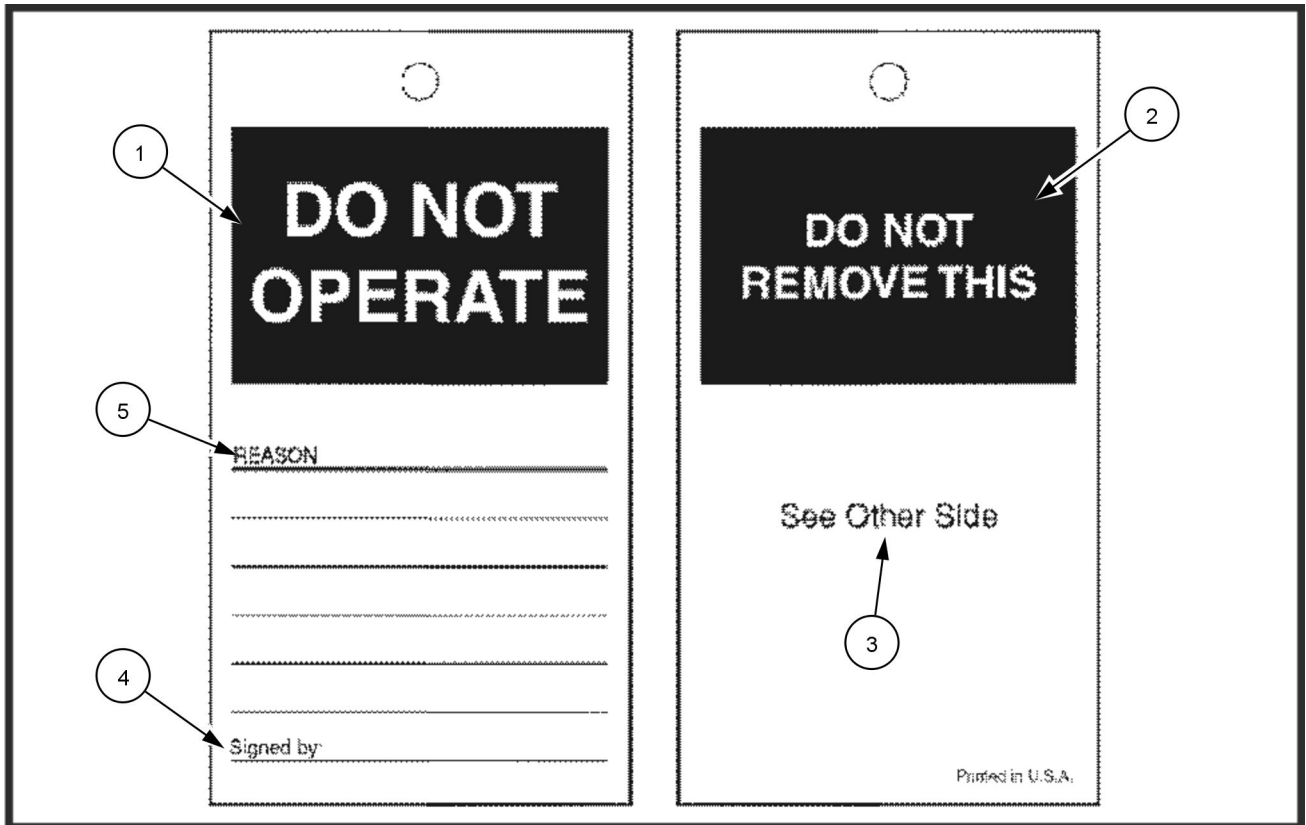
⚠ WARNING

Moving parts!

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

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) frame - Personal safety

▲ 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.

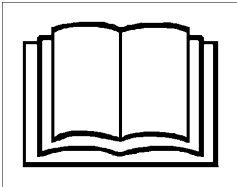
DO NOT attach any device to the protective structure for pulling purposes. DO NOT drill holes in the protective structure.

Safety signs

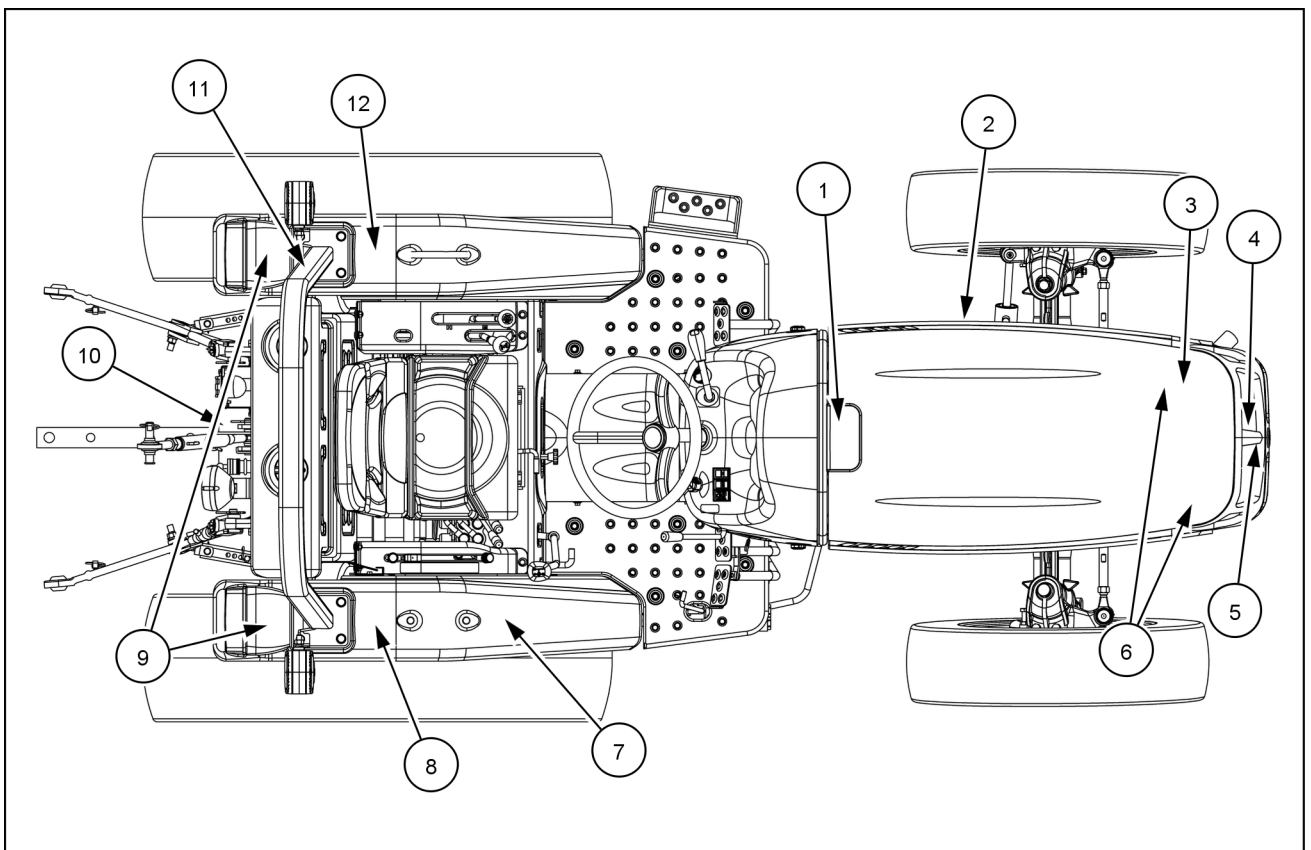
The following safety signs are placed on your machine as a guide for your safety and for those working with you. Walk around the machine and note the content and location of these safety signs before operating your machine.

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.



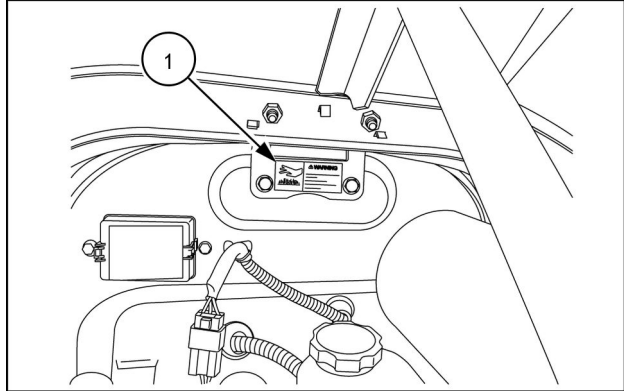
NHIL12CT00863FA 1

(1)
WARNING
 To prevent serious injury or death.
 Beware hot part.
 Keep clear of muffler to avoid injury.
 Failure to comply could result in minor or moderate injury.
 Quantity: 1
 English Part Number: MT40195646



40195646A 2

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



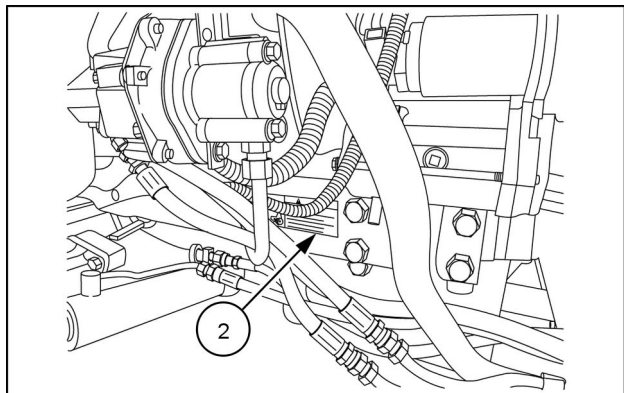
NHIL12CT00850AA 3

(2)
WARNING
RUN OVER HAZARD
 To prevent serious injury or death:
 • Start only from seat with transmission and PTO in neutral
 • Do not short across starter terminals to start engine.
 Failure to comply could result in death or serious injury.
 Quantity: 1
 English Part Number: MT40195651



40195651 4


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



NHIL12CT00852AA 5

(3)
WARNING

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



WARNING

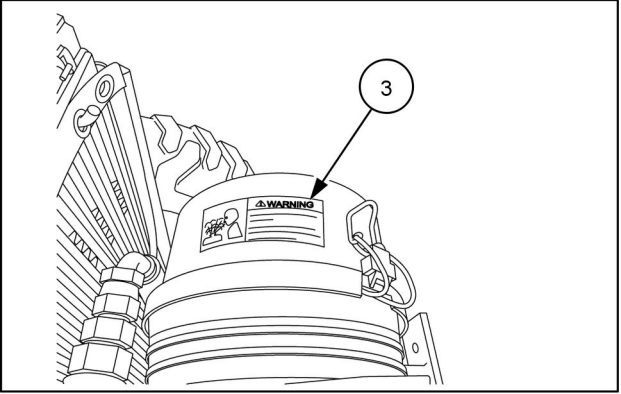
To prevent serious injury or death.
High pressure steam and hot water. Remove filler cap with extreme care.

40195649

40195649 6

Quantity: 1
English Part Number: **MT40195649**

(3) Location: On top of the air cleaner housing.



NHIL12CT00849AA 7

(4)
WARNING

- **TO JUMP START (Negative Grounded Battery)**
- Shield eyes.
- Connect end of one cable to positive (+) terminals of each battery.
- Connect one end of other cable to negative (-) terminal of "Good" battery.
- 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.

Quantity: 1
English Part Number: **MT40254070**

WARNING

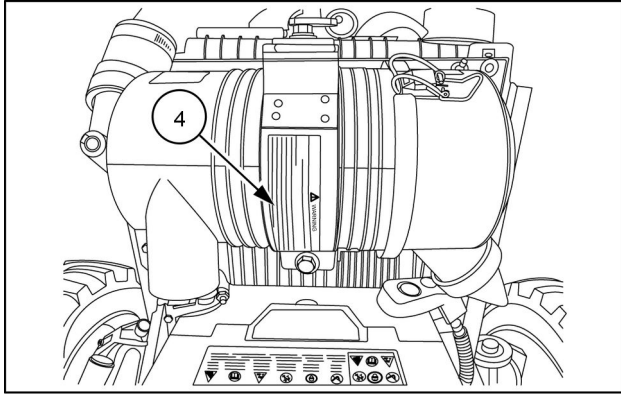
TO JUMP START (Negative Grounded Battery)

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.

40254070

40254070 8

(4) Location: On front of air cleaner



NHIL12CT00847AA 9

(5)
WARNING
EXPLOSIVE

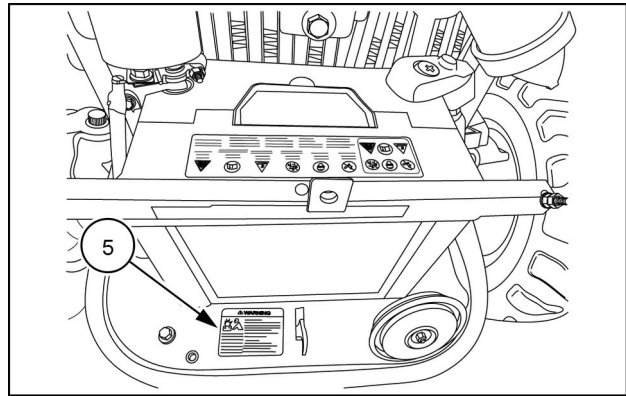
Can cause blindness or severe injury, protect eyes. Sparks, flames, cigarettes can cause explosion. Tools and cable clamps can cause sparks. Do not use without instruction. Keep vents tight and level. **ACID-POISON** causes severe burns. Contains sulphuric acid. In the event of contact flush with water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

Quantity: 1
 English Part Number: MT40239639



40236197A 10

(5) Location: In front of the battery on support plate.



NHIL12CT00848AA 11

(6)
WARNING

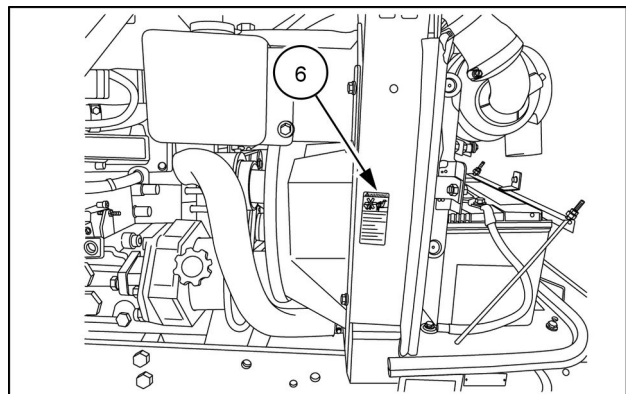
Keep hands and clothing away from the rotating fan and belts. Contact with moving parts may cause loss of fingers or a hand. Failure to comply could result in death or serious injury.

Quantity: 2
 English Part Number: MT40239638



40008816A 12

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



NHIL12CT00851AA 13

<p style="text-align: center;">(7) Multiple Safety Cautions and Warnings</p> <p style="text-align: center;">(A) CAUTION</p> <ul style="list-style-type: none"> • PTO selector & lever must be in the “OFF” position to start engine. • Do not operate on hard surfaces with 4WD engaged. <p style="text-align: center;">(B) WARNING To prevent serious injury or death:</p> <ul style="list-style-type: none"> • 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. 	<div style="border: 1px solid black; padding: 5px;"> <div style="background-color: yellow; border: 1px solid black; padding: 2px; text-align: center;"> CAUTION </div> <ul style="list-style-type: none"> • PTO selector & lever must be in "OFF" position to start engine. • Do not operate on hard surfaces with 4WD engaged. <div style="background-color: orange; border: 1px solid black; padding: 2px; text-align: center;"> WARNING </div> <p style="margin: 2px 0;">To prevent serious injury or death</p> <ul style="list-style-type: none"> • 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. • Allow no riders on tractor or implements. <table border="1" style="width: 100%; border-collapse: collapse; margin: 2px 0;"> <tr> <td style="width: 30%; text-align: center; vertical-align: middle;"> </td> <td style="padding: 2px;"> <p>To prevent serious injury or death</p> <ul style="list-style-type: none"> • Always use a seat belt when you operate the tractor. • Do not use a seat belt when operating with folding ROPS in lowered position. </td> </tr> <tr> <td style="text-align: center; vertical-align: middle;"> </td> <td style="padding: 2px;"> <ul style="list-style-type: none"> • Engine exhaust fumes can cause death or sickness. • Always try to work in a well ventilated area. </td> </tr> <tr> <td style="text-align: center; vertical-align: middle;"> </td> <td style="padding: 2px;"> <ul style="list-style-type: none"> • 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. </td> </tr> </table> <p style="text-align: right; font-size: small; margin: 0;">40195656</p> </div> <div style="margin-top: 10px;"> <p style="margin: 0;">(A)</p> <p style="margin: 0;">(B)</p> </div>		<p>To prevent serious injury or death</p> <ul style="list-style-type: none"> • Always use a seat belt when you operate the tractor. • Do not use a seat belt when operating with folding ROPS in lowered position. 		<ul style="list-style-type: none"> • Engine exhaust fumes can cause death or sickness. • Always try to work in a well ventilated area. 		<ul style="list-style-type: none"> • 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.
	<p>To prevent serious injury or death</p> <ul style="list-style-type: none"> • Always use a seat belt when you operate the tractor. • Do not use a seat belt when operating with folding ROPS in lowered position. 						
	<ul style="list-style-type: none"> • Engine exhaust fumes can cause death or sickness. • Always try to work in a well ventilated area. 						
	<ul style="list-style-type: none"> • 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. 						

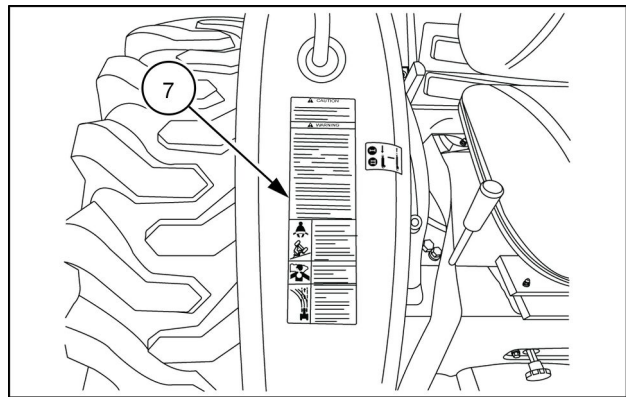
- **Always use a seat belt when you operate the tractor.**
- **Allow no riders on tractor or implements.**
- **Always use a seat belt when you operate the tractor.**
- **Do not use a seat belt when operating with folding ROPS in lowered position.**
- **Engine exhaust fumes can cause death or sickness. Always try to work in a well ventilated area.**
- **Disengage the differential lock when turning the tractor. Always disengage the differential lock when driving on roads.**
- **Depress one or both brake pedals to disengage the differential lock.**

Failure to comply could result in death or serious injury.

Quantity: 1

English Part Number: MT40195656

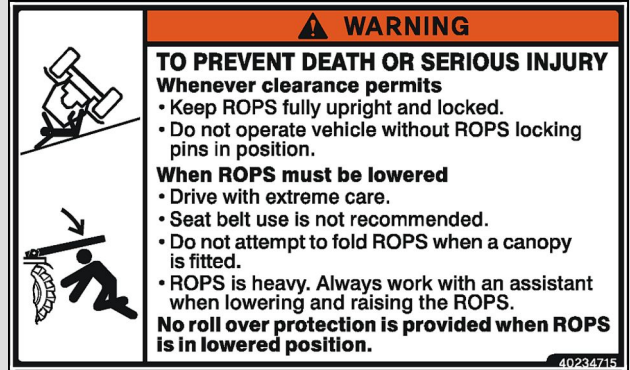
(7) Location: On the top of the right-hand fender.



NHIL12CT00845AA 15

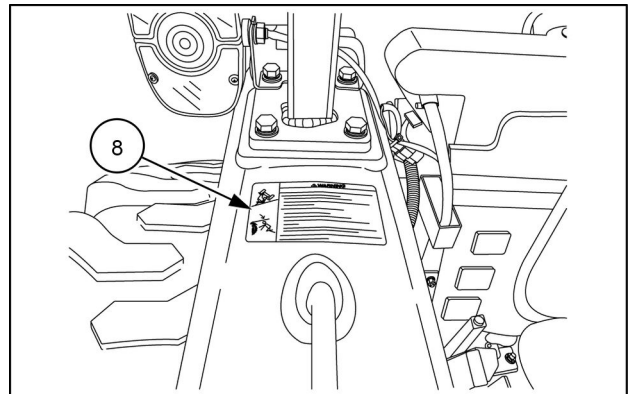
(8)
WARNING
TO PREVENT DEATH OR SERIOUS INJURY

- Keep Rollover Protection Structure fully upright and locked.
 - Do not operate vehicle without ROPS locking pins in position
 - When ROPS must be lowered:
 - Drive with extreme care.
 - Seat belt use is not recommended.
 - Do not attempt to fold ROPS when a canopy is fitted.
 - ROPS is heavy. Always work with an assistant when lowering and raising the ROPS.
 - Drive with extreme care.
 - Seat belt use is not recommended.
- No roll over protection is provided when ROPS is in lowered position.
 Failure to comply could result in death or serious injury.
- Quantity: 1
 English Part Number: MT40234715



40234715 16

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



NHIL12CT00846AA 17

(9)

WARNING

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

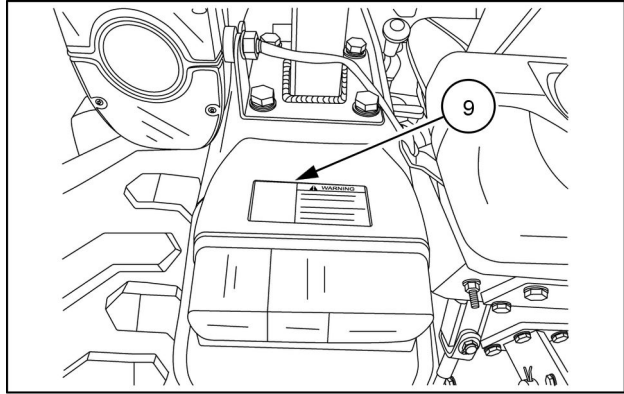
Quantity: 2

English Part Number: MT40229994



40229994 18

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



NHIL12CT00843AA 19

(10)

WARNING

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

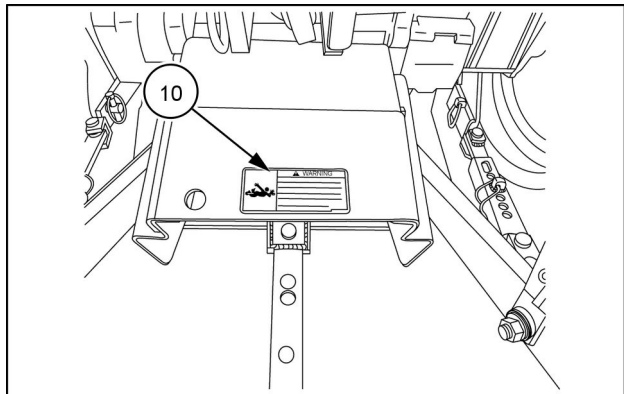
Quantity: 1

English Part Number: MT40195650



40195650 20

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



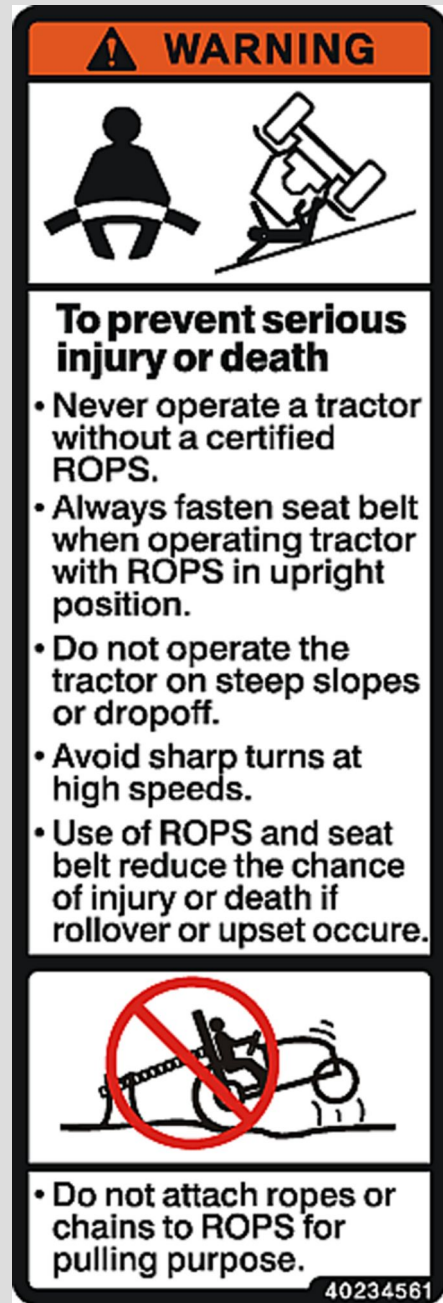
NHIL12CT00844AA 21

(11)
WARNING

To prevent serious injury or death:

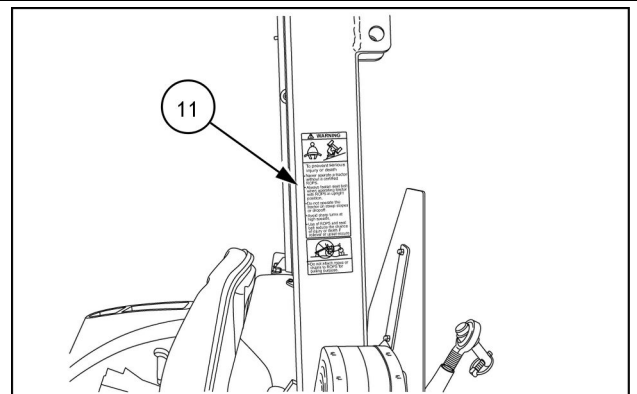
- Never operate a tractor without a certified ROPS.
 - Always fasten seat belt when operating tractor with ROPS in upright position.
 - Do not operate the tractor on steep slopes or drop-off.
 - Avoid sharp turns at high speeds.
 - Use of ROPS and seat belt reduce the chance of injury or death if rollover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



40234561A 22

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



83115221 23

(12)

WARNING

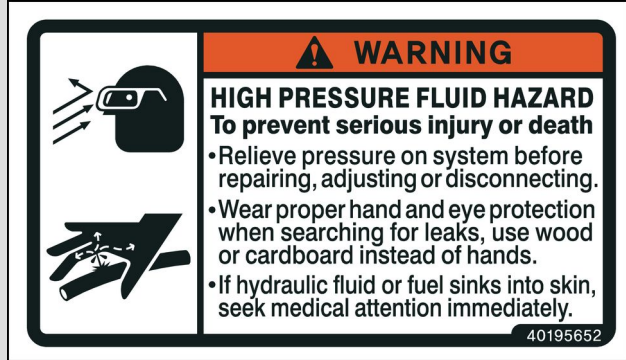
HIGH PRESSURE FLUID HAZARD

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.

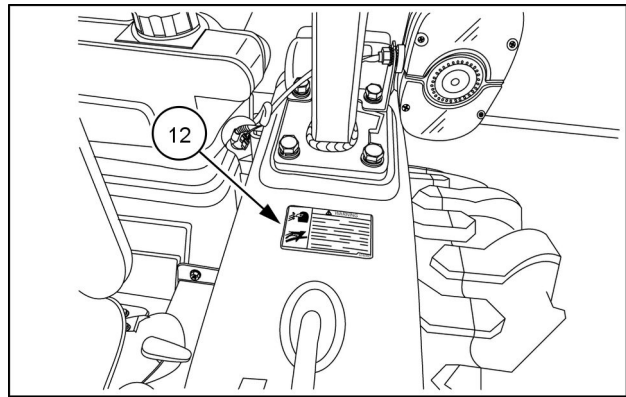
Quantity: 1

English Part Number: MT40195652



40195652 24

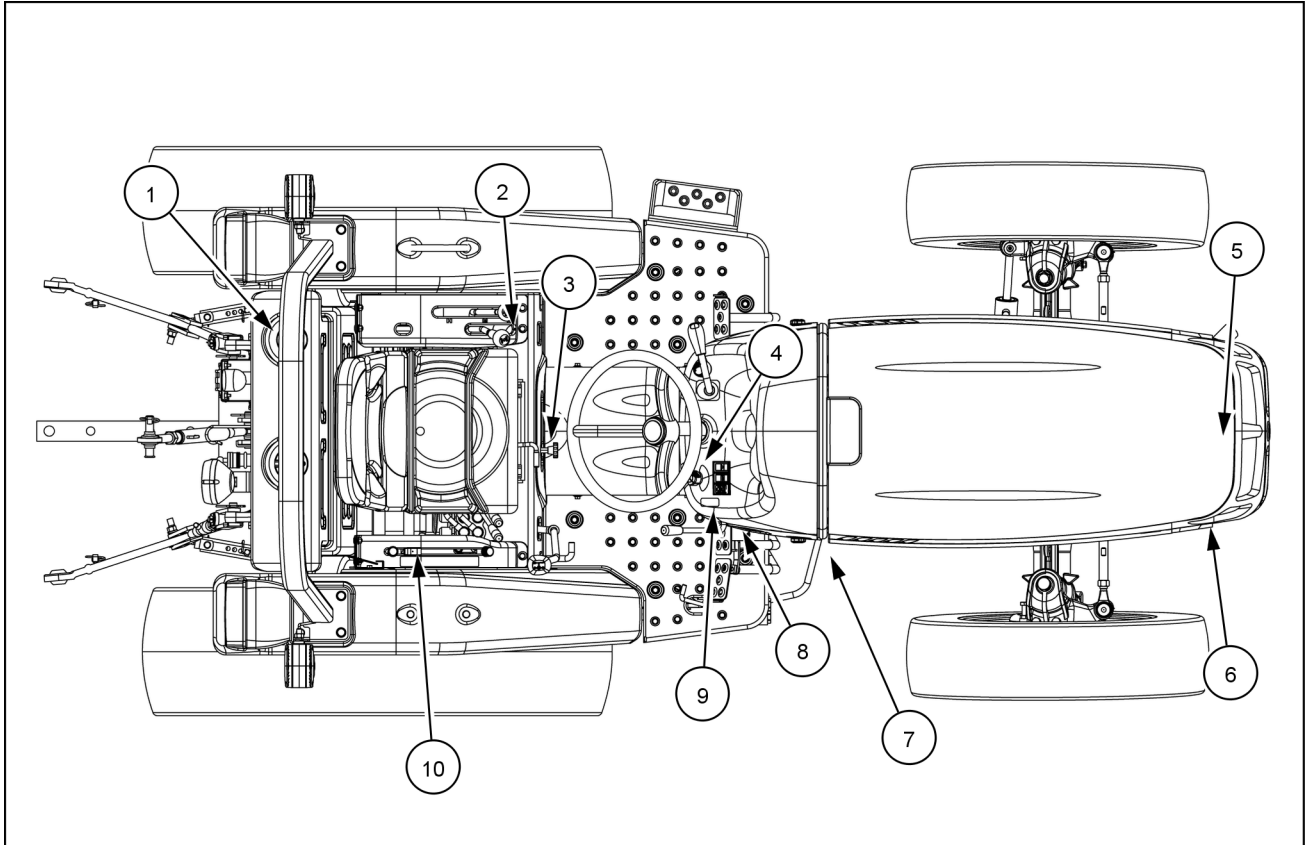
(12) Location: On top of the left-hand fender.



NHIL12CT00842AA 25

Instructional signs

The following instructional decals 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 decals. Review the decals and operating instructions detailed in this manual with the tractor operators. Keep the decals clean and legible. If they become damaged or illegible, obtain replacements from your authorized NEW HOLLAND dealer.



NHIL12CT00863FA 1

(1)

Fuel Cap

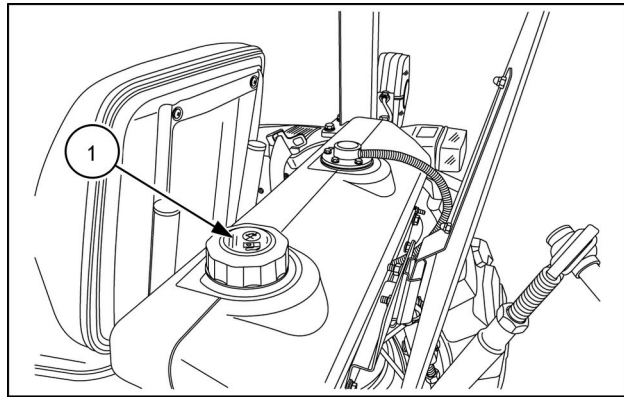
Ultra low sulfur diesel fuel only

- English **MT40241059**

Location: On top of the fuel cap on the left-hand side of the fuel tank.



40241059A 2



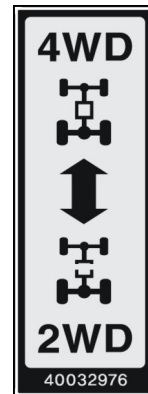
NHIL12CT00683AA 3

(2)

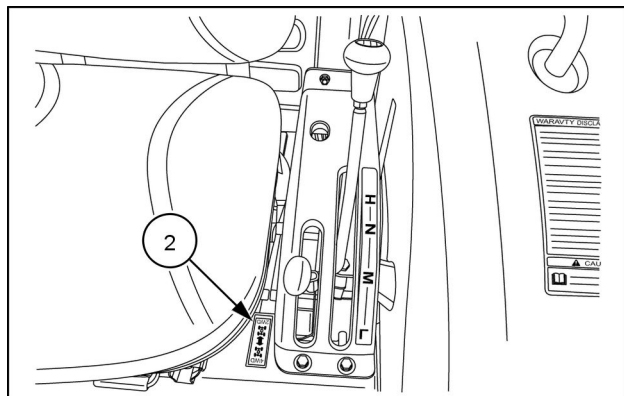
Four wheel drive engagement lever

- English **MT40032976**

Location: To left side of the drivers seat.



40032976 4



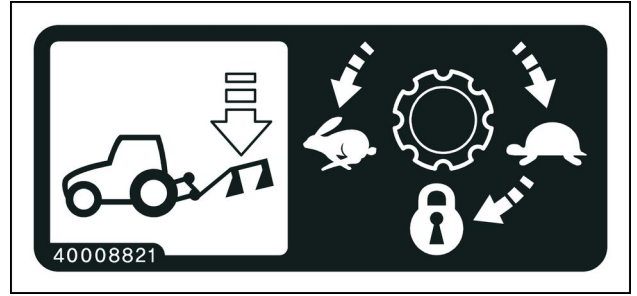
NHIL12CT00680AA 5

(3)

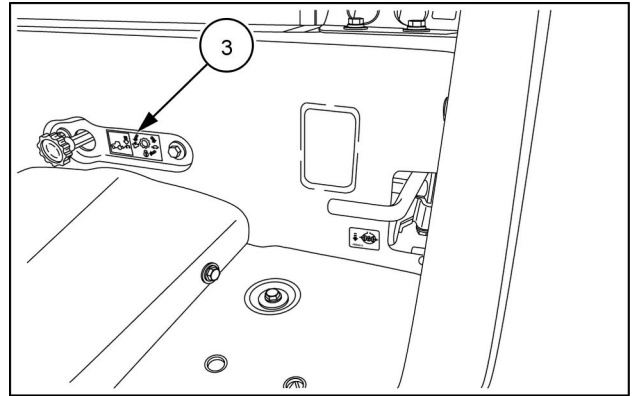
Drop Rate Control Valve

- English **MT40008821**

Location: Below the drivers seat.



