

OPERATOR'S MANUAL

Workmaster™ 50

Workmaster™ 60

Workmaster™ 70

Tractor

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1 - GENERAL INFORMATION

Note to the owner

This manual contains information concerning the adjustment and maintenance of the tractors. 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 tractor. New Holland Top Service is also available. Call 1-866-NEWHLND (1-866-639-4563) or email na.topservice@cnh.com.

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

Please record the following information

Model

Product Identification Number (PIN)

Date purchased

Attachment model

Attachment model

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

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

Replace all shields before operating the machine.

Failure to comply could result in death or serious injury.

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Improvements

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

Intended use

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.

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.

ATTENTION: *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!*

Operator's age

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

WARNING

**IMPROPER OPERATION OF THIS MACHINE
CAN CAUSE DEATH OR SERIOUS INJURY.
MAKE SURE THAT EVERY OPERATOR:**

- is instructed in the safe and proper use of this machine.**
 - reads and understands the operator's manual for this machine.**
 - reads and understands ALL safety signs on the machine.**
- Failure to comply could result in death or serious injury.**

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Read and thoroughly understand this manual before operating this machine. If you are an inexperienced operator, study this manual and receive operating instructions from an experienced operator. Your dealer can assist you in learning machine operation and show you proper operating procedures. Keep this manual readily available, preferably with the machine. If the original manual is damaged, order a new one from your dealer.

Electro-magnetic compatibility (EMC)

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

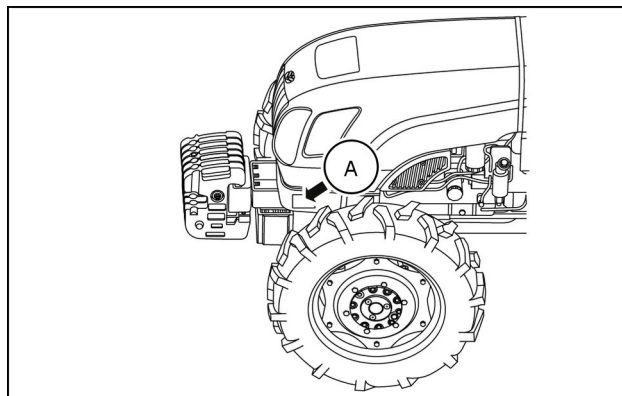
- The maximum power of emission equipment (radio, telephones, etc.) must not exceed the limits imposed by the national authorities of the country where you use the machine
- The electro-magnetic field generated by the add-on system should not exceed **24 V/m** at any time and at any location in the proximity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

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

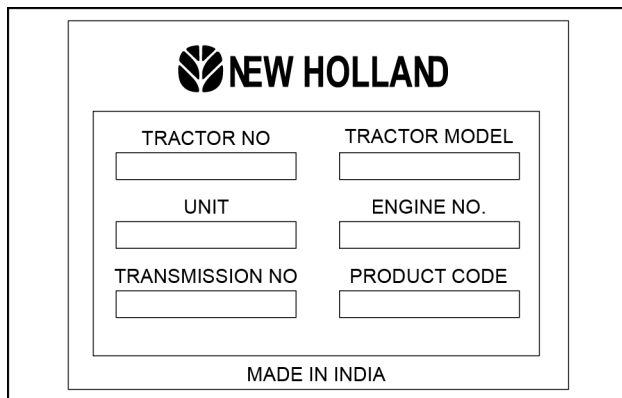
Product Identification Number (PIN)

Product Identification Number (PIN) plate

The tractor identification decal (**A**) is located on the left-hand side of the battery plate. The first line represents tractor make and model while the second line represents engine serial number and product code followed by transmission serial number. Record the information that is on the decal for quick reference.



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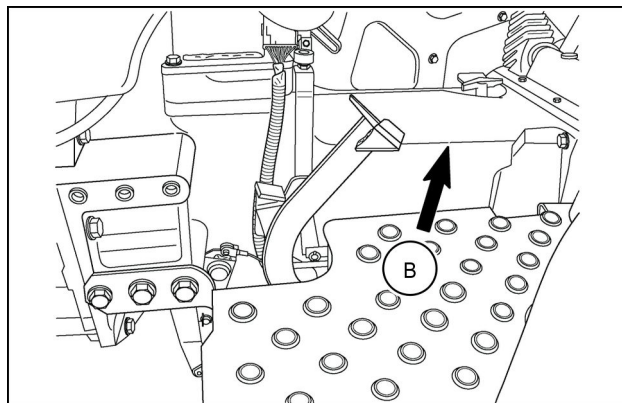


GNIL14TR00508AA 2

Product Identification Number (PIN) location (Stamped)

The tractor serial number, unit code and engine number are stamped on the top of the transmission housing at (**B**). These numbers are also repeated on the product identification number (PIN) plate reproduced above.

Tractor PIN.....



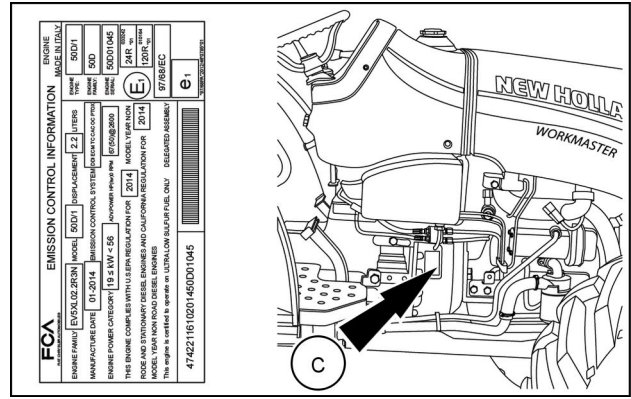
86090118NNN 3

Engine Product Identification Number (PIN)

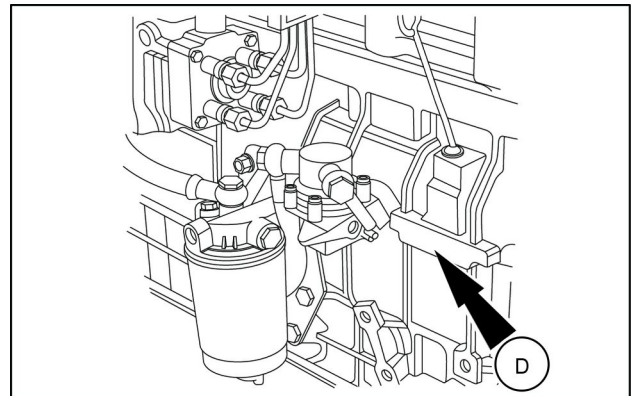
The engine product identification number (PIN) plate **(C)** placed on right-hand side of the engine flywheel block, just below the fuel tank ..

Engine product identification number (PIN) is stamped on the left-hand side **(D)** of the engine crankcase.

Engine PIN.....



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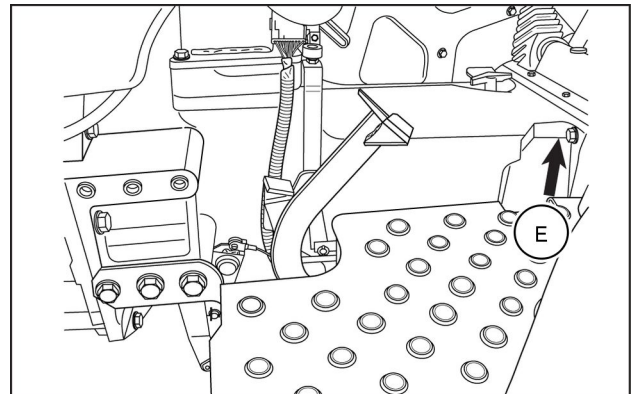


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Transmission Product Identification Number (PIN)

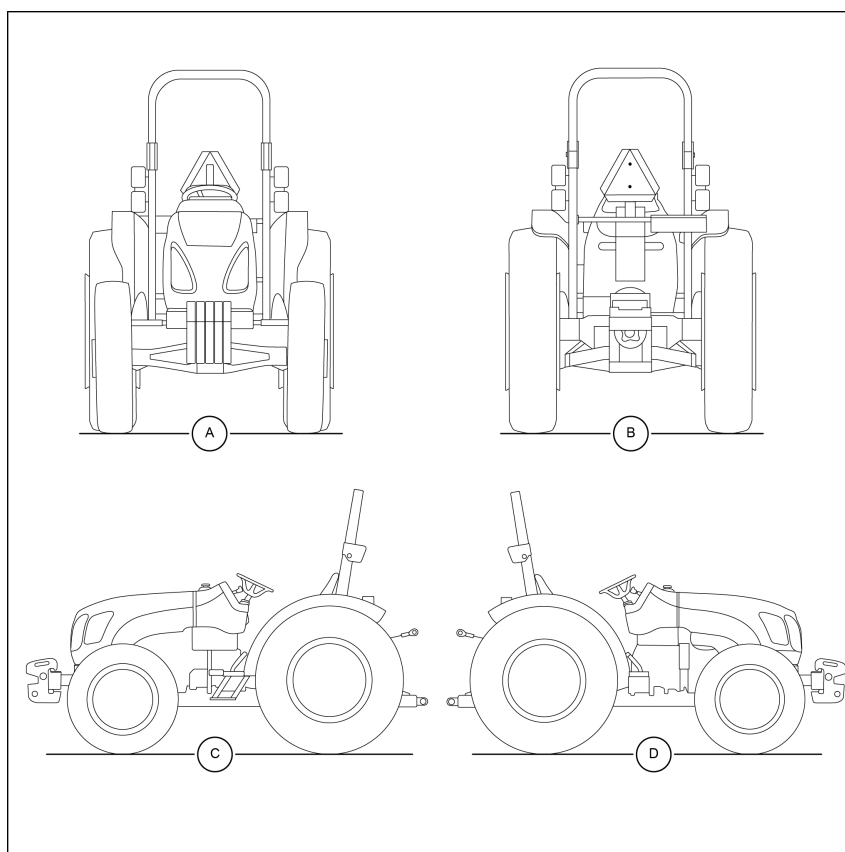
The transmission product identification number (PIN) **(E)** is stamped on left-hand side of transmission housing below driver seat. This information is repeated on tractor identification decal. Record the Transmission identification number (PIN) below for quick reference.

Transmission PIN.....



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Machine orientation



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(A) Front
(C) Left-hand side

(B) Rear
(D) Right-hand side

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

What is Exhaust Gas Recirculation (EGR)?

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

The main components of the EGR system include:

- EGR valve
- Diesel Oxidation Catalyst (DOC)
- Particulate Matter Catalyst (PM Cat)
- Exhaust gas temperature sensors
- Throttle valve actuator

What is a Particulate Matter Catalyst (PM Cat)?

A PM Cat is a high efficiency flow through filter that works based on an open flow design to allow exhaust gases to pass through. It is made up of alternating layers of corrugated metal foil on a porous metal fleece. The filter captures particulate matter long enough for catalytic oxidation. By design, a PM Cat cannot plug up, creating no risk of an uncontrolled regeneration.

How does it work?

When exhaust enters the DOC, many chemical reactions occur. Nitric Oxide (NO) gas enters the DOC to be oxidized to nitrogen dioxide (NO₂). When it enters the particulate matter catalyst, NO₂ oxidizes the particulate matter, creating a continuous, efficient, passive regeneration. This reaction occurs best between **220 - 480 °C (428 - 896 °F)**.

What if the exhaust isn't warm enough?

A special engine management system has been designed for off road applications to maintain the efficiency of the particulate matter catalyst, even in situations such as prolonged idling, or low-load applications. During these scenarios, the engine management software will activate an exhaust temperature management mode to maintain the efficiency of soot reduction. In this mode, the exhaust gas temperature is controlled via management of multiple injections and control of the air system. This design enhances passive regeneration in low load conditions, and reduces the need for an incinerating regeneration.

Manual regeneration

If the thermal management system is disabled for prolonged periods of time, depending on exhaust temperatures, soot may build up within the particulate matter catalyst. If the soot build-up reaches extreme levels, a manual regeneration initiated by the operator may be necessary. This is enabled through the instrument cluster, and takes about **15 min**. For these reasons, it is recommended to have the thermal management system remain enabled unless the tractor is in high fire-risk conditions.

Finding a cleaning facility

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

Top Service: 1-866-639-4563
na.topservice@newholland.com

US Environmental Protection Agency (EPA) and California Emissions Control Warranty Statement

NEW HOLLAND warrants to the ultimate purchaser and each subsequent purchaser that the engine is designed, built and equipped so as to conform with US Environmental Protection Agency regulations applicable at the time of

manufacture and that it is free from defects in workmanship or material which would cause it not to meet these regulations for a period of:

- 2 years or **1500 h** of operation, whichever occurs first, for engines less than **19 kW (25 Hp)**.
- 5 years or **3000 h** of operation, whichever occurs first, for engines greater than or equal to **19 kW (25 Hp)**.

NOTE: *This warranty applies to all units operated in the United States or Canada.*

Coverage

The model year, class of diesel engine, and emission application determination for your engine are identified on the Emission Control Information Label. This label is affixed to one of the following areas of the engine: the top of engine's rocker arm cover, the right-hand side of the oil pan, and the right-hand side of the engine front gear cover. The warranty period begins on the date the new equipment is sold to the first retail purchaser. The presence of the emission control label is the indication that the engine conforms to the applicable standards. Any emission control system parts which are proven defective during normal use will be repaired or replaced during the warranty period.

The engine owner has responsibility to perform all the required maintenance listed in the Owner's Manual. NEW HOLLAND will not deny an emission warranty claim solely because no record of maintenance exists; however, a claim may be denied if failure to perform maintenance resulted in the failure of a warranted part.

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

The manufacturer is liable for damages to other engine components caused by the failure of any warranted emission control system part. NEW HOLLAND is not responsible for failures resulting from improper repair or the use of parts that are not genuine NEW HOLLAND or NEW HOLLAND approved parts.

Component coverage

New engines certified for sale and registered will have the following items covered by the emission warranty, depending on the emission level of the engine, if the items were first installed on the new engine as original equipment:

Fuel injection system

- Fuel injection pump
- Fuel injectors
- Fuel injection lines

Air induction system

- Intake manifold
- Turbocharger system (includes exhaust manifold)
- Charge air cooler

Positive crankcase ventilation system (if applicable)

- PCV valve
- Oil fill cap

Exhaust after treatment Devices (if applicable)

- Catalytic converter (DOC)
- Diesel particulate filter (DPF)
- Selective catalytic reduction (SCR)
- Diesel Exhaust Fluid (DEF) tank and dispensing systems
- Particulate Matter Catalyst (PM Cat)

Exhaust Gas Recirculation Systems (EGR)

- EGR valve assembly
- EGR cooler

Cold Start Enrichment Systems

Electronic Control Units, Sensors, Solenoids, and Wiring harnesses used in above systems

Emissions warranty does not cover

- Repairs arising from storage deterioration, failure to maintain the equipment, negligence, alteration, improper use of the equipment, collision or other accident, vandalism, or other casualty, or operation beyond rated capacity or specification.
- Repairs arising from abuse or neglect, including but not limited to: operation without adequate coolant or lubricants, adjustments to the fuel system outside equipment specifications, over-speeding, improper storage, starting, warm-up, or shutdown practices, incorrect fuel or contaminated fuel, oil or other fluids.

- Normal maintenance services, such as engine tune-ups, engine fuel system cleaning, checks, adjustments, shimming, etc.
- Items replaced due to customer demand.
- Labor charges performed by anyone except a dealer authorized by contract to repair the equipment, unless they qualify under special provisions (i.e. outside labor).
- Any and all travel costs for items such as towing, service calls, or transporting a unit to and from the place where the warranty service is performed.
- Normal maintenance costs, including but not limited to: lubricants, coolants, fluids, fuel, filters, and associated labor. Lubricants, filters, and coolants may qualify for warranty reimbursement if they require replacement as a DIRECT RESULT of a defect in material or workmanship.
- Claims involving the inspection or reconditioning of units after storage or prior use.
- Repairs arising from service performed by agents not approved by NEW HOLLAND.
- Repairs arising from any unauthorized modification to the product or the use of non- NEW HOLLAND parts, implements or attachments.
- Removal, replacement, or installation of non- NEW HOLLAND optional equipment, attachments or components.
- Premiums charged for overtime labor costs or out of shop expenses.
- Economic loss including lost profits, crop loss, equipment rental, or other expense.
- Unauthorized modification or updating machines without a warrantable failure.
- Any and all costs of dealer shop supplies incurred with repairs, including but not limited to: solvents, cleaners, anti-seize lubricants, loctite, sealant, adhesive, oil-dry, shop towels, etc.
- Failure of the machine, its implements or attachments caused by improper field application or loading.
- Any and all costs for coolant, fuel, or lube (oil) analysis including supplies and lab recommendations.
- Cost associated with cleaning of machine in preparation for servicing.

2 - SAFETY INFORMATION

Personal safety

Personal safety



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

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

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

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

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

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

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

Machine safety

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

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

Information

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

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

Safety rules

General safety rules

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

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

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

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

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

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

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

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

Wear protective equipment when appropriate.

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

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

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

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

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

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

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

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

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

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

Before you leave the machine:

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

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

General maintenance safety

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

Service the machine on a firm, level surface.

Install guards and shields after you service the machine.

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

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

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

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

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

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

Wheels and tires

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

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

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

Always have a qualified tire technician service the tires and wheels. If a tire has lost all pressure, take the tire and

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

3. **WARNING**

Some components may continue to run down after disengaging drive systems.

Make sure all drive systems are fully disengaged.

Failure to comply could result in death or serious injury.

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Shift the transmission into neutral.

4. Apply the parking brake.

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

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

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

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

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

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

wheel to a tire shop or your dealer for service. Explosive separation of the tire can cause serious injury.

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

Driving on public roads and general transportation safety

Comply with local laws and regulations.

Use appropriate lighting to meet local regulations.

Make sure that the SMV emblem is visible.

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

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

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

When you transport equipment or a machine on a transport trailer, make sure that it is properly secured. Be sure

the SMV on the equipment or machine is covered while being transported on a trailer.

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

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

Slow down and signal before turning.

Pull over to allow faster traffic to pass.

Follow correct towing procedure for equipment with or without brakes.

Fire and explosion prevention

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

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

Always have a fire extinguisher on or near the machine.

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

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

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

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

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

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

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

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

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

General battery safety

Always wear eye protection when you work with batteries.

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

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

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

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

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

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

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

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

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

Keep out of reach of children and other unauthorized persons.

Operator presence system

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

Never disconnect or bypass the operator presence system.

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

Power Take-Off (PTO)

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

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

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

Never use a spline adaptor:

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

Reflectors and warning lights

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

Seat belts

Seat belts must be worn at all times.

Seat belt inspection and maintenance:

- Keep seat belts in good condition.
- Keep sharp edges and items 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 the belt is attached to the seat, make sure that the seat or seat brackets are mounted securely.
- Keep seat belts clean and dry.
- Clean belts only with soap solution and warm water.
- Do not use bleach or dye on the belts because this can make the belts weak.

Operator protective structure

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

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

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

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

Personal Protective Equipment (PPE)

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

Do Not Operate tag

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

Hazardous chemicals

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

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

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

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

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

Do not weld, drill holes, attempt to straighten or repair the protective structure. Modification in any way can reduce the structural integrity of the structure, which could cause death or serious injury in the event of fire, tip over, roll over, collision or accident.

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

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

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

Keep out of reach of children or other unauthorized persons.

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

Utility safety

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

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

Retract raised or extended components, if necessary. Remove or lower radio antennas or other accessories. Should a contact between the machine and an electric

power source occur, the following precautions must be taken:

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

Electrical storm safety

Do not operate machine during an electrical storm.

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

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

Mounting and dismounting

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

Do not jump off of the machine.

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

Face the machine when you mount and dismount the machine.

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

Never mount or dismount from a moving machine.

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

Working at heights

When the normal use and maintenance of the machine requires you to work at heights:

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

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

Do not use the machine 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.

Do not use raised equipment as a work platform.

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

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

Do not 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.

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

2 - SAFETY INFORMATION

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.

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

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

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

Ecology and the environment

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

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

Helpful hints

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

Battery recycling

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



NHIL14GEN0038AA 1

Mandatory battery recycling

NOTE: The following requirements are mandatory in Brazil.

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

Points of sale are obliged to:

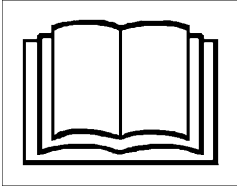
- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

Safety signs

The following safety signs are 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.

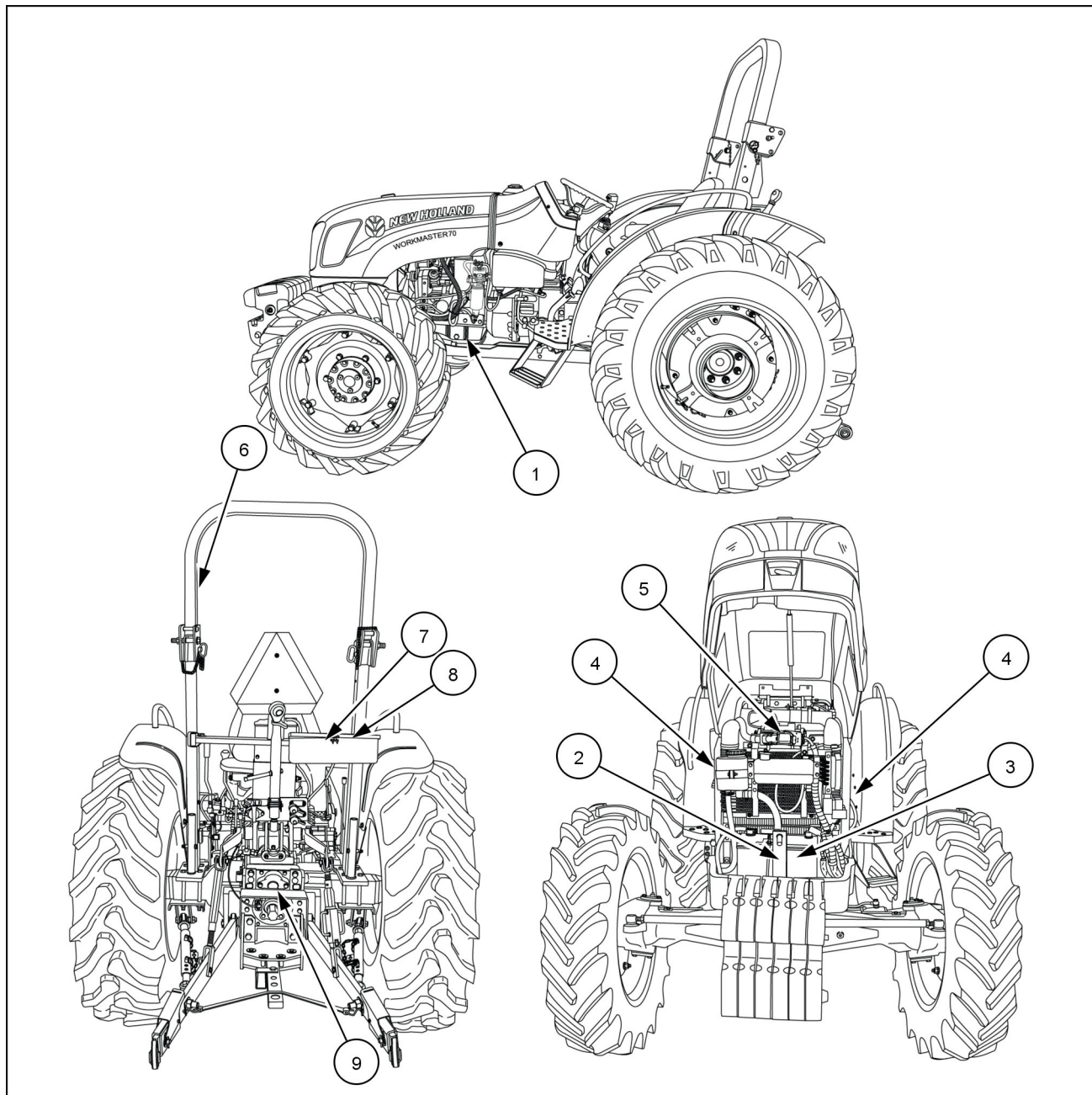
Keep safety signs clean and legible. Clean safety signs with a soft cloth, water, and a gentle detergent. Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety signs.

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.

2 - SAFETY INFORMATION



GNIL14TR00551HA 1

(1)

DANGER

- Start engine only from operator's seat. If safety switch is bypassed, engine can start with transmission in gear.
- Do not connect or short across terminals on starter solenoid.
- Attach booster cables as shown on battery decal.
- Starting in gear causing runaway can result in serious injury.
- Failure to comply will result in death or serious injury.

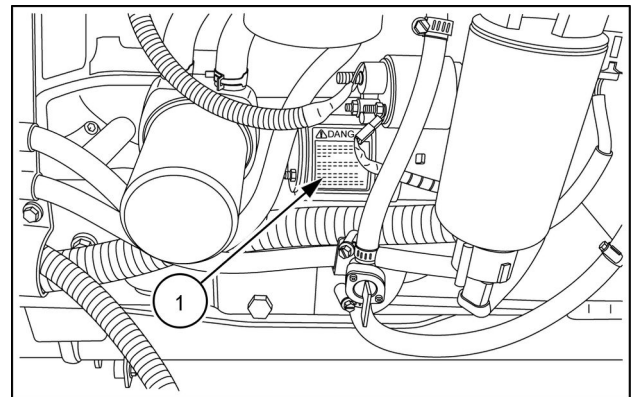
Quantity: 1

English Part Number: 82985062



82985062N 2

(1) Location: On starter motor.



GNIL14TR00568AA 3

(2)

DANGER

EXPLOSIVE

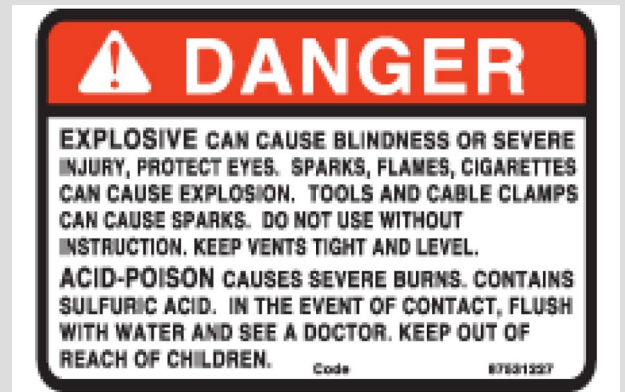
- can cause blindness or sever injury, protect eyes, sparks, flames, cigarettes can cause explosion. Tools and cable clamps can cause sparks. Do not use without instruction. Keep vents tight and level.

ACID-POISON

- causes severe burns, contains sulfuric acid. In the event of contact, flush with water and see a doctor. Keep out of reach of children.
- Failure to comply will result in death or serious injury.

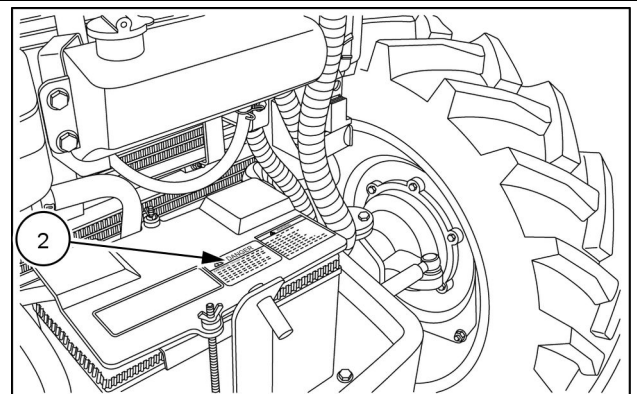
Quantity: 1

English Part Number: 87531227



87531227N 4

(2) Location: Top side of battery hold down bracket.



GNIL14TR00574AA 5

(3)
WARNING
TO JUMP START
(Negative Grounded Battery)

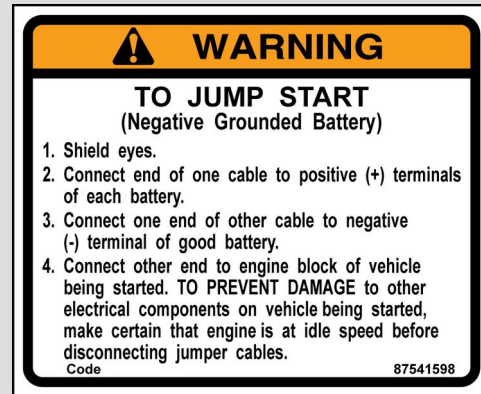
1. Shield eyes
2. Connect end of one cable to positive (+) terminals of each battery.
3. Connect one end of other cable to negative (-) terminal of good battery.
4. Connect other end to engine block of vehicle being started.

TO PREVENT DAMAGE to other electrical components or vehicle being started, make certain that engine is at idle speed before disconnecting jumper cables.

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

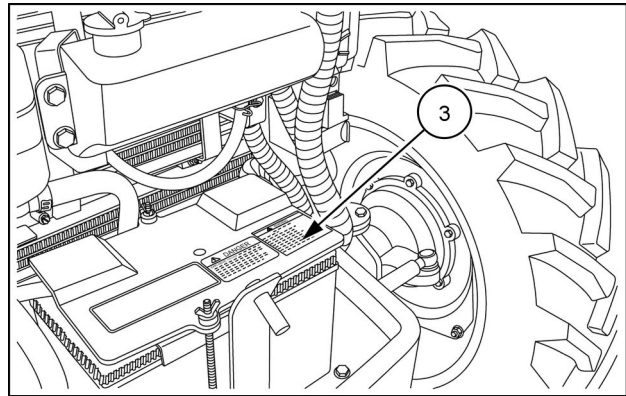
Quantity: 1

English Part Number: 87541598



87541598 6

(3) Location: Top side of battery hold down bracket.



GNIL14TR00574AA 7

(4)
WARNING

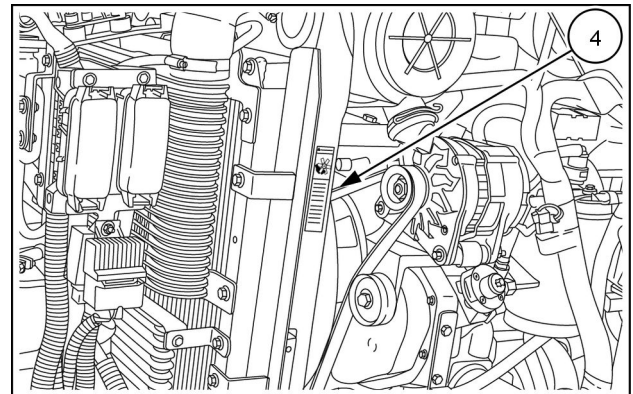
- Keep hands and clothing away from the rotating fan and belts.
- Contact with moving parts may cause loss of fingers or a hand.
- Failure to comply will result in death or serious injury.



86532907NN 8

Quantity: 2
English Part Number: 8652907

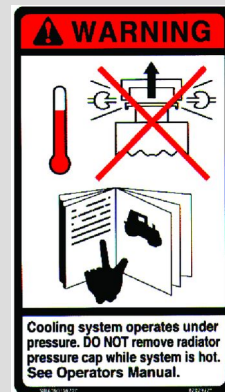
(4) Location: Both sides of the radiator.



GNIL14TR00577AA 9

(5)
WARNING

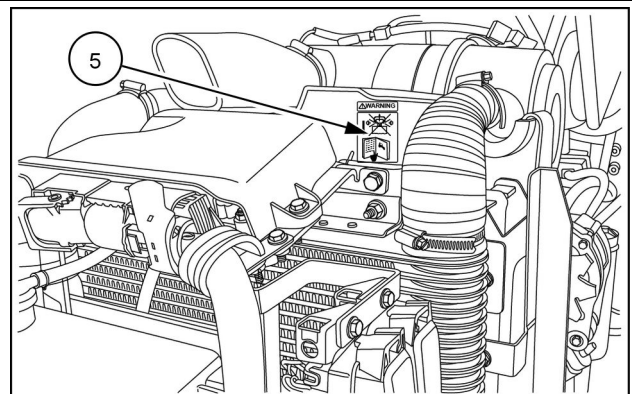
- Cooling system operates under pressure. DO NOT remove radiator pressure cap while system is hot. See Operators Manual.
- Failure to comply will result in death or serious injury.



82029421 10

Quantity: 1
English Part Number: 82029421

(5) Location: On front of air cleaner

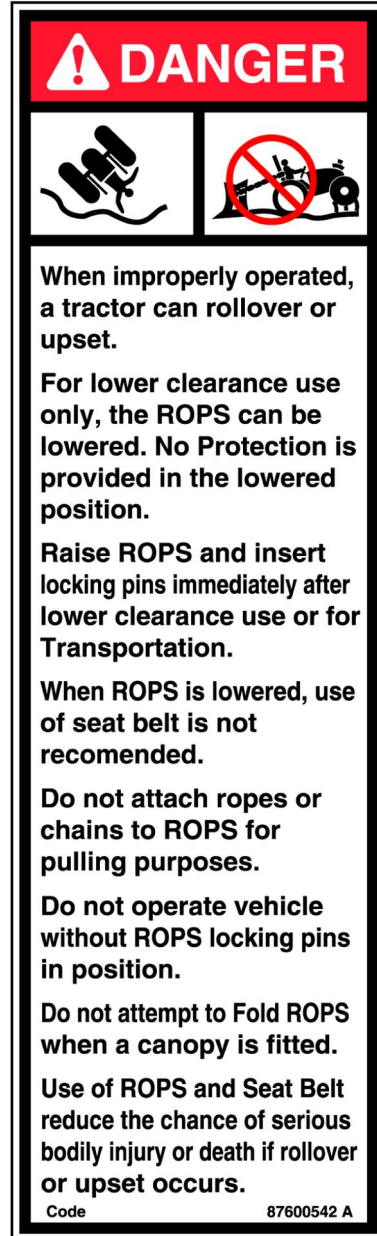


GNIL14TR00575AA 11

(6)
DANGER

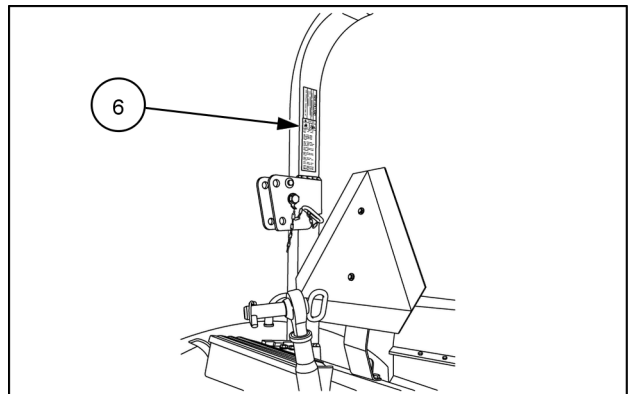
- When improperly operated, a tractor can rollover or upset.
- For lower clearance use only, the ROPS can be lowered. No protection is provided in the lowered position.
- Raise ROPS and insert locking pins immediately after lower clearance use or for transportation.
- When ROPS is lowered, use of seat belt is not recommended.
- Do not attach ropes or chains to ROPS for pulling purposes.
- Do not operate vehicle without ROPS locking pins in position.
- Do not attempt to fold ROPS when a canopy is fitted.
- Use of ROPS and seat belt reduce the chance of serious bodily injury or death if rollover or upset occurs.
- Failure to comply will result in death or serious injury..

Quantity: 1
English Part Number: 87600542



87600542N 12

(6) Location: Side of Roll Over Protective Structure (ROPS)



GNIL14TR00570AA 13

(7)
WARNING

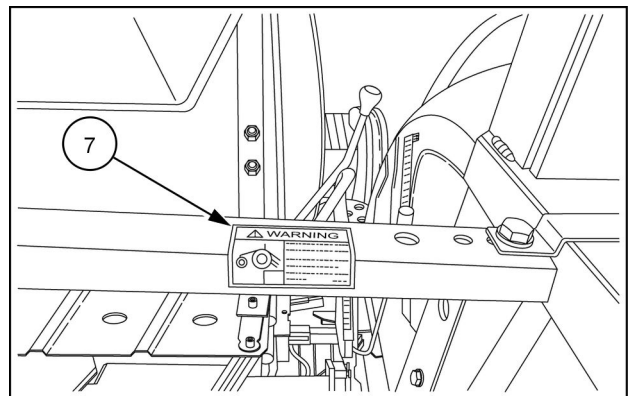
- Operate controls only from tractor seat.
Read Operator's Manual.
Failure to comply could result in death or serious injury.
- Failure to comply will result in death or serious injury.

Quantity:1
English Part Number: 87300025



87300025N 14

(7) Location: Right – hand side of ROPS cross support. .



NHIL13CT00536AA 15

(8)

(A) WARNING

- .Before starting and operating
- .Know the operating and safety instructions in the operators manual and on the tractor.
- .Clear the area of bystanders.
- .Locate and know the operation of controls.
- .Fasten your seat belt.
- .Start engine only from operators seat with transmission in neutral, PTO disengaged and hydraulic controls in the lowered position.
- .Avoid accidental contact with gear shift lever while the engine is running. Unexpected tractor movement can result.
- .Slow down on turns, rough ground and slopes to avoid upsets.
- .Do not permit anyone but the operator to ride on the tractor, unless an instructional seat has been fitted.
- .Lock brakes together, use warning lights and SMV emblem while driving on roads.
- .Lower equipment, place gear shift levers in neutral, stop engine and apply parking brake before leaving tractor seat.
- .Always engage parking brake before dismounting. Transmission will not prevent tractor from rolling when engine is shut off.
- .Keep safety shields in place for your protection.
- .FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS.**

A

 **WARNING**

- Before starting and operating:
Know the operating and safety instructions in the operators manual and on the tractor.
Clear the area of bystanders.
Locate and know operation of controls.
Fasten your seatbelt.
- Start engine only from operators seat with transmission in neutral, PTO disengaged and hydraulic controls in lowered position.
- Avoid accidental contact with gear shift lever while the engine is running. Unexpected tractor movement can result.
- Slow down on turns, rough ground and slopes to avoid upset.
- Do not permit anyone but the operator to ride on the tractor, unless an instructional seat has been fitted.
- Lock brakes together, use warning lights and SMV emblem while driving on roads.
- Lower equipment, place gear shift levers in neutral, stop engine and apply parking brake before leaving tractor seat.
- Always engage parking brake before dismounting. Transmission will not prevent tractor from rolling when engine is shut off.
- Keep safety shields in place for your protection.

FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS.

ATTENTION

- Do not tow tractor unless all transmission levers are in neutral.
- To prevent cab damage:
Place tractor hydraulic system in position control before attaching implement.
Raise the implement slowly and ensure 4" (10 cm) cab to implement clearance.
- To protect the engine and hydraulic components:
1) Idle engine for one minute before shutdown after full load operation.
2) Do not exceed half throttle for first five minutes of operation.
- Do not use creeper gears for high draft loads.
- With units equipped with creeper gears. Do not stop engine with transmission in "creeper gear" to avoid starting difficulties.

See Operators Manual for complete instructions.

82030429N

(B) ATTENTION:

- Do not tow tractor unless all transmission levers are in neutral.
- To prevent cab damage
- Place tractor hydraulic system in position control before attaching implement.
- Raise the implement slowly and ensure 4" (10cm) cab to implement clearance.
- To protect the engine and hydraulic components:
 - 1) Idle engine for one minute before shutdown after full load operation.
 - 2) Do not exceed half throttle for first five minutes of operation.
- Do not use creeper gears for high draft loads.
- With units equipped with creeper gears. Do not stop engine with transmission in "creeper gear" to avoid starting difficulties.
- See Operators Manual for complete instructions.

Quantity: 1

English Part Number: 82030429

B

 **WARNING**

- Before starting and operating:
Know the operating and safety instructions in the operators manual and on the tractor.
Clear the area of bystanders.
Locate and know operation of controls.
Fasten your seatbelt.
- Start engine only from operators seat with transmission in neutral, PTO disengaged and hydraulic controls in lowered position.
- Avoid accidental contact with gear shift lever while the engine is running. Unexpected tractor movement can result.
- Slow down on turns, rough ground and slopes to avoid upset.
- Do not permit anyone but the operator to ride on the tractor, unless an instructional seat has been fitted.
- Lock brakes together, use warning lights and SMV emblem while driving on roads.
- Lower equipment, place gear shift levers in neutral, stop engine and apply parking brake before leaving tractor seat.
- Always engage parking brake before dismounting. Transmission will not prevent tractor from rolling when engine is shut off.
- Keep safety shields in place for your protection.

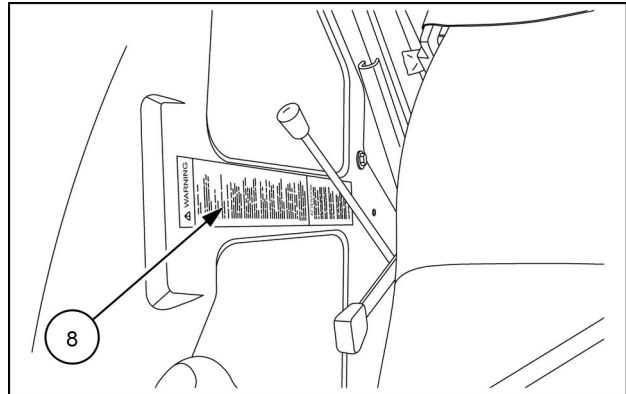
FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS.

ATTENTION

- Do not tow tractor unless all transmission levers are in neutral.
- To prevent cab damage:
Place tractor hydraulic system in position control before attaching implement.
Raise the implement slowly and ensure 4" (10 cm) cab to implement clearance.
- To protect the engine and hydraulic components:
1) Idle engine for one minute before shutdown after full load operation.
2) Do not exceed half throttle for first five minutes of operation.
- Do not use creeper gears for high draft loads.
- With units equipped with creeper gears. Do not stop engine with transmission in "creeper gear" to avoid starting difficulties.
- See Operators Manual for complete instructions.

