2025R
Compact Utility Tractor
(Serial No NP000001-)
(North America)

JOHN DEERE

OPERATOR'S MANUAL

2025R Compact Utility Tractors
(North America)

OMTR135773 ISSUE E3 (ENGLISH)

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.

If this product contains a gasoline engine:

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

John Deere Augusta Works
North America Edition
PRINTED IN U.S.A.

Introduction

Foreword

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. (See your John Deere dealer to order.)

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I. N.) in the Specification or Identification Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate or statement which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

THE TIRE MANUFACTURER'S warranty supplied with your machine may not apply outside the U.S.

If you are not the original owner of this machine, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

DX,IFC1-19-03APR09

Contents

Continued on next page

Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

General Information

Product View

LV26905—UN—20FEB17

Open Operator Station

UP00731,00000CB-19-30NOV16

Trademarks

Trademarks	
GreenStar™	Trademark of Deere & Company
iMatch™	Trademark of Deere & Company
Quik-Tatch™	Trademark of Deere & Company
Cool-Gard™	Trademark of Deere & Company
Cool-Gard™ II	Trademark of Deere & Company
Plus-50™	Trademark of Deere & Company
Torq-Gard™	Trademark of Deere & Company
Hy-Gard™	Trademark of Deere & Company

UP00731,00000CC-19-18NOV16

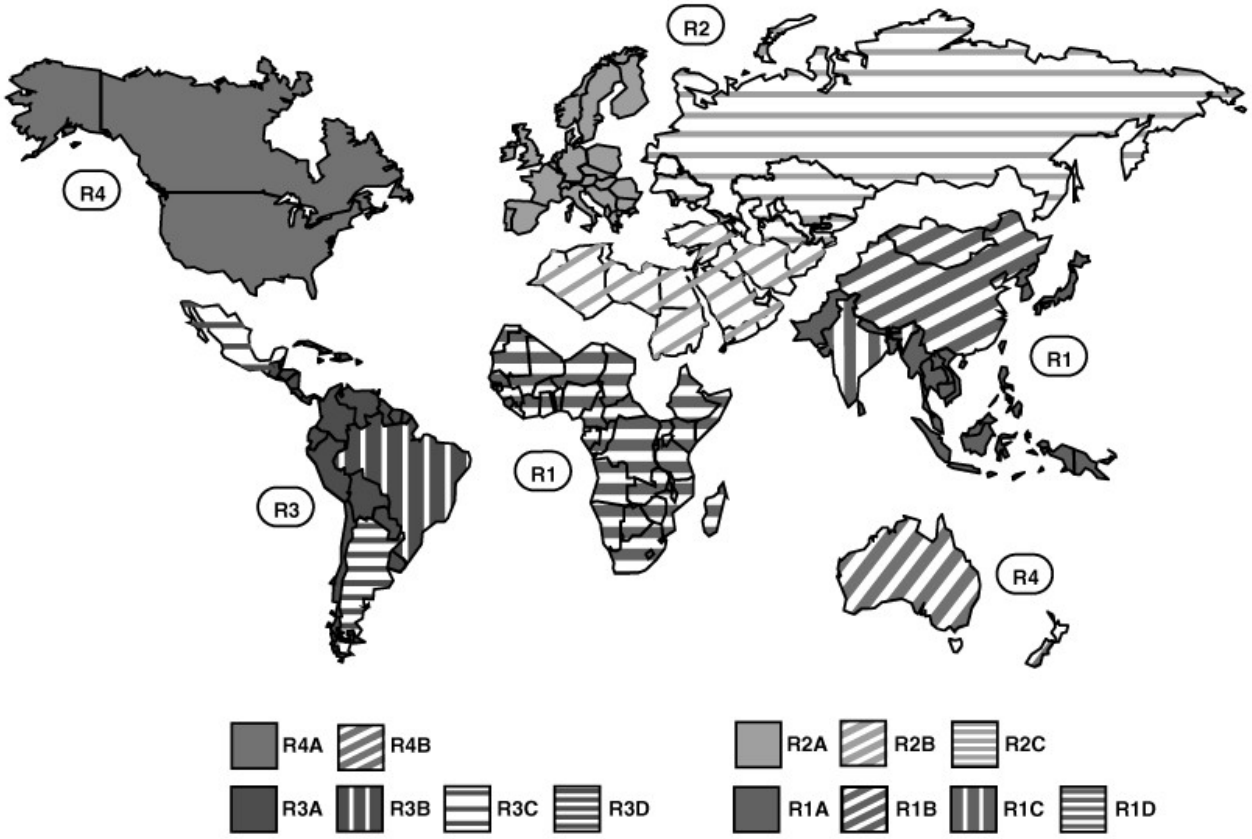
Glossary of Terms

Abbreviation	Description
MFWD	Mechanical Front-Wheel Drive
OBD	On-Board Diagnostic
PTO	Power Take-Off
RIO	Reverse Implement Option

Abbreviation	Description
ROPS	Roll-Over Protective Structure
SCV	Selective Control Valve

DN39857,000069D-19-18MAR22

Regions and Country Versions



RXA0150915—UN—01FEB16

R1—Asia and Sub-Saharan Africa
R1A—Far East, Sri Lanka, and Pakistan
R1B—China
R1C—India
R1D—Sub-Saharan Africa
R2—Europe, North Africa, Mid East, CIS
R2A—European Union (EU 28+)
R2B—North Africa and North Middle East (NANME)
R2C—Commonwealth of Independent States (CIS)
R3—Central and South America
R3A—Latin America (JDLA)
R3B—Brazil
R3C—Mexico
R3D—Argentina
R4—North America
R4A—USA and Canada
R4B—Oceania (Australia and New Zealand)

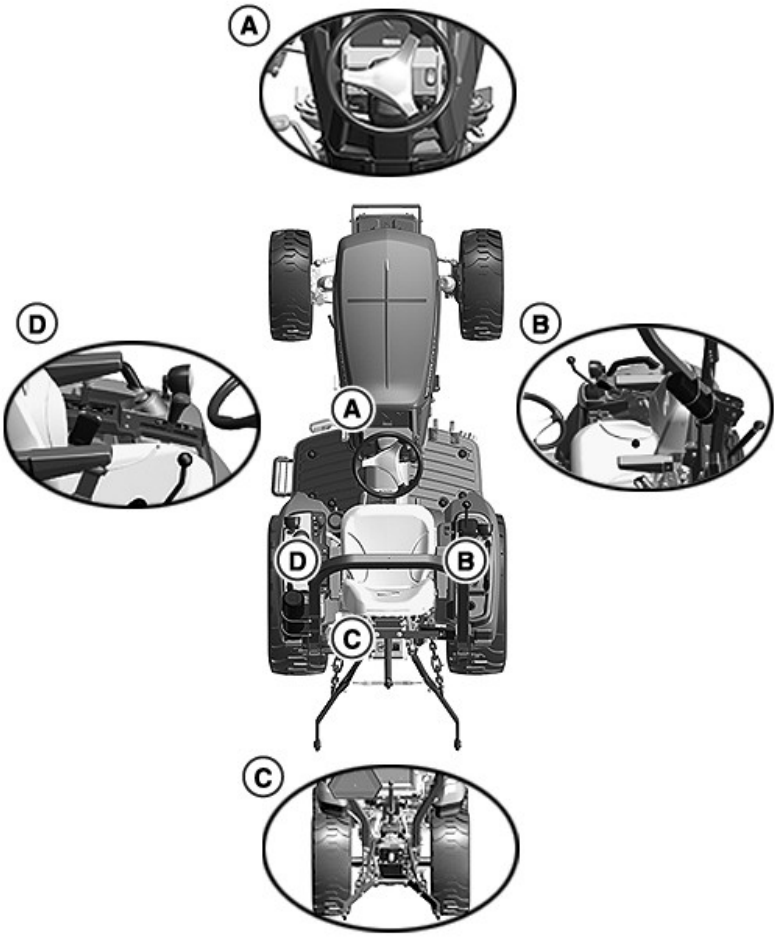
Regions 1, 2 and 3 equipment is traditionally manufactured with Economic Commission for Europe (ECE) features or systems.	Region 4 equipment is traditionally manufactured with Society of Automotive Engineers (SAE) features or systems.
Drive and signal lighting, traffic signs, safety signs, and braking features are some of the systems that differ between ECE and SAE. For example, Text-Free (pictorial only) safety signs are used for ECE while Text with Picture safety signs are used on SAE. When identifying equipment information by regions, countries, trade federations, industry standards, or governmental regulations, refer to the region map provided. *NOTE: Australia and New Zealand (R4B) are available as either region 4 and/or region 2 configurations, only using text-free safety signs.*	

GS25068,0001DB8-19-14JAN19

Machine Overview

IMPORTANT: READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may available in other languages. See your John Deere dealer for specific language requirements and to place an order.)

Review manual sections for Controls and Instruments identification, Steering and Brakes, Transmission, and Transportation before operation on the road or in the field.



LV26911—UN—18NOV16

A—Front Console Controls
B—Right Side Controls
C—Rear Implement Interface
D—Left Side Controls

Operating the Machine Introduction:

See relevant section in the operator manual for operating procedures.

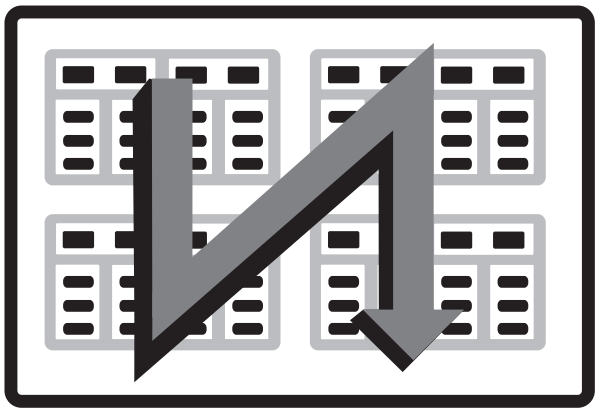
- Sit in the operator seat and fasten seat belt.
- Start engine.
- Turn on lights or signals as required.
- To move machine, operate the transmission.
- Use steering and brakes as required.
- Activate features and implements as required.

Preliminary Overview

Inspect the machine before operation, use the following

list as a reminder. Detailed operation and service information is available in this operator manual.

- Review manual and machine for safety information and safety signs.
- Review manual for proper operation, adjustment, and service.
- Review manual for engine and drivetrain operations. (throttles, brakes, steering, transmission gears, MFWD, and Differential Lock.)
- Review manual for control devices (hitch, hydraulic, and electrical).
- Review manual for regular lubrication points and intervals.
- Check for visual signs of leaks, damage, failures, and flats.
- Prepare machine hardware, fuel, fluids, lubricants, air, and daily maintenance.
- Check and prepare implements or attachments according to implement or attachment operator manuals.



W28329—UN—18OCT17

UP00731,0000571-19-16APR18

Using this Manual:

The information provided in this manual is divided into sections. The sections are organized with the typical machine features or functional systems together. These sections are identified at the top of each page. Specific information within each section is organized into modules. These modules are enclosed in boxes and the main modules are identified with a heading at the top left. Page numbers identify the section as well as the number of the page in the section.

By reviewing this manual frequently you learn which section to turn to for specific information. For example, the safety information is covered at the beginning, the operation of all features and systems is covered in the first half of the manual. Maintenance intervals are in the middle of the manual, the maintenance of all the features and systems is covered in the second half of the manual. The specifications are covered at the end.

A detailed table of contents appears before safety information and there is an alphabetical index at the very end of the manual.

The Operator's Manual content flows as sequential reading down one column of text and graphic then over to the top of the next column as shown.

Recognize Safety Information

T81389—UN—28JUN13

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Understand Signal Words

TS187—19—30SEP88

DANGER; The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

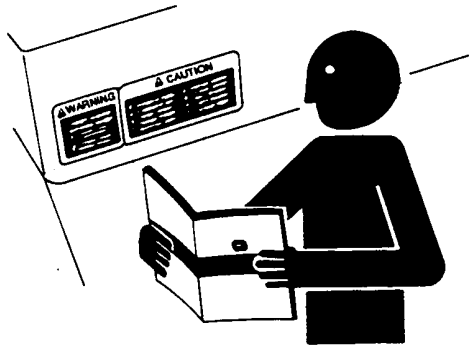
WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION; The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

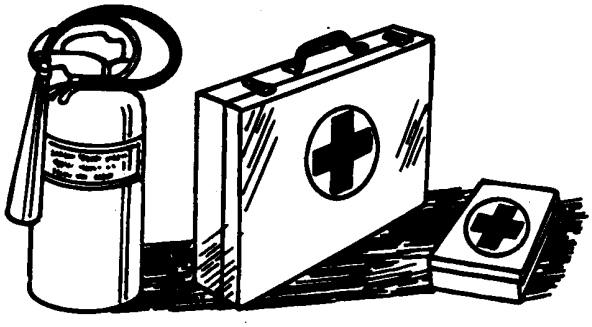
Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ-19-01AUG22

Prepare for Emergencies



TS291—UN—15APR13

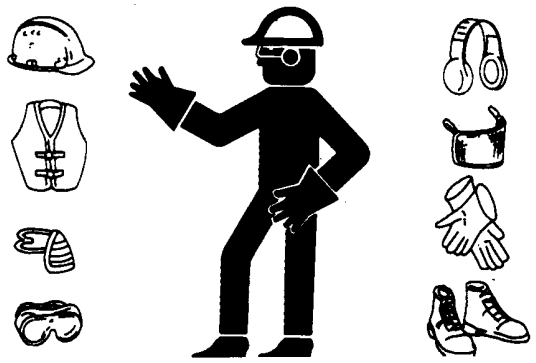
Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

DX,FIRE2-19-03MAR93

Wear Protective Clothing



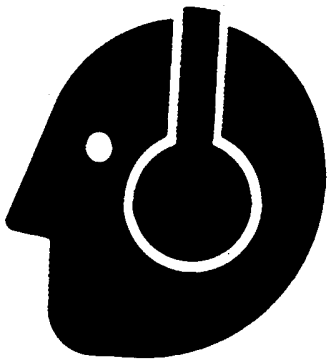
TS206—UN—15APR13

Wear close fitting clothing and safety equipment appropriate to the job.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

DX,WEAR2-19-03MAR93

Protect Against Noise



TS207—UN—23AUG88

There are many variables that affect the sound level range, including machine configuration, condition and maintenance level of the machine, ground surface, operating environmental, duty cycles, ambient noise, and attachments.

Exposure to loud noise can cause impairment or loss of hearing.

Always wear hearing protection. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

DX,NOISE-19-03OCT17

Handle Fuel Safely—Avoid Fires

TS202—UN—23AUG88

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.

Use only an approved fuel container for transporting flammable liquids.

Never fill fuel container in pickup truck with plastic bed liner. Always place fuel container on ground before refueling. Touch fuel container with fuel dispenser nozzle before removing can lid. Keep fuel dispenser nozzle in contact with fuel container inlet when filling.

Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.

DX,FIRE1-19-12OCT11

Handle Starting Fluid Safely

TS1356—UN—18MAR92

Starting fluid is highly flammable.

Keep all sparks and flame away when using it. Keep starting fluid away from batteries and cables.

To prevent accidental discharge when storing the pressurized can, keep the cap on the container, and store in a cool, protected location.

Do not incinerate or puncture a starting fluid container.

Do not use starting fluid on an engine equipped with glow plugs or an air intake heater.

DX,FIRE3-19-14MAR14

Fire Prevention

To reduce the risk of fire, your tractor should be regularly inspected and cleaned.

- Birds and other animals may build nests or bring other flammable materials into the engine compartment or onto the exhaust system. The tractor should be inspected and cleaned prior to the first use each day.
- A build up of grass, crop material and other debris may occur during normal operation. This is especially true when operating in very dry conditions or conditions where airborne crop material or crop dust is present. Any such build up must be removed to ensure proper machine function and to reduce the risk of fire. The tractor must be inspected and cleaned periodically throughout the day.
- Regular and thorough cleaning of the tractor combined with other routine maintenance procedures listed in the Operator's Manual greatly reduce the risk of fire and the chance of costly downtime.
- Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.
- Check fuel lines, tank, cap, and fittings frequently for damage, cracks or leaks. Replace if necessary.

Follow all operational and safety procedures posted on the machine and the Operator's Manual. Be careful of hot engine and exhaust components during inspection and cleaning. Before carrying out any inspection or cleaning, always shut OFF the engine, place the transmission in PARK or set parking brake, and remove the key. Removal of the key will prevent others from starting the tractor during inspection and cleaning.

DX,WW,TRACTOR,FIRE,PREVENTION-19-12OCT11

In Case of Fire

TS227—UN—15APR13

CAUTION: Avoid personal injury.

Stop machine immediately at the first sign of fire. Fire may be identified by the smell of smoke or sight of flames. Because fire grows and spreads rapidly, get off the machine immediately and move safely away from the fire. Do not return to the machine! The number one priority is safety.

Call the fire department. A portable fire extinguisher can put out a small fire or contain it until the fire department arrives; but portable extinguishers have limitations. Always put the safety of the operator and bystanders first. If attempting to extinguish a fire, keep your back to the wind with an unobstructed escape path so you can move away quickly if the fire cannot be extinguished.

Read the fire extinguisher instructions and become familiar with their location, parts, and operation before a fire starts. Local fire departments or fire equipment distributors may offer fire extinguisher training and recommendations.

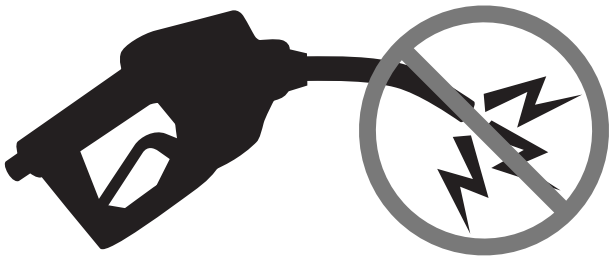
If your extinguisher does not have instructions, follow these general guidelines:

1. Pull the pin. Hold the extinguisher with the nozzle pointing away from you, and release the locking mechanism.
2. Aim low. Point the extinguisher at the base of the fire.
3. Squeeze the lever slowly and evenly.
4. Sweep the nozzle from side-to-side.

DX,FIRE4-19-22AUG13

Avoid Static Electricity Risk When Refueling

RG22142—UN—17MAR14



RG21992—UN—21AUG13

The removal of sulfur and other compounds in Ultra-Low Sulfur Diesel (ULSD) fuel decreases its conductivity and increases its ability to store a static charge.

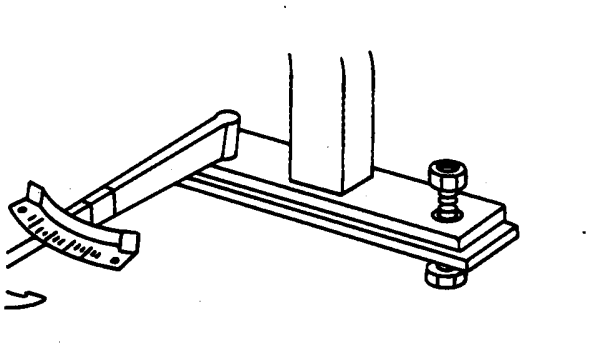
Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion.