40008821 6



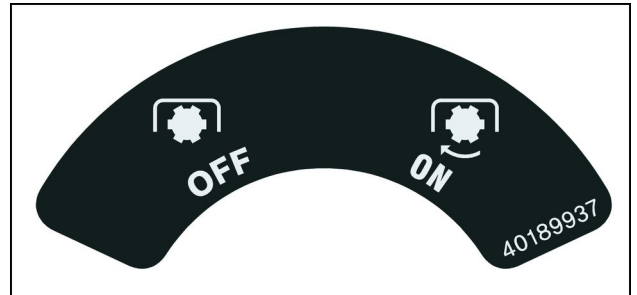
NHIL12CT00687AA 7

(4)

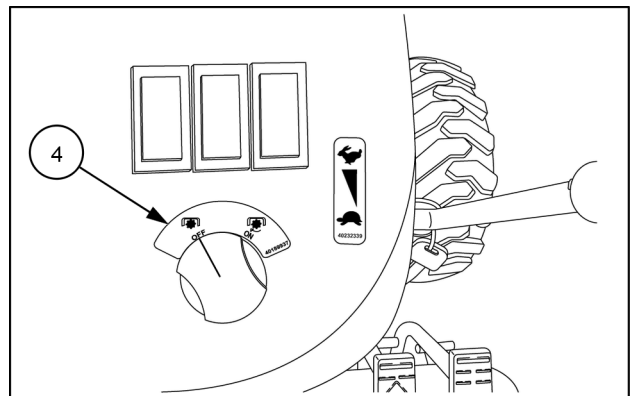
PTO Switch

- English **MT40189937**

Location: Right-hand side of the dash panel.



40189937 8



NHIL12CT00670AA 9

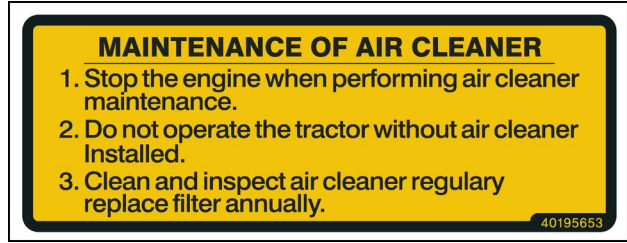
(5)

MAINTENANCE OF AIR CLEANER

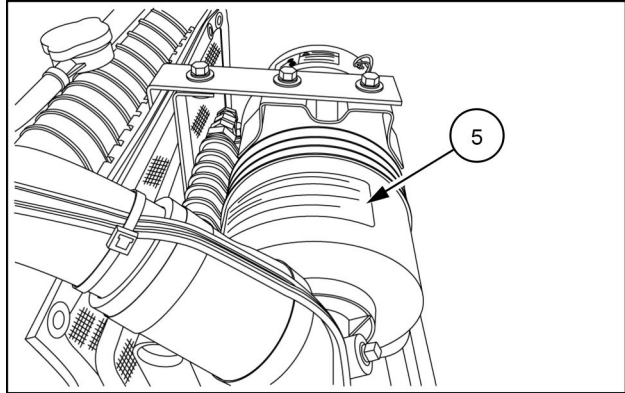
1. Stop the engine when performing air cleaner maintenance.
 2. Do not operate the tractor without air cleaner installed.
 3. Clean and inspect air cleaner regularly
- Failure to comply could result in machine damage.

- English **MT40195653**

Location: On top of the air cleaner.



40195653 10



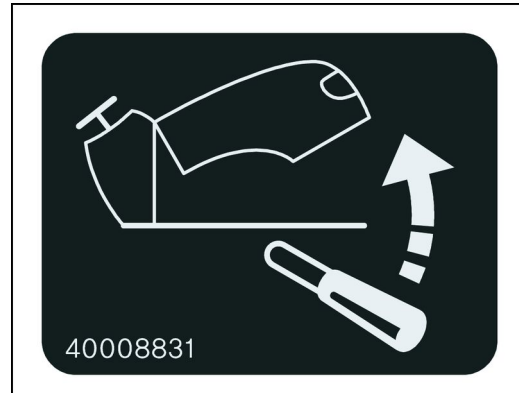
NHIL12CT00884AA 11

(6)

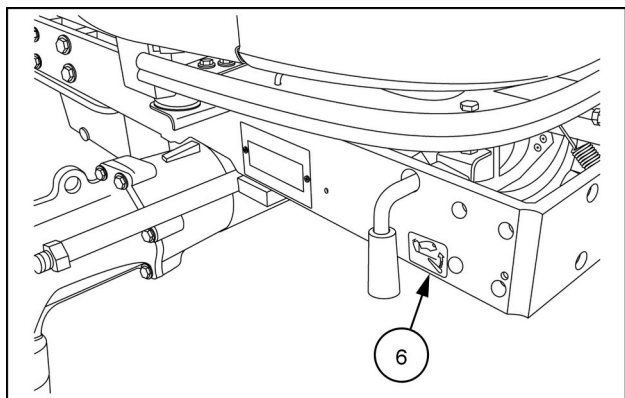
Hood Release

- English **MT40008831**

Location: On the front right-hand side of the frame rail, in front of the hood release lever.



40008831 12



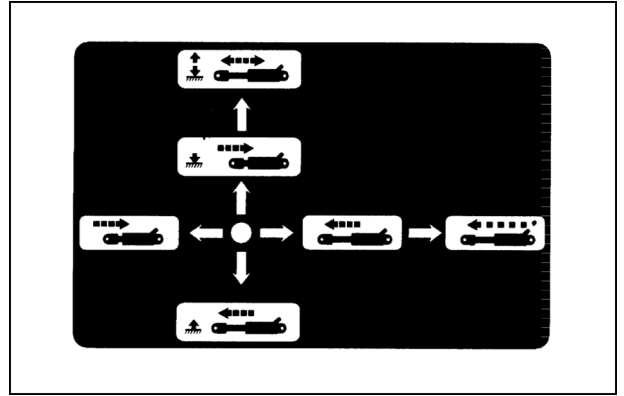
NHAC13CT00045AA 13

(7)

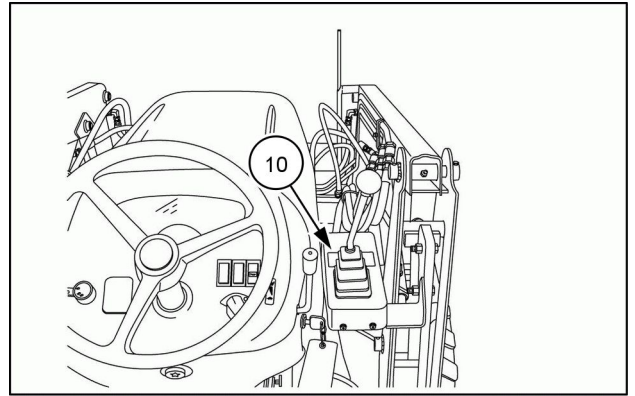
Mid Mount Valve Operation (early production)

- English **86532911**

Location: On the valve cover on right-hand side of operator's platform.



86532911N 14



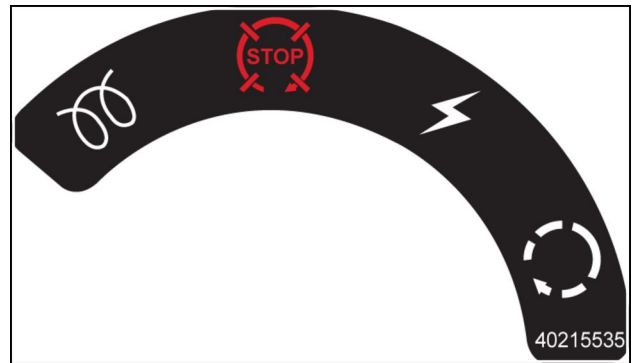
NHIL13CT00001AA 15

(8)

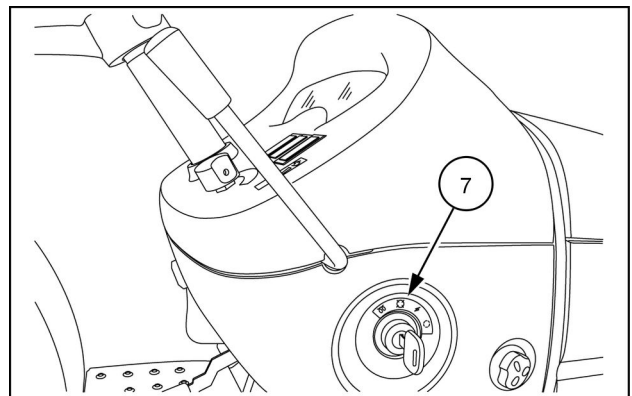
Key Switch

- English **MT40215535**

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



40215535 16



NHIL12CT00692AA 17

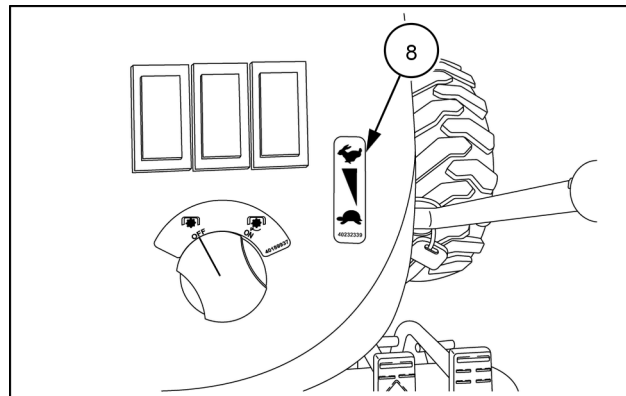
(9)
Hand Throttle Lever

- English **MT40232389**

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



40232389 18



NHIL12CT00670AA 19

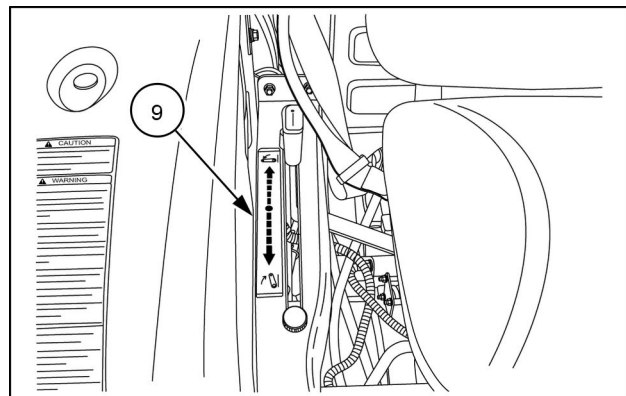
(10)
Position Control Lever

- English **MT40008842**

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




40008842 20



NHIL12CT00681AA 21

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	 KAM Keep alive memory	 N 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 lower (rear)
 Engine oil pressure	 Rear windshield wash/wipe	 Differential lock	 Hitch height limit (rear)
 Engine coolant temperature	 Heater temperature control	 Rear axle oil temperature	 Hitch height limit (front)
 Coolant level	 Heater fan	 Transmission oil pressure	 Hitch dis-abled
 Tractor lights	 Air conditioner	 FWD engaged	 Hydraulic and transmission filters
 Headlamp main beam	 Air filter blocked	 FWD dis-engaged	 Remote valve extend
 Headlamp dipped beam	 Parking brake	 Warning!	 Remote valve retract
 Work lamps	 Brake fluid level	 Hazard warning lights	 Remote valve float
 Stop lamps	 Trailer brake	 Variable control	 Malfunction! See Operator's Manual
 Horn	 Roof beacon	 Pressurized! Open carefully	 Malfunction! (alternative symbol)
	 Warning ! Corrosive substance		

3 - CONTROLS AND INSTRUMENTS

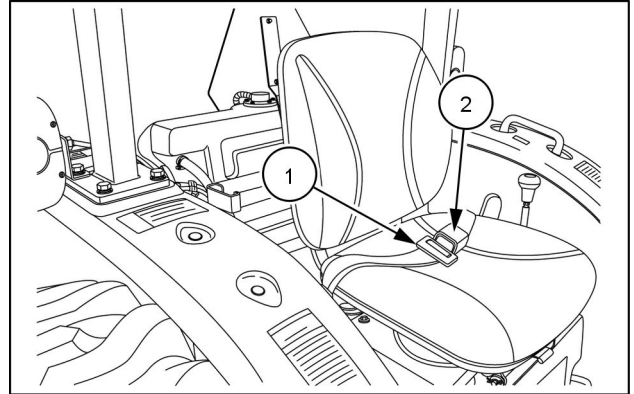
OPERATOR'S SEAT

Seat belt

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

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

Replace the seat belt if it becomes damaged or worn.



NHIL12CT00690AA 1

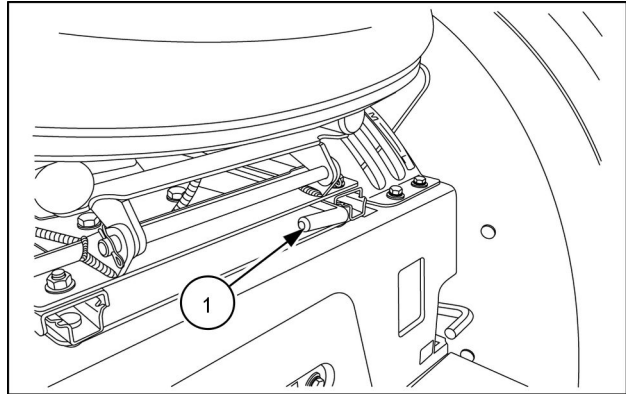
Seat controls

Adjusting the tractor seat

Your tractor is equipped with an adjustable suspension seat.

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

The seat can be tilted forward for storage position.



NHIL12CT00682AA 1

NOTE: Care of vinyl, plastic, and rubber parts to MAXIMIZE life

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."

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

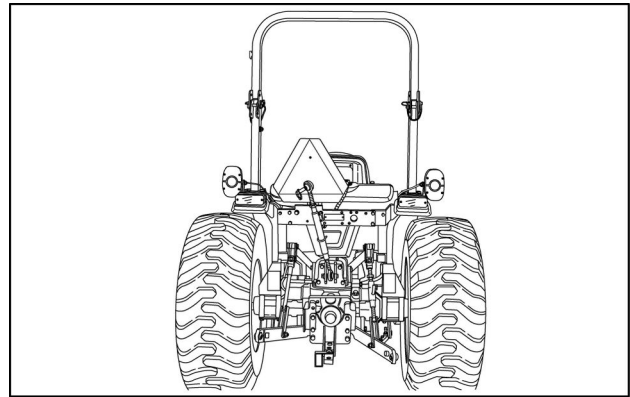
Roll-over hazard!
Always pull from the drawbar. **DO NOT** attach chains or ropes to the Roll Over Protective Structure (ROPS) for pulling purposes, as the machine could tip over. When driving through door openings or under low overhead objects, make sure there is sufficient clearance for the ROPS. Failure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



NHIL12CT00671AA 1

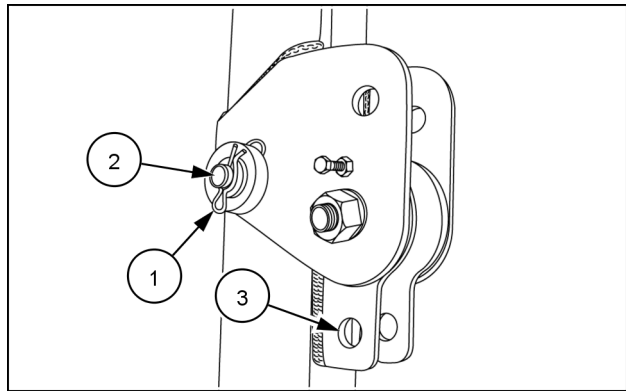
Foldable ROPS

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

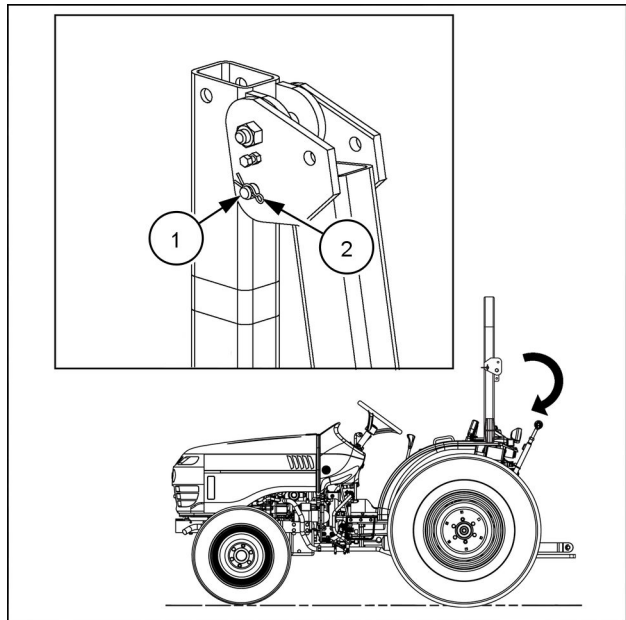
ROPS folding procedure

To fold the ROPS into the "DOWN" position, remove retaining clip (1) from the pin (2) and remove pin from the latching bracket, on both sides of the ROPS. Rotate the top part of the ROPS downward until the brackets contact the ROPS uprights. Reinstall pin (2) into lower retaining hole (3).

Secure the pin (1) with the retaining clip (2).



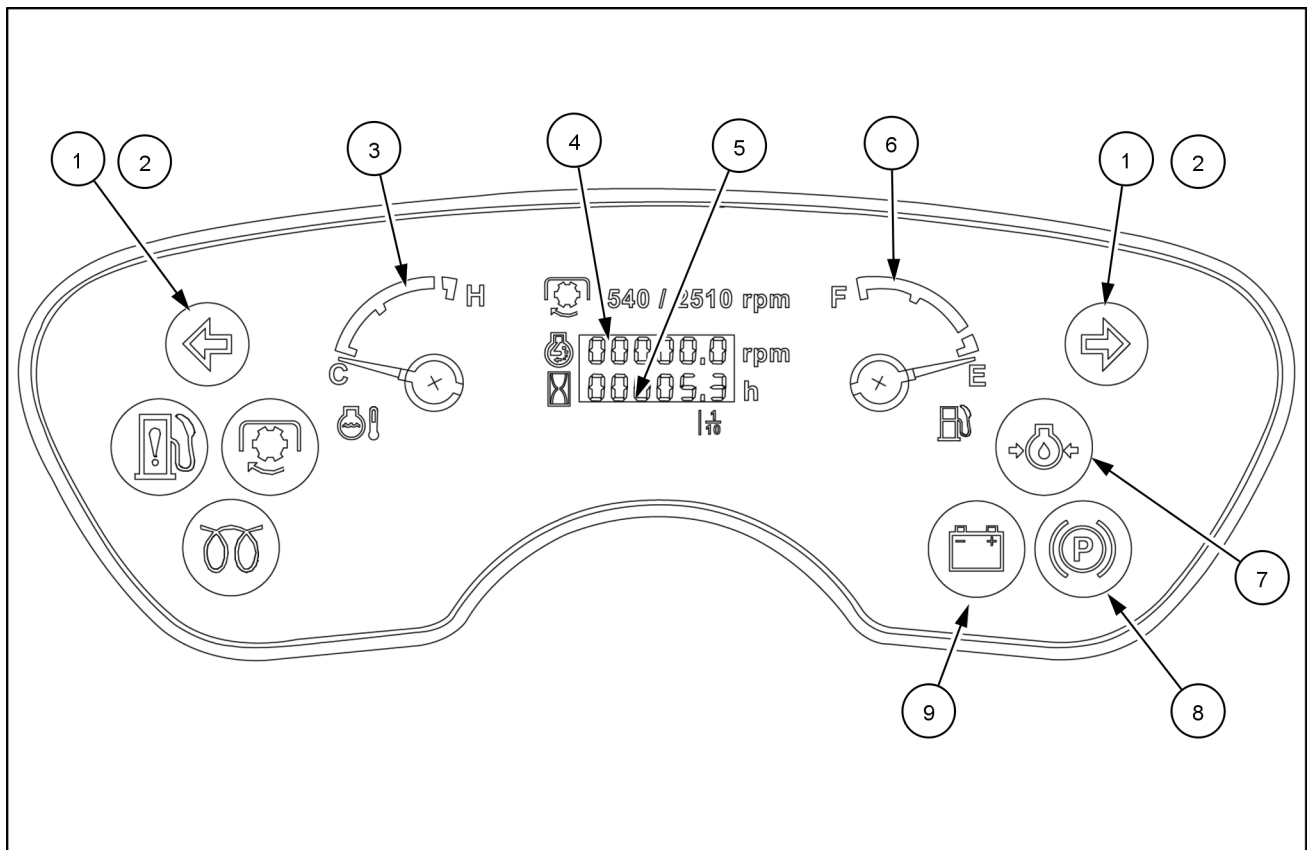
93099328 2



NHAC13CT00064GA 3

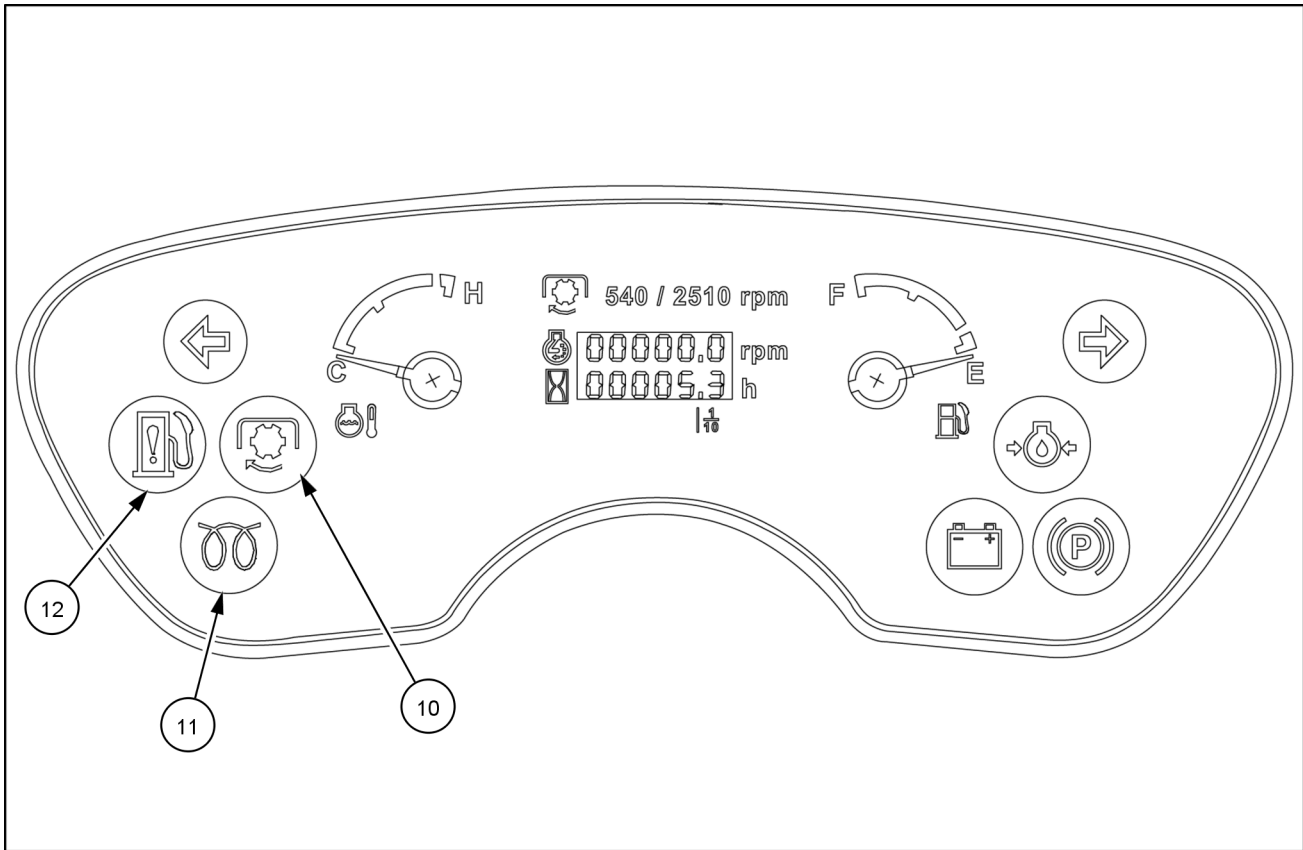
FORWARD CONTROLS

Instrument cluster



NHIL14CT00501FA 1

1. Flasher Warning Lights - Operate when the multifunction switch is turned on, regardless of the key switch position. Use the flasher warning lights, road lights and the SMV sign when traveling on public roads, day or night.
2. 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.
3. 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.
4. Tachometer - Registers engine rpm (Revolutions Per Minute).
5. 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.
6. 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.
7. Engine Oil Pressure Warning Light - Illuminates with the key switch in the "ON" position and remains lit for a short period of time after the engine is started. The light indicates oil pressure only and goes out when sufficient oil pressure is present at the oil sender. If the bulb becomes lit during operation, stop the tractor engine immediately and investigate the cause.
8. Park Brake Light - Illuminates if the park brake is engaged when the key switch is turned from the "OFF" position.
9. 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. As the battery can become fully discharged under these conditions, the problem should be investigated as soon as possible.



NHIL14CT00501FA 2

- 10. PTO On Indicator - When either the rear or mid PTO is engaged, the indicator will be illuminated amber with the key in the "START" or "ON" positions.
- 11. Cold Starting Indicator Light - Illuminates when the key switch is first turned to the "HEAT " position. It remains lit for approximately ten seconds, during which time the glow plugs are heating the precombustion chambers.
- 12. Fuel Filter Warning Indicator - Illuminates when there is a restriction or excess water in the fuel filter. When this indicator illuminates the engine will shut off automatically.

Cruise control

⚠ WARNING

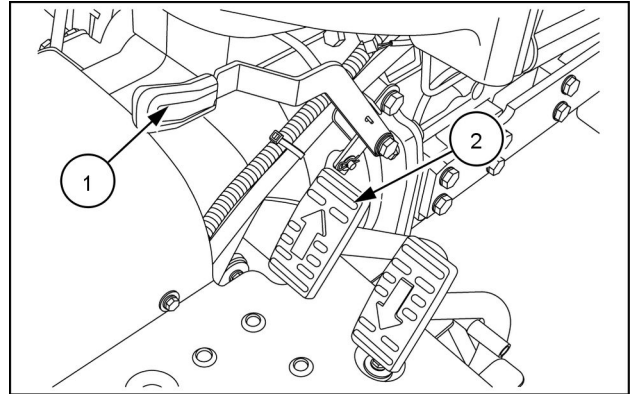
Loss of control hazard!
To maintain optimum control of the machine,
do not use the cruise control at high speeds
or when roading.
Failure to comply could result in death or se-
rious injury.

W0978A

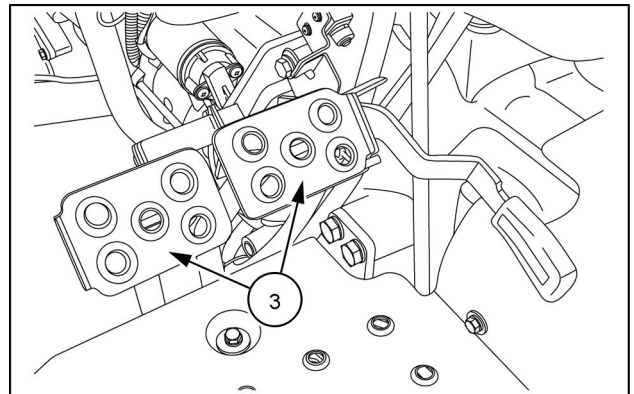
The HST cruise control lever **(1)** is located on the right-hand side of the operator's platform. It is used to maintain a constant forward speed.

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

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



NHIL12CT00693AA 1



NHIL12CT00691AA 2

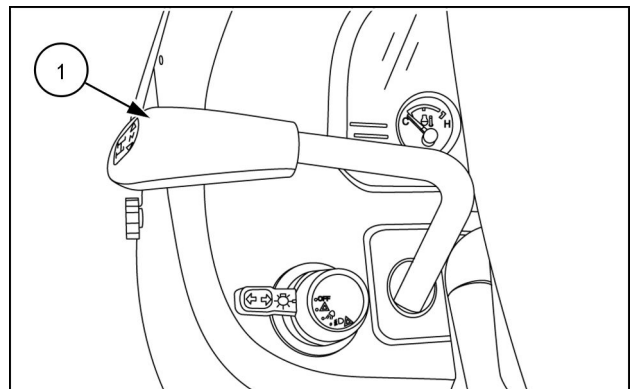
Transmission shuttle shift lever

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

NOTE: The shuttle shift lever is only found on gear model tractors.

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

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



93099335 1

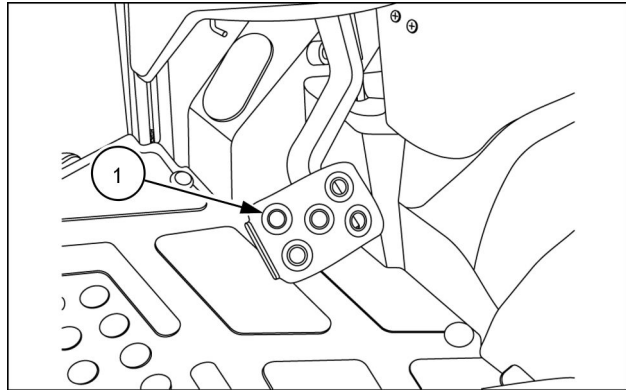
Clutch pedal

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.



93099348 1

Brake pedals

⚠ WARNING

Loss of control hazard!

Uneven brake force exists on left-hand and right-hand brakes. To ensure uniform brake application and maximum stopping ability, always lock the service brake pedals together before road travel.

Failure to comply could result in death or serious injury.

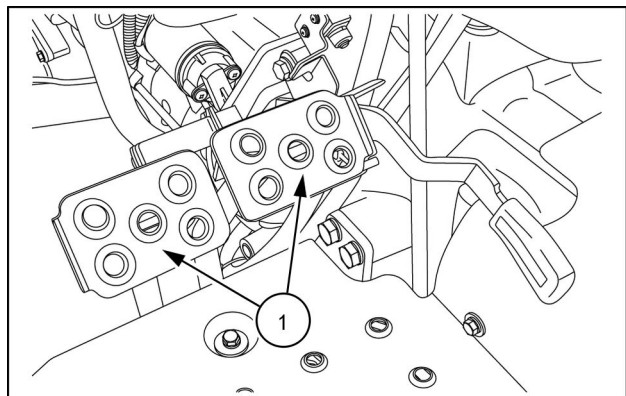
W1188A

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

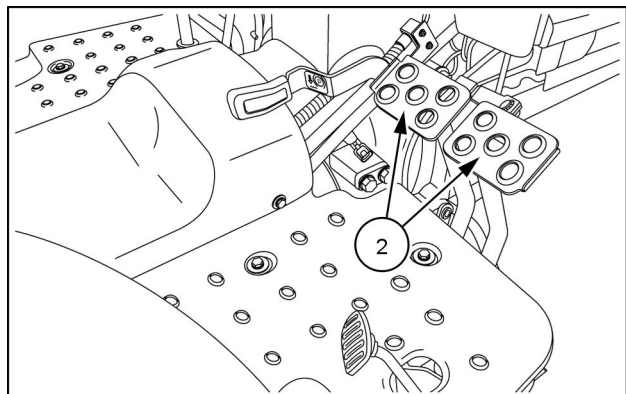
The function of the brake pedals are identical for the HST and gear model tractors except for the location of the pedals. The brake pedals (1) on a HST model tractor are located on the left-hand side of the operators platform and the brake pedals (2) on a gear model tractor are located on the right-hand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



NHIL12CT00691AA 1



NHIL13CT00044AA 2

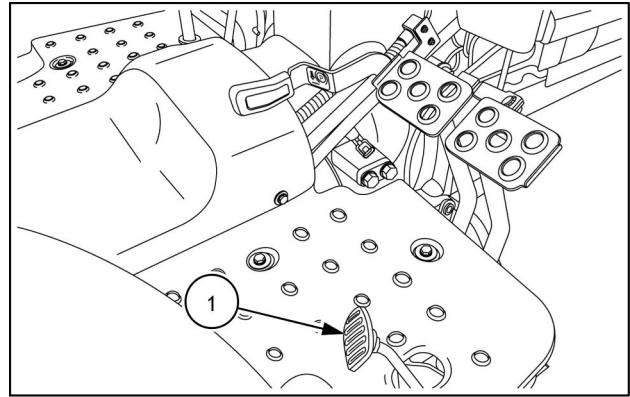
Foot throttle pedal

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

NOTE: The foot throttle pedal is found only on gear model tractors.

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

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



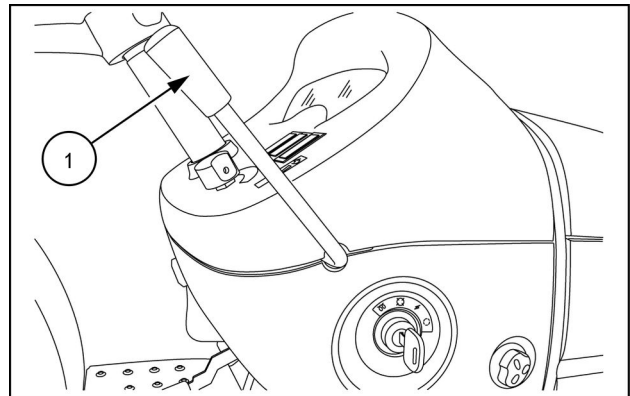
NHIL13CT00044AA 1

Hand throttle lever

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

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

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

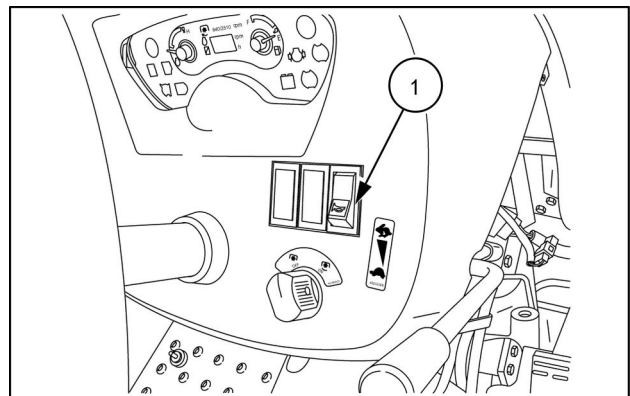


NHIL12CT00692AA 1

Horn switch (optional)

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

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



NHIL12CT00727AA 1

PTO switch

NOTICE: Most rear PTO equipment is designed to operate efficiently at **540 RPM \pm 10 RPM**. The tachometer is marked to indicate 540 PTO RPM. If the needle registers above the **540 RPM** mark, this indicates a dangerous over speed condition, and the engine RPM should be reduced immediately.