82030429

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



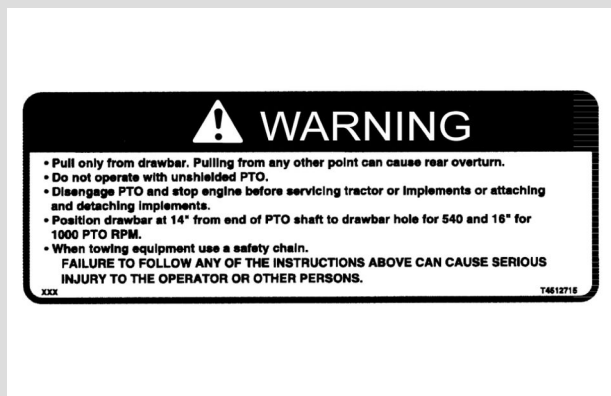
GNIL14TR00573AA 18

(9)
WARNING

- Pull only from drawbar. Pulling from any other point can cause rear overturn.
- Do not operate with unshielded PTO.
- Disengage PTO and stop engine before servicing tractor or implements or attaching or detaching implements.
- Position drawbar at 14" from end of PTO shaft to drawbar hole for 540 and 16" for 1000 PTO RPM.
- When towing use a safety chain.
- **FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS.**

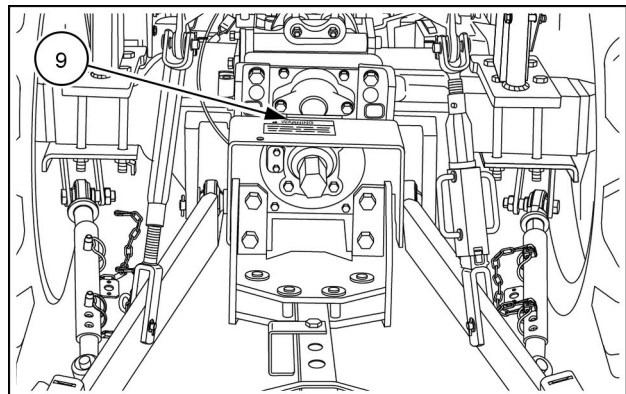
Quantity: 1

English Part Number: 86532904



86532904N 19

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



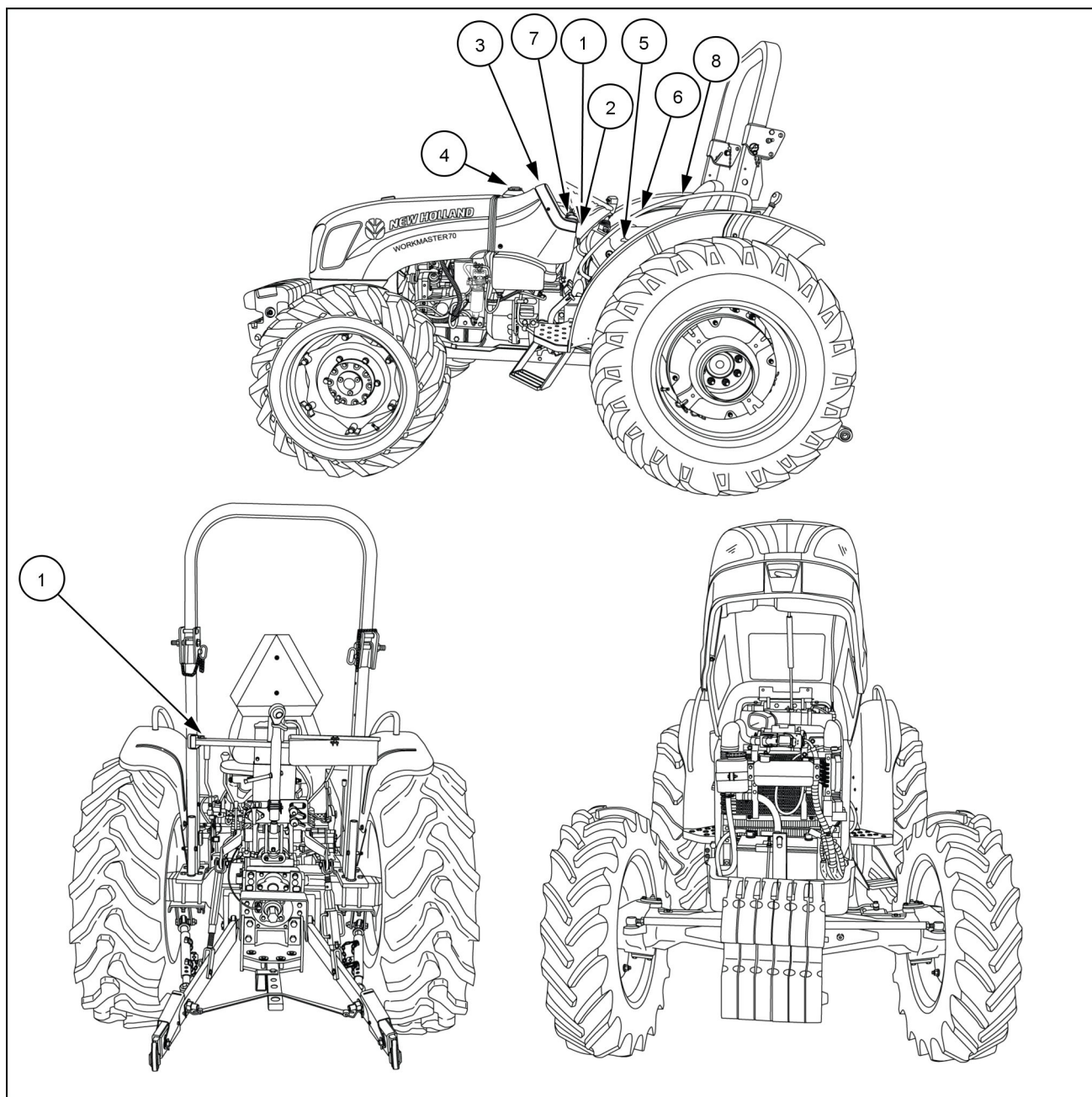
GNIL14TR00579AA 20

Instructional signs

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

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

2 - SAFETY INFORMATION



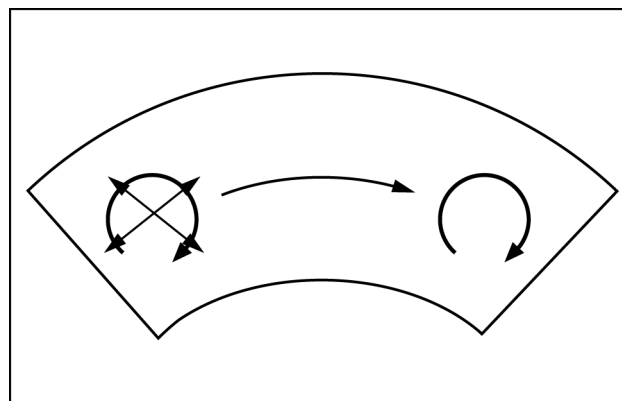
GNIL14TR00551HA 1

(1)

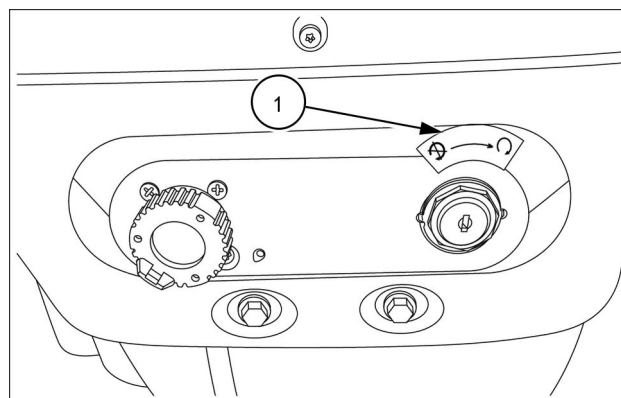
Key switch

- Part number 82833395

Location: Above the key switch



GNIL14TR00563AA 2



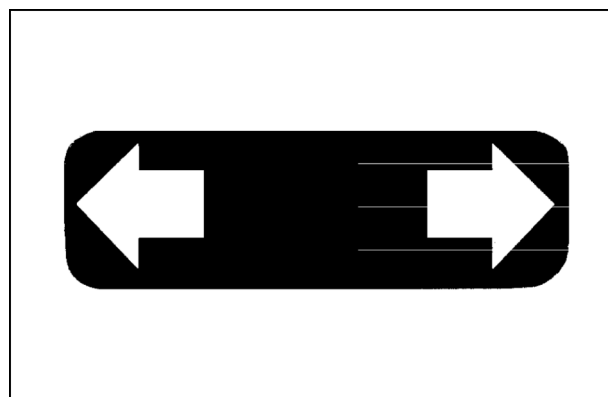
GNIL14TR00576AA 3

(2)

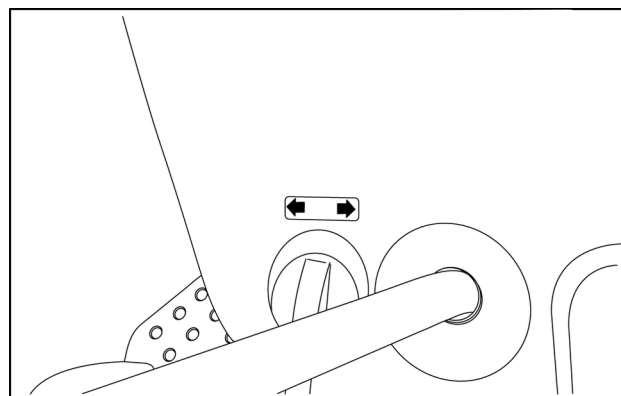
Turn signal

- Part number 87316799

Location: Above turn signal switch



87316799N 4



NHIL13CT00531AA 5

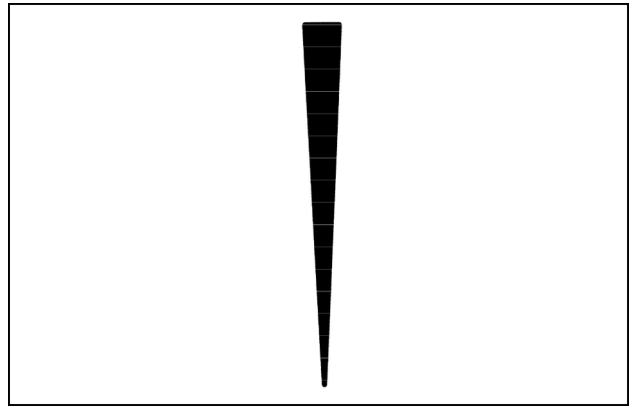
2 - SAFETY INFORMATION

(3)

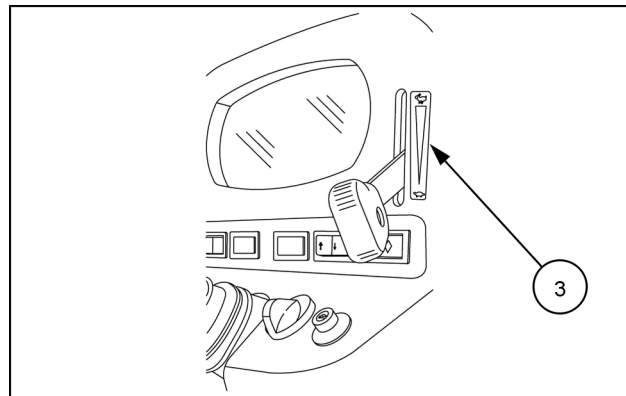
Hand throttle

- Part number 81863547

Location: Top right-hand side of dash



81863547N 6



GNIL14TR00571AA 7

(4)

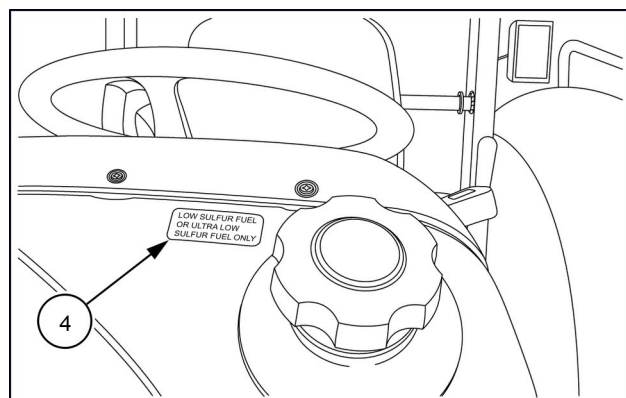
Low sulfur fuel

- Part number 87478167

Location: Beside fuel cap



87478167 8



NHIL13CT00533AA 9

2 - SAFETY INFORMATION

(5)

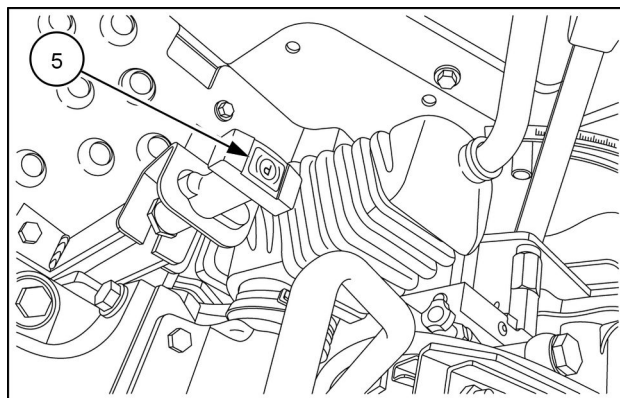
Park brake

- Part number 82016114

Location: Below operator's seat on right-hand side on top of park brake knob.



82016114N 10



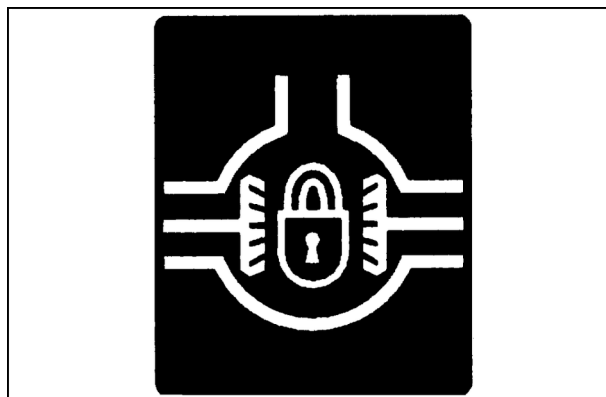
GNIL14TR00572AA 11

(6)

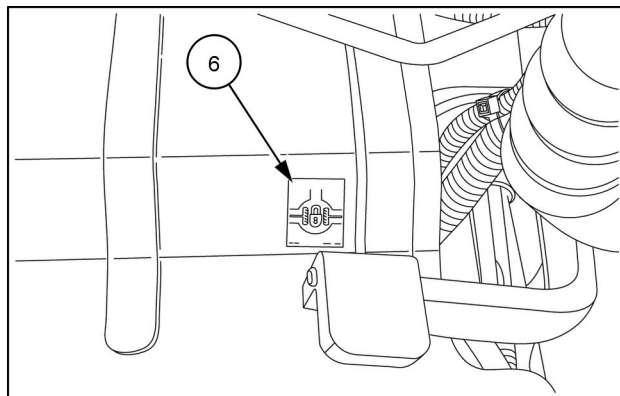
Differential lock

- Part number 86532901

Location: Right-hand side of operator's platform.



86532901N 12



NHIL13CT00538AA 13

2 - SAFETY INFORMATION

(7)

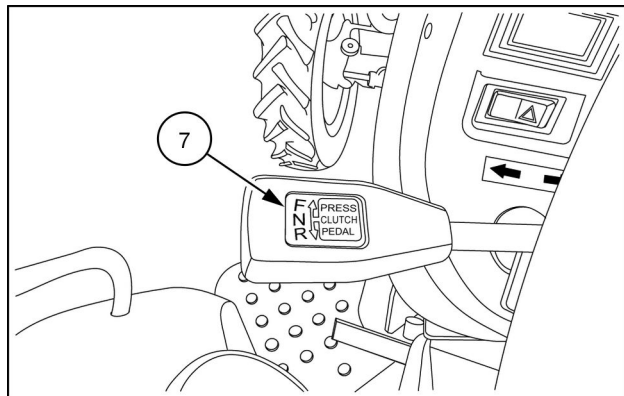
Shuttle shift

- Part number 84135594

Location: On shuttle shift lever knob



84135594 14



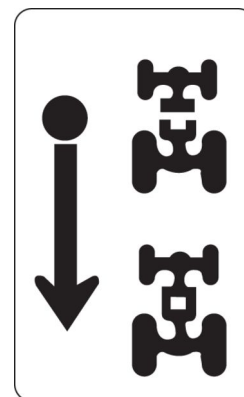
NHIL13CT00546AA 15

(8)

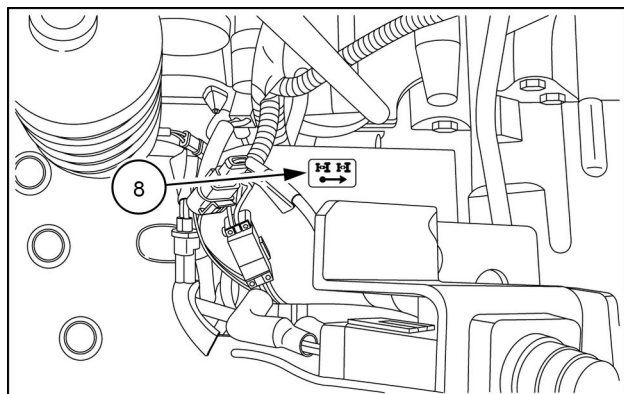
FWD

- Part number 5143545

Location: Lower left-hand side of the operator's platform.



5143545 16



GNIL14TR00569AA 17

(9)

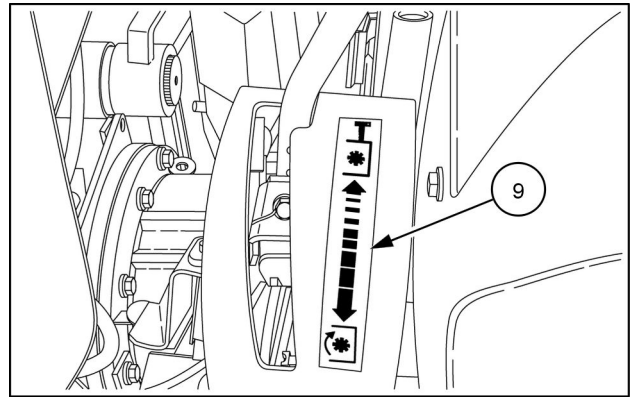
PTO control

- Part number 86538220

Location: Left-hand side of operator's platform on Power
Take-Off (PTO) quadrant



84259170 18



NHIL13CT00534AA 19

3 - CONTROLS AND INSTRUMENTS

ACCESS TO OPERATOR'S PLATFORM

Before operating

⚠ WARNING

Improper operation or service of this machine can result in an accident. Read and understand the SAFETY INFORMATION Section before you operate or service the machine. Failure to comply could result in death or serious injury.

W0266A

Read this section thoroughly. The controls and instruments section details the location and operation of the various instruments, switches, and controls on your tractor. Even if you operate other tractors, you should thoroughly read this section of the manual and ensure that you are familiar with the location and function of all the features of the tractor.

Do not start the engine, or attempt to drive or operate the tractor until you are fully familiar with all the controls. It is too late to learn once the tractor is moving. If you have any questions about any aspect of operation of the tractor, consult your authorized dealer.

Pay particular attention to the recommendations for running-in to ensure that your tractor will give the long and dependable service for which it was designed.

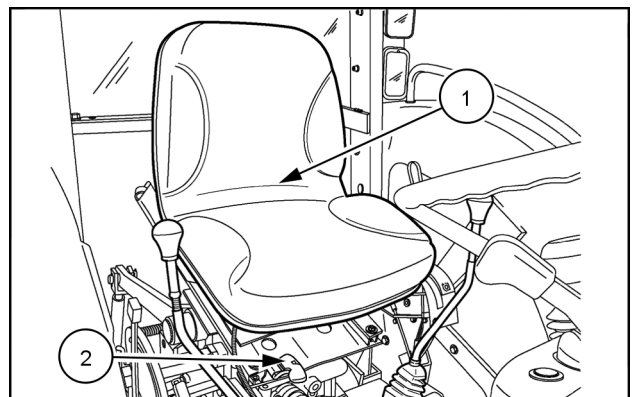
OPERATOR'S SEAT

Operator's seat

Your tractor is equipped with an adjustable seat, (1). Before operating the tractor, it is important to adjust the seat to the most comfortable position. See the following text and illustrations for details.

Operator's seat adjustment

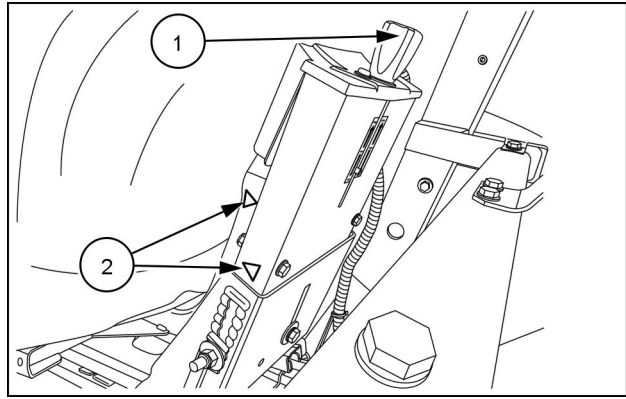
To move the seat forward and rearward, raise the lever, (2), and position the seat to a comfortable position. Do not start the engine or attempt to drive or operate the tractor until you are fully familiar with all the controls. It is too late to learn once the tractor is moving. If you have any questions about any aspect of operation of the tractor, consult your authorized dealer.



NHIL13CT00714AA 1

Weight adjustment

Sit on the operator's seat. Adjust the weight adjustment knob (1) and match the two arrows (2) for optimum comfort. This is also necessary for the proper functioning of the operator alert system.



GNIL14TR00590AA 2

Seat belt

⚠ WARNING

Equipment failure could cause accident or injury!

Always fasten the seat belt securely before you operate the machine. Inspect seat belt parts for wear and damage. Replace any and all worn or damaged parts of the seat belt prior to operation.

Failure to comply could result in death or serious injury.

W0046C

⚠ WARNING

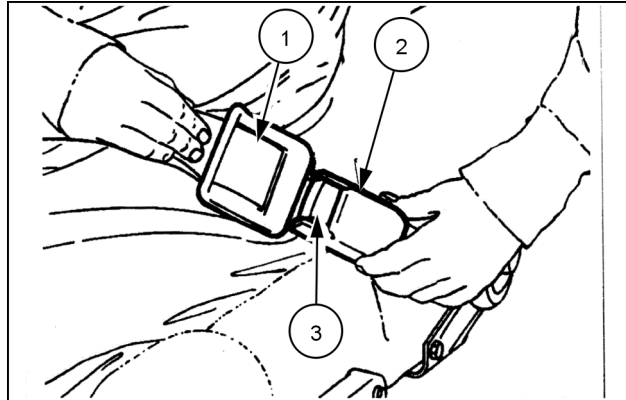
Crushing hazard!

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

To fasten the seat belt, pull the belt from the retractor and push the tongue (1) into the buckle end (2) until a 'click' indicates that the tongue is properly engaged. Press the red release button (3) on the buckle and remove the tongue from the buckle.



20108779 1

Cleaning the seat and seat belt

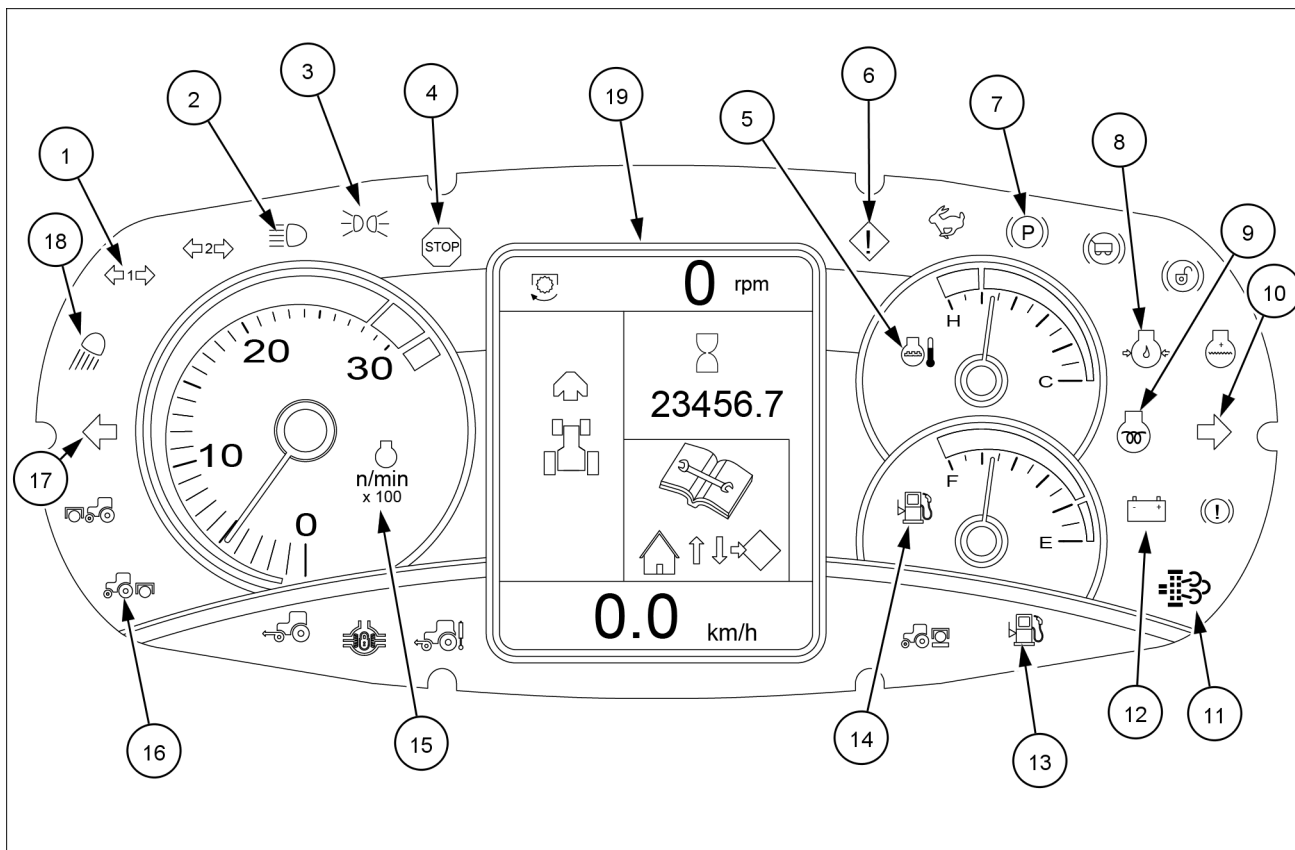
The seat belt may be sponged with clean, soapy water. Do not use solvents, bleach or dye on the belt as these chemicals will weaken the webbing.

Replace the seat belt when the seat belt shows signs of fraying, damage or general wear.

Do not use solvents to clean the seat. Use only warm water with a little detergent added or a proprietary brand of automotive upholstery cleaner. Avoid wetting the seat more than is absolutely necessary.

FORWARD CONTROLS

Instrument cluster - Localization overview



GNIL14TR00509FA 1

The indicator lights on the control panel inform you of the operational condition of the machine. Some of these indicate faults arising during operation. An indicator light coming on may be followed by a continuous or intermittent buzzer. Depending on the severity of the trouble, the alarm will sound.

- 1  **Trailer direction indicator light (green)**
This indicator light flashes together with the tractor/trailer direction indicators, if the first trailer is connected
- 2  **High beam headlights (blue)**
This indicator light will illuminate when the tractor headlights are switched to high beam.
- 3  **Marker lights (green)**
This indicator light is illuminated when the tractor lights are turned on.
- 4  **Stop warning light (red)**
If the red "Stop" warning light illuminates, switch off the tractor immediately and look for the cause. A warning symbol will appear on the display confirming the location of the fault.
- 5  **Engine coolant temperature gauge**
This instrument indicates the temperature of the engine coolant.

- Indicator lamp (amber)**
This indicator light illuminates and the display shows a warning symbol . The light blinks for 4 seconds, after which the symbol on the display disappears and the indicator light stays on steady. To display the fault, you need to go to the menu **6** . Stop the tractor and investigate the cause of the trouble.
- Parking brake warning light (red)**
This indicator illuminates when the key start switch is turned ON with the parking brake applied. If the key-start switch is turned OFF and the parking brake is not applied, or the operator leaves the seat without applying the parking brake, a warning buzzer will sound for approximately 10 seconds or until the parking brake has been applied.
- Engine oil pressure warning light (red)**
This indicator light together with the red **(5)**. "Stop" indicator light indicates the engine oil pressure is too low. Stop the engine and investigate the cause.
NOTE: With low engine oil pressure, this warning light illuminates when the start switch is in the contact position (supply to accessories - ignition).
- Cold start device (amber)**
The indicator lights up when the glow plugs are turned on by the key switch.
- Right-hand direction indicator (green)**
This indicator light flashes at the same time as the tractor's right-hand direction indicator. With the tractor running, if the turn signal is not switched off within 20 seconds, an intermittent alarm comes on. This audible warning comes on if the direction indicator is not turned off within five minutes with the tractor stationary.
- Warning light of the Diesel Particulate Filter (DPF) (green)**
For more details, see the chapter on regeneration of the particulate filter.
- Alternator charging warning light (red)**
A steady light indicates that the alternator is not charging the battery.
- Fuel reserve (amber)**
The light comes on when the tractor needs to be refueled.
- Fuel level gauge**
This instrument shows the fuel level in the tank.
- Revolution counter**
Indicates the engine — **RPM** . Each subdivision of the graduated scale represents **100 RPM**
- Rear Power Take-Off (PTO) indicator light (yellow)**
Lights up when the engine is running and the rear Power Take-Off (PTO) is engaged. The indicator light will start to flash if the engine speed exceeds the maximum allowable engine speed for the PTO..
- Left-hand direction indicator (green)**
This indicator light flashes at the same time as the tractor's left-hand direction indicator. With the tractor running, if the turn signal is not switched off within 20 seconds, an intermittent alarm comes on. This audible warning comes on if the direction indicator is not turned off within five minutes with the tractor stationary.

18



Work lights (amber)

This indicator light illuminates when the work lights are switched on.

19

Information display

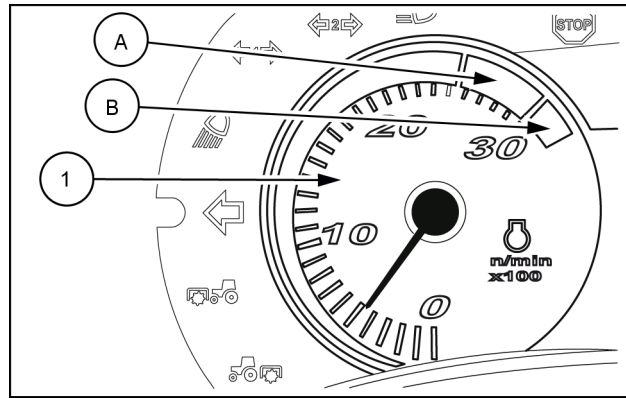
The display shows information on the operational condition of the machine and highlights any trouble in the form of symbols or error codes.

Tachometer

The tachometer **(1)** indicates the engine speed in Revolutions Per Minute (RPM). Each division on the scale represents **100 RPM**. Therefore, with the needle indicating 20, the engine is running at **2000 RPM**.

Engine speed

NOTICE: Never run the engine continuously or for a long periods of time at speeds between **2500 - 3000 RPM** (yellow area **(A)** on the tachometer) to avoid damage to the engine. Never exceed **3000 RPM** (red area **(B)** on the tachometer). For appropriate use, always operate the engine under **2300 RPM**.



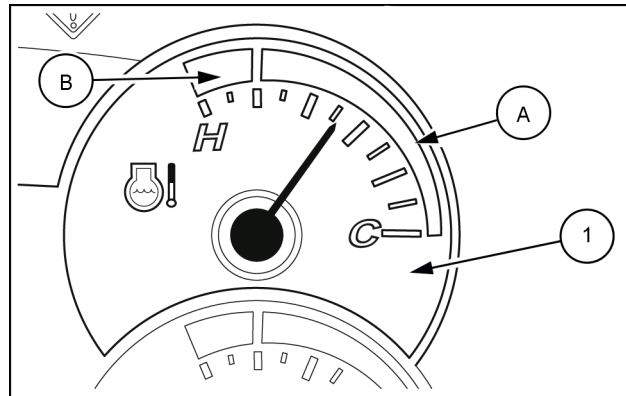
DCUTLBRNE003S3A 2

Engine coolant temperature gauge

The temperature display **(1)** indicates the temperature of the engine coolant.

- green area **(A)** = normal temperature
- red area **(B)** = temperature too high

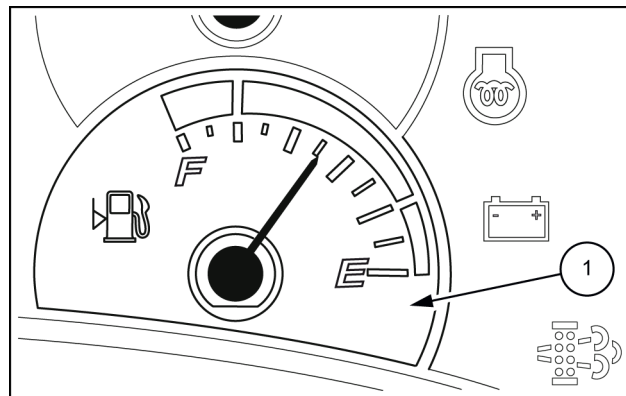
If the engine overheats, slow the engine to idling speed (without stopping the engine) and, if the light stays on, have the cooling system checked.



DCUTLBRNE004S3A 3

Fuel level gauge

This instrument **(1)** indicates the level of diesel in the tank and only works when the ignition key is turned to ON.

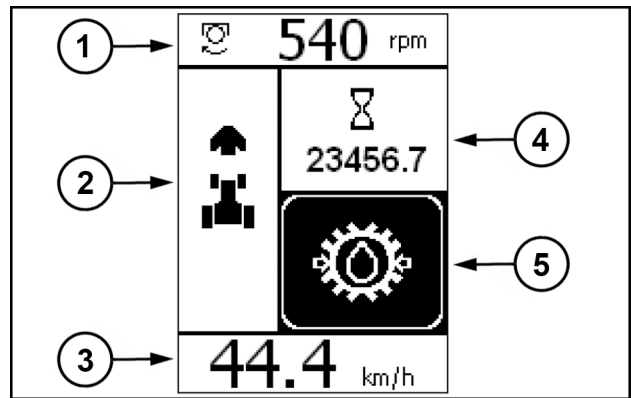


DCUTLBRNE005S3A 4

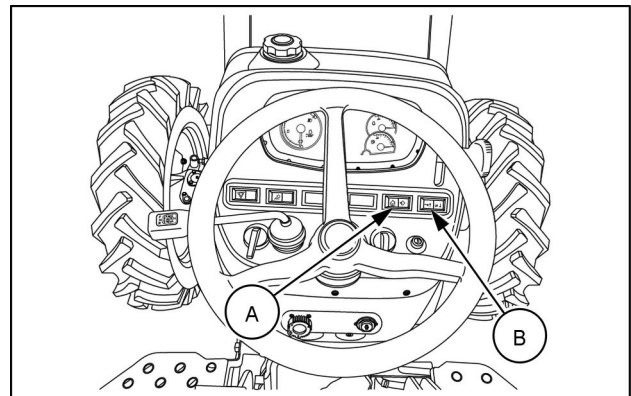
Central display

The central Liquid Crystal Display (LCD) provides the operator with a range of information

1. Front or rear Power Take-Off (PTO) speed
Front or rear lift position
Slip
Data displayed by pressing and releasing the button ENTER, see figure 6
2. Tractor direction
3. Speed of the vehicle in Km/h or MPH
4. Tractor hour meter
5. Kilometers or miles travelled
Area worked
Area worked per hour
Battery voltage
Data displayed by pressing the arrow buttons up or down (**B**), see 6
When necessary, warning and error messages
Programming menu (see specific chapter)

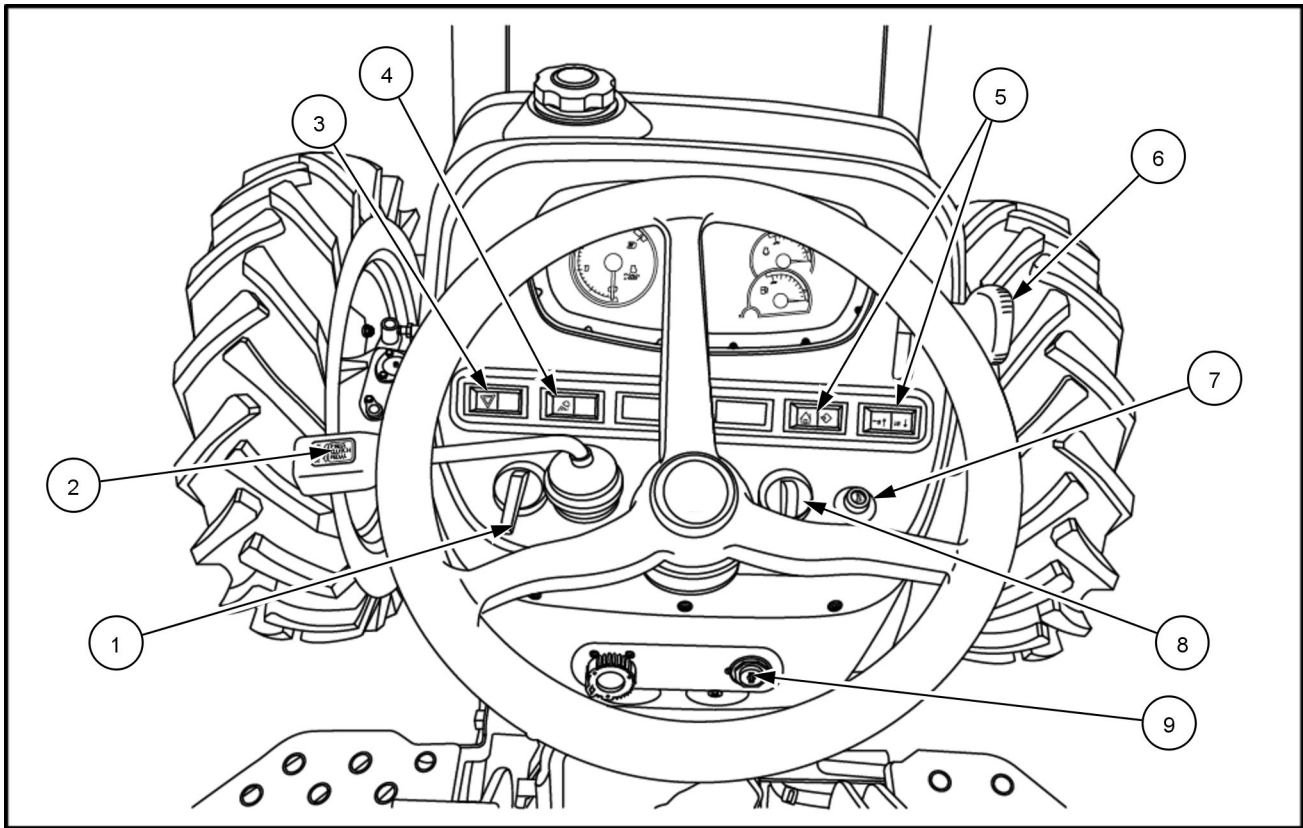


DCAPLT5NE005S3F 5



GNIL14TR00512AA 6

Hand controls and switches



GNIL14TR00512AA 1

Turn signal switch

The turn signal switch **(1)** activates the turn signals. Move the turn signal switch to the right to operate the right-hand turn indicator light and to the left to operate the left-hand turn indicator light.

NOTE: The turn signal will operate only when the key switch is turned on.

Shuttle shift lever

The shuttle shift lever **(2)** is used to change the direction of travel, between forward and reverse.

Central display navigation buttons

Navigate through the menus of the central Liquid Crystal Display (LCD) with the rocker switches **(5)**. **(A)** and **(B)** see the image in the previous page.

Hand throttle lever

The hand throttle lever **(6)** should be used during field operation of the tractor.

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

Hazard switch

The hazard switch **(3)** activates the hazard flasher lights. Use the hazard flasher lights when traveling on public roads, day or night.

Head light switch

The head light switch **(4)** consists of four positions, (see head light switch positions, see **2**).

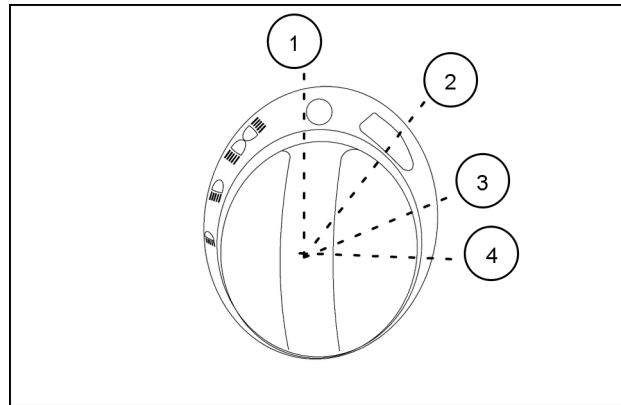
Horn Button

Press the horn button **(7)** to activate the horn.

Head Light Switch Positions

The head light switch (8), see 1 consists of four positions,

- Position (1) - Off
- Position (2) - Parking lights on.
- Position (3) - Head lamp low beam.
- Position (4) - Head lamp high beam.



20108778 2

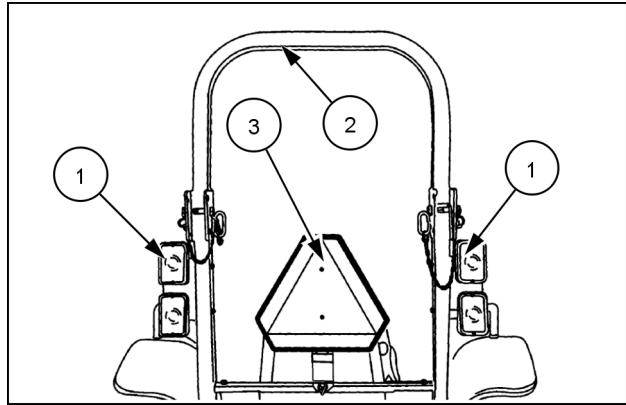
Key start/stop switch

The key switch (9) activates electrical equipment, lights, gauges, and starter motor.

Hazard Warning Light Switch

The hazard warning lights switch **(3)** (**1**) activates the hazard flashing warning lights **(1)** located on each side of the Roll Over Protective Structure (ROPS) **(2)**.

The hazard flashing warning lights can be activated with the key switch in any position. For your protection, use the flasher warning lights and the Slow Moving Vehicle (SMV) emblem **(3)** when travelling on public roads, day or night.

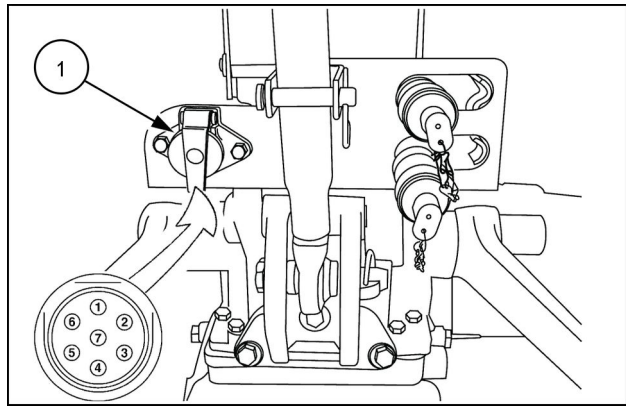


Trailer electrical socket

A standard 7-pin trailer socket **(1)** is a standard equipment and the 7-pin trailer socket is mounted to the left-hand side of ROPS cross brace.

The trailer socket pin connections (see insert) are as follows:

Pin No.	Circuit
1	Ground (White)
2	Side Marker Lights
3	Left-hand flashing and turn indicator
4	Stop Lamp
5	Right-hand flashing and turn indicator
6	Tail Lamp
7	NA

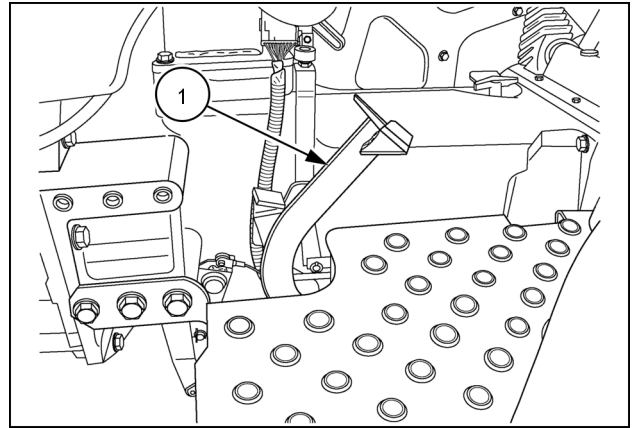


Clutch pedal

When the clutch pedal **(1)** is depressed, the drive between the engine and the transmission will be disengaged. Use the clutch pedal to transfer engine power smoothly to the rear wheels when moving off from a stationary position.

NOTICE: Always depress the clutch pedal before engaging or disengaging a gear.

NOTICE: Do not use the clutch pedal as a footrest when driving the tractor. Such action will lead to clutch slippage and premature clutch failure.



86090118 1

Brake pedals - Control identification

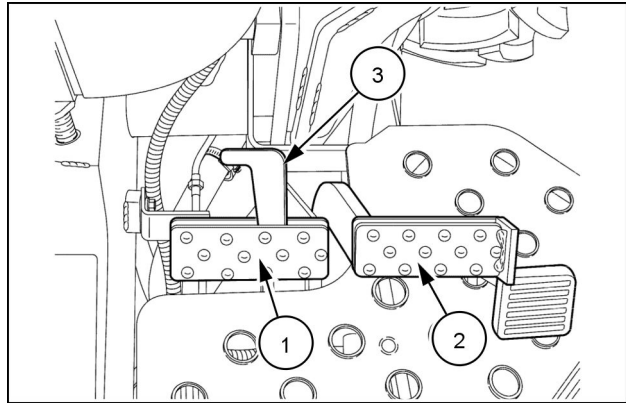
⚠ WARNING

Loss of control hazard!

One-sided brake force exists if you do not use the brake pedal latch, and if you do not depress the left and right pedals at the same time. **ALWAYS** use the brake pedal latch when traveling at transport speeds and/or when a trailer with hydraulic or air-applied brakes is attached to the machine.

Failure to comply could result in death or serious injury.

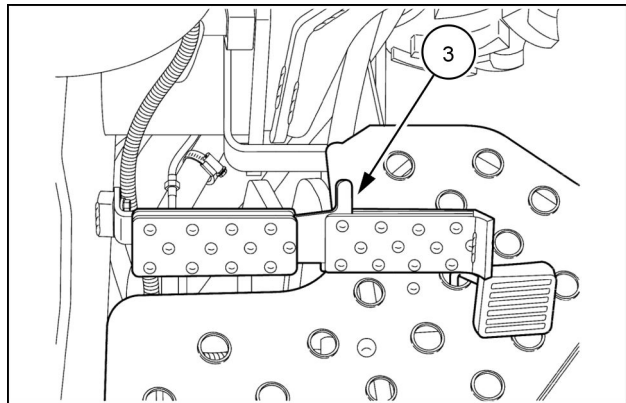
W0375A



Brake pedals

The left-hand and right-hand foot brakes (1) & (2), may be operated independently to assist turning in confined spaces or locked together for normal stopping. When operating in the field the brake pedals may be unlocked. However, due to the proximity of the pedals to one another, it is still possible to apply both brakes together when required. To lock the pedals together, pivot the latch (3) into the right-hand brake pedal (2) slot.

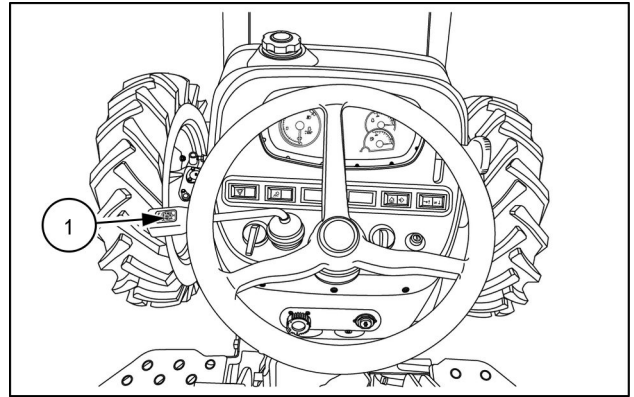
NOTE: The brake latch is used to lock both brake pedals together. Brake pedals must be locked together for road travel. This will insure uniform brake application and maximum stopping ability.