Therefore, it is important to ensure that the entire system used to refuel your machine (fuel supply tank, transfer pump, transfer hose, nozzle, and others) is properly grounded and bonded. Consult with your fuel or fuel system supplier to ensure that the delivery system is in compliance with fueling standards for proper grounding and bonding practices.

DX,FUEL,STATIC,ELEC-19-12JUL13

Keep ROPS Installed Properly



TS212—UN—23AUG88

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

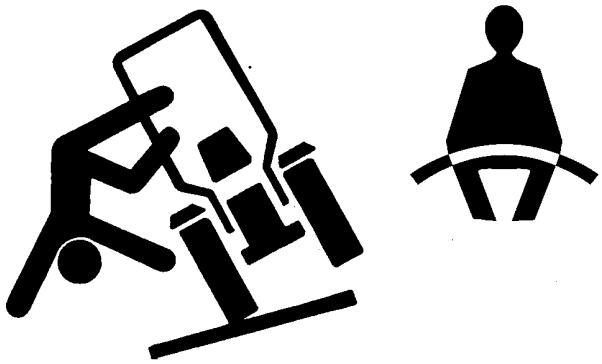
The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

The seat is part of the ROPS safety zone. Replace only with John Deere seat approved for your tractor.

Any alteration of the ROPS must be approved by the manufacturer.

DX,ROPS3-19-12OCT11

Use Foldable ROPS and Seat Belt Properly



TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

- If this machine is equipped with a foldable rollover protective structure (ROPS), keep the ROPS in the fully extended and locked position. USE a seat belt when you operate with a ROPS in the fully extended position.
  - Hold the latch and pull the seat belt across the body.
  - Insert the latch into the buckle. Listen for a click.
  - Tug on the seat belt to make sure that the belt is securely fastened.

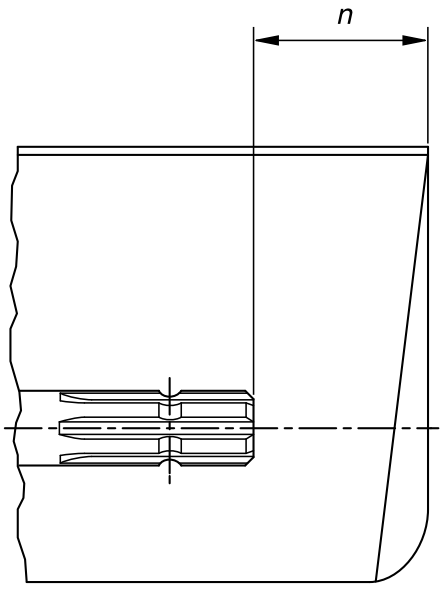
- Snug the seat belt across the hips.

- If this machine is operated with the ROPS folded (for example, to enter a low building), drive with extreme caution. DO NOT USE a seat belt with the ROPS folded.
- Return the ROPS to the raised, fully extended position as soon as the machine is operated under normal conditions.

DX,FOLDROPS-19-22AUG13

Stay Clear of Rotating Drivelines

TS1644—UN—22AUG95



H96219—UN—29APR10

Entanglement in rotating driveline can cause serious injury or death.

Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Only use power take-off driveshafts with adequate guards and shields.

Wear close fitting clothing. Stop the engine and be sure that PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

Do not install any adapter device between the tractor and the primary implement PTO driveshaft that will allow a 1000 rpm tractor shaft to power a 540 rpm implement at speeds higher than 540 rpm.

Do not install any adapter device that results in a portion of the rotating implement shaft, tractor shaft, or the adapter to be unguarded. The tractor master shield shall overlap the end of the splined shaft and the added adaptor device as outlined in the table.

The angle at which the primary implement PTO driveshaft can be inclined may be reduced depending on the shape and size of the tractor master shield and the shape and size of the guard of the primary implement PTO driveshaft.

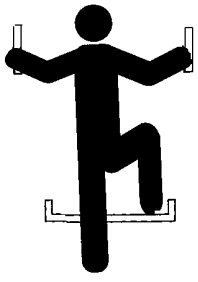
Do not raise implements high enough to damage the tractor master shield or guard of primary implement PTO driveshaft. Detach the PTO driveline shaft if it is necessary to increase implement height. (See Attching/ Detaching PTO Driveline)

When using Type 3/4 PTO, inclination and turning angles may be reduced depending on type of PTO master shield and coupling rails.

PTO Type	Diameter	Splines	n ± 5 mm (0.20 in.)
1	35 mm (1.378 in.)	6	85 mm (3.35 in.)
2	35 mm (1.378 in.)	21	85 mm (3.35 in.)
3	45 mm (1.772 in.)	20	100 mm (4.00 in.)
4	57.5 mm (2.264 in.)	22	100 mm (4.00 in.)

DX,PTO-19-28FEB17

Use Steps and Handholds Correctly



T133468—UN—15APR13

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease

or oil. Never jump when exiting machine. Never mount or dismount a moving machine.

DX,WW,MOUNT-19-12OCT11

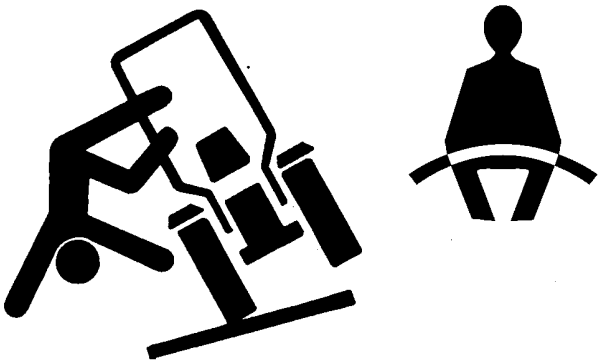
Read Operator's Manuals for ISOBUS Controllers

In addition to GreenStar™ Applications, this display can be used as a display device for any ISOBUS Controller that meets ISO 11783 standard. This includes capability to control ISOBUS implements. When used in this manner, information and control functions placed on the display are provided by the ISOBUS Controller and are the responsibility of the ISOBUS Controller manufacturer. Some of these functions could pose a hazard to either the operator or a bystander. Read the Operator's Manual provided by the ISOBUS Controller manufacturer and observe all safety messages in manual and on ISOBUS Controller product prior to use.

NOTE: ISOBUS refers to the ISO Standard 11783

DX,WW,ISOBUS-19-15JUL15

Use Seat Belt Properly



TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

This machine is equipped with a rollover protective structure (ROPS). USE a seat belt when you operate with a ROPS.

- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.

DX,ROPS1-19-22AUG13

Operating the Tractor Safely

You can reduce the risk of accidents by following these simple precautions:

- Use your tractor only for jobs it was designed to perform, for example, pushing, pulling, towing, actuating, and carrying a variety of interchangeable equipment designed to conduct agricultural work.
- Operators must be mentally and physically capable of accessing the operator's station and/or controls, and operating the machine properly and safely.
- Never operate machine when distracted, fatigued, or impaired. Proper machine operation requires the operator's full attention and awareness.
- This tractor is not intended to be used as a recreational vehicle.
- Read this operator's manual before operating the tractor and follow operating and safety instructions in the manual and on the tractor.
- Follow operation and ballasting instructions found in the operator's manual for your implements/ attachments, such as front loaders.
- Follow the instructions outlined in the operator's manual of any mounted or trailed machinery or trailer. Do not operate a combination of tractor-machine or tractor-trailer unless all instructions have been followed.
- Make sure that everyone is clear of machine, attached equipment, and work area before starting engine or operation.
- Stay clear of the three-point linkage and pickup hitch (if equipped) when controlling them.
- Keep hands, feet, and clothing away from power-driven parts.

Driving Concerns

- Never get on or off a moving tractor.
- Complete any required training prior to operating vehicle.
- Keep all children and nonessential personnel off tractors and all equipment.
- Never ride on a tractor unless seated on a John Deere approved seat with a seat belt.
- Keep all shields/guards in place.
- Use appropriate visual and audible signals when operating on public roads.
- Move to side of road before stopping.
- Reduce speed when turning, applying individual

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brakes, or operating around hazards on rough ground or steep slopes.

- Stability degrades when attached implements are at high position.
- Couple brake pedals together for road travel.
- Pump brakes when stopping on slippery surfaces.
- Regularly clean fenders and fender valances (mud flaps) if installed. Remove dirt before driving on public roadways.

Heated and Ventilated Operator's Seat

- An overheated seat heater can cause a burn injury or damage to the seat. To reduce the risk of burns, use caution when using the seat heater for extended periods of time, especially if the operator cannot feel temperature change or pain to the skin. Do not place objects on the seat, such as a blanket, cushion, cover, or similar item, which can cause the seat heater to overheat.

Towing Loads

- Be careful when towing and stopping heavy loads. Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control.
- Consider the total weight of the equipment and its load.
- Hitch towed loads only to approved couplings to avoid rearward upset.

Parking and Leaving the Tractor

- Before dismounting, shut off SCVs, disengage PTO, stop engine, lower implements/attachments to ground, place implement/attachment control devices in neutral, and securely engage park mechanism, including the park pawl and park brake. In addition, if the tractor is left unattended, remove key.
- Leaving transmission in gear with engine off will NOT prevent the tractor from moving.
- Never go near an operating PTO or an operating implement.
- Wait for all movement to stop before servicing machinery.

Common Accidents

Unsafe operation or misuse of the tractor can result in accidents. Be alert to hazards of tractor operation.

The most common accidents involving tractors are:

- Tractor rollover
- Collisions with motor vehicles
- Improper starting procedures
- Entanglement in PTO shafts
- Falling from tractor
- Crushing and pinching during hitching

DX,WW,TRACTOR-19-08MAY19

Avoid Backover Accidents

PC10857XW—UN—15APR13

Before moving machine, be sure that all persons are clear of machine path. Turn around and look directly for best visibility. Use a signal person when backing if view is obstructed or when in close quarters.

Do not rely on a camera to determine if personnel or obstacles are behind the machine. The system can be limited by many factors including maintenance practices, environmental conditions, and operating range.

DX,AVOID,BACKOVER,ACCIDENTS-19-30AUG10

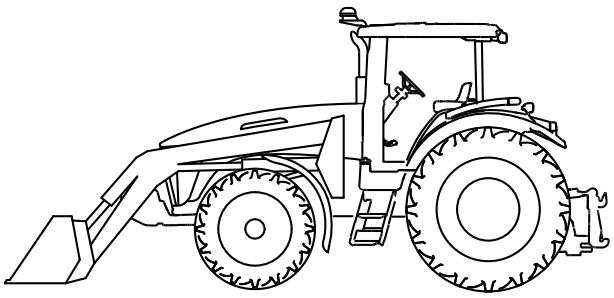
Limited Use in Forestry Operation

The intended use of John Deere tractors when used in forestry operations is limited to tractor-specific applications like transport, stationary work such as log splitting, propulsion, or operating implements with PTO, hydraulic, or electrical systems.

These are applications where normal operation does not present a risk of falling or penetrating objects. Any forestry applications beyond these applications, such as forwarding and loading, requires fitment of application-specific components including Falling Object Protective Structure (FOPS) and/or Operative Protective Structures (OPS). Contact John Deere dealer for special components.

DX,WW,FORESTRY-19-12OCT11

Operating the Loader Tractor Safely



TS1692—UN—09NOV09

When operating a machine with a loader application, reduce speed as required to ensure good tractor and loader stability.

To avoid tractor rollover and damage to front tires and tractor, do not carry load with your loader at a speed over 10 km/h (6 mph).

To avoid tractor damage do not use a front loader or a sprayer tank if the tractor is equipped with a 3 Meter Front Axle.

Never allow anyone to walk or work under a raised loader.

Do not use loader as a work platform.

Do not lift or carry anyone on loader, in bucket, or on implement or attachment.

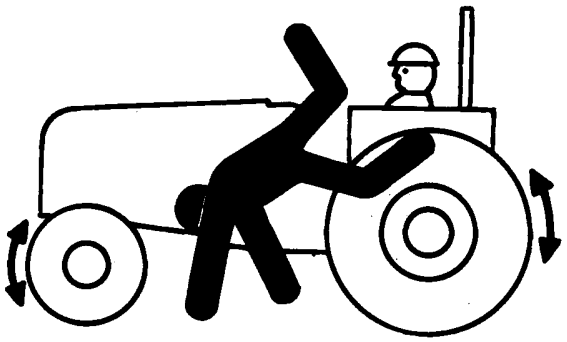
Lower loader to ground before leaving operators station.

The Rollover Protective Structure (ROPS) or cab roof, if equipped, may not provide sufficient protection from load falling onto the operators station. To prevent loads from falling onto the operators station, always use appropriate implements for specific applications (that is, manure forks, round bale forks, round bale grippers, and clampers).

Ballast tractor in accordance to Ballast Recommendations in PREPARE TRACTOR section.

DX,WW,LOADER-19-18SEP12

Keep Riders Off Machine



TS290—UN—23AUG88

Only allow the operator on the machine. Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

DX,RIDER-19-03MAR93

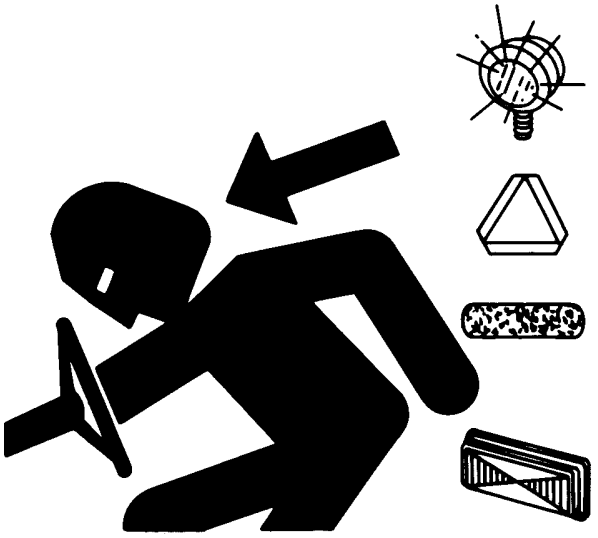
Instructional Seat

TS1730—UN—24MAY13

The instructional seat, if so equipped, has been provided only for training operators or diagnosing machine problems.

DX,SEAT,NA-19-22AUG13

Use Safety Lights and Devices



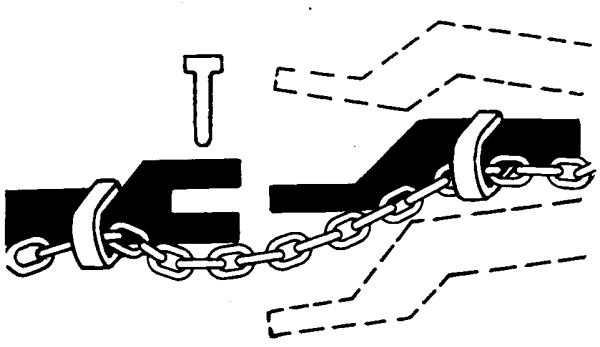
TS951—UN—12APR90

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.

DX,FLASH-19-07JUL99

Use a Safety Chain



TS217—UN—23AUG88

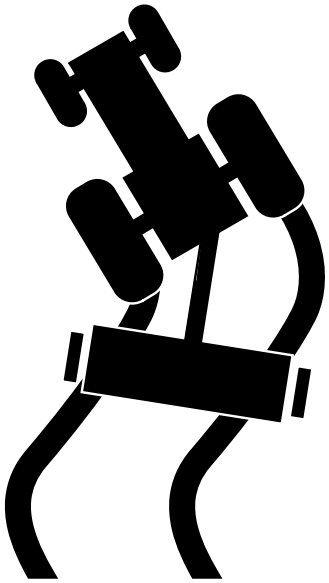
A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

See your John Deere dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine. Do not use safety chain for towing.

DX,CHAIN-19-03MAR93

Transport Towed Equipment at Safe Speeds



TS1686—UN—27SEP06

Do not exceed the maximum transport speed. This towing unit may be capable of operating at transport speeds that exceed the maximum allowable transport speed for towed implements.

Before transporting a towed implement, determine from signs on the implement or information provided in the implement's operator manual the maximum transport speed. Never transport at speeds that exceed the implement's maximum transport speed. Exceeding the implement's maximum transport speed can result in:

- Loss of control of the towing unit/implement combination
- Reduced or no ability to stop during braking
- Implement tire failure
- Damage to the implement structure or its components

Implements shall be equipped with brakes if the maximum fully loaded weight is greater than 1500 kg (3307 lbs) and greater than 1.5 times the weight of the towing unit.

Example: Implement mass is 1600 kg (3527 lbs) and towing unit mass is 1600 kg (3527 lbs), example implement is not required to have brakes.

Implements without brakes: Do not transport at speeds greater than 32 km/h (20 mph).

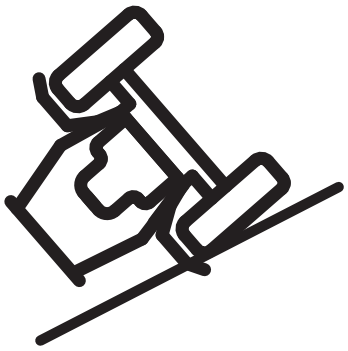
Implements with brakes:

- If the manufacturer does not specify a maximum transport speed, do not tow at speeds greater than 40 km/h (25 mph).
- When transporting at speeds up to 40 km/h (25 mph) the fully loaded implement must weigh less than 4.5 times the towing unit weight.
- When transporting at speeds between 40—50 km/h (25—31 mph) the fully loaded implement must weigh less than 3.0 times the towing unit weight.

When towing a trailer, become familiar with the braking characteristics and ensure the compatibility of the tractor/trailer combination in regard to the deceleration rate.

DX,TOW1-19-28FEB17

Use Caution on Slopes, Uneven Terrain, and Rough Ground



RXA0103437—UN—01JUL09

Avoid holes, ditches, and obstructions which cause the tractor to tip, especially on slopes. Avoid sharp uphill turns.

Driving forward out of a ditch, mired condition, or up a steep slope could cause the tractor to tip over rearward. Back out of these situations if possible.

Danger of overturn increases greatly with narrow tread setting, at high speed.

Not all conditions that can cause a tractor to overturn are listed. Be alert for any situation in which stability may be compromised.

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution.

Uneven terrain or rough ground can cause loss-of-control and tip-over accidents, which can result in severe injury or death. Operation on uneven terrain or rough ground requires extra caution.

Never drive near the edge of a gully, drop-off, ditch, steep embankment, or a body of water. The machine could suddenly roll over if a wheel goes over the edge or the ground caves in

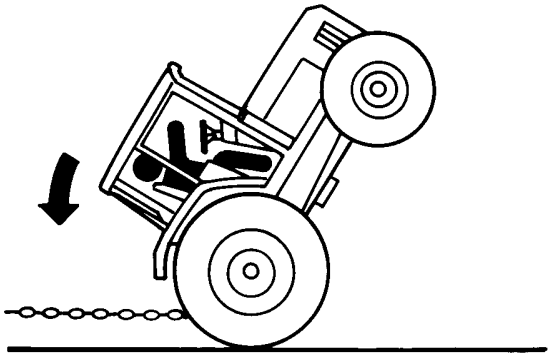
Choose a low ground speed so you will not have to stop or shift while on a slope.

Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the PTO and proceed slowly, straight down the slope.

Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to roll over.

DX,WW,SLOPE-19-28FEB17

Freeing a Mired Machine



TS1645—UN—15SEP95

TS263—UN—23AUG88

Attempting to free a mired machine can involve safety hazards such as the mired tractor tipping rearward, the towing tractor overturning, and the tow chain or tow bar (a cable is not recommended) failing and recoiling from its stretched condition.

Back your tractor out if it gets mired down in mud. Unhitch any towed implements. Dig mud from behind the rear wheels. Place boards behind the wheels to provide a solid base and try to back out slowly. If necessary, dig mud from the front of all wheels and drive slowly ahead.

If necessary to tow with another unit, use a tow bar or a long chain (a cable is not recommended). Inspect the chain for flaws. Make sure all parts of towing devices are of adequate size and strong enough to handle the load.

Always hitch to the drawbar of the towing unit. Do not

hitch to the front pushbar attachment point. Before moving, clear the area of people. Apply power smoothly to take up the slack: a sudden pull could snap any towing device causing it to whip or recoil dangerously.

DX,MIRED-19-07JUL99

Avoid Contact with Agricultural Chemicals

TS220—UN—15APR13

TS272—UN—23AUG88

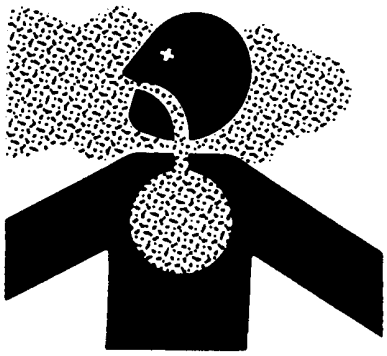
This enclosed cab does not protect against inhaling vapor, aerosol or dust. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.

Before leaving the cab, wear personal protective equipment as required by the pesticide use instructions. When re-entering the cab, remove protective equipment and store either outside the cab in a closed box or some other type of sealable container or inside the cab in a pesticide resistant container, such as a plastic bag.

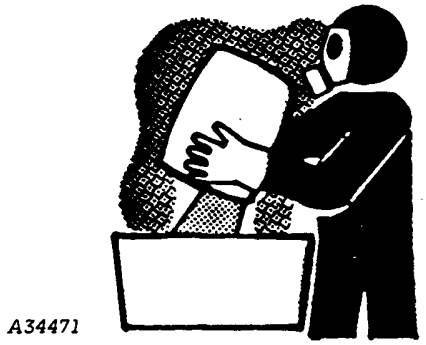
Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.

DX,CABS-19-25MAR09

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471—UN—11OCT88

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

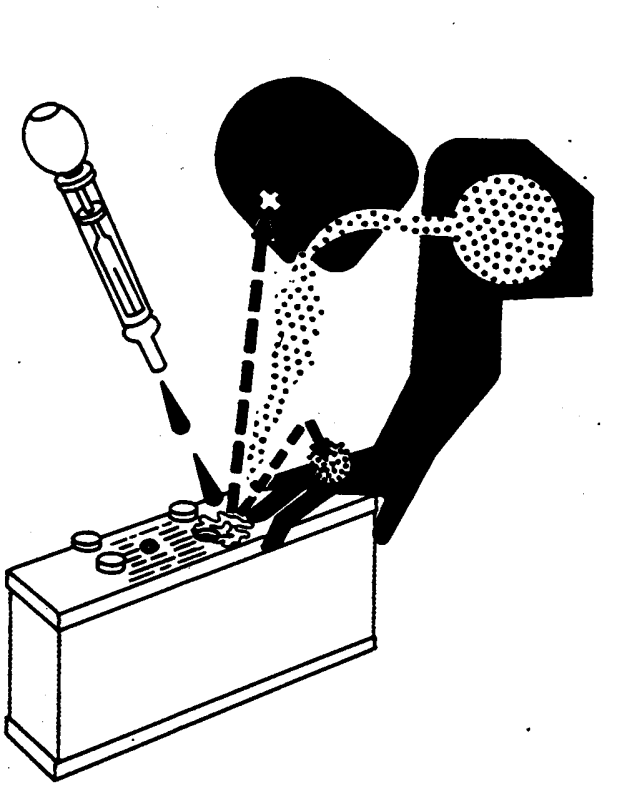
- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
  - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
  - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
  - Chemicals labeled **'Caution'**: Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.

- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.

DX,WW,CHEM01-19-24AUG10

Handling Batteries Safely

TS204—UN—15APR13



TS203—UN—23AUG88

Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

Always remove grounded (-) battery clamp first and replace grounded clamp last.

Sulfuric acid in battery electrolyte is poisonous and strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid hazards by:

- Filling batteries in a well-ventilated area
- Wearing eye protection and rubber gloves
- Avoiding use of air pressure to clean batteries
- Avoiding breathing fumes when electrolyte is added
- Avoiding spilling or dripping electrolyte
- Using correct battery booster or charger procedure.

If acid is spilled on skin or in eyes:

1. Flush skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush eyes with water for 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 qt.).
3. Get medical attention immediately.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

DX,WW,BATTERIES-19-02DEC10

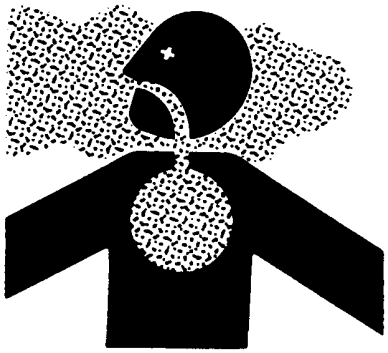
Avoid Heating Near Pressurized Fluid Lines

TS953—UN—15MAY90

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.

DX,TORCH-19-10DEC04

Remove Paint Before Welding or Heating



TS220—UN—15APR13

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place.

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02

Handle Electronic Components and Brackets Safely

TS249—UN—23AUG88

Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

If installing or servicing a RTK base station on a tower or other tall structure, use a certified climber.

If installing or servicing a global positioning receiver mast used on an implement, use proper lifting techniques and wear proper protective equipment. The mast is heavy and can be awkward to handle. Two people are required when mounting locations are not accessible from the ground or from a service platform.

DX,WW,RECEIVER-19-24AUG10

Practice Safe Maintenance

TS218—UN—23AUG88

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing away from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

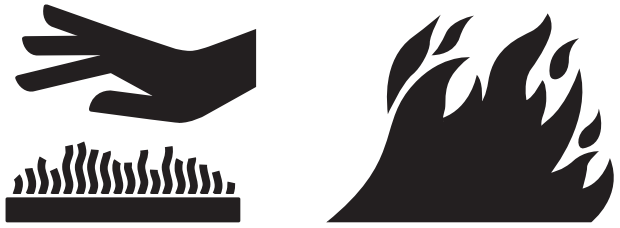
On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

Falling while cleaning or working at height can cause serious injury. Use a ladder or platform to easily reach each location. Use sturdy and secure footholds and handholds.

DX,SERV-19-28FEB17

Avoid Hot Exhaust



RG17488—UN—21AUG09

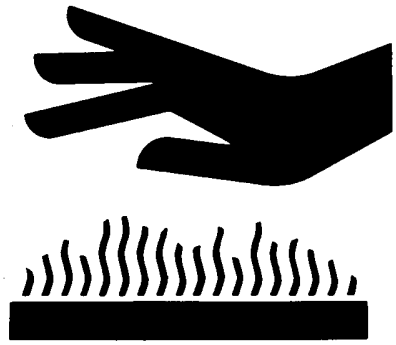
Servicing machine or attachments with engine running can result in serious personal injury. Avoid exposure and skin contact with hot exhaust gases and components.

Exhaust parts and streams become very hot during operation. Exhaust gases and components reach temperatures hot enough to burn people, ignite, or melt common materials.

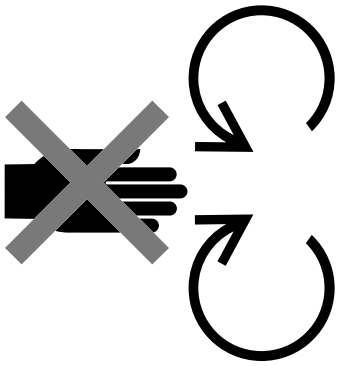
DX,EXHAUST-19-20AUG09

Clean Exhaust Filter Safely

TS227—UN—15APR13



TS271—UN—23AUG88



TS1693—UN—09DEC09

TS1695—UN—07DEC09

During exhaust filter cleaning operations, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components reach temperatures hot enough to burn people, or ignite or melt common materials.

Keep machine away from people, animals, or structures which may be susceptible to harm or damage from hot exhaust gases or components. Avoid potential fire or explosion hazards from flammable materials and vapors near the exhaust. Keep exhaust outlet away from people and anything that can melt, burn, or explode.

Closely monitor machine and surrounding area for smoldering debris during and after exhaust filter cleaning.

Adding fuel while an engine is running can create a fire or explosion hazard. Always stop engine before refueling machine and clean up any spilled fuel.

Always make sure that engine is stopped while hauling machine on a truck or trailer.

Contact with exhaust components while still hot can result in serious personal injury.

Avoid contact with these components until cooled to safe temperatures.

If service procedure requires engine to be running:

- Only engage power-driven parts required by service procedure
- Ensure that other people are clear of operator station and machine

Keep hands, feet, and clothing away from power-driven parts.

Always disable movement (neutral), set the parking brake or mechanism and disconnect power to attachments or tools before leaving the operator's station.

Shut off engine and remove key (if equipped) before leaving the machine unattended.

DX,EXHAUST,FILTER-19-12JAN11

Work In Ventilated Area

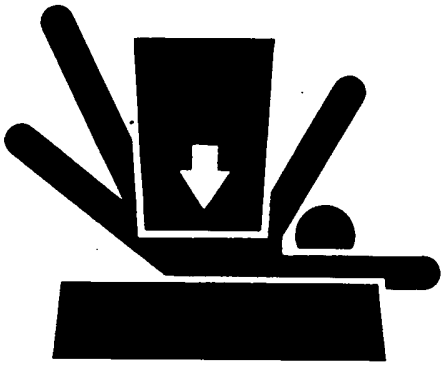
TS220—UN—15APR13

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

DX,AIR-19-17FEB99

Support Machine Properly



TS229—UN—23AUG88

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load.

Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.

DX,LOWER-19-24FEB00

Prevent Machine Runaway

TS177—UN—11JAN89

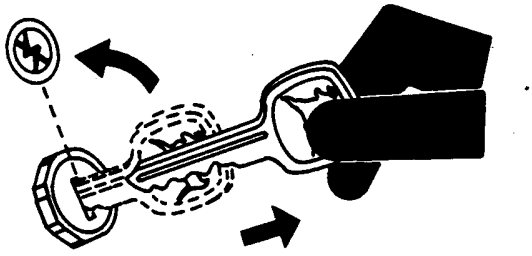
Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator’s seat, with transmission in neutral or park.

DX,BYPAS1-19-29SEP98

Park Machine Safely



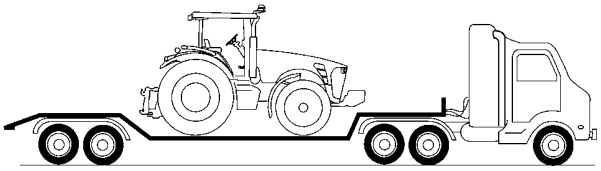
TS230—UN—24MAY89

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.

DX,PARK-19-04JUN90

Transport Tractor Safely



RXA0103709—UN—01JUL09

A disabled tractor is best transported on a flatbed carrier. Use chains to secure the tractor to the carrier. The axles and tractor frame are suitable attachment points.

Before transporting the tractor on a low-loader truck or flatbed rail wagon, make sure that the hood is secured over the tractor engine and that doors, roof hatch (if equipped) and windows are properly closed.

Never tow a tractor at a speed greater than 10 km/h (6 mph). An operator must steer and brake the tractor under tow.

DX,WW,TRANSPORT-19-19AUG09

Service Cooling System Safely

TS281—UN—15APR13

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

DX,WW,COOLING-19-19AUG09

Service Accumulator Systems Safely

TS281—UN—15APR13

Escaping fluid or gas from systems with pressurized accumulators that are used in air conditioning, hydraulic, and air brake systems can cause serious injury. Extreme heat can cause the accumulator to burst, and pressurized lines can be accidentally cut. Do not weld or use a torch near a pressurized accumulator or pressurized line.

Relieve pressure from the pressurized system before removing accumulator.

Relieve pressure from the hydraulic system before removing accumulator. Never attempt to relieve hydraulic system or accumulator pressure by loosening a fitting.

Accumulators cannot be repaired.

DX,WW,ACCLA2-19-22AUG03

Service Tires Safely

RXA0103438—UN—11JUN09

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

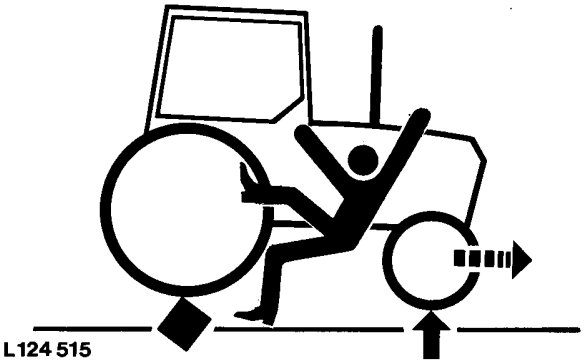
When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims, or missing lug bolts and nuts.

Wheels and tires are heavy. When handling wheels and tires use a safe lifting device or get an assistant to help lift, install, or remove.

DX,WW,RIMS-19-28FEB17

Service Front-Wheel Drive Tractor Safely

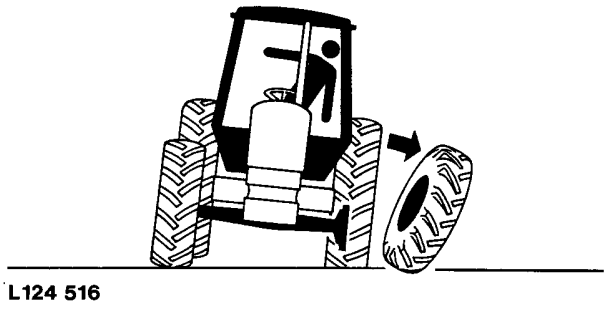


L124515—UN—06AUG94

When servicing front-wheel drive tractor with the rear wheels supported off the ground and rotating wheels by engine power, always support front wheels in a similar manner. Loss of electrical power or transmission hydraulic system pressure will engage the front driving wheels, pulling the rear wheels off the support if front wheels are not raised. Under these conditions, front drive wheels can engage even with switch in disengaged position.

DX,WW,MFWD-19-19AUG09

Tightening Wheel Retaining Bolts/Nuts

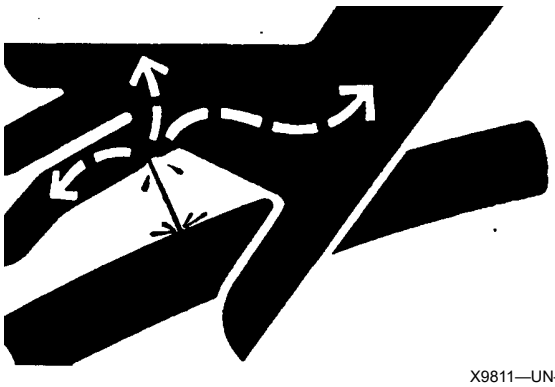


L124516—UN—03JAN95

Torque wheel retaining bolts/nuts at the intervals specified in section Break-In Period and Service.

DX,WW,WHEEL-19-12OCT11

Avoid High-Pressure Fluids



X9811—UN—23AUG88

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID-19-12OCT11

Do Not Open High-Pressure Fuel System

TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. Do not disconnect or attempt repair of fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system.

Only technicians familiar with this type of system can perform repairs. (See your John Deere dealer.)

DX,WW,HPCR1-19-07JAN03

Store Attachments Safely

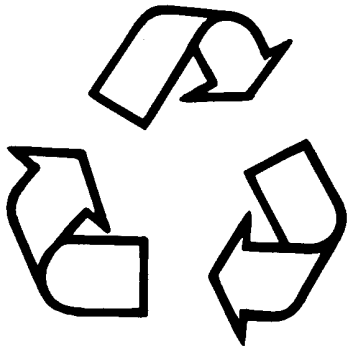
TS219—UN—23AUG88

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.

DX,STORE-19-03MAR93

Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

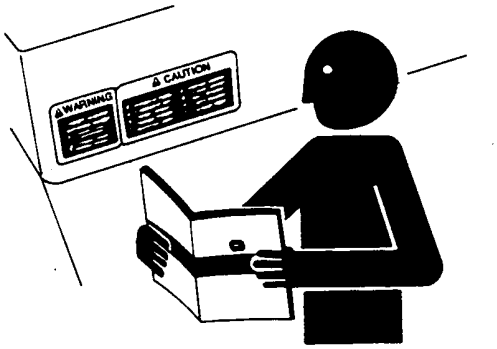
Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.

- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as fertilizers and pesticides. Handle and dispose of these components appropriately.
- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.
- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid); filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.
- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN-19-01JUN15

Replace Safety Signs



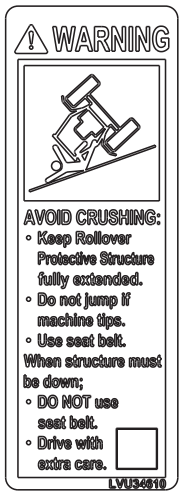
TS201—UN—15APR13

Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

DX,SIGNS-19-18AUG09

Use Seat Belt Properly - OOS



LV28432—UN—18MAY17

LV26552—UN—18JAN17

Right-Side ROPS — Open Operator Station

WARNING

AVOID CRUSHING:

• Keep Rollover Protective Structure fully extended.

• Do not jump if machine tips.

• Use seat belt.

When structure must be down:

•DO NOT use seat belt.

•Drive with extra care.