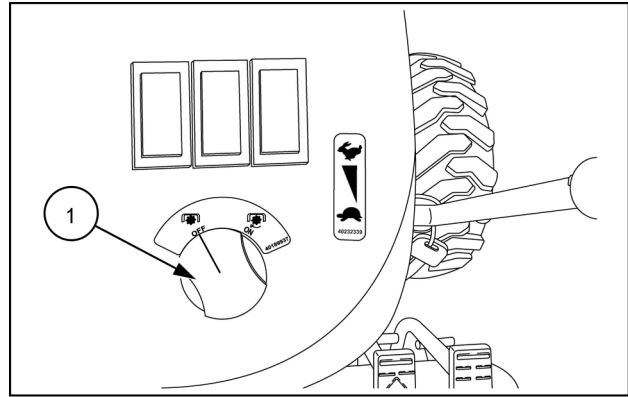
The PTO switch (1) is located on the right-hand side of the dash panel.

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 (2).

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

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

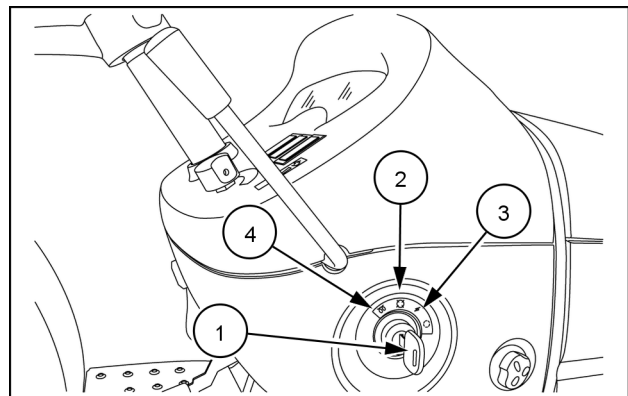


NHIL12CT00670AA 1

Key switch

The key switch (1) is located on the right-hand side of the rear hood panel. Turning the key to the middle "ON" position (2) activates the warning lights, instruments, and pre-heat system. The engine starts when the key is turned to the extreme right "START" position (3). A internal spring returns the key to the middle "ON" position when released.

Turning the key to the extreme left "STOP" position (4) will shut the engine off.



NHIL12CT00692AA 1

Differential lock pedal

⚠ WARNING

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

W0292A

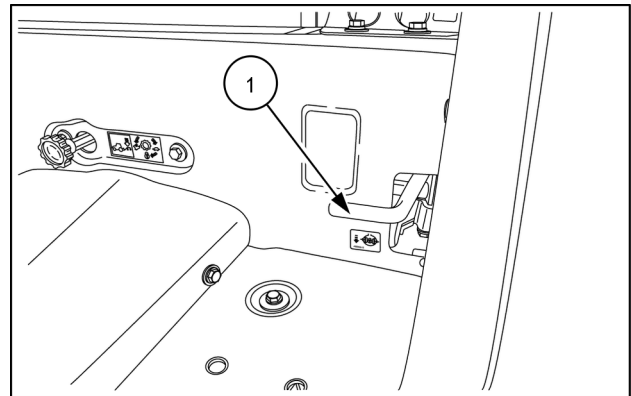
The differential lock pedal is located on the left-hand foot platform (1) on HST models and on the right-hand foot platform (2) on gear models. The differential lock is used to obtain additional traction in wet or loose soil.

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.

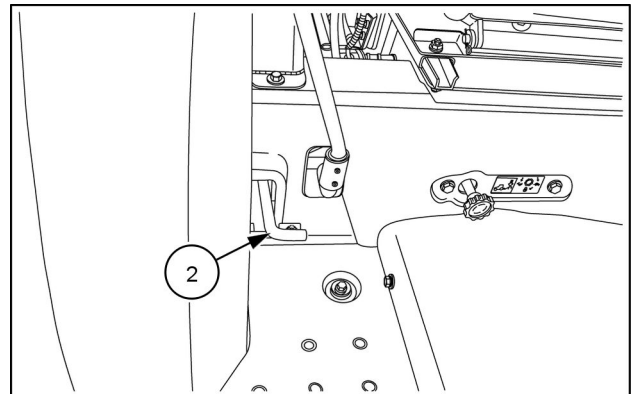
To operate the differential lock, depress and hold the pedal down until the lock is positively engaged. It is best to engage the lock while the wheels are turning slowly to minimize shock loads to the driveline. If a wheel spins at high speed, such as on ice, reduce engine speed to idle before engaging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



NHIL12CT00687AA 1

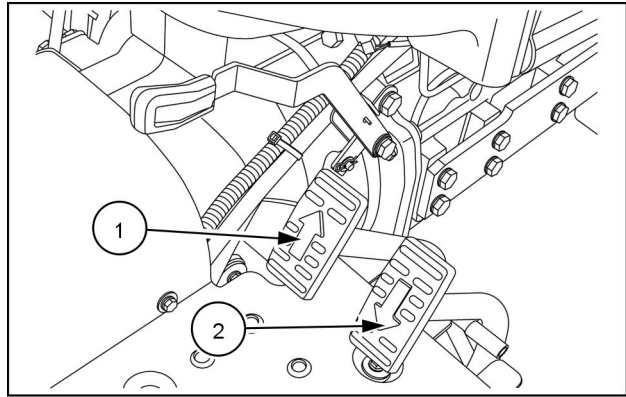


NHIL13CT00039AA 2

Hydrostatic transmission (HST) foot pedals

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

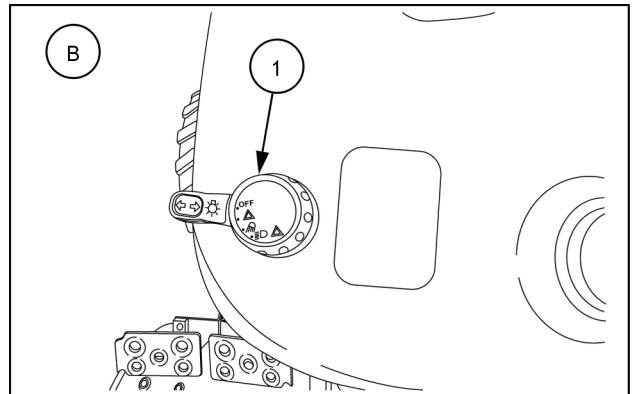
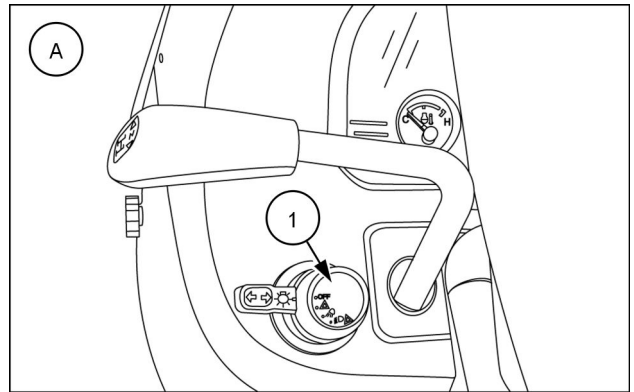
For forward travel, depress the forward pedal **(1)** until the desired ground speed is reached. For reverse travel, depress the rear pedal **(2)**. Unless the HST cruise control switch is in the "ON" position, the transmission returns to neutral and the tractor stops when the pedal is released.



NHIL12CT00693AA 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/work lights, side/taillights, hazard lights and turn signals.



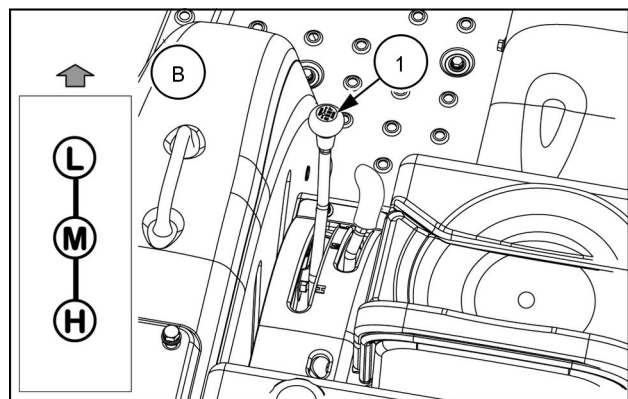
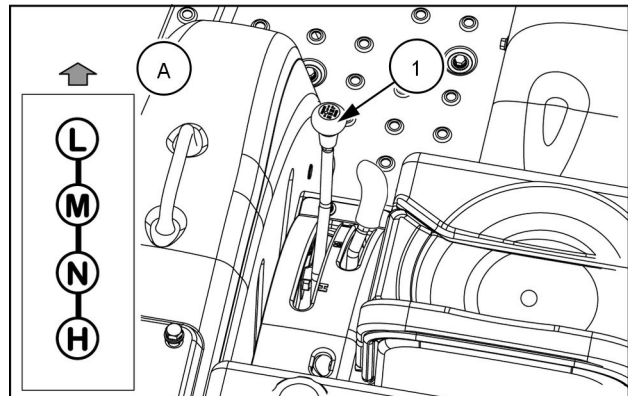
- (A) GEAR MODEL
- (B) HST MODEL

LEFT-HAND SIDE CONTROLS

Transmission range lever

The transmission range selector lever (1) is located on the left-hand control pod. There are three speed ranges, (H) High, (M) Medium, and (L) Low. The transmission range selector lever on HST models (A) has a neutral position between the H and M positions, gear models (B) do not.

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



- (A) HST MODEL
(B) GEAR MODEL

Park brake

⚠ WARNING

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

W1011B

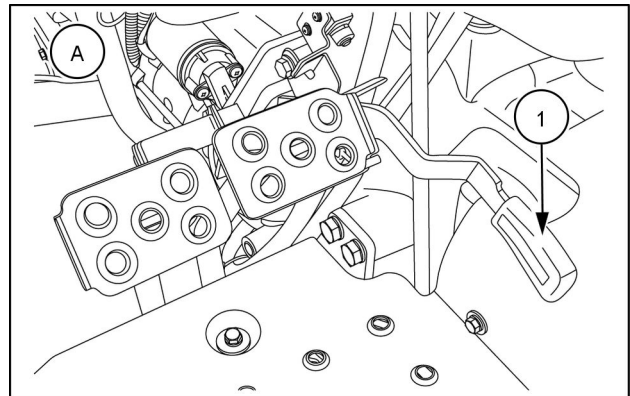
NOTICE: Ensure the park brake is fully disengaged before driving the tractor.

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

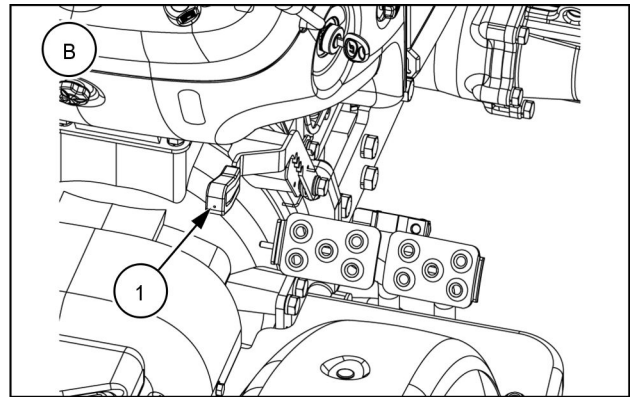
To engage the park brake, lock the pedals together and push the park brake lever downward while depressing the brake pedals.

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

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



NHIL12CT00691AA 1



NHIL12CT00775AA 2

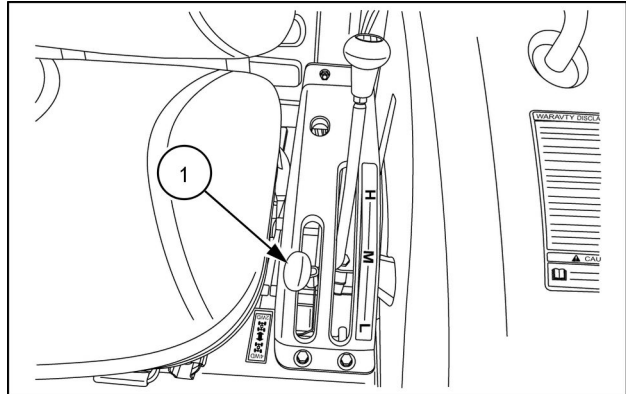
Four wheel drive lever

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

NOTE: Use four wheel drive when additional traction is required while operating on loose soil, in wet, slippery conditions, or on slopes. For normal operation on firm soil, level hard surfaces, or when operating the unit at high speeds, disengage the four wheel drive to maximize tire and driveline life and to economize on fuel.

Gear model

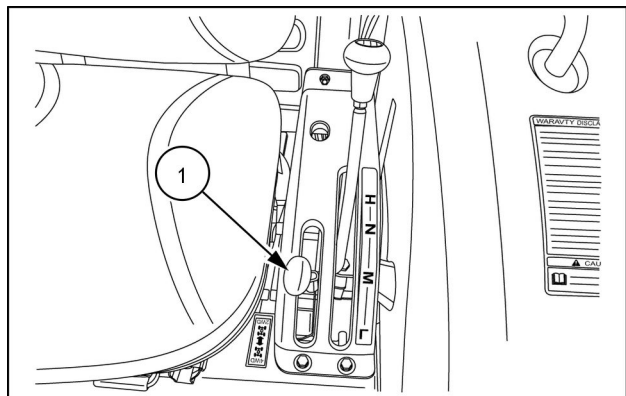
To engage the four wheel drive on gear model tractors, stop the tractor completely, depress the clutch pedal and move the lever (1) completely forward. To disengage the four wheel drive, stop the tractor completely, depress the clutch pedal and pull the lever (1) rearward.



NHIL12CT00885AA 1

HST model

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



NHIL12CT00680AA 2

Mid PTO lever

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

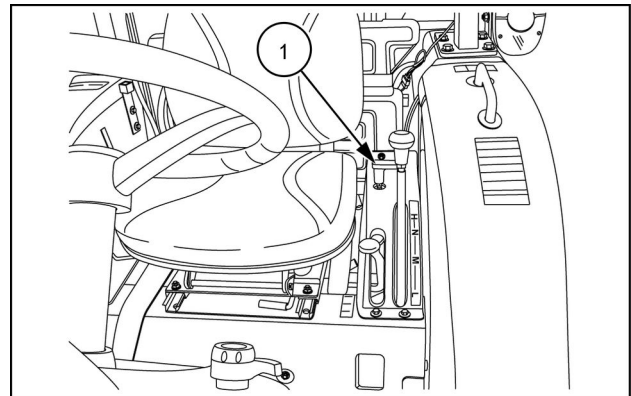
NOTE: The mid PTO is optional equipment on HST and gear model tractors.

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

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

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

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



NHIL12CT00772AA 1

RIGHT-HAND SIDE CONTROLS

Hydraulic power lift (HPL)

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

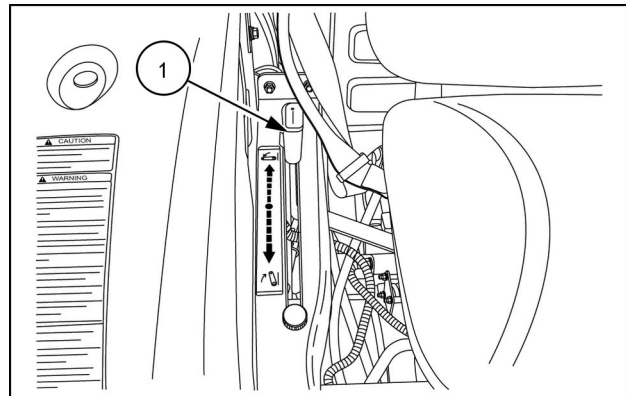
⚠ DANGER

Crushing hazard!

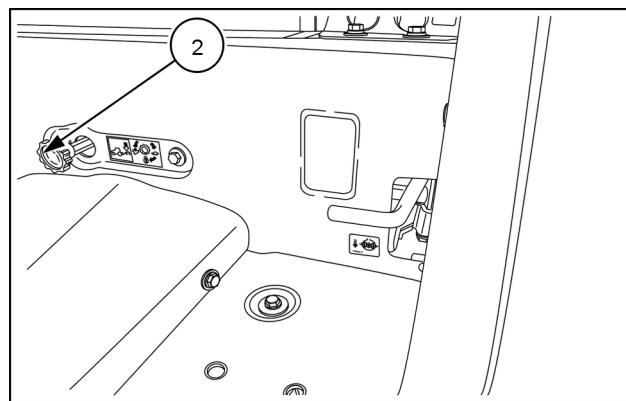
Make sure area is clear of all persons before lowering equipment.

Failure to comply will result in death or serious injury.

D0016A



NHIL12CT00681AA 1



NHIL12CT00687AA 2

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.

Position control

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

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

Rear remote hydraulic valve(s)

⚠ WARNING

Escaping fluid!

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

Failure to comply could result in death or serious injury.

W0095B

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

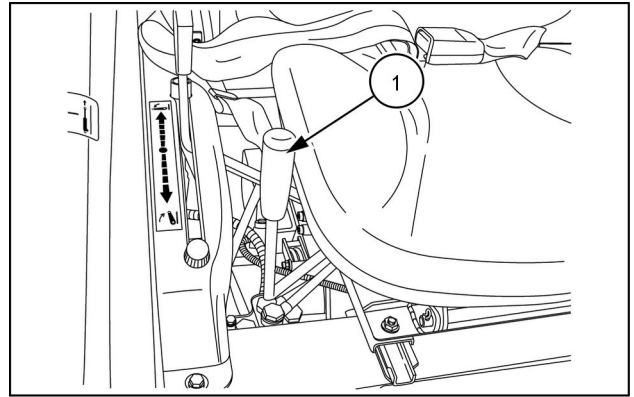
NOTE: The rear remote hydraulic valves are optional equipment on HST and gear model tractors.

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

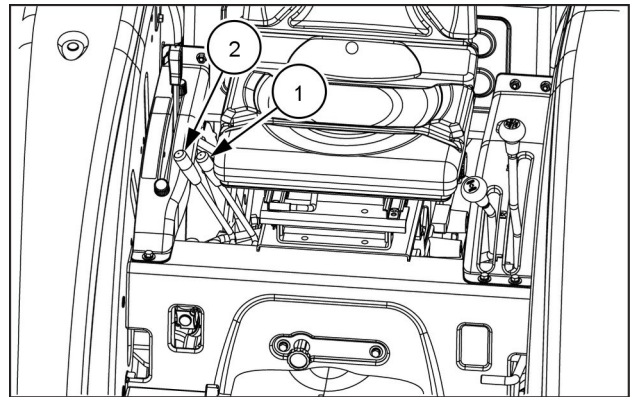
To operate the single or two spool valve, pull the selected control lever rearward to extend the cylinder and push the control lever forward to retract the cylinder. Release the control lever to stop the cylinder in any position before it is fully extended. The lever automatically returns to neutral.

NOTE: The valves do not have a detented position.

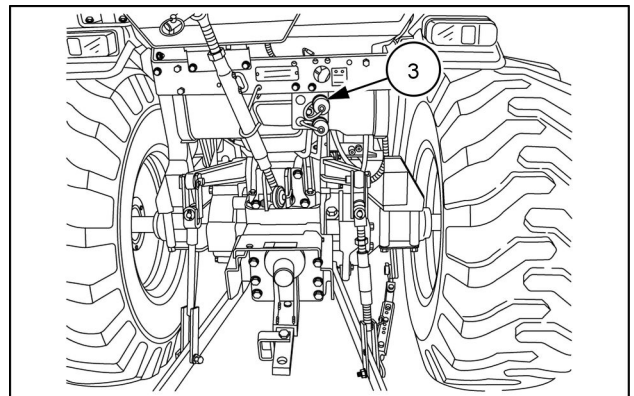
The #1 (Green) set of couplers (3) is located outboard and the #2 (Blue) set of couplers (4) is located inboard. The rear remote valves come standard with 12.7 mm (0.5 in) female quick couplers .



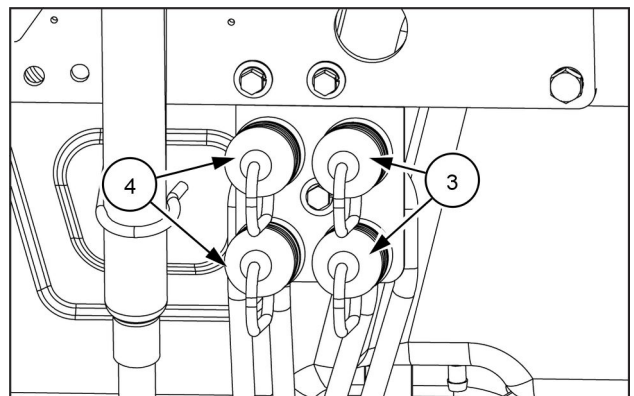
NHIL12CT00807AA 1



NHIL12CT00819AA 2



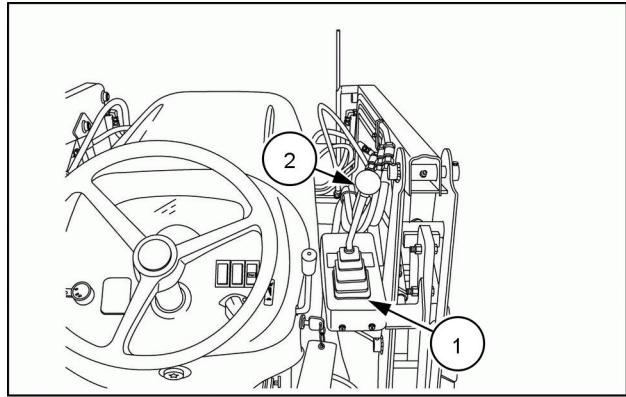
NHIL12CT00771AA 3



NHIL12CT00818AA 4

Mid mount two spool hydraulic valve

The (optional) mid mount two-spool hydraulic valve (1) is mounted to the valve mounting bracket, located at the right front of the operator's platform. This valve is used mainly for front end loader operation, but may also be used to operate other front mounted implements.



NHIL13CT00001AA 1

Valve operation

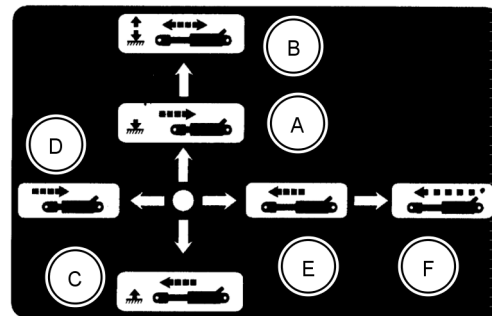
To operate the two-spool valve, move the control lever (2) in any of the four directions.

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

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

- Move the control lever forward to lower the loader or retract lift cylinders (A).
- Move the control lever fully forward to "FLOAT" the loader boom (B) which allows the lift cylinders to extend or retract freely.
- Move the control lever rearward to raise the loader or extend lift cylinders (C).
- Move the control lever to the left to curl the bucket or retract the bucket cylinders (D).
- Move the control lever to the right to dump bucket or extend cylinders at slower rate. (E).
- Move the control lever fully to the right to dump bucket or extend cylinders at faster rate. (F).

NOTE: Do not use the "FLOAT" position if the loader is raised to its highest position.



SBA86532911N 2

Valve lock

This style of mid mount two spool valve does NOT have a valve lock feature.

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!

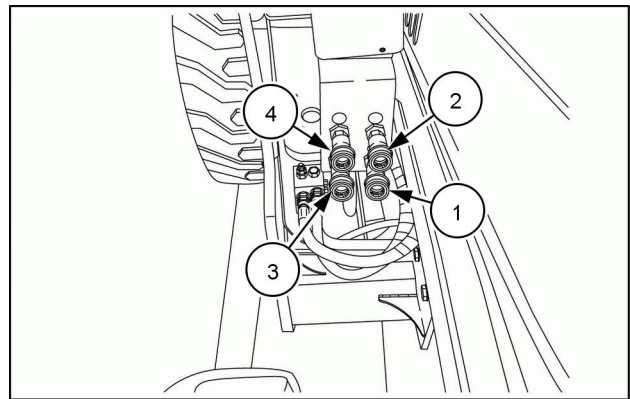
Remote couplers must be properly mounted and securely fastened to the machine mounting bracket for proper functioning of the safety disconnect feature.

Failure to comply could result in death or serious injury.

W0131A

When connecting hydraulic hoses, follow the instructions listed below.

- Lift cylinder, rod side, yellow coupler (1).
- Lift cylinder, base side, green coupler (2).
- Bucket cylinder, base side, blue coupler (3).
- Bucket cylinder, rod side, red coupler (4).



NHIL13CT00023AA 3

Transmission main shift lever

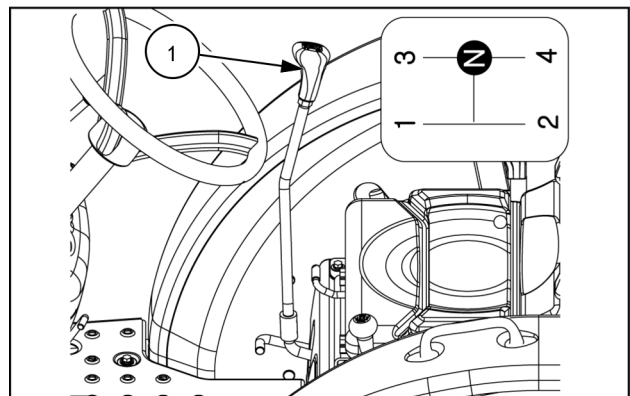
Gear model

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.

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

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

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



NHIL12CT00776AA 1

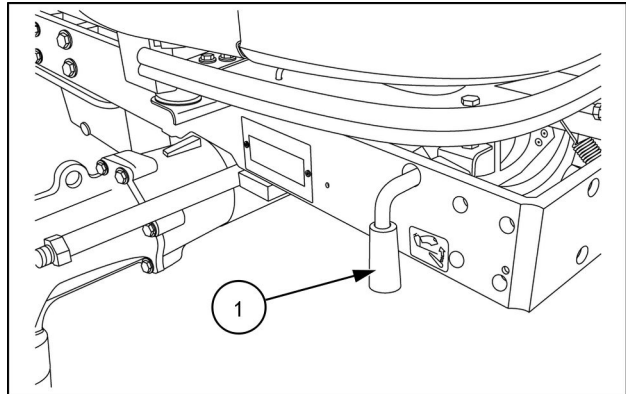
EXTERIOR CONTROLS

Hood release lever

As viewed from the front of the tractor:

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

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



NHAC13CT00045AA 1

4 - OPERATING INSTRUCTIONS

COMMISSIONING THE UNIT

Engine break-in procedure

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

1. Avoid "lugging" the engine. Operating in too high a gear under heavy load may cause engine lugging, which is indicated when the engine will not respond to a throttle increase.
2. Use the lower gear ratios when pulling heavy loads and avoid continuous operation at constant engine speeds. You will save fuel and minimize engine wear by selecting the correct gear ratio for a particular operation. Operating the tractor in low gear with a light load and high engine speed wastes fuel.
3. Avoid prolonged operation at either high or low engine speeds without a load on the engine.
4. Check the instruments frequently and keep the radiator and oil reservoirs filled to recommended levels. Daily checks include the engine oil level, radiator coolant, and air cleaner.
5. After the first 50 hours of use, be sure to perform the maintenance items listed in the maintenance schedule.

Power take-off (PTO) operation

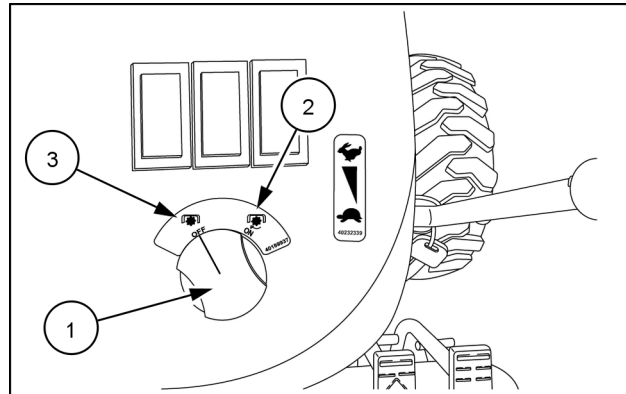
Rear PTO

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

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

2. The PTO system is totally independent of the tractor ground speed, and the following operations can be performed.
 - The tractor ground travel can be stopped without stopping the PTO.
 - Stop the PTO by disengaging the PTO clutch without stopping the tractor ground travel.

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



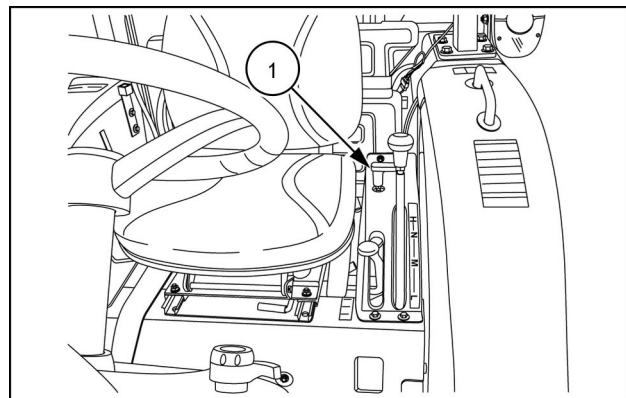
Mid PTO (Optional)

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

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

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

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



Rear PTO operation without operator present

⚠ WARNING

Entanglement hazard!

Before operating stationary Power Take-Off (PTO) equipment, do the following: apply the parking brake, place all controls in the neutral position, and block all four wheels.

Failure to comply could result in death or serious injury.

W0336A

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

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

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

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

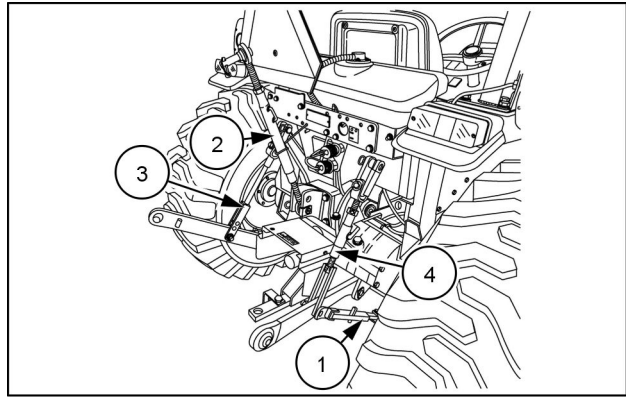
NOTE: *The alarm will sound when the following conditions are present:*

- Rear PTO is engaged.
- 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 and the top link.

The three-point linkage has easy to adjust sway bars **(1)** to control lateral movement of the lift arms. The length of the top link **(2)** and the height of the left-hand and right-hand lift arms **(3)** and **(4)** can be adjusted to ease the attachment of implements and to level the implement after attaching.



NHIL12CT00803AA 1

Attaching three-point equipment

⚠ WARNING

Entanglement hazard!

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

Failure to comply could result in death or serious injury.

W0323A

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

Most implements can be attached to the tractor as follows:

1. Position the tractor so that the lower link hitch points are level with and slightly ahead of the implement hitch pins. Carefully bring the tractor rearwards to match the tractor and implement hitch points. First attach the left-hand lower link, then by adjusting the leveling box, attach the right lower link.
2. Lengthen or shorten the top link until the implement mast pin can be inserted through the mast and upper link of the implement.
3. When detaching the implement, the procedure is the reverse of attaching. The following hints will make detaching easier and safer.
 - Always park the implement on a level, firm surface.
 - Implement should be supported so that it cannot tip or fall when detached from the tractor.
 - Always relieve all hydraulic pressure in any remote cylinders before detaching.

Left-hand lift rod adjustment

⚠ WARNING

Crushing hazard!

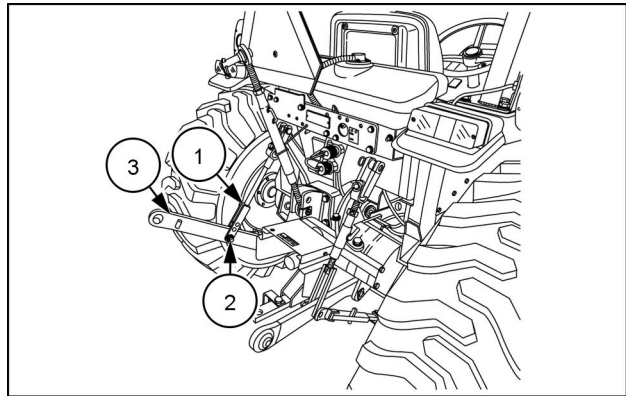
Before disconnecting a lift rod from the lower link, lower the attached implement to the ground, and stop the engine. Make sure the attached implement is correctly supported and no pressure remains in the hydraulic system before removing the lift rod securing pins.

Failure to comply could result in death or serious injury.

W0034A

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

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

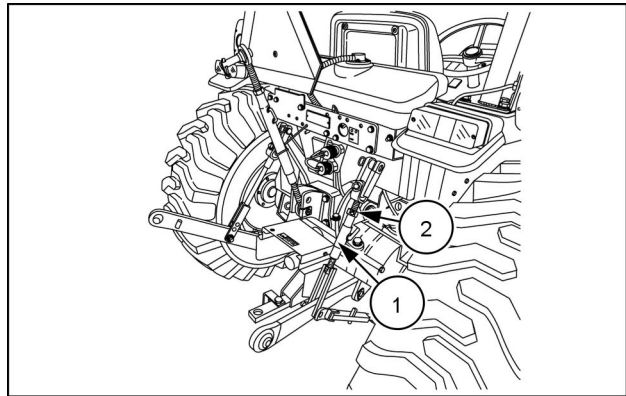


NHIL12CT00803AA 1

Right-hand lift rod adjustment

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

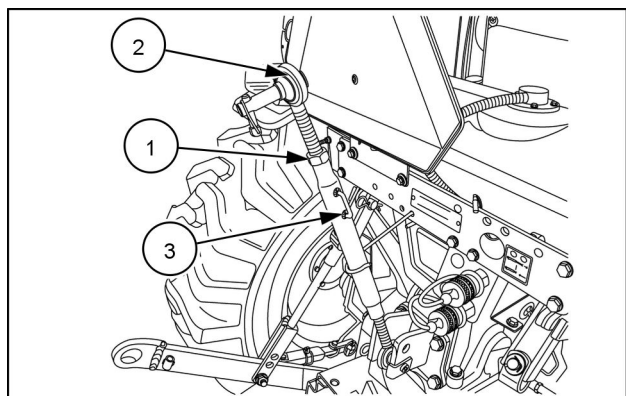
To lengthen or shorten the right-hand lift rod (1) loosen jam nut (2) and rotate lift rod clockwise to reduce the length and counter-clockwise to increase the length.