Transmission - Control identification

Transmission shuttle lever

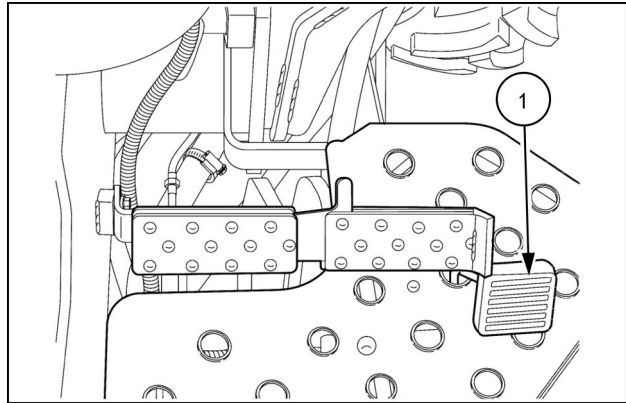
The shuttle shift lever (1) is used to engage the transmission into forward or reverse. You must depress the clutch pedal in order to shift the transmission. Move the lever forward to enable the tractor to travel forward and rearward to enable the tractor to travel in reverse.. The shuttle lever must be in the neutral (middle) position to activate the safety start system and allow the engine to start.



GNIL14TR00512AA 1

Foot throttle control - Control identification

The foot throttle pedal **(1)** may be used independently of the hand throttle lever to control the speed of the tractor. Use the foot throttle pedal when you drive on the main road or on the highway.



86096195N 1

LEFT-HAND SIDE CONTROLS

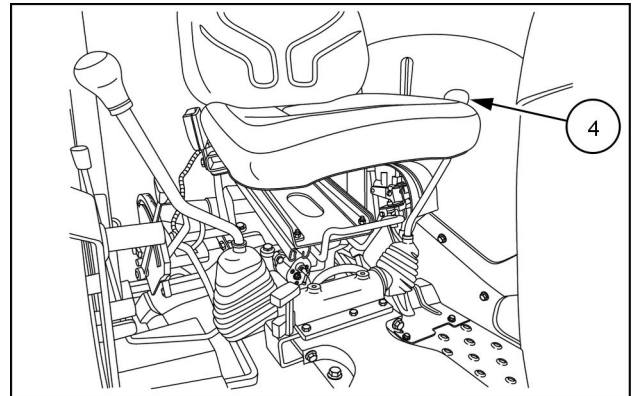
Transmission - Control identification

Transmission range lever (Hi-Low)

The Hi-Low range lever (4) is used to select the high or low range, which gives the operator double the number available speeds. Always depress the clutch pedal fully and bring the tractor to a complete stop prior to moving the range selector from high to low.

To change the gear range; depress the clutch pedal, stop the tractor, and shift Hi-Low range lever (4) rearward for high or forward for low gear.

NOTICE: DO NOT attempt to change range gears while the tractor is moving. The range gears are not synchronized. The clutch pedal must be fully depressed and the tractor stopped to change gear ratios with the range shift lever.



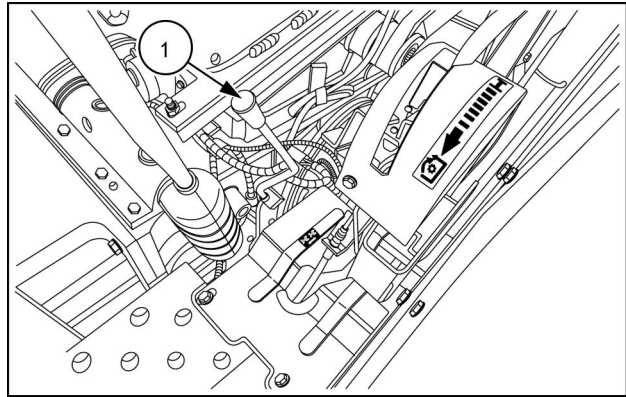
GNIL14TR00785AA 1

Four-Wheel Drive (4WD)

The Four-Wheel Drive (4WD) option is controlled by a lever (1) located on the left-hand lower side of operator's platform.

To engage 4WD, move the lever completely rearward. To disengage 4WD, move the lever fully forward.

NOTICE: *Four-Wheel Drive (4WD) 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 travelling on road at high speeds, disengage the 4WD to maximize tire and drive-line life, and to reduce fuel consumption.*



NHIL13CT00583AA 1

Power Take-Off (PTO) - Control identification

⚠ WARNING

Entanglement hazard!
Do not wear loose clothing when operating Power Take-Off (PTO) driven equipment.
Failure to comply could result in death or serious injury.

W0337A

⚠ DANGER

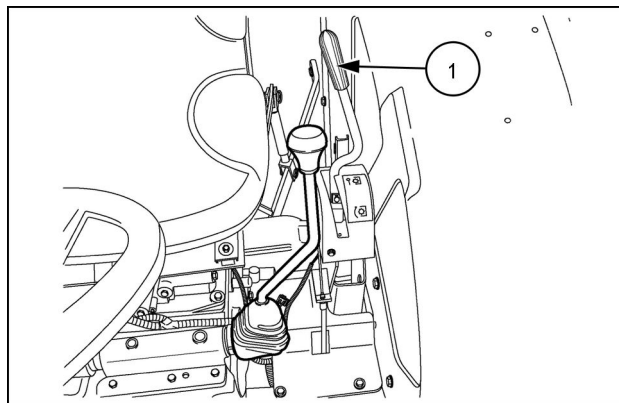
Entanglement hazard!
Make sure all people and obstructions are clear of the implement before engaging the tractor Power Take-Off (PTO).
Failure to comply will result in death or serious injury.

D0077A

The Power Take-Off (PTO) lever (1) is located on the left-hand side of the operator's platform. The PTO lever (1) is used to engage or disengage the power transmission to the rear PTO shaft from engine.

A standard speed of **540 RPM** PTO can be obtained at an engine speed of **2575 RPM**.

Shift the lever (1) forward to engage the PTO and rearward to disengage the PTO.

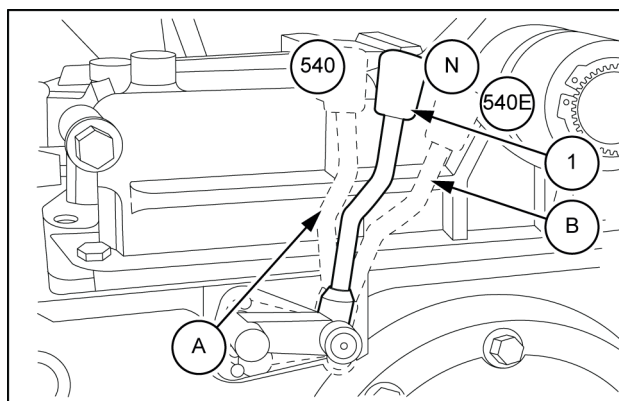


86090124N 1

Power Take-Off (PTO) Lever

A standard speed of **540 RPM** PTO can be obtained at an engine speed of **2575 RPM** and **540E RPM** can be obtained at an engine speed of **2016 RPM**.

Shift lever (1) to position (A) to get PTO **540 RPM** and shift the lever (1) to position (B) to get PTO **540E RPM**.



GNIL14TR00553AA 2

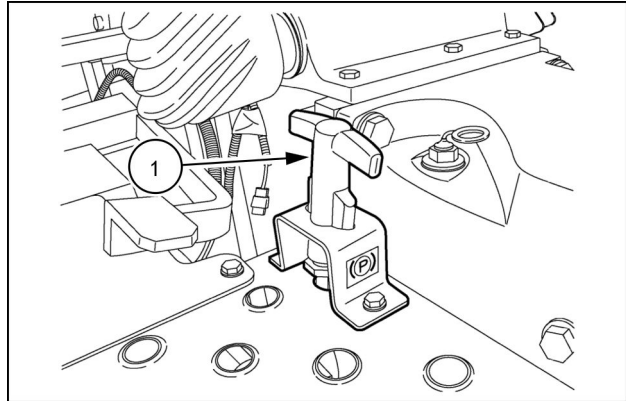
RIGHT-HAND SIDE CONTROLS

Parking brake

1. The "T" shaped park brake handle (1) is used in conjunction with the foot brakes.
2. To apply the park brake, first pull up the "T" handle and lock the "T" shaped handle in place by rotating **90 °**
3. Then press the brake pedals firmly and release after ensuring the pawl of the park brake is locked in one of the teeth of ratchet provided on the foot brake pedal lever.
4. To release the park brake, press the foot brake pedal, rotate the "T" handle **90 °** and release the handle and foot brake pedal.

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

NOTE: Always apply the park brake when getting off of the tractor. If the park brake is not applied or operator leaves the seat without applying the park brake a warning buzzer will sound for approximately ten seconds.



86090119N 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.

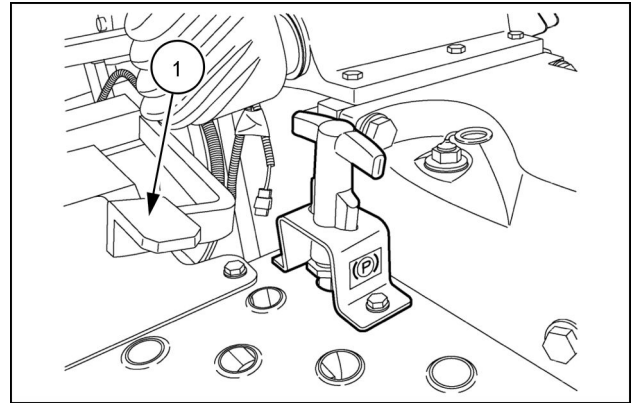
W0292A

Differential lock pedal

Depress the differential lock pedal to engage the differential lock in the following cases:

- During plowing, to reduce slippage of the land-side wheel.
- When one of the rear wheels loses grip due to uneven, muddy, or loose soil.

NOTICE: *If one rear wheel spins at higher speed than the other, reduce the engine speed before trying to engage the differential lock. This will avoid shock loads and the risk of damage to the internal components.*

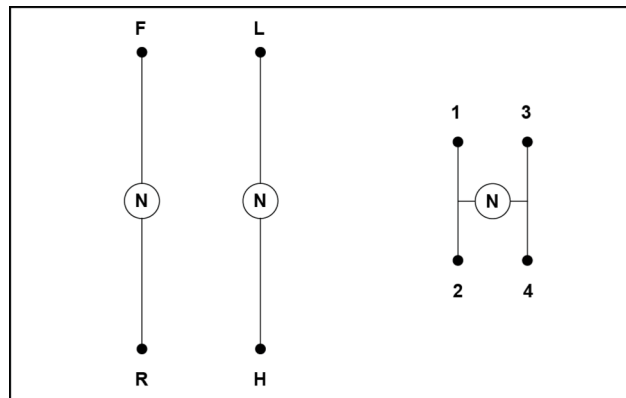


86090119N 1

Transmission - Control identification

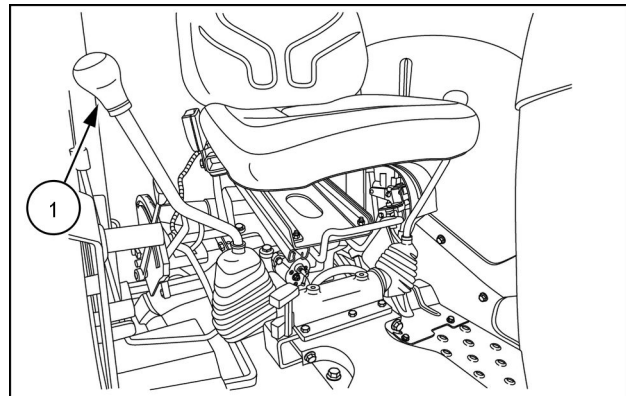
Transmission main shift lever

The main transmission shift lever **(1)** operates in an H-Pattern. To change the gears while in the selected range; depress the clutch pedal, stop the tractor, and shift main gear lever into the desired gear.



GNIL14TR00513AC 1

The main transmission shift lever **(1)** is used to select any one of the four forward or reverse gears.



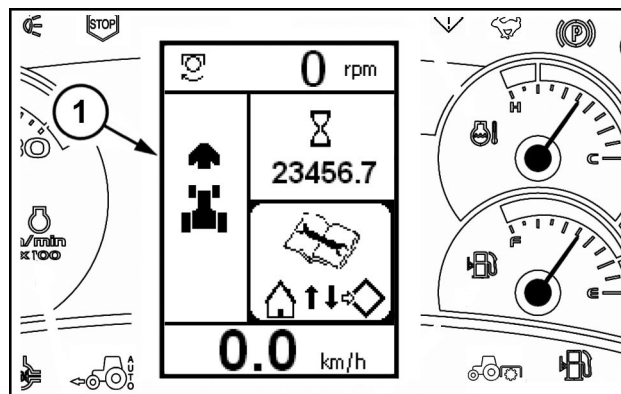
GNIL14TR00785AA 2

DISPLAY SETTINGS

Instrument cluster Analog-Digital Instrument Cluster (ADIC) - Program

The multifunction Liquid Crystal Display (LCD) **(1)** can show useful and necessary information when driving and a menu for making the following adjustments:

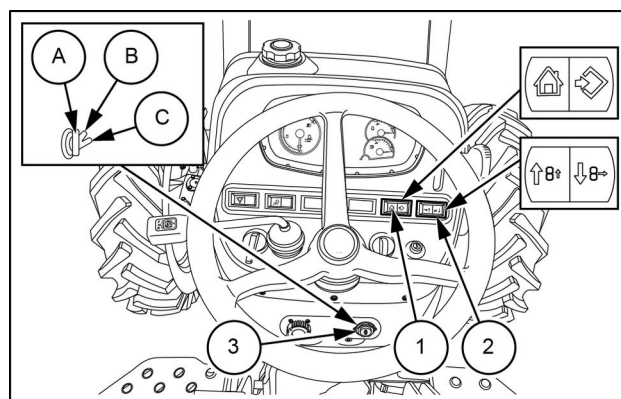
- Tractor speed calibration .
- Implement width.
- Programmed maintenance.
- Sound level on/off on pressing the buttons.
- Diesel particulate filter control (DPF).
- Resetting oil change.
- Viewing active error codes and warning messages.



DCAPLT5NE044S3A 1

Navigate the menu with the rocker switches **(1)** and **(2)** .. Each rocker switch provides two controls, depending on the position where the rocker switch is pressed.

To enter the "SETUP MENU", turn the start switch key **(3)** to position **(B)**, panel powered, and subsequently keep the switch **(1)** pressed on the symbol **(B)** for more than three seconds.



GNIL14TR00516AA 2

Switch (1)

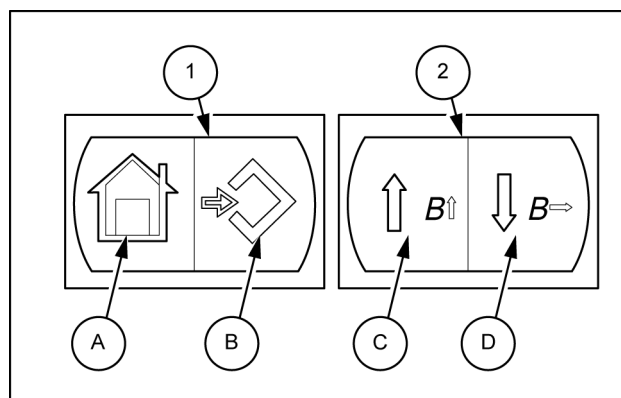
(A) Exit/Cancel. Use this switch position to cancel or quit the setting and programming modes.

(B) Menu/Enter. Use this switch position to enter the menu or confirm the settings.

Switch (2)

(C) Up arrow = scrolling up through the menu or numerical value. Press this switch position repeatedly to scroll forwards in the menu or change the value of a number.

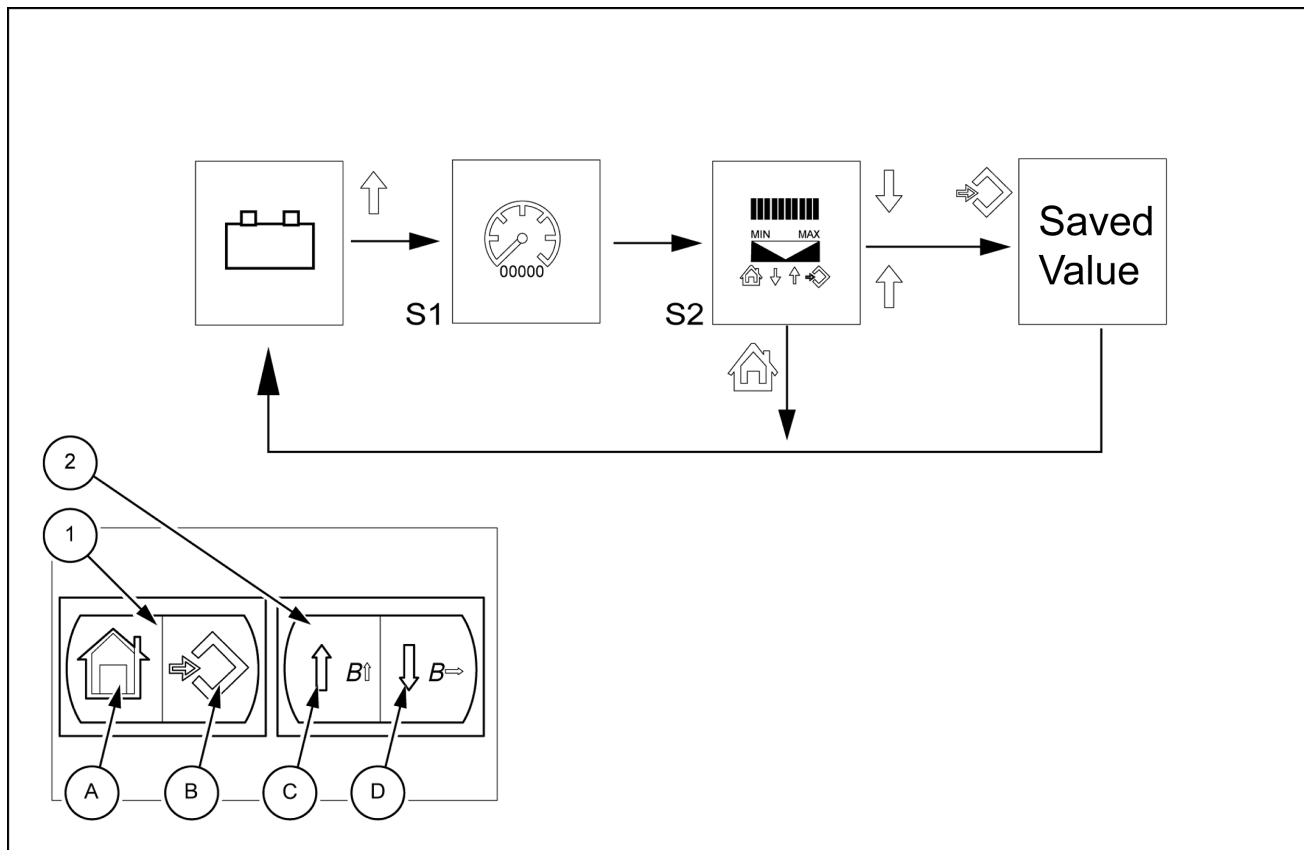
(D) Down arrow = scrolling down through the menu or numerical value. Press this switch position to scroll backwards in the menu or to move to the right of a position.



MOIL12TRO0042AB 3

Adjusting the dashboard/display brightness

NOTE: During this adjustment bear in mind that the illumination will always be greater with the marker lights off, whereas with the marker lights on there will automatically be a decrease in the brightness of the display.

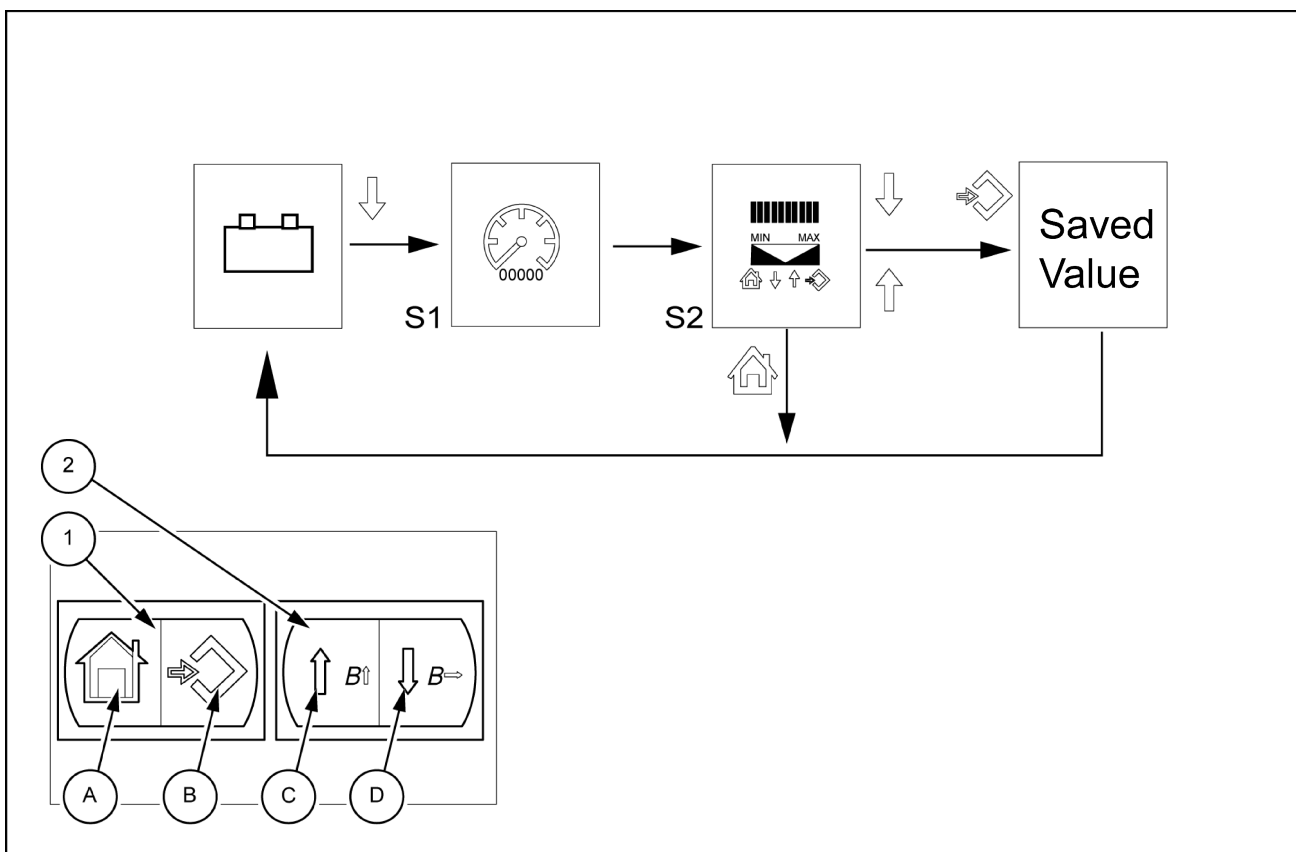


GNIL14TR00585FA 1

Brightness of warning lights and indicator pointers

1. With the panel powered, press and hold down the switch (2) on the up arrow (C) for 3 seconds
2. The central display will show the detail (S1).
3. Release the direction key to pass on to the next screen (S2).
4. Press switch (2) on symbol (C) to increase or on symbol (D) to decrease the brightness of the warning lights and hands of the indicators, to set the required brightness.
5. Press the switch (1) on the symbol (B) to save the setting.
6. Two seconds after saving you are automatically returned to the initial condition.
7. Press the switch (2) on the symbol (D) again to exit the programming menu.

NOTE: If you want to stop the adjustment without saving, press the switch (1) on the symbol (A) to exit the adjustment.



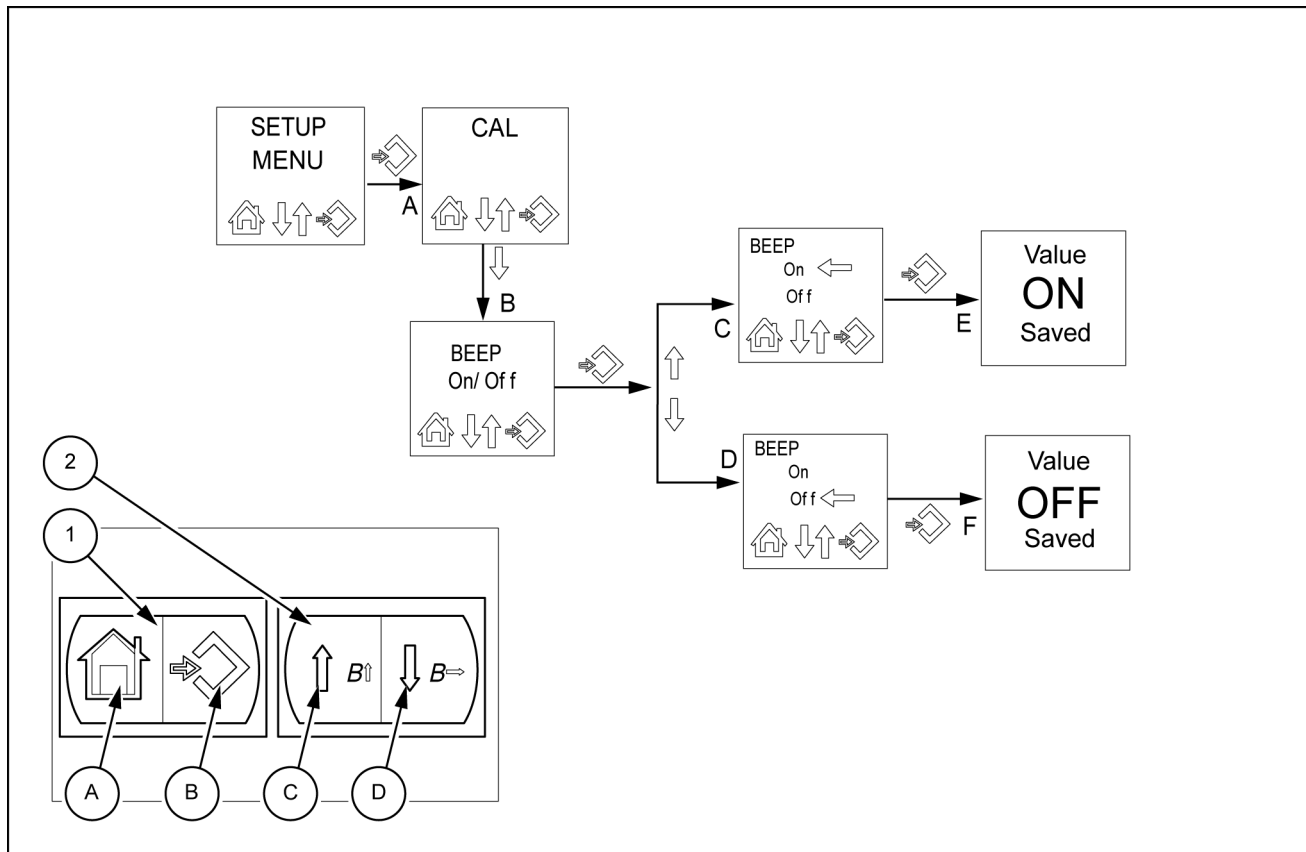
GNIL14TR00584FA 2

Central display brightness

1. With the panel powered, press and hold down the switch (2) on the up arrow (D) for 3 seconds.
2. The central display will show the detail (S1).
3. Release the direction key to pass on to the next screen (S2).
4. Press the switch (2) on the symbol (C) to increase or on the symbol (D) to decrease the brightness of the central display until you reach the desired brightness.
5. Press the switch (1) on the symbol (B) to save the setting.
6. Two seconds after saving you are automatically returned to the initial condition.
7. Press the switch (2) on the symbol (D) again to exit the programming menu.

NOTE: If you want to stop the adjustment without saving, press the switch (1) on the symbol (A) to exit the adjustment.

Activating/deactivating buzzer



MOIL12TRO0050FB 1

If you want to turn on or off the audible warning signal that sounds each time a button is pressed, proceed as follows:

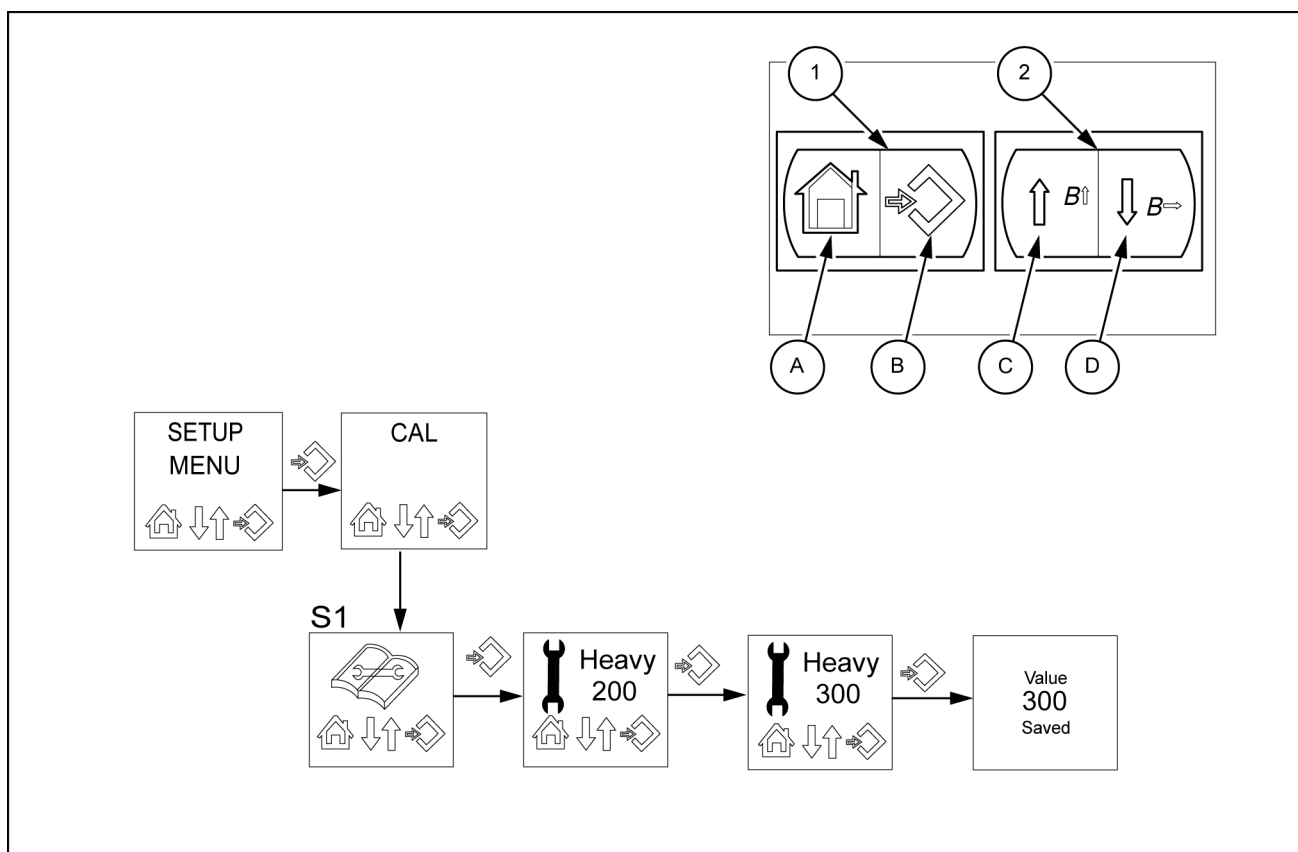
1. Press the switch **(1)** on the symbol **(B)** for longer than three seconds to enter the programming menu. The central display shows the words "SETUP MENU". Release the switch.
2. Press the switch **(2)** on the symbol **(D)** a number of consecutive times until the display shows "BEEP ON/OFF".
3. Press the switch **(1)** on the symbol **(B)**. The display will show the last setting made, "BEEP ON" or "BEEP

OFF". Press the switch **(2)** on the symbol **(D)** or **(C)** to change the setting.

4. "ON" = warning signal "BEEP" ON
5. "OFF" = warning signal "BEEP" OFF
6. After selecting the desired condition (ON or OFF), press the switch **(1)** on the symbol **(B)** to confirm. The display will show "Value ON Saved" when enabling the audible warning signal. The display will show "Value OFF Saved" when disabling the audible warning signal.

NOTE: If you want to stop the display, press the switch **(1)** on the symbol **(A)**. This will automatically return you to the initial page display "BEEP ON/OFF". Press the same symbol again to exit the programming menu.

Programming maintenance work



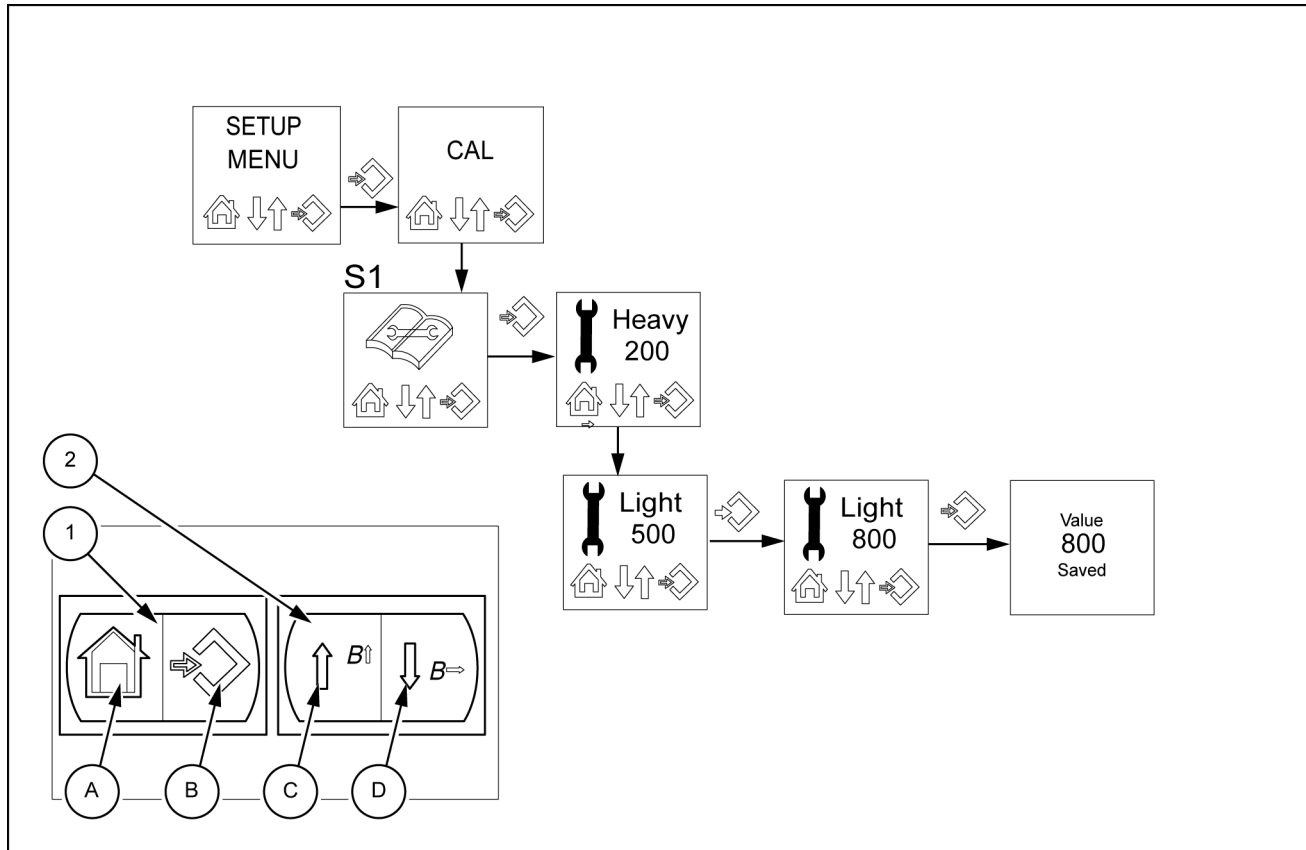
MOIL12TRO0048FD 1

Setting a maintenance reminder for heavy-duty use

This function allows the operator to program maintenance according to two levels of importance: “routine (LIGHT)” or “heavy-duty use (HEAVY)”. Proceed as follows:

1. Press the switch **(1)** on the symbol **(B)** for more than three seconds to enter the programming menu. The display will show “SETUP MENU”. Release the switch.
2. Press the switch **(2)** on the symbol **(D)** a number of times until the display shows the symbol for programming maintenance intervals **(S1)**.
3. Press the switch **(1)** on the symbol **(B)**. The display will show the “Heavy” screen with the hours that remain until maintenance is due. The setting cannot be changed at this stage.
4. Press the switch **(1)** on the symbol **(B)** to change the setting of the first flashing digit. (In the above example, the number “2”).
5. Press the switch **(2)** on the symbol **(C)** to increase the value. Press the same switch on the symbol **(D)** to move to the next digit.
6. If you do not want to save the new setting and go back to the start of programming, press the switch **(1)** on the symbol **(A)**.
7. To save the new maintenance schedule, press the switch **(1)** on the symbol **(B)**. The display will show confirmation that the new value has been saved.
8. After two seconds, you will exit the programming menu for maintenance operations.

NOTE: As the time for the programmed work approaches, the display will show a warning in the number of operating hours that remain until maintenance is due. At the end of the countdown, the display will show “Heavy” followed by an alarm message to indicate that the time has expired. At the end of the count, in the maintenance work programming menu, the counter will show three dashes and must be re-programmed as described above.



MOIL12TRO0049FD 2

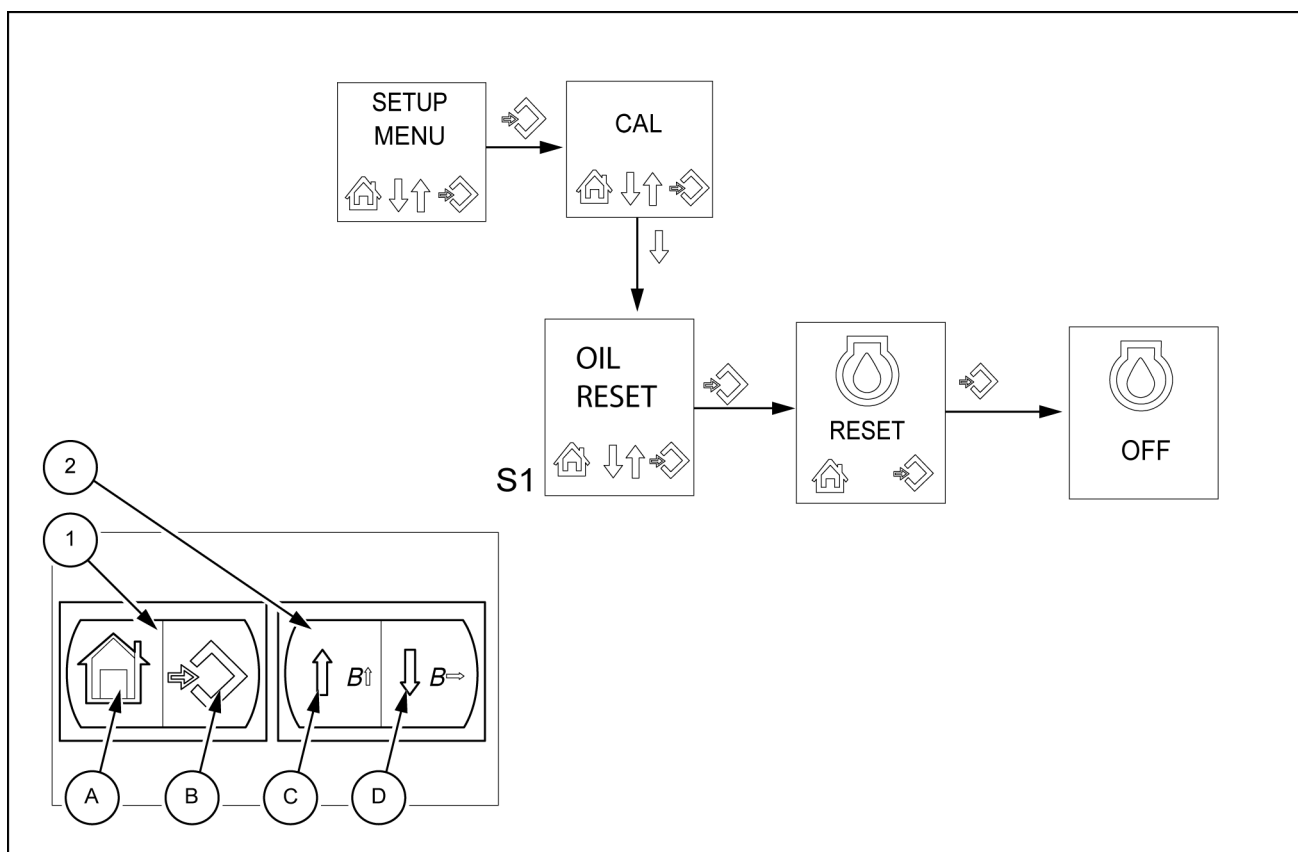
Setting a maintenance reminder for light use

Setting a reminder for routine maintenance

1. Press the switch (1) on the symbol (B) for longer than three seconds to enter the programming menu. Release the switch.
2. Press the switch (2) on the symbol (D) a number of times until the display shows the symbol for programming maintenance intervals (S1).
3. Press the switch (1) on the symbol (B). The display will show the "Heavy" screen with the hours that remain until maintenance is due.
4. Press the switch (2) on the symbol (D). The display will show the "Light" screen with the hours that remain until maintenance is due. The setting cannot be changed at this stage.
5. Press the switch (1) on the symbol (B) to change the setting of the first flashing digit. (In the above example, the number "5").
6. Press the switch (2) on the symbol (C) to increase the value. Press the symbol (D) to move to the next digit.
7. If you do not want to save the new setting and go back to the start of programming, repeatedly press the switch (1) on the side with the symbol (A).
8. To store the new maintenance program, press the switch (1) on the symbol (B). The display will show confirmation that the new value has been saved.
9. After two seconds, you will exit the programming menu for maintenance operations.

NOTE: As the time for the programmed work approaches, the display will show a warning in the number of operating hours that remain until maintenance is due. At the end of the countdown, the display will show "Light " followed by an alarm message to indicate that the time has expired. At the end of the count, in the maintenance work programming menu, the counter will show three dashes and must be re-programmed as described above.

Resetting the oil change counter



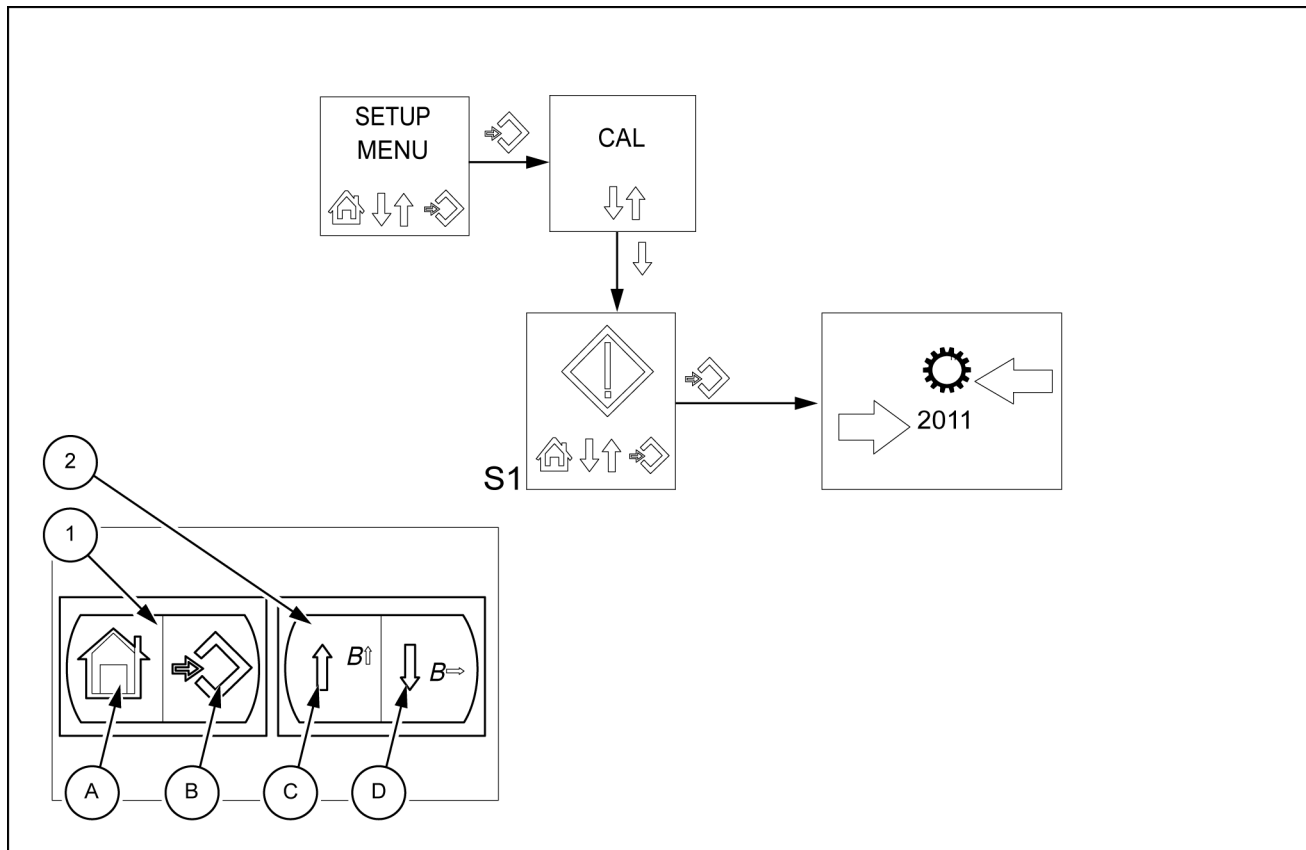
MOIL12TRO0054FC 1

NOTE: For this procedure the engine must be switched off. At every oil change you must reset the operating hours counter for the engine oil, as described below:

1. Press the switch **(1)** on the symbol **(B)** for longer than three seconds to enter the programming menu. The display will show the words "SETUP MENU". Release the switch.
2. Press the switch **(2)** on the symbol **(D)** a number of consecutive times until the display shows "OIL RESET" S1.
3. Press the switch **(1)** on the symbol **(B)** to show "RESET" on the display.
4. Press the switch **(1)** on the symbol **(B)** to reset the hourmeter. The display will show "OFF".
5. After two seconds, the display automatically returns to the initial display. Now press the switch **(1)** on the symbol **(A)** to exit the programming menu.