PP71895,00014BA-19-24AUG20

Use Seat Belt Properly - Cab

LV30410—UN—17JAN19

LV30412—UN—23JAN19

Cab Tractor

WARNING

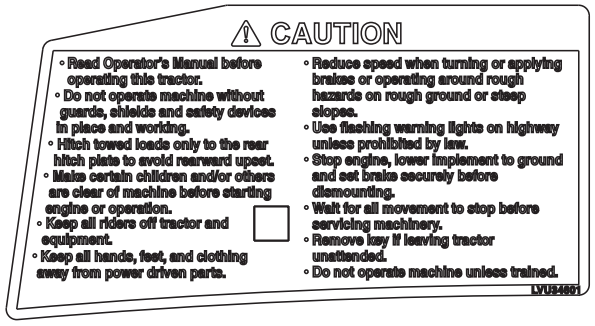
AVOID CRUSHING

Do not jump if machine tips

USE SEAT BELT

PP71895,00014BB-19-24AUG20

Operator's Manual



LV28502—UN—25MAY17

LV21913—UN—19MAY14

Foot Deck

LV30414—UN—24JAN19

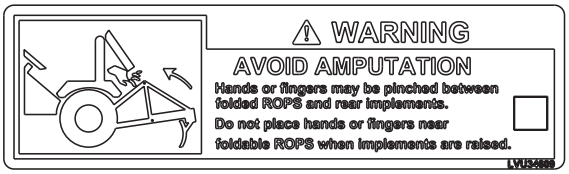
Cab Tractor

CAUTION

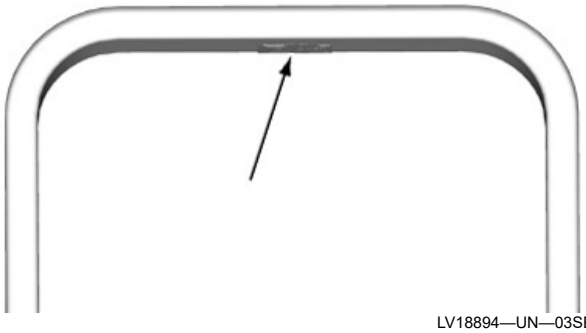
- **Read Operator's Manual before operating this tractor.**
- **Do not operate machine without guards, shields, and safety devices in place and working.**
- **Hitch towed loads only to the rear hitch plate to avoid rearward upset.**
- **Make certain children and/or others are clear of machine before starting engine or operation.**
- **Keep all riders off tractor and equipment.**
- **Keep all hands, feet, and clothing away from power driven parts.**
- **Reduce speed when turning or applying brakes or operating around rough hazards on rough ground or steep slopes.**
- **Use flashing warning lights on highway unless prohibited by law.**
- **Stop engine, lower implement to ground and set brake securely before dismounting.**
- **Wait for all movement to stop before servicing machinery.**
- **Remove key if leaving tractor unattended.**
- **Do not operate machine unless trained.**

PP71895,00014BC-19-24AUG20

Folding ROPS



LV28431—UN—18MAY17



LV18894—UN—03SEP13

Top of ROPS

WARNING

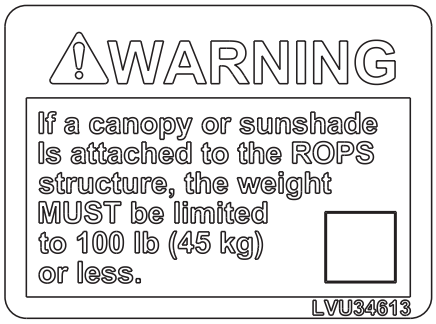
AVOID AMPUTATION

Hands or fingers may be pinched between folded ROPS and rear implements.

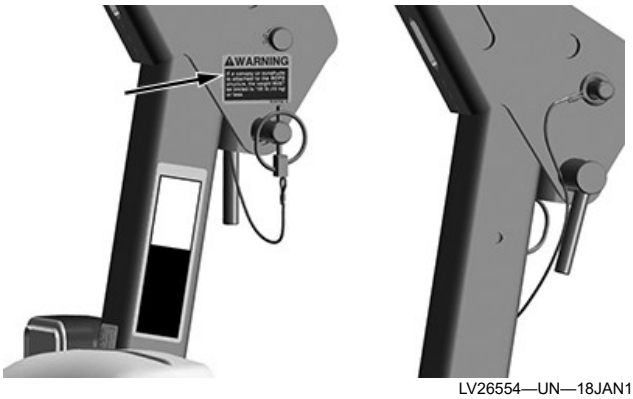
Do not place hands or fingers near foldable ROPS when implements are raised.

PP71895,00014BD-19-23JUN20

Canopy or Sunshade



LV28492—UN—01JUN17



LV26554—UN—18JAN17

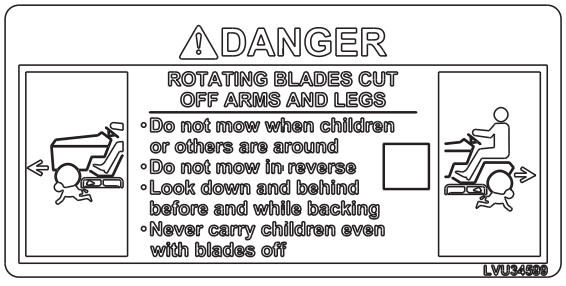
ROPS

WARNING

If a canopy or sunshade is attached to the ROPS structure, the weight MUST be limited to 100 lb (45 kg) or less.

PP71895,00014BE-19-23JUN20

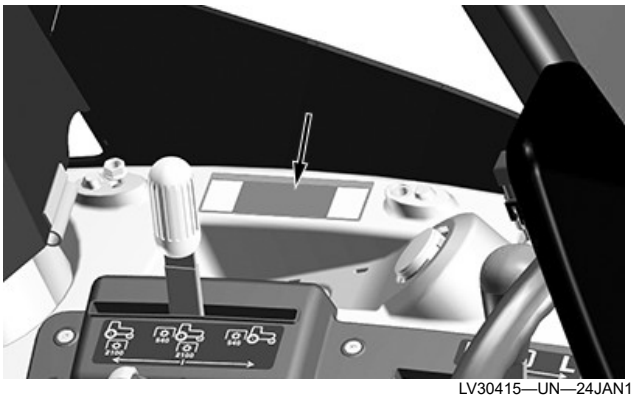
Rotating Blades



LV28428—UN—17MAY17

LV21912—UN—19MAY14

Foot Deck—Operator Station Tractor



LV30415—UN—24JAN19

Cab Tractor

DANGER

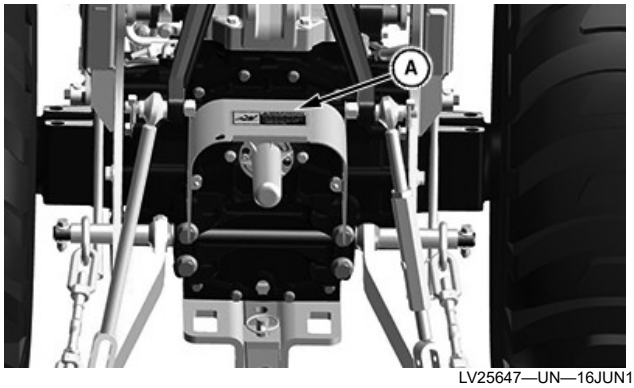
ROTATING BLADES CUT OFF ARMS AND LEGS

- **Do not mow when children or others are around**
- **Do not mow in reverse**
- **Look down and behind before and while backing**
- **Never carry children even with blades off**

PP71895,00014BF-19-24AUG20

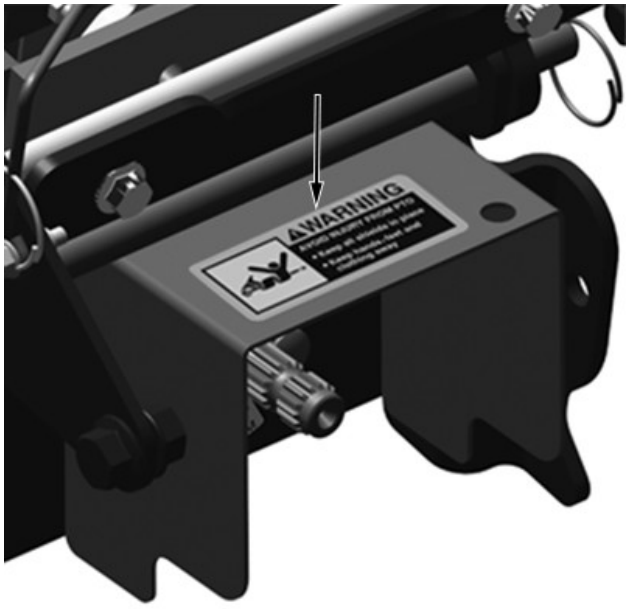
PTO Shield

LV28429—UN—18MAY17



LV25647—UN—16JUN16

PTO Shied



LV29034—UN—26JUL17

Front Hitch (If Equipped)

WARNING

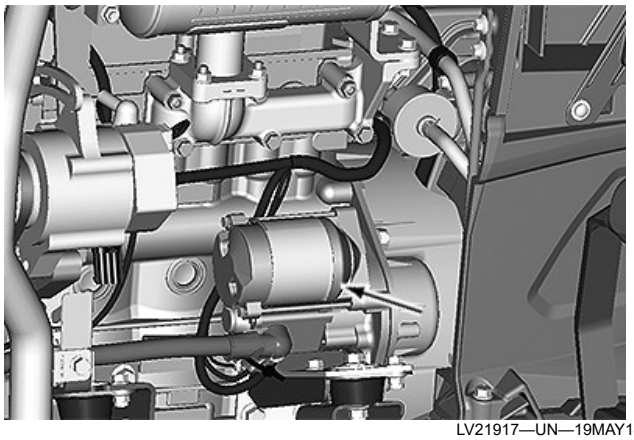
AVOID INJURY FROM PTO

- **Keep all shields in place**
- **Keep hands, feet and clothing away**

PP71895,00014C0-19-24AUG20

Starter

LV28430—UN—18MAY17



LV21917—UN—19MAY14

Starter

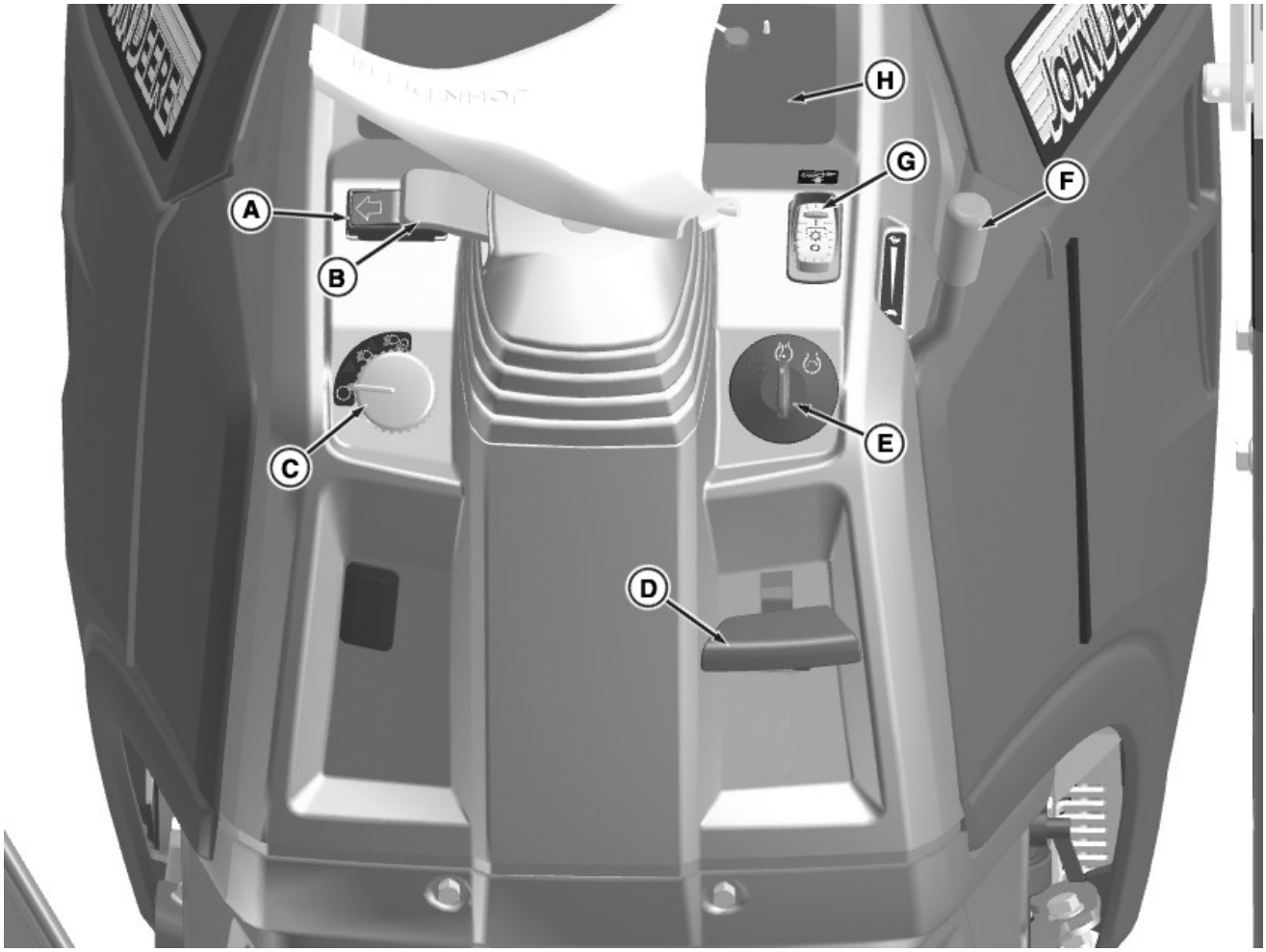
DANGER

Start only from seat in park or neutral.

Starting in gear kills.

PP71895,00014C1-19-23JUN20

Front Console Controls



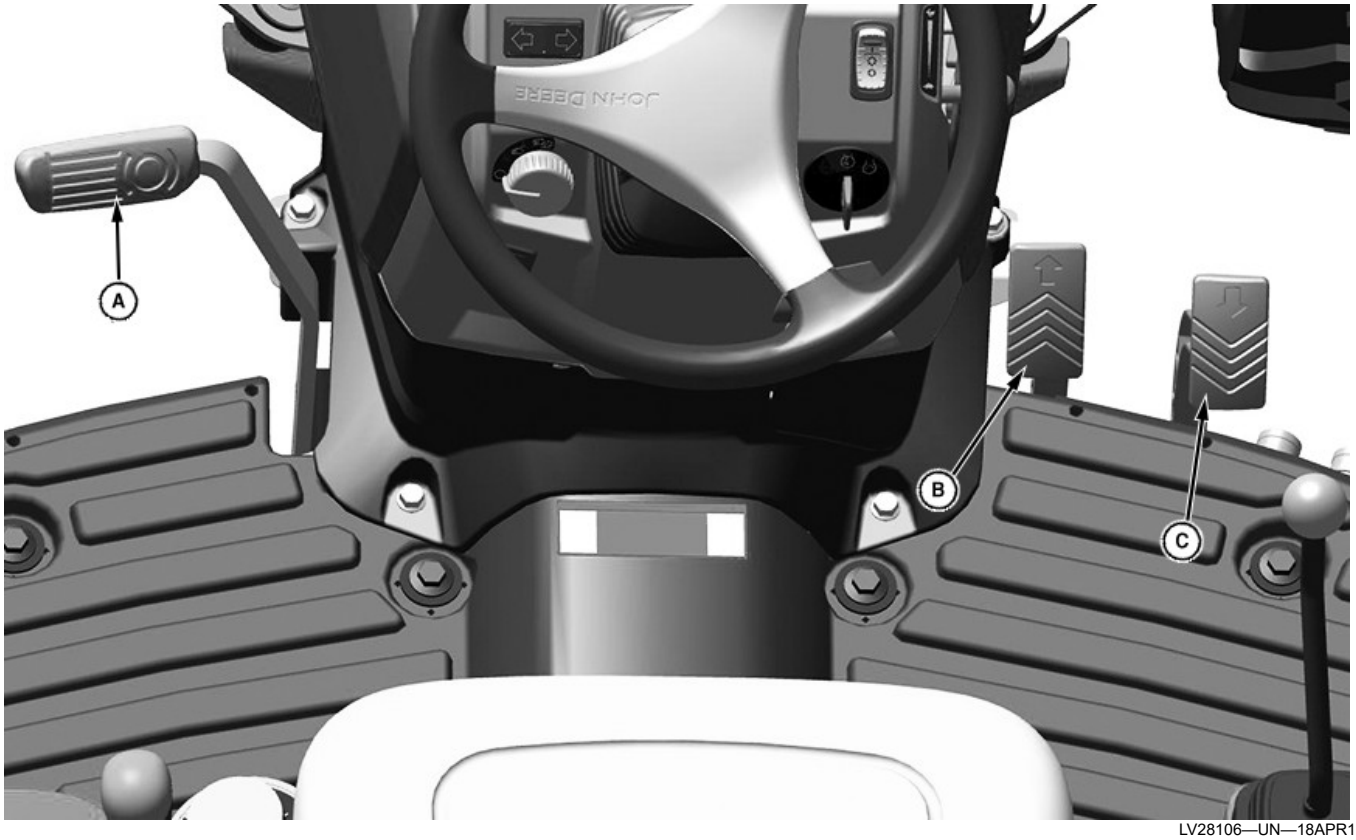
LVP15677—UN—12MAY22

Front Console

A—Turn Signal Switch
B—Tilt Wheel Lever
C—Light Control/Warning Flasher Light Switch
D—Cruise Control Lever
E—Key Switch
F—Hand Throttle
G—Power Take Off/Reverse Implement Option (PTO/RIO) Switch
H—Instrument Cluster