NHIL12CT00803AA 2

Top link adjustment

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



NHIL12CT00805AA 3

Telescoping stabilizers and optional flex end links adjustment

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

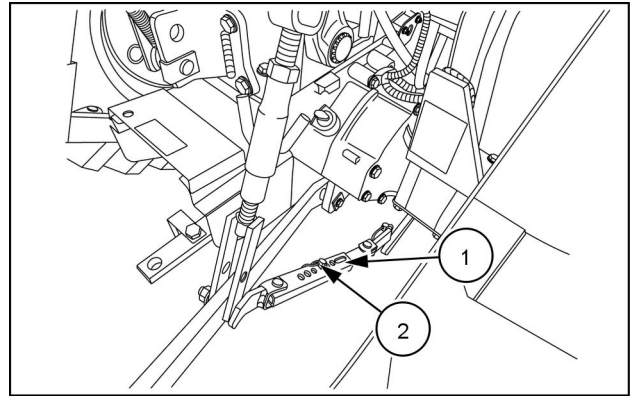
Machine damage can cause accidents!

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

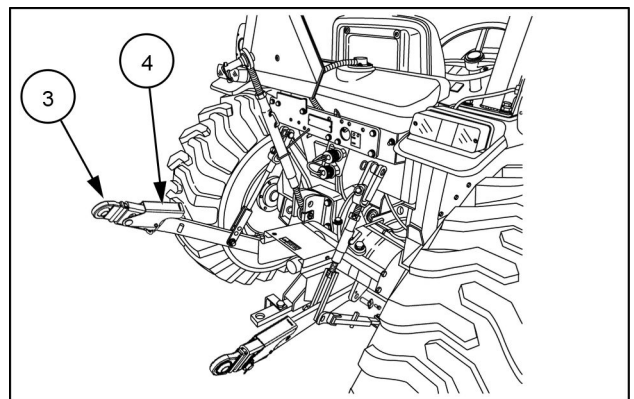
Failure to comply could result in death or serious injury.

W0467A

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



NHIL12CT00804AA 4

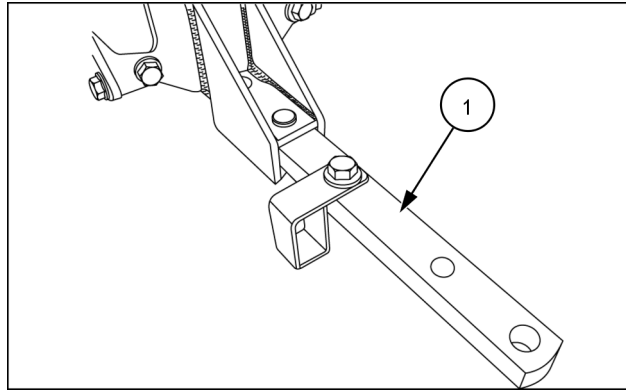


NHIL12CT00837AA 5

Extendible drawbar

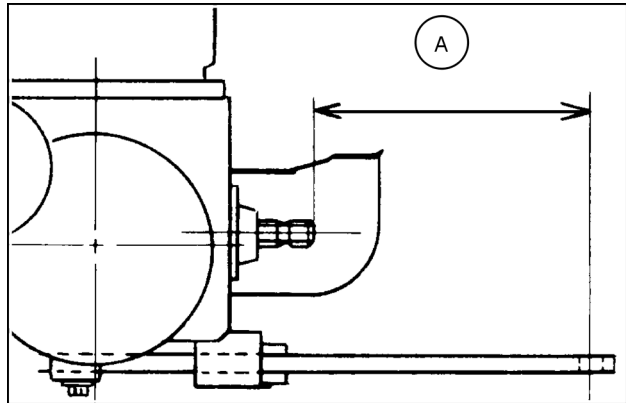
NOTICE: When transporting equipment on highways, a safety chain with a tensile strength equal to the gross weight of the implement should be installed between the tractor and implement hitch.

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

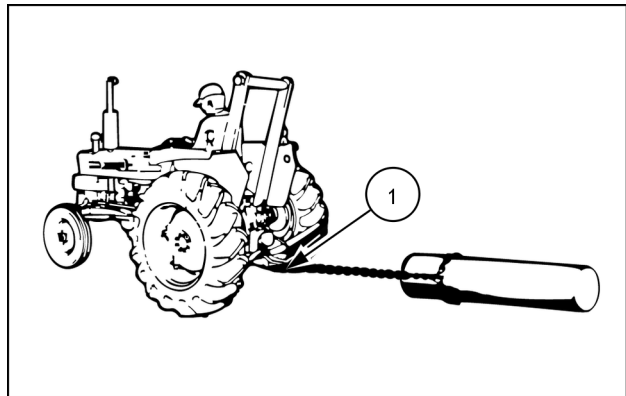
(A) 356 mm (14 in)

⚠ 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

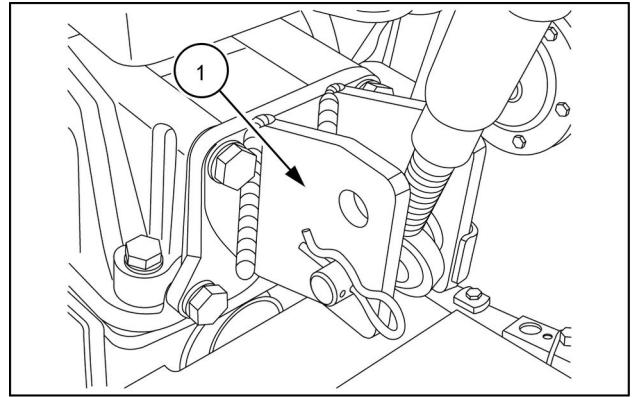


NHIL13CT00908AA 3

(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.



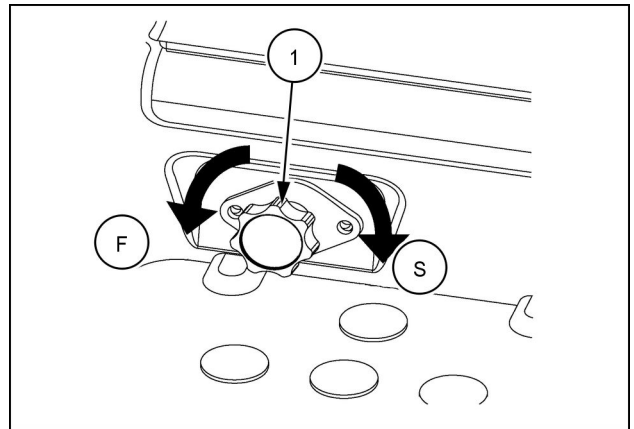
NHIL12CT00806AA 1

Hydraulic Power Lift (HPL) drop rate control valve

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

Turn the drop rate control valve "IN" (clockwise) to decrease the rate of drop. Turn the valve "OUT" (counterclockwise) to increase the rate of drop.

The drop rate control valve must be opened before the hydraulic lift control will lower. If the valve is turned all the way "IN" (clockwise), the lower links can be raised to maximum height but cannot be lowered.



200900060A 1

(F) Fast
(S) Slow

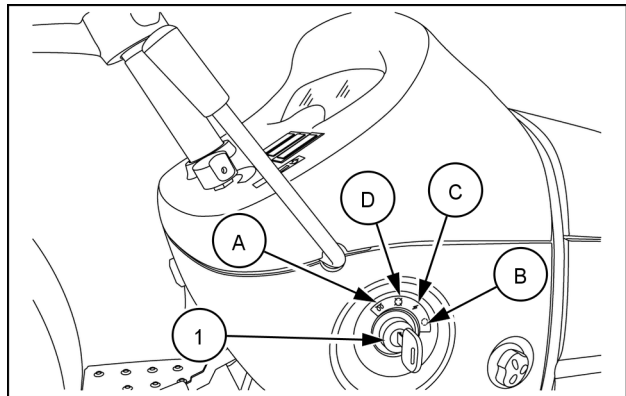
NOTE: The drop rate control valve needs to be adjusted accordingly to the amount of weight being carried on the rear hitch arms.

STARTING THE UNIT

Key switch

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

- Turn the key counterclockwise to the left "HEAT" position (A) activates the preheat system.
- Turn the key clockwise to the extreme right "START" position (B) to start the engine.
- When the key is released, an internal spring returns the key to the middle "ON" position (C).
- Turn the key counterclockwise to the left to the "STOP" position (D) will shut the engine off.



NHIL12CT00692AA 1

Cold starting aids

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

▲ DANGER

Explosion hazard!

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

Failure to comply will result in death or serious injury.

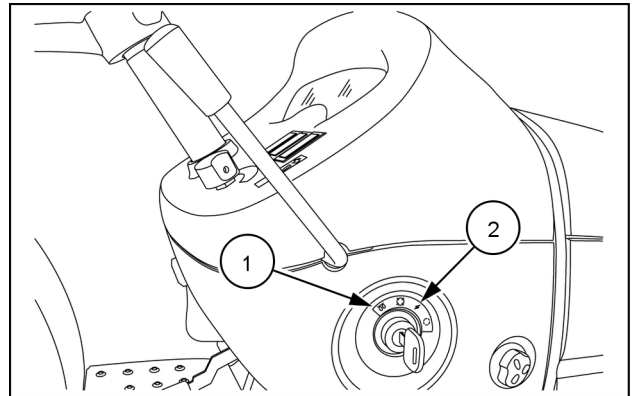
D0085A

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

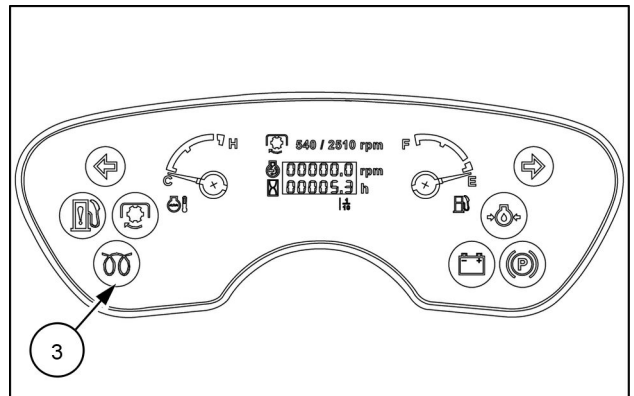
To preheat the engine, turn the key switch counterclockwise to the "HEAT" position (1) or clockwise to the "ON" position (2). The cold start indicator light (3) will illuminate for approximately ten seconds. The glow plugs heat the precombustion chambers during this time. After the light goes out the tractor can be started. When the key is released from the "HEAT" position the key switch will return to the "OFF" position.

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 -18 °C (0 °F) by warming the engine coolant.



NHIL12CT00692AA 1



NHIL14CT00501AA 2

Starting the engine

Gear model

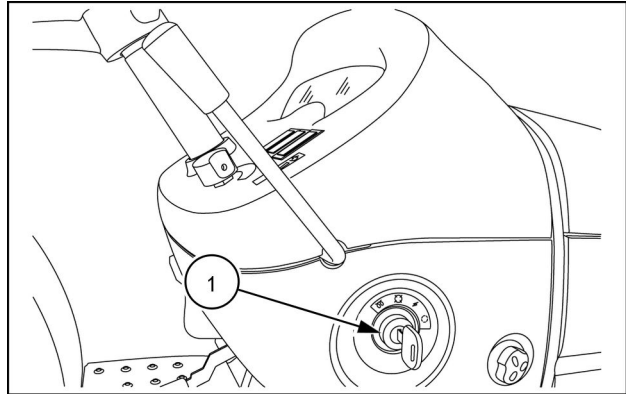
▲ WARNING

Run-over hazard!

Always sit in the operator's seat with the parking brake engaged when attempting to start the engine. Never attempt to start the engine while standing beside the machine.

Failure to comply could result in death or serious injury.

W0967A

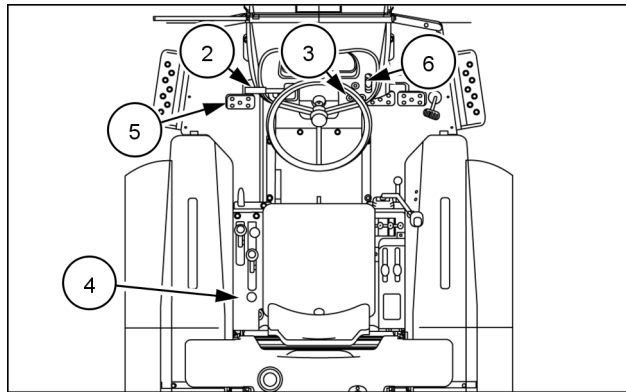


NHIL12CT00692AA 1

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

- Shuttle lever (2) is in the neutral position.
- PTO switch (3) is in the "OFF" position.
- Mid PTO lever (4) is in the "OFF" position (if equipped)
- Clutch Pedal (5) is depressed.

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



93100852 2

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

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

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

HST model

⚠ WARNING

Run-over hazard!

Always sit in the operator's seat with the parking brake engaged when attempting to start the engine. Never attempt to start the engine while standing beside the machine.

Failure to comply could result in death or serious injury.

W0967A

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

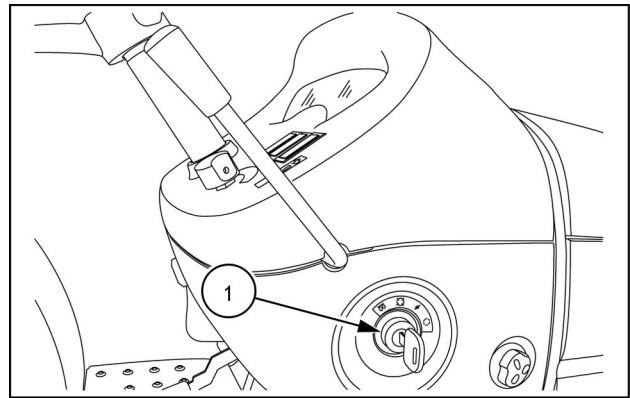
- HST forward/reverse pedals (2) are in the neutral position.
- PTO switch (3) is in the "OFF" position.
- Mid PTO lever (4) is in the "OFF" position (if equipped)

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.

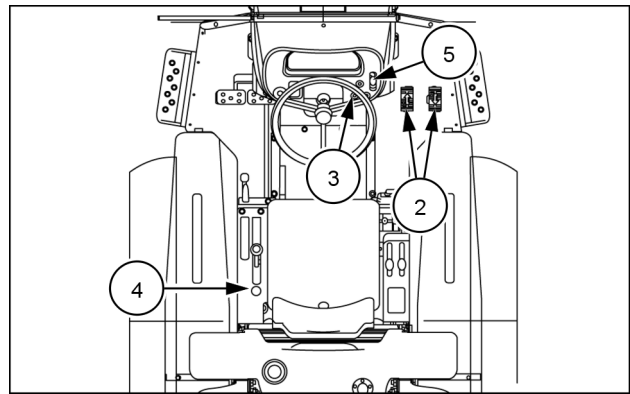
1. Push the hand throttle lever (5) forward to about the middle position.
2. Turn the key switch to the middle "ON" position and check if the engine oil pressure, battery charge, and cold start indicator lights are on.
3. Wait until the cold start indicator light goes off (approximately ten seconds).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

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

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



NHIL12CT00692AA 3



93100853 4

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	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

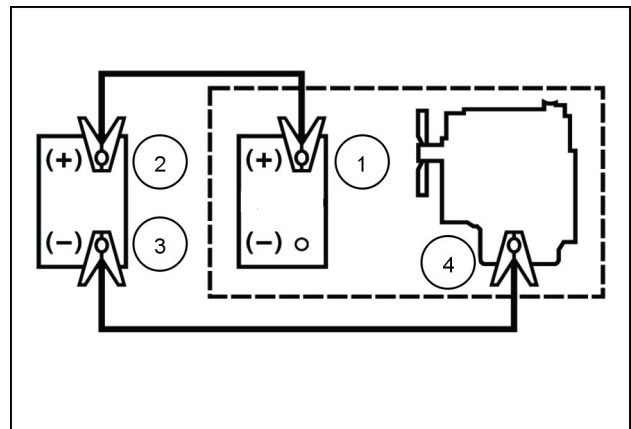
Explosion hazard!
When jump-starting the machine, connect and disconnect the jumper cables exactly as indicated in this manual. **DO NOT** connect the jumper cables to the machine battery terminals. Make sure no persons are near the connecting points before starting the engine. Start the engine from 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 **4-12** .
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 hydraulic power lift (HPL) control lever forward to lower implements to the ground.
6. Turn the key to the "STOP" position to shut the engine off.

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

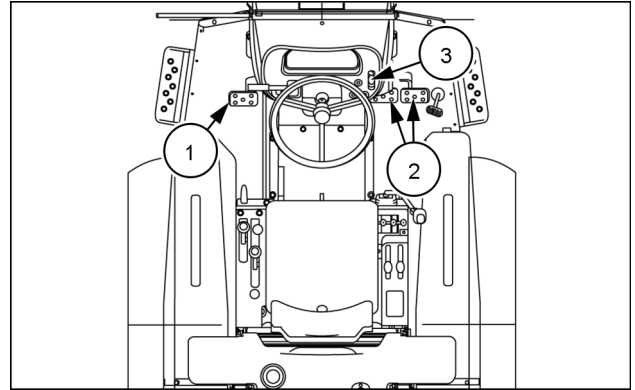
NOTE: *If the key is not left in the "STOP" position after the engine has stopped, the warning lights will remain on and discharge the battery.*

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.

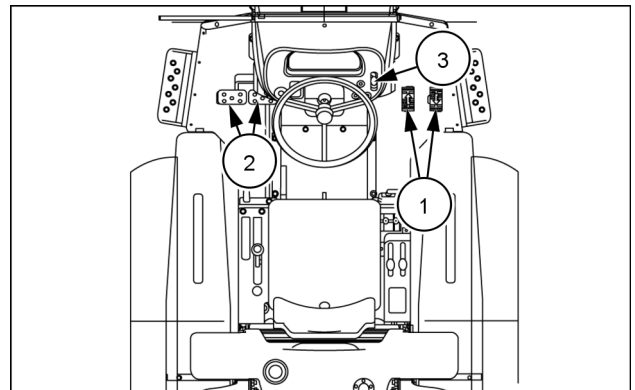


93100852 1

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

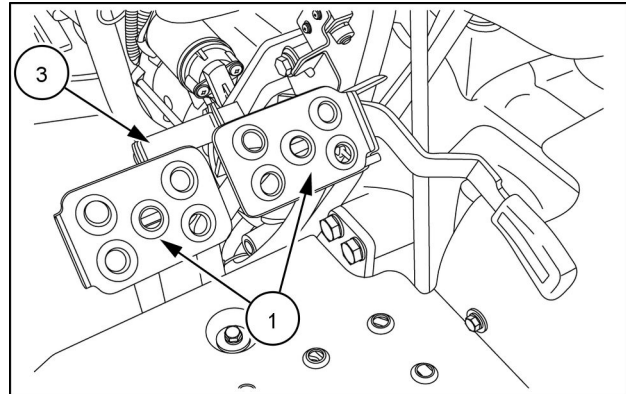
⚠ WARNING

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.

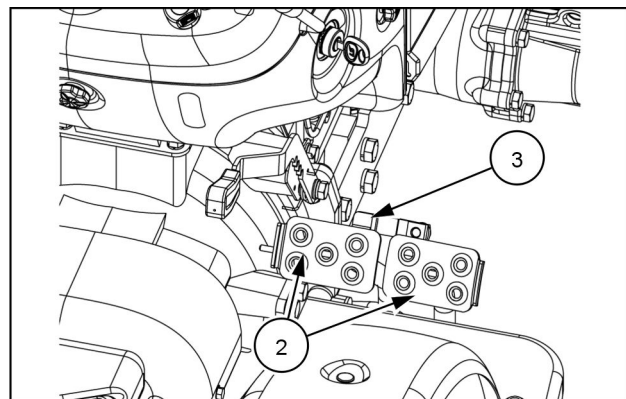
W1237A



NHIL12CT00691AA 1

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.



NHIL12CT00775AA 2

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.

Brake pedal lock

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

Park brake

⚠ WARNING

Unexpected movement!

Always engage the parking brake and switch off the engine before exiting the machine.

Failure to comply could result in death or serious injury.

W0209A

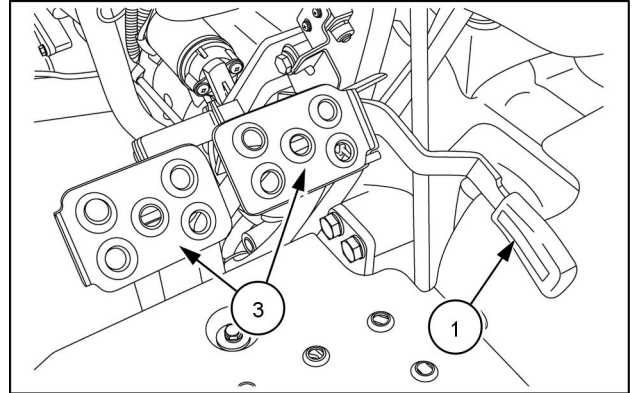
NOTICE: *Ensure the park brake is fully disengaged before driving the tractor.*

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

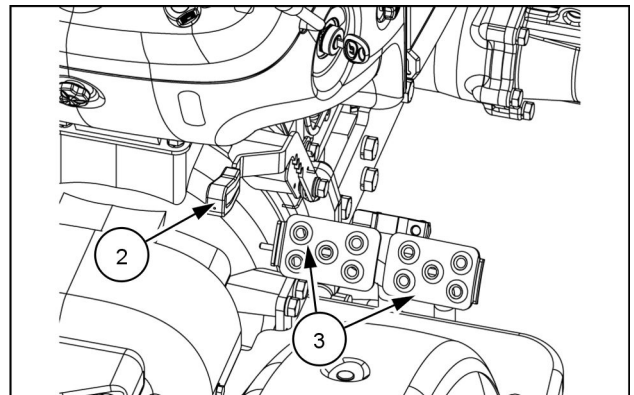
To engage the park brake, lock the pedals together and push down on the park brake lever while depressing the brake pedals **(3)**.

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

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



NHIL12CT00691AA 3



NHIL12CT00775AA 4

MOVING THE UNIT

Steering operation

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

Operating notes

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

NOTICE: *Do not hold the steering wheel fully to the left or right for more than 10 seconds, it could cause a failure in the steering system.*

- If an abnormal sound is heard while operating the steering wheel, this means that there is some air in the steering components line. In this case, turn the steering wheel to left and right fully and hold for about 5 seconds. The air should bleed out and the abnormal noise should go away. If the sound does not go away take your tractor to your authorized NEW HOLLAND dealer.
- When operating the tractor in cold weather, the abnormal sound may be heard. In this case, warm up the tractor before using to reduce the oil viscosity.
- If you use the tractor for a long period of time while turning the steering wheel fully, the oil temperature will increase which may cause the reduction of the product life or the failure of the hydraulic steering system.

NOTE: *If the engine stops, the hydraulic power for the steering system will stop. 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



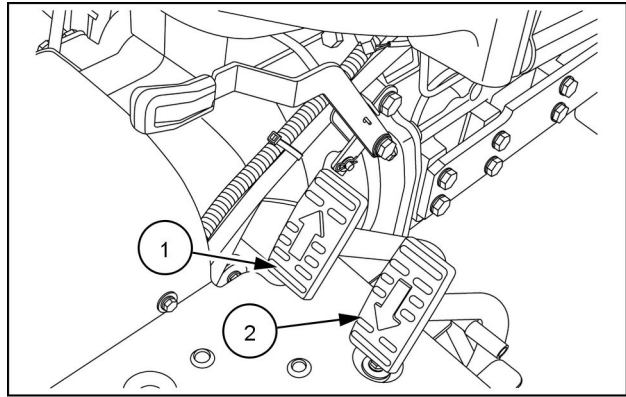
Set the park brake during warm up operation. Set all shift levers to the "NEUTRAL" positions and place the PTO clutch lever in the "OFF" position during warm up operation. Failure to comply could result in death or serious injury.

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

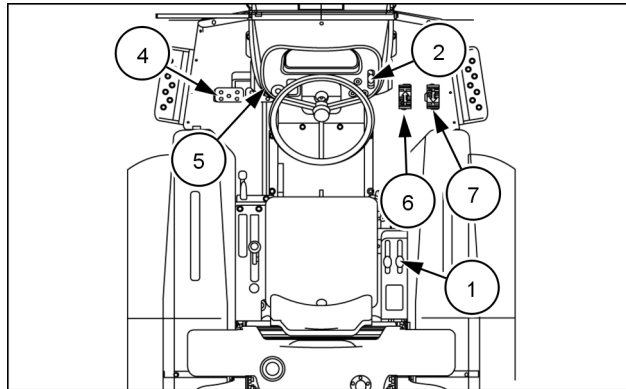
The ground speed of tractors equipped with a hydrostatic transmission is continuously variable, from zero to full rated speed in each range. Speed is controlled by the HST forward (1) and reverse (2) pedals located on the right-hand operators platform.



NHIL12CT00693AA 1

To operate the HST transmission, carry out the following:

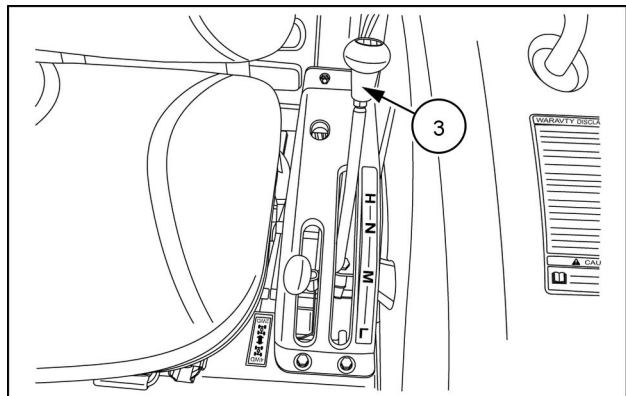
1. Start the engine and pull the HPL control lever (1) rearward to lift the implement off the ground (if equipped).
2. Move the hand throttle lever (2) forward until the engine speed is above **1500 RPM**.
3. Place the range gear shift lever (3) in the desired range.
4. Depress the brake pedals (4) and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



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.



NHIL12CT00680AA 3

Cruise control operation

⚠ WARNING

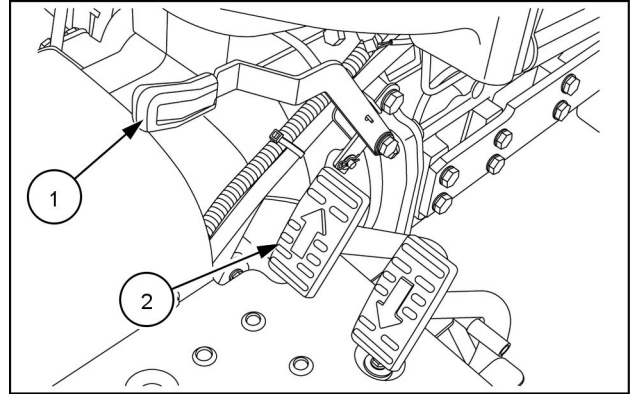
Loss of control hazard!

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



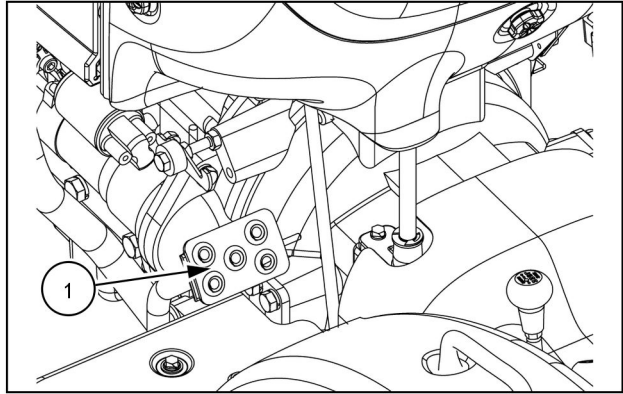
NHIL12CT00693AA 4

12 x 12 transmission operation

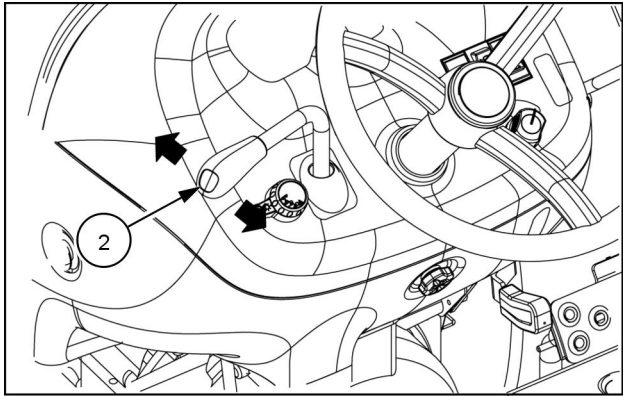
The 12 x 12 gear transmission operates through the use of a clutch pedal (1) a forward/reverse shuttle shift lever (2) main transmission shift lever (3) and a range selector lever (4).

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

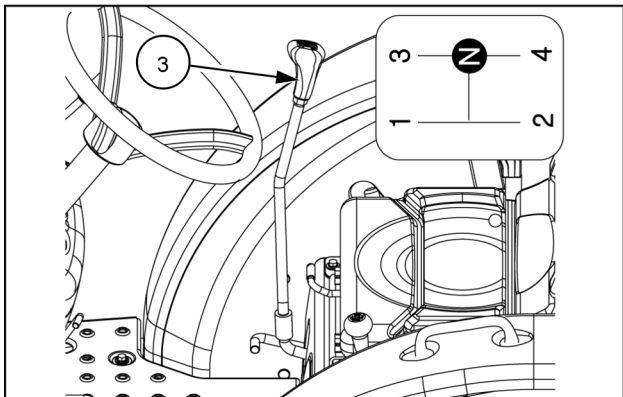
NOTE: The shift pattern is shown as sitting in the operators seat.



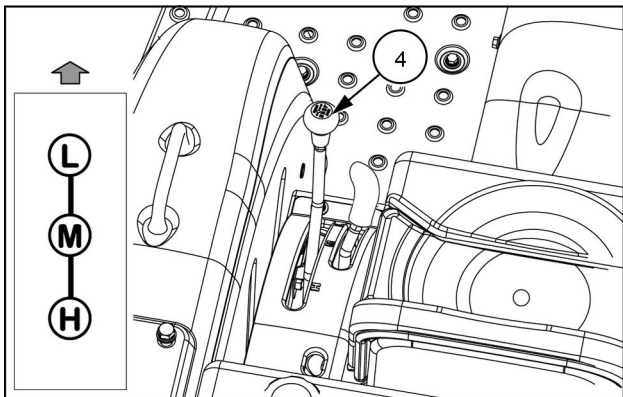
NHIL12CT00774AA 1



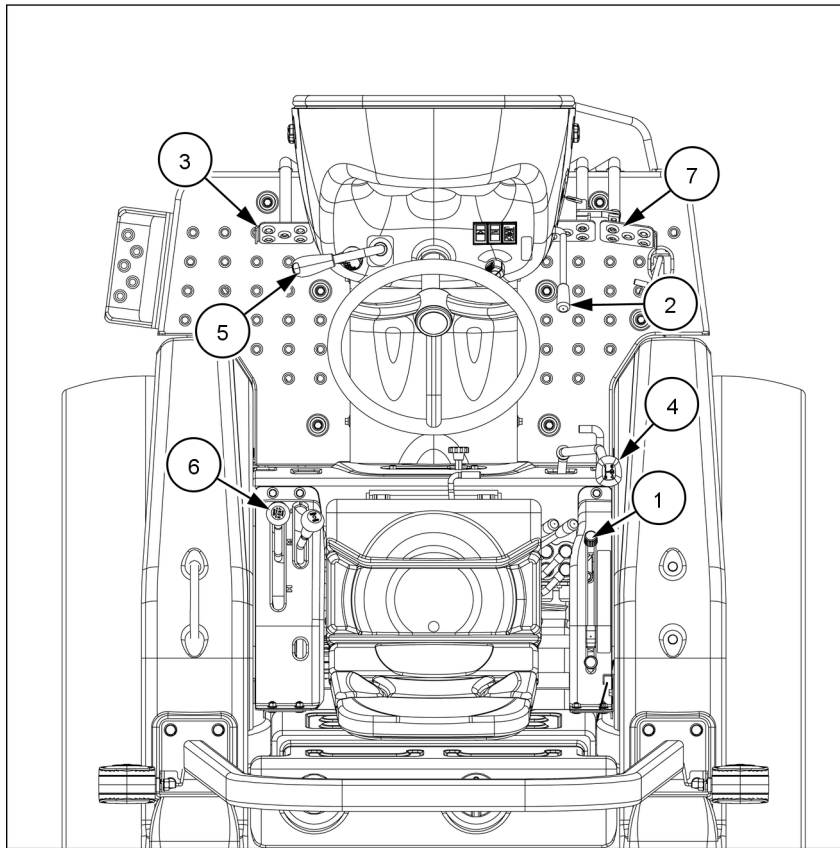
NHIL12CT00786AA 2



NHIL12CT00776AA 3



NHIL12CT01097AA 4



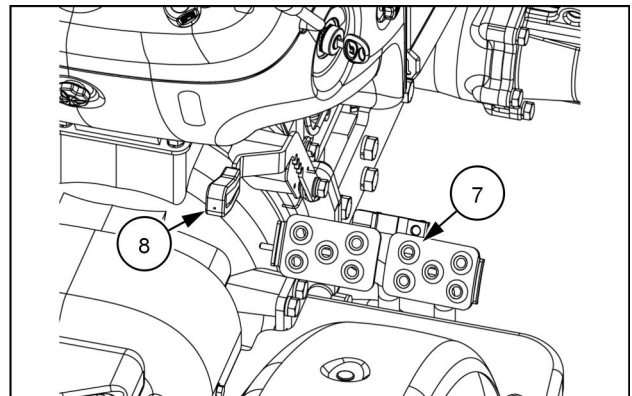
NHIL12CT00891GA 5

To operate the 12 x 12 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.