NOTE: If you reset the hourmeter correctly, the pressure indicator for the engine oil on the instrument cluster will flash for two seconds.

Viewing error codes



MOIL12TRO0055FC 1

If it is necessary to know the list of error codes or warnings that are stored by the control unit and that are not permanently visible, proceed as described below:

1. Press the switch **(1)** on the symbol **(B)** for longer than three seconds to enter the programming menu. The central display shows the words "SETUP MENU". Release the switch.
2. Press the switch **(2)** on the symbol **(D)** a number of consecutive times until the display shows the symbol for the error codes **(S1)**.
3. Press the switch **(1)** on the symbol **(B)** to display the error codes in the memory.

The error codes or warnings are displayed in two different ways:

NOTE: The current error codes are displayed in sequence. Each code is displayed three times blinking for four seconds.

1. The symbol of the failed component appears on the display together with its error code. Stop the work. Contact the authorized dealer. The error codes or warnings are displayed in two different ways:
2. The display will show only the symbol with no error code. When only the symbol is displayed, this is a warning. The warning symbols indicate conditions. Although these conditions do not compromise the operation of the tractor, these warning symbols should not be ignored. Take appropriate action where necessary.
3. Press the switch **(1)** on the symbol **(A)** to exit the error codes display.

4 - OPERATING INSTRUCTIONS

STARTING THE UNIT

Starting the tractor

⚠ DANGER

Run-over hazard!

Start engine only from operator's seat. If you bypass the safety start switch, the engine can start with the transmission in gear and the machine will move. DO NOT short or connect across terminals of the starter solenoid. Failure to comply will result in death or serious injury.

D0102A

To start the engine:

1. Step onto the tractor from left-hand side only.
2. Sit on the operator's seat and fasten seat belt.
3. Make sure that both gear-shift levers and shuttle lever are in neutral.

NOTICE: Neutral start switch prevents operation of the starting motor unless the gear levers are in the neutral position.

4. Make sure the Power Take-Off (PTO) is disengaged.
5. Depress the clutch pedal.

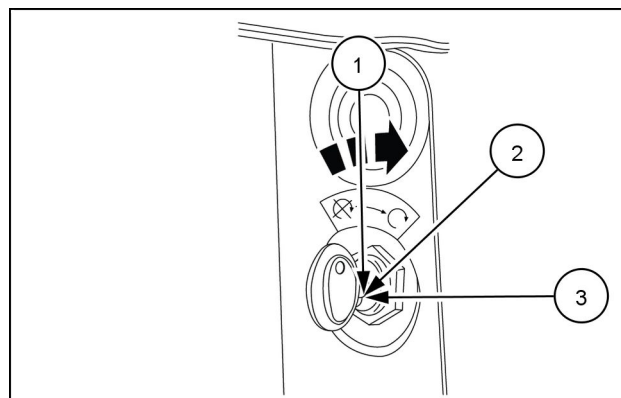
NOTICE: Clutch switch prevents operation of the starting motor unless the clutch pedal is depressed.

6. Turn the key switch to the start position. Release the key when the engine starts.

NOTICE: Never push or tow the tractor to start the engine. Doing so may overstress the drive train.

A three-position key-start switch is installed. The key-start switch positions are as follows:

Position 1	Electrical equipment Off.
Position 2	Accessories on (head lamp, Instrument cluster, horn and gauges, brake lights, turn signals) engine 'ON'.
Position 3	Engine Start -- The full clockwise position activates the starter motor, to start the engine. Once the key is released, the switch returns to Position 2.



GNIL14TR00558AA 1

Starting a cold engine

1. Place the hand throttle lever (1) in the halfway position.
2. Place transmission shuttle shift lever (2) in the neutral position.
3. Place both gear levers (3) in the neutral position.
4. Depress the clutch pedal (4).

5. **⚠ WARNING**

Explosion hazard!

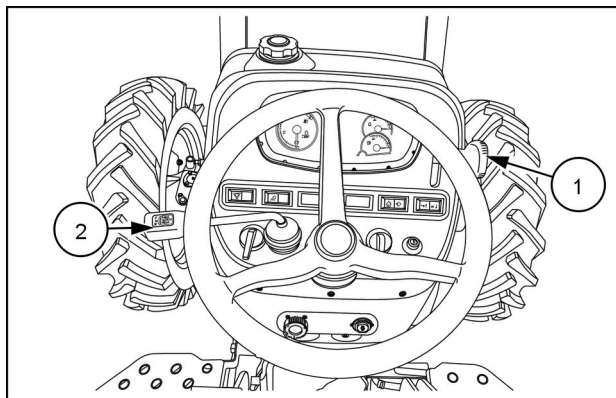
DO NOT use ether starting fluid. Serious engine damage, explosion, death, or serious personal injury could occur.

Failure to comply could result in death or serious injury.

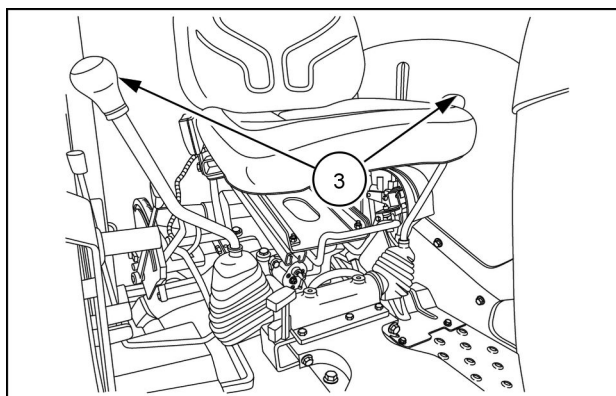
W0148A

Turn the key switch (4) fully clockwise to the "START" (3) position to operate the starting motor. Rotate the engine but do not operate the starter motor for more than **10 s**.

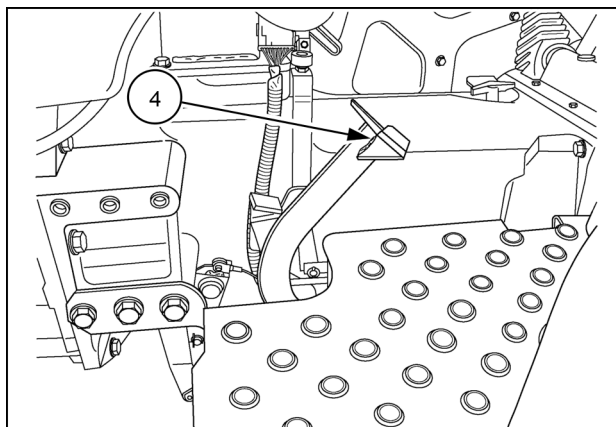
6. After the engine starts, allow the key switch to return to the "RUN" position.
7. Return the hand throttle lever to the idle position and check that all warning lights are off and gauge readings are normal.



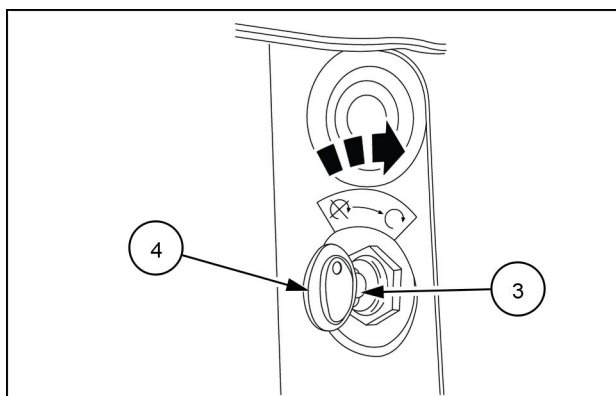
GNIL14TR00512AA 2



GNIL14TR00785AA 3



86090118 4



GNIL14TR00558AA 5

Starting a cold engine in cold weather

Your tractor has a diesel engine. Before starting a cold engine, the precombustion chambers of the engine must be heated with electrical glow plug heating elements. .

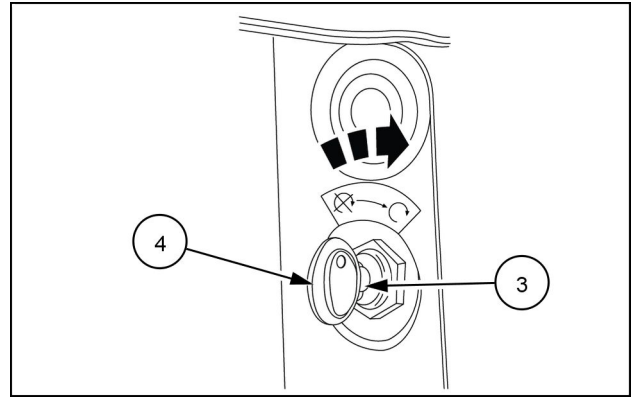
1. **⚠ WARNING**

Explosion hazard!

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

Failure to comply could result in death or serious injury.

W0148A



GNIL14TR00558AA 6

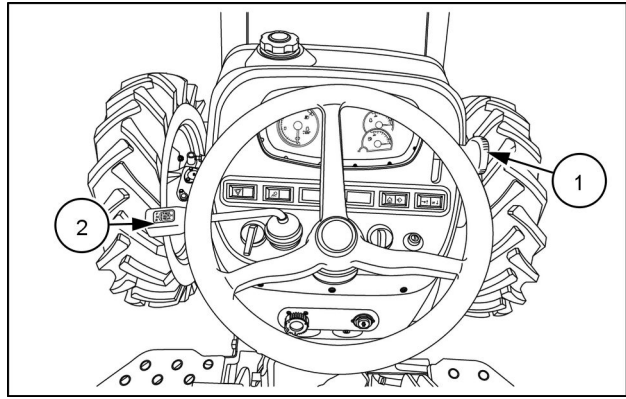
Turn the keyswitch (4) fully clockwise to the “START” (3) position to operate the starting motor. Do not operate the starter motor for more than 10 seconds.

NOTICE: When starting the machine after long periods, avoid immediate use of hydraulics. It is necessary to allow time for enough lubrication of all moving parts before subjecting them to work loads, particularly if outdoor temperatures approach 0°C (32°F). Run the engine at **1300 - 1500 RPM** for about **15 min** to bring the rear drive oil up to normal operating temperature.

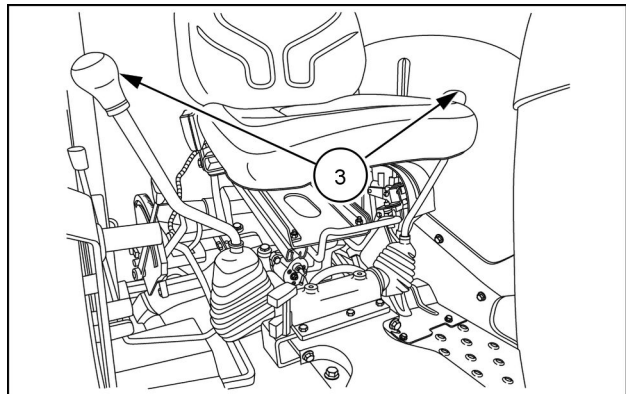
NOTE: A coolant immersion heater is available as a dealer installed option. This heater allows for easier starting in temperatures below **-17.7 °C (0 °F)** by warming the engine coolant.

Starting in warm weather or when the engine is hot

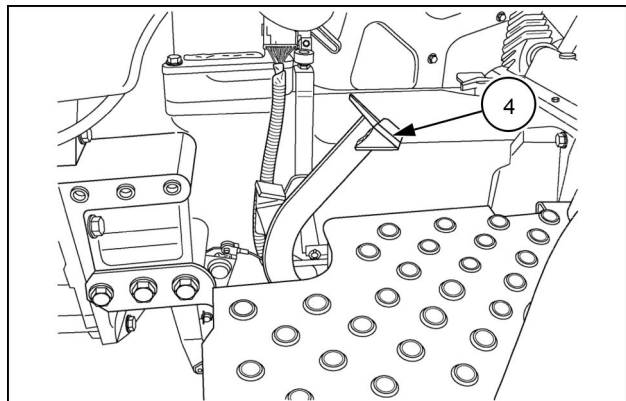
1. Place the hand throttle lever **(1)** in the halfway position.
2. Place transmission shuttle shift lever **(2)** in the neutral position.
3. Place both gear levers **(3)** in the neutral position
4. Depress the clutch pedal **(4)**.
5. Turn the key- switch **(4)** fully clockwise to the "START" **(3)** position to operate the starting motor. Do not operate the starter motor for more than **10 s**
6. After the engine starts, allow the key to return to the "RUN" position.
7. Return the hand throttle lever to the idle position and check that all warning lights are off and gauge readings are normal.



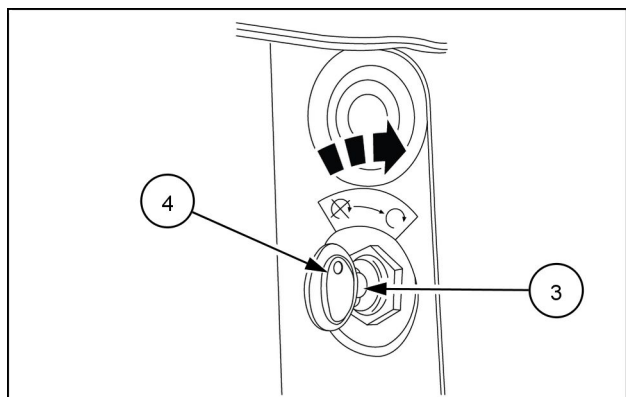
GNIL14TR00512AA 7



GNIL14TR00785AA 8



86090118N 9



GNIL14TR00558AA 10

4 - OPERATING INSTRUCTIONS

OPERATOR ALERT LOGIC TABLE

Alarm	Ignition key	Parking brake	SEAT IN or OUT	Power Take-Off (PTO) clutch	Hi-Low range lever	Logic control
Yes	OFF	Change of state	Either	Either	Either	Electronic module
Yes	ON	Not engaged	OUT	Either	Either	Electronic module
Yes	ON	Engaged	OUT	Engaged	Either	Electronic module
Yes and shutdown	ON (Engine running)	Not engaged	Operator gets out of the seat	Either	Engaged (High or low)	Electronic module, harness logic and Engine Control Unit (ECU)
Yes and shutdown	ON (Engine running)	Engaged	OUT	Not engaged	Engaged (High or low)	Electronic module, harness logic and Engine Control Unit (ECU)
Either (seat IN or OUT) = Operator may or may not be on the seat						
Either (Hi-Low range lever) = High-Low lever engaged or disengaged						
Either (PTO clutch) = PTO engaged or disengaged						
Change of state = Engage to disengage						

STOPPING THE UNIT

Shut off the engine

To shut off the engine, carry out the following procedure

1. Remain in the operator's seat.
2. Bring the tractor to a complete stop.
3. Bring the hand throttle lever to the idle position.
4. Apply the park brake.
5. Place both gear shift levers and the shuttle shift lever are in neutral position.
6. Place the PTO clutch lever in the disengaged position.

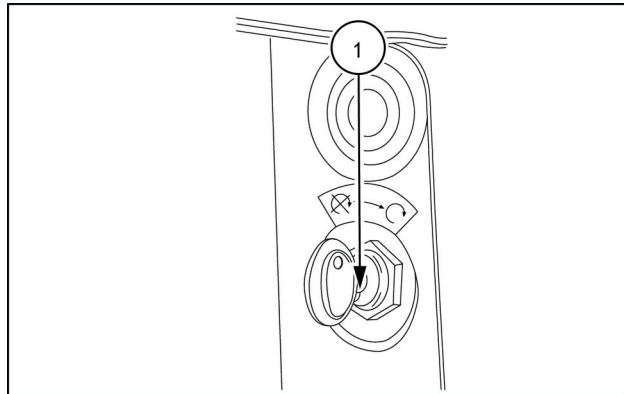
7. **⚠ WARNING**

Crushing hazard!

ALWAYS make sure the work area is clear of bystanders and domestic animals before raising or lowering the equipment.

Failure to comply could result in death or serious injury.

W0123A



GNIL14TR00559AA 1

Move the hydraulic lift position control lever fully forward to lower all hydraulic equipment to the ground.

8. Place the key switch (1) into the "STOP" position.

MOVING THE UNIT

Roll Over Protective Structure (ROPS) frame - Basic instructions

⚠ WARNING

Misuse hazard!

Your machine is equipped with an operator protective structure. **DO NOT** weld, drill holes, attempt to straighten, or repair the protective structure. Modification in any way can reduce the structural integrity of the structure.

Failure to comply could result in death or serious injury.

W0001B

⚠ WARNING

Roll-over hazard!

A folded Roll-Over Protective Structure (ROPS) does not provide roll-over protection. Do not operate the machine with the ROPS folded as a standard operating mode. Raise the ROPS immediately after low clearance use or transport.

Failure to comply could result in death or serious injury.

W0938A

⚠ WARNING

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!

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

⚠ DANGER

Crushing hazard!

DO NOT operate the machine with the Roll-Over Protective Structure (ROPS) removed. Remove the ROPS only for service or replacement.

Failure to comply will result in death or serious injury.

D0032A

⚠ DANGER

Roll-over hazard!

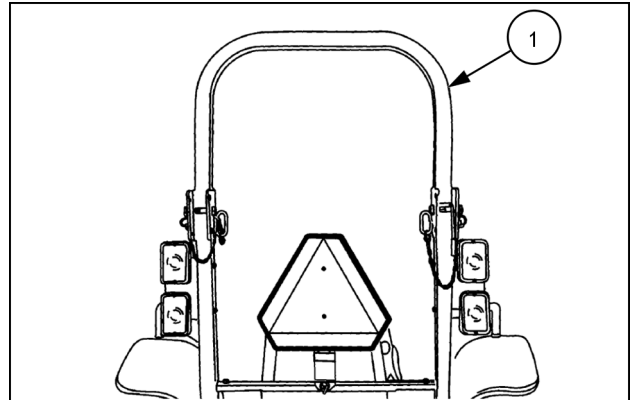
A folded Roll-Over Protective Structure (ROPS) does not provide roll-over protection. Do not operate the machine with the ROPS folded as a standard operating mode. Raise the ROPS immediately after low clearance use or transport.

Failure to comply will result in death or serious injury.

D0058A

Roll Over Protective Structure (ROPS)

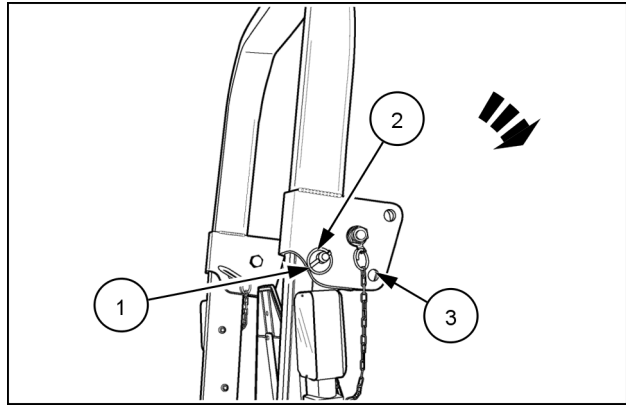
A foldable Roll Over Protective Structure (ROPS) (1), and seat belts are standard equipment on this tractor at the time of factory assembly. Operate with this ROPS in the "up" position whenever possible. Use the ROPS in the "folded" position only when absolutely necessary. If the ROPS was deleted by the original purchaser or has been removed, it is recommended that you equip your tractor with a ROPS and seat belts.



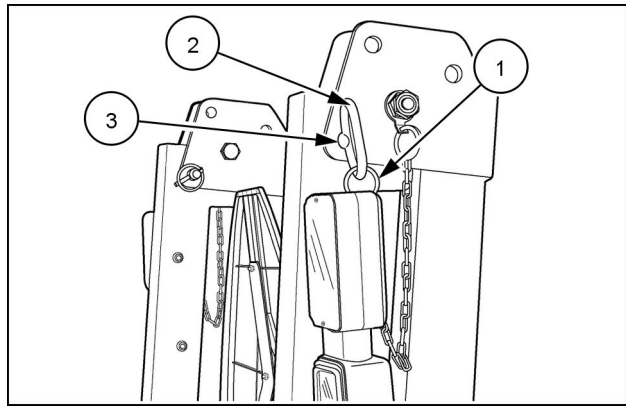
76099309N 1

Roll Over Protective Structure (ROPS) Folding Procedure

To fold the ROPS into the "DOWN" position, remove retaining ring **(1)**, from the pin **(2)**. Remove pin from the latching bracket, on both sides of the ROPS.



Rotate top part of ROPS fully downward until brackets contact ROPS uprights. Reinstall pin **(2)** into lower retaining hole **(3)**. Re-attach the retaining ring **(1)**.



5 - TRANSPORT OPERATIONS

ROAD TRANSPORT

Towing attachments

⚠ 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.

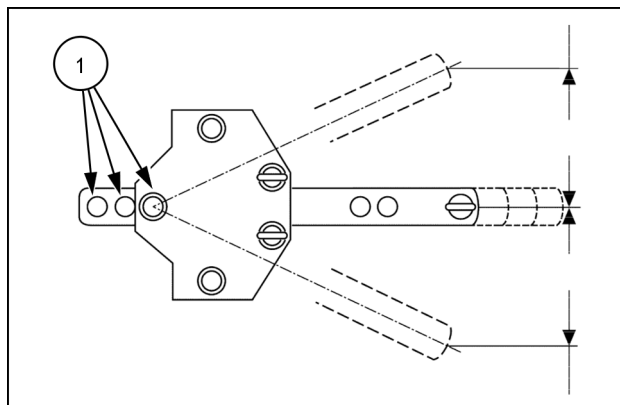
W0417A

Swinging/Extendable drawbar

Use the drawbar to tow agricultural implements and trailers.

The drawbar length may be adjusted by inserting the pin in the series of holes (1) in the drawbar.

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



76099306N 1

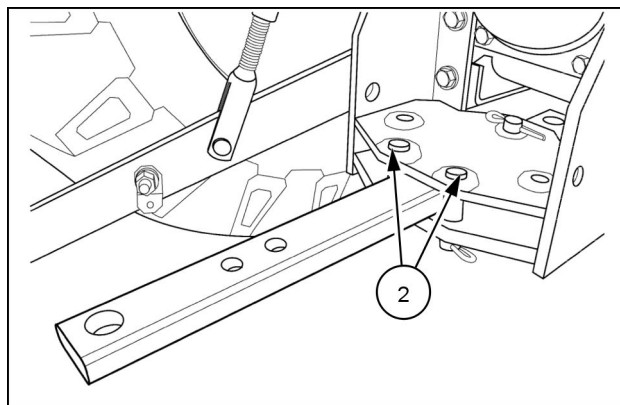
⚠ WARNING

Collision hazard!

During road transport, the drawbar must be locked in the center position, and the implement must be centered behind the tractor. Failure to comply could result in death or serious injury.

W0324A

Drawbar swing may be adjusted by location of pins (2).



76099307N 2

Telescoping stabilizers and flex end links

⚠ WARNING

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

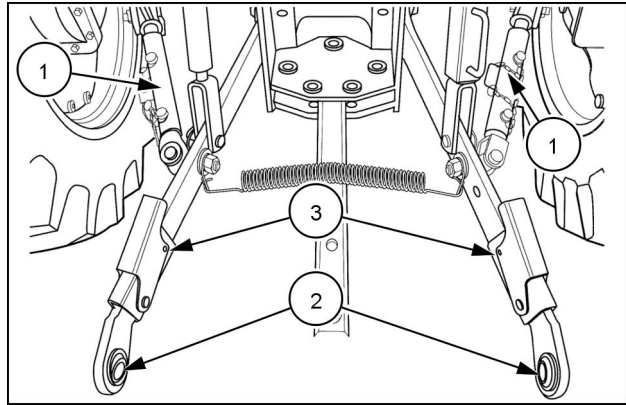
W0467A

Telescoping stabilizers and lower lift arms with flex ends are a standard equipment, for the tractor.

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

The flex ends (2) on the lower lift arms are adjusted by pushing down on the clamp (3) 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,

NOTICE: 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.



76080380N 3

RECOVERY TRANSPORT

Towing the tractor

⚠ WARNING

Loss of control hazard!
Do not tow the machine faster than 8 kph (5 mph). The steering is much slower and steering wheel effort is much greater without the engine running.
Failure to comply could result in death or serious injury.

W0076A

⚠ 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: 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.

If towing the tractor obey the following instructions

1. Use a strong chain when towing the tractor
2. Tow the tractor from the rear using only the drawbar, rear tow hitch, or the three-point hitch.
3. 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.
4. If possible, run the engine to provide lubrication, to avoid damaging the transmission or other components that turn, but that are not lubricated during towing, such as the transmission and power steering.

Carrying the tractor on a transporter

Transport the tractor with all four wheels on a flat bed trailer or truck. Securely chain the tractor to the transporter.

Use drawbar hanger for a rear tie down point.

NOTICE: Do not place chain around the steering cylinders, or other components that could be damaged by contacting the chain or by heavy loading.

6 - WORKING OPERATIONS

GENERAL INFORMATION

Field operation

Before operating

⚠ WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE DEATH OR SERIOUS INJURY. MAKE SURE THAT EVERY OPERATOR:

- learns and practices the safe use of machine controls in a safe, clear area before operating the machine on a job site.**
- clears the work area of all bystanders.**
- observes pertinent laws and regulations.**
- follows the instructions in this operator's manual.**

Failure to comply could result in death or serious injury.

W0189A

Read this section carefully for a thorough understanding of operational requirements. Even if you operate other tractors, you should thoroughly read this section of the manual and ensure that you are familiar with the location and function of all the controls of this tractor

Do not start the engine or attempt to drive or operate the tractor until you are fully familiar with all controls. It is too late to learn once the tractor is moving. If you have any questions about the operation of tractor, consult your Authorized Dealer.

See Tractor specifications will be found in **9-1** and **9-7**.

Running-in procedure

Your tractor will provide long and dependable service if given proper care during the first **50 h** running-in period and if serviced at the recommended intervals.

Avoid overloading the engine. Operating in a high gear under heavy load may cause engine overloading. Overloading occurs when the engine will not respond to a throttle increase.

Do not operate the engine without a load. This can be as harmful to the engine as overloading. Ensure that the engine is subjected to heavy as well as light loads during the running-in period.

Pre-operation checks

Perform daily lubrication and maintenance operation in accordance with **7-11**

After completing the daily maintenance operations, perform a walk around visual inspection of the tractor. Pay particular attention and check the following items:

1. Fan belt for cracks.
2. Engine area for accumulation of debris.
3. Hoses, lines, and fittings for leaks and damages
4. Tires for damage.
5. Hardware for looseness.
6. Leakage at joints.

Make any necessary repairs before using the tractor.

POWER TAKE OFF (PTO)

Two-speed rear Power Take-Off (PTO) - Grouped Safety Message

⚠ 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

⚠ WARNING

Entanglement hazard!

The Power Take-Off (PTO) guard must be installed when operating PTO-driven equipment. Failure to comply could result in death or serious injury.

W0322A

⚠ WARNING

Entanglement hazard!

**Do not wear loose clothing when operating Power Take-Off (PTO) driven equipment.
Failure to comply could result in death or serious injury.**

W0337A

⚠ WARNING

Flying objects!

**Do not use the implement at a higher Power Take-Off (PTO) RPM than recommended. Machine damage due to vibration may occur, resulting in loose parts and flying debris.
Failure to comply could result in death or serious injury.**

W0192A

⚠ 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

⚠ WARNING

Unexpected movement!

**Disengage the Power Take-Off (PTO) after each use. This prevents an attached implement from moving unintentionally.
Failure to comply could result in death or serious injury.**

W0423B

Attaching Power-Take Off (PTO) driven equipment

Before attaching or detaching equipment or changing the Power-Take Off (PTO) shaft :

- Make sure that all levers (shuttle lever, gear shifter, and range shifter) are in neutral.
- Make sure that the PTO lever is in the disengaged position.
- Apply the parking brake.
- Stop the engine.
- Make sure that PTO shaft has stopped rotating before getting off the tractor.

Mount or hitch the implement to the tractor as outlined in **6-19**.

Power Take Off (PTO)

Description

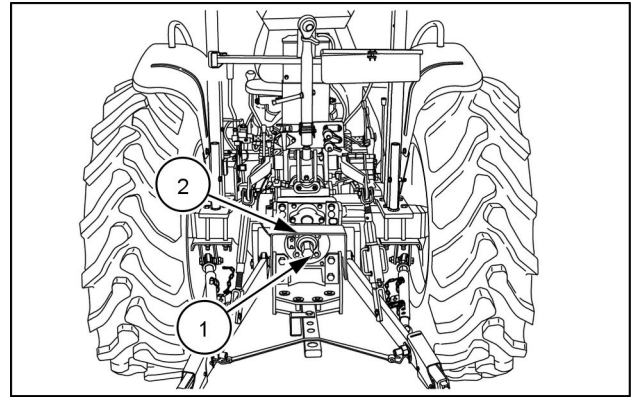
The Power Take-Off (PTO) transfers engine power directly to mounted or trailed equipment through a splined shaft **(1)** at the rear of the tractor.

A PTO flip-up guard **(2)** is standard equipment. This guard serves as a support for drive-line shields used with PTO driven equipment, and provides safety for the operator. Do not modify the guard.

The PTO system is independent, that is, the PTO may be engaged or disengaged whether the tractor is moving or stationary. Rotation of the PTO shaft is not affected by the main clutch and tractor speed, but is related directly to the speed of the engine.

The system utilizes the standard 6-splines shaft designed to operate at **540 RPM**.

A standard speed of 540 PTO can be obtained an engine speed of **2575 RPM**.

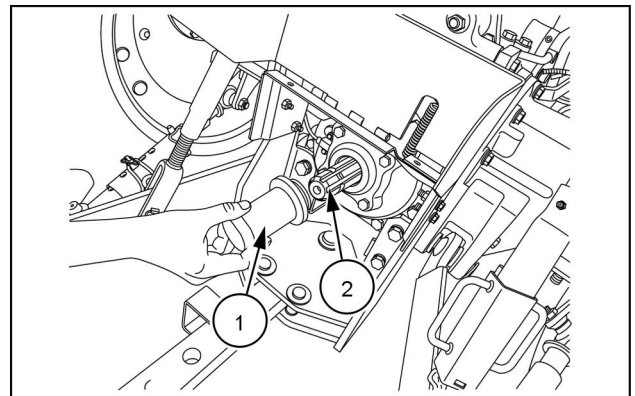


GNIL14TR00560AA 1

Attaching Power-Take Off (PTO) driven implements

To connect PTO driven implement to the PTO shaft, remove the PTO cap **(1)** and store in the toolbox. Attach the implement to the PTO shaft **(2)**.

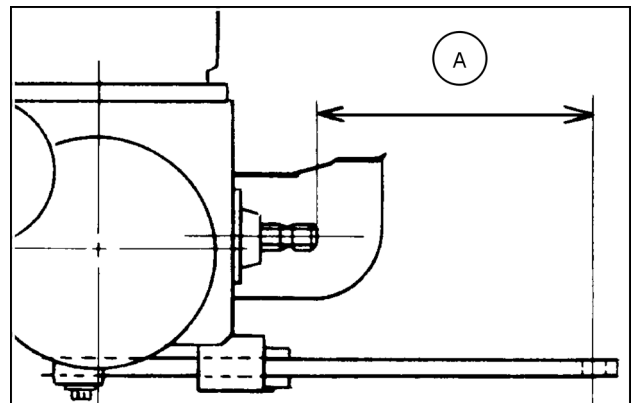
NOTICE: After attaching mounted implement, carefully raise and lower using Position Control lever and check clearances and PTO shaft slide range and proper fit. When attaching trailed implement, ensure the drawbar is correctly set.



GNIL14TR00515AA 2

Drawbar length adjustment

Adjust the drawbar length so that there is **349.0 mm (13.7 in) (A)** from the end of the rear PTO shaft to the center of the drawbar pin hole.



20099087 3

Power-Take Off (PTO) operation

WARNING

Avoid injury!

**Observe ALL precautions listed below when operating Power Take-Off (PTO) driven equipment.
Failure to comply could result in death or serious injury.**

W0435A

DANGER

Entanglement hazard!

Make sure all people and obstructions are clear of the implement before engaging the tractor Power Take-Off (PTO).

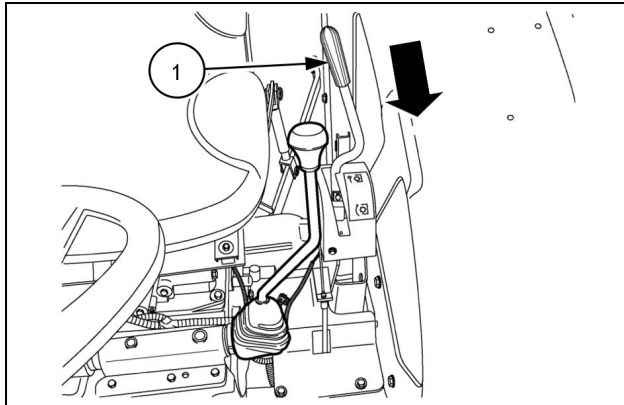
Failure to comply will result in death or serious injury.

D0077A

1. Check that you are using the correct PTO speed for the implement.
2. Follow the operator's instructions in the operator's manual.
3. Make sure that the PTO guard is installed when using PTO driven equipment
4. DO NOT wear loose clothing when operating PTO driven equipment.
5. Firmly apply the parking brake, place all control levers in the neutral position, and block all four wheels before operating any stationary PTO equipment.
6. DO NOT approach, clean, or adjust PTO driven equipment while the engine is still running.
7. Stop the engine and remove the key. Wait until the PTO and the equipment stop turning before leaving the machine or before working on the PTO, or the equipment.
8. With the engine stopped and key removed, the PTO brake is released and the shaft may be turned by hand to assist in the installation or removal of the implement shaft.

Power-Take Off (PTO) engagement

1. To engage the PTO, press the clutch pedal, and pull lever **(1)** towards the operator's seat and then push forward until handle engages the notch in the quadrant.



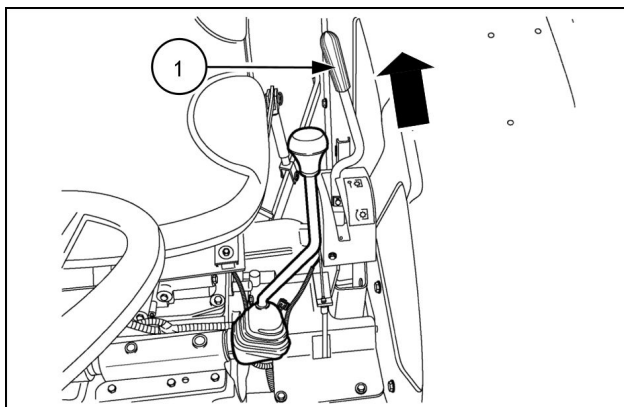
86090124N 4

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

NOTE: If the operator leaves the seat without disengaging the PTO, an alarm will sound.

Power-Take Off (PTO) disengagement

1. Pull the PTO lever **(1)** rearward to disengage the PTO.



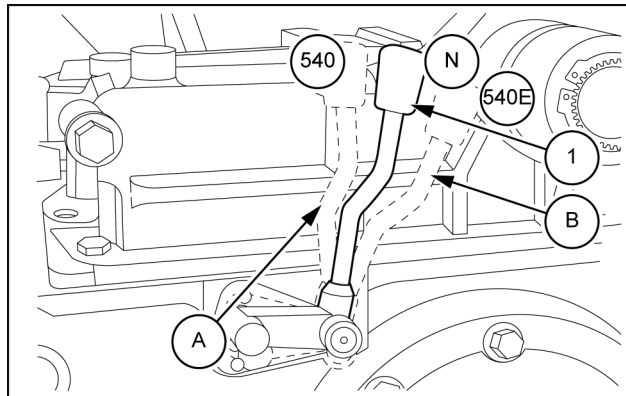
86090124N 5

The PTO will stop automatically when disengaged due to an internal frictional brake.

Power-Take Off (PTO) lever positions

Standard speed of 540 PTO. can be obtained at an engine speed of **2575 RPM** and **540E RPM** can be obtained at an engine speed of **2016 RPM**.

Shift lever (1) at position (A) to get standard PTO RPM and to get 540E PTO shift lever (1) at position (B).



GNIL14TR00553AA 6

THREE POINT LINKAGE

Three-point linkage

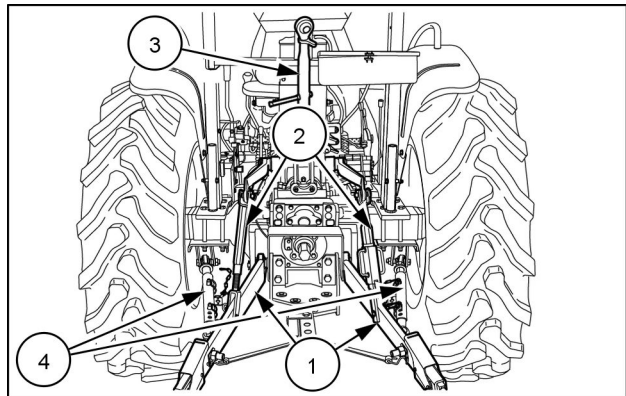
Description

The three-point linkage enables semi-mounted and fully mounted implements to be connected to the tractor, and be controlled by the tractor hydraulic system. The three-point linkage consists of two lower links (1) connected to the rear axle housing. The rear end of the lower links are connected to the lower hitch pins on the implement.

The lower links are raised and lowered by means of the lift rods (2) connected to the lift arms. The right-hand lift rod is readily adjusted to ease the attachment of implements and to level the implement after attaching.

The top link (3) is connected to a bracket on the hydraulic lift housing. The rear of the top link should be connected to the upper hitch pin of a mounted implement. The top link is also adjustable to aid implement setting.

Adjustable stabilizers (4) are connected to each lower link. The stabilizers limit side to side movement of the lower links and attached implement. Adjust stabilizers so that there is not any interference between the tires and the lower links.



GNIL14TR00562AA 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

⚠ WARNING

Collision hazard!

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

Failure to comply could result in death or serious injury.

W0232A

⚠ WARNING**Pinch hazard!**

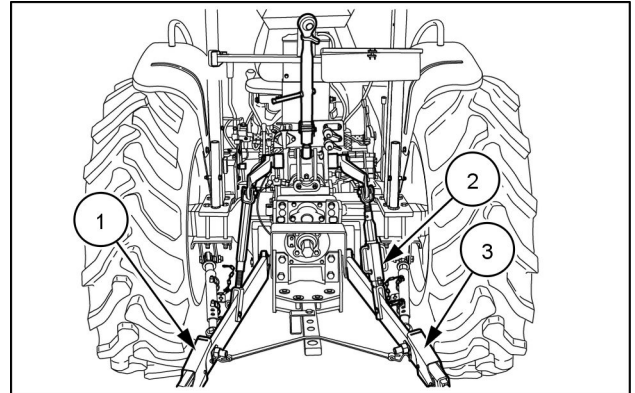
Always use the position control lever when attaching, detaching, or transporting implements.

Failure to comply could result in death or serious injury.

W0466A

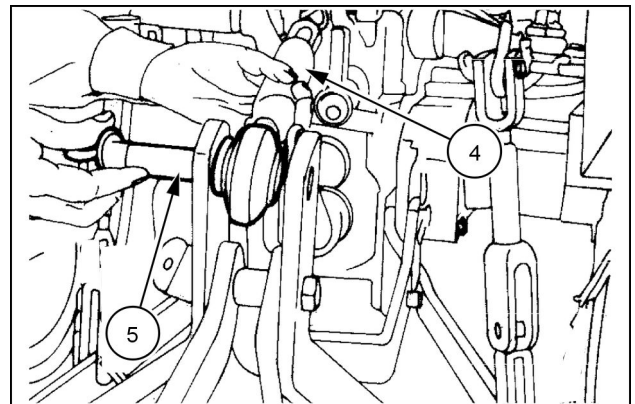
NOTE: Before attaching implements read the following text carefully.

Most implements can be attached to the tractor as follows: 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 (1) then by adjusting the levelling box (2) attach the right-hand lower link (3).



GNIL14TR00562AA 1

Lengthen or shorten the top link (4) until the implement mast pin (5) can be inserted through the mast and upper link of the implement.

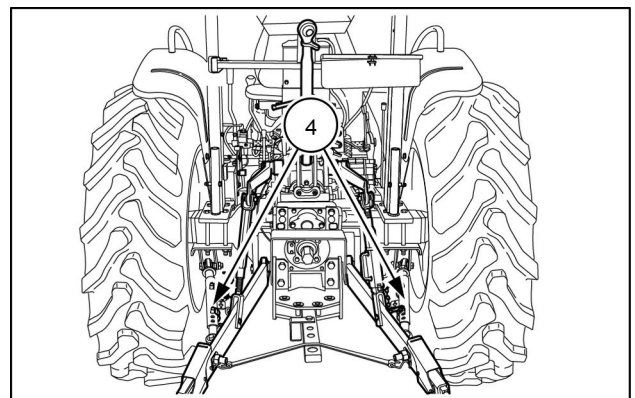


20108789 2

Adjust stabilizers (4) to limit side to side movement of the lower links and attached implement. Adjust stabilizers so that there is not any interference with tires and lower links when moving attached implement side to side.

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 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.

NOTICE: Ensure that the telescoping stabilizers (4) are adjusted to suit the equipment. Remove the swinging drawbar, if close mounted equipment is being attached.



GNIL14TR00562AA 3

Detaching three-point equipment

- When detaching 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.
- The implement should be supported so that the implement cannot tip or fall when detached from the tractor.
- Always relieve all hydraulic pressure in any remote cylinders before detaching.

Lift rods, lower links and top link

⚠ WARNING

Crushing hazard!

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

Failure to comply could result in death or serious injury.

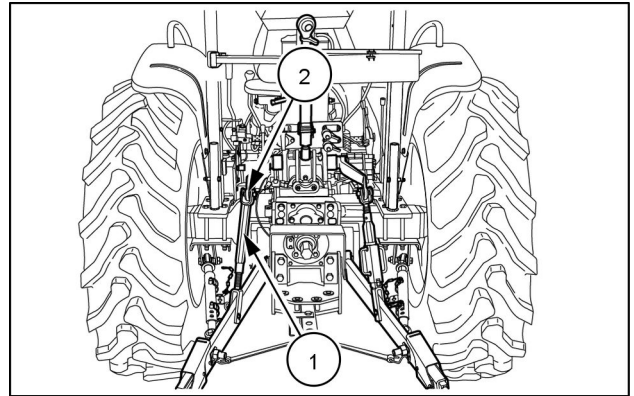
W0034A

Left-hand Lift Rod

NOTE: 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):

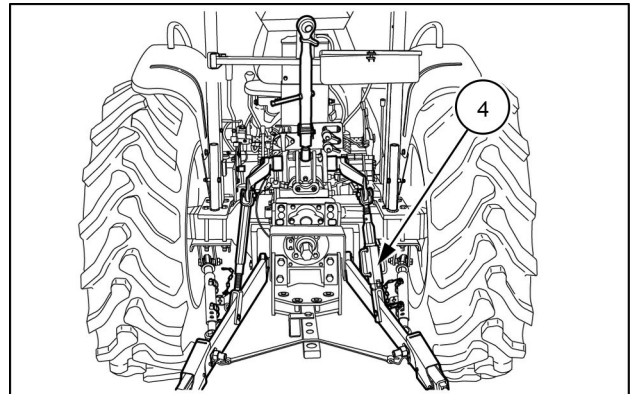
1. Remove retaining clip (2) and pin (2) from lift rod.
2. Rotate the top half of the lift rod clockwise to reduce length.
3. Rotate the top half of the lift rod counter-clockwise to increase the length.



Right-hand Lift Rod

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

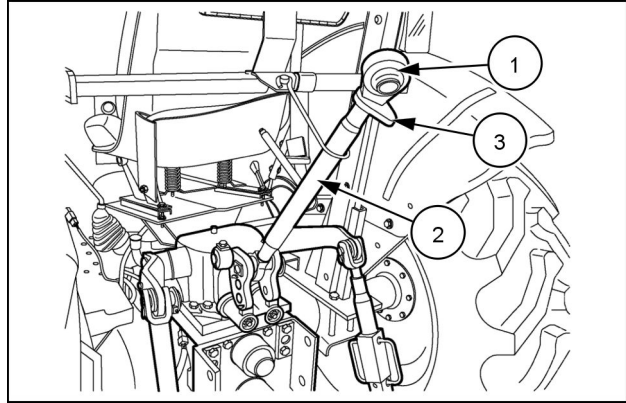
To lengthen or shorten the right-hand lift rod, lift the jug handle up (4) and rotate clockwise to increase the length and counter-clockwise to reduce the length.



Top Link

To adjust the top link length:

1. Hold the link end **(1)** and rotate the sleeve **(2)** to lengthen or shorten the top link.
2. Tighten the lock **(3)** against the top link sleeve to prevent unwanted rotation of sleeve when in work.