DN39857,00006D7-19-12MAY22

Foot-Operated Controls



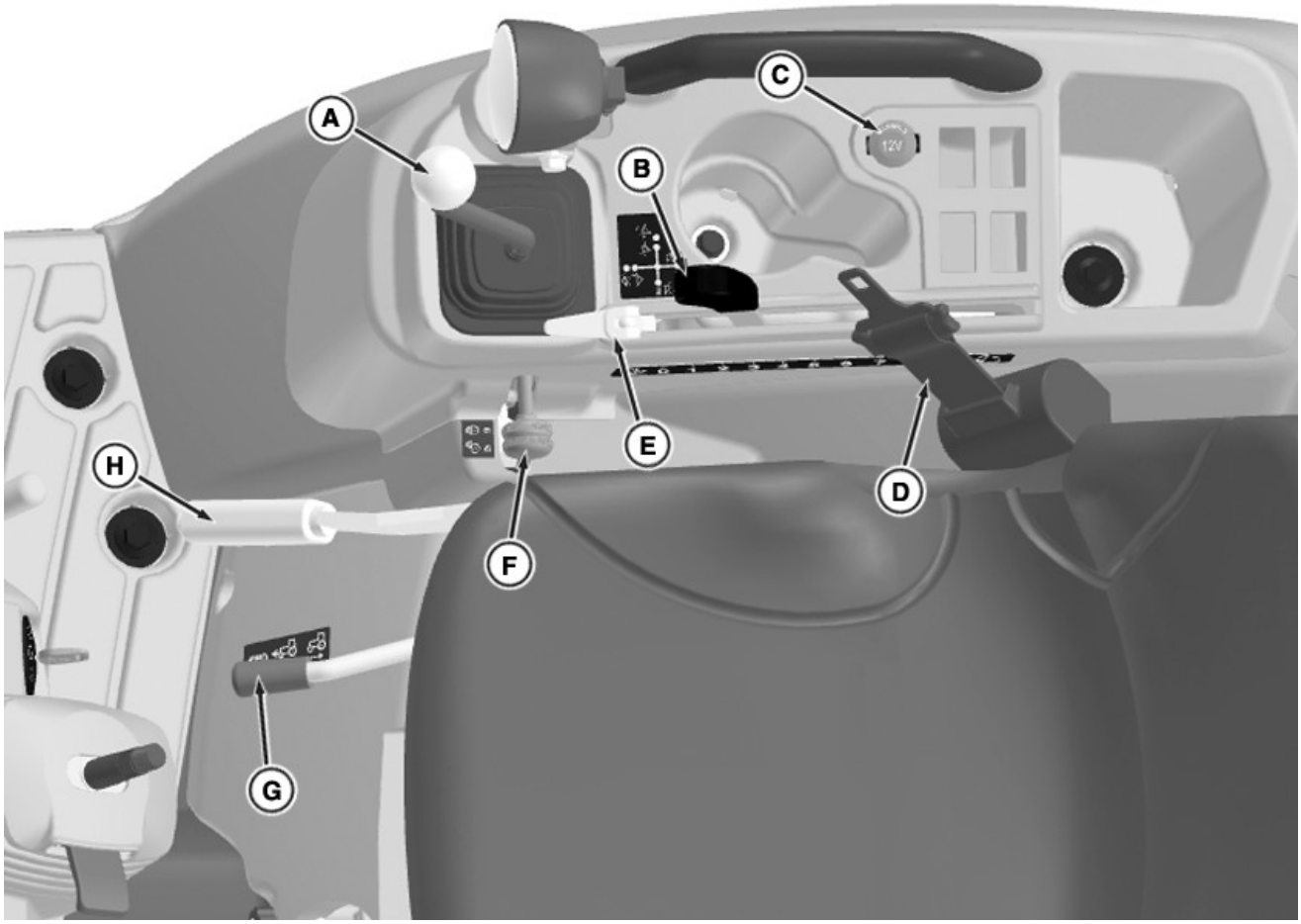
LV28106—UN—18APR17

Foot Controls

A—Brake Pedal
B—Forward Pedal
C—Reverse Pedal

UP00731,000027B-19-14FEB18

Right-Hand Console Controls



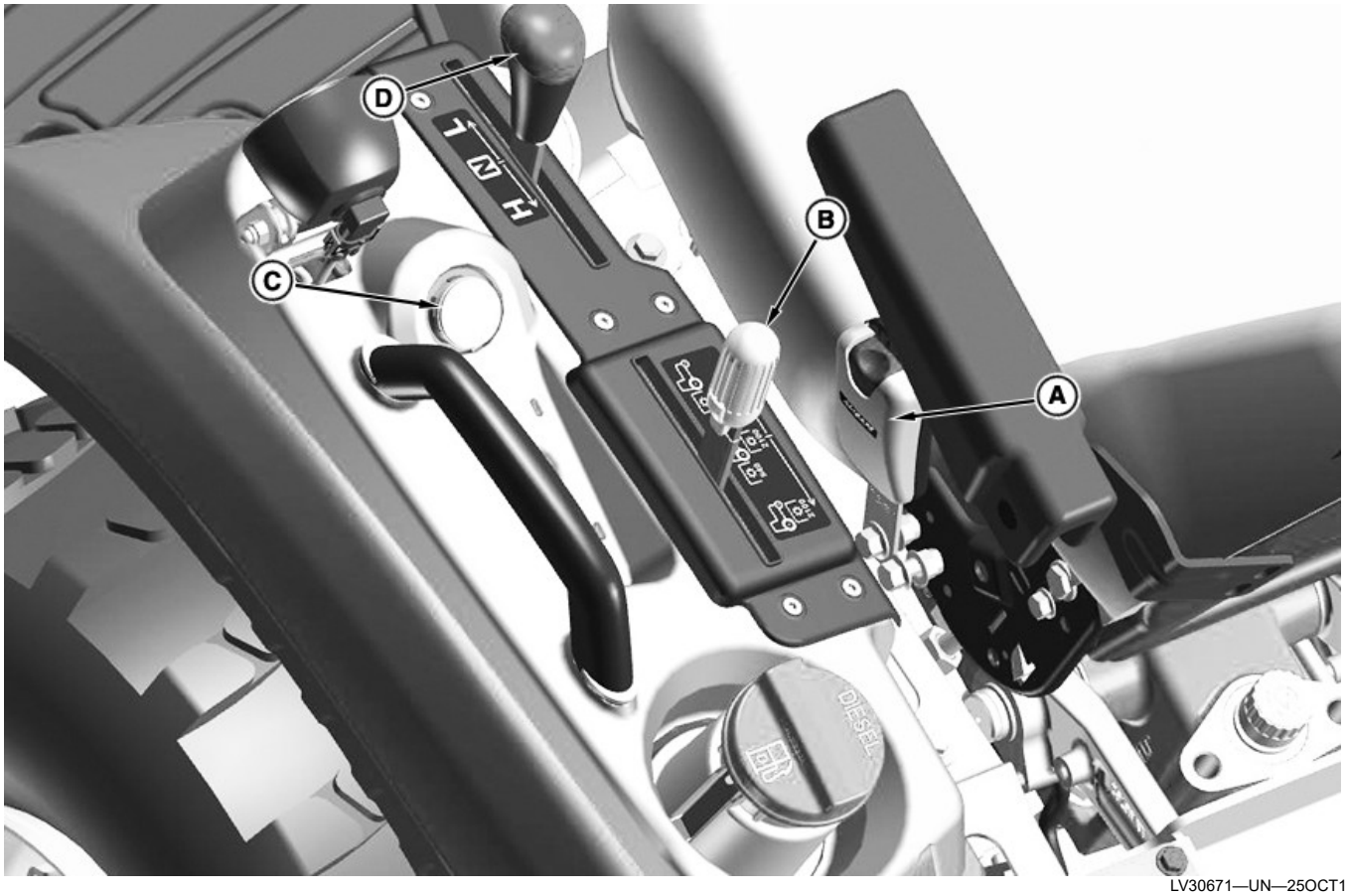
LVP12109—UN—29JUN21

Right-Hand Side Console

A—Selective Control Valve (SCV) Lever
B—Rockshaft Control Lever
C—12 V Outlet (if equipped)
D—Seat Belt
E—Rockshaft Depth Stop
F—SCV Lever Lock
G—MFWD Control Lever
H—Park Brake Lever

AL61114,0000735-19-28JUN21

Left-Hand Console Controls



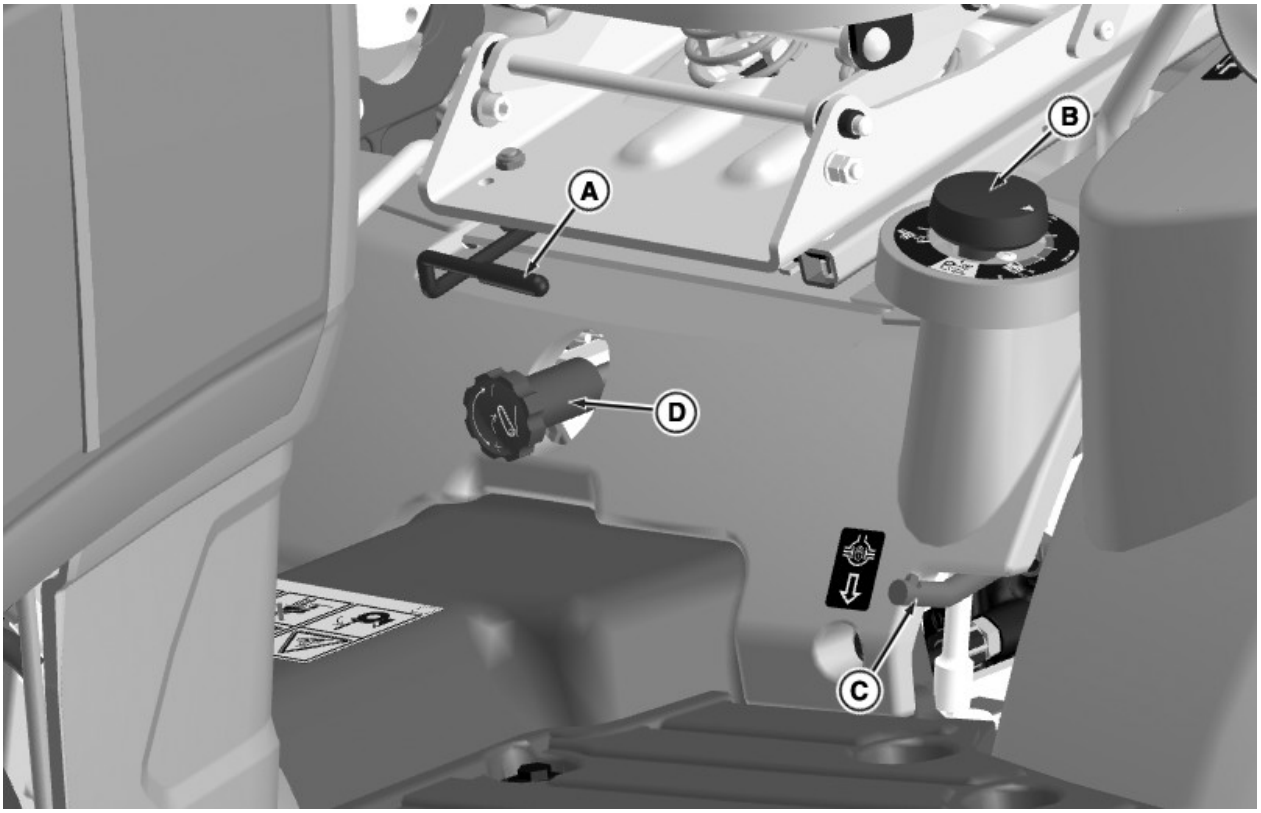
LV30671—UN—25OCT19

Left-Hand Side Console

A—Seat Belt
B—PTO Shift Lever
C—Fuel Gauge
D—Range-Shift Lever

UP00731,0000023-19-25OCT19

Differential, MFWD, Rate-of-Drop, and Seat Controls



LVP12110—UN—29JUN21

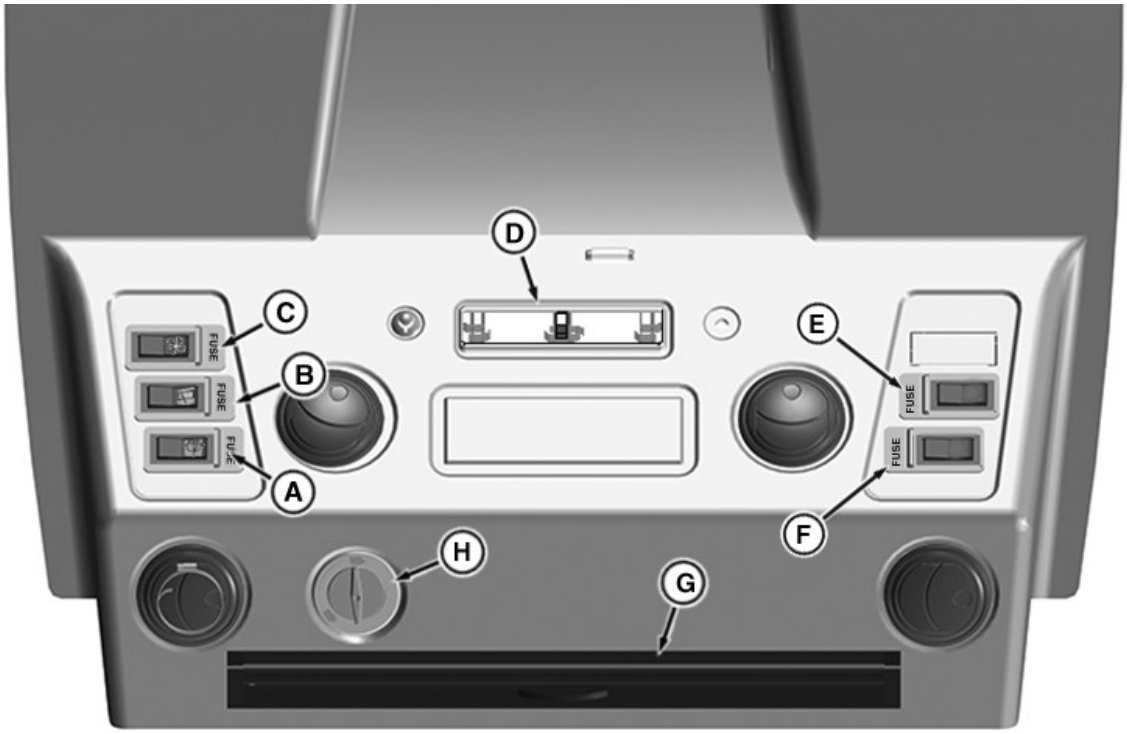
Rate-of-Drop, Differential Lock Pedal, MFWD Control Lever, Seat Adjustment Lever, and Mower Height Control

A—Seat Adjustment Lever
B—Mower Height Control
C—Differential Lock Pedal
D—Rate-of-Drop Valve

AL61114,0000736-19-28JUN21

Cab Controls (If Equipped)

NOTE: This is a Category 1 type cab.



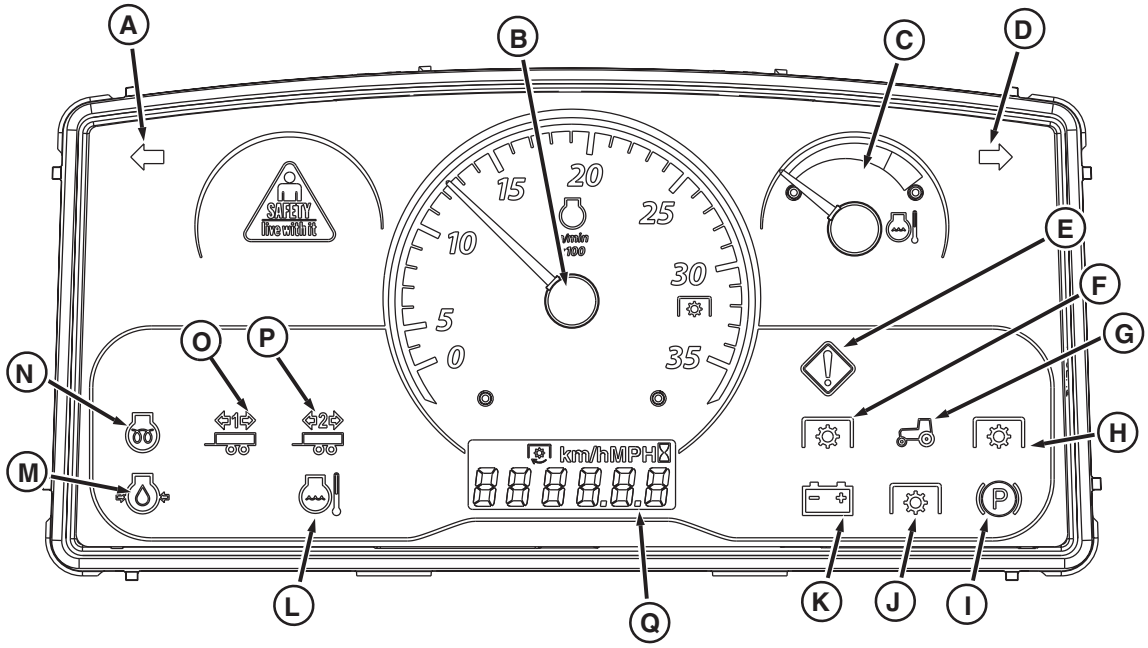
LV30408—UN—12MAR19

Cab Controls--If Equipped

A—Windshield Wiper Switch
B—Rear Wiper (If equipped)
C—Fan Switch
D—Interior Light
E—Beacon Light Switch (If equipped)
F—Rear Work Light (If equipped)
G—Sunshade
H—Temperature Control for Heater

UP00731,00008D5-19-12MAR19

Instrument Control Panel



LVP15603—UN—01APR22

Instrument Control Panel

A - Left Turn Signal/Warning Flasher Indicator Icon - This indicator light will turn on and flash when the turn signal switch is moved to the left turn position, when the hazard lights are on, or when the headlights/taillights are in the ON position.

B - Tachometer - Shows engine speed. Engine speed is shown in hundreds.

C - Engine Coolant Temperature Gauge - This gauge indicates the temperature of the cooling system.

D - Right Turn Signal/Warning Flasher Indicator Icon - This indicator light will turn on and flash when the turn signal switch is moved to the right turn position, when the hazard lights are on, or when the headlights/ taillights are in the ON position.

E - Service Alert Indicator Icon - This light flashes, indicating that performance or operational problem is detected that needs to be resolved as soon as possible.

F - PTO Indicator Icon - Not used.

G - Tractor PTO Indicator Icon - Not used.

H - Rear PTO Indicator Icon - Not used.

I - Park Brake Light- Illuminates when the ignition key is in the ON position and the park brake is engaged.

J - Rear and Mid PTO Indicator Icon - Illuminates when the Rear or Mid PTO is engaged.

K - Alternator/Battery Charging Icon - Illuminates when the ignition key is in the ON position and the engine is not running. It also indicates an electrical load has exceeded alternator capacity and continued operation could deplete battery reserve.

L- Engine Coolant Temperature Icon - Illuminates when the engine coolant temperature is above the high temperature limit.

M - Engine Oil Pressure Icon - Illuminates when there is insufficient engine oil pressure to continue operation.

N - Engine Glow Plug Indicator Icon - Illuminates when the ignition key is in the ON position and the engine glow plug is initially heated.

O - Trailer 1 Indicator Icon - Not used.

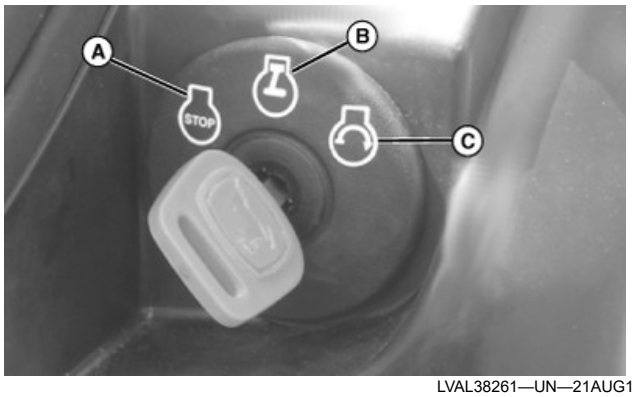
P - Trailer 2 Indicator Icon - Not used.

Q - Information Display - Displays general tractor information.