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

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



NHIL12CT00775AA 6

PARKING THE UNIT

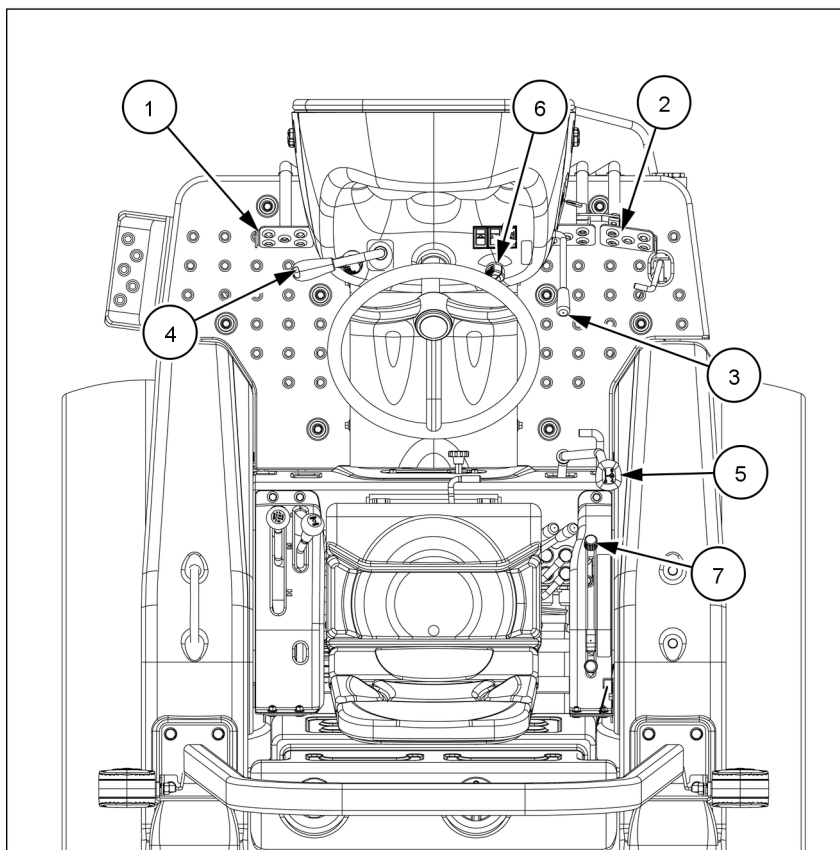
Brakes and controls - Park

⚠ WARNING

Avoid injury! Always do the following before lubricating, maintaining, or servicing the machine.

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

W0047A



NHIL12CT00891GA 1

Gear model

To park the tractor carry out the following procedures:

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

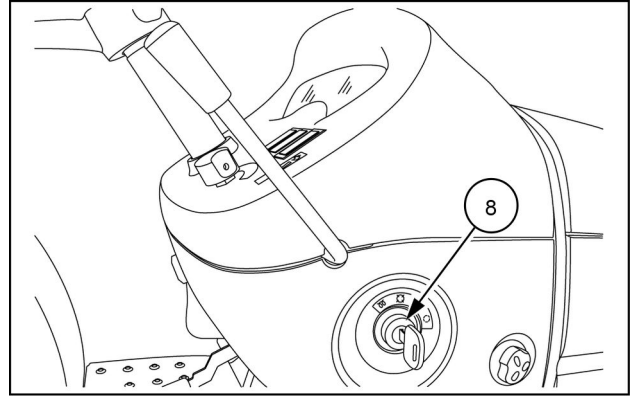
NOTE: Park the tractor on a level surface, if it is necessary to park on a slope, place the transmission in the lowest gear and place chocks or blocks in front

or behind the tires depending on the direction of the slope.

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

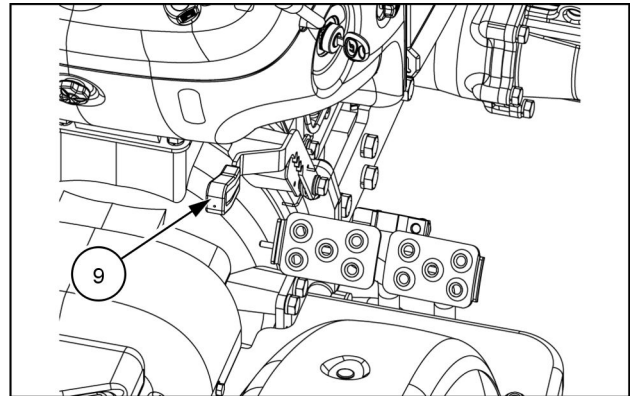
4 - OPERATING INSTRUCTIONS

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



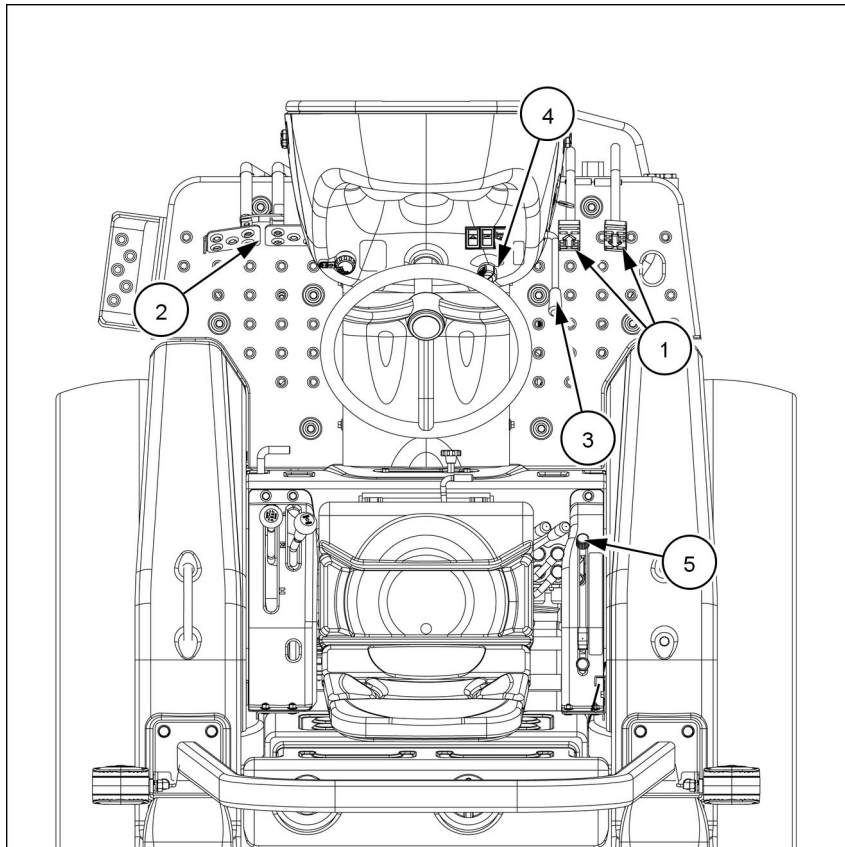
NHIL12CT00692AA 2

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



NHIL12CT00775AA 3

HST model



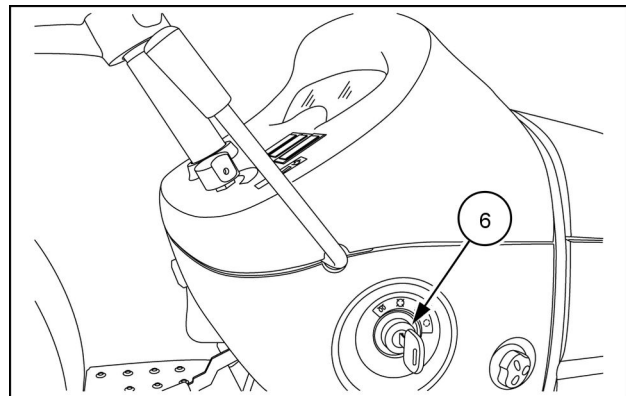
NHIL12CT00892GA 4

To park the tractor carry out the following procedures:

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

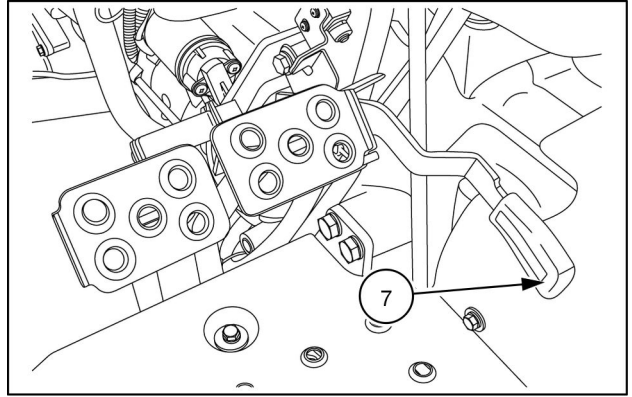
NOTE: Park the tractor on a level surface, if it is necessary to park on a slope, place the range gear shift lever in the lowest gear and place chocks or blocks in front or behind the tires depending on the direction of the slope.

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



NHIL12CT00692AA 5

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



NHIL12CT00691AA 6

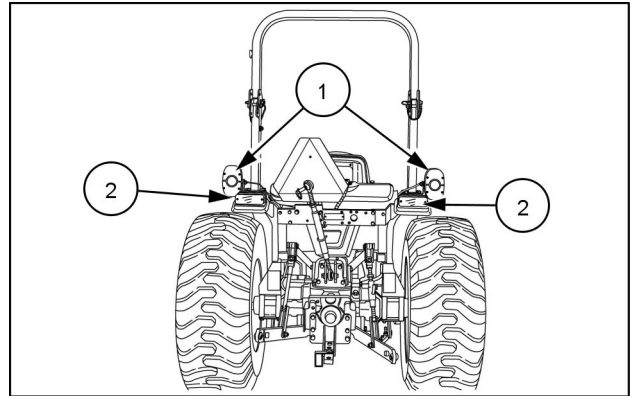
5 - TRANSPORT OPERATIONS

ROAD TRANSPORT

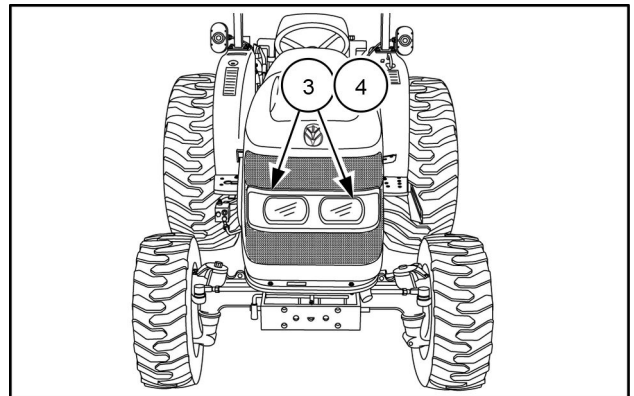
External lighting - Identification

Your tractor is equipped with:

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



NHIL12CT00671AA 1

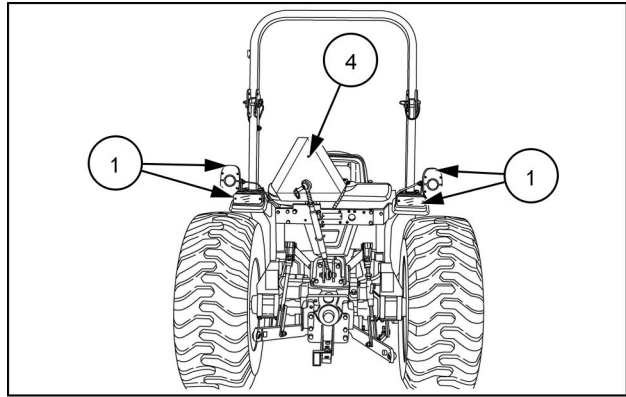


NHAC13CT00138AA 2

Hazard warning light operation

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

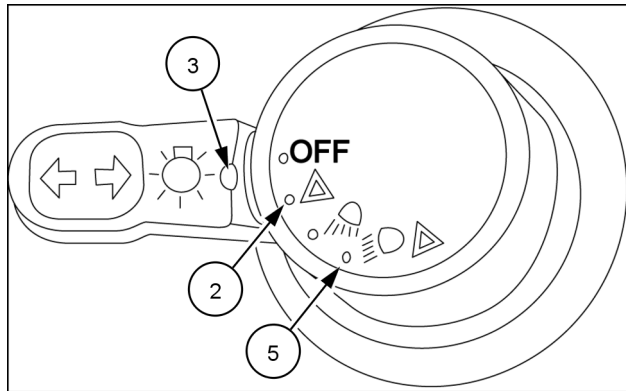
NOTE: The hazard lights can function with the key in any position.



NHIL12CT00671AA 1

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

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



93099370 2

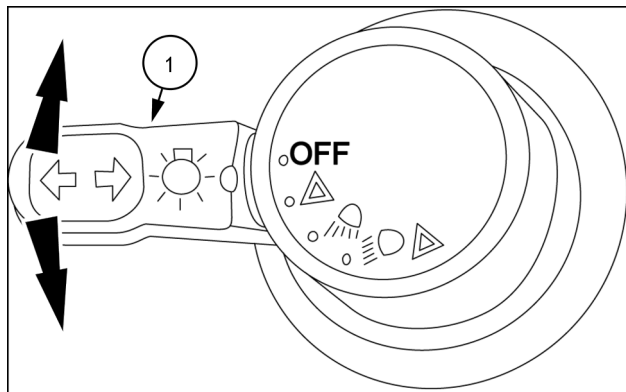
Turn signal operation

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

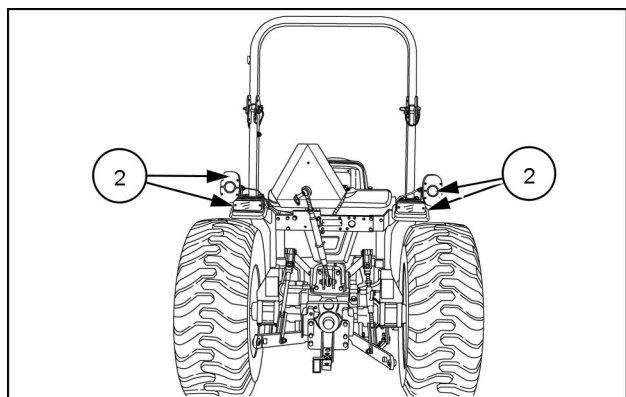
NOTE: The multifunction switch is located on the left-hand side of the dash panel.

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

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



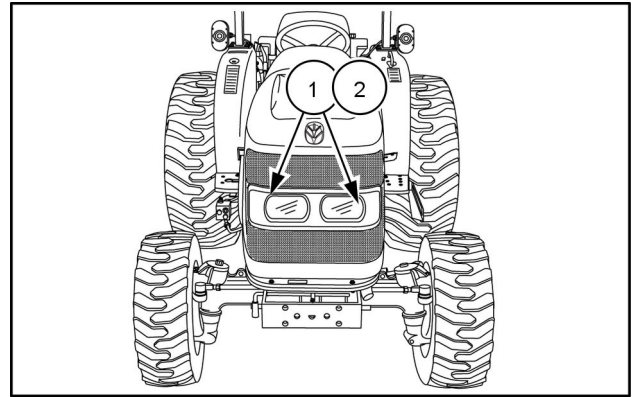
93099370 1



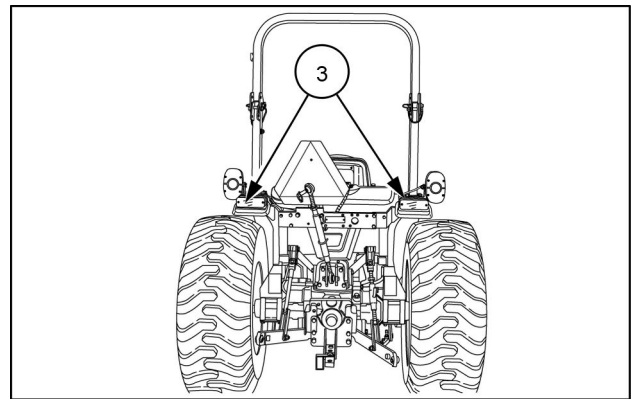
NHIL12CT00671AA 2

Road light/work light operation

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



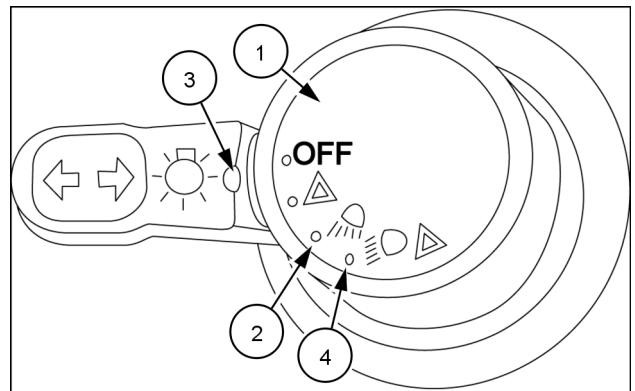
NHAC13CT00138AA 1



NHIL12CT00671AA 2

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

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

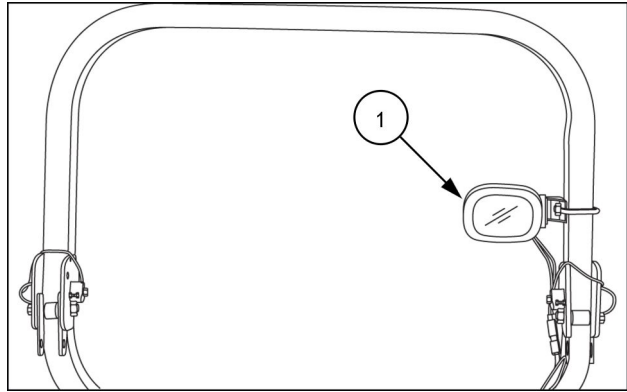


93099370 3

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

Rear work light (optional)

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

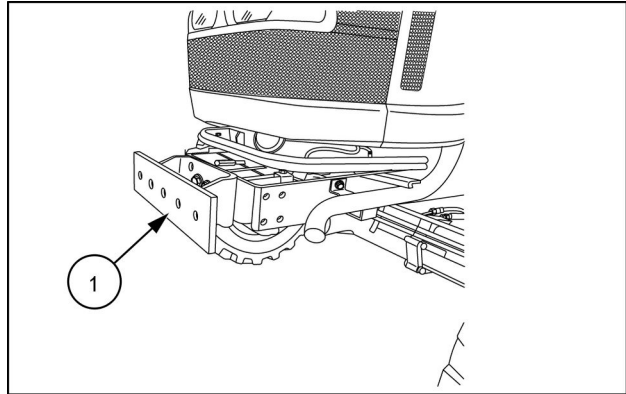
Tractor ballasting weights

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.



NHIL12CT00832AA 1

Weight options:

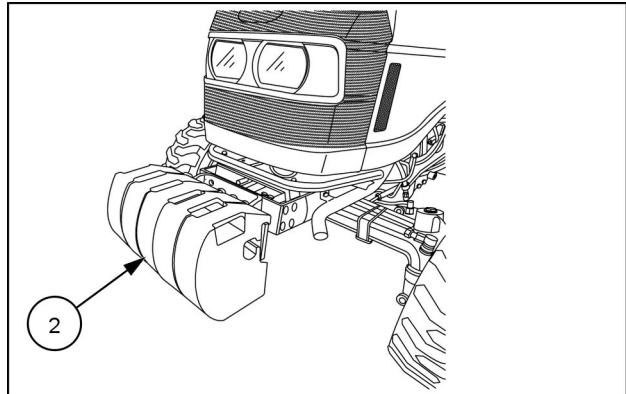
A maximum of five **27 kg (60 lb)** weights (2) for a total weight of **136 kg (300 lb)** .

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

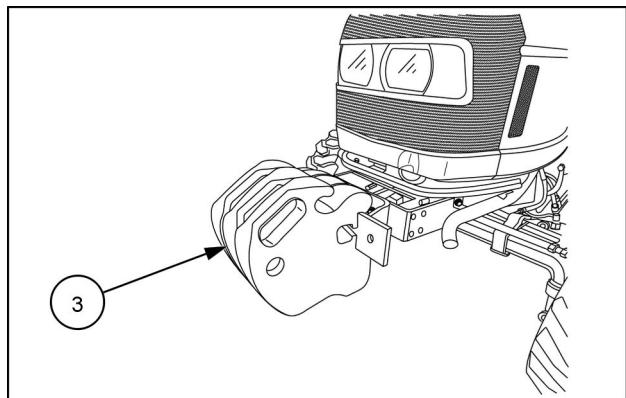
NOTE: The front extension mounting bracket with a maximum of three **27 kg (60 lb)** weights attached is compatible with a grille guard.

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

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



NHIL12CT00839AA 2



NHIL12CT00840AA 3

Rear wheel weights (Optional)

NOTE: The rear wheel weights are not available .

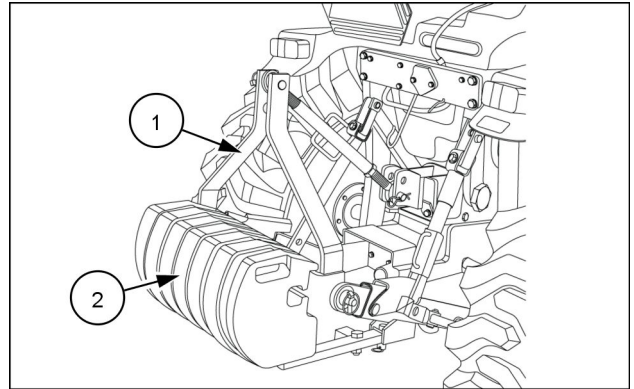
Rear counter weight bracket (Optional)

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

Weight options:

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

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

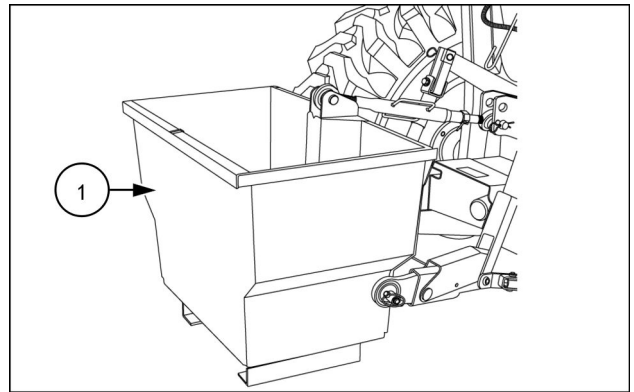


93100917 4

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	46 kg (101 lb)	228 kg (503 lb)



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 (CaCl₂) 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/CaCl₂.

Tire Type	Tire Size	Approximate Added Weight
Agricultural	11.2-24, 4PR, R1	115 kg (254 lb)
Turf	41 x 14.00-20, 4PR, R3	157 kg (346 lb)
Industrial (R4)	43 x 16-20 4PR, R4	234 kg (515 lb)

7 - MAINTENANCE

GENERAL INFORMATION

General information

▲ WARNING

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

W0012A

▲ WARNING

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

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

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

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

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

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

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

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

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

Grease Fittings

Wipe dirt from fittings before greasing.

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

Wipe off excess grease.

Use a grease gun containing clean high grade of **NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE.**

Safety rules

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

Biodiesel fuel - approved blend ratio

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.

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 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

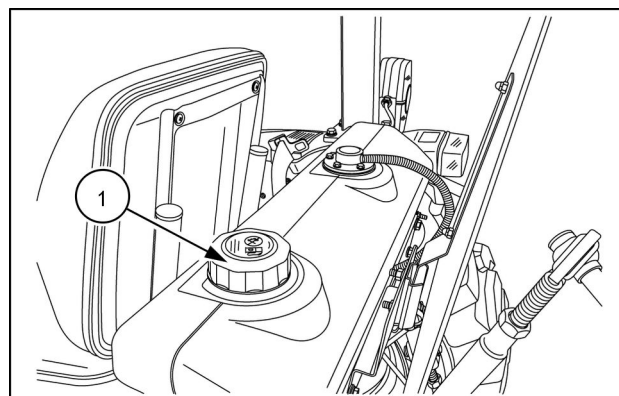
⚠ WARNING

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



NHIL12CT00683AA 1

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

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

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

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

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

Consumables

Lubricant	Type and Description	Part Number	Container Size
Engine Oil	NEW HOLLAND AMBRA SUPER GOLD 10W-30	9613313	0.946 l (1 US qt)
		86641052	3.785 l (1 US gal)
		9613314	18.93 l (5 US gal)
	NEW HOLLAND AMBRA SUPER GOLD 15W-40	86641081	0.946 l (1 US qt)
		86641084	3.785 l (1 US gal)
		86641083	18.93 l (5 US gal)
Transmission/Hydraulic Oil	NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL	9624451	18.93 l (5 US gal)
	NEW HOLLAND AMBRA F200A HYDRAULIC FLUID	86523625DS	18.93 l (5 US gal)
Front Axle/Gear Oil	NEW HOLLAND AMBRA HYPOIDE 90	9613295	0.946 l (1 US qt)
		9613294	9.46 l (2.5 US gal)
Grease	NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE	9613310	Tube 14 oz
Coolant	Ethylene Glycol Coolant Concentrate		

MAINTENANCE CHART

Maintenance Chart

Maintenance action	Grease				Adjust				Page no.
	Check	Change fluid	Replace	Tighten	Test	Cleaning			
						Drain fluid			
		Bleed							
Every 10 hours or daily									
Engine oil level									7-7
Engine cooling system									7-8
After first 50 hours									
Engine oil and filter									7-9
Fuel filter									7-10
Hydraulic oil filter									7-10
Hydrostatic (HST) oil filter									7-11
Roll Over Protective Structure (ROPS)									7-12
Wheels bolt/nut									7-13
Every 50 hours									
Grease fittings									7-14
Transmission fluid level									7-16
Wheels and tires									7-17
Clutch pedal free play									7-19
Hydrostatic Transmission (HST) neutral adjustment									7-19
Fan belt tension									7-22
Brake pedal free play									7-23
Front axle differential oil level									7-23
Air cleaner primary element									7-24
Every 100 hours									
Fuel filter water separator									7-25
Every 300 hours									
Engine oil and filter									7-26
Fuel filter									7-26
Hydraulic oil filter									7-26
Hydrostatic (HST) oil filter									7-26
Air cleaner primary element									7-27
Fan belt tension									7-27
Wheels bolt/nut									7-27
Roll Over Protective Structure (ROPS)									7-27
Every 600 hours									
Front axle differential fluid									7-28
Transmission and hydraulic fluid									7-29
Every 1000 hours									
Air filter inner safety element									7-31
Engine coolant									7-31
As required									
Fuel injection system									7-33
Fuel injectors									7-35
Hydrostatic Transmission (HST) neutral adjustment									7-36
Roll Over Protective Structure (ROPS)									7-38
Battery									7-39
Fuse identification									7-40
Maxi-fuse									7-41
Headlight									7-41

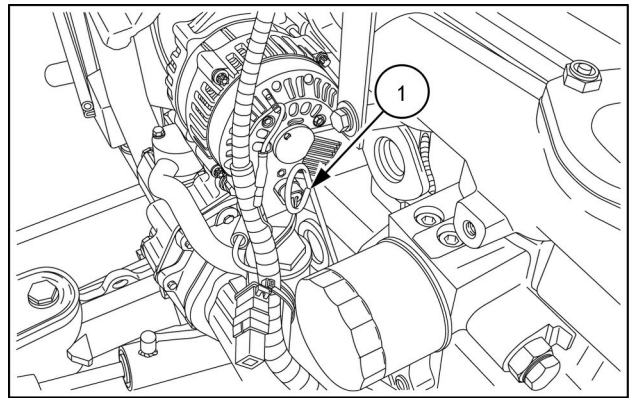
Maintenance action	Grease					Adjust					
	Tighten					Cleaning					
	Replace					Drain fluid					
	Change fluid					Bleed					
	Check					Test					
						Page no.					
Tail/brake light bulb											7-42
Turn signal/hazard light bulb											7-43
Front wheels toe-in											7-44
Brake pedal free play											7-45
Clutch pedal free play											7-46

Every 10 hours or daily

Engine oil level

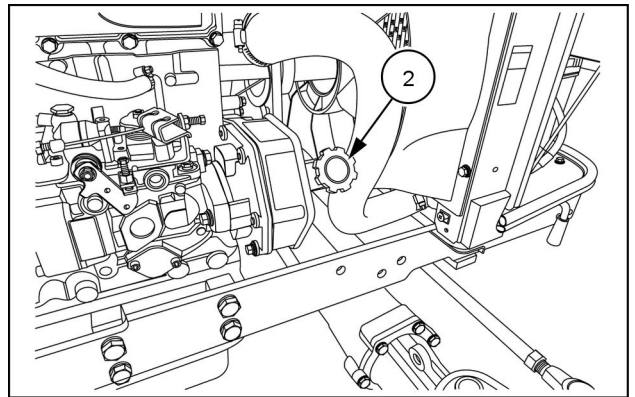
NOTE: Check the engine oil level daily or after every 10 hours of operation.

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



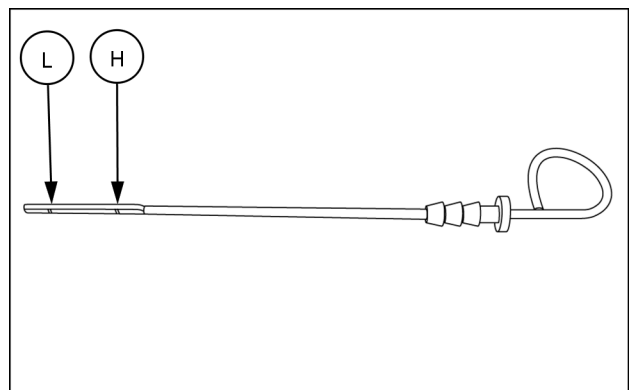
NHIL12CT00694 1

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



NHIL12CT00678AA 2

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



93100903 3

Engine cooling system

Cooling system

⚠ WARNING

Hot liquid under pressure!

Scalding can result from fast removal of the radiator cap. Check and service the engine cooling system according to the maintenance instructions in this manual.

Failure to comply could result in death or serious injury.

W0163A

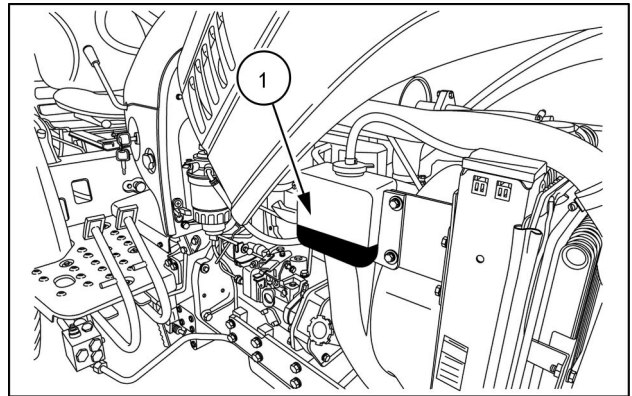
The tractor engine must operate at the correct temperature to obtain maximum efficiency and service life. This is dependent on the cooling system.

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

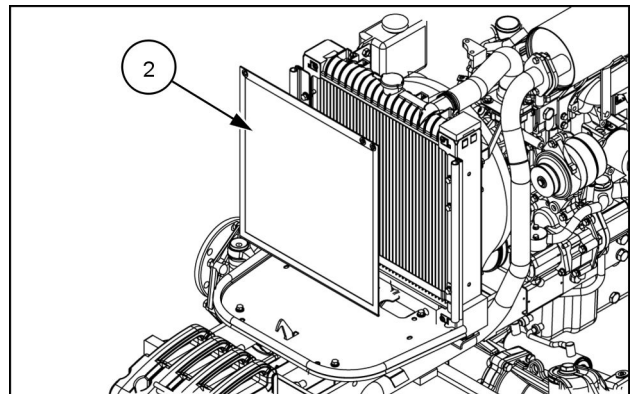
Checking the coolant level

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 "FULL" lines located on the side of the reservoir.
2. If the coolant level is not between the "LOW" and "FULL" 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.



NHIL12CT00679AA 1



NHIL12CT00782AA 2

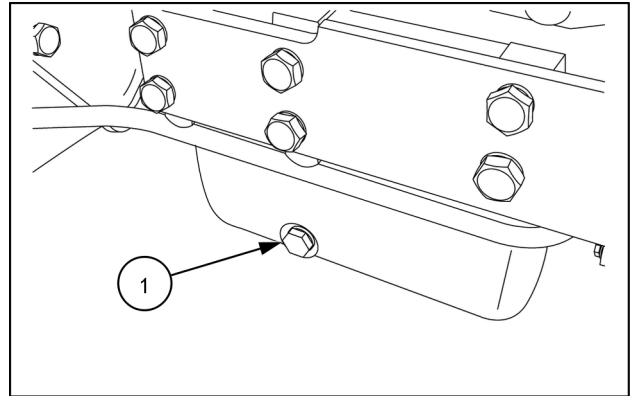
After first 50 hours

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:

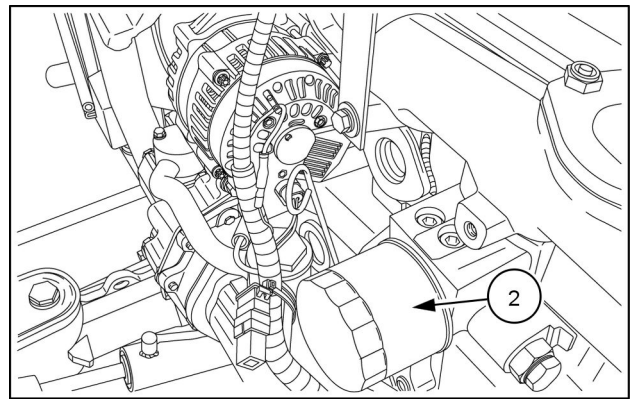
1. Place a suitable container beneath the drain opening to catch the used oil. With the tractor engine off but at normal operating temperature, remove the drain plugs, (1). Reinstall the plugs after all of the oil has been drained.



NHIL12CT00696AA 1

NOTE: There are two drain plugs in the oil pan, one on each side of the engine.

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.
4. Add the proper type and level of new oil, then start the engine and check the filter for leaks.