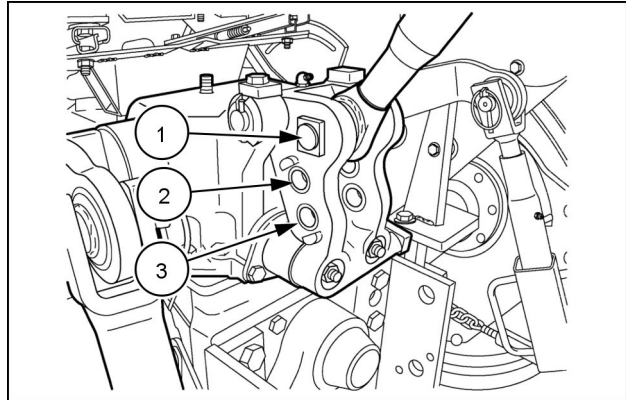


86090128N 3

Hydraulic draft sensing spring adjustment

When operating in Draft Control, the top link and hydraulic draft sensing spring transmit draft signals to the control valve within the hydraulic system. The top link attachment to the draft sensing spring affects draft signals.

The draft sensing spring bracket contains three holes for attaching the top link. The top hole **(1)** is recommended for light draft loads and light equipment. With the top link in the top hole, the hydraulic system is more sensitive to draft signals. Use the middle hole **(2)** for heavier draft loads and equipment, and the bottom hole **(3)** for the heaviest loads. With the top link in the bottom hole, the hydraulic system is less sensitive to draft signals.



86090127N 4

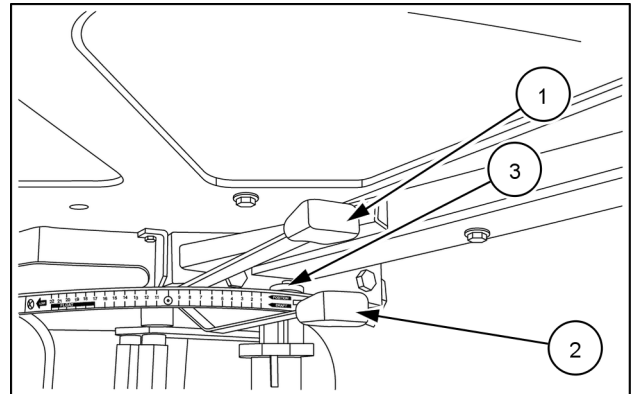
NOTICE: When mounting a category I, three-point hitch mounted implement, it may be necessary to remove the drawbar and drawbar support to obtain clearance between tractor and implement.

HYDRAULIC SYSTEM

Hydraulic systems - Operating

Hydraulic Power Lift (HPL)

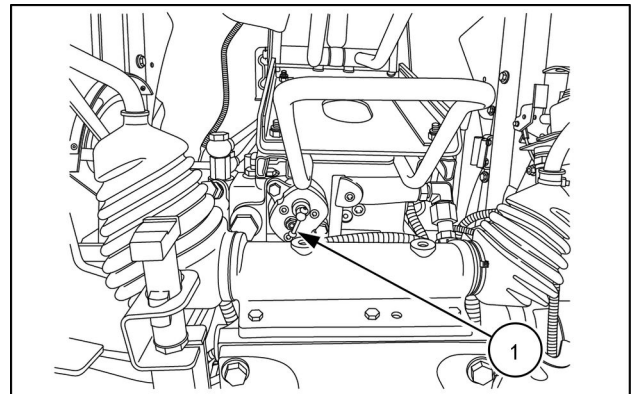
This is a closed-center hydraulic system, where a hydraulic gear pump constantly circulates hydraulic oil through the hydraulic system. Transmission lubrication oil is used as the hydraulic oil. The system allows the operator to select any of the three controls (position control, draft control, and float control).



GNIL14TR00580AA 1

The hydraulic Power Lift (HPL) system is operated by the position control lever (1), draft control lever (2), see, 1 and the response control (3), see 1.

NOTICE: Some mounted or semi-mounted equipment may interfere with and cause damage to tractor sheet metal. To avoid damage check for clearance between tractor and implements.



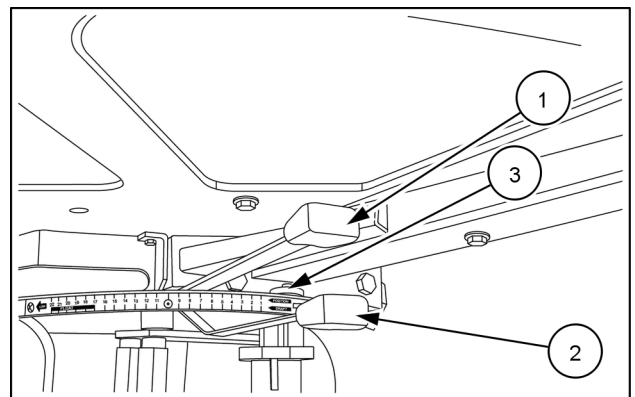
GNIL14TR00554AA 2

Position control

The position control lever (1) sets the lower position of the hydraulic lift. Position control is best for fixed-level implements that operate above the ground, such as mowers, rakes, and sprayers. Position control keeps the equipment at one position at all times, so it is not recommended for any ground-engaging equipment, unless the field is very flat and the soil is very consistent.

To set the position control, move the draft control lever (2) to its full forward position. Then set the implement position lower by moving the position control lever, forward, or set implement position higher by moving the lever, rearward. When operating in position control, the tractor and implement become a single unit that reacts to changing terrain as one piece of equipment. Once you have position control set, you can raise and lower the attached implement at the end of each pass.

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



GNIL14TR00580AA 3

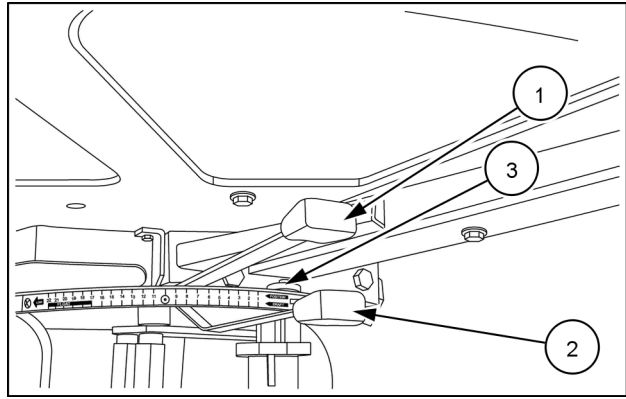
Draft control

The draft control lever (1) sets the desired depth of the attached implement. Draft control is best when using implements that operate in the ground, such as plows, harrows, or cultivators. The draft loading on the implement increases and decreases as the working depth or the soil resistance changes.

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

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

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



GNIL14TR00580AA 4

Combined draft and position control

You can use Draft and Position Control together to operate in Draft Control but prevent the implement from sinking excessively when soil conditions change. First set the draft control lever (1) with the position control lever (2) fully forward. Then move the position control lever back until the link arms start to rise. The position control lever sets the lowered position of the hydraulic lift.

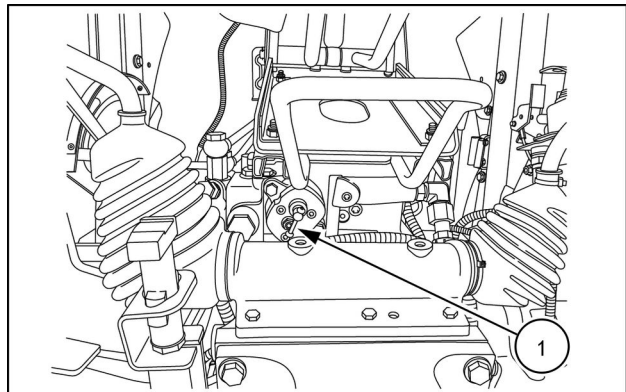
Response control

The response control knob (1) varies the speed of drop of the lower links.

Clockwise rotation -- Decreases speed of drop

Counter-clockwise rotation - Increases speed of drop

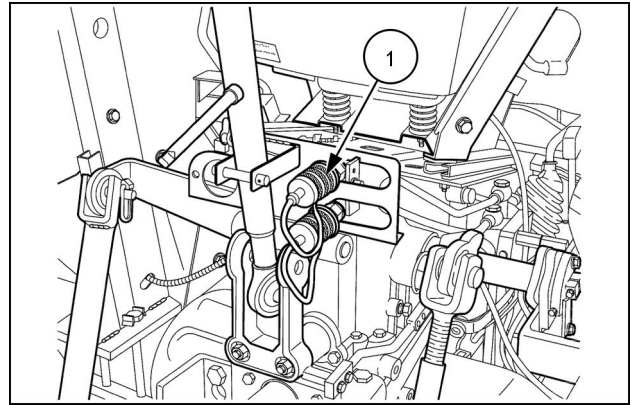
NOTICE: To lock implements in transport position when driving on road, fully raise Position Control lever (2), see 5 and screw in (rotate clockwise) knob (1), see 5.



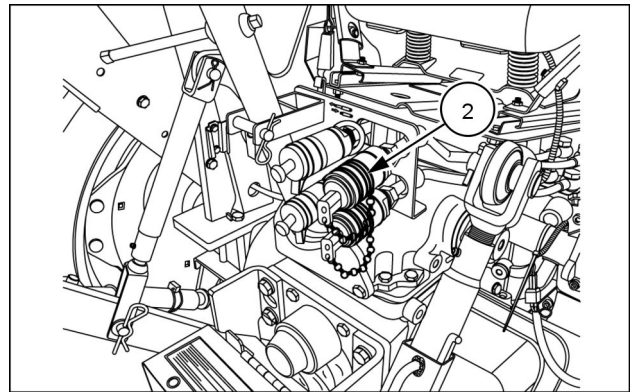
GNIL14TR00554AA 5

Rear remote control valve(s)

The number 1 rear remote valve **(1)** is standard equipment and number 2 valve **(2)** is an optional dealer installed accessory.



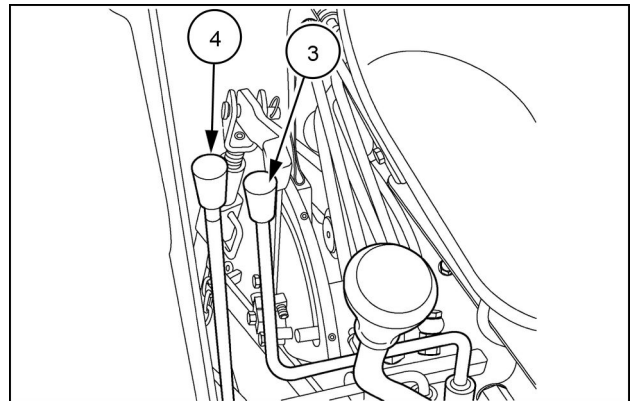
86096199N 6



93103969 7

To operate the remote control valve, move control lever **(3)** for valve number 1 and **(4)** for valve number 2. Move control lever rearward to extend implement cylinder and forward to retract implement cylinder.

If the valve is a float/detent style valve, move the control lever to the full forward position in order to place the valve into the detent "Float" position.



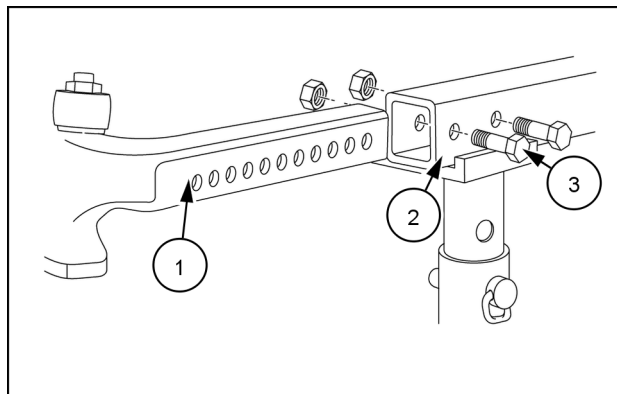
86071888N 8

WHEEL TRACK ADJUSTMENT

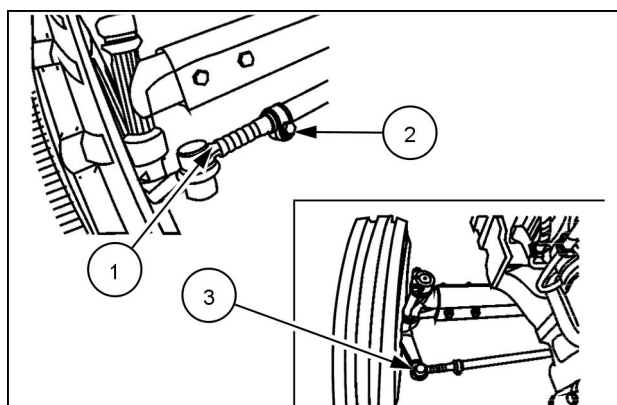
Wheel tread settings

Front wheel tread adjustment

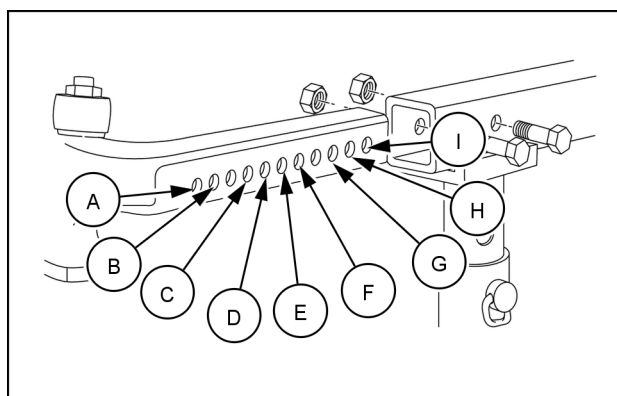
1. The front axle consists of a hollow center beam (1) with a telescopic section (2) at each end. Seven holes at 50 mm (1.97 in) intervals are provided in the telescopic sections for adjustment purposes. Adjustment of the front wheel track width is effected by extending both ends of the axle equally.
2. To extend the axle, apply the hand brake and place blocks at the front and rear of the rear wheels. Jack up the front axle and place on axle stands. Remove the securing bolts, (3), securing the left-hand telescopic section to the center beam.
3. Repeat the same for the right-hand side of the axle.
4. The tie rod is adjustable and consists of a central, hollow tube with a solid extendible section at each end. The left-hand end of the tie rod has a number of notches (1) at 50 mm (1.97 in) intervals
5. A locating bolt (2) passes through a clamp and one of the notches in the solid section and locks the tie rod assembly at the desired length. Additionally, the right-hand end of the tie rod is threaded (3) to provide fine adjustment of toe-in.
6. Remove the locating bolt (2) from the left-hand end of the tie rod. This will permit the tie rod to extend or retract freely.
7. Reset both axle telescopic sections. Passing the securing bolts through the center beam and telescopic sections, as indicated in 3 and table below:



GNIL14TR00500AA 1



76099305N 2



GNIL14TR00500AA 3

Securing Bolt Locations	2WD
2WD Dished In	7.50 - 16
AC	1424 mm
BD	1524 mm
CE	1624 mm
DF	1724 mm
EG	1824 mm
FH	1924 mm
2WD Dished Out	
AC	1472 mm
BD	1572 mm
CE	1672 mm
DF	1772 mm
EG	1872 mm
FH	1972 mm

NOTE: The tread settings shown are approximate. The front wheel discs are off-set, relative to the center line of the rim. The tread settings in the table are with the dished side of the wheel nearest the axle hub. If the front wheels are reversed on the hubs the tread settings shown in the table will be increased by approximately **25 mm (0.98 in)**.

8. Tighten the nuts on the axle extension securing bolts to **118 N·m (87 lb ft)**
9. With both front wheels parallel, install the locating bolt **(2)** in the nearest aligning notch in the tie rod. Tighten the nut on the locating bolt to **24.5 N·m (18 lb ft)**

Tractor model	Front wheel bolt torque
	320.0 N·m (236.0 lb ft)

NOTE: Re-check all torque settings after **50 h** of operation.

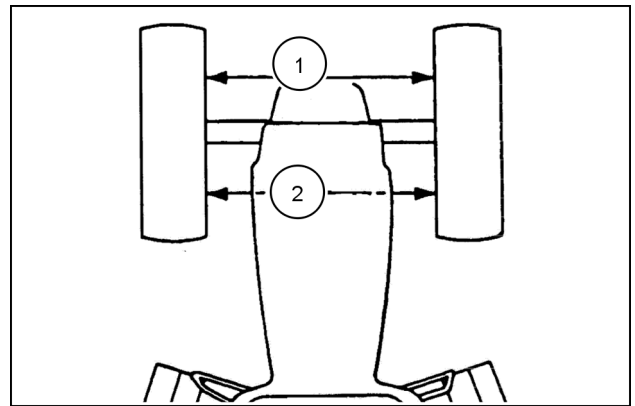
Front wheel toe-in

After resetting the track width, the front wheel toe-in may require adjustment. For correct operation, the front wheels should be parallel or toe-in slightly.

NOTICE: Incorrect toe-in setting may result in abnormal wear of front tires.

To measure the toe in proceed as follows

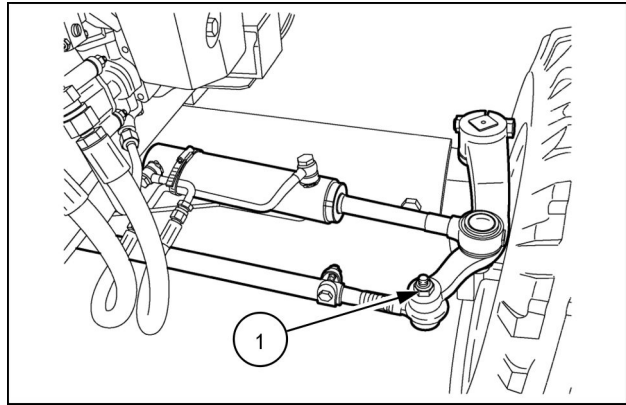
1. Measure the distance **(1)** between the wheel rims at hub height at the front of the wheels. Rotate both front wheels by **180 °** and check the measurements again, this time at the rear of the wheels **(2)**
2. This will eliminate wheel rim run-out errors. The correct toe-in setting is **0-5 mm**, i.e., the measurement taken at the front of the rims should be the same as the rear or be smaller by up to **5 mm (0.20 in)**



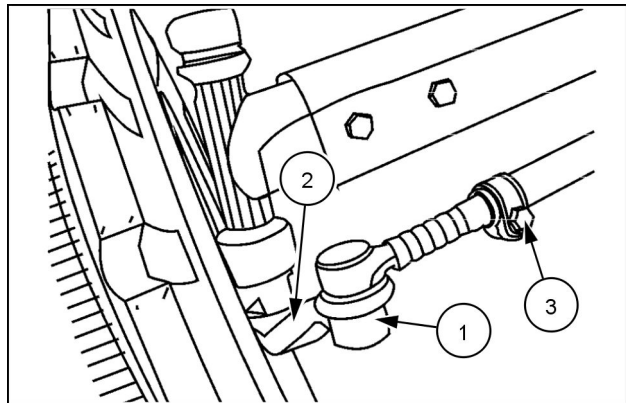
20108791 4

Tie Rod - Steering (Right-hand side - Illustrated)

1. The tie rod located behind the axle must be disengaged to permit adjustment of the axle.
2. The tie rod is telescopic and consists of a central hollow tube with a solid extendible section at each end.
3. Remove the locating bolt (1) from both ends of the tie rod.
4. The position for the setting of the steering cylinder will also change respectively.
5. Left-hand and right-hand axle telescopic sections, passing the securing bolts through the center beam and telescopic sections, as indicated in 3, see chart.
6. Remove the nut (1) at the right-hand end of the tie rod and withdraw tie rod from arm (2)
7. Loosen the bolt (3) and rotate the threaded end to shorten or lengthen tie rod assembly until the toe-in is correct. Tighten all bolts/nuts securely.



86090130N 5



20108792 6

⚠ WARNING**Roll-over hazard!**

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

Failure to comply could result in death or serious injury.

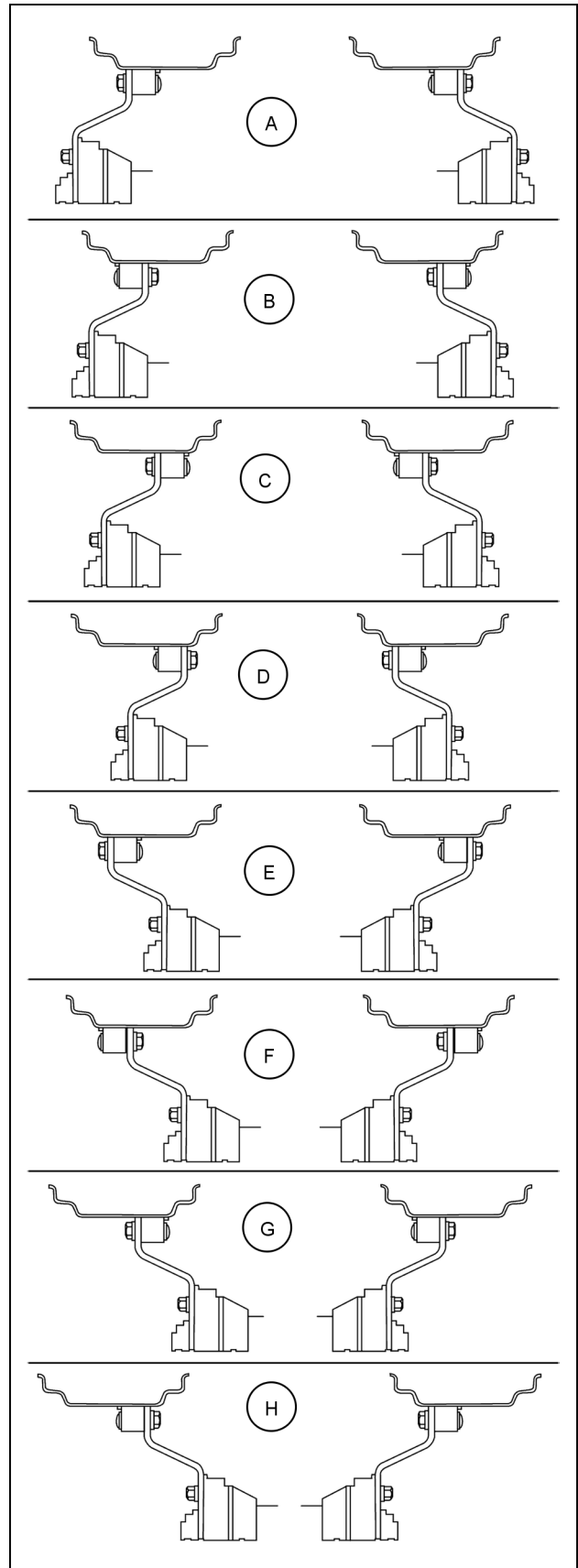
W0346A

Four-wheel drive (4WD) tread setting

4WD Front Axle	4WD Tread Setting
	9.5 —24
(A)	NA
(B)	NA
(C)	NA
(D)(Standard)	1558.0 mm (61.3 in)
(E)	1522.0 mm (59.9 in)
(F)	1630.0 mm (64.2 in)
(G)	1650.0 mm (65.0 in)
(H)	1758.0 mm (69.2 in)

4WD Front Axle	
	R4 12.5/80-18
Front	1532 mm

Front wheel bolt torque: **192.0 N·m (141.6 lb ft)**



76096164N-85X23 7

Rear wheel tread adjustment

⚠ WARNING

Roll-over hazard!

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

Failure to comply could result in death or serious injury.

W0346A

Rear wheel track adjustment is affected by changing the wheel rim relative to the center disc, the rim and/or the disc relative to the axle hub or by interchanging the rear wheels.

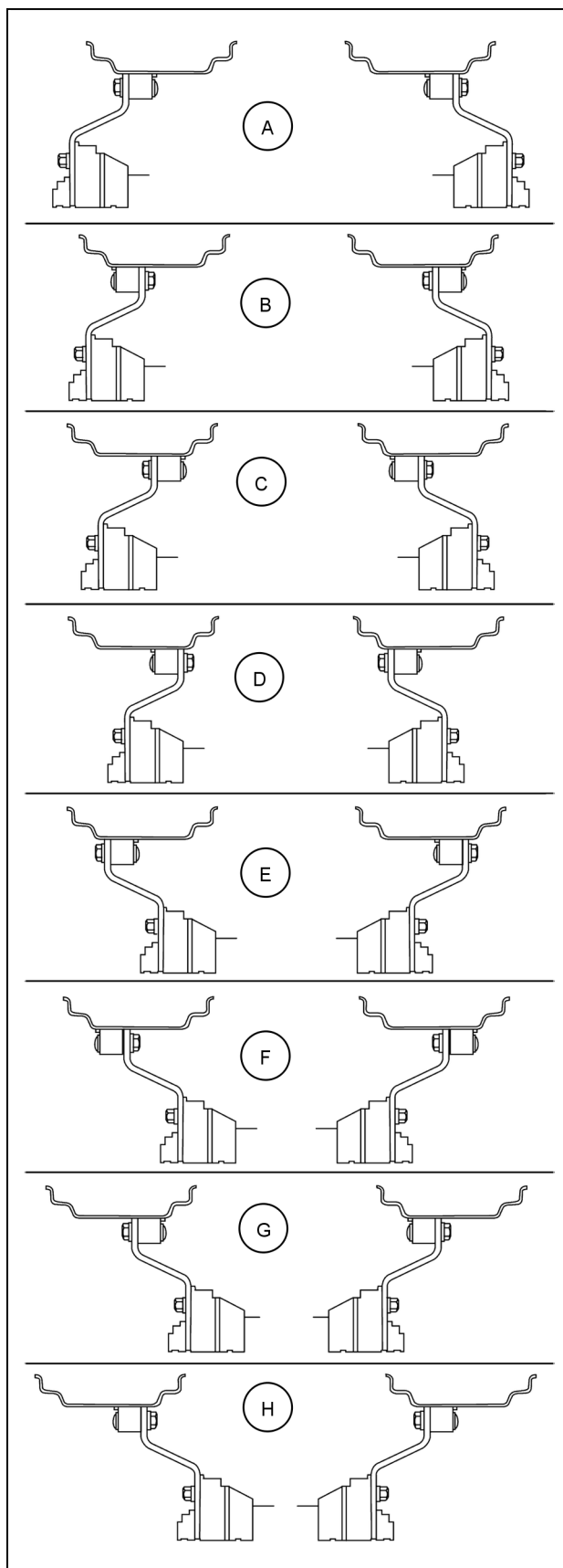
The sectioned drawings shown in the table illustrate the wheel rim and disc positions viewed from rear of the tractor relative to the hub at various track width settings. Track width (the distance between the center of the tires) are nominal and may vary by as much as **13 mm (0.5 in)**.

NOTICE: When interchanging left-hand and right-hand wheel assemblies, ensure the "V" of the tire tread remains pointing in the direction of forward travel of tractor for better traction.

NOTICE: With certain options and/or tire sizes narrower track settings may not be possible due to minimal clearance between tires and fenders or equipment.

When installing or adjusting a wheel, tighten the bolts to the following torques recheck after driving the tractor for 1 hour and 8 hours operation and thereafter at the 50 hour intervals:

Rear disc to hub bolts	192 N·m (142 lb ft)
Rear disc to rim nuts	239 N·m (176 lb ft)



76096164N-85X23 8

Rear Axle Configuration	2WD	2WD & 4WD	4WD
	13.6 R 28	14.9 R 28	R4 18.4X24
(A)	N/A	N/A	N/A
(B)	N/A	N/A	1438.0 mm (56.6 in)
(C)	N/A	N/A	N/A
(D)	1336.0 mm (52.6 in)	1336.0 mm (52.6 in)	N/A
(E)	1420.0 mm (56 in)	1420.0 mm (56 in)	N/A
(F)	1534.0 mm (60.4 in)	1534.0 mm (60.4 in)	N/A
(G)	1623.0 mm (64 in)	1623.0 mm (64 in)	N/A
(H)	1737.0 mm (68.4 in)	1737.0 mm (68.4 in)	N/A

BALLASTING AND TIRES

Ballasting and tires

Selecting Ballast

WARNING

Roll-over hazard!

A tractor without adequate ballasting, wheel base, and tire spacing can be unstable when operating the implement on an incline. Read the tractor operator's manual for exact instructions. If instructions are not available, you must conduct suitable tests in safe conditions to assess stability.

Failure to comply could result in death or serious injury.

W0190A

When tractor horsepower loads vary the optimum weight of the tractor will change. This means that ballast may have to be added or removed to maintain the best tractor performance. Proper ballast will greatly improve tractor operation and ride.

The amount of ballast required is effected by

- Weight of tractor
- Soil and Traction condition
- Type of implement fully-mounted, semi-mounted or trailed.
- Working speed.
- Tractor horsepower & load

- Type and size of tires
- Tire Pressure

Do not use more ballast than needed. Excess ballast should be removed when the excess ballast is not required.

Too little Ballast

- Rough ride
- Excessive wheel slip
- Power loss
- Tire wear
- Excessive fuel consumption
- Lower productivity

Too much Ballast

- Higher maintenance costs
- Increased driveline wear
- Power loss
- Increased soil compaction
- Excessive fuel consumption
- Lower productivity

6 - WORKING OPERATIONS

For maximum tractor performance in heavy draft conditions weight should be added to the tractor in the form of liquid ballast, cast iron weights or combination of both.

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

When a rear mounted implement is raised to the transport position, the weight on the front wheels should be at least 20% of total tractor weight.

Add front-end ballast as required, for stability during operation and transport. Ballasting of the front end may not always provide adequate stability if the tractor is operated at high speed on rough ground. Reduce tractor speed and be cautious under these conditions.

When using front mounted equipment, it may be necessary to add weight to the rear wheels to maintain traction and stability.

NOTICE: Only sufficient weight should be added to provide traction and stability. Adding more weight than necessary results in unnecessary loads being put on the tractor and higher fuel consumption. When adding weight adhere to the maximum tire capacity loading stated in the tables at the end of this Section. If further information or assistance is required on tractor weighing consult your Authorized Dealer.

WARNING

Roll-over hazard!

If proper stability cannot be achieved within the following weight limitations, reduce the load on the machine until you achieve stability.

Failure to comply could result in death or serious injury.

W0468A

Ballast limitations

Ballast should be limited by the tire capacity or tractor capacity. Each tire has a recommended carrying capacity, which should not be exceeded.

NOTICE: Do not exceed the tractor gross vehicle weight of **2300.0 kg (5070.6 lb)**. This can cause overload condition that may invalidate the warranty and may exceed the load rating of the tires. The maximum recommended gross vehicle weight is the weight of the tractor plus ballast plus any mounted equipment/ implement in the raised position.

Rear wheel weights (optional)

The rear wheels are fitted with cast iron wheel weights, weighing **40.0 kg (88.2 lb)** each.

Tire Size	No. Weights per wheel	Total added weight per wheel
13.6-28	2 X 40	40.0 kg (88.2 lb)
14.9-28	2 X 40	40.0 kg (88.2 lb)
18.4-24	2 X 40	40.0 kg (88.2 lb)

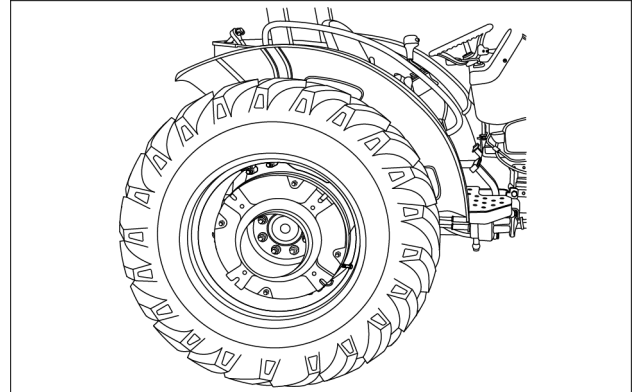
Tightening torque:

Rear wheel weight to rear wheel disc:

230 ± 13 N·m (170 ± 10 lb ft).

Rear wheel weight to rear wheel disc:

230 ± 13 N·m (170 ± 10 lb ft).

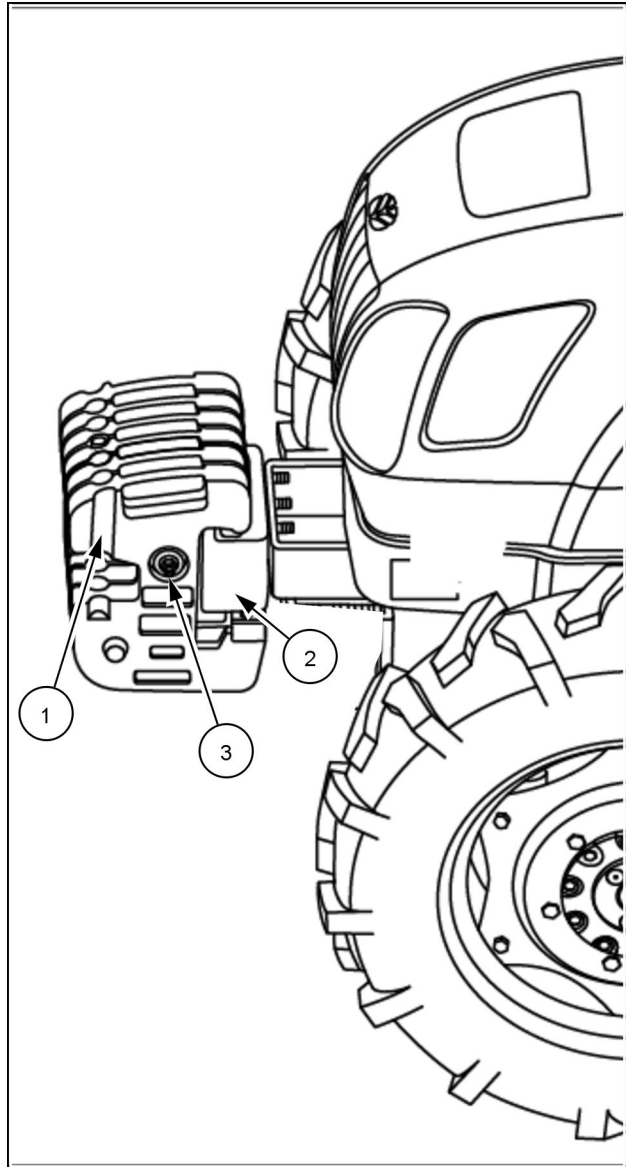


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Front ballast weights (optional)

The front ballast weights **(1)** are available from your authorized dealer, which can be mounted on a front carrier **(2)**. Wafer weights can be mounted and clamped together by means of the long through bolt **(3)**. The maximum recommended front ballast weight is:

Front ballast weights
6 X 30.0 kg (66.1 lb) = 180.0 kg (396.8 lb)

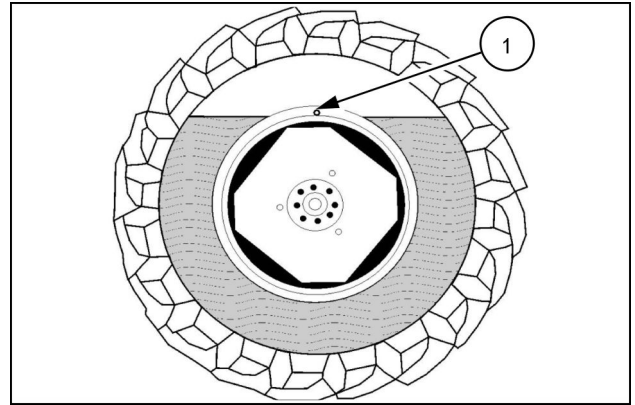


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Liquid ballast (Optional)

It is a common practice to add weight to the tractor by filling the rear tires with liquid. A calcium chloride (CaCl_2) and water solution is recommended due to the 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 dealer. Tires should never be filled beyond **75 %**. At **75 %** full, the liquid will come to the valve stem (**1**) when the valve stem is at the highest point, at the top of the wheel.



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Rear tire liquid

Ballast Weights (Per Tire) 600 grams/liter
(5 lbs/gal) CaCl_2 %
Solution

Tire Size	Weight per tire
13.6-28	211 kg (465 lb)
14.9-28	261 kg (575 lb)

Tire inflation

DANGER

Explosion hazard!

Welding to a wheel can create an explosive air and gas mixture. Removing air from the tire or loosening the tire on the wheel (breaking the bead) will **NOT** eliminate the hazard. **ALWAYS** remove the tire completely from the wheel before welding.

Failure to comply will result in death or serious injury.

D0033A

WARNING

Explosion hazard!

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

Failure to comply could result in death or serious injury.

W0059A

WARNING

Explosion hazard!

Do not remove, install, or make repairs to a tire on a wheel rim. Take the tire and rim to a tire shop where persons with special training and special safety tools are available.

Failure to comply could result in death or serious injury.

W0365A

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

Operation	Front	Rear
Field	220 kPa (32 psi)	69 - 110 kPa (10 - 16 psi)
Haulage	220 kPa (32 psi)	110 - 179 kPa (16 - 26 psi)
Industrial	310.3 kPa (45.0 psi)	165.0 kPa (23.9 psi)

See the tables for tire pressure and permissible load for more details.

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

Do not exceed the load for the pressures listed. Do not over-inflate or under-inflate the tire.

6 - WORKING OPERATIONS

Front tire pressure and permissible loads

The following chart gives the load carrying capacity of the tires at the tire pressure indicated:

Tire Size		Cold Inflation Pressure - kPa (psi)											
		141 kPa (20.5 psi)	169 kPa (24.5 psi)	200 kPa (2 9 psi)	228 kPa (3 3 psi)	248 kPa (2 6 psi)	279 kPa (40.5 psi)	310 kPa (4 5 psi)	341 kPa (49.5 psi)	372 kPa (5 4 psi)	400 kPa (5 8 psi)	421 kPa (6 1 psi)	448 kPa (6 5 psi)
		Maximum load per tire - kg											
7.50 -16 (2WD)	6 ply	500	535	605	660	695	745	-	-	-	-		-
	8 ply	500	535	605	660	695	745	790	830	870			
9.5–24 (4WD)	6 ply	740	770	795	825	855	880	915	940	—	—	—	-
	8 ply	740	770	795	825	855	880	915	940	965	990	1015	1040

Tire Size		Cold Inflation Pressure - kPa (psi)											
		83 kPa (12 p- si)	96.5 kPa (1 4 psi)	110 kPa (1 6 psi)	124 kPa (1 8 psi)	138 kPa (2 0 psi)	152 kPa (2 2 psi)	165 kPa (2 4 psi)	179 kPa (2 6 psi)	193 kPa (2 8 psi)	207 kPa (3 0 psi)		
		Maximum load per tire - kg											
8.3-24 (FWD)	6 ply	400	438	463	500	531	558	-	-	-	-	-	-
9.5-24 (FWD)	6 ply	500	544	580	630	671	712	748	776	826	848	-	-

Tire Size		Cold Inflation Pressure - psi			
		28 psi	36 psi	45 psi	61 psi
		Maximum load per tire - lb			
12.5-18(FWD)	10 ply	4435 lb	5240 lb	6005 lb	7205 lb

The above charts are for tractors operated at speeds up to **32 km/h (20 mph)**. Under front-end loader applications at speeds up to **8 km/h (5 mph)**, the above loads may be increased by 50% maximum for the same inflation pressure.

6 - WORKING OPERATIONS

Rear tire pressure and permissible loads(cross ply tires)

The following chart gives the load carrying capacity of the rear tire at the pressure indicated.

Tire size		Cold Inflation Pressure - kPa (psi)														
		90 kPa (13 psi)	100 kPa (14.5 psi)	110 kPa (16 psi)	121 kPa (17.5 psi)	131 kPa (19 psi)	141 kPa (20.5 psi)	152 kPa (22 psi)	159 kPa (23 psi)	169 kPa (24.5 psi)	179 kPa (26 psi)	190 kPa (27.5 psi)	200 kPa (29 psi)	210 kPa (30.5 psi)	221 kPa (32 psi)	228 kPa (33 psi)
		Maximum load per tire - kgs														
13.6 -28	8 ply	1060	1120	1180	1230	1285	1340	1395	1450	1500	1550	1370 1660	1650	-	-	-
	10 ply	1060	1120	1180	1230	1285	1340	1395	1450	1500	1550	1660	1650	1700	1750	-
	12 ply	1060	1120	1180	1230	1285	1340	1395	1450	1500	1550	1660	1650	1700	1750	1180
14.9 -28	8 ply	-	-	1410	1475	1545	1610	1675	1740	1810	1880	-	-	-	-	-
	10 ply	-	-	1410	1475	1545	1610	1675	1740	1810	1880	1930	1975	2020	-	-
	12 ply	-	-	1410	1475	1545	1610	1675	1740	1810	1880	1930	1975	2020	2070	2120

Tire Size		Cold Inflation Pressure - kPa			
		120 kPa	140 kPa	150 kPa	165 kPa
		Maximum load per tire - kg			
18.4-24	8 ply	2390 kg	2600 kg	2760 kg	3020 kg

To avoid the possibility of tire creep (movement of the tire on the rim), tire pressure below **90 kPa (13 psi)** should not be used with cross ply tires for operations having a high torque requirement, e.g., sub-soiling, heavy transport, etc. When mounted implements are used on tractor, loads may be increased by **20 %** with no increase in inflation pressure, if operated at speeds up to **6 km/h (4 mph)**.

For haulage service, it is recommended that the tire be inflated to the maximum pressure stipulated in the table.

The above chart is for guidance only. For exact information regarding inflation pressures and loads for your particular tires, consult your dealer.

7 - MAINTENANCE

GENERAL INFORMATION

Lubrication and maintenance general information

Introduction

This section gives full details of the service procedures necessary to maintain your tractor at peak efficiency. The lubrication and maintenance chart provides a ready reference to these requirements, see **7-11**. Each operation being numbered for easy reference. If in doubt about any aspect of lubrication and maintenance, consult your authorized dealer.

Safety precautions

Read and observe all safety precautions listed in "Servicing the Tractor" in the safety rules section at the front of this Manual. See **2-2**.

NOTE: Dispose of used filters and fluids properly.

CAUTION

Maintenance hazard!

Always stop the machine before performing any lubrication. Observe the following precautions before leaving the operator's platform: Disengage all drives. Engage the parking brake. Raise the header. Engage the header lifter safety latch. Turn the machine engine OFF. Remove the ignition key. Failure to comply could result in minor or moderate injury.

C0029A

- Air filter: check clogging indicator (clean if required)
- Check engine oil

During first 50 hour operation

In addition to the regular maintenance operations listed, check the following items every 10 hours or daily during the first 50 hours of operation:

- Check engine oil.
- Check Transmission/Hydraulic, rear axle oil level.
- Wheel nuts for tightness.

NOTICE: Park the tractor on level ground and where applicable, extend all cylinders on implements or attachments before checking these oil levels.

The first 50 hour service

At the first 50-hours service, ensure that the following additional service operations are carried out. The items are listed in the "First 50-Hour service" check list

- Change hydraulic oil filter.
- Check and tighten all cooling system hose connections.
- Check and tighten all air intake connections.
- Check and torque front end weight bolts.
- Check torque of all wheel nuts

10 hours or daily check

- Coolant: check coolant level (top up if required)

NOTICE: *Items listed in first 50-hours service are important. If not performed, early component failure and reduced tractor life may result.*

Preventing system contamination

To prevent contamination when changing oils, filters, etc., always clean the area around the filler caps, level and drain plugs, dipsticks, and filters prior to removal. To prevent dirt entry during greasing, wipe dirt from the grease fittings before greasing. Wipe excess grease from the fitting after greasing.

Flexibility of maintenance intervals

The intervals listed in the lubrication and maintenance chart are guidelines to be used when operating in normal working conditions.

Adjust the service intervals for environment and extreme working conditions. Intervals should be reduced under

adverse (Wet, muddy, sandy, or extremely dusty) working conditions.

Lubrication and maintenance chart

The chart lists the intervals when the routine checks, lubrication, service and/or adjustments should be performed. Use the chart as a quick reference guide when servicing the tractor, see **7-11**.

Warranty notice

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.*

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

- Avoid using fuel mixed with water or other substances which may damage the engine.
- Use fuel with a low sulfur content. The percentage of sulfur must never exceed **10 - 50 ppm**.
If the percentage of sulfur contained in the fuel exceeds the value indicated, the particulate filter will not work properly.
All fuels are inflammable. Any fuel leaking or dropping on hot surfaces and electric components can cause fires. Do not smoke when refueling or nearby any filling station.

Fuel requirements (recommended fuel)

- During refueling, make sure the fuel does not contain any residue; in this case use specific filters.

Refueling the Tractor

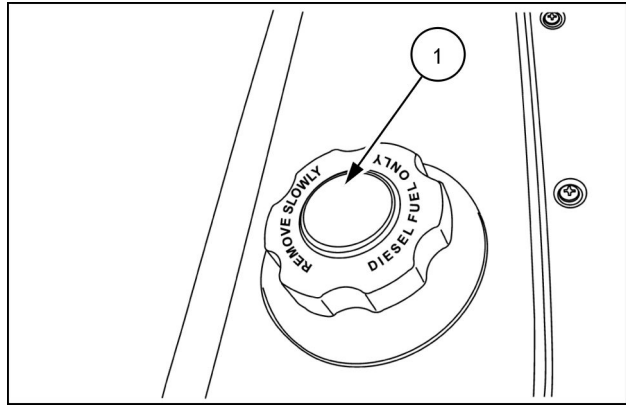
The fuel tank filler cap (1) is located at the rear of the front hood. Before removing the cap, wipe all dust and dirt from around the cap to prevent debris from falling into the tank while filling.

Use an approved fuel container and check the inside of the container periodically for cleanliness. Fuel tank capacity is **51 l (13.5 US gal)**

NOTICE: 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.