DN39857,00006AD-19-25MAR22

Engine Operation

Operate Key Switch



LVAL38261—UN—21AUG12

A—Off Position
B—Run Position
C—Start Position

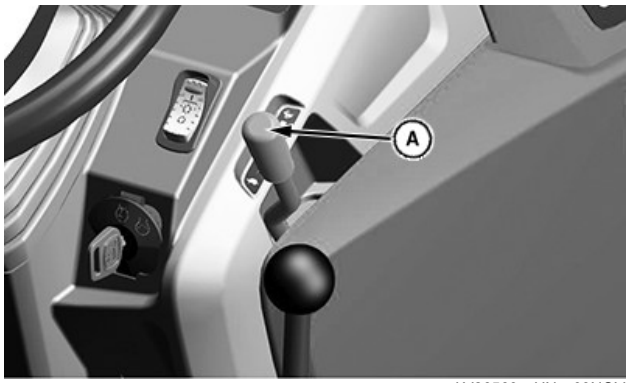
Position (A)—Switched power is off and engine is off.

Position (B)—The oil pressure light and battery charge light illuminates on initial activation. If there is a need for engine pre-heating, the glow plugs are activated .

Position (C)—Start position. Release the key after the engine has started to return to the run position (B). Engine oil pressure and battery charge lights turn off.

KN52281,1003EAA-19-14FEB18

Operate Hand Throttle



LV26560—UN—03NOV16

A—Hand Throttle

To set the engine speed, use the hand throttle in conjunction with the tachometer .

- **Increase Engine Speed** - Push the hand throttle (A) towards the front of the machine.
- **Decrease Engine Speed** - Pull the hand throttle (A) towards rear of the machine.

UP00731,0000076-19-14FEB18

Operate Auto-Throttle (If Equipped)

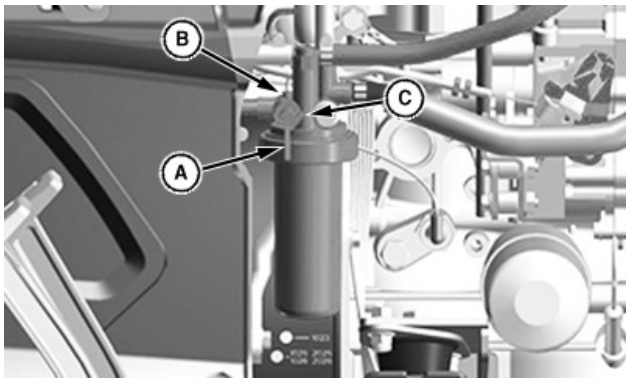
NOTE: The use of auto-throttle is not recommended during PTO applications. When auto-throttle is engaged, constant PTO RPM cannot be maintained, which will result in reduced performance of implement.

Using auto-throttle enables the operator to increase or decrease the speed of the engine and tractor by using the forward and reverse travel pedals. With the auto-throttle kit installed, the auto-throttle is always enabled.

UP00731,0000105-19-16FEB17

Operate Fuel Shutoff Valve

NOTE: Close fuel shutoff valve when performing any type of engine service, during transport of the machine, and during storage.



LV27644—UN—16FEB17

A—Fuel shutoff Valve
B—Vertical Position Marked “O”
C—Horizontal Postion Marked “C”

Open or close fuel shutoff valve (A) as required:

- **Open Valve:** Rotate valve lever pointer to the vertical position (B) marked “O”.
- **Close Valve:** Rotate valve lever pointer to the horizontal position (C) marked “C”.

KN52281,1003EB6-19-14FEB18

Start the Engine

CAUTION: Avoid Injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

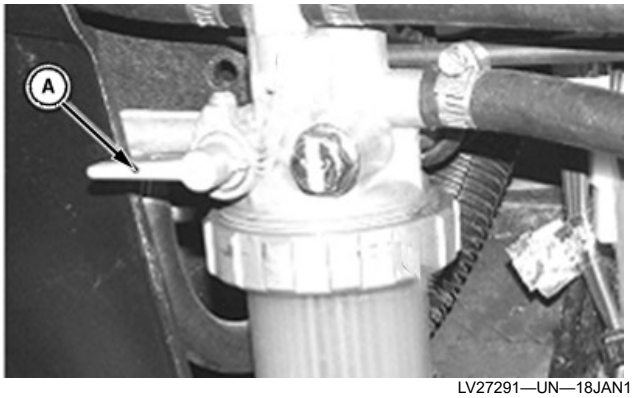
- **Move the machine to an outside area before running the engine.**
- **If running engine in an enclosed area, make sure that there is adequate ventilation.**
- **To direct exhaust fumes out of the area,**

connect a pipe extension to the engine exhaust pipe.

- **To clear out the exhaust fumes, allow fresh outside air into the work area.**

NOTE: When operating machine in temperatures below - 18°C (0°F), it is recommended to install the optional engine block heater, hydraulic oil heater, and battery heating pad.

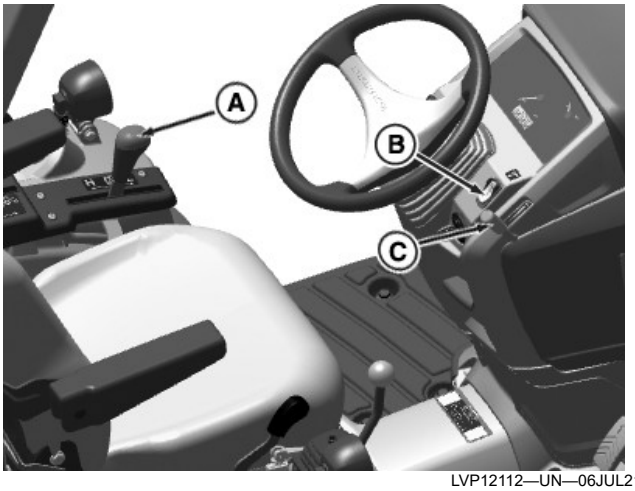
When temperature is below 0°C (32°F), follow the additional cold weather starting aids.



LV27291—UN—18JAN17

Fuel Shutoff Valve

1. Open the fuel shutoff valve.
2. Apply the park brake.



LVP12112—UN—06JUL21

A—Transmission Range Lever
B—PTO/RIO Switch Knob
C—Hand Throttle Lever

3. Move the transmission range lever (A) to the N (neutral) position.
4. Remove foot from forward and reverse travel pedals.

CAUTION: Avoid Injury! Check to be sure that area is clear of any bystanders before lowering implements to the ground.

5. Lower any rear-mounted implements to the ground by pushing the rockshaft control lever forward.
6. Lower any front-mounted implement to the ground using the SCV lever (if equipped).
7. Set hand throttle (C) to the 1/2-3/4 fast position.
8. Turn ignition key switch to the ON position.
9. Check indicator lights:
   - All indicator lights illuminate.
   - All gauges do a full sweep and return to normal.

IMPORTANT: Avoid Damage! Operating the starter for more than 20 seconds at a time results in damage to the starter.

If the engine does not start, wait two minutes before trying again.

10. Turn key switch to START position. Release key when engine starts.
11. Check indicator lights:
    - Engine oil pressure light should go out after 5 seconds of the engine running. If it does not go out, the engine oil pressure may be too low. Stop the engine and check for cause.
    - Alternator/battery charging light should go out after 10 seconds of the engine running. If it does not go out, set the engine speed at full throttle.
12. Set hand throttle to the 1/2 fast position for 1 minute without load before operating.

LK28014,0000063-19-02JUL21

Cold Weather Starting Aids

IMPORTANT: Avoid Damage! Glow plugs and air heater are operational during cranking. Do not use ether or starter fluid when starting engine. Engine damage occurs if ether or starter fluid is used.

Recommendations:

- Turn key to ON position for 5-10 seconds to activate glow plugs.
- Install optional engine coolant heater if you operate machine in temperatures below -18°C (0°F).

KN52281,1003EB8-19-04FEB19

Warm and Idle the Engine

IMPORTANT: Avoid Damage! In cold weather, run engine several minutes to allow engine oil and transmission oil to warm.

NOTE: It is normal for the engine to be louder and for blue-white exhaust smoke to be present during the engine warm-up. The amount of exhaust smoke depends on air temperature.

Warming the Engine:

- Lock the park brake.
- Set throttle lever to the 1/2 throttle position for 5 minutes without load.

Idling the Engine:

- Adjust throttle lever rearward to set engine speed at 1575 ± 25 rpm (low idle speed).

KN52281,1003EB9-19-15MAY19

To Start a Stalled Engine

IMPORTANT: Avoid engine damage! Start the engine immediately after stalling to prevent abnormal heat buildup.

1. If engaged, disengage the PTO.
2. Disengage the forward and reverse travel pedals.
3. Move the transmission range lever to the neutral (N) position.
4. Start the engine. Set the engine at low idle for 2 minutes before stopping the engine, or continuing with normal operation.

JC48530,0000488-19-30JUL20

Stop Engine

Normal Stop

1. Position the machine on a firm, level surface.
2. Stop motion by smoothly removing pressure from forward or reverse travel pedals.
3. Disengage the PTO.

CAUTION: Avoid Injury! Check that the area is clear of bystanders before lowering implements to the ground.

4. Lower implements to the ground.

CAUTION: Avoid Damage! Do not stop the engine immediately after a hard or extended operation. Prevent heat buildup by running the engine at low idle for 2 minutes.

5. Set hand throttle to the low idle position. Allow the engine to idle for 2 minutes.

CAUTION: Engage the park brake and move the transmission range lever to a position other than N (neutral) before leaving the machine unattended.

6. Apply the park brake.
7. Turn key switch to OFF position.
8. Remove key.
9. Wait for the engine and all moving parts to stop before leaving the operator station.

Emergency Stopping

1. Remove foot from forward or reverse pedal.
2. Depress brake pedal.
3. Turn key switch to OFF position. Do not release the brake pedal until all moving parts have stopped.
4. Apply the park brake.

YCWRHFR,000000D-19-18MAR22

Fill the Fuel Tank

CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

- **Shut off engine before filling fuel tank.**
- **Allow engine to cool before refueling.**
- **Do not smoke while handling fuel.**
- **Keep fuel away from flames or sparks.**
- **Fill fuel tank outdoors or in ventilated area.**
- **Clean up spilled fuel immediately.**
- **Use clean approved non-metal container to prevent static electric discharge.**

IMPORTANT: Avoid damage! Dirt and water in fuel causes engine damage:

- **Clean dirt and debris from the fuel tank opening.**
- **Use clean, fresh, stabilized fuel.**
- **To keep condensation out of the fuel tank, fill the fuel tank at the end of each day of operation.**
- **Use a non-metallic funnel with a plastic mesh strainer when filling the fuel tank or container.**

To prevent condensation and freezing during cold weather, fill fuel tank at the end of each day of operation.

1. Park machine safely.
2. Allow engine to cool.
3. Remove any trash from area around the fuel tank cap.

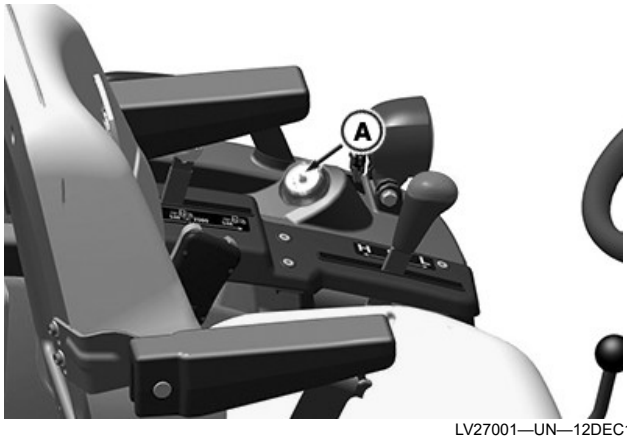
LV26732—UN—03NOV16

A—Fuel Tank Cap

4. Remove fuel tank cap (A) slowly to allow any pressure built up in the tank to escape.
5. Fill fuel tank only to bottom of filler neck. Do not overfill.
6. Install fuel tank cap.

UP00731,00000C5-19-28NOV16

Use Fuel Gauge



LV27001—UN—12DEC16

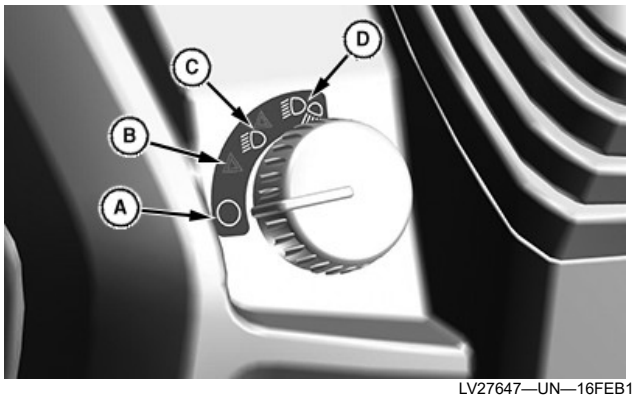
A—Fuel Gauge

The fuel gauge (A) shows approximately how much fuel is in the fuel tank.

UP00731,0000104-19-01DEC16

Use Light Switch

NOTE: Normal use of turn signals is possible when light switch is in either hazard warning position. Turn signals override hazard warning light when activated. When turn signals are de-activated, the hazard warning light resumes operation.



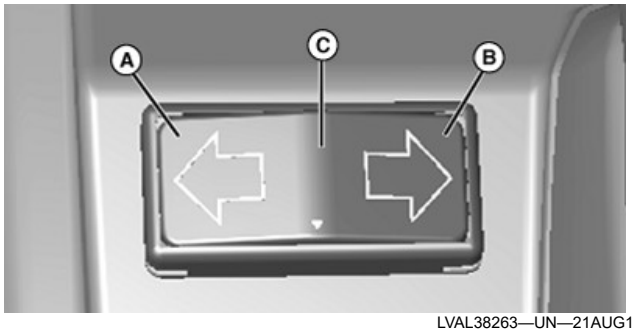
LV27647—UN—16FEB17

A—All Lights Off
B—Hazard Warning Lights On
C—Headlights, Tail Lights, and Hazard Warning Lights On
D—Headlights, Worklights, and Tail Lights On

UP00731,00001DE-19-28AUG18

Use Turn Signal Switch

NOTE: The turn signal switch operates when the ignition key switch is in the ON position.



LVAL38263—UN—21AUG12

A—Left Turn Signal
B—Right Turn Signal
C—Off

1. To operate the left turn signal (A), depress left side of switch.
2. To operate the right turn signal (B), depress right side of switch.
3. To turn signals OFF (C), move switch to the center position.

KN52281,1003EAC-19-28AUG18

Use Power Port Outlet

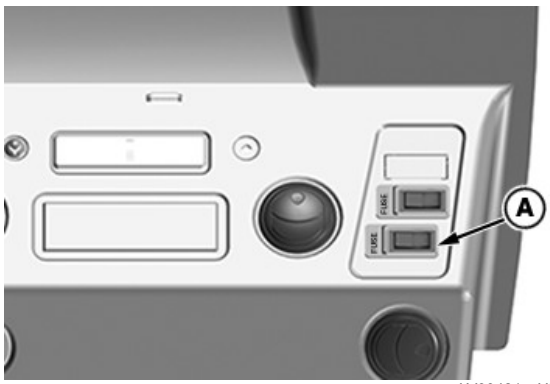
LV27771—UN—20FEB17

A—Outlet

The 12-volt power port electrical outlet (A) is used when connecting auxiliary equipment.

UP00731,00001DF-19-17FEB17

Work Light (If Equipped)



LV30421—UN—05FEB19

Work Light - Cab Tractor

A—Work Light Switch

To turn the work light on and off, use the work light switch (A).

UP00731,00008E4-19-05FEB19

Beacon Light (If Equipped)

LV30422—UN—05FEB19

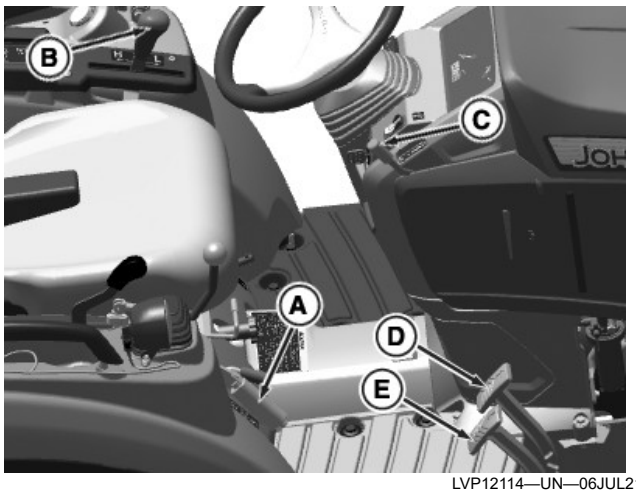
Beacon Light - Cab Tractor

A—Beacon Light Switch

To turn the beacon light on and off, use the beacon light switch (A).

UP00731,00008E5-19-05FEB19

Drive Machine



LVP12114—UN—06JUL21

A—Park Brake Lever
B—Range-Shift Lever
C—Throttle Lever
D—Forward Pedal
E—Reverse Pedal

CAUTION: Avoid injury! Always check area around the machine for bystanders and obstacles before operating the machine.

IMPORTANT: Avoid damage! To prevent transmission damage, stop machine motion completely before shifting the range-shift lever.

1. Start machine engine.
2. Unlock park brake (A).
3. Choose low “L” or high “H” speed range on the range-shift lever (B).
4. Move throttle lever (C) to desired operating speed.
5. Slowly depress forward travel pedal (D) downward to move forward. Slowly depress reverse travel pedal (E) downward to move in reverse.
6. Release travel pedal to stop machine and change speed range.
7. Fully stop machine motion before turning ignition key switch to OFF position.

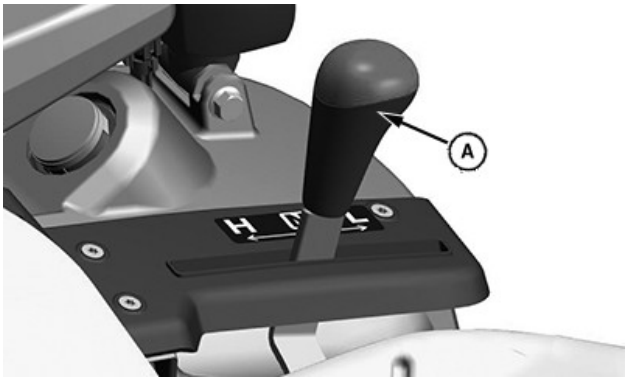
LK28014,0000064-19-02JUL21

Operate the Hydrostatic Transmission

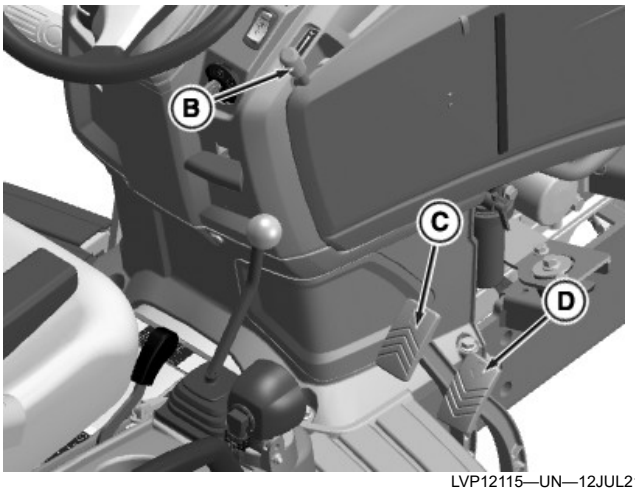
IMPORTANT: Avoid damage! Select the proper speed range for the job:

- **Never overload engine by lugging machine at low idle speeds.**
- **Raise engine speed to match expected loads. If a slight increase in engine rpm occurs simultaneously with moving throttle lever (B) forward, engine is not overloaded.**

1. The transmission range-shift lever (A) provides two-speed ranges and is used in conjunction with the forward pedal (C), and reverse pedal (D).