NHIL12CT00694 2

NOTE: Oil Capacity, with filter 6.5 l (6.9 US qt)

Recommended Oils

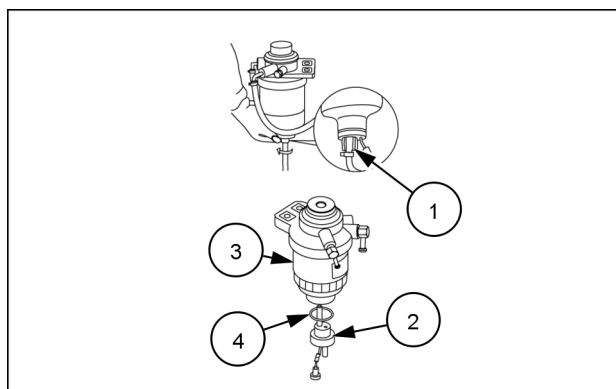
Ambient Temp (°F)	Recommended Oil
-12 - 49 °C (10 - 120 °F)	NEW HOLLAND AMBRA MASTERGOLD™ HSP ENGINE OIL SAE 15W-40
-23.3 - 49 °C (-10 - 120 °F)	NEW HOLLAND AMBRA MASTERGOLD™ HSP ENGINE OIL SAE 10W-30
-29 - 16 °C (-20 - 60 °F)	NEW HOLLAND AMBRA MASTERGOLD HSP SAE 5W-30
Oil Specification API CF-4 or CH-4	

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

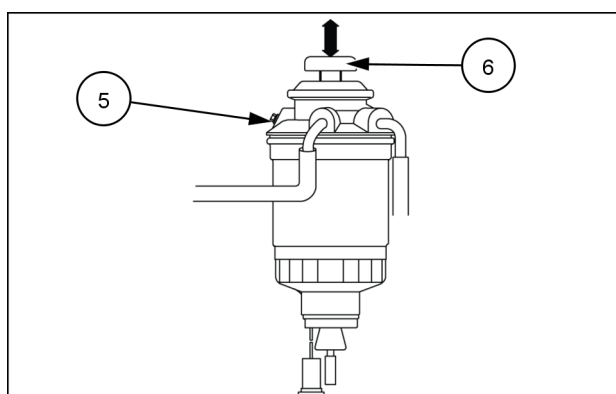
Fuel filter

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

1. Loosen fuel filter drain plug **(1)** and drain the fuel from the filter.
2. Disconnect the electrical connector from the fuel filter sensor **(2)**.
3. Remove the fuel filter element **(3)** from the filter base.
4. Remove the fuel filter sensor **(2)** from the original element and install sensor with O-ring **(4)** onto the 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 loosening the air bleed plug **(5)** and pressing the manual fuel feed pump **(6)** several times until the fuel flowing from the air bleed plug is free of any air bubbles.
9. Tighten the air bleed plug when air free fuel is flowing from the air bleed plug.



93100920 1



93100927 2

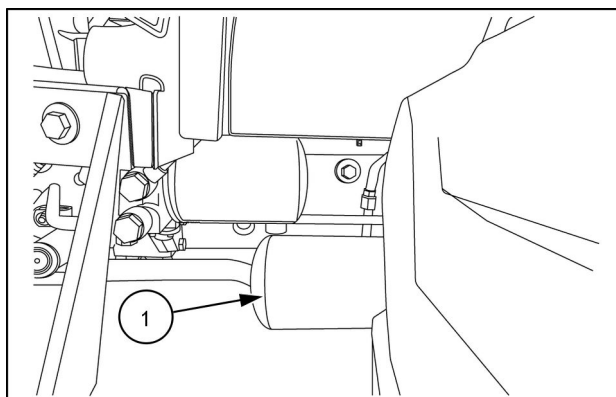
NOTE: There is not a fuel shutoff valve in the fuel system. To stop the fuel flow from the fuel tank, the fuel inlet hose to the fuel filter has to be removed from the fuel filter base and a plug installed or the fuel hose needs to be crimped shut to shutoff the fuel flow.

Hydraulic oil filter

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, located on the left side of the tractor underneath the operator's platform. To replace the filter **(1)**:

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



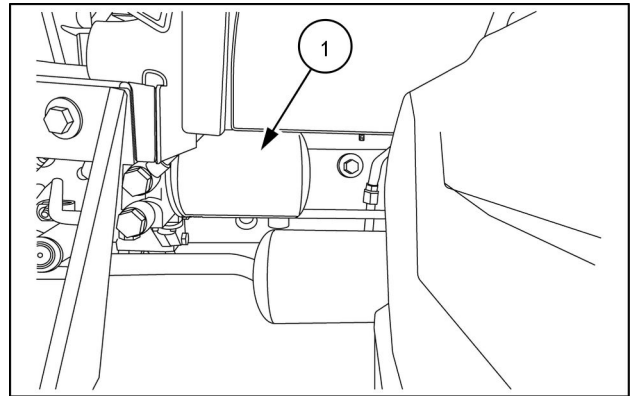
NHIL12CT00686AA 1

Hydrostatic (HST) oil filter

NOTE: Change the Hydro-Static Transmission (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, located on the left side of the tractor underneath the operator's platform. To replace the filter (1):

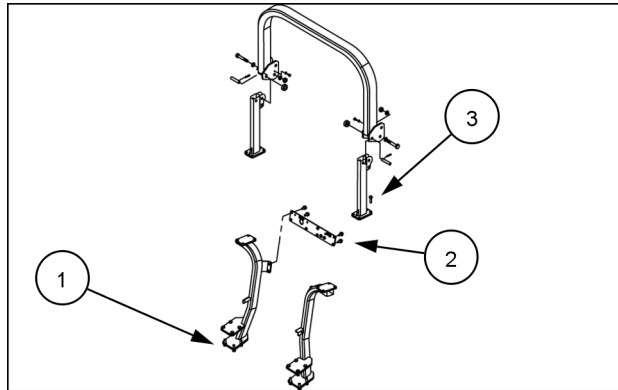
1. Unscrew the used oil filter and discard.
2. Coat the gasket on the new filter with a film of clean oil. Screw the filter into place until the gasket contacts the sealing surface, then tighten the filter by hand approximately three-quarters of a turn. Do not overtighten.
3. Start the engine and check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



NHIL12CT00686AA 1

Roll Over Protective Structure (ROPS)

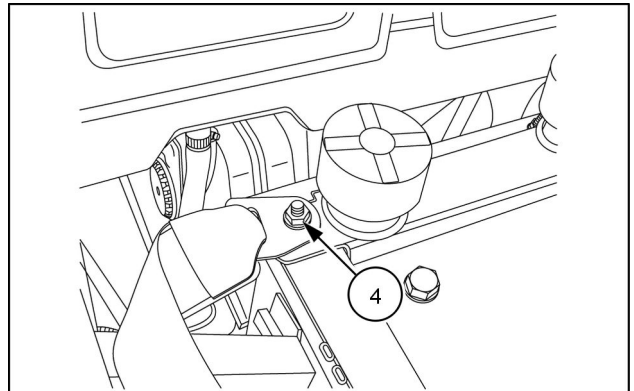
Maintenance and inspection



230100876 1

NOTE: Inspect the Roll Over Protection Structure - 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 top portion mounting bolts **(3)**. Tighten the M12, bolts to the correct torque of **83 N·m (61 lb ft)** if necessary.
4. Inspect the operator's seat and the mounting parts for the seat belt. Tighten the bolts **(4)** to the correct torque of **28 N·m (21 lb ft)** if necessary and replace any parts that show wear or damage.



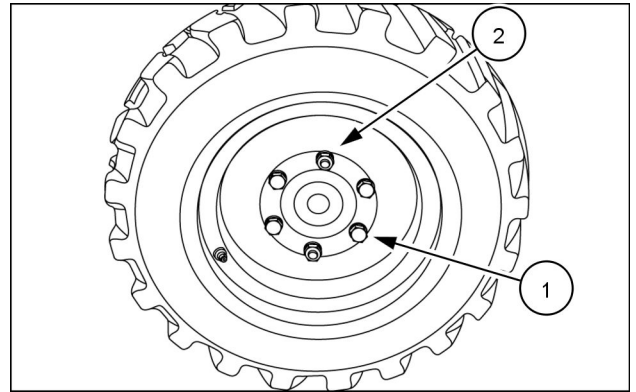
NHIL12CT00838AA 2

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)**



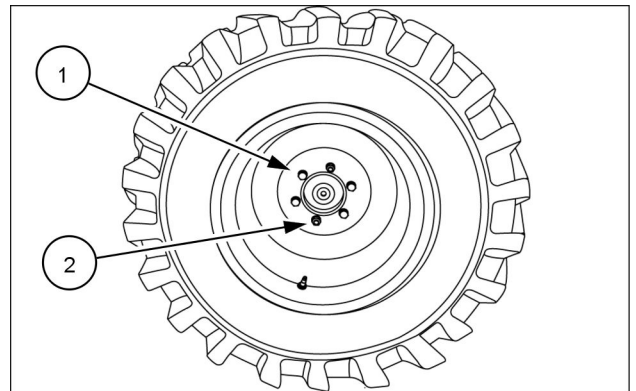
93100874 1

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



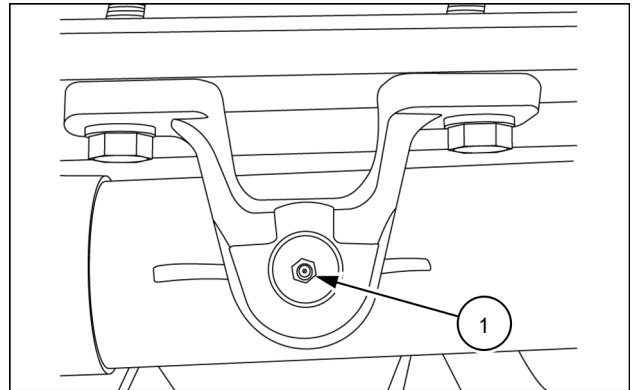
93100875A 2

Every 50 hours

Grease fittings

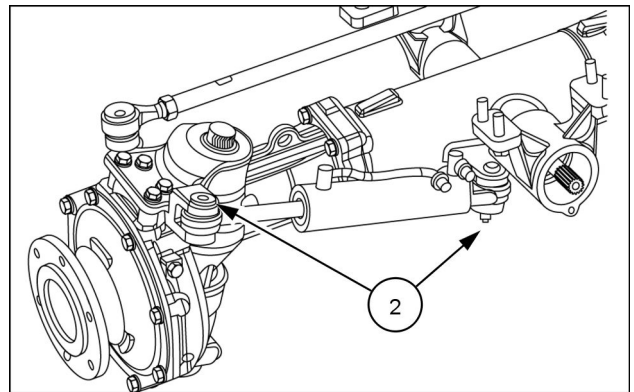
NOTE: After every 50 hours of normal operation, apply a good quality grease to the lubrication points listed below. When operating under extremely dirty conditions, lubricate more frequently than every 50 hours.

1. Front Axle Pivot (1)



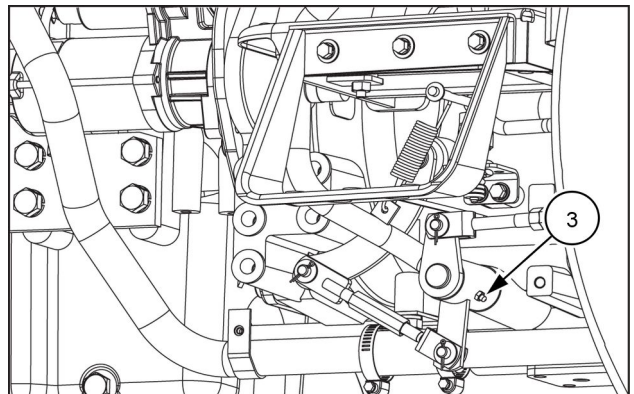
93100890 1

2. Power Steering Cylinder (2)



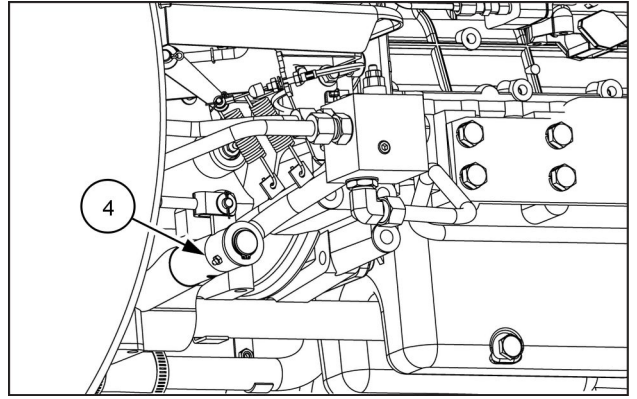
93100864 2

3. Clutch Pedal Shaft (3) (GEAR tractor)



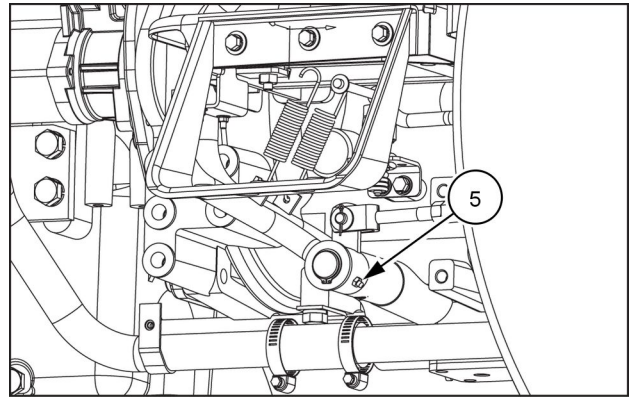
NHIL13CT00158AA 3

4. Brake pedals shaft **(4)** (GEAR tractor).



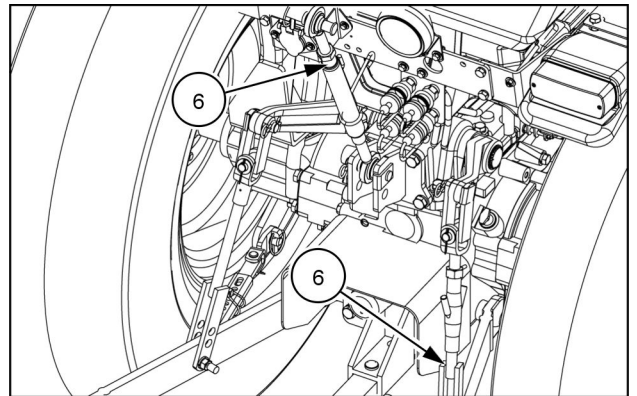
NHIL13CT00157AA 4

5. Brake pedals shaft **(5)** (HST tractor).



NHIL13CT00159AA 5

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



NHIL12CT00821AA 6

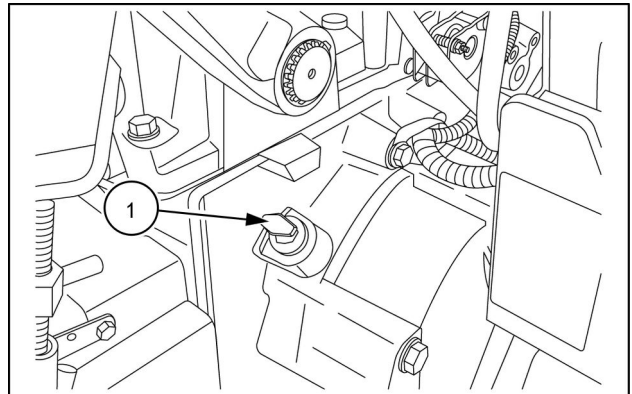
To lubricate these points:

7. Wipe away all old grease and dirt from the lubrication fittings to prevent dirt or foreign material from entering as new grease is applied.
8. Use a grease gun to pump in the new grease. Apply pressure until clean grease oozes from each lubrication point.
9. Wipe away any excess grease.

Transmission fluid level

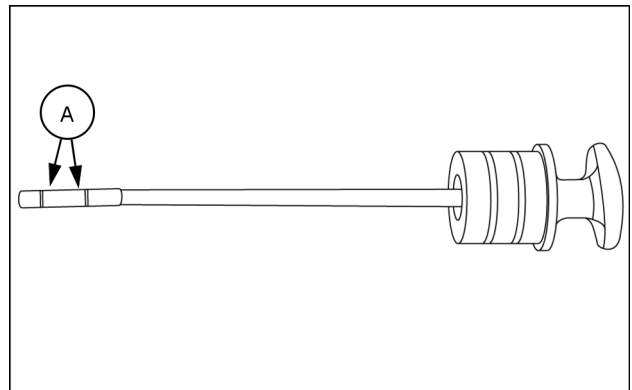
NOTE: Check the transmission, rear axle, and hydraulic system oil level after every 50 hours of operation.

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



NHIL12CT00684AA 1

2. The oil is at the correct level when it reads between the two marks (A) on the dipstick. If the level is low, add **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.



93100904 2

Wheels and tires

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 chart found in this manual. See **9-2**. If necessary, adjust the tire pressure, being careful not to overinflate 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, see the following:
 - **6-2**
 - **6-4**
 - **9-2**

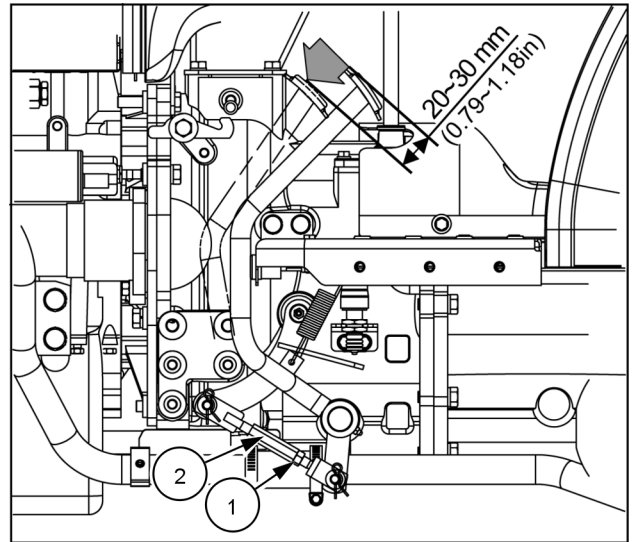
Clutch pedal free play

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.



NHIL12CT00783AA 1

Hydrostatic Transmission (HST) neutral adjustment

Checking HST return to "NEUTRAL"

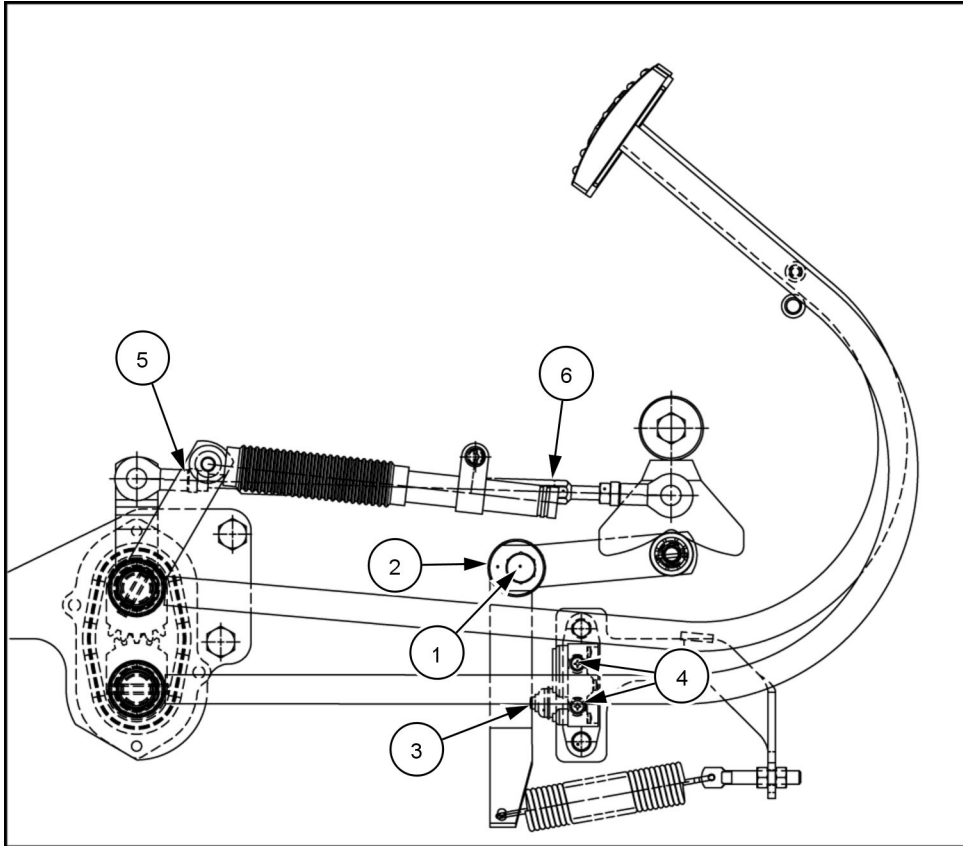
1. Place range gear in "LOW" range and engine speed at high idle position.
2. Drive tractor in forward and reverse, remove foot from HST pedal. Tractor should stop and rear wheels should not rotate when pedals are at "NEUTRAL" position.
3. If rear wheels rotate when HST pedals are in the "NEUTRAL" position,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



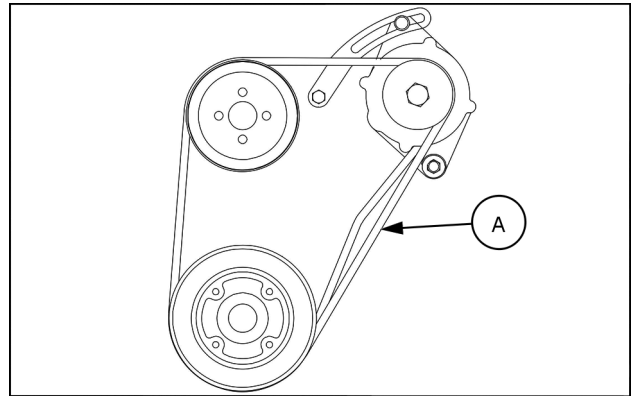
NHIL12CT00784AA 1

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)**.
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.

Fan belt tension

NOTE: Check the condition of the fan belt after every 50 hours of operation. Check fan belt tension after every 300 hours of operation.

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



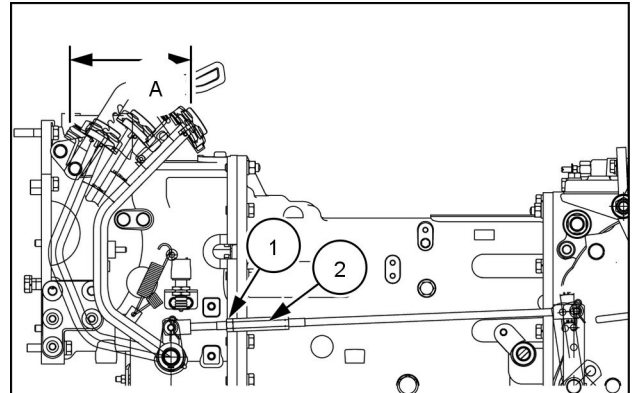
NHIL12CT00890AA 1

Brake pedal free play

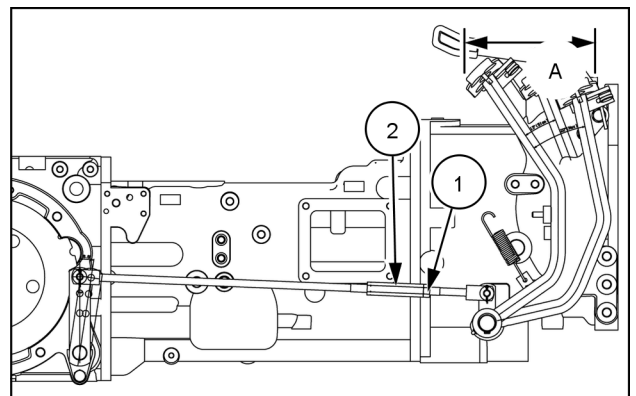
Whenever brake pedal travel becomes excessive, or if the travel of one pedal is unequal to that of the other, each pedal should be adjusted.

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

NOTE: Note HST tractor is in Figure 1 and Gear tractor is in Figure 2.



NHAC13CT00055AA 1

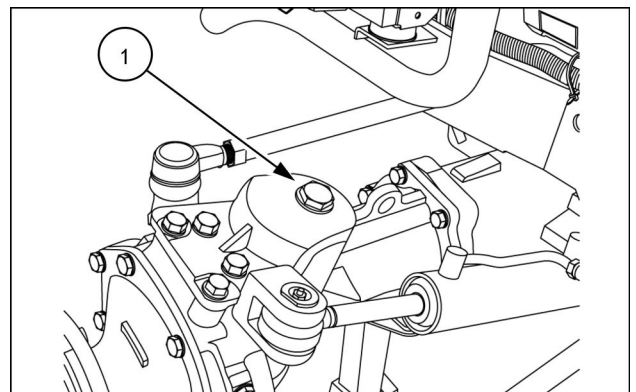


NHAC13CT00139AA 2

Front axle differential oil level

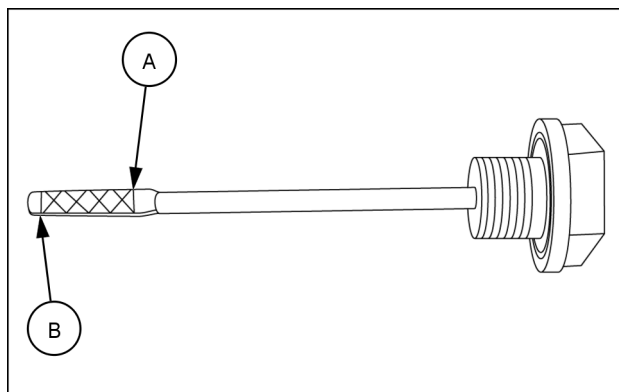
NOTE: Check the front axle differential case and final reduction gear case oil level after every 50 hours of operation.

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 HY-POIDE 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/cm² (30 psi)** or less). Blow dust from the inside to the outside of the element (opposite to normal air flow through element).

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

3. After cleaning the element, check the inner diameter seals for damage. If damage is present, replace the 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.

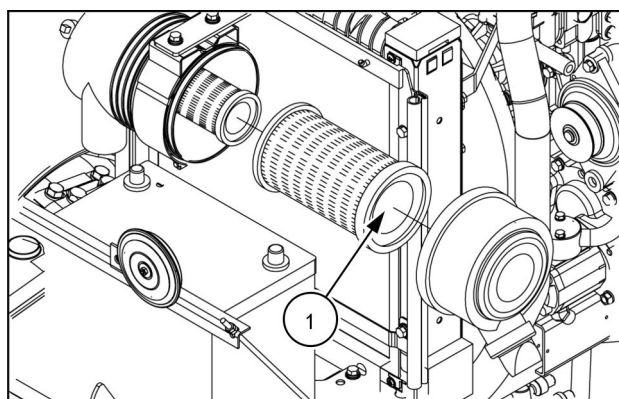
NOTE: Place a light inside the element to check for paper leaks or for bonding of the paper to the end plate. If any leaks are found, replace the element.

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.



NHIL12CT00781AA 1

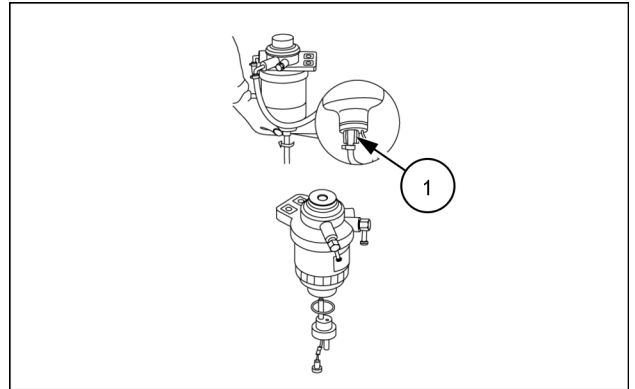
Every 100 hours

Fuel filter water separator

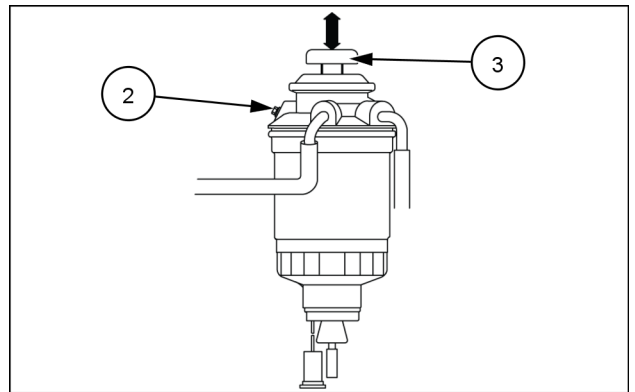
NOTE: The fuel filter should be drained after every 100 hours of operation.

1. Make sure there is adequate fuel in the fuel tank. Loosen filter drain plug (1) and drain water from inside of the filter.
2. Tighten drain plug when only fuel flows from the filter base.

3. Bleed the air from the fuel filter, by loosening the air bleed plug (2) and pressing the manual fuel feed pump (3) several times until fuel flowing from the air bleed plug is free of any air bubbles.
4. Tighten the air bleed plug when air free fuel is flowing from the air bleed plug.



93100920 1



93100927 2

Every 300 hours

Engine oil and filter

See page 7-9.

Fuel filter

See page 7-10.

Hydraulic oil filter

See 7-10.

Hydrostatic (HST) oil filter

See 7-11.

Air cleaner primary element

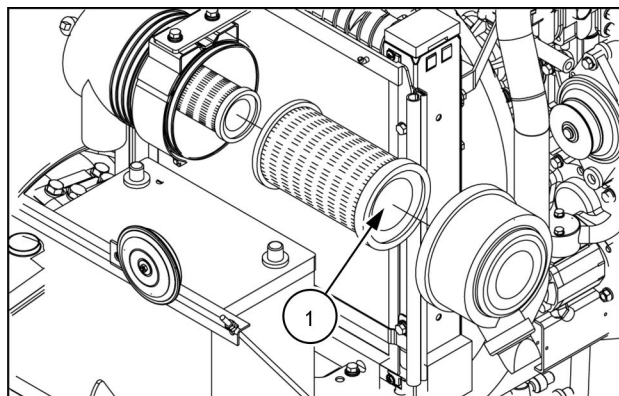
NOTE: Replace the primary element after every 300 hours of service. Extremely dusty conditions may require more frequent service intervals.

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.



NHIL12CT00781AA 1

Fan belt tension

To adjust fan belt tension:

⚠ WARNING

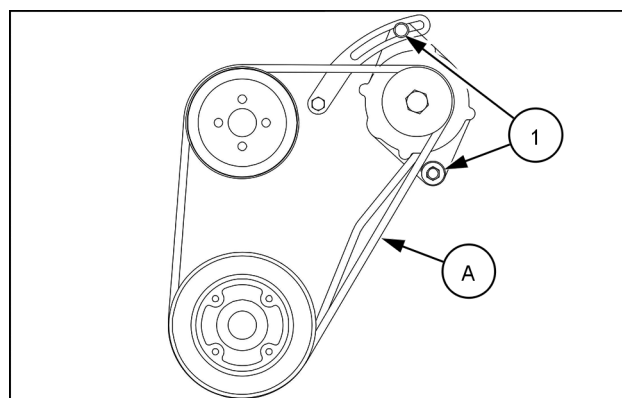
Maintenance hazard!

The engine must be OFF when you loosen or tighten alternator mounting bolts.

Failure to comply could result in death or serious injury.

W1096A

1. Loosen the alternator mounting bolts (1).
2. Pry the alternator away from the engine and tighten the mounting bolts.
3. Recheck belt deflection (A).



NHIL12CT00890AA 1

Wheels bolt/nut

See page 7-13.

Roll Over Protective Structure (ROPS) - Maintenance and inspection

See 7-12

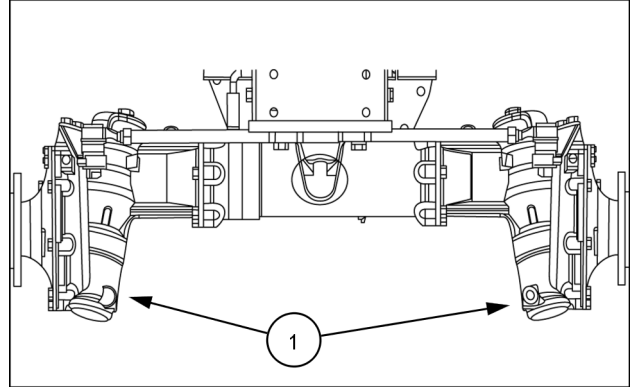
Every 600 hours

Front axle differential fluid

Changing front axle differential and final reduction gear case oil

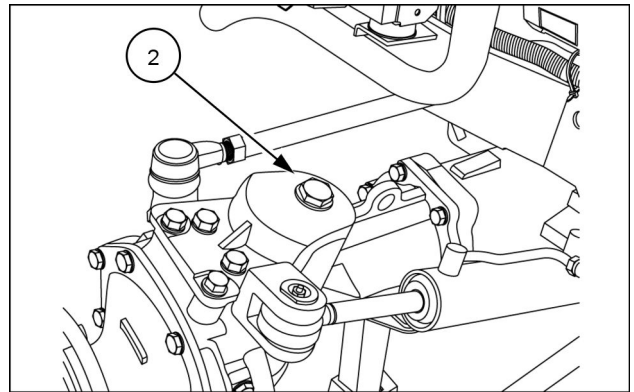
NOTE: The front axle differential case and final reduction gear case oil should be changed after every 600 operating hours.

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.



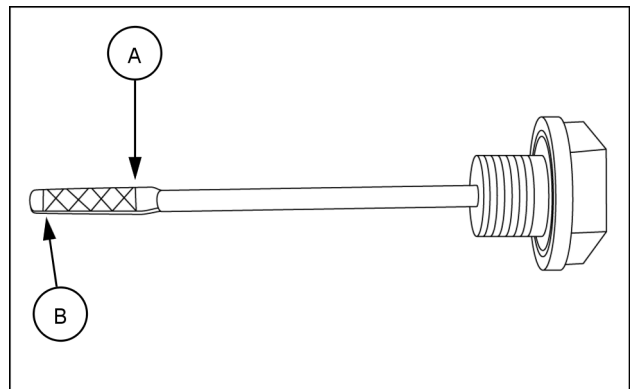
93100868 1

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



93100889 2

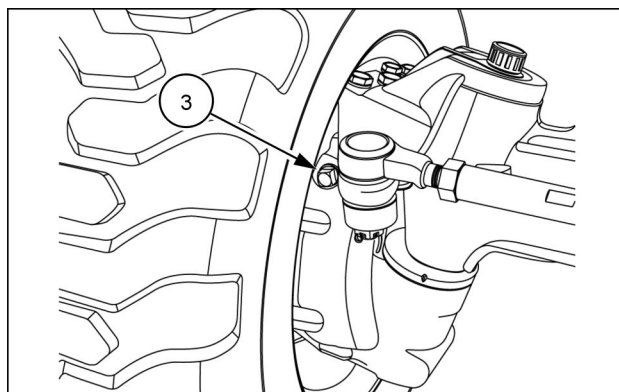
3. Fill the axle with **NEW HOLLAND AMBRA HYPOIDE 90** oil until the oil level is between the upper mark **(A)**, and the lower mark **(B)** of the dipstick. Reinstall the dipstick/filler plug.