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

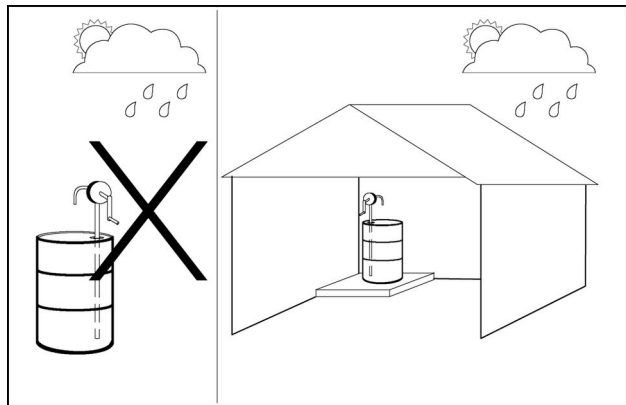


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Fuel storage

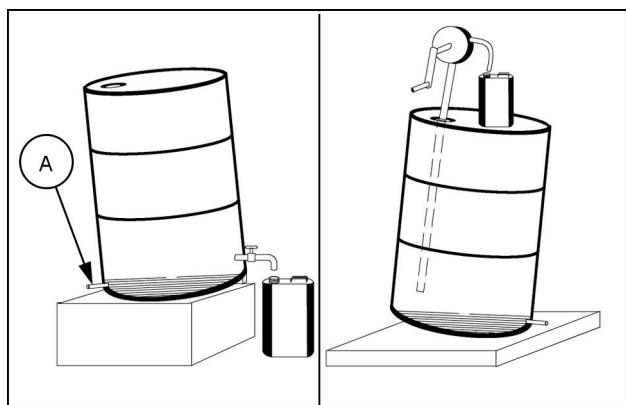
Take the following precautions to ensure that the stored fuel is kept free of dirt, water and other contaminants.

1. Store the fuel in black iron tanks, not galvanized tanks, as the zinc coating will react with the fuel and form compounds that will contaminate the injection pump and injectors.
2. Install bulk storage tanks away from direct sunlight.



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3. Keep the tank slightly tilted so that the sediments will settle away from the outlet pipe. To facilitate moisture and sediment removal provide a drain plug at the lowest point at the end opposite the outlet pipe.
4. If fuel is not filtered from the storage tank, put a funnel with a fine mesh screen in the fuel tank filler neck when refuelling.
5. Arrange fuel purchase so summer grade fuels are not held over & used in winter.



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(A) Drain Plug

Fuel saving tips for optimum performance

Proper maintenance of Tractor reduces fuel consumption to a greater extent.

1. Store fuel in properly cleaned, rust and contamination free containers.

7 - MAINTENANCE

2. Always fill the tank at the end of each day to reduce overnight condensation of moisture in the air, in turn to avoid damage to the fuel system.
3. Fuel filters should be replaced as per recommended time schedule as the filtering capacity is not retained after this specified time. It may allow harmful contamination and damage the fuel injection system. Follow the service schedule for draining the water from the filters and cleaning the feed pump filter.
4. Always use genuine fuel filters available from your Authorized Dealers.
5. Stop diesel leakage, if any, immediately.
6. Dirt particles entering the engine causes early wear of liners and piston rings, resulting in loss of power, engine oil & fuel consumption. Clean the pre-cleaner bowl daily and change the air cleaner oil as mentioned in service schedule. Ensure that there is no leakage through hoses and the air cleaner bowl seal is in good condition, keep hose clamps tight.
7. Check the Radiator coolant level daily and top-up with clean water only. Radiator fins should always be kept clean. Should it be necessary to replace radiator cap, use only genuine cap of the specified pressure. Never try to remove the thermostat. Check and adjust fan belt tension regularly. Ignoring these, will result in engine over heating and heavy diesel consumption.
8. Follow the running-in procedure given in this manual for optimum performance of your tractor.
9. Do not run the engine in idle condition for more than two minutes. It may result in wastage of fuel.
10. Do not rest your foot on clutch pedal, as this will cause clutch slippage, loss of engine power and increased fuel consumption. Maintain the specified clutch pedal free play.
11. Always drive the tractor in proper gear.
12. Use a lower gear while driving down a slope and use brakes sparingly.
13. Maintain proper tire pressures for field work as well as for roadwork. Refer the tire pressure chart given in this manual. Worn out tires causes wheel slippage and waste fuel. Re-tread or replace the tires if they are badly worn out. Adhere to tire ballasting as and when required to reduce wheel slippage and fuel consumption.
14. Always use matching implements to cut down the diesel wastage. Implements should be maintained in good condition, as usage of worn out implements will waste fuel.
15. Always plow length wise and plan your field run to reduce fuel consumption. Adjust the wheel track to suit the implement and avoid overlap when working in the field.
16. When using a PTO driven equipment, operate the engine at the recommended speed to reduce fuel consumption.

Biodiesel fuel

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

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.

NOTICE: *It is imperative that you check which blend is approved for your engine with your local dealer. Beware 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 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 incorrect mixture that can lead to problems with both engine and fuel system.

Engine performance is affected by the use of Biodiesel Fuel. There may be up to 12 percent 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 uses 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 particles 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 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 3 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 3 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 may void your machine's Warranty coverage.*

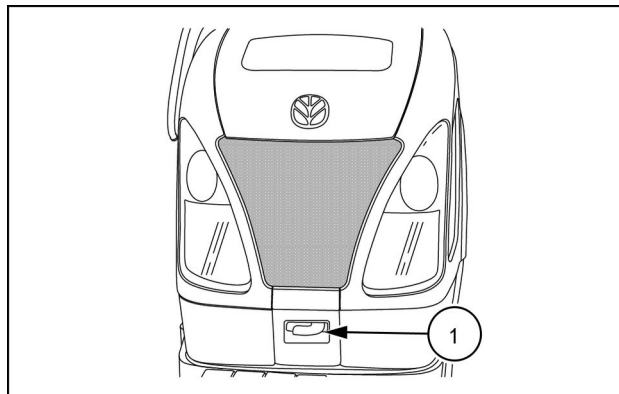
Machine shields and guards - Basic instructions

Guards

To gain access to perform inspection, lubrication and maintenance operations, the hood and certain access panels may need to be opened and removed.

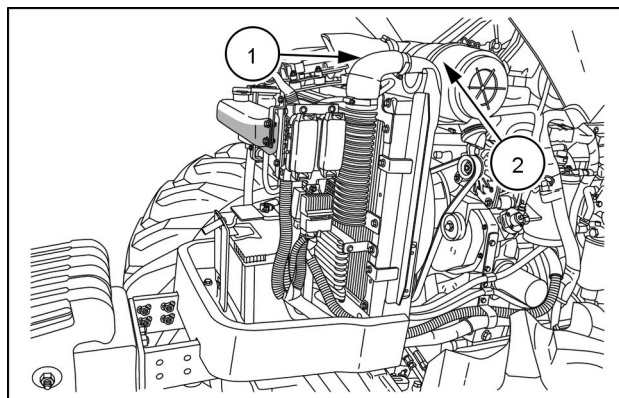
Engine hood

The hood is hinged at the rear to allow easy and safe access to the various engine components. In order to open the hood, slide the lock to, right, and with the help of the handle (1), raise the hood.



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To maintain the hood in the raised position a gas strut is provided on the underside of the hood ensuring access to the radiator cap, (1), and air cleaner (2).



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Consumables

Recommended fluids and application	International specification	Approximate quantities	
Engine oil NEW HOLLAND AMBRA AUTO SUPREME 5W-30 NEW HOLLAND AMBRA UNITEK MASTERGOLD SBL CJ-4 SAE 10W-40. See 7-20.	API CJ4.....	6.3 l (6.6 US qt)	6.3 l (6.6 US qt)
Transmission oil or rear axle oil NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL	API GL4, ISO 32/46	23.0 L (24.3 US qt) for 2WD	25.0 L (26.4 US qt) for 4WD
Front axle differential or final reduction gear case NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL	API GL4, ISO 32/46	7.5 l (8.0 US qt)	7.5 l (8.0 US qt)
Grease fittings or bearings NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE.	NLGI No. 2.....	As required	As required
Steering oil (Hydraulic) NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL	API GL4, ISO 32/46	2.0 l (2.1 US qt)	2.0 l (2.1 US qt)
Engine radiator coolant System Capacity *Water Ethylene Glycol		8.5 l (9.0 US qt) 50% 50%	8.5 l (9.0 US qt) 50% 50%

Protecting the electrical system during charging or welding

DANGER

Hazardous chemicals!

Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.

Failure to comply will result in death or serious injury.

D0105A

Precautions

To avoid damage to the electrical systems, always observe the following:

1. Never make a break in any of the charging circuit connections, when the engine is running.
2. Never short any of the charging components to earth.
3. Do not use a slave battery of higher than **12 V** nominal voltage.
4. Always disconnect the ground cable from the batteries before carrying out arc welding on the tractor or on any implement attached to the tractor.
5. Position the welder ground cable clamp as close to the welding area as possible.
6. Never allow welding cables to lay on, near or across any electrical wiring or electronic component while work is in progress.
7. Always disconnect the negative cable from the batteries when charging the batteries in the tractor with a battery charger.

Protection of the Alternator

Protection of the Alternator

1. Before carrying out any operation on the alternator please disconnect the battery.
2. Never check the working of the alternator by connecting positive and negative terminals.

3. Do not run the alternator without battery in the circuit.
4. Do not use high voltage bulbs as warning light.

Maintenance of the Battery

1. Batteries should not be allowed to discharge completely. If the tractor is to be stored for a period of more than 2 weeks, the battery should be removed from the tractor and stored in dry location in a wooden platform. Trickle charge every 2 to 3 weeks to maintain the battery in good condition.
2. Ensure that the electrolyte level in all battery cells is preferably at the maximum level. However, in general, the level should be between minimum and maximum marks. Add distilled water, if the electrolyte level is found below the minimum level. Do not use well/tap water. Do not top off with acid.
3. The specific gravity in every cell of the battery should ideally be between 1.260 - 1.230. At any point of time, specific gravity in cells should not fall below 1.230. If the reading is below 1.230, then the battery shows symptoms of a discharged battery. Please refer it to your Battery Dealer.
4. Always apply the battery terminals with petroleum jelly to avoid current leakage and rusting. Never use grease for the same purpose.
5. Always disconnect the ground terminals (negative terminal) of the battery, while carrying out any repairs on the tractor, especially during welding.
6. Do not crank the engine for more than ten seconds at one time. Wait for about thirty seconds and then crank again.

Starter Motor

1. Starter motor mounting nuts should be tight.
2. Give sufficient time between consecutive starts.
3. Do not run the starter motor for more than ten seconds.
4. Do not run the starter motor without any load.
5. Do not run the starter motor with discharged battery.

General battery maintenance

⚠ DANGER

Hazardous chemicals!

Battery electrolyte contains sulfuric acid. Contact with skin and eyes could result in severe irritation and burns. Always wear splash-proof goggles and protective clothing (gloves and aprons). Wash hands after handling.

Failure to comply will result in death or serious injury.

D0105A

⚠ 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

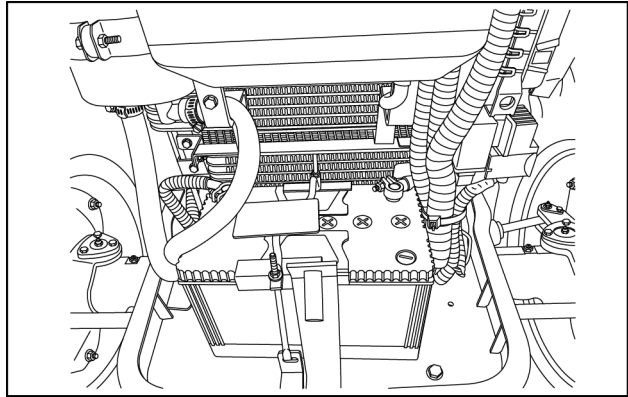
The battery is located in front of the radiator.

The battery electrolyte level should be between the minimum and maximum lines provided on battery container.

If necessary, top off with distilled or de-mineralized water until the level is correct. Do not overfill. Never use tap water or water from rain barrel or other source.

To prevent the formation of corrosion, the terminals should be cleaned and smeared with petroleum jelly. Do not apply grease to the battery terminals.

NOTE: Battery size - BCI group - 47 (CCA 600--850).



GNIL14TR00784AA 1

MAINTENANCE CHART

Frame - Maintenance chart

Service points	Cleaning					Adjust				
	Drain fluid					Grease				
	Lubricate					Test				
	Replace					Change fluid				
	Check					Bleed				
Page no.										
Every 10 hours of operation or daily										
Engine oil level										7-13
Engine cooling system										7-13
Steering reservoir oil level										7-14
After the first 50 hours of operation										
Clutch pedal free play										7-15
Brake pedal free play										7-15
Wheels and tires										7-15
Hydraulic oil filter										7-15
Every 50 hours										
Clutch pedal free play										7-16
Brake pedal free play										7-16
Wheels and tires										7-17
Transmission or hydraulics oil level										7-17
Front axle differential oil level										7-18
Front wheel hub oil level (4WD)										7-18
Air cleaner										7-19
Every 150 hours										
Battery electrolyte level										7-20
Every 300 hours										
Engine oil and filter										7-20
Engine air cleaner outer element										7-22
Hydraulic oil filter										7-26
Power Take-Off (PTO) clutch										7-27
Every 600 hours										
Transmission breather										7-28
Front wheel bearings - (2WD)										7-28
Fuel injectors - servicing										7-29
Fuel filter replacement										7-30
Hydraulic oil filter										7-31
Every 900 hours										
Air cleaner restriction indicator										7-32
Every 1200 hours										
Transmission or hydraulics oil level										7-32
Fuel tank cleaning										7-33
Engine coolant										7-34
Steering oil reservoir										7-35
Four-Wheel Drive (4WD) front axle differential oil										7-36
Four-Wheel Drive (4WD) front axle hub oil										7-36

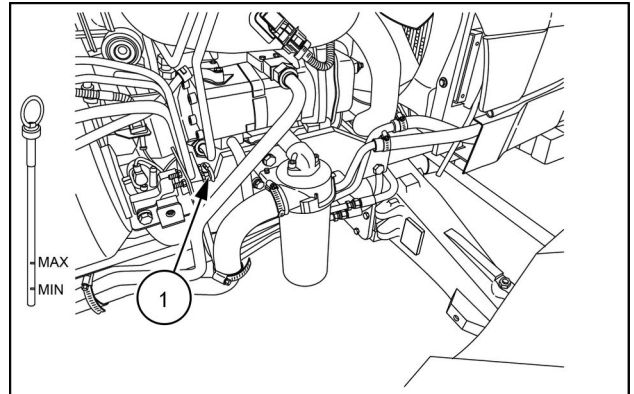
7 - MAINTENANCE

Cleaning					Adjust				
Drain fluid					Grease				
Lubricate					Test				
Replace					Change fluid				
Check					Bleed				
Service points					Page no.				
Air filter									7-37
Power Take-Off (PTO)									7-39
Every 1800 hours									
"Drive belt (type Poly-V)"									7-40
Every 4000 hours									
Alternator									7-40
As required									
Lubrication points									7-41
Headlights									7-44
Fuses									7-45
Bulbs									7-47

Every 10 hours of operation or daily

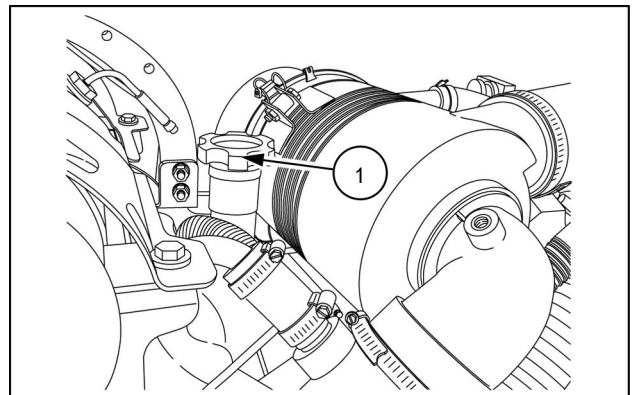
Engine oil level

1. Before checking the oil level, ensure that the tractor is on level ground, stop the engine and wait for a short period to allow the oil to drain back into the sump.



GNIL14TR00519AA 1

2. Pull out the dipstick from dipstick port. (1) see figure 2
3. Check the oil level by means of the dipstick (1) see figure 1.
4. If the level is below minimum mark, add fresh oil (1) see figure 2 until oil level is between the two marks on the dipstick.



GNIL14TR00523AA 2

NOTICE: Do not fill above the upper maximum line on dipstick. Excessive oil will be burned off within a short time and give a false impression of oil consumption.

Engine cooling system

⚠ WARNING

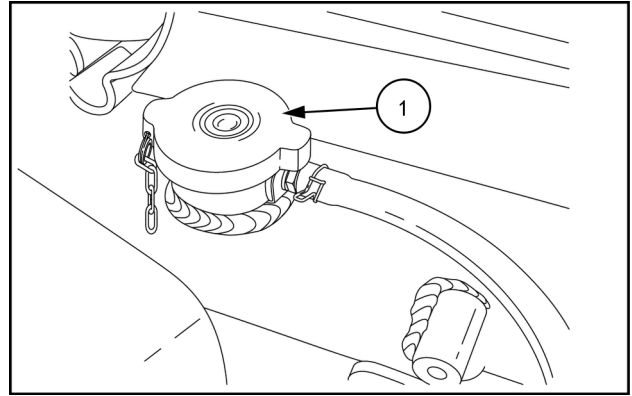
Burn hazard!

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

Failure to comply could result in death or serious injury.

W0367A

Peak power operation, followed by a rapid reduction in power requirement and engine speed, may cause the coolant to boil and be discharged from the radiator overflow tube. Normally, this loss of coolant is small and of little consequence, but repeated loss can significantly lower the coolant level and necessitate topping off. An additional water tank is fitted fill the coolant in the tank by removing tank cap (1).

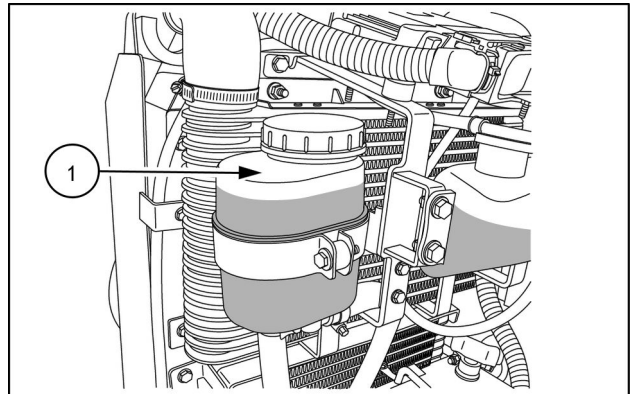


GNIL14TR00517AA 1

NOTICE: Never use tractor without radiator cap (1) as this will result into boiling and hence evaporation of the engine coolant.

Steering oil reservoir level

1. Check the oil level through the transparent reservoir (1).
2. If level is low, add **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** as required.
3. Make sure that the breather in the cap is completely clean.
Oil capacity **2.0 l (0.5 US gal)**.



GNIL14TR00518AA 1

After the first 50 hours of operation

Clutch pedal free play

1. See **7-16**

Brake pedal free play

1. See **7-16**

Wheels and tires

1. See **7-17**

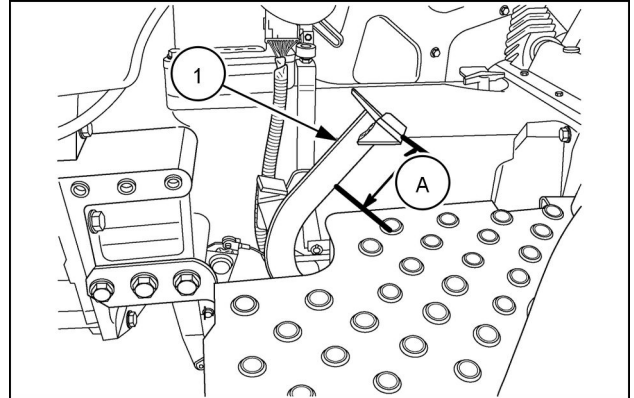
Hydraulic oil filter

1. See **7-26**

Every 50 hours

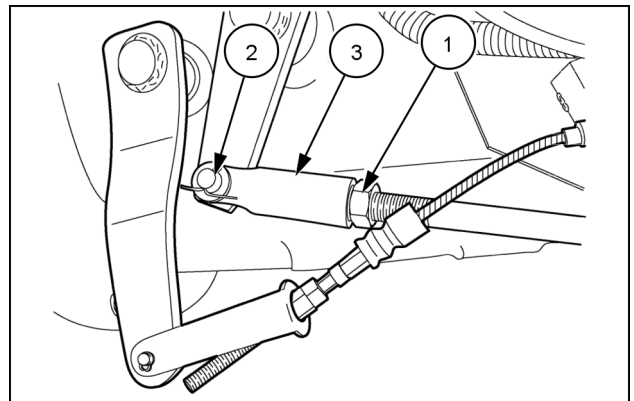
Clutch pedal free play

1. Check clutch free play **(A)** . The clutch free play should be **35 - 40 mm (1.38 - 1.57 in)** at clutch pedal **(1)**.



86090118NN 1

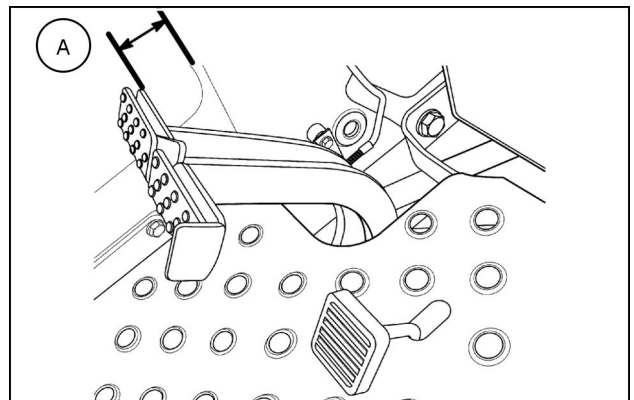
2. If adjustment is required, loosen the locknut **(1)** remove the split pin and clevis pin **(2)**.
3. Turn the clevis **(3)** to lengthen or shorten the operating rod, as required. Secure the clevis pin with a new split pin and tighten the locknut.
4. Lengthening the operating rod will increase free play and vice-versa.



86090149N 2

Brake pedal free play

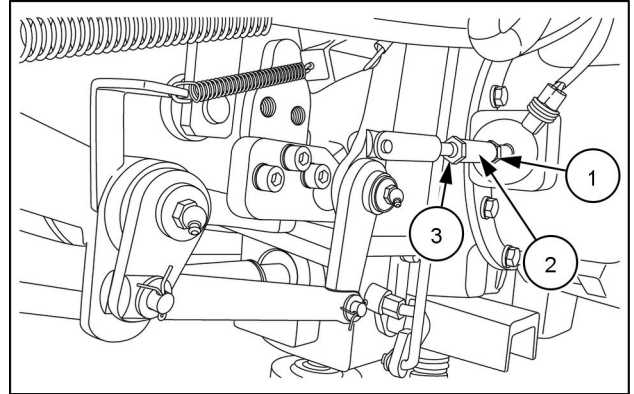
1. Measure free play of the brake pedals **(A)** free play should be **20 - 40 mm (0.79 - 1.57 in)**



76096162N 1

2. Adjustment to each pedal linkage is made to the brake pull rods beneath the tractor.

3. Block the wheels, front and rear, unlock the brake pedals and release the parking brake lever.
4. Loosen the locknut **(1)** on the brake pull rod **(2)** and turn the adjuster nut **(3)** clockwise to reduce the play and counter-clockwise to increase the play. Ensure that the pedals have same travel



GNIL14TR00520AA 2

5. Lock the brake pedals together and road test to ensure that the brakes are adjusted equally and will stop the tractor in a straight line.
6. Adjust the linkages if needed to balance the brakes

Wheels and tires

1. Check the front and rear wheel nuts for tightness.
2. The specified torque values are shown in the table for reference.

Front disc to hub bolts	123 N·m (91 lb ft)
Rear disc to hub bolts	192 N·m (142 lb ft)
Rear disc to rim nuts	239 N·m (176 lb ft) 239 N·m (176 lb ft)
Rear wheel weight to disc	150 N·m (111 lb ft)

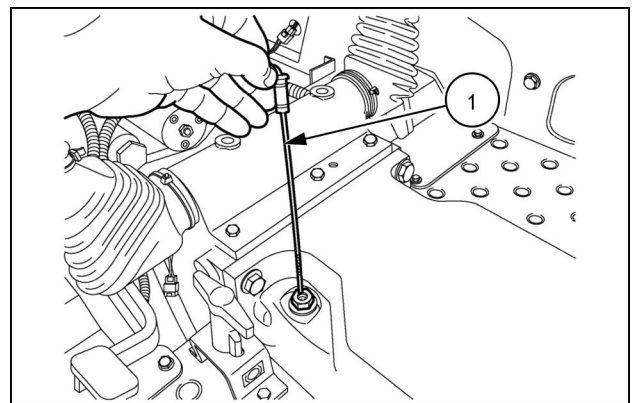
Tire Pressures and Condition

Check and adjust the front and rear tire pressures and inspect the tread and side-walls for damage.

3. Adjust the tire pressures to suit the load being carried.

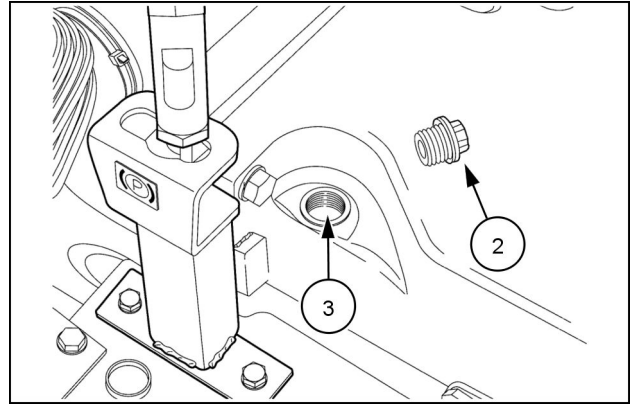
Transmission oil level or hydraulic oil level

1. The oil level should be between the high and low marks on the dipstick **(1)**.



86090135N 1

2. If necessary, remove the dipstick adapter fitting (2) and add oil through dipstick hole (3). Add oil until level is to upper mark on the dipstick. Do not overfill.

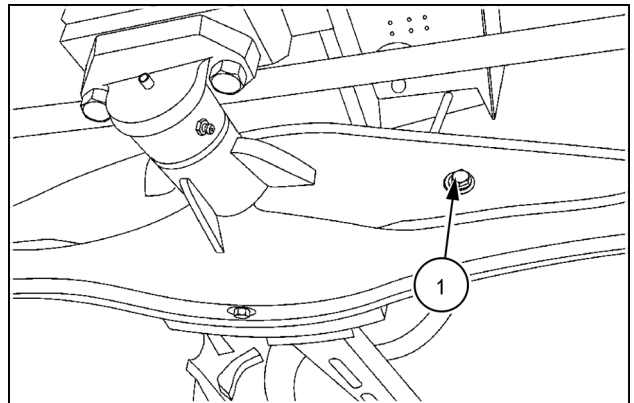


86096197N 2

NOTICE: Use only Genuine **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil.

Front axle differential oil level

1. On Four-Wheel Drive (4WD) tractors, check oil level at oil fill plug (1). The oil is at the correct level when oil level is at the bottom of the fill port opening.

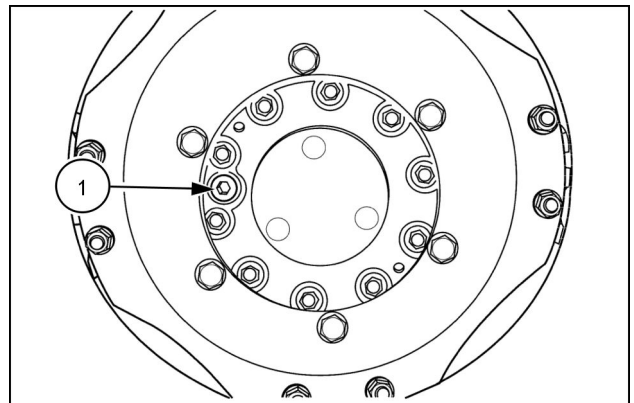


96096503 1

2. If oil level is low, add **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil through fill port, until correct oil level is obtained.

Front wheel hub oil level (4WD)

1. On Four-Wheel Drive (4WD) tractors, check each front axle hub oil level with the wheel positioned so the oil filler plug (1) is level with the center of the hub, midway from top to bottom.



76073647N 1

2. The oil is at the correct level when the oil level is at the bottom of the fill port opening.

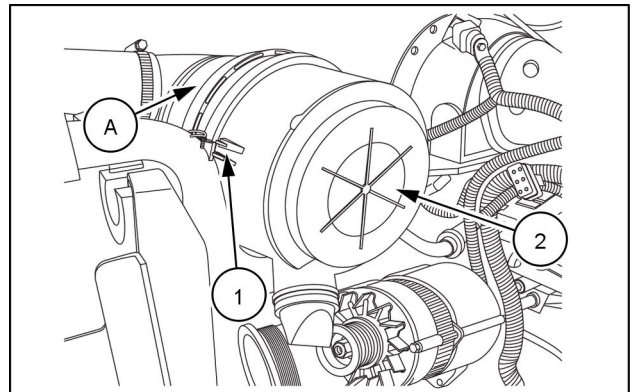
3. If the oil level is low, add **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil through fill port, until correct oil level is obtained.

Air cleaner

Engine air cleaner outer element - check

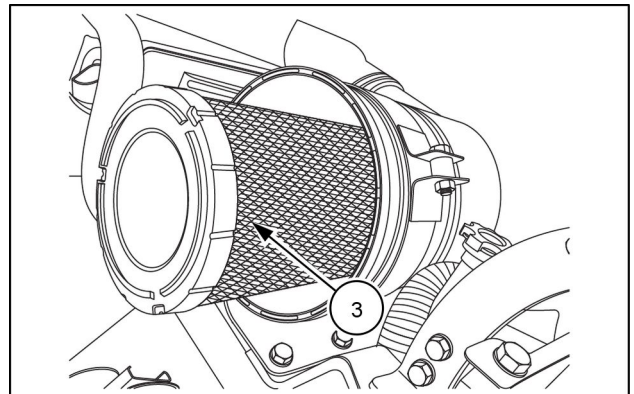
The air cleaner **(A)** which is located under the hood, consists of an inner and outer paper element within a metal casing.

1. Unlatch the three retaining clips, **(1)** and lift off the air cleaner assembly cover **(2)**.



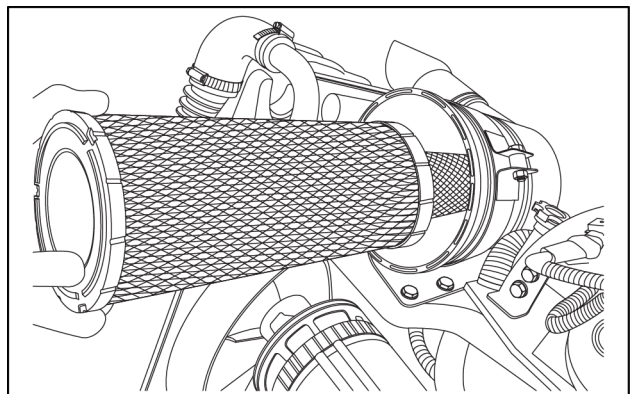
GNIL14TR00501AA.PNG 1

2. Remove the outer element **(3)**, from the air cleaner assembly by gently twisting the end of the filter clockwise to disengage the seal.



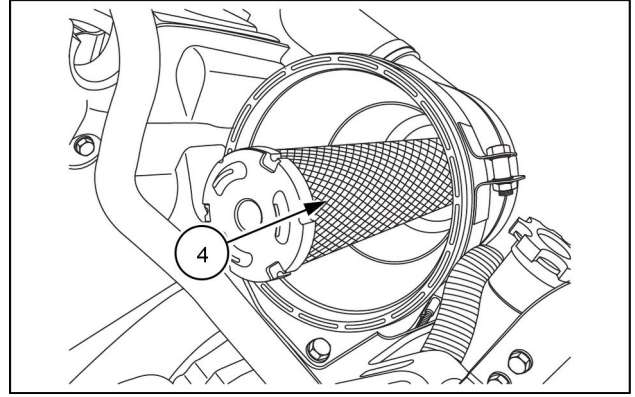
GNIL14TR00502AA.PNG 2

3. Then pull the filter straight out of the housing, not at an angle.



GNIL14TR00503AA.PNG 3

4. Make sure that the inner element (4) remains in place



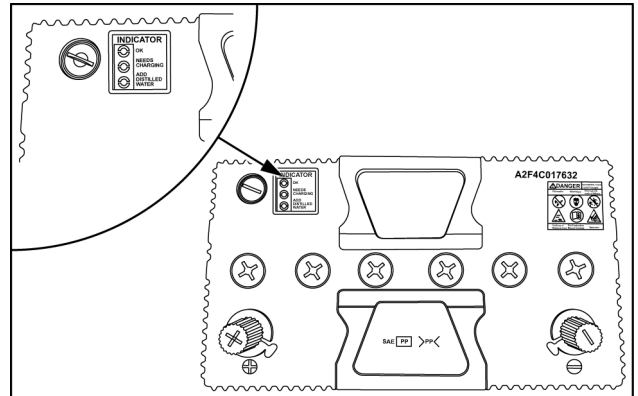
GNIL14TR00504AA.PNG 4

NOTICE: Do not disturb or remove the inner element.

Every 150 hours

Battery electrolyte level

1. Battery is located in front of the radiator. Battery electrolyte level should be between min. and Max. lines provided on battery container.
2. Battery has a feature “Magic Eye” - a transparent window on top of battery which indicates the condition of battery based on the color indication shown.
Green - Indicates battery is OK
Yellow - Indicates battery requires charging
Red - Indicates distilled water needs to be added.



GNIL14TR00589AA 1

3. If necessary, top up with distilled or demineralized water until the level is correct. Do not overfill. Never use tap water or water from rain barrel or other source.
4. To prevent formation of corrosion, terminals should be cleaned and smeared with petroleum jelly (Vaseline) only. Do not apply grease to the battery terminals.

NOTICE: In the event that battery is severely discharged, such that the terminal voltage is below 7 V, recovery will require a special charging procedure, Contact your authorized dealer.

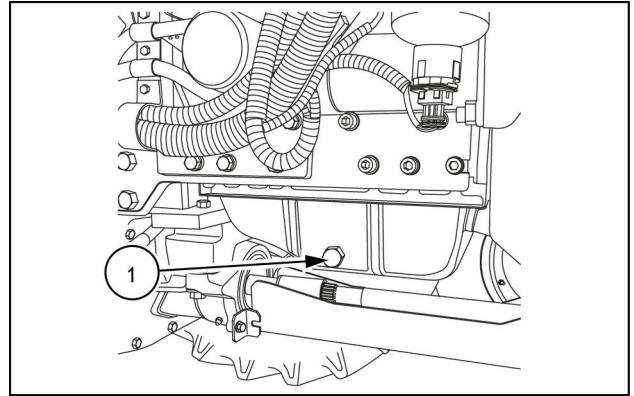
Every 300 hours

Engine oil and filter

Engine oil and filter replacement

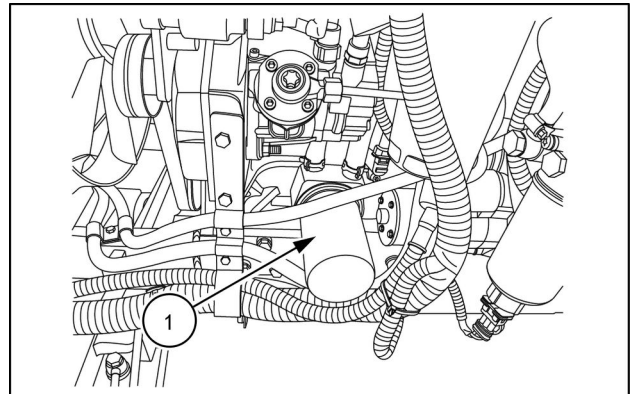
1. Warm the engine to operating temperature.
2. Park the tractor on level ground.
3. Shut off the engine.

4. Remove both drain plugs **(1)** and collect the oil in a suitable container.



GNIL14TR00522AA 1

5. Remove and discard the engine oil filter **(1)**.
6. Clean the filter mounting surface before installing new filter.
7. Lubricate the seal of new filter with clean engine oil.
8. Install the new filter, tighten filter until the seal meets the mating surface, then tighten additional 3/4 of a turn. Do not over tighten.



GNIL14TR00521AA 2

NOTICE: Always change engine oil filter, when changing engine oil.

Recommended Oils

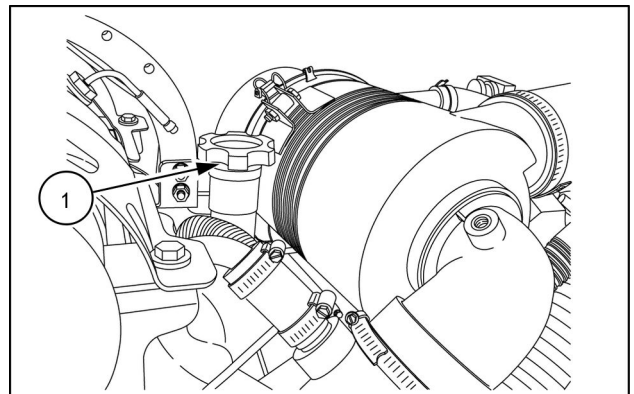
Ambient Temperature	Recommended Oil
15 - +45 °C	SAE 10W 40
-30 - +45 °C	SAE 5W 40
-30 - +15 °C	SAE 5W 30

* Tractors are originally shipped with 10W-30 oil.

NOTE: The combined capacity of the engine crankcase and oil filter is **6.3 L (1.7 US gal)** for

9. Replace the drain plugs and refill the engine with clean oil at filler cap **(3)**.
10. Run the engine for a minute or so to circulate the oil, and shut off the engine.
11. Add clean oil, as necessary, until the oil level is between minimum and maximum marks on the dipstick.

NOTICE: Do not fill above the maximum mark on the dipstick. Excessive oil will be burned off within a short time and give a false impression of oil consumption.



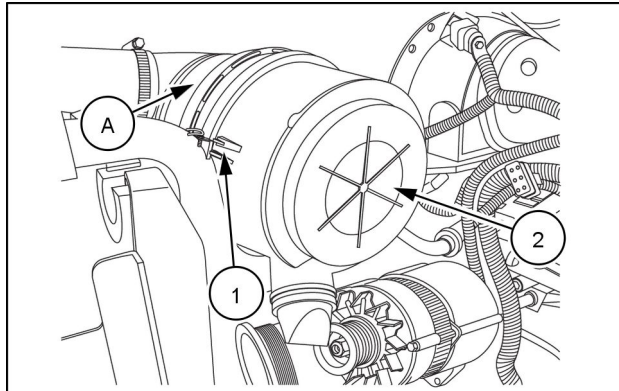
GNIL14TR00523AA 3

Engine air cleaner outer element

Engine air cleaner outer element

The air cleaner **(A)** which is located under the hood, consists of an inner and outer paper element within a metal casing.

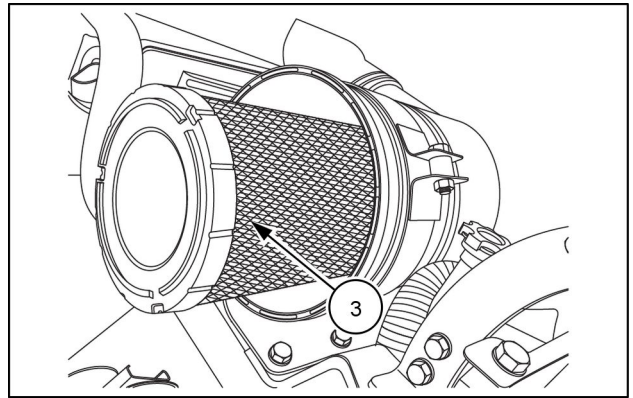
1. Unlatch the three retaining clips, **(1)** and lift off the air cleaner assembly cover **(2)**.



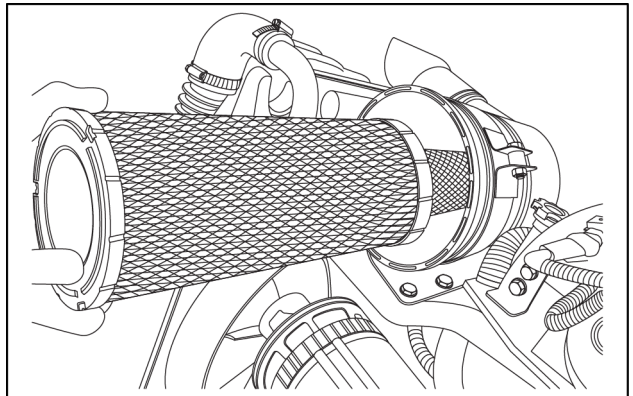
GNIL14TR00501AA.PNG 1

7 - MAINTENANCE

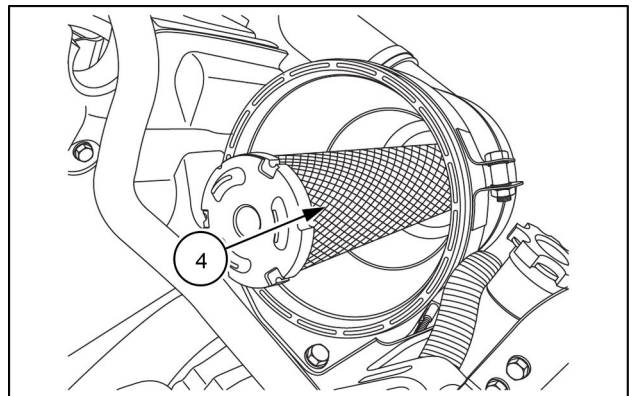
2. Remove the outer element **(3)** from the air cleaner assembly by gently twisting the end of the filter clockwise to disengage the seal. Then pull the filter straight out of the housing, not at an angle.



GNIL14TR00502AA.PNG 2



GNIL14TR00503AA.PNG 3



GNIL14TR00504AA.PNG 4

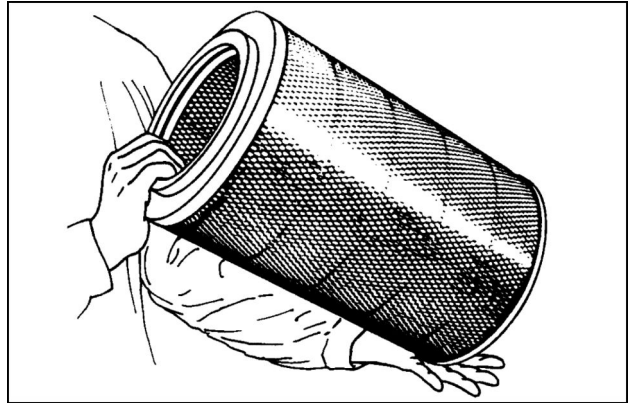
NOTICE: Do not disturb or remove the inner element.

3. Make sure the inner element **(4)** remains in place.
4. Clean the outer element using either method A, or method B, depending on the element's condition.

NOTICE: The outer element may be dry cleaned (methods A or B) every **300 h** or when warning bulb glows (which ever is earlier). The outer element should be replaced after four cleanings or maximum of **1200 h**. The inner element should be replaced when the outer element is replaced or every **1200 h**

Method A

1. Lightly tap the end of the element against the palm on the hand.



20108807 5

NOTICE: Do not tap the element against a hard surface as this will damage the element.

Method B

1. WARNING

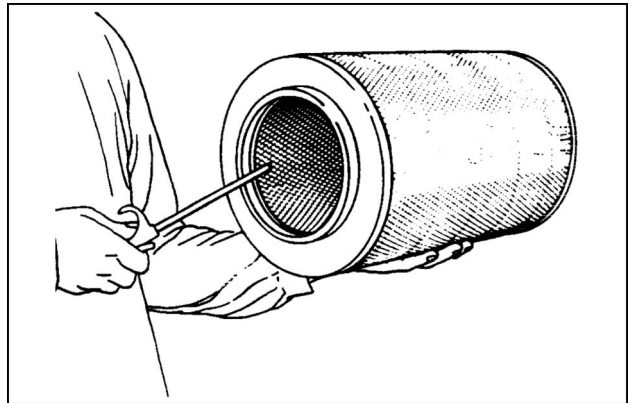
Flying debris!

Compressed air can propel dirt, rust, etc. into the air. Wear eye and face protection when using compressed air.

Failure to comply could result in death or serious injury.

W0307A

Use compressed air, not exceeding **131.0 kPa (19.0 psi)**.



20108808 6

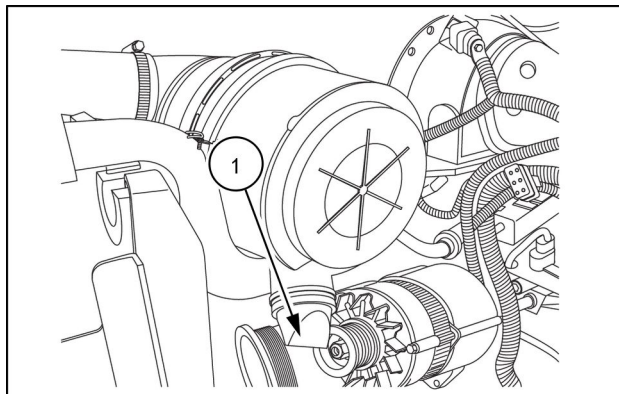
2. Insert the air line nozzle inside the element
3. Hold the nozzle at a distance from the element and blow the dust from the inside through the element to the outside.

NOTICE: Under dusty conditions, clean outer element more often than **300 h** Loss of engine power, excessive smoke, and the illumination of air cleaner restriction light indicates the possible clogging of the filter.

Inspection of the outer element

1. Examine the element for damage by placing a light inside the element. Discard the element if pin pricks of light can be seen or if there are areas where the paper appears thin.
2. Check the element material for bunching, the metal casing for distortion and rubber sealing for damage. Discard the filter if the filter is damaged.
3. Clean the inside of air cleaner housing using a damp, lint free cloth on a probe. Do not damage the inner filter element. Make sure that the inner end of housing is clean and smooth, to ensure a good seating for rubber seal on the element.