LV26561—UN—03NOV16



LVP12115—UN—12JUL21

A—Transmission Range Lever
B—Throttle Lever
C—Forward Pedal
D—Reverse Pedal

2. Choose a speed range to match work application.
   - L – Low speed operations such as tilling hard soil, mowing long grass, or heavy hauling. Machine speed is decreased, but machine power is increased.
   - N – Neutral position. Lever must be in the N (neutral) position when starting the engine.
   - H – High-speed operations such as light tilling and hauling, mowing short grass and transport. Machine speed is increased, but machine power is decreased.

When changing speed range, stop the machine.

AL61114,000073F-19-12JUL21

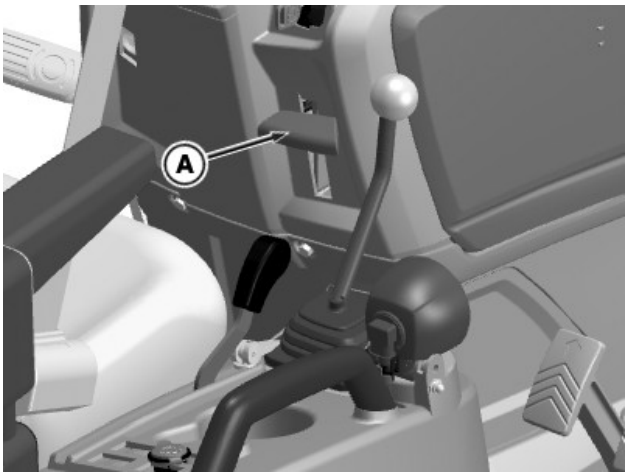
Use Cruise Control

CAUTION: Avoid Injury! Use cruise control only in large, open areas. Shut off cruise control before turning or when working in areas with obstacles.

NOTE: The cruise control is only operational when the machine is traveling forward.

Engage Cruise Control

1. Depress forward pedal until desired travel speed is reached.



LVP12116—UN—12JUL21

A—Cruise Lever

2. Lift cruise lever (A) to engage.
3. Release forward pedal.

Disengage Cruise Control

The cruise control can be disengaged in one of two ways:

- Depress brake pedal and push lever down.
- Increase travel speed slightly and push lever down.

Adjust Cruise Control Travel Speed

To adjust travel speed:

- Increase travel speed by pressing forward pedal until desired speed is reached.
- Decrease travel speed by disengaging cruise control, adjusting forward speed as desired and engage lever.

AL61114,0000740-19-12JUL21

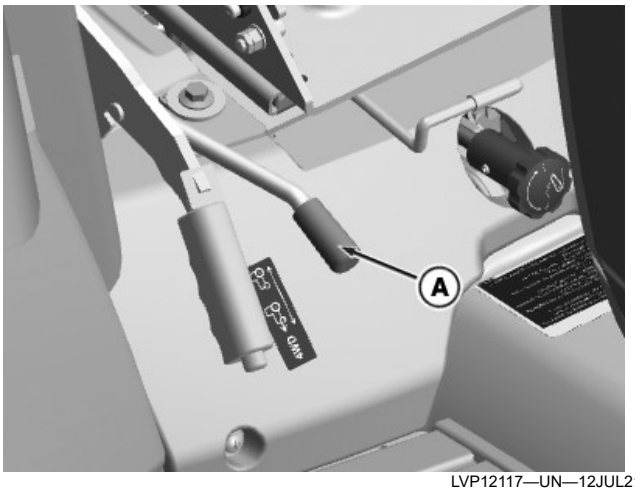
Use Mechanical Front Wheel Drive (MFWD)

The mechanical front wheel drive (MFWD) enables the power train to drive both front and rear axles. The MFWD improves traction on difficult ground conditions and provides four wheel braking. The MFWD can be engaged and disengaged on-the-go with light loads and on low traction surfaces.

CAUTION: Avoid Injury! Use extra caution when driving on slopes. To increase traction and provide four wheel braking, engage the mechanical front wheel drive (MFWD) when driving on slopes. The MFWD improves access to dangerously sloped terrain, which increases the possibility of a machine roll-over.

To improve braking on sloped, icy, wet, or graveled surfaces, engage the MFWD. To avoid skidding and loss of steering control, add ballast to the tractor and travel at a reduced speed.

IMPORTANT: Avoid Damage! Disengage the MFWD when driving on a paved surface.



LVP12117—UN—12JUL21

A—MFWD Lever

NOTE: Reduce the engine load to disengage the front wheel drive.

Push the MFWD lever (A) downward to engage the MFWD. Pull the lever upward to disengage the MFWD.

Tips for Operating MFWD:

- To ensure proper tire performance in all field conditions, maintain front tire pressure at the maximum allowable level.
- Engage MFWD to provide four wheel braking.
- Disengage MFWD when driving machine to or from the work site to increase front tire life.

AL61114,000073C-19-12JUL21

Use Differential Lock (Traction Assist)

CAUTION: Avoid Injury! Driving at high speeds with the traction assist engaged results in loss of steering control. Do not engage traction assist or turn with the traction assist engaged while operating machine at high speeds or on slopes.

The differential lock is used to provide better traction when the rear wheels start to slip. With the differential lock engaged, the right and left side rear axles are locked together and both rear wheels turn at equal speeds for maximum traction.

IMPORTANT: Avoid Damage! Using the traction assist function improperly damages the transaxle:

- **Reduce speed and allow the drive wheels to rotate at the same speed before engaging or disengaging the traction assist.**
- **Disengage the traction assist when driving on asphalt or concrete.**
- **Use the traction assist only when necessary for improved ground engagement.**

NOTE: The turning radius is increased when the differential lock is engaged.

Engage Differential Lock

1. Stop or slow the machine movement.

NOTE: The differential lock remains engaged as long as the rear wheel slippage occurs. If the tires slip and regain traction repeatedly, hold down the differential lock pedal so differential lock remains engaged.

LV26736—UN—01DEC16

A—Differential Lock Pedal

2. To engage the differential lock, push down on the differential lock pedal (A).

Disengage Differential Lock

1. Remove foot from the differential lock pedal.

NOTE: Rear wheel slippage keeps differential lock engaged. Lock automatically disengages when traction equalizes.

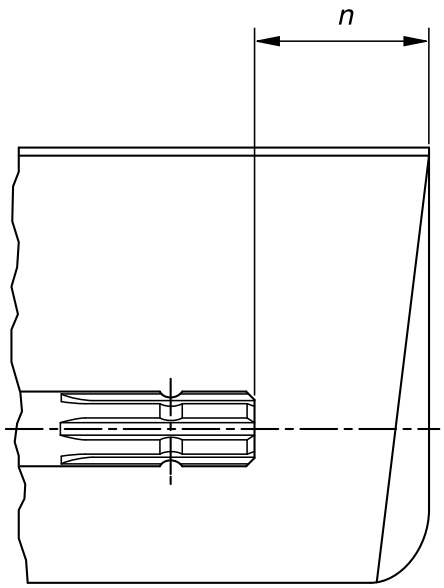
2. If lock does not disengage when removing foot from pedal, depress brake pedal to equalize traction, then release.

UP00731,00000B4-19-14FEB18

Power Take Off (PTO) Operation

Stay Clear of Rotating Drivelines

TS1644—UN—22AUG95



H96219—UN—29APR10

Entanglement in rotating driveline can cause serious injury or death.

Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Only use power take-off driveshafts with adequate guards and shields.

Wear close fitting clothing. Stop the engine and be sure that PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment.

Do not install any adapter device between the tractor and the primary implement PTO driveshaft that will allow a 1000 rpm tractor shaft to power a 540 rpm implement at speeds higher than 540 rpm.

Do not install any adapter device that results in a portion of the rotating implement shaft, tractor shaft, or the adapter to be unguarded. The tractor master shield shall overlap the end of the splined shaft and the added adaptor device as outlined in the table.

The angle at which the primary implement PTO driveshaft can be inclined may be reduced depending on the shape and size of the tractor master shield and the shape and size of the guard of the primary implement PTO driveshaft.

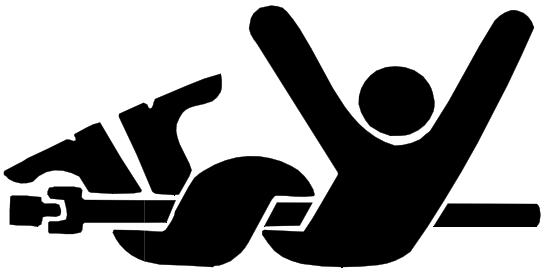
Do not raise implements high enough to damage the tractor master shield or guard of primary implement PTO driveshaft. Detach the PTO driveline shaft if it is necessary to increase implement height. (See Attching/ Detaching PTO Driveline)

When using Type 3/4 PTO, inclination and turning angles may be reduced depending on type of PTO master shield and coupling rails.

PTO Type	Diameter	Splines	n ± 5 mm (0.20 in.)
1	35 mm (1.378 in.)	6	85 mm (3.35 in.)
2	35 mm (1.378 in.)	21	85 mm (3.35 in.)
3	45 mm (1.772 in.)	20	100 mm (4.00 in.)
4	57.5 mm (2.264 in.)	22	100 mm (4.00 in.)

DX,PTO-19-28FEB17

Use the PTO Safely



LVAL38277—UN—21AUG12

CAUTION: Avoid injury! Stay clear of rotating drivelines:

- **Entanglement in the rotating driveline can cause serious injury or death.**
- **Keep hands, feet, and clothing away.**
- **Make sure that all shields are installed and used properly.**
- **Stop the engine and be sure that PTO driveline is stopped before getting near it.**

KN52281,1003EC1-19-29NOV16

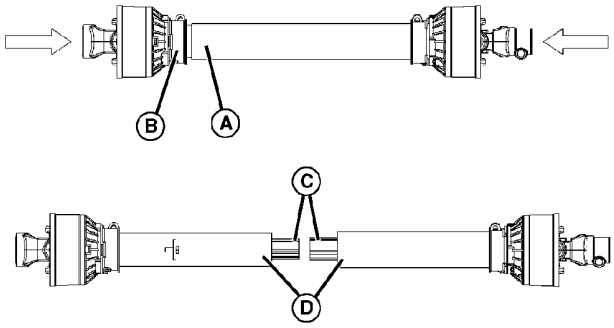
Check PTO Driveshaft Length

IMPORTANT: Avoid Damage! The PTO driveshaft is a standard length. Certain driveshaft applications cause contact with transmission. Shorten driveshaft length to avoid contact.

Checking PTO Driveshaft

NOTE: Check PTO driveshaft movement before operating implement.

1. Park machine safely.
2. Install driveshaft on implement.
3. Attach implement to tractor. Do not install the driveshaft on tractor.
4. Check the fully shortened position of the driveshaft.
   a. Push the driveshaft in to its shortest length by hand.



LVAL38278—UN—21AUG12

A—Outer Tube Shield
B—Shield Bell
C—Ends of the Driveshaft
D—Ends of the Shield Tubes

   b. Check the area where the outer tube shield (A) meets the shield bell (B).
   c. If the outer tube shield does not touch the shield bell, make a mark on the inner tube where the outer tube shield ends.
5. Install driveshaft on tractor and adjust the center link to level the implement for operating while in lowered position. (See Operating 3-Point Hitch.)
6. Have an observer stand a safe distance from the implement to tell you when the driveshaft is fully shortened.
7. Set the tractor at low idle and raise the implement. Stop raising the implement when the outer tube shield reaches the mark on the inner tube, or the outer tube shield touches the shield bell.
   - If the implement is fully raised and the driveshaft does not reach the fully shortened position, with either the outer tube shield at the mark or touching the bell shield, the driveshaft is ready for operation.
   - If the driveshaft reaches the fully shortened position before the implement is fully raised, the driveshaft requires shortening.

Shortening the PTO Driveshaft

CAUTION: Avoid Injury! Check to make sure that driveshaft is covered before operating.

1. Remove 25 mm (1 in) from the ends of the driveshaft (C) and the ends of the shield tubes (D). Or, see your John Deere dealer for assistance.
2. Check driveshaft length again and shorten further if needed.

KN52281,1003EC2-19-14JAN19

Operate Rear and Mid PTO (Operator on Seat)

CAUTION: If PTO engages at engine start-up, contact your John Deere dealer for service.

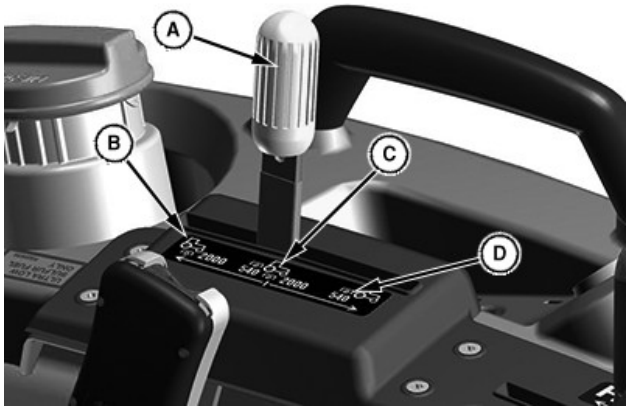
IMPORTANT: Use rear mounted equipment rated for 540 rpm. Do not operate mid or rear PTO over 3200 rpm mark on tachometer.

NOTE:

- *The mid-PTO is only operational with the operator on the seat.*
- *Engine starts with PTO switch engaged, but PTO switch must be cycled off and on again before PTO engages.*

Engaging the PTO

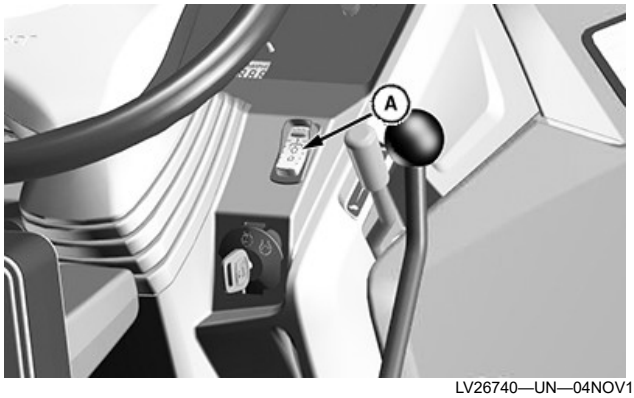
1. Sit on the operator seat.
2. Lock the park brake.
3. Move the range-shift lever to the neutral “N” position.
4. Start the engine.
5. Set engine speed to 1500 rpm or less.



LV26738—UN—10NOV16

A—PTO Lever
B—Mid PTO Only
C—Mid and Rear PTO
D—Rear PTO Only

6. Move the PTO lever (A) to desired operating position.
   - Position (B) - Mid PTO only.
   - Position (C) - Mid and Rear PTO.
   - Position (D) - Rear PTO only.



LV26740—UN—04NOV16

7. Engage the PTO by pressing switch (A) forward.
8. Adjust the hand throttle forward to the desired speed for the implement used.

NOTE:

- *When operating at 3200 engine rpm the mid PTO speed is 2100 rpm and rear PTO speed is 540 rpm.*
- *If the engine overheats during the PTO operation the PTO will automatically shutoff. Disengage the PTO switch, engage the park brake and the shut the engine off. Allow sufficient time for the engine to cool. Check the coolant level and add coolant if necessary. Clean debris away from the radiator cooling fins and the front grill. If the PTO still does not engage after the engine has cooled, see your local John Deere Dealer for service.*

Disengaging the PTO

1. Adjust engine rpm to low idle.
2. Push PTO switch rearward to the disengaged/off position.

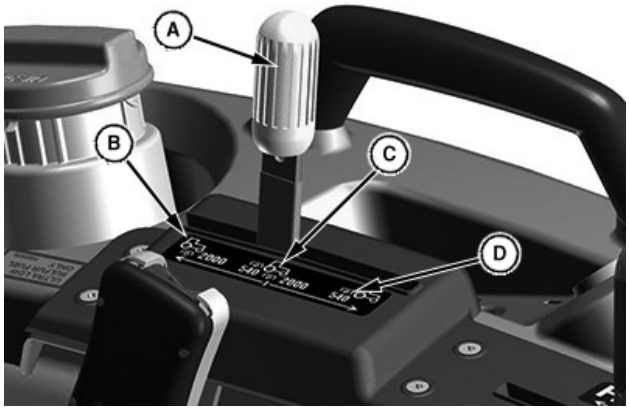
JC48530,000047C-19-28JUL20

Operate Rear PTO (Operator off Seat)

NOTE: Engine starts with PTO switch engaged, but PTO switch must be cycled off and on again before PTO engages.

Engaging the PTO

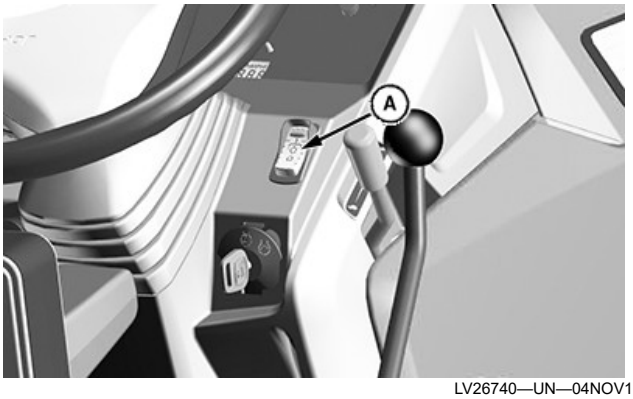
1. Sit on the operator seat.
2. Lock the park brake.
3. Move the range-shift lever to the neutral “N” position.
4. Start the engine.
5. Set engine speed to 1500 rpm or less.



LV26738—UN—10NOV16

A—PTO Lever
B—Mid PTO Only
C—Mid and Rear PTO
D—Rear PTO Only

6. Move the PTO lever (A) to Position (D) - Rear PTO only.
   - Position (B) - Mid PTO only.
   - Position (C) - Mid and Rear PTO.
   - Position (D) - Rear PTO only.



LV26740—UN—04NOV16

7. Engage the PTO by pressing switch (A) forward.
8. Push and hold the PTO switch in the engaged position for at least 2 seconds. “SEAt” is shown in the display.
9. Exit the seat and release the PTO switch. After exiting, “StAt Pto Act” is shown on the display.

NOTE: If the park brake is not engaged and the range-shift lever is not in “N” , the information display with show “APPLY Pb” and/or “ShiFt to nEut”. These conditions must be met before the out of seat PTO will activate.