93100902 3

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



93110428 4

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

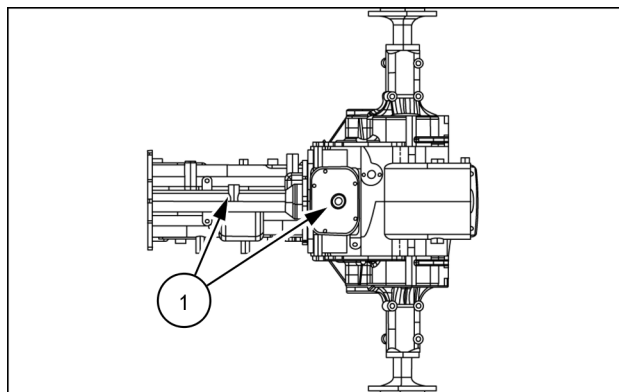
Transmission and hydraulic fluid

Changing the transmission, rear axle and hydraulic system oil

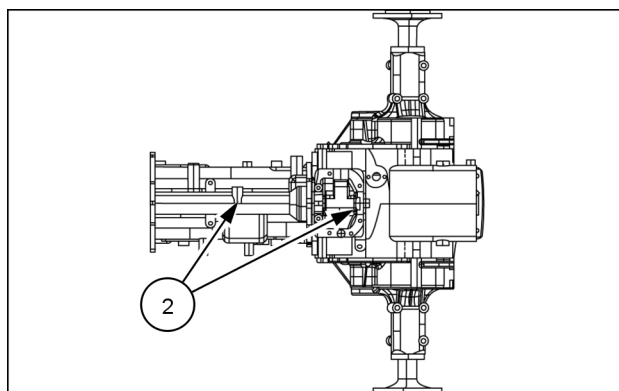
NOTE: Change the transmission, rear axle, and hydraulic system oil after every 400 hours of operation.

NOTE: During cold weather operation, tractor hydraulic oil can be changed to New Holland F200. The F200 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.



93100871 1



93100872 2

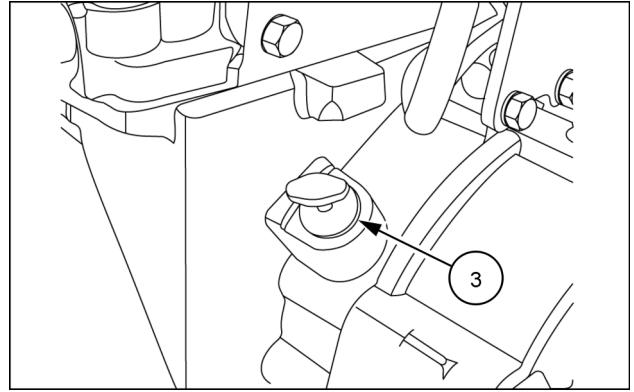
- Remove the dipstick (3) and fill with **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil. The transmission is filled to the correct level when the oil registers between the two marks on the dipstick.

Capacity:

- Gear transmission **30.0 l (7.9 US gal)**
- HST transmission **30.0 l (7.9 US gal)**

- 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 filter inner safety element

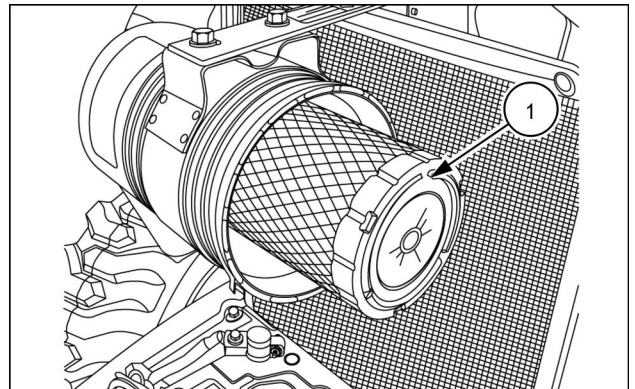
NOTE: For maximum engine protection and air cleaner service life, install a new inner safety element (2) every third primary element change or after every 1000 h of operation, whichever comes first.

1. Remove the air filter primary element (1) to gain access to the inner safety element (2).
2. The air cleaner inner safety element (2) 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.
3. To remove the inner safety element, pull element out of the canister body.

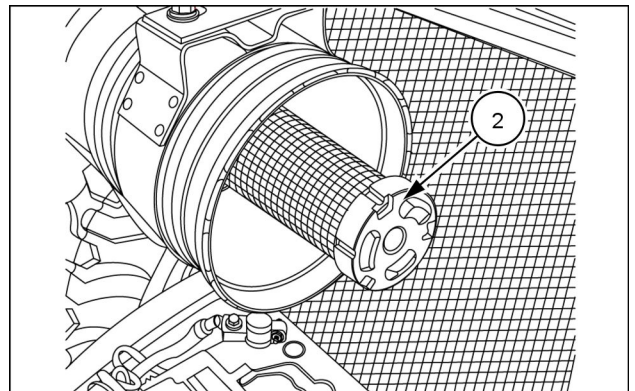
NOTICE: Clean any dirt from the canister before installing the inner safety element. Check element inner diameter seals for damage and replace the safety element if seal damage is present.

4. To install the new inner safety element, push element into the canister until seated.

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



93099358 1



93099359 2

Engine coolant

Draining and flushing the cooling system

▲ WARNING

Burn hazard!

Always remove the recovery tank cap BEFORE you remove the filler cap. Never remove either cap while the engine is running or the coolant is hot. Stop the engine and let the system cool. Using a thick cloth, loosen the cap slowly and allow the pressure to escape.

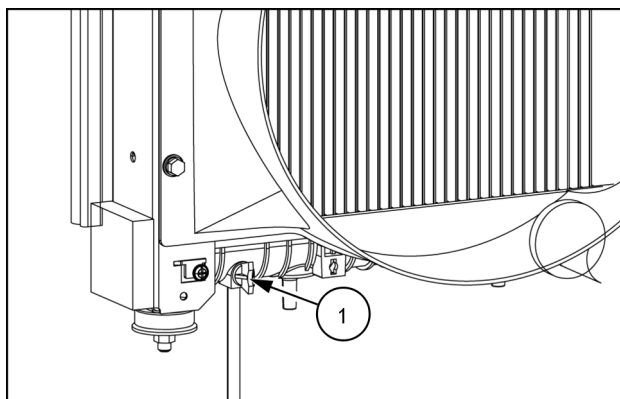
Failure to comply could result in death or serious injury.

W0361A

NOTE: Drain and flush the radiator and engine block every 12 months. Refill with a 50/50 mixture of permanent antifreeze and clear water.

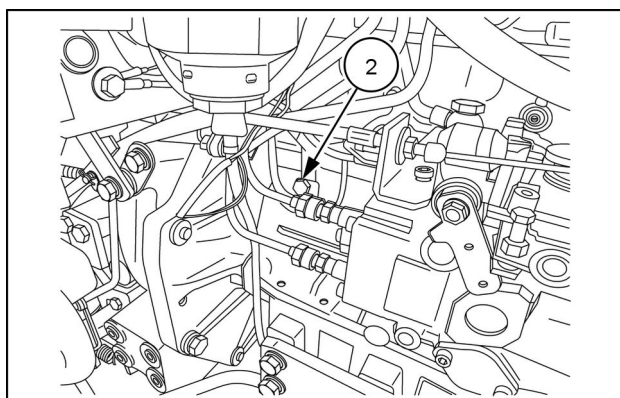
To drain the cooling system:

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.



NHIL12CT00827AA 1

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.



NHIL12CT00835AA 2

NOTE: Coolant system capacity is: 5.0 l (1.3 US gal)

4. Clean the radiator cap and cap seal and install the cap.
5. 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.

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.

As required

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!

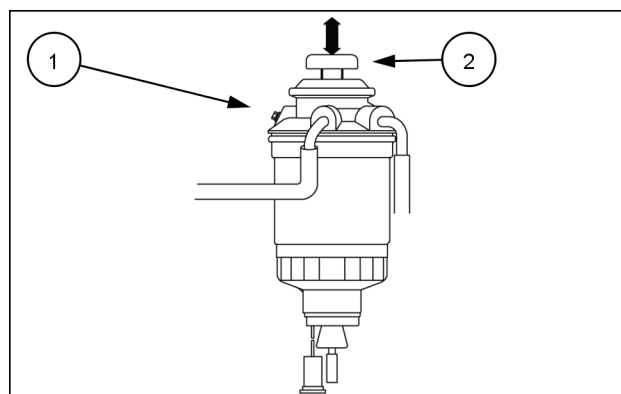
Hydraulic fluid or diesel fuel leaking under pressure can penetrate the skin and cause infection or other injury. To prevent personal injury: Relieve all pressure before disconnecting fluid lines or performing work on the hydraulic system. Before applying pressure, make sure all connections are tight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

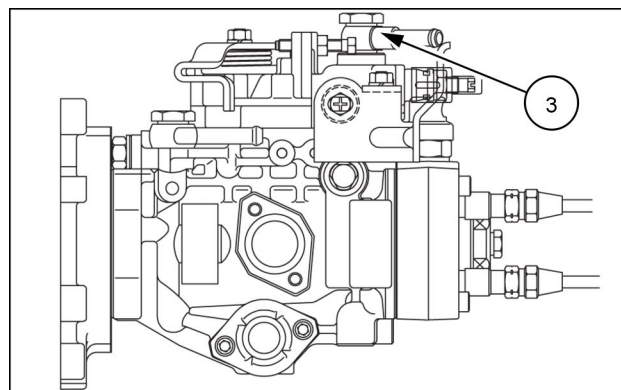
To bleed the fuel system:

1. Make sure there is adequate fuel in the fuel tank.
2. Bleed the air from the fuel filter, by loosening the air bleed plug (1) and pressing the manual fuel feed pump (2) several times until the fuel flowing from the air bleed plug is free of any air bubbles.
3. Tighten the air bleed plug when the air free fuel is flowing from the air bleed plug.
4. After the air is bled from the fuel filter, the fuel injection pump needs to be bled for air.

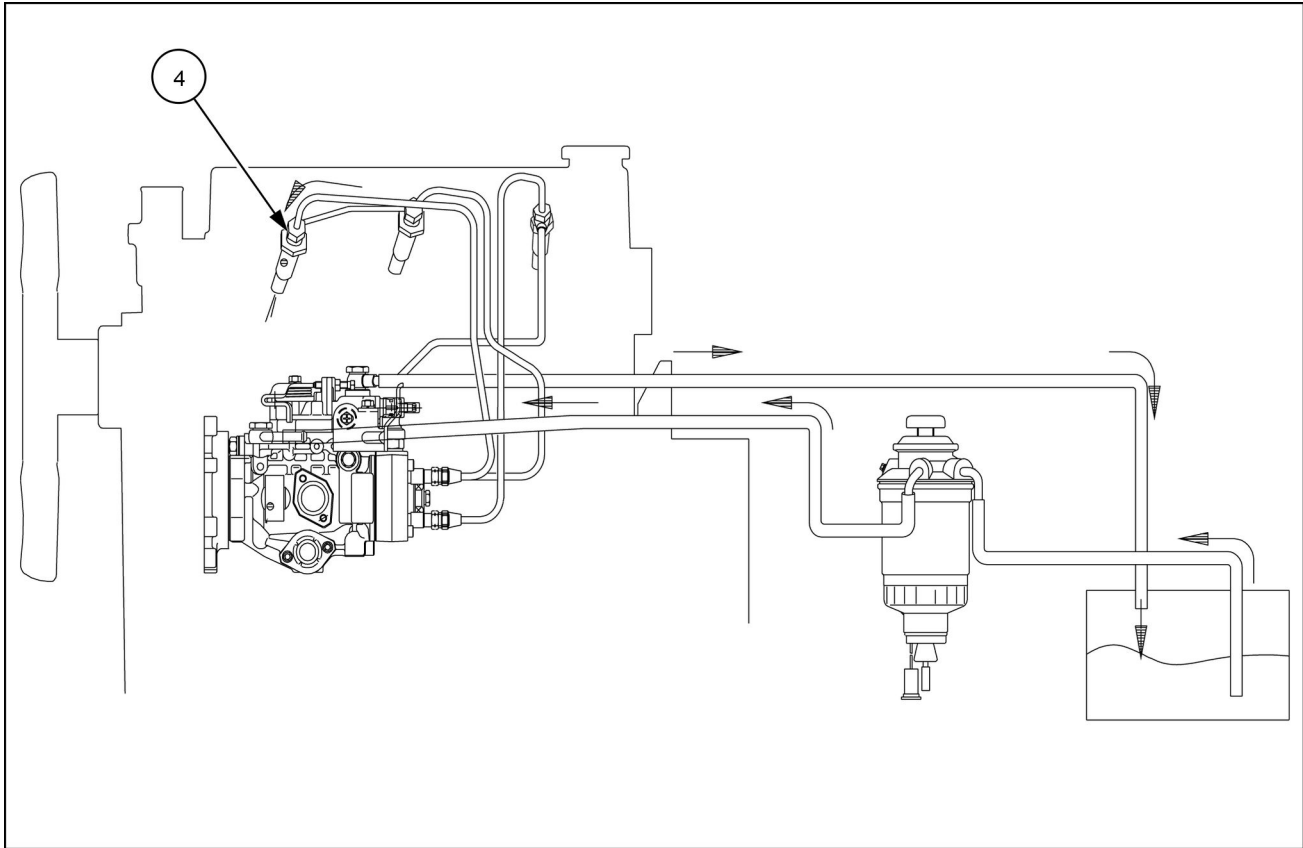


93100927 1

5. To bleed fuel injection pump:
6. Using a wrench, loosen the fuel injection pump bleed banjo bolt (3) continue loosening the banjo bolt by hand (without using wrench) until the bolt stops turning.
7. Place the key switch to the "ON" position.
8. Fuel flowing from the banjo bolt should be free of any air bubbles.
9. When air free fuel is present tighten banjo bolt and place the key switch in the "OFF" position.
10. Tighten banjo bolt to **20 - 29 N·m (14.5 - 22 lb ft)** of torque.



93100928 2



NHIL12CT00788AA 3

11. To bleed individual fuel injectors:
12. Loosen injector line nut **(4)**, one injector at a time. Crank the engine with the starter until fuel flows from around the injector nut without any air bubbles present. Tighten nut and proceed to next injector.

Fuel injectors - Bleed

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.

⚠ WARNING

Escaping fluid!

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

Failure to comply could result in death or serious injury.

W0178A

⚠ WARNING

Burn hazard!

Exhaust surfaces are hot! Always wear protective gloves when cleaning or working on the muffler, catalytic converter, or exhaust stack.

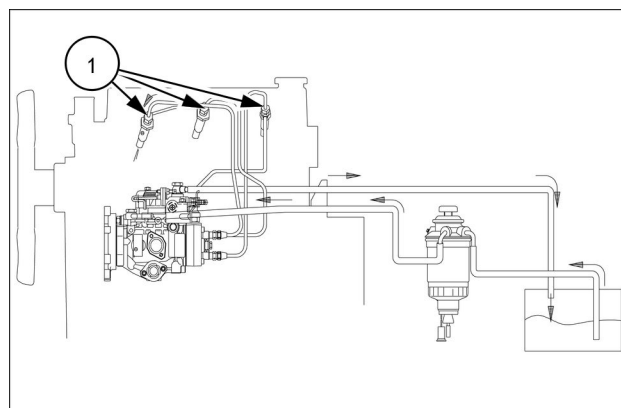
Failure to comply could result in death or serious injury.

W0329A

To bleed the injector lines:

1. Loosen the injector line fittings, (1), at the injectors.
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.



NHIL12CT00788AA 1

Hydrostatic Transmission (HST) neutral adjustment

Checking HST return to "NEUTRAL"

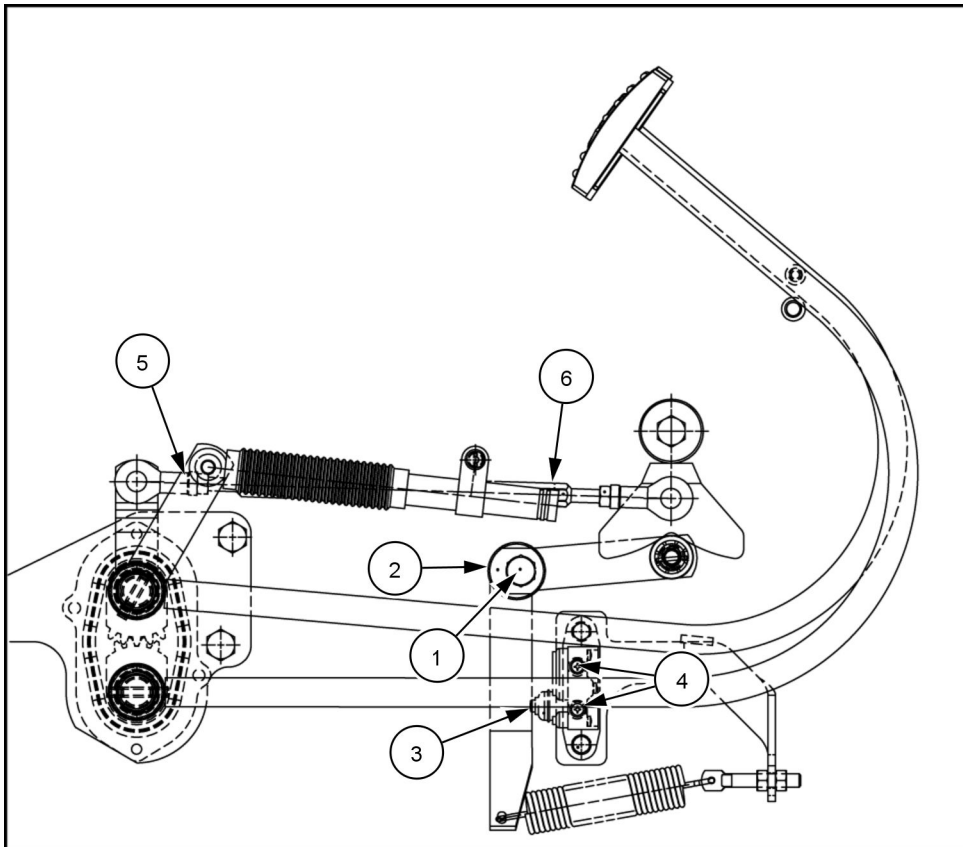
1. Place range gear in "LOW" range and engine speed at high idle position.
2. Drive tractor in forward and reverse, remove foot from HST pedal. Tractor should stop and rear wheels should not rotate when pedals are at "NEUTRAL" position.
3. If rear wheels rotate when HST pedals are in the "NEUTRAL" position,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



NHIL12CT00784AA 1

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)**.
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.

Roll Over Protective Structure (ROPS) - 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.

 **WARNING** 

Always pull from the drawbar. **DO NOT** attach chains or ropes to the 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 ROPS. Failure to comply could result in death or serious injury.

M1415

 **WARNING** 

If the ROPS is removed or replaced, install the proper hardware and tighten to correct torque listed in maintenance section of operator's manual. Failure to comply could result in death or serious injury.

M1462

 **WARNING** 

Always use the seat belt with a safety cab or Roll Over Protective Structure (ROPS) frame installed. If tractor is not equipped with a safety cab or ROPS, do not use a seatbelt. Failure to comply could result in death or serious injury.

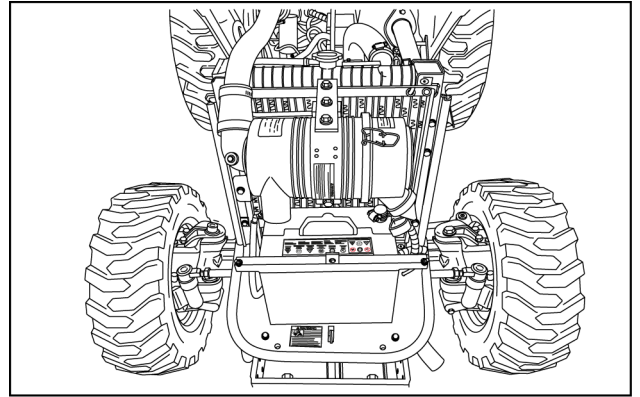
B050A

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.

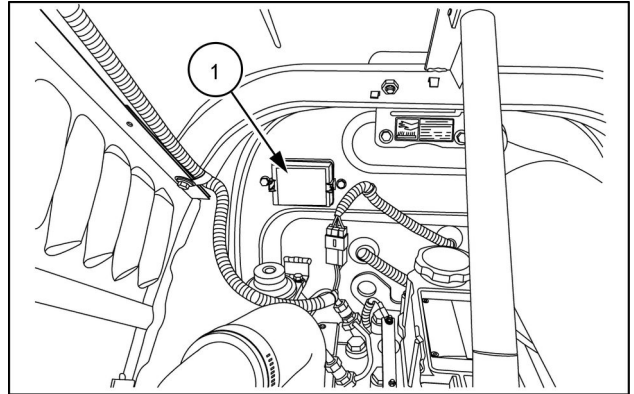
In freezing temperatures, a good battery charge must be maintained. If the battery becomes discharged or run down, the electrolyte becomes weak and may freeze, causing damage to the case. If you must add water, use distilled water. Add the water just before using the tractor so that the water will mix with the electrolyte during the charging process, thus preventing the water from freezing. To determine the battery charge, check the specific gravity of the electrolyte.



NHIL12CT00675AA 1

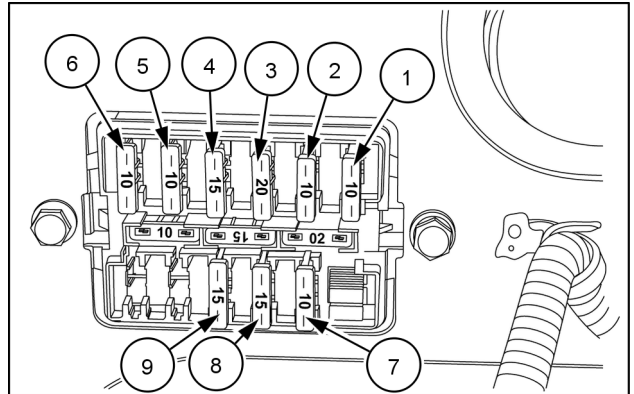
Fuse identification

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



NHIL12CT00676AA 1

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

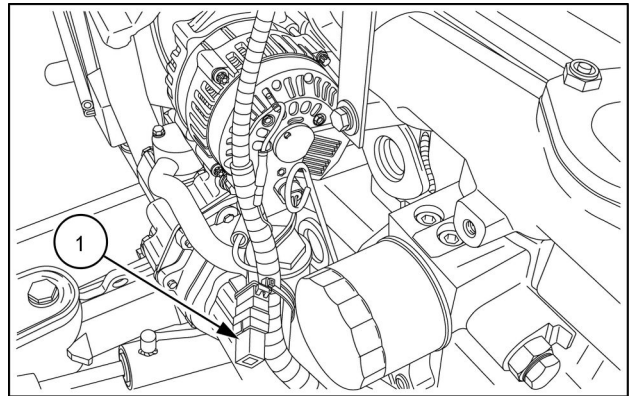


NHIL12CT00685AA 2

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

Maxi-fuse

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



NHIL12CT00694 1

To replace the main fuse:

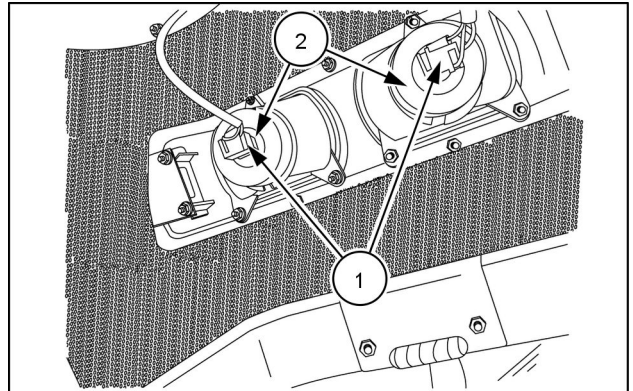
1. Remove the old fuse from the fuse holder and replace.

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

Headlight

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

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



NHIL12CT00834AA 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.

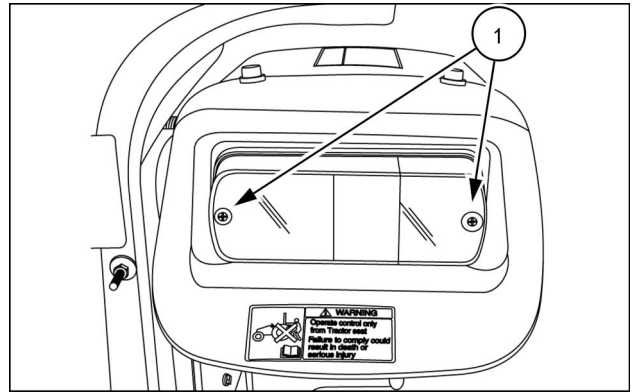
NOTE: Replacement bulbs are dual **55/60 W** filament halogen : (H4 U 37R).

7. Reinstall rubber boot and wire harness connector.

Tail/brake light bulb

To replace a taillight bulb:

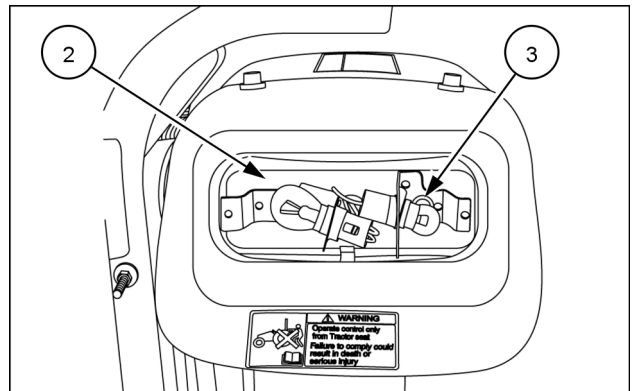
1. Remove the two screws (1) retaining the taillight lens and remove the lens.



93100887 1

2. Push in on the brake/tail light bulb (2) or turn signal bulb (3) and rotate counter-clockwise in the socket to remove the old bulb.
3. Insert the new bulb into the socket and turn the bulb in a clockwise direction until tightened.

NOTE: Replace brake/tail bulb with a P21/5 watt bulb. and turn signal bulb with a R10 watt bulb

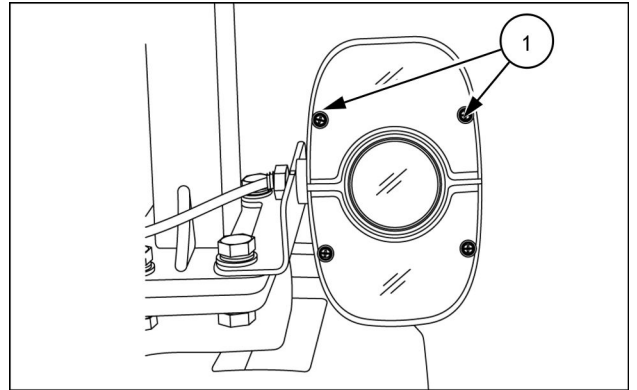


93100888 2

Turn signal/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.

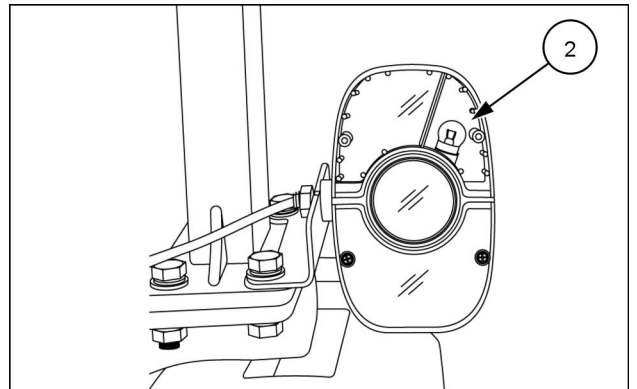


93100885 1

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

NOTE: Replace with a P21 watt bulb.

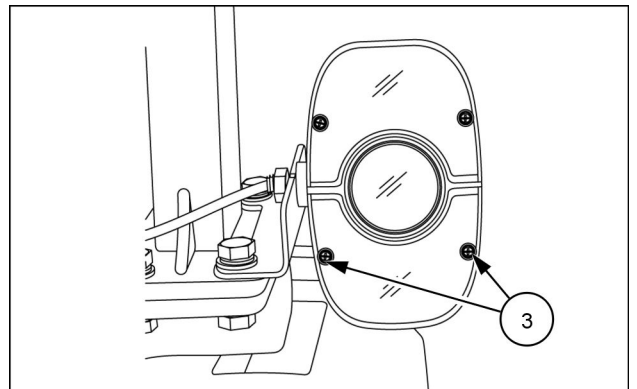
3. Insert the new bulb into the socket and turn it clockwise until the bulb locks into place.
4. Install lenses and retaining screws.



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.

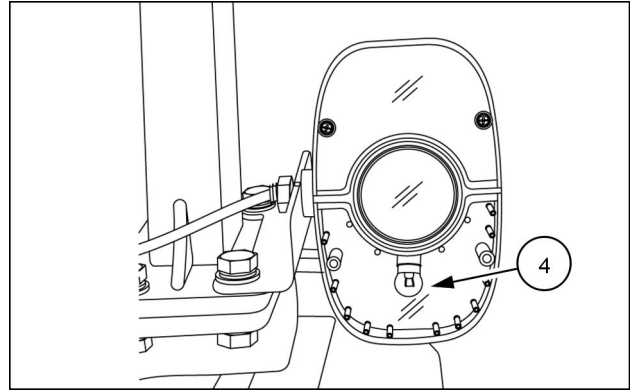


93100885 3

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.

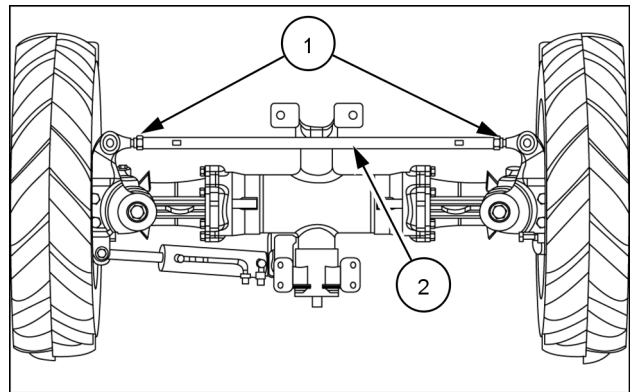


93100886 4

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.



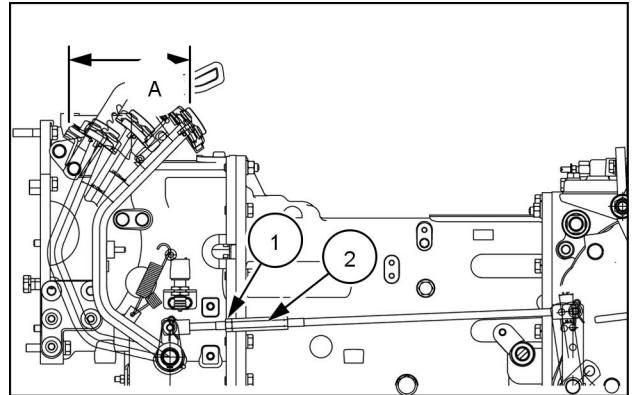
93100867 1

Brake pedal free play

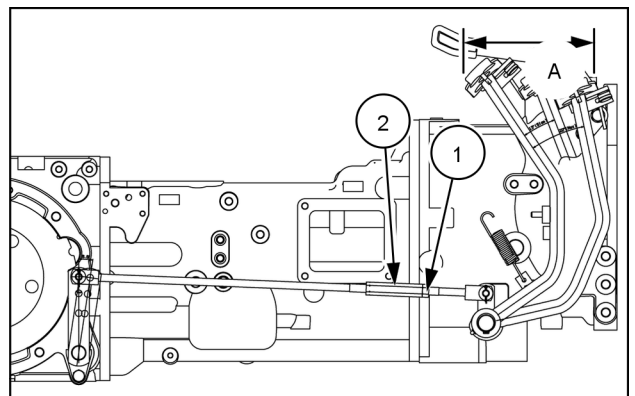
Whenever brake pedal travel becomes excessive, or if the travel of one pedal is unequal to that of the other, each pedal should be adjusted.

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

NOTE: Note HST tractor is in Figure 1 and Gear tractor is in Figure 2.



NHAC13CT00055AA 1



NHAC13CT00139AA 2

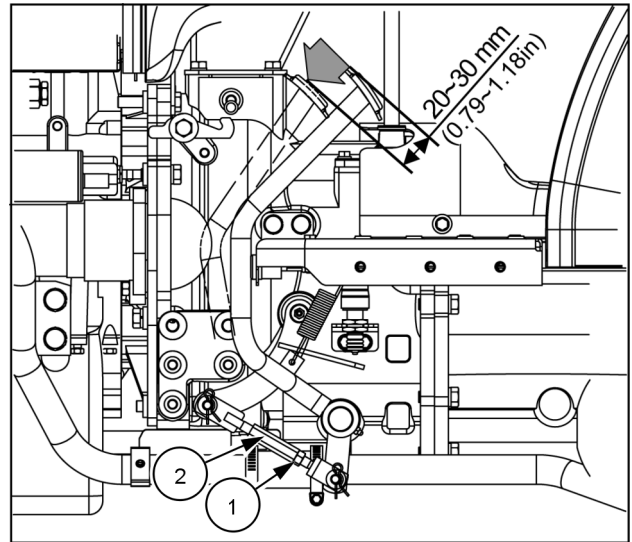
Clutch pedal free play

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.



NHIL12CT00783AA 1

STORAGE

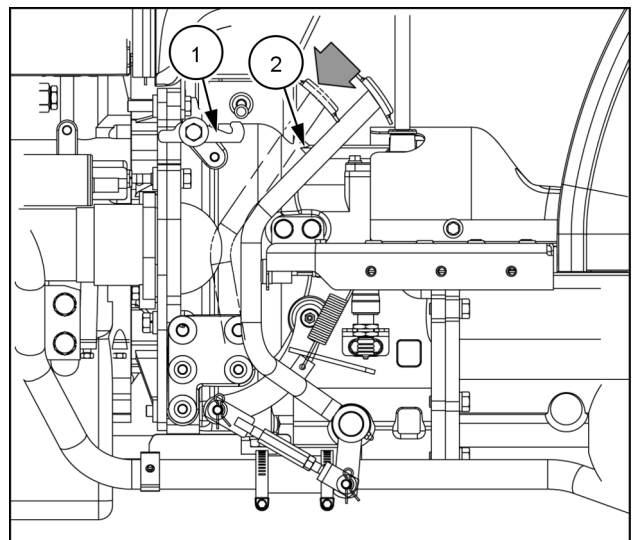
Storage of tractor

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

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

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

6. Open the drain valve of the radiator and engine block. Flush the system, close the drain valves, and fill with a 50/50 solution of permanent antifreeze and clear water.
7. Remove the battery and clean it thoroughly. Be sure that it is fully charged and that the electrolyte is at the proper level. Store the battery in a cool, dry place above freezing temperature, and charge it periodically during storage.
8. Place blocking under the tractor axles to remove the weight from the tires.
9. Cover the exhaust pipe opening.
10. Depress the clutch pedal, engage the latch **(1)** with the pin **(2)** located on the clutch pedal. When the clutch pedal is locked in this position, the clutch disc will be separated from the flywheel.