4. Install cleaned outer element or a new outer element by gently pushing the outer element inside the housing while rotating the filter in a clockwise direction.
5. While installing the cover make sure that the dust cup (1) is facing downward.



GNIL14TR00501AA.PNG 7

6. Check all the air intake hoses for damage. Replace the damaged hoses.
7. Check air intake hoses clamps for tightness, tighten clamps if needed.

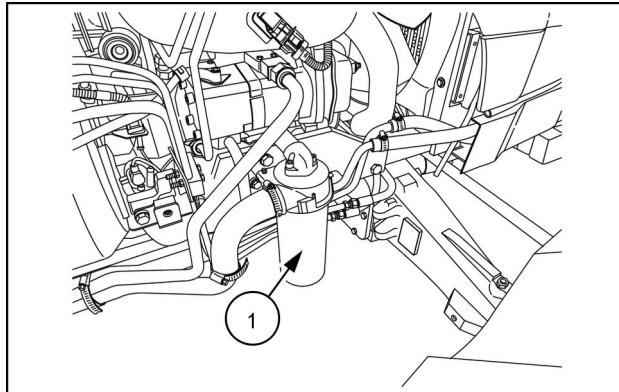
Inspection of inner element

1. Only remove the inner element for replacement. The inner element should never be cleaned
2. The inner element should be replaced when replacing outer element or every **1200 h**, hours whichever is earlier.
3. Follow the similar instructions of removing and fitting outer element from casing to replace the inner element.

Hydraulic oil filter

The hydraulic oil filter **(1)** is installed on the right-hand side of the engine.

1. Clean the area around the filter. Remove the filter and discard.
2. Clean the inlet gallery and the face of the filter mounting.



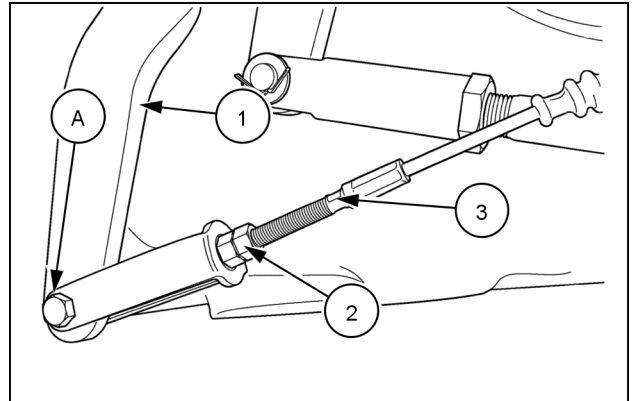
GNIL14TR00506AA 1

3. Apply clean oil around the rubber seal of the new filter and install on the tractor.
4. Tighten until the faces just meet, then tighten the hydraulic oil filter further 3/4 of a turn. Do not over tighten.

Power Take-Off (PTO) clutch

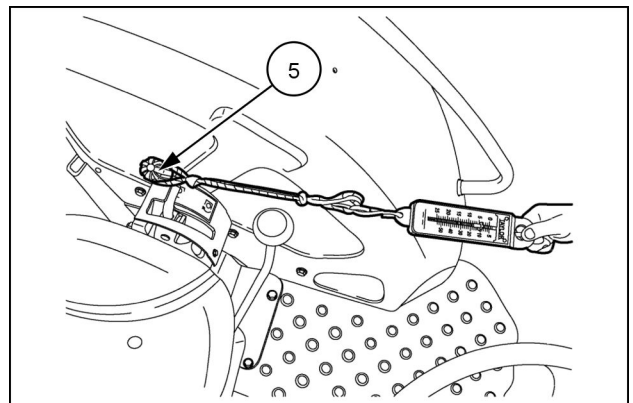
The Power Take-Off (PTO) clutch engagement pressure needs to be checked and adjusted to prevent slippage of the PTO during operation under load.

1. When the PTO clutch linkage is properly adjusted, the PTO lever **(1)** should have **2 mm (0.079 in)** of free play at the pin **(A)** when the PTO handle is in the "OFF" position.
2. If the free play of lever is not correct, adjust the free play by loosening jam nut **(2)** and shortening or lengthening cable, **(3)**.



56061331N 1

3. Use a spring scale **(4)** to measure the force needed to fully engage the PTO handle **(5)**. Proper amount of force at end of handle to fully engage the PTO clutch is **125 - 142 N (28 - 32 lb)**



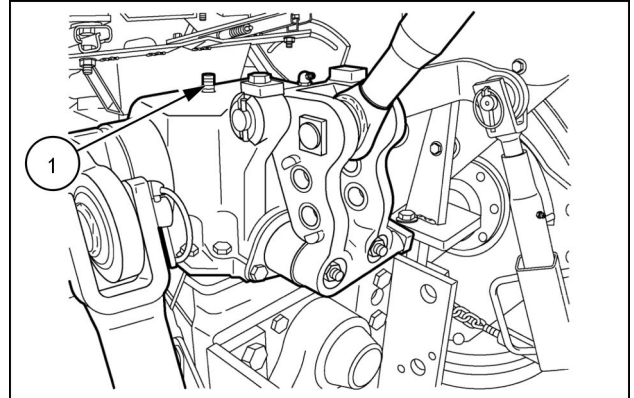
86090136N 2

NOTICE: When PTO clutch linkage is properly adjusted, the total cable travel should be **21 mm (0.83 in)** while engaging and disengaging the PTO clutch.

Every 600 hours

Transmission breather

1. Remove breather (1) and wash with cleaning fluid. Check for the free movement of ball inside the breather by shaking. If the ball is jammed, replace the breather with a new breather.



86090127N 1

Front wheel bearing - Two-Wheel Drive (2WD)

Clean, grease and adjust wheel bearings

⚠ WARNING

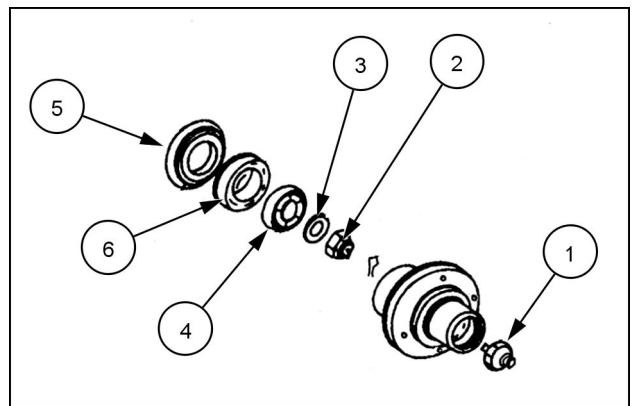
Overturning hazard!

Always try to park the machine on firm level ground. Avoid parking on slopes. Block the wheels in both directions.

Failure to comply could result in death or serious injury.

W0051A

1. With the parking brake applied on a flat surface, jack up and support one front wheel. Block the wheels before jacking.
2. Remove the cap (1), nut (2), thrust washer (3), and the outer bearing (4).
3. Remove the complete wheel and hub assembly and remove the grease seal (5) and inner bearing (6).



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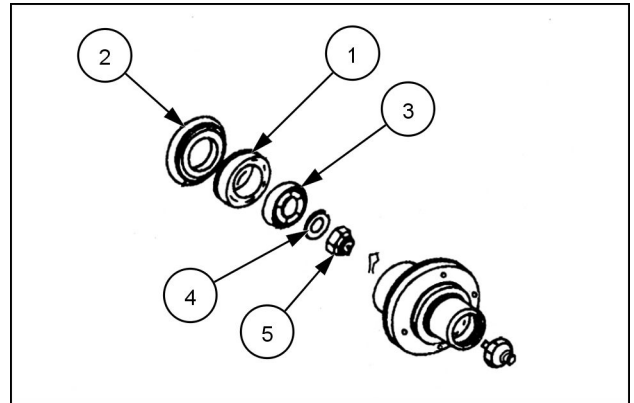
4. Thoroughly clean all parts and allow to dry.

Reassembly

1. Inspect the bearings and both bearing cups in the wheel hub for discoloration and wear.
2. Replace bearings and cups as needed.
3. Pack the bearings and space between the two bearing cups with grease. Also coat the wheel spindle with grease.

NOTE: Reassemble using a new grease seal.

4. Install inner bearing (1), grease seal (2), outer bearing (3), thrust washer (4), and castle nut (5).

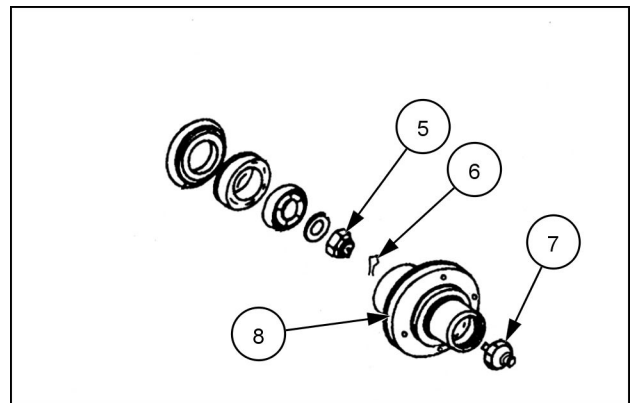


20108810 2

5. Tighten the castle nut (5), to while rotating the wheel, until some resistance is felt.
6. Loosen the castle nut until the next slot aligns with the cotter pin hole in the axle. Install the cotter pin (6).
7. Install the cap (7) onto the wheel hub (8).

NOTICE: Correct bearing pre-load settings are very important. Incorrect setting may lead to premature wear of the bearings and tires. Please contact your Authorized Dealer if you have questions on bearing pre-load.

8. Repeat the procedure for the other wheel.



20108810 3

Fuel injectors - servicing

⚠ CAUTION

Escaping fluid!

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

Failure to comply could result in minor or moderate injury.

C0104A

1. The fuel injectors should only be cleaned and adjusted by an Authorized dealer.

Fuel filter replacement

Replacing the fuel filter

⚠ WARNING

Pressurized system!

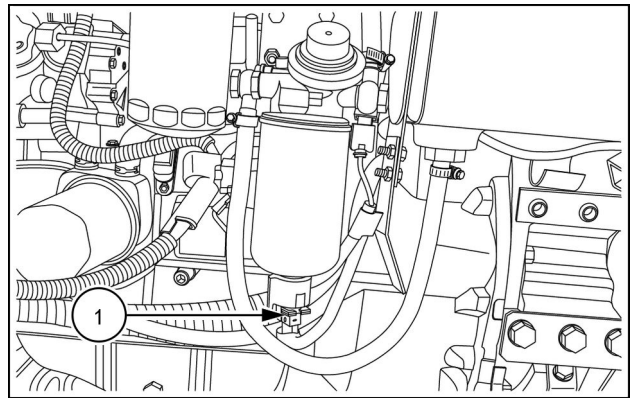
**Never attempt to drain fluids or remove filters when the engine is running. Turn off the engine and relieve all pressure from pressurized systems before servicing the machine.
Failure to comply could result in death or serious injury.**

W0905A

NOTICE: Change the diesel fuel filter after 600 operating hours.

Changing the fuel pre-filter

1. Allow engine to cool before performing any maintenance on the engine.
2. Remove the electrical connector **(1)** from the bottom of the fuel pre-filter.
3. Place a container below the fuel pre-filter to collect any fuel that drains out during filter removal.
4. Remove the sensor from the bottom of the fuel pre-filter.
5. Remove the fuel pre-filter from filter base
6. Fill new fuel pre-filter with diesel fuel.
7. Lubricate the fuel pre-filter gasket before installation.
8. Install new filler onto fuel pre-filter base.
9. Bleed air from fuel system by:
 - a. Loosing the bleed screw located on fuel filter base.
 - b. Actuate the hand pump until fuel free of any air bubbles follow from the bleed screw.
 - c. Tighten the bleed screw.



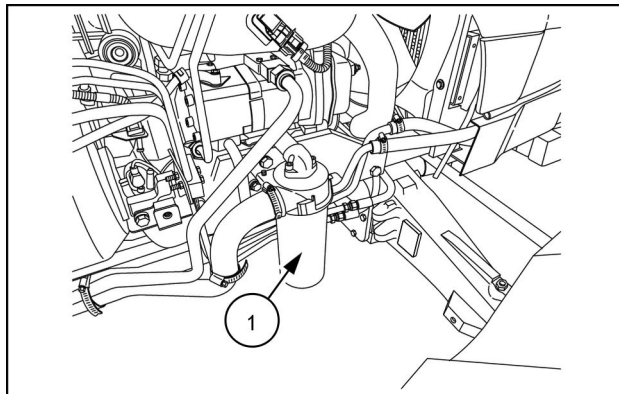
GNIL14TR00591AA 1

NOTE: If any fuel leaks are found, stop the engine immediately and contact a service workshop.

Hydraulic oil filter

The hydraulic oil filter **(1)** is installed on the right-hand side of the engine.

1. Clean the area around the filter. Remove the filter and discard.
2. Clean the inlet gallery and the face of the filter mounting.



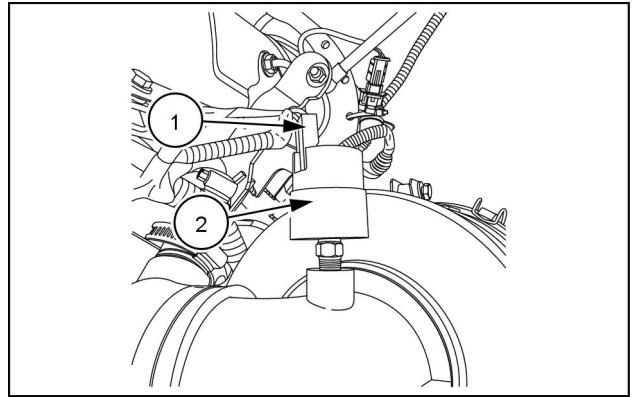
GNIL14TR00506AA 1

3. Apply clean oil around the rubber seal of the new filter and install on the tractor.
4. Tighten until the faces just meet, then tighten the hydraulic oil filter further $\frac{3}{4}$ of a turn. Do not over tighten.

EVERY 900 HOURS

Air cleaner restriction indicator

1. Air cleaner restriction light indicates that air cleaner is blocked.
2. Clean the air cleaner outer element whenever light glows.
3. If the air cleaner restriction indicator illuminates continuously, check the air cleaner restriction sensor. **(1)**.
4. Disconnect the Electrical connection
5. Unscrew the air cleaner restriction sensor **(2)** from air inlet pipe. Inspect the air cleaner restriction sensor. Replace the air restriction sensor indicator if necessary.



GNIL14TR00524AA 1

Every 1200 hours

Transmission/hydraulics oil level

⚠ WARNING

Burn hazard!

Be very careful to avoid contact with hot fluids. If fluid is extremely hot, allow it to cool to a moderately warm temperature before proceeding.

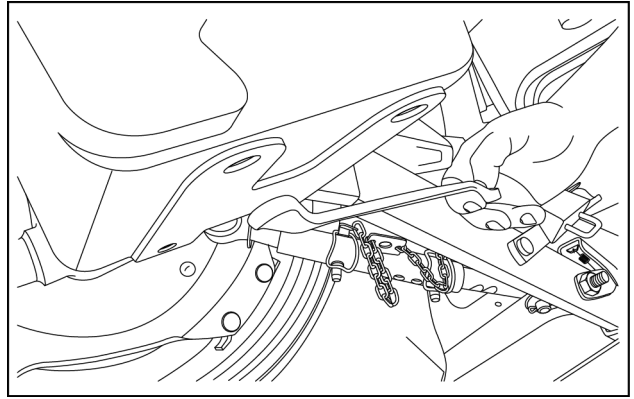
Failure to comply could result in death or serious injury.

W0362A

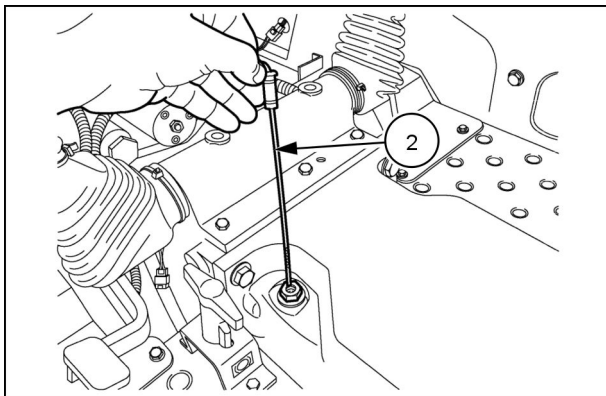
1. Prior to changing oil, run the engine and operate the hydraulic/transmission system until the oil is warm.
2. Park the tractor on level ground, lower the three point linkage and stop the engine. Engage the parking brake and block wheels.

To drain the transmission oil:

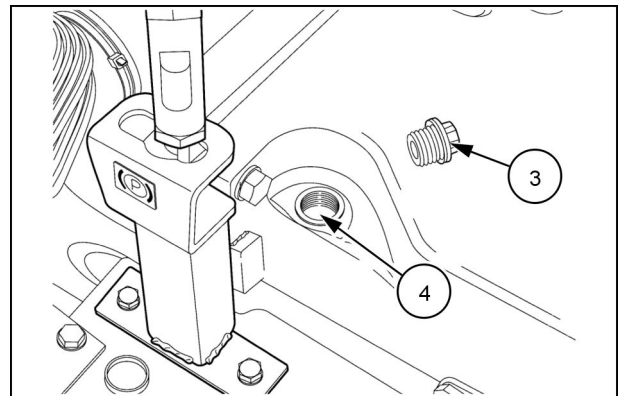
1. Remove the drain plug. Drain the oil in to a suitable container.
2. Reinstall the drain plug after the oil is drained.
3. Remove the dipstick (2) and adapter fitting (3) and add oil through dipstick hole (4). Add oil until level is to upper mark on the dipstick. Do not overfill.
4. Start the engine and operate the hydraulic system. Fully raise and lower the three point linkage.
5. Shut off the tractor and wait for few minutes, for checking the system for leaks.
6. Check the oil level. The oil level should be between the two marks on dipstick.



GNIL14TR00564AA 1



86090135N 2



86096197N 3

NOTICE: Do not fill above the top mark.

Transmission/Rear Axle Oil Capacity

Capacity

25 l (6.6 US gal)

Oil Type:

NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL

Fuel tanks - Cleaning

1. Clean the fuel tank once in a year or at every **1200 h** which ever is earlier. For further details contact your authorized dealer

Engine coolant

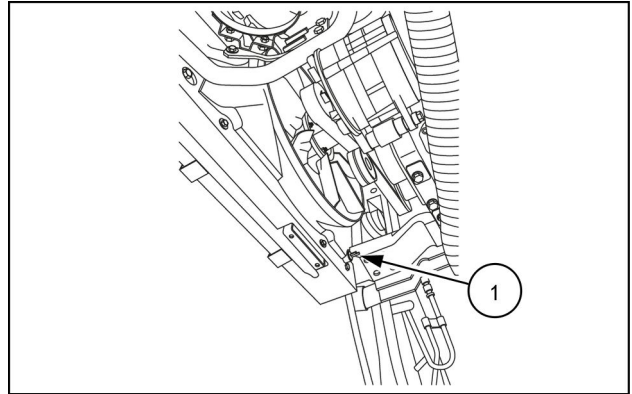
⚠ WARNING

Hot liquid under pressure!
Service when cool.
Failure to comply could result in death or serious injury.

W1187A

NOTICE: It is essential that a genuine approved pressure cap is used. If the cap is misplaced or damaged, obtain a replacement from your Authorized NEW HOLLAND Dealer.

1. Open the radiator drain plug **(1)** and allow the coolant to drain. (Drain cock is on the rear, left-hand side of the radiator). Remove the radiator pressure cap to increase the drainage rate.



GNIL14TR00525AA 1

2. After draining, flush the cooling system with clean water through the radiator filler. When the flushing process is complete, refill the cooling system with a 50/50 solution of ethylene glycol antifreeze and water through the radiator until the coolant is **20 mm (0.79 in)** below the neck of the radiator tank. Re-install the pressure cap.

NOTE: To avoid trapping air in the system, fill the radiator as slowly as possible thereby allowing any formation of air pockets to disperse.

NOTE: The coolant level may drop as the coolant is pumped around the cooling system.

3. If the engine is not going to be operated immediately following this coolant change, run the engine for one hour to ensure that the water is distributed throughout the cooling system. Allow the engine to cool and make a final check to ensure that the water level is satisfactory.
4. For cold climate (below freezing point), add a quality anti-freeze solution. Add the solution to radiator in addition to water as follows:

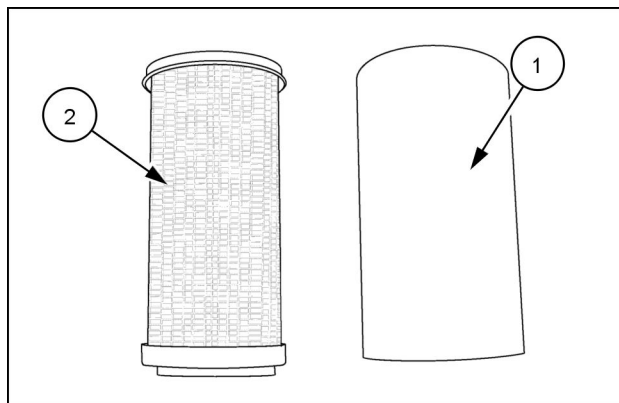
Degrees C	-5	-5 to -18	-18 to -25	-25 to -37
% volume of Anti-freeze	25	30	40	50

Cooling System Capacity

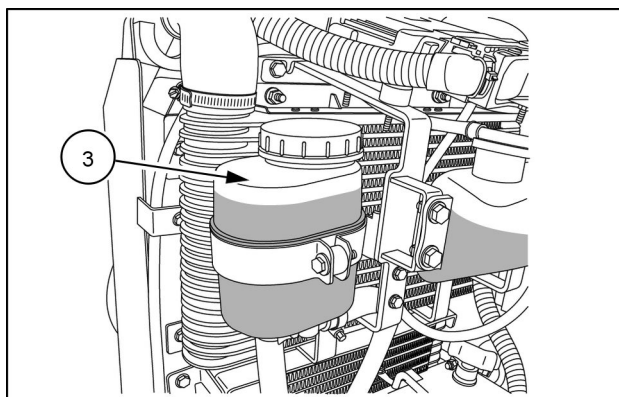
8.0 L (8.5 US qt)

Steering - Change fluid

1. Press and remove the plastic container (1) of the steering oil filter element (2) from the power steering oil reservoir (3).
2. Clean steering filter element with cleaning fluid and dry before installing.

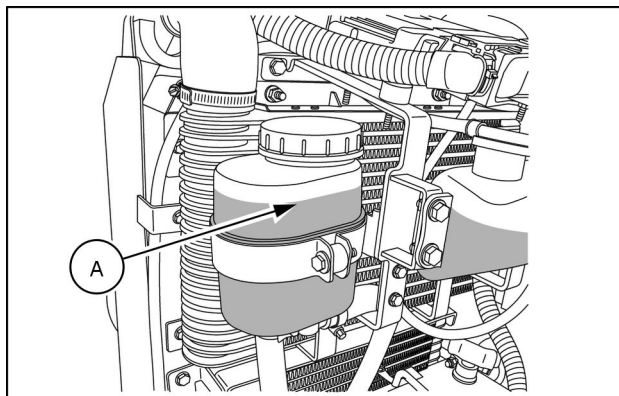


86061341N 1



GNIL14TR00518AA 2

3. Reinstall and fill the reservoir with fresh hydraulic oil up to the full line (A) on the reservoir. Replace the cap.



GNIL14TR00518AA 3

4. With the engine running, bleed the system by turning the steering wheel from lock to lock several times. Fill reservoir to full line, as required.

Steering system oil capacity

Capacity

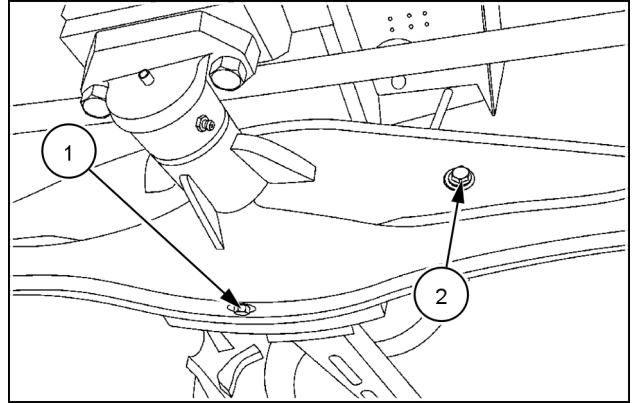
2.0 l (0.5 US gal)

Oil Type:

NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL

Four-Wheel Drive (4WD) front axle differential oil - Change fluid

1. Remove the drain plug (1) and collect the oil in a suitable container.
2. Replace the plug and fill the differential with oil at fill plug (2) until oil level is at the bottom of the fill port.

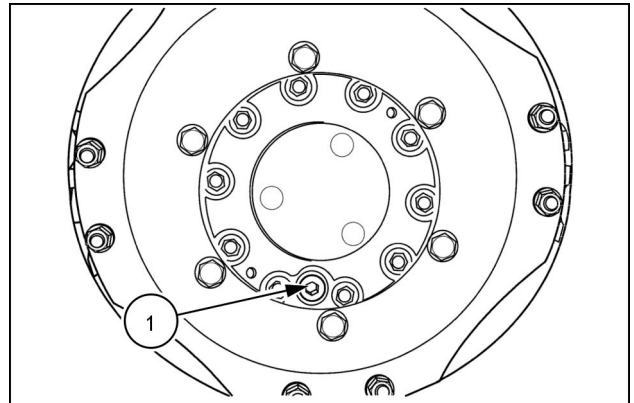


96096503 1

3. Add **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil through fill port, until correct oil level is obtained.
4. The capacity for the differential is **5.5 l (5.8 US qt)**.

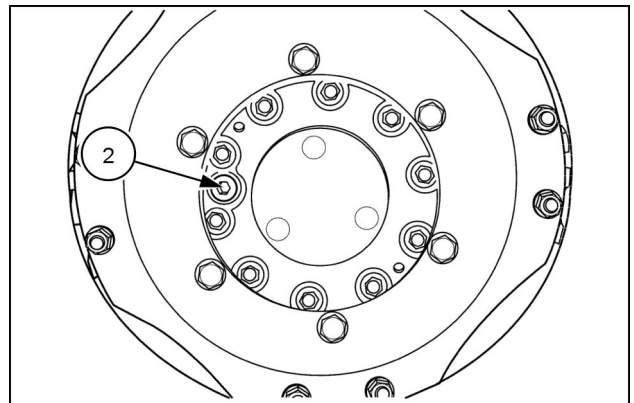
Four-Wheel Drive (4WD) front axle hub oil - Change fluid

1. Drain the front axle hub oil by positioning the wheel so the filler plug (1) is closest to the ground. Remove the plug and allow the oil to drain.



76073648N 1

2. Reposition the wheel so the filler hole (2) is level with the center of the hub, midway from the top to the bottom. Fill the hub until the oil level is at the bottom of the fill port.
3. Add **NEW HOLLAND AMBRA MULTI G 134™ HYDRAULIC TRANSMISSION OIL** hydraulic oil through fill port, until correct oil level is obtained. The capacity for the hub is **1.2 l (1.3 US qt)**.



76073647N 2

Air filter

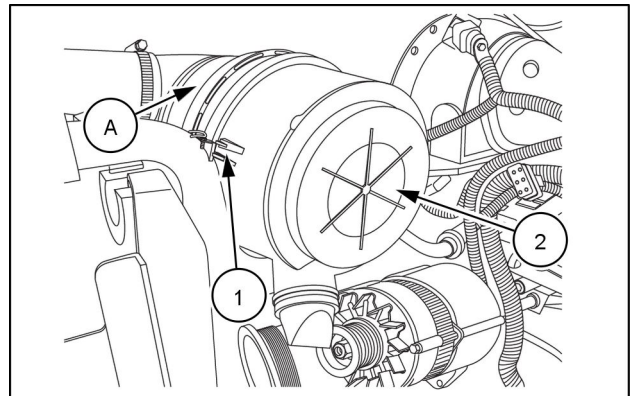
NOTICE: The outer element may be dry cleaned every **300 h** of operation or when warning bulb glows (which ever is earlier). Outer element to be replaced after four times of cleaning or maximum of **1200 h** Inner element to be replaced with outer element replacement or every **1200 h**.

The air cleaner assembly **(A)** is located under the right-hand side of the engine hood. The air cleaner assembly consists of an inner and outer paper element within a metal housing.

Engine air cleaner outer element replacement

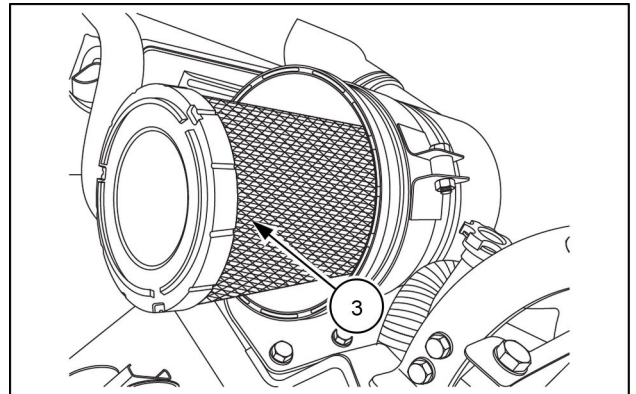
The air cleaner **(A)** which is located under the hood, consists of an inner and outer paper element within a metal casing.

1. Unlatch the three retaining clips, **(1)** and lift off the air cleaner assembly cover **(2)**.



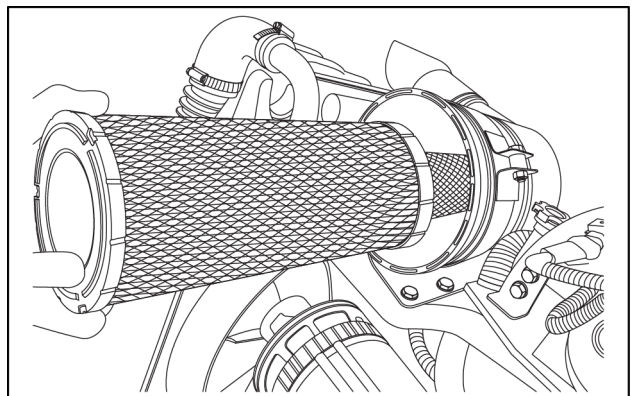
GNIL14TR00501AA.PNG 1

2. Remove the outer element **(3)** from the air cleaner assembly by gently twisting the end of the filter clockwise to disengage the seal.



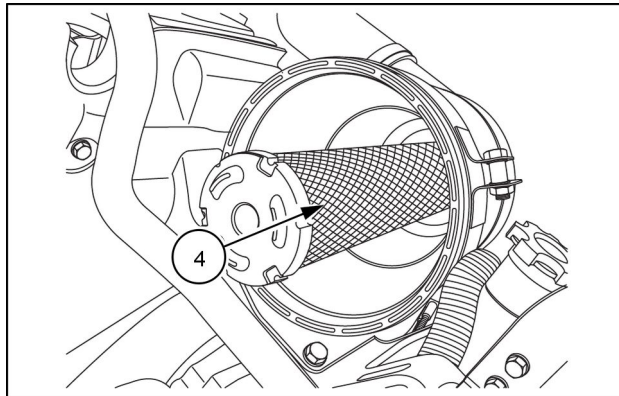
GNIL14TR00502AA.PNG 2

3. Then pull the filter straight out of the housing, not at an angle.



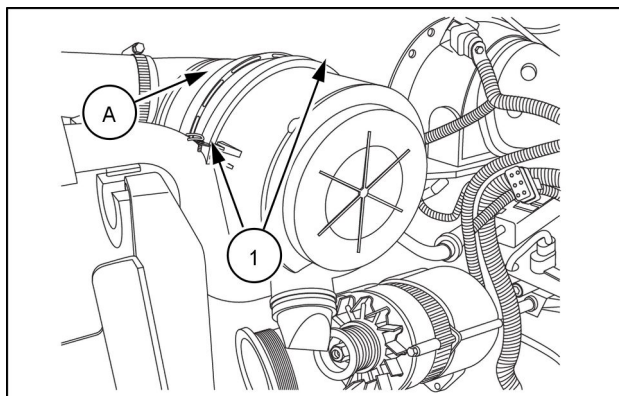
GNIL14TR00503AA.PNG 3

4. Make sure the inner element **(4)** remains in place.



GNIL14TR00504AA.PNG 4

5. Clean inside of air cleaner housing and check that the sealing surfaces for inner and outer elements are clean.
6. Install new inner and outer air cleaner elements into housing. Make sure that both elements seals are seated against the inside of the air cleaner housing.
7. Reinstall cover **(2)** and secure cover to air cleaner housing with the three retaining clips **(1)**.

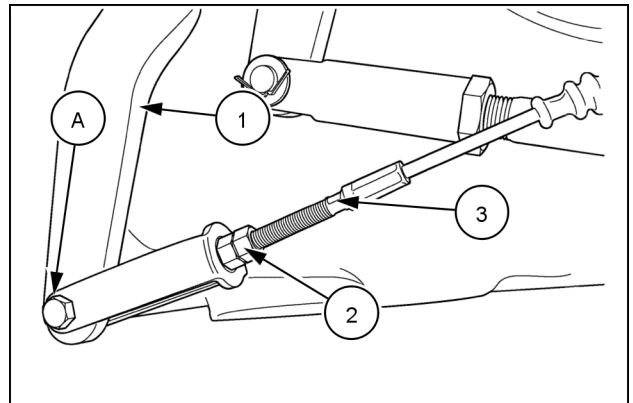


GNIL14TR00501AA.PNG 5

Power Take-Off (PTO) clutch

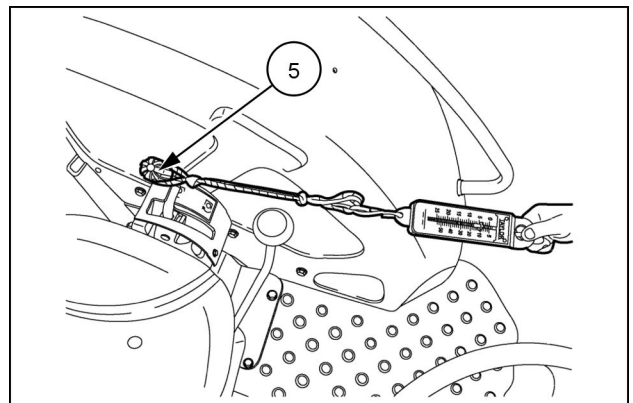
The Power Take-Off (PTO) clutch engagement pressure needs to be checked and adjusted to prevent slippage of the PTO during operation under load.

1. When the PTO clutch linkage is properly adjusted, the PTO lever (1) should have **2 mm (0.079 in)** of free play at pin (A) when the PTO handle is in the "OFF" position.
2. If the free play of lever is not correct, adjust by loosening jam nut (2) and shortening or lengthening cable, (3).



56061331N 1

3. Use a spring scale (4) to measure the force needed to fully engage the PTO handle (5). Proper amount of force at end of handle to fully engage the PTO clutch is **125 - 142 N (28 - 32 lb)**



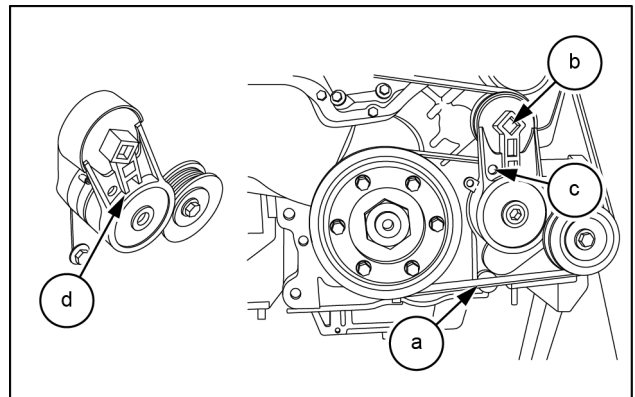
86090136N 2

NOTICE: When PTO clutch linkage is properly adjusted, the total cable travel should be **21 mm (0.83 in)** while engaging and disengaging the PTO clutch.

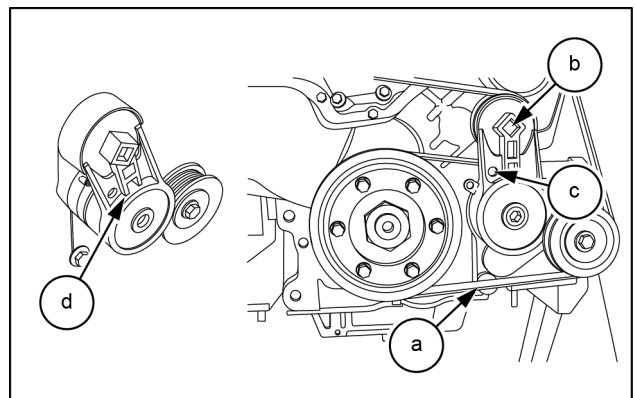
Every 1800 hours

Fan and drive - Replace

1. Position a linear tensioner belt remover tool in the automatic tensioner release slot.



2. Rotate the automatic tensioner, in the direction of the arrow, to remove the tension on the serpentine belt.
a - Serpentine belt
b - Tensioner release slot
3. Install an allen screw into the tensioner hole to block the tensioner rotation.



4. Before removing the serpentine belt, note the belt position on the alternator, and idler pulleys.
5. Remove the serpentine belt.

Every 4000 hours

Alternator - Replace

1. Contact your authorized dealer

As required

Lubrication points

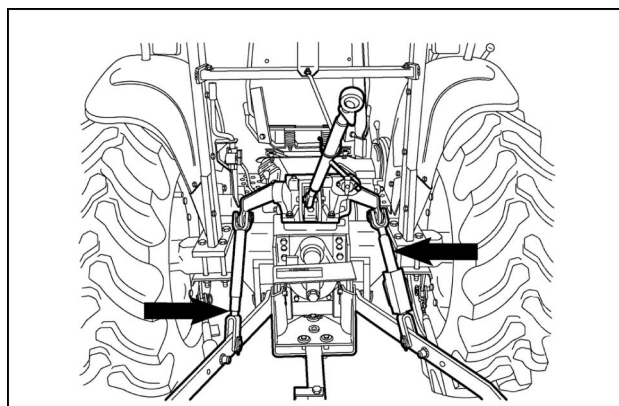
Grease Fittings

Apply grease with the help of a grease gun to the lubrication fittings, as shown in Figures 1 - 11.

Use only Genuine **NEW HOLLAND AMBRA GR-9 MULTI-PURPOSE GREASE** .

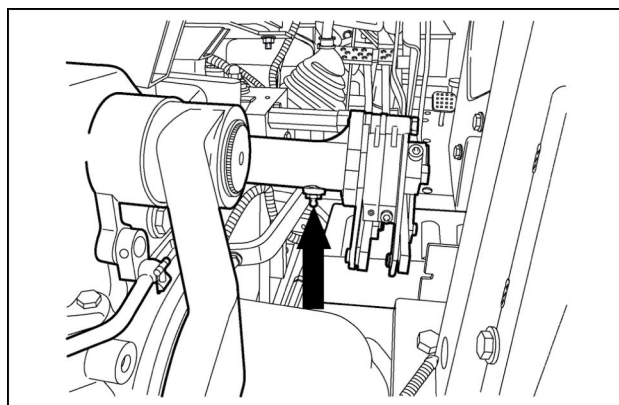
NOTICE: Grease daily when operating in adverse conditions, but do not overgrease, damage to the seals may occur, where applicable.

1. Hydraulic lift linkages



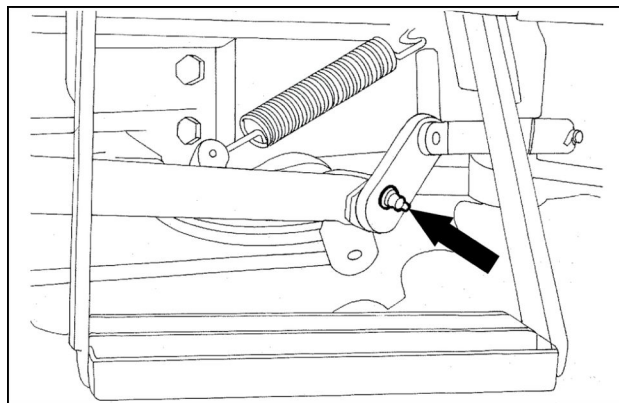
86090139N 1

2. Hydraulic lift lever shaft



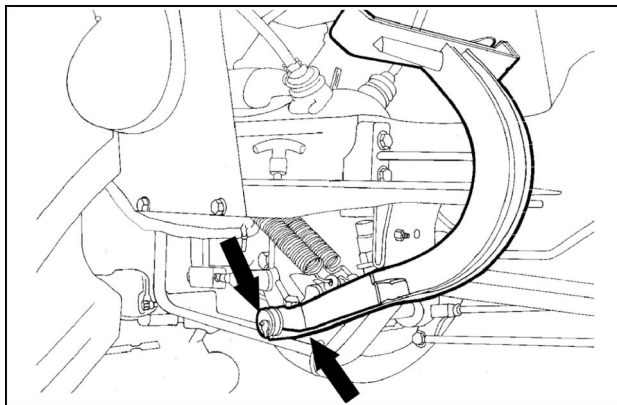
86090131N 2

3. Clutch pedal shaft



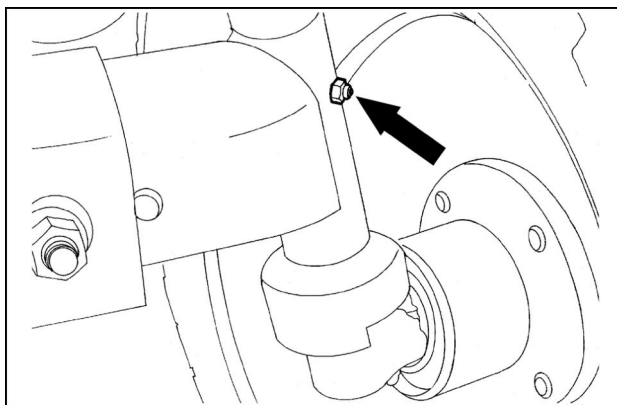
20108800 3

4. Brake pedal shaft



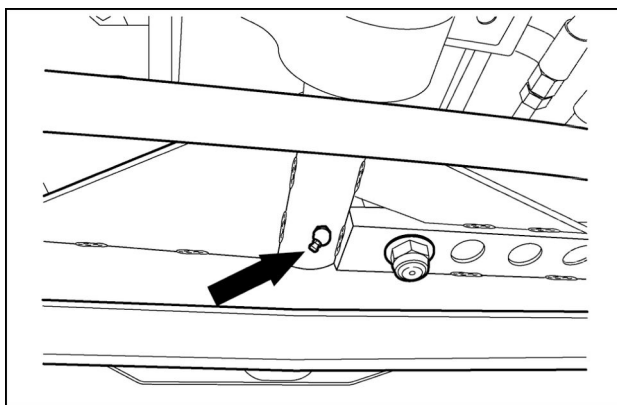
20108801 4

5. Front wheel spindles and hubs (Two-Wheel Drive (2WD) front axles)



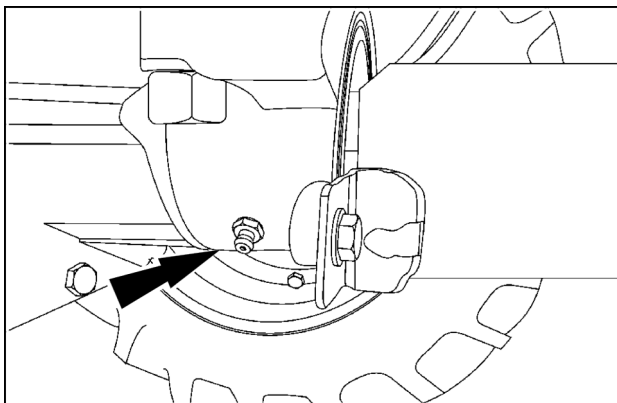
36090133N 5

6. Front axle trunion pin (2WD front axles)



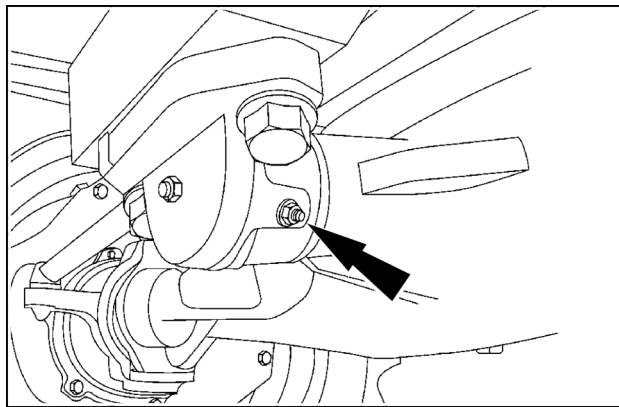
86090132N 6

7. Front axle rear pivot (Four-Wheel Drive (4WD) front axles)



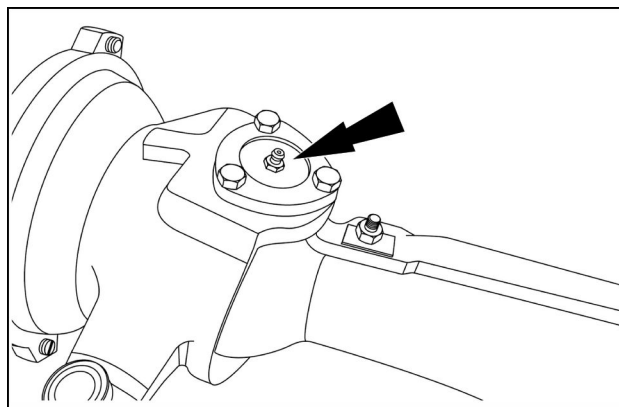
96096504 7

8. Front axle front pivot (4WD front axles)



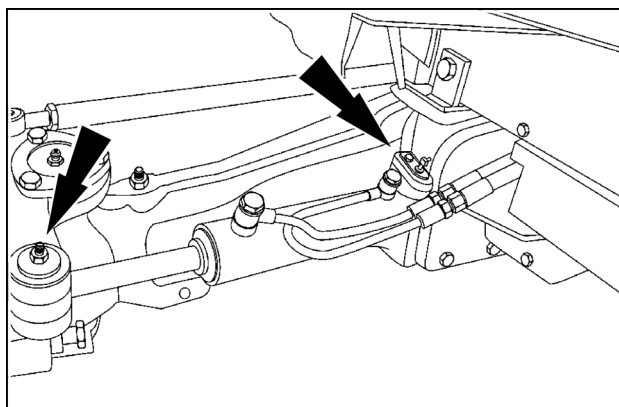
96096506 8

9. Front axle wheel steering knuckles (4WD)



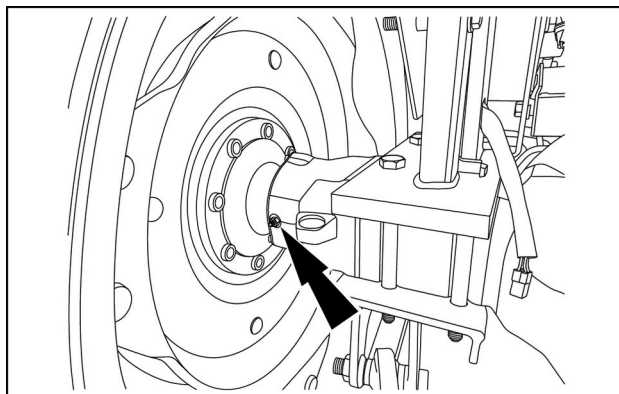
96096505N 9

10. Steering cylinder pivots (4WD front axle shown).



96096507 10

11. Rear axle seal grease fitting.



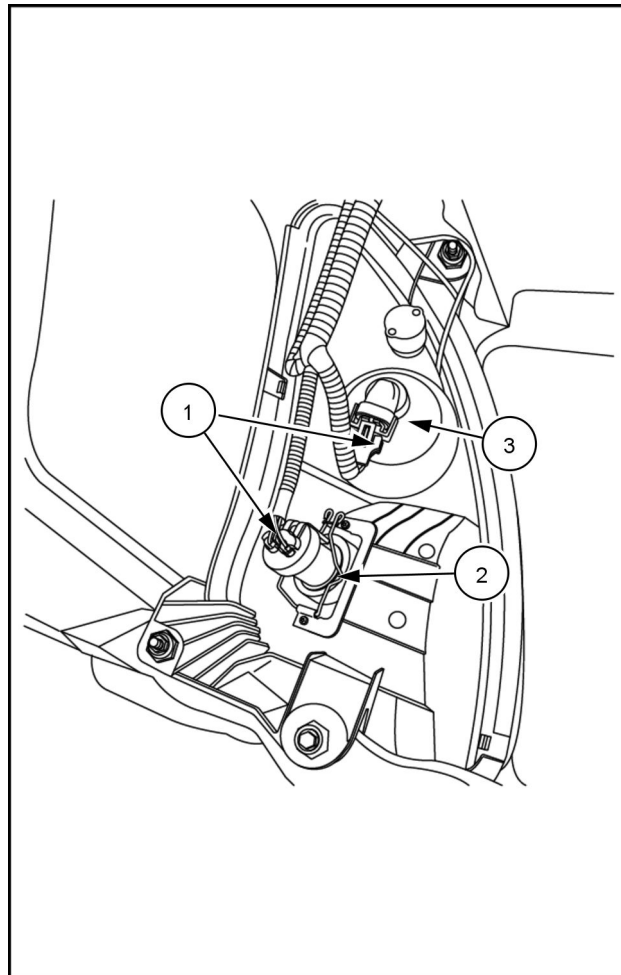
GNIL14TR00555AA 11

Headlights

1. To avoid blinding of on coming drivers, adjust the angle of the beams. Adjust the head light so that the high beam is **100 - 400 mm** below the centre of the headlight at a distance of **6 m**.