NHIL12CT00828AA 1

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	16 oz Spray
	86109141-DS	1 US qt
CNH Dark Gray	B96104	16 oz Spray
	B96105	1 US qt
Bianco White (Wheels)	9624698-DS	16 oz Spray
	9624699-DS	1 US qt
Med Gloss Black	94792-DS	16 oz Spray
	9624700-DS	1 US qt

8 - TROUBLESHOOTING

SYMPTOM(S)

Engine - Troubleshooting

Problem	Possible Cause	Correction
The start motor does not rotate with the key switch in the (START) position.	Low battery charge	Charge or replace
	Loose battery or starter cable terminals	Tighten the terminal
	Key switch faulty	Repair or replace switch
	Safety start switch not completing circuit	Depress clutch pedal fully
	PTO safety switch is not in "OFF" position	Place PTO switch in "OFF" position
	Starter motor faulty	Repair or replace starter motor
The start motor rotates but the engine does not start	Low battery charge	Charge or replace battery
	Air in fuel system	Bleed out the air
	Fuel filter clogged	Clean or replace the filter
	Fuel shutoff valve on fuel filter in closed position	Open the valve
	Fuel shutoff solenoid on fuel injection pump stuck in off position	Check solenoid for proper operation, repair as needed
Engine speed is irregular	Air in fuel system	Bleed the fuel system
	Fuel filter clogged	Clean or replace the filter
	Injection nozzle clogged	Repair or replace nozzle
	Fuel leakage	Repair fuel system
	Irregular fuel injection	Repair or replace fuel injection pump
Engine speed is more than maximum rated high idle speed	Governor malfunction	Repair injection pump as needed
Engine stops suddenly during operation	Fuel shortage	Add fuel and bleed air from fuel system
	Faulty fuel injector	Repair or replace injector
	Faulty fuel injection pump	Repair or replace injection pump
	Internal parts of engine seized due to lack of lubrication	Repair engine as needed
Engine stops at low speed	Faulty injection pump	Repair or replace injection pump as needed
	Engine valve gap is not correct	Adjust the gap
	Low fuel injector pressure	Repair fuel injector as needed
Engine overheating	Lack of coolant	Add coolant as needed
	Fan belt slipping or belt is broken	Adjust belt tension or replace belt
	Dirt attached to the radiator or prescreen	Clean radiator fins or screen as needed
The color of exhaust smoke is white	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
The color of exhaust gas is black.	Air filter clogged	Clean or replace engine air filter
	Excessive fuel supply	Repair fuel injection pump as needed
	Faulty fuel injector	Repair or replace fuel injector
Low engine power	Fuel injector nozzle clogged	Repair injector as needed
	Carbon accumulation on valve seat	Repair valve and seats as needed
	Incorrect valve gap adjustment	Adjust valve gap to correct amount
	Incorrect fuel injection timing	Check and adjust fuel injection timing as needed
	Lack of fuel supply	Check fuel system for restriction
	Air filter clogged	Clean or replace air filter

Problem	Possible Cause	Correction
Instrument panel engine oil pressure indicator light is "ON" during operation.	Lack of engine oil	Add engine oil as needed
	Low viscosity of engine oil	Replace oil with proper viscosity type
	Faulty pressure switch	Replace switch
	Faulty engine oil pump	Repair oil pump as needed
	Engine oil filter clogged	Replace the filter
Instrument panel battery charging indicator is "ON" during operation.	Bad electrical connection	Check battery terminals, ground, and repair as needed
	Faulty alternator	Repair or replace alternator as needed
	Faulty battery	Replace battery
	Incorrect fan belt tension or belt broken	Adjust belt tension or replace belt

Clutch - Troubleshooting

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

Hydraulic service brakes - Troubleshooting

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

Hydraulic Lift System - Troubleshooting

Problem	Possible Cause	Correction
The 3-point linkage will not raise	Lack of transmission / hydraulic oil	Add oil as needed
	Air in the hydraulic suction pipe	Tighten the hydraulic filter and check all hydraulic suction connections
	Hydraulic filter clogged	Replace hydraulic filter
	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
Oil leakage	Connecting part loosened	Tighten
	Oil seal damaged	Replace
	Pipe cracked	Replace
The 3-point linkage does not move down when control handle is moved to down position.	Down speed control valve locked in closed position	Turn the knob counterclockwise, to open valve

Problem	Possible Cause	Correction
	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
Hydraulic steering system does not work	Faulty power steering pump	Replace pump if needed
	Steering unit damaged or worn	Repair or replace unit as needed
	Steering cylinder piston seal damaged or worn	Repair cylinder as needed
	External oil leakage of oil tubes or hoses	Repair or replace tubes or hoses as needed
Excessive steering wheel effort	Steering unit: Spline and column spline does not align	Check mounted condition of steering unit and column
	Steering unit: Spool and sleeve damaged by foreign material	Replace steering unit
	Steering unit: Excessive tightening torque of end cap bolt	Apply proper torque of end cap hardware
	Pump: Low flow	Increase engine RPM, to increase pump flow
	Faulty power steering pump	Check pump , repair or replace if needed
	Power steering relief valve: pressure setting low	Check power steering relief valve pressure adjust to proper pressure setting
Cylinder movement not as smooth as steering wheel	Air in steering line if not used for a long time	Bleed air in steering system
	Air in suction tube	Check suction tube, repair as needed
	Cylinder piston seal damaged	Repair cylinder as needed
Front wheels turn the opposite direction to the steering wheel direction	Incorrect assembly of steering gear	Repair steering gear as needed
	Incorrect assembly of steering hoses	Assemble steering hoses correctly
Oil leakage of steering pump, steering unit, cylinder	Seal damaged	Replace seal
Abnormal noise	Lack of oil	Add oil as needed
	Restriction of oil flow in suction line	Replace filter
	Air in system	Bleed air from system

Hydrostatic transmission - Troubleshooting

Problem	Possible Cause	Correction
When operating HST pedal, tractor does not move.	HST high pressure relief valve pressure setting low	Check HST pressure and repair as needed
	HST charge pressure valve faulty	Check HST charge pressure and repair as needed
	HST Filter clogged	Replace HST filter
	HST pump faulty	Repair or replace HST pump
	HST control linkage worn or damaged	Repair or replace linkage as needed
Tractor is still moving when HST pedal is in neutral position	Incorrect neutral adjustment of HST linkage	Adjust neutral position of HST linkage
	HST pedal linkage damaged	Replace damaged linkage parts as needed
	HST control arm clamp bolt loose	Tighten control arm clamp bolt
HST power is low	Oil shortage	Add transmission oil as needed
	Air in HST circuit	Check and repair the hydraulic suction line

Problem	Possible Cause	Correction
	Transmission oil temperature is too high	Shut down tractor to cool the transmission oil, and restart after oil temperature has been reduced
	HST internal parts worn	Repair HST transmission as needed
	HST filter clogged	Replace the HST filter
Abnormal noise	Engine speed is too low	Set engine speed over 1500 RPM
	Oil temperature is too low	Run engine to warm up the oil
	Hydraulic oil filter clogged	Replace the HST filter
	Oil shortage	Add transmission oil as needed

Electrical system - Troubleshooting

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

9 - SPECIFICATIONS

Wheel tread settings

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

Front wheel settings

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

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

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

Rear wheel settings

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

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

Tire inflation pressures

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

The chart below outlines tire inflation pressures.

FRONT TIRE INFLATION PRESSURES			
Tire Type	Tire Size	Recommended air pressure	Maximum load capacity at (Minimum inflation pressure)
Agricultural (R1)	7-14, 4PR, R1	41 - 248 kPa (6 - 36 psi)	160 kg (353 lb)
Turf (R3)	25 x 8.50-14, 4PR, R3	34 - 152 kPa (5 - 22 psi)	251 kg (553 lb)
Industrial (R4)	25 x 8.50-14, 6PR, R4	207 - 345 kPa (30 - 50 psi)	716 kg (1579 lb)

REAR TIRE INFLATION PRESSURES			
Tire Type	Tire Size	Recommended air pressure	Maximum load capacity at (Minimum inflation pressure)
Agricultural (R1)	11.2-24, 4PR, R1	83 - 124 kPa (12 - 18 psi)	454 kg (1001 lb)
Turf (R3)	41 x 14.00-20, 4PR, R3	69 - 172 kPa (10 - 25 psi)	825 kg (1819 lb)
Industrial (R4)	43 x 16-20, 4PR, R4	138 kPa (20 psi)	NA

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/CaCl₂.

Tire Type	Tire Size	Approximate Added Weight
Agricultural	11.2-24, 4PR, R1	115 kg (254 lb)
Turf	41 x 14.00-20, 4PR, R3	157 kg (346 lb)
Industrial (R4)	43 x 16-20, 4PR, R4	234 kg (515 lb)

General specifications

	Model - Workmaster 35 Hydrostatic/ Gear	Model - Workmaster 40 Hydrostatic/ Gear
ENGINE		
Type	Diesel	Diesel
Model	L3BL	L3AL
Engine Gross Horsepower	24.6 kW (33 Hp)	28.3 kW (38 Hp)
Cylinders	3	3
Bore	88 mm (3.367 in)	90 mm (3.54 in)
Stroke	105 mm (4.13 in)	105 mm (4.13 in)
Displacement	1.915 l (116.86 in³)	2.003 l (122.23 in³)
Compression Ratio	22.0:1	22.0:1
Firing Order	1-3-2	1-3-2
Low Idle Speed	1120±20 RPM	1120±20 RPM
Maximum Speed:		
High Idle	2800 ±30 RPM	2800 ±30 RPM
Rated	2600 RPM	2600 RPM
Valve Clearance (Cold)		
Intake	0.25 mm (0.010 in)	0.25 mm (0.010 in)
Exhaust	0.25 mm (0.010 in)	0.25 mm (0.010 in)
CAPACITIES		
Fuel Tank	28.0 l (7.4 US gal)	28.0 l (7.4 US gal)
Cooling System	5.0 l (1.3 US gal)	5.0 l (1.3 US gal)
Engine Crankcase:		
With Filter	6.5 l (6.9 US qt)	6.5 l (6.9 US qt)
Rear Axle & Transmission (Includes Hydraulics)		
Gear	30.0 l (7.9 US gal)	30.0 l (7.9 US gal)
HST	30.0 l (7.9 US gal)	30.0 l (7.9 US gal)
Front Axle	5.5 l (5.8 US qt)	5.5 l (5.8 US qt)
COOLING SYSTEM		
Type	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass
Water Pump:		
Type	Centrifugal	Centrifugal
Drive	V-Belt	V-Belt

	Model - Workmaster 35 Hydrostatic/ Gear	Model - Workmaster 40 Hydrostatic/ Gear
Belt Deflection	10 - 12 mm (0.4 - 0.47 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys	10 - 12 mm (0.4 - 0.47 in) when 10 kg (22 lb) pressure is applied midway between belt pulleys
Fan Diameter	380 mm (15.0 in)	380 mm (15.0 in)
Thermostat:		
Start to Open	76.5 °C (170 °F)	76.5 °C (170 °F)
Fully Open	90 °C (194 °F)	90 °C (194 °F)
Radiator Cap	90 kPa (13 psi)	90 kPa (13 psi)
ELECTRICAL SYSTEM		
Alternator	12 V, Heavy Duty, 50 A	12 V, Heavy Duty, 50 A
Battery	12 V, w/ negative ground, 660 cca BCI Group 34	12 V, w/ negative ground, 660 cca BCI Group 34
Starting Motor	Solenoid Pre-Engaged Reduction	Solenoid Pre-Engaged Reduction
FUEL SYSTEM		
Fuel Type	Diesel	Diesel
Type of Fuel to Use if Above 4 °C (40 °F)	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40
Type of Fuel to Use if Below 4 °C (40 °F)	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:		
Type	Rotary	Rotary
Timing	3 ° ATDC	3 ° ATDC
CLUTCH		
Type	240 mm (9.4 in) - Transmission 12x12 Trans	240 mm (9.4 in) - Transmission 12x12 Trans
Pedal Free-Travel	20 - 30 mm (0.79 - 1.2 in)	20 - 30 mm (0.79 - 1.2 in)
BRAKES		
Type	Wet Disc	Wet Disc
2 Disc per Side	223 mm (8.78 in) x 174 mm (6.85 in)	223 mm (8.78 in) x 174 mm (6.85 in)

9 - SPECIFICATIONS

	Model - Workmaster 35 Hydrostatic/ Gear	Model - Workmaster 40 Hydrostatic/ Gear
STEERING		
Type	Power	Power
Turns Lock-to-Lock:		
FWD	3.92 L to R 3.30 R to L	3.92 L to R 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	3047 mm (120 in) Left turn 3297 mm (129.8 in) Right turn	3047 mm (120 in) Left turn 3297 mm (129.8 in) Right turn
Steering System Relief Valve Setting	11720 kPa (1700 psi)	11720 kPa (1700 psi)
POWER TAKE-OFF		
Type	Independent	Independent
Shaft Size:		
Rear PTO	35 mm (1.4 in)	35 mm (1.4 in)
Mid PTO	25.4 mm (1 in)	25.4 mm (1 in)
Engine Speed for 540 RPM Rear PTO Operation	2509 RPM - HST Transmission 2509 RPM - Gear Transmission	2509 RPM - HST Transmission 2509 RPM - Gear Transmission
Engine Speed for 2000 RPM Mid PTO Operation	2545 RPM - HST 2545 RPM - Gear	2545 RPM - HST 2545 RPM - Gear
Horsepower PTO Observed	19.8 kW (26.6 Hp) - HST 21.2 kW (28.4 Hp) - Gear	23.2 kW (31.2 Hp) - HST 24.9 kW (33.4 Hp) - Gear
Direction of Rotation (As viewed from rear of tractor)		
Rear PTO	Clockwise	Clockwise
Mid PTO	Clockwise	Clockwise
HYDRAULIC LIFT SYSTEM		
Type	Open Center	Open Center
Pump Type	Gear	Gear
Pump Capacity	31.2 l/min (8.2 US gpm)	31.2 l/min (8.2 US gpm)
System Relief Valve Setting	16671 kPa (2418 psi)	16671 kPa (2418 psi)

	Model - Workmaster 35 Hydrostatic/ Gear	Model - Workmaster 40 Hydrostatic/ Gear
TRANSMISSION SPEEDS (HYDROSTATIC)		
	(2600 RPM Engine Rated Speed with 11.2-24 Rear Tires)	(2600 RPM Engine Rated Speed with 11.2-24 Rear Tires)
Gear Position:		
Low	0 - 2.76 km/h (0 - 1.71 mph)	0 - 2.76 km/h (0 - 1.71 mph)
Mid	0 - 7.54 km/h (0 - 4.68 mph)	0 - 7.54 km/h (0 - 4.68 mph)
High	0 - 23.07 km/h (0 - 14.33 mph)	0 - 23.07 km/h (0 - 14.33 mph)
Reverse Low	0 - 2.63 km/h (0 - 1.63 mph)	0 - 2.63 km/h (0 - 1.63 mph)
Reverse Mid	0 - 7.17 km/h (0 - 4.45 mph)	0 - 7.17 km/h (0 - 4.45 mph)
Reverse High	0 - 21.93 km/h (0 - 13.63 mph)	0 - 21.93 km/h (0 - 13.63 mph)
TRANSMISSION SPEEDS (GEAR)		
	(2600 RPM Engine Rated Speed with 11.2-24 Rear Tires)	(2600 RPM Engine Rated Speed with 11.2-24 Rear Tires)
Gear Position: Forward		
Range Low, 1st gear	1.18 km/h (0.74 mph)	1.18 km/h (0.74 mph)
Range Low, 2nd gear	1.73 km/h (1.07 mph)	1.73 km/h (1.07 mph)
Range Low, 3rd gear	2.24 km/h (1.39 mph)	2.24 km/h (1.39 mph)
Range Low, 4th gear	2.76 km/h (1.72 mph)	2.76 km/h (1.72 mph)
Range Mid, 1st gear	3.23 km/h (2.01 mph)	3.23 km/h (2.01 mph)
Range Mid, 2nd gear	4.71 km/h (2.93 mph)	4.71 km/h (2.93 mph)
Range Mid, 3rd gear	6.12 km/h (3.80 mph)	6.12 km/h (3.80 mph)
Range Mid, 4th gear	7.54 km/h (4.68 mph)	7.54 km/h (4.68 mph)
Range High 1st gear	9.39 km/h (5.83 mph)	9.39 km/h (5.83 mph)
Range High, 2nd gear	14.42 km/h (8.96 mph)	14.42 km/h (8.96 mph)

	Model - Workmaster 35 Hydrostatic/ Gear	Model - Workmaster 40 Hydrostatic/ Gear
Range High, 3rd gear	18.71 km/h (11.63 mph)	18.71 km/h (11.63 mph)
Range high, 4th gear	23.07 km/h (14.33 mph)	23.07 km/h (14.33 mph)
Gear Position: Reverse		
Range Low, 1st gear	1.13 km/h (0.70 mph)	1.13 km/h (0.70 mph)
Range Low, 2nd gear	1.64 km/h (1.02 mph)	1.64 km/h (1.02 mph)
Range Low, 3rd gear	2.13 km/h (1.32 mph)	2.13 km/h (1.32 mph)
Range Low, 4th gear	2.63 km/h (1.63 mph)	2.63 km/h (1.63 mph)
Range Mid, 1st gear	3.07 km/h (1.91 mph)	3.07 km/h (1.91 mph)
Range Mid, 2nd gear	4.48 km/h (2.78 mph)	4.48 km/h (2.78 mph)
Range Mid, 3rd gear	5.81 km/h (3.61 mph)	5.81 km/h (3.61 mph)
Range Mid, 4th gear	7.17 km/h (4.46 mph)	7.17 km/h (4.46 mph)
Range High 1st gear	9.40 km/h (5.84 mph)	9.40 km/h (5.84 mph)
Range High, 2nd gear	13.71 km/h (8.52 mph)	13.71 km/h (8.52 mph)
Range High, 3rd gear	17.78 km/h (11.05 mph)	17.78 km/h (11.05 mph)
Range high, 4th gear	21.93 km/h (13.63 mph)	21.93 km/h (13.63 mph)
FRONT END WEIGHTS		
With weight extension bracket installed	(5) weights @ 26 kg (60 lb) each	(5) weights @ 26 kg (60 lb) each
With weight extension bracket installed	Optional (3) weights @ 45 kg (100 lb) each	Optional (3) weights @ 45 kg (100 lb) each
DRAWBARS		

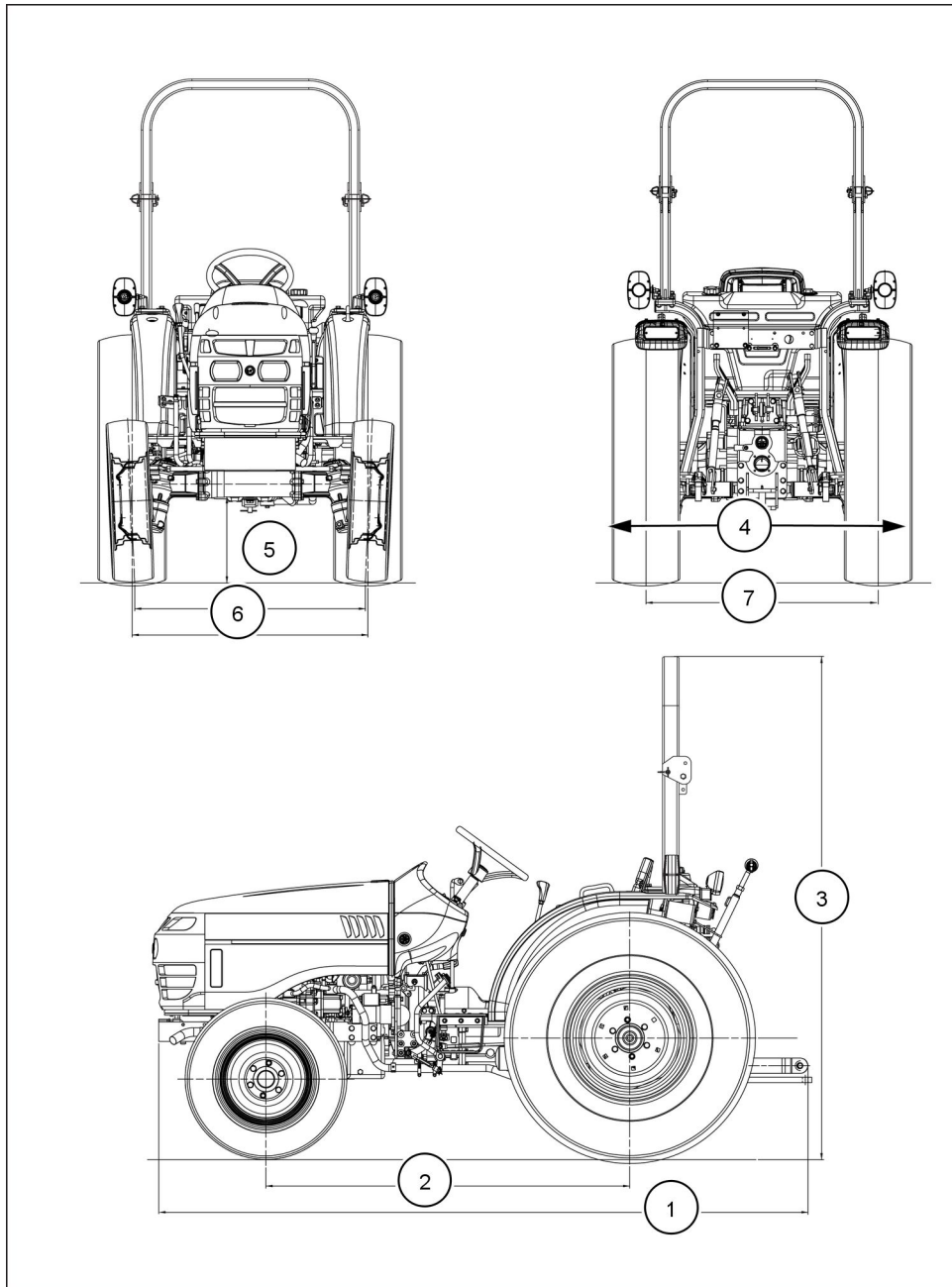
	Model - Workmaster 35 Hydrostatic/ Gear	Model - Workmaster 40 Hydrostatic/ Gear
Extendible	Standard	Standard
REAR WHEEL WEIGHTS		
R-4 Tires	(4) weights (2) per wheel @ 34 kg (75 lb) each	(4) weights (2) per wheel @ 34 kg (75 lb) each
Turf Tires	NA	NA
Ag. Tires	(4) weights (2) per wheel @ 48 kg (106 lb) each	(4) weights (2) per wheel @ 48 kg (106 lb) each
TIRES		
FRONT		
Agricultural:	7-14, 6PR, R1	7-14, 6PR, R1
Turf:	25 x 8.50-14, 4PR, R4	25 x 8.50-14, 4PR, R4
Industrial:	25 x 8.50-14, 6PR, R4	25 x 8.50-14, 6PR, R4
REAR:		
Agricultural	11.2-24, 4PR, R1	11.2-24, 4PR, R1
Turf	41 x 14.00-20, 4PR, R3	41 x 14.00-20, 4PR, R3
Industrial	43 x 16-20, 4PR, R4	43 x 16-20, 4PR, R4
WHEEL BOLT TORQUES		
Front Wheel --- Disc-to-Hub:		
FWD	176 - 196 N·m (130 - 145 lb ft)	176 - 196 N·m (130 - 145 lb ft)
Rear Wheel --- Disc-to-Axle	176 - 196 N·m (130 - 145 lb ft)	176 - 196 N·m (130 - 145 lb ft)
ROPS ATTACHING BOLT TORQUES		
ROPS to Rear Axle	132 - 147 N·m (97 - 108 lb ft)	132 - 147 N·m (97 - 108 lb ft)
Seat Belt	49 - 54 N·m (36 - 40 lb ft)	49 - 54 N·m (36 - 40 lb ft)

Tractor dimensions

	Model Workmaster 35 Hydrostatic/ Gear	Model Workmaster 40Hydrostatic/ Gear
(1) - LENGTH:		
FWD:		
	2988 mm (117.7 in)	2988 mm (117.7 in)
(2) - WHEEL BASE:		
FWD	1674 mm (66.0 in)	1674 mm (66.0 in)
(3) - TOP of ROPS - Folding:		
Ag. Tires: 11.2-24		
Up Position	2252 mm (88.7 in)	2252 mm (88.7 in)
Down Position	1753 mm (69.0 in)	1753 mm (69.0 in)
Turf Tires: 41 x 14.00-20		
Up Position	2217 mm (87.3 in)	2217 mm (87.3 in)
Down Position	1722 mm (67.8 in)	1722 mm (67.8 in)
Ind. Tires: 43 x 16-20		
Up Position	2227 mm (87.7 in)	2227 mm (87.7 in)
Down Position	1732 mm (68.2 in)	1732 mm (68.2 in)
(4) - WIDTH:Rear Axle Outside to Outside of Tire		
Ag. Tires: 11.2-24		
Dished In	1383 mm (54.45 in)	1383 mm (54.45 in)
Dished Out	1639 mm (64.53 in)	1639 mm (64.53 in)
Turf Tires: 41 x 14.00-20		
Dished In (Only)	1562 mm (61.50 in)	1562 mm (61.50 in)
Ind. Tires: 43 x 16-20		
Dished In (Only)	1639 mm (66.50 in)	1639 mm (66.50 in)

	Model Workmaster 35 Hydrostatic/ Gear	Model Workmaster 40Hydrostatic/ Gear
(5) - MINIMUM GROUND CLEARANCE (under drawbar):		
Ag. Tires: 11.2-24	261.0 mm (10.3 in)	261.0 mm (10.3 in)
Turf Tires: 41 x 14.00-20	242 mm (9.5 in)	242 mm (9.5 in)
Ind. Tires: 43 x 16-20	252 mm (10.0 in)	252 mm (10.0 in)
WHEEL TREAD SETTINGS:		
(6)-FRONT:		
Ag. Tires: 7-14	1068 mm (42.0 in)	1068 mm (42.0 in)
Turf Tires: 25 x 8.50-14 (Dished In Only)	1159 mm (45.6 in)	1159 mm (45.6 in)
Ind. Tires: 25 x 8.50-14 (Dished In Only)	1159 mm (45.6 in)	1159 mm (45.6 in)
(7)-REAR:		
Ag. Tires: 11.2-24	1041 - 1374 mm (41.0 - 54.1 in)	1041 - 1374 mm (41.0 - 54.1 in)
Turf Tires: 41 x 14.00-20	1208 mm (47.5 in)	1208 mm (47.5 in)
Ind. Tires: 43 x 16-20 (Dished In Only)	1283 mm (50.5 in)	1283 mm (50.5 in)
WEIGHT:With ROPS/Less Tires		
HST (FWD)	1272 kg (2804 lb)	1272 kg (2804 lb)
GEAR (FWD)	1302 kg (2870 lb)	1302 kg (2870 lb)

9 - SPECIFICATIONS



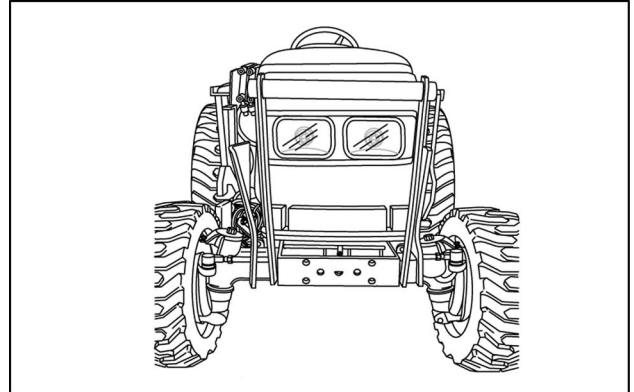
NHIL12CT00862HA 1

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.



NHIL13CT00043AA 1

11 - FORMS AND DECLARATIONS

Delivery report - Owner Copy

Check and adjust as required

Workmaster 35/40

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- **176 - 196 N·m (130 - 145 lb ft)**
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
(Max: 2800 RPM, Idle: 1120 RPM)
4. ___ PTO Engagement & Disengagement
5. ___ Selector Lever for HPL Control
6. ___ FWD-Drive Lever Operation
7. ___ Operation of HST

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

Workmaster 35/40

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- **176 - 196 N·m (130 - 145 lb ft)**
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
(Max: 2800 RPM, Idle:1120 RPM)
4. ___ PTO Engagement & Disengagement
5. ___ Selector Lever for HPLControl
6. ___ FWD-Drive Lever Operation
7. ___ Operation of HST

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 _____

Index

	1	
12 x 12 transmission operation		4-24
	A	
Air cleaner primary element		7-24, 7-27
Air filter inner safety element		7-31
Attaching three-point equipment		4-5
	B	
Battery		7-39
Biodiesel fuel - approved blend ratio.		7-3
Brake pedal free play		7-23, 7-45
Brake pedals		3-8
Brakes		4-18
Brakes and controls - Park		4-26
	C	
Carrying the tractor on a transporter.		5-6
Clutch pedal		3-8
Clutch pedal free play		7-19, 7-46
Clutch - Troubleshooting.		8-2
Cold starting aids		4-11
Consumables		7-5
Cruise control		3-7
	D	
Delivery report - Dealer Copy		11-5
Delivery report - Owner Copy		11-3
Differential lock pedal		3-11
Driving the vehicle		5-5
	E	
Electrical system - Troubleshooting		8-4
Electro-magnetic compatibility (EMC)		1-6
Emergency stopping		4-17
Engine break-in procedure		4-1
Engine coolant		7-31
Engine cooling system		7-8
Engine oil and filter		7-9, 7-26
Engine oil level		7-7
Engine - Troubleshooting		8-1
Extendible drawbar		4-8
External lighting - Identification		5-1
	F	
Fan belt tension		7-22, 7-27
Foot throttle pedal		3-9
Foreword Ecology and the Environment		1-2
Four wheel drive lever		3-16
Front axle differential fluid		7-28
Front axle differential oil level		7-23
Front wheels toe-in		7-44
Fuel filter		7-10, 7-26
Fuel filter water separator		7-25
Fuel injection system - Bleed		7-33
Fuel injectors - Bleed		7-35
Fuse identification		7-40

G

General information	7-1
General specification - Biodiesel fuels	1-3
General specifications	9-3
Grease fittings	7-14

H

Hand throttle lever	3-9
Hazard warning light operation	5-2
Headlight	7-41
Hood release lever	3-22
Horn switch (optional)	3-9
Hydraulic lift rocker	4-9
Hydraulic Lift System - Troubleshooting	8-2
Hydraulic oil filter	7-10, 7-26
Hydraulic power lift (HPL)	3-18
Hydraulic Power Lift (HPL) drop rate control valve.	4-9
Hydraulic service brakes - Troubleshooting.	8-2
Hydrostatic (HST) oil filter	7-11, 7-26
Hydrostatic transmission (HST) foot pedals	3-12
Hydrostatic Transmission (HST) neutral adjustment	7-19, 7-36
Hydrostatic transmission (HST) operation	4-22
Hydrostatic transmission - Troubleshooting.	8-3

I

Instructional signs	2-23
Instrument cluster.	3-5
International symbols	2-29

K

Key switch	3-10, 4-10
----------------------	------------

L

Liquid ballast.	6-4, 9-2
-------------------------	----------

M

Machine orientation	1-9
Maintenance Chart	7-6
Maxi-fuse	7-41
Mid mount two spool hydraulic valve	3-20
Mid PTO lever	3-17
Multifunction light switch	3-13

N

Note to the Owner	1-1
-----------------------------	-----

O

Operator's manual storage	1-8
Optional equipment	10-1

P

Park brake	3-15
Personal safety.	2-11
Power take-off (PTO) operation.	4-2
Precautionary statements	2-1
Product identification	1-7
Proposition 65	1-4
PTO switch	3-10

R

Rear remote hydraulic valve(s)	3-19
Rear work light (optional)	5-4
Refueling the tractor	7-4
Removal of tractor from storage	7-48
Road light/work light operation	5-3

Roll Over Protective Structure (ROPS)	3-3, 7-12
Roll Over Protective Structure (ROPS) frame - Personal safety	2-12
Roll Over Protective Structure (ROPS) - Maintenance and inspection	7-27
Roll Over Protective Structure (ROPS) - Possible damage	7-38

S

Safety rules	2-2, 7-3
Safety signs	2-13
Seat belt.	3-1
Seat controls.	3-2
Starting the engine	4-12
Starting the tractor with jumper cables	4-15
Steering operation	4-20
Steering - Troubleshooting	8-3
Stopping the engine.	4-16
Storage of tractor	7-47

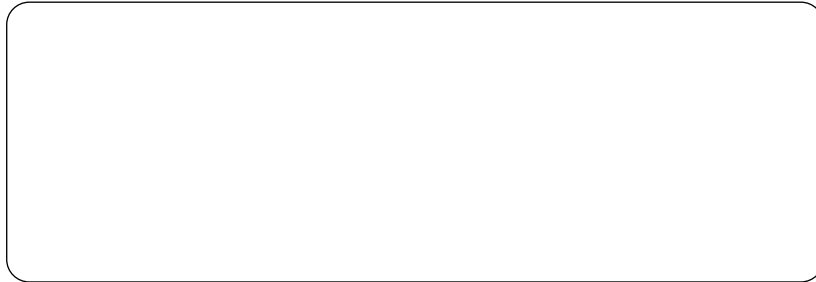
T

Tail/brake light bulb	7-42
Three-point linkage	4-4
Tire inflation pressures	9-2
Towing	5-6
Tractor ballasting	6-1
Tractor ballasting weights	6-2
Tractor dimensions	9-6
Tractor intended use	1-5
Transmission and hydraulic fluid	7-29
Transmission fluid level	7-16
Transmission main shift lever.	3-21
Transmission operation at low ambient temperatures	4-21
Transmission range lever	3-14
Transmission shuttle shift lever	3-7
Turn signal/hazard light bulb	7-43
Turn signal operation	5-2

W

Wheels and tires	7-17
Wheels bolt/nut.	7-13, 7-27
Wheel tread settings	9-1

Dealer's stamp



CNH Industrial America LLC reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at time of publication, but are subject to change without notice.

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