Front headlight bulb — replacement

1. Open the tractor hood.
3. Remove the electrical connector **(1)**.

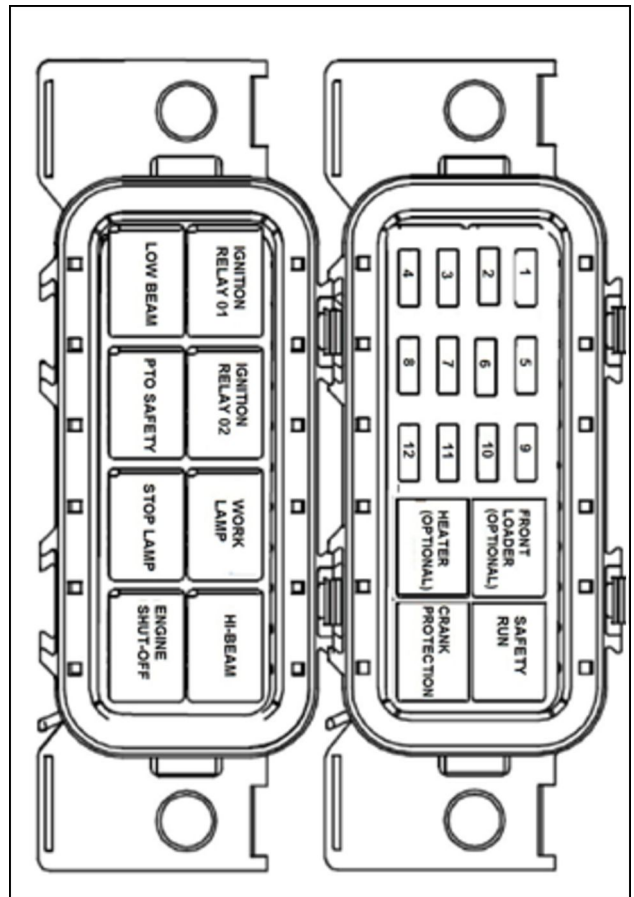


GNIL14TR00534AA 1

4. Compress retaining clip **(2)** , and remove bulb, **(3)** , from the socket.
5. Insert bulb assembly and secure with retaining clips.

Fuses

1. The Fuse box is located at the left-hand side of the intercooler mounted on the ECU frame.

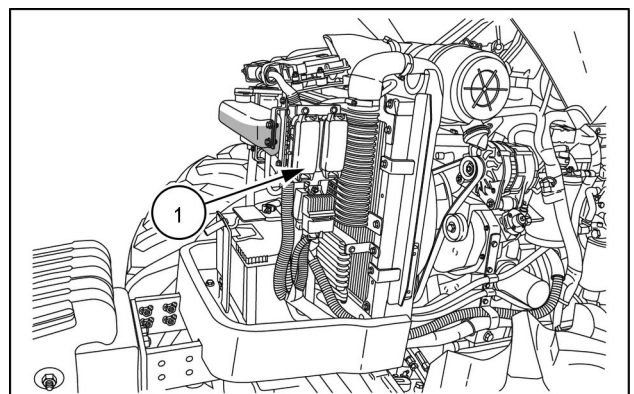


GNIL14TR00507AA 1

Fuse No	Rating	Circuit
1	15 A	Fuse ECU 01
2	10 A	Fuse ECU 01
3	10 A	LAMDA PROBES
4	10 A	Cluster Hot
5	15 A	Work lamp
6	15 A	Hi/Low Beam
7	25 A	Starter SW
8	25 A	Heater
9	5 A	Loader
10	10 A	ECU/ Safety Start
11	25 A	Dummy 1
12	15 A	Dummy 2

The fuse box (1) is located at the right-hand rear side of the engine compartment, mounted on the engine fire-wall. To access the fuse box, lift the engine hood and open the fuse box cover to gain access to individual fuses.

Six fuses are provided in one row. See the following table for details of the circuits protected by the fuses.

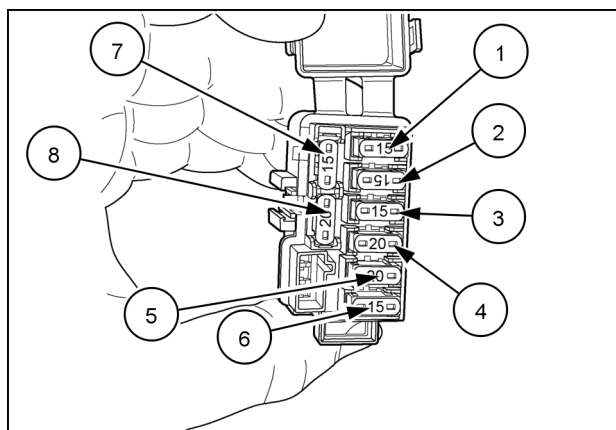


GNIL14TR00529AA 2

NOTICE: Do not replace a blown fuse with another of a different rating.

Fuse identification

Fuse No.	Rating	Circuit
(1)	15 A	Instrument Panel
(2)	15 A	Safety Start System
(3)	15 A	Horn, Turn Signals
(4)	20 A	Headlights
(5)	20 A	Worklight
(6)	15 A	Hazard Flasher Lights
(7)	15 A	Spare Fuse
(8)	20 A	Spare Fuse

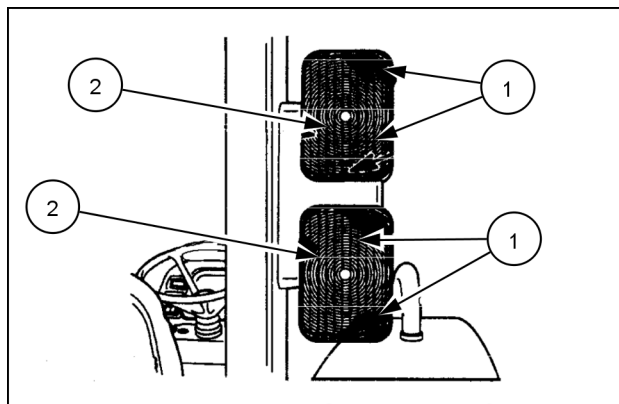


86065632 3

Bulbs

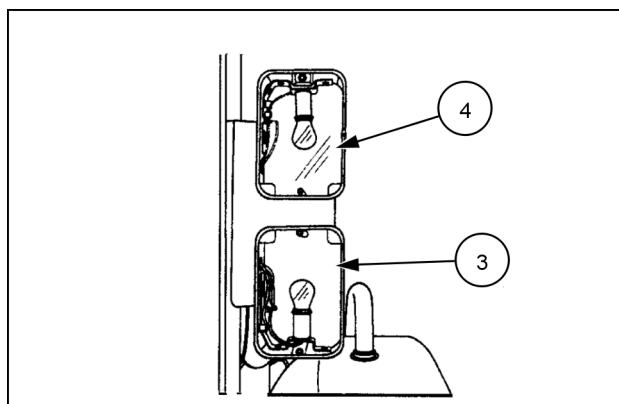
Stop/Turn/Position lights, bulb replacement

1. The bulbs are accessible after removal of the plastic lenses assembly.
2. Remove the two screws (1) and take out the lens assembly (2).
3. The bulbs can be removed by pressing in and turning approximately 20 degree counterclockwise. Reassemble in reverse order.



20108813 1

4. Tail light (3) and flasher/turn signal light (4)



20108814 2

NOTICE: When replacing the lenses, take care not to overtighten the retaining screws.

Bulb Size

- Tail Light - #1157
- Flasher/Turn Signal - #1156

STORAGE

Tractor storage

The following text is given for your information and guidance. For further information concerning long term storage of your tractor, please consult your Authorized New Holland Dealer.

Tractor storage

Before storing the tractor for an extended period, the following precautions should be taken:

- Clean the tractor.
- Drain the engine and transmission/rear axle and refill with clean oil.
- Check the radiator coolant level. If storing tractor in cold weather conditions, check the strength of the antifreeze, with an antifreeze tester, to verify proper cold protection.
- Lubricate all grease fittings.
- Using the tractor hydraulic system in Position Control, raise the lift linkage and support the lift arms in the raised position.
- Remove the battery and store in a warm, dry atmosphere. Recharge periodically.
- Raise the tractor and place supports under the axles to take weight off the tires.

Preparation for use after storage

After extended storage, prepare the tractor for further use, as follows:

- Inflate the tires to the correct pressure and lower the tractor to the ground.
- Refill the fuel tank.
- Check the radiator coolant level.
- Check all oil levels.
- Install fully charged battery.
- Remove the exhaust pipe covering.
- Start the engine and check that all instruments and controls are functioning correctly. Using the tractor hydraulic system in Position Control, fully raise the lift linkage and remove the supports.
- Drive the tractor without load to ensure that 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	86109144DS 86109141DS	16 oz Spray Quart
CNH Dark Gray	B96104 B96105	16 oz Spray Quart
Bianco White (Wheels)	9624698-DS 9624699-DS	16 oz Spray Quart
Med Gloss Black	94792-DS 9624700-DS	16 oz Spray Quart

8 - TROUBLESHOOTING

SYMPTOM(S)

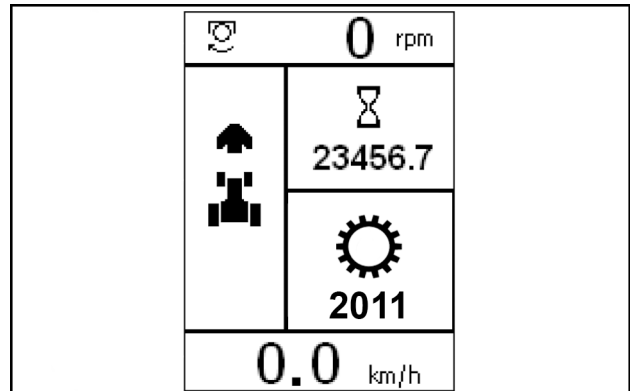
Viewing error codes

Error codes transmission

The tractor's electronic control units are able to detect operating faults or errors occurring in key areas such as the engine, gearbox, electric systems.

Should a malfunction or error occur, the relevant symbol and error code will appear in the display.

This display may be accompanied by the amber or red warning lights on the control panel coming on and by an audible warning, depending on the severity of the fault. Contact your NEW HOLLAND authorized dealer's specialized personnel where envisaged.



DCAPLT5NE002S8A 1

Engine - Troubleshooting

Problem	Possible Cause	Correction
During the ignition phase the control board and the engine do not start.	Flat battery	Recharge or replace battery
	Blown fuse	Replace fuse
	The electric cables are disconnected or they do not guarantee continuity	Check the electric connections
	Failure of engine revolution sensor	Replace the sensor Apply to a service workshop
The engine does not start	Presence of air in the fuel supply circuit	Carry out bleeding (See "Fuel supply circuit bleeding")
	Dirty or faulty injectors	Replace the injectors Apply to a service workshop
	Faulty fuel pressure regulation valve	Replace the valve Apply to a service workshop
	Failure of the start control	Replace the start control Apply to a service workshop
	water and/or impurities in the fuel	Apply to a service workshop
	Clogged fuel filter	Replace filter (See "Fuel filter replacement.")
The starter motor runs idle	Electromagnet failure	Check the starter motor Apply to a service workshop
The starter motor is not running	Flat battery	Recharge or replace battery
	Interrupted electric connection	Check the electric connections
	Worn brushes	Replace the worn brushes Apply to a service workshop
The engine stops after ignition	Presence of air in the fuel supply circuit	Carry out bleeding (See "Fuel supply circuit bleeding")
	Clogged fuel filter	Replace filter (See "Fuel filter replacement.")
	Injection pump malfunction	Apply to a service workshop
	Faulty fuel pressure regulation valve	Replace the valve Apply to a service workshop
	Presence of air in the fuel supply circuit	Carry out bleeding (See "Fuel supply circuit bleeding")
	Water and/or impurities in the fuel	Apply to a service workshop

8 - TROUBLESHOOTING

Problem	Possible Cause	Correction
The engine stops after ignition	The electric cables are disconnected or they do not guarantee continuity	Check the electric connections
The engine does not reach the operating speed	Clogged fuel filter	Replace filter (See "Fuel filter replacement.")
	Presence of air in the fuel supply circuit	Carry out bleeding (See "Fuel supply circuit bleeding")
	Injection pump malfunction	Apply to a service workshop
	Dirty or faulty injectors	Replace the injectors Apply to a service workshop
	Water and/or impurities in the fuel	Apply to a service workshop
	Clogged air filter	Clean or replace the filter
	Insufficient combustion air flow	Apply to a service workshop
	Engine overheating	Apply to a service workshop
	Overload	Reduce the load
Emission of black smoke from the exhaust pipe	Dirty or faulty injectors	Replace the injectors Apply to a service workshop
	Faulty turbocharging turbine	Replace the turbine Apply to a service workshop
Light emission of white smoke from the exhaust pipe	oil level too high	Adjust the oil level
	Worn segments	Check compression Apply to a service workshop
	Worn valve guideways	Check wear Apply to a service workshop
Abundant emission of white smoke from the exhaust pipe	Burnt gasket head	Apply to a service workshop
	Water pump malfunction	Replace the pump Apply to a service workshop Replace the belt (See "Changing the belt (type Poly-V)")
	Thermostat valve malfunction	Replace the valve Apply to a service workshop
	Coolant too low	Top up, if necessary (See "Engine coolant level check")
The pressure gauge shows a too low engine oil pressure and the corresponding warning light comes on	Failure of pressure gauge	Check or replace the pressure gauge Apply to a service workshop
	Oil level too low	Adjust the oil level (See "Engine oil level control")
	Oil pump failure	Check or replace the pump Apply to a service workshop
	Faulty sensor	Check and, if appropriate, replace the sensor. Apply to a service workshop
	Engine oil filter blocked	Replace the engine oil filter (See "Oil filter cartridge replacement")
The oil pressure warning light comes on	Engine oil pressure too low	Turn off the engine. Apply to a service workshop
The coolant temperature warning light comes on	Coolant too low	Adjust the engine coolant level (See "Engine coolant level check")
	Stuck overpressure valve of the load plug	Replace the plug
	Water pump malfunction	Replace the pump Apply to a service workshop
	Thermostat valve malfunction	Replace the valve Apply to a service workshop

8 - TROUBLESHOOTING

Problem	Possible Cause	Correction
The coolant temperature warning light comes on	Broken or worn belt	Replace the belt (See "Changing the belt (type Poly-V)")
Output reduction	Clogged fuel filter	Replace filter (See "Fuel filter replacement.")
	Presence of air in the fuel supply circuit	Carry out bleeding (See "Fuel supply circuit bleeding")
	Injection pump malfunction	Replace the pump Apply to a service workshop
	Dirty or faulty injectors	Replace the injectors Apply to a service workshop
	Clogged air filter	Clean or replace the filter
	Engine overheating	Apply to a service workshop
	Insufficient combustion air flow	Apply to a service workshop
	Particulate filter is clogged	The particulate filter regeneration is necessary
The battery warning light comes on	The alternating current generator does not charge the battery	Check and, if appropriate, replace the alternating current generator Apply to a service workshop

Electrical systems - Troubleshooting

Problem	Possible Cause	Correction
The electrical system does not work.	Battery terminals loose or corroded.	Clean and tighten battery terminals.
	Discharged battery.	Charge or replace battery.
	Fusible link wire failure.	Check for cause of failure and replace fusible link.
Low starter motor speed and difficulty in starting engine.	Connections loose or corroded.	Clean and tighten terminals.
	Battery discharged.	Charge or replace battery.
	Improper ground circuit.	Check and clean ground connections.
Starter motor does not function.	High-low selector gear & gear shifter levers not in neutral.	Place shift levers in the neutral position.
	Connections loose or corroded.	Clean and tighten connections.
	Battery discharged.	Charge or replace battery.
	Faulty starter motor.	Replace starter motor.
Battery charge indicator light illuminates with the engine running.	Fan belt loose or broken.	Adjust belt tension or replace belt.
	Alternator faulty.	Check charging system, repair as needed.
	Faulty battery.	Replace battery.
Battery not charging.	Faulty alternator.	Contact your authorized dealer.
	Terminals loose or corroded.	Clean and tighten terminals.
	Fan belt loose or broken.	Adjust fan belt tension or replace belt.
	Faulty battery.	Replace battery.

Hydraulic systems - Troubleshooting

Problem	Possible Cause	Correction
3-point does not raise when the control valve lever is actuated.	Low hydraulic oil level.	Check hydraulic oil level, add oil as needed.
	Hydraulic oil filter clogged.	Replace hydraulic oil filter.
	Faulty hydraulic pump.	Contact you authorized dealer.
	Control valve linkage misadjusted.	Contact you authorized dealer.
3-point linkage does not lift fully.	Low hydraulic oil level.	Check hydraulic oil level, add oil as needed.
	Hydraulic oil filter clogged.	Replace hydraulic oil filter.
	Control valve linkage misadjusted.	Contact you authorized dealer.
	Control valve internally linkage misadjusted	Contact you authorized dealer.
Hydraulic fluid is overheating.	Hydraulic control valve not returning to neutral position.	Return all control valve levers to the neutral position.
	Hydraulic fluid level is to low.	Check hydraulic fluid level, add oil as needed.
	Hydraulic filter clogged.	Replace hydraulic filter.
3-point linkage lowers slowly.	Drop rate speed control misadjusted.	Adjust drop rate control for faster drop speed.
	3-point linkage binding	Check for damaged parts or corrosion.
Auxiliary hydraulic functions do not function properly.	Hose to coupler connections not correct.	Check hose and valve couplers for damage or contamination.
	Auxiliary system overloaded.	Reduce load on system.

Brakes and controls - Troubleshooting

Problem	Possible Cause	Correction
Brakes actuate only when pedals are depressed fully.	Incorrect brake pedal linkage adjustment.	Adjust brake pedal linkage for proper pedal travel.
Tractor pulls to one side when brakes are applied.	Brake pedals linkage not adjusted equally.	Adjust brake pedals linkages equally.
Brakes noisy during engagement.	Transmission oil contamination.	Drain and replace transmission oil.
	Brake discs worn or contaminated.	Replace brake discs.

Error code identification

NOTE: Should any trouble occur, the central display on the instrument panel will show a warning symbol and a four-digit error code. To resolve the problem, contact your authorised NEW HOLLAND dealer and report the error code displayed.

Rear Power Take-Off (PTO) error codes



In the event of problems with the rear power take-off, the following symbol will be displayed accompanied by a four-digit error code.

Fault code of digital instrument

FAULT CODE	SYMBOL	Function	Acoustic signal	Warning light on
3786		Automatic regeneration of the diesel particulate filter (DPF) inhibited; manual regeneration starting only.		YES
3787		Regeneration of the diesel particulate filter (DPF) inhibited; contact your dealer immediately		YES
14200		Battery isolator switch on at key-on for more than 30 seconds	NO	YES
14015		Supply voltage at 5 V too high	NO	YES
14016		Supply voltage at 5 V too low	NO	YES
14021		Cranking line shorted to +12 V	NO	YES
14022		Cranking line shorted to GND	NO	YES
14051		Fuel sensor short to Vcc or open circuit	NO	YES
14052		Fuel sensor short to GND	NO	YES
14058		Seat switch closed for 25 hours	YES	YES
14093		Seat switch short to Vcc or open circuit	YES	YES
14094		Seat switch shorted to GND	YES	YES
14109		Electronic lift present but not configured	NO	YES
14900		Transmission module missing	NO	YES
14901		Engine module missing	NO	YES

9 - SPECIFICATIONS

General specification

Engine			
Type/Model	CRDI/VM R753IE4		
Emission Level	Tier 4		
Engine Net Horsepower	39.5 kW (53.7 Hp)	44.8 kW (60.9 Hp)	52.2 kW (71.0 Hp)
PTO Horsepower	34.0 kW (46.2 Hp)	38.0 kW (51.7 Hp)	46.0 kW (62.5 Hp)
Cylinders	3		
Bore	94.0 mm (3.7 in)		
Stroke	107.0 mm (4.2 in)		
Displacement	2227.0 cm³ (135.9 in³)		
Compression Ratio	17.5:1		
Firing Order	1-3-2		
Aspiration	Turbocharged Intercooler		
Low Idle Speed	900±100 RPM		
Maximum no-load speed	2750±50 RPM		
Rated Speed	2600 ±50 RPM		
Tappet Clearance			
Intake/Exhaust (cold)	Hydraulically Adjustable		
Crankcase Oil Capacity	6.3 L (6.7 US qt)		
Capacities			
Fuel Tank	65.0 L (17.2 US gal)		
Cooling system	10.0 L (10.6 US qt)		
Engine Crankcase Oil Capacity	6.3 L (6.7 US qt)		
Rear Axle & Transmission	23.0 L (6.1 US gal) for 2WD 25.0 L (6.6 US gal) for 4WD		
Front Axle (Four Wheel Drive)	7.5 l (8.0 US qt)		
Cooling system			
Type	Pressurized Liquid with Recirculating bypass		
Water Pump	Centrifugal		
Drive	poly V-Belt		
Belt Deflection	Auto Adjustable		
Fan Diameter	415.0 mm (16.3 in)		
Number of Fan Blades	8		
Thermostat:			
Start to Open	80.0 °C (176.0 °F)		
Fully Open	95.0 °C (203.0 °F)		
Radiator Cap	90 kPa (13 psi)		
Antifreeze	Ethylene Glycol		
System Capacity	8.3 L (8.8 US qt)		

Electrical system

Main System Protection

Mega Fuse **125 A**

Number of fuses for protection

6

Alternator

75 A

Battery Type

12 V

Negative Ground

BCI group 47

CCA 600-850

Starter Motor - Type

Solenoid operated

Starter kw (hp) Rating

2.0 kW (2.7 Hp)

Bulb Rating and Type

Head Light

55/65 W

Turn Signal

21 W

Tail Light

21 W / No. 1157

Fuel system

Fuel Type

Diesel

Type of fuel to use

If above 5°C (40°F)

Type of fuel to use

If below **5 °C (40 °F)**

EN590:2009

Biodiesel 5% EN 590

Injection Pump:

Type

CRDI

Brakes

Type	Wet Disc
Number of Discs per side	3
Brake Disc Diameter	165 mm (6.5 in)
Pedal Free Travel	50-55 mm 1.96-2.16 in

Steering

Type	Power
Pump flow	21.0 L/min (5.5 US gpm)
Maximum Hydraulic Steering Pressure	20700.0 kPa (207.0 bar)
Turns Lock to Lock	
2WD	3
4WD	3.5
Maximum Steering Angle	
2WD	91.4 °
4WD	62 °
Turn Radius	
Without Brakes (2WD)	3100.0 mm (122.0 in)
With Brakes (2WD)	3450.0 mm (135.8 in)
Without Brakes (4WD)	4850.0 mm (190.9 in)
With Brakes (4WD)	4200.0 mm (165.4 in)

Power Take-off (PTO)

Type	Independent
Clutch Disc Size	280 mm (11 in)
Clutch Material	OrganicOrganic
Control	Hand Lever, Mechanical
Shaft Size	35 mm (1-3/8 in)
Number of Splines	6
PTO Shaft Rotation	Clockwise (Viewed from rear)
Engine Speed for 540 RPM	2575 RPM
PTO Horsepower	34.0 kW (46.2 Hp) 38.0 kW (51.7 Hp) 46.0 kW (62.5 Hp)

Hydraulic system

Type	Open Center
Pump Type	Gear, engine driven
Pump Capacity	45.0 L/min (11.9 US gpm)
System Relief Valve Setting	19000.0 kPa (190.0 bar)
Number of rear remote available	2
Number of mid remote available	1
Draft Control	Available

3-Point linkage

Category Type	II/I
Lift capacity at ball ends	1100.0 kg (2425.1 lb) / 1500.0 kg (3306.9 lb)
Lift capacity 610mm behind ball ends	860.0 kg (1896.0 lb) / 1225.0 kg (2700.7 lb)

Clutch system

Type	LUK
(Transmission)	
Clutch Disc Diameter	280 mm (11 in)
(PTO)	
Clutch Disc Diameter	280 mm (11 in)
Pedal Free Travel	35 - 40 mm (1.38 - 1.57 in)

Transmission speeds (8X8)

(2WD and 4WD) with 13.6 x28 rear tires, at 2600 RPM, rated engine speed

Forward/Low/ 1st	2.8 km/h (1.7 mph)
Forward/Low/2nd	4.2 km/h (2.6 mph)
Forward/Low/3rd	6.1 km/h (3.8 mph)
Forward/Low/4th	8.4 km/h (5.3 mph)
Forward/High/1st	10.0 km/h (6.2 mph)
Forward/High/2nd	15.1 km/h (9.4 mph)
Forward/High/3rd	22.3 km/h (13.9 mph)
Forward/High/4th	30.7 km/h (19.1 mph)
Reverse/Low/1st	2.9 km/h (1.8 mph)
Reverse/Low/2nd	4.4 km/h (2.7 mph)
Reverse/Low/3rd	6.5 km/h (4.0 mph)
Reverse/Low/4th	8.9 km/h (5.5 mph)
Reverse/High/1st	10.6 km/h (6.6 mph)
Reverse/High/2nd	16.0 km/h (9.9 mph)
Reverse/High/3rd	23.6 km/h (14.6 mph)
Reverse/High/4th	32.5 km/h (20.2 mph)

Transmission speeds (8x8)

(2WD and 4WD) with 14.9x28 rear tires, at 2600 RPM, rated engine speed

Forward/Low/ 1st	2.9 km/h (1.8 mph)
Forward/Low/2nd	4.3 km/h (2.7 mph)
Forward/Low/3rd	6.4 km/h (4.0 mph)
Forward/Low/4th	8.8 km/h (5.5 mph)
Forward/High/1st	10.4 km/h (6.5 mph)
Forward/High/2nd	15.7 km/h (9.7 mph)
Forward/High/3rd	23.2 km/h (14.4 mph)
Forward/High/4th	31.9 km/h (19.8 mph)
Reverse/Low/1st	3.0 km/h (1.9 mph)
Reverse/Low/2nd	4.6 km/h (2.8 mph)
Reverse/Low/3rd	6.8 km/h (4.2 mph)
Reverse/Low/4th	9.3 km/h (5.8 mph)
Reverse/High/1st	11.0 km/h (6.8 mph)
Reverse/High/2nd	16.6 km/h (10.3 mph)
Reverse/High/3rd	24.5 km/h (15.2 mph)
Reverse/High/4th	33.7 km/h (20.9 mph)

Tires

Front

Agricultural

2WD

7.5 x 16, 6 ply

4WD

8.3 x 24 , 6 Ply

12.5 x 18

Rear

Agricultural

2WD and 4WD

13.6 x 28 R1, 6 Ply

18.4 x 24 R4

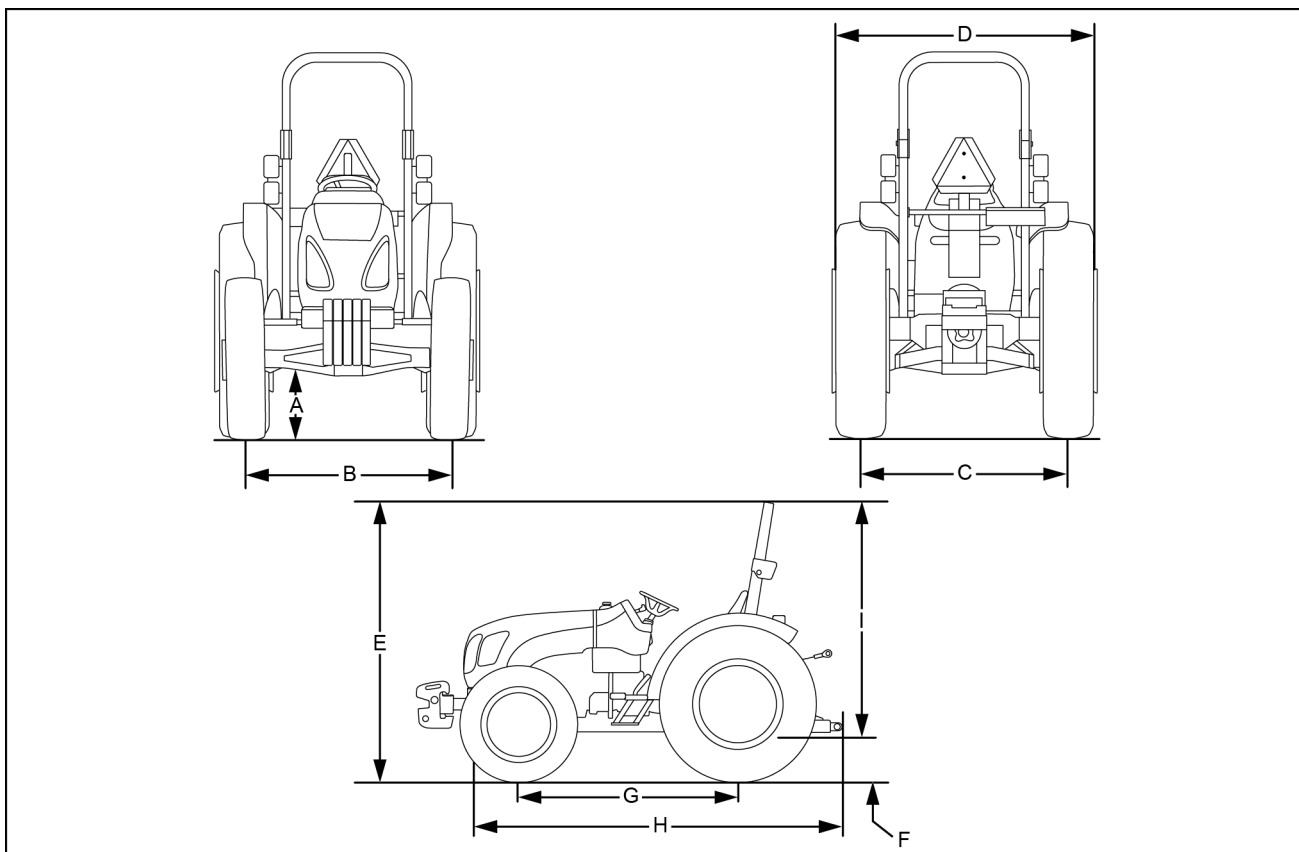
14.9 x28 R1, 6 Ply

18.4 x 24 R4

14.9 x28 R1, 6 Ply

18.4 x 24 R4

Tractor dimensions - General



GNIL14TR00583FA 1

NOTICE: The following dimensions are based on standard tractors fitted with tire sizes as shown. Allowance must be given for tires of larger or smaller dimensions.

9 - SPECIFICATIONS

2WD/4WD Dimension

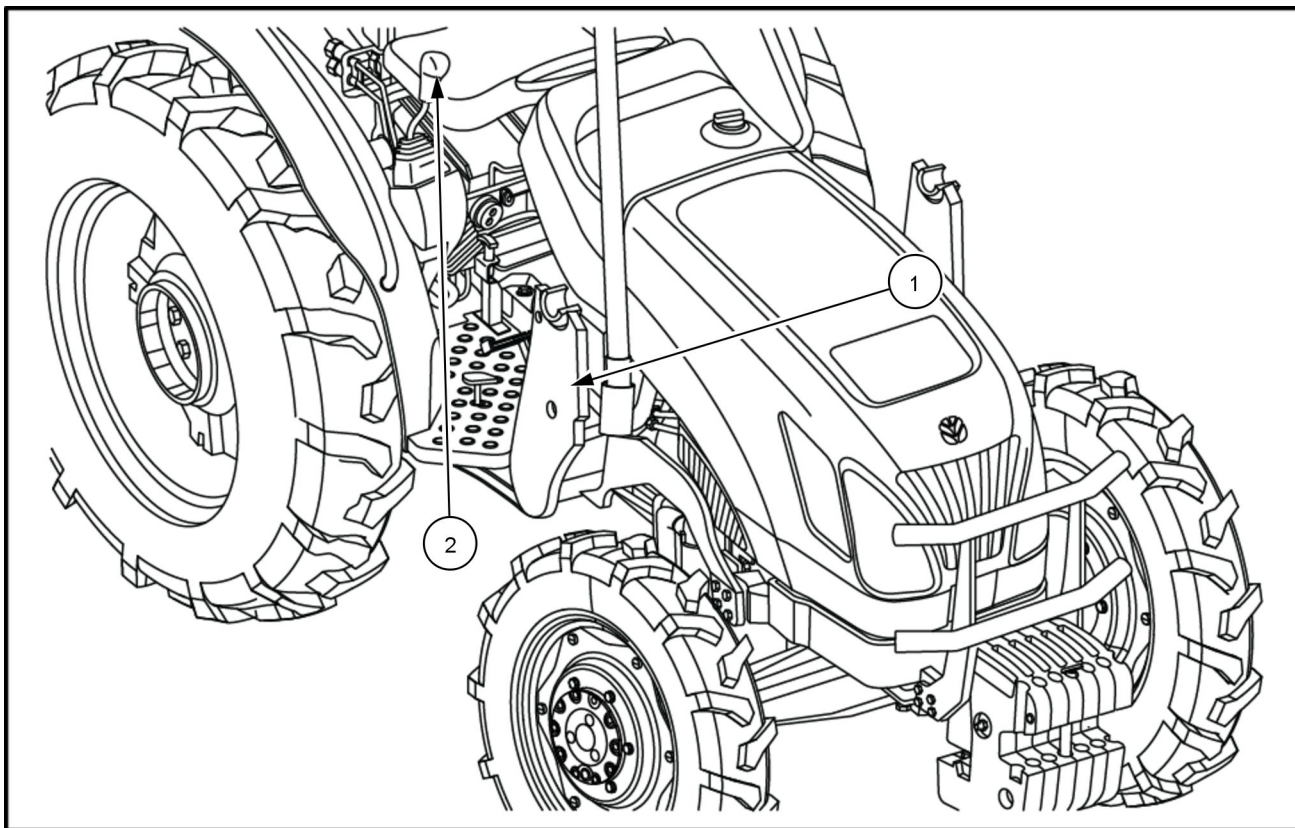
Dimension			
A	Overall Width	1690.0 mm (66.5 in)	1714.0 mm (67.5 in)
B	Under front axle	495.0 mm (19.5 in)	405.0 mm (15.9 in)
C	Front Standard Track Setting	1385.0 mm (54.5 in)	1322.0 mm (52.0 in)
D	Rear Standard Track Setting	1336.0 mm (52.6 in)	
E	To Top of Exhaust	2300.0 mm (90.6 in)	2317.0 mm (91.2 in)
F	Less Cab (top of seat/ROPS)	2450.0 mm (96.5 in)	2478.0 mm (97.6 in)
G	Under Standard Drawbar	429.0 mm (16.9 in)	456.0 mm (18.0 in)
H	Weight carrier	285.0 mm (11.2 in)	175.0 mm (6.9 in)
	Front weights	500.0 mm (19.7 in)	389.0 mm (15.3 in)
J	Wheel base	1970.0 mm (77.6 in)	1960.0 mm (77.2 in)
K	Overall Length	3290.0 mm (129.5 in)	3404.0 mm (134.0 in)
L	Rear Axle to top of ROPS	1795.0 mm (70.7 in)	
M	Drawbar to Rear Axle	226.0 mm (8.9 in)	
N	Ground to Top of ROPS when Folded	1927.0 mm (75.9 in)	1957.0 mm (77.0 in)

Tractor total weight

Model	2WD	4WD
	3000.0 kg (6613.9 lb)	

10 - ACCESSORIES

Front-end loader



GNIL14TR00581FA 1

Your tractor can, on request, be fitted for the front loader connection.

The kit comprises:

- (1) Support for loader connection.
- (2) Joystick.

The loader is controlled by joystick (2), installed in the cab on the right-hand side of the driver's seat.

NOTE: For installation of the front loader and its operation, refer to the manual supplied by the manufacturer of the loader.

Control valve joystick - Overview

⚠ 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

⚠ WARNING

Avoid injury and/or machine damage!

Before disconnecting the couplers, you must:

- lower the connected attachments,
- stop the engine,
- move the control levers forward and backward to discharge pressure from the hydraulic system.

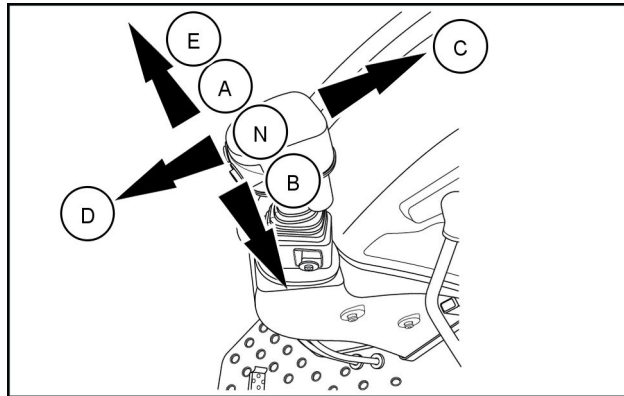
Failure to comply could result in death or serious injury.

W0933A

Joystick positions

- (A) Lever forward – lowering function
- (B) Lever backward – lifting function
- (E) Lever completely forward – float function
- (C) Lever to the right – lowering function
- (D) Lever to the left – lifting function

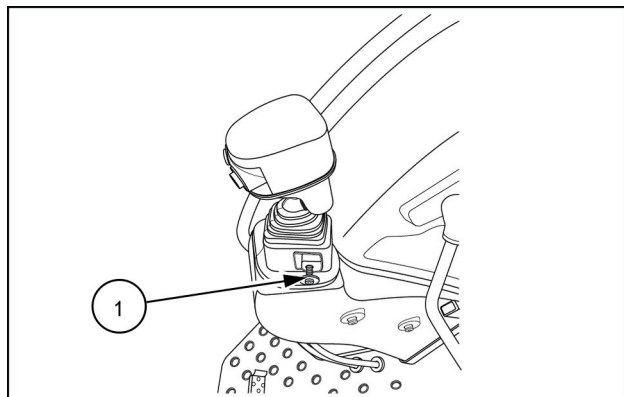
Moving the joystick lever diagonally operates two control valves simultaneously. This function is useful when working with loaders, fertiliser spreaders, combined seed drills/fertiliser spreaders, etc.



GNIL14TR00566AA 1

Safety latch

To use the joystick, disengage the safety latch (1) by pulling the safety latch out. When the joystick is not being used, push the safety latch in to lock the joystick and to prevent the joystick from being operated accidentally.



GNIL14TR00567AA 2

NOTE: Do not hold the joystick at either the extended or retracted position when the cylinder has reached the travel limit, as this would result in the system operating at maximum pressure, thus opening the relief valve. If

allowed to continue for long periods of time the oil will overheat, which may lead to problems with hydraulic and drive line components.

11 - FORMS AND DECLARATIONS

Pre-delivery report - Owner's copy

Check and adjust as required

Workmaster 50/60/70

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. ___ Power Steering Reservoir
Oil Level,
8. ___ Transmission & Rear Axle Oil Level,
9. ___ Hydraulic Lift Control Drop
Rate Adjustment (Response Control),
10. ___ Top Link (present),
11. ___ Brake Adjustment & Pedal Equalization
4-8
12. ___ Rear Wheel Bolt Torque - **192 N·m (142 lb ft)**
13. ___ Front Wheel Bolt Torque - **123 N·m (91 lb ft)**
14. ___ Front Wheel Toe-in,
15. ___ Fuel Level, 4-3
16. ___ Body Panels & Paint Condition, 6-1
17. ___ Seat Functions, 2-2

Safety items check

1. ___ ROPS Installed,
2. ___ Seat Belts Installed,
3. ___ PTO Shield Installed,
4. ___ SMV Emblem Installed,
5. ___ Safety Decals Installed,
6. ___ Neutral Start Switches Operation,
7. ___ Park Brake & Latch 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,
 4. ___ PTO Engagement & Disengagement
 5. ___ Hydraulic System:
___ Selector Lever for Position Control -
-

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 _____

Pre-delivery report - Dealer's copy

Check and adjust as required

Workmaster 50/60/70

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. ___ Power Steering Reservoir
Oil Level,
8. ___ Transmission & Rear Axle Oil Level,
9. ___ Hydraulic Lift Control Drop
Rate Adjustment (Response Control),
10. ___ Top Link (present),
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16. ___ Body Panels & Paint Condition, 6-1
17. ___ Seat Functions, 2-2

Safety items check

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2. ___ Seat Belts Installed,
3. ___ PTO Shield Installed,
4. ___ SMV Emblem Installed,
5. ___ Safety Decals Installed,
6. ___ Neutral Start Switches Operation,
7. ___ Park Brake & Latch Operation,
8. ___ Flashing Lights/Tail Lights Operation,
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Operative service checks

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5. ___ Hydraulic System:
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Dealer Representative's
Signature _____

Date _____

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Owner's Signature _____

Date _____

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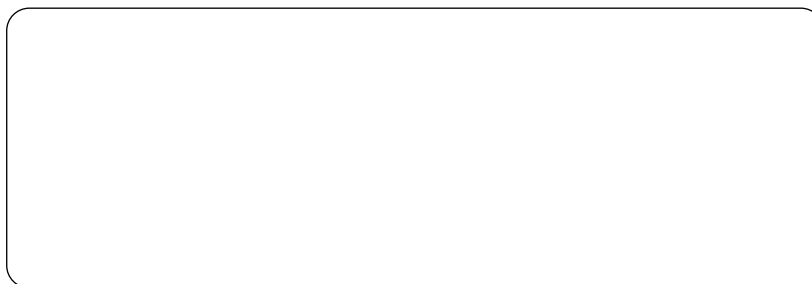
V

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Wheel tread settings	6-14

Dealer's stamp



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



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