After exiting seat, if the seat switch is reengaged (operator sits in the seat) and then disengaged (operator leaves the seat), the PTO will automatically disengage. “out oF SEAt” displays on the information display.

10. Adjust the hand throttle forward to the desired speed for the implement used.

Disengaging the PTO

1. Adjust engine rpm to low idle.
2. Push PTO switch rearward to the disengaged/off position.

JC48530,000047E-19-10AUG20

Operate Reverse Implement Option (RIO)

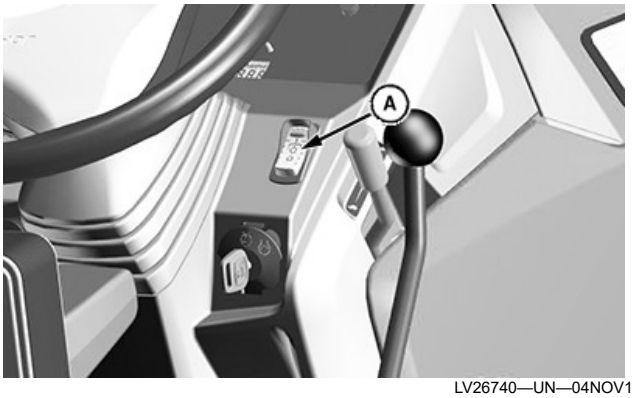
CAUTION: Rotating blades are dangerous. Children or bystanders may be injured by runover and rotating blades.

Before backing up, carefully check the area around the machine.

NOTE: NOTE: Backing up while mower is engaged is discouraged. Only use the reverse implement option when operating another attachment or when the operator deems it necessary to reposition machine with mower engaged.

1. Stop machine forward travel with attachment engaged.
2. Look behind the machine to be sure that there are no bystanders.

NOTE: If attachment stops while repositioning the machine, return the PTO/RIO switch to the off position. Begin again with Step 2 in procedure. If the reverse pedal is depressed without engaging the PTO/RIO switch, “rIo” is displayed in the information display and the engine shuts down.



LV26740—UN—04NOV16

A—PTO/RIO Switch

3. To activate the reverse implement option, press PTO/RIO switch (A) down past PTO engagement position.
4. Press the reverse travel pedal and release the RIO switch. Information display shows “rIo Act”.

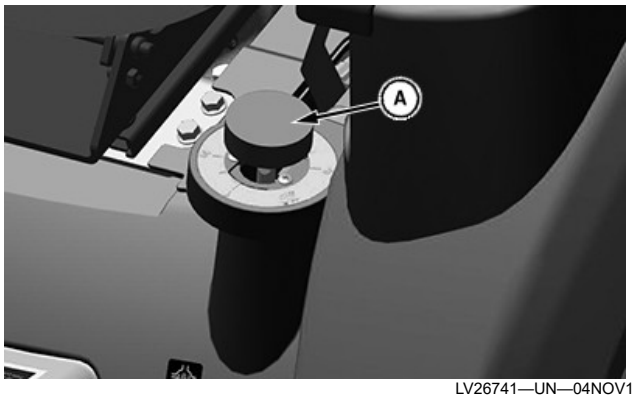
NOTE: RIO function stays enabled until tractor stops or forward motion is detected.

5. As machine begins to move backward, reposition the tractor.
6. Resume forward travel. The attachment continues to operate.
7. Repeat Steps 1 through 5 to reposition machine again.

NOTE: If the operator leaves the seat with the engine running and the mid-PTO engaged, the safety interlock system stops the engine and all implements.

JC48530,000047D-19-28JUL20

Adjust Height-of-Cut (If Equipped)



LV26741—UN—04NOV16

Mower Height -of-Cut Dial Shown

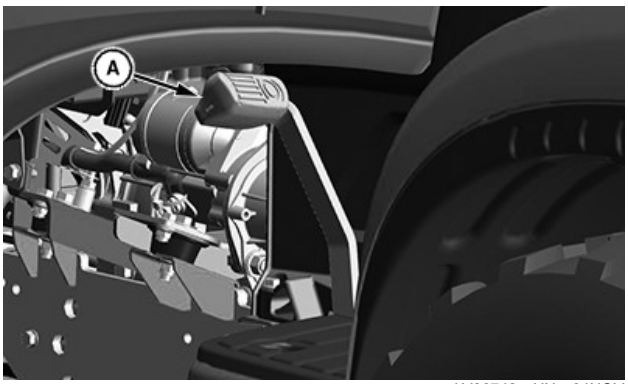
A—Mower Height-of-Cut Dial

Use the mower height-of-cut dial (A) to adjust mower cutting height and lock mower lift draft arms in raised position. See your mower deck operator's manual for instructions.

IMPORTANT: To avoid machine damage when operating without a mower, fully raise the mower lift draft arms and turn the height-of-cut dial to the highest setting to lock the arms in raised position.

UP00731,00000C6-19-10AUG20

Operate Brake Pedal



LV26742—UN—04NOV16

A—Brake Pedal

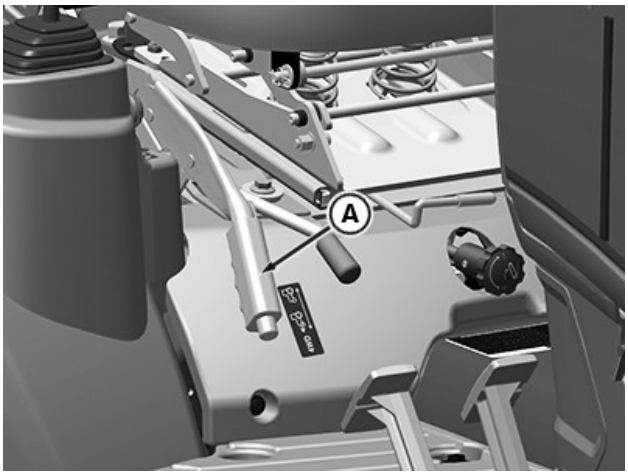
To operate the brake, depress the brake pedal (A).

UP00731,00000B7-19-28AUG18

Operate Park Brake

NOTE: Label on dash illustrates park brake operation.

CAUTION: Avoid Injury! Always lock park brake and move transmission range lever to a position other than N (neutral) before leaving machine unattended. Transmissions do not prevent machine motion without the park brake being locked.



LVP15604—UN—01APR22

A—Park Brake Lever

- **To Lock Park Brake:** Pull park brake lever (A) up to the locked position.
- **To Unlock Park Brake:** Raise park brake lever (A) slightly, push the park brake lock in to unlock the park brake.

YCWRHFR,000000E-19-18MAR22

Adjust Tilt Steering Wheel

CAUTION: Avoid Injury! Do not attempt to adjust the steering wheel while the machine is moving. The operator can lose control of the machine.

- **Stop the machine before adjusting the steering wheel.**
- **Lock the steering wheel in position before driving the machine.**

1. Stop machine.
2. Pull tilt steering lever (A) up to release steering wheel.

LV26745—UN—04NOV16

Tilt Steering Lever Location Shown

A—Tilt Steering Lever

3. Adjust the steering wheel to desired position.
4. Steering wheel is locked in position when the tilt steering lever is released.

UP00731,00000C7-19-29NOV16

Warm Hydraulic System Oil

Hydraulic system is slow to function when the tractor is started in cold weather. The reason is because cold oil does not flow easily through the filter screen or the hydraulic system filter. Steering is slow until system warms up. Hydraulic system functions normally after the oil warms up.

1. Start the machine and idle at low idle.
2. Turn and hold steering wheel in full left or right turn.

IMPORTANT: To prevent damage to the hydraulic pump or relief valve, do not exceed 2 to 3 minutes of warm-up time.

UP00731,000021B-19-14JAN19

Hydraulics Information

For hydraulic operation of components, see specific component section. For example, operating the selective control valve (SCV) is in the Selective Control Valve Operation section.

UP00731,00002DC-19-14JAN19

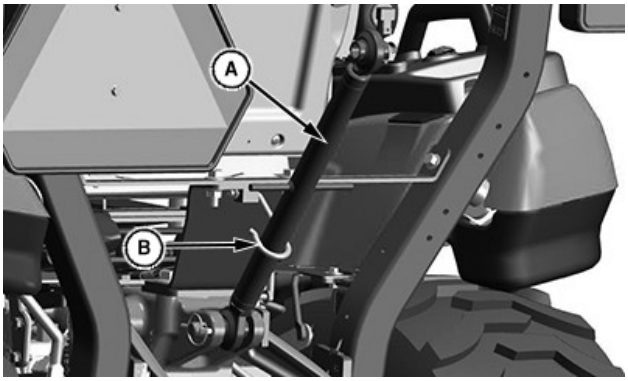
Operate Attachments

When operating attachments, check full range of three point hitch travel each time a new attachment or implement is mounted. Watch for hoses and attachment parts throughout the 3-point hitch travel range. Adjust the depth stop as needed. Some attachments with short driveshafts require an up-stop. See your John Deere dealer. If attachments are operated at too high an angle, the driveshaft can be damaged.

RD47322,0000B0C-19-27AUG18

Operate 3-Point Hitch

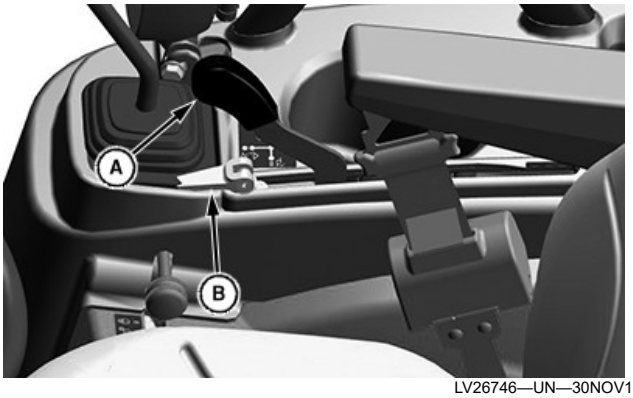
NOTE: The 3-point hitch on your machine is classified as a limited Category 1 hitch.



LV27292—UN—19JAN17

A—Center Link
B—Storage Hook

Place center link (A) in the storage hook (B) when hitch is not in use.



LV26746—UN—30NOV16

A—Rockshaft Lever
B—Depth Stop Lever

Use rockshaft lever (A) to raise and lower equipment attached to the 3-point hitch.

- To lower implement: Push lever forward.
- To raise implement: Pull lever rearward.

Position control can be used to maintain the operating depth of the implement. To adjust the operating depth:

1. Unlock the depth stop lever (B) and slide toward the front of the console completely.
2. Operate the implement for several minutes to determine the desired operating depth.
3. Slide the depth stop against the rockshaft lever and lock it in position.

   NOTE: The calibrated label settings below the rockshaft lever are for reference only and do not signify specific operating depths.

   - The implement operates in same position each time the rockshaft lever is pushed against the depth stop.

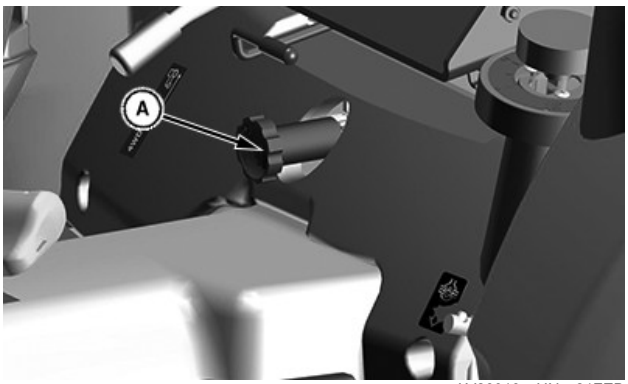
UP00731,00000B9-19-19JAN17

Operate Rate-of-Drop

The rate-of-drop valve controls the rate of rockshaft drop when the rockshaft lever is operated. This provides direct rate-of-drop for 3-point hitch-mounted implements. The valve can also be used to hydraulically lock the rockshaft (3-point hitch) in a desired position.

CAUTION: Avoid injury! Excessive rate-of-drop causes injury or damage. Fully lowering implement takes at least 2 seconds.

IMPORTANT: Avoid damage! To prevent overheating hydraulic oil and damaging machine, do not raise rockshaft when rate-of-drop valve is closed.



LV26913—UN—21FEB17

A—Rate-of-Drop Knob

Increase Rate-of-Drop: Rotate rate-of-drop knob (A) counterclockwise to make drop faster.

Decrease Rate-of-Drop: Rotate rate-of-drop knob (A) clockwise to make drop slower.

CAUTION: Avoid Injury! Do not use the rockshaft drop/lock valve for holding an attachment in raised position for service work. Loss of hydraulic pressure could result in sudden drop of attachment. Lower attachment onto blocks or remove from machine before servicing.

Lock 3-Point Hitch: Rotate rate-of-drop knob clockwise until tight.

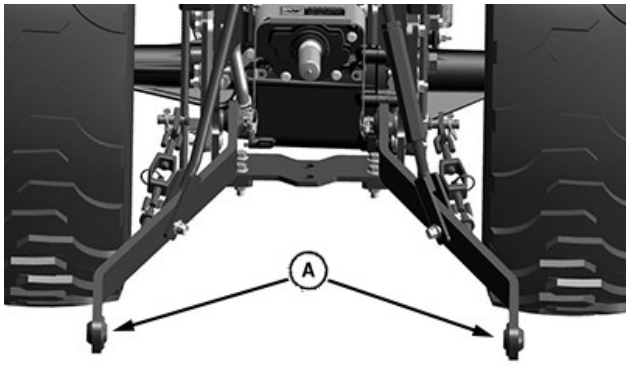
Unlock 3-Point Hitch: Rotate rate-of-drop knob counterclockwise.

UP00731,00000D9-19-29AUG18

Use Draft Link and Center Link

CAUTION: Avoid injury! Look down and behind before and while backing. Clear area of all bystanders before backing machine.

1. Slowly back machine into position to align draft links with implement lift brackets.
2. Park machine safely.



LV26749—UN—10NOV16

A—Draft Link
B—Center Link

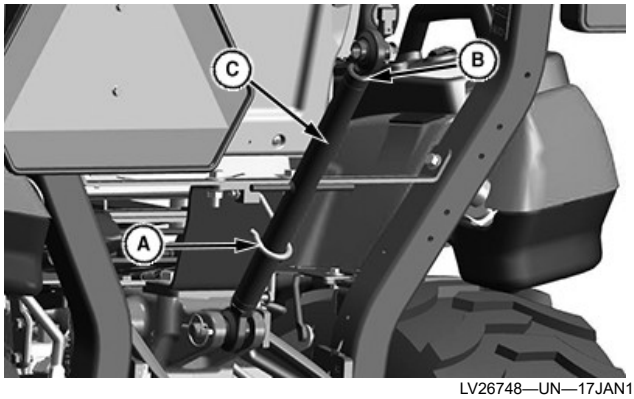
3. Connect draft links (A) to the implement.
4. Secure implement with quick lock pins.

UP00731,0000029-19-14JAN19

Level Implement Front-to-Rear

1. Park machine safely.

NOTE: When the 3-point hitch is not being used, return center link to the storage hook (A).



LV26748—UN—17JAN17

A—Storage Hook
B—Locknut
C—Center Link Body

2. Lower implement to ground to relieve pressure on center link.
3. Loosen locknut (B).

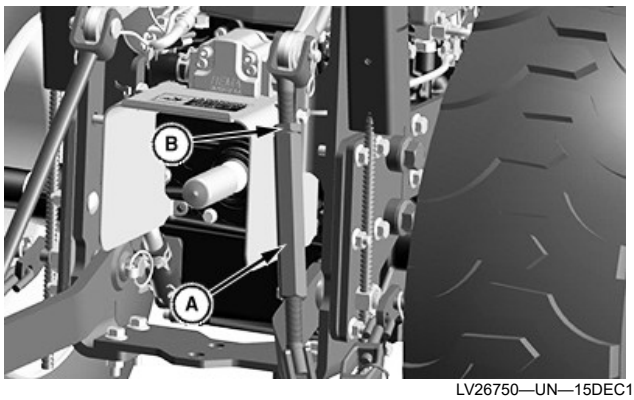
IMPORTANT: Avoid damage! To avoid threads being damaged, do not turn center link body past the stops.

4. Lengthen or shorten the center link as needed. To lengthen or shorten the center link, rotate center link body (C).
5. Tighten locknut (B).

UP00731,000002D-19-19JAN17

Level Implement Side-to-Side

1. Lower any rear mount implement to the ground.
2. Park machine safely.



LV26750—UN—15DEC16

A—Lift Link Body
B—Locknut

3. Loosen locknut (B).
4. Rotate lift link body (A) to raise or lower draft link until 3-point hitch-mounted implement is level from side-to-side.

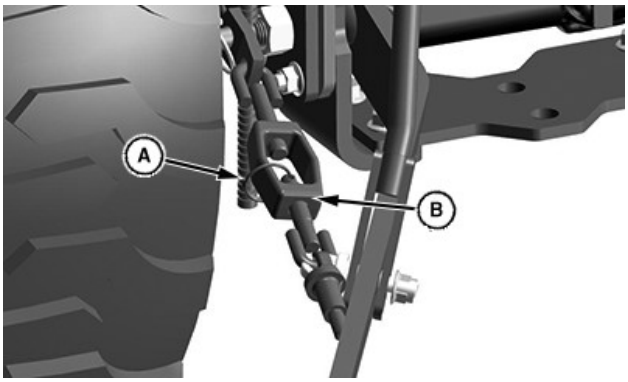
5. Tighten locknut (B).

UP00731,000002E-19-17JAN17

Adjust Implement Side-to-Side Sway

NOTE: Check implement operator manual procedure for adjusting sway links. When sway links have been properly adjusted, the position of links controls the side sway of the implement.

1. Lower any rear-mount implement to the ground.
2. Park machine safely.



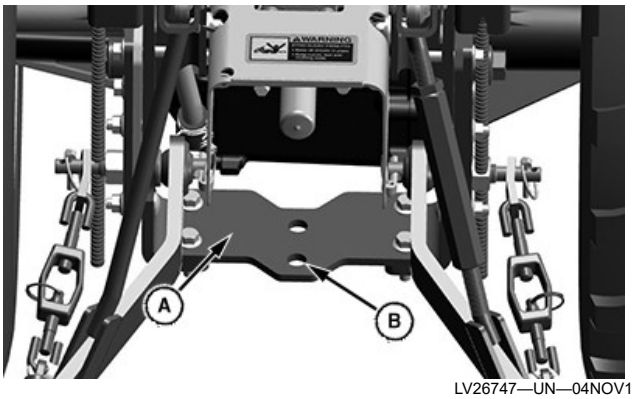
LV26801—UN—10NOV16

A—Locking Ring
B—Turnbuckle

3. Remove locking ring (A).
4. To adjust length, rotate the turnbuckle (B).
5. Install locking ring.

UP00731,000002F-19-29AUG18

Operate Rear Hitch



LV26747—UN—04NOV16

A—Rear Hitch Plate
B—Single Fixed Mounting Position

The rear hitch plate (A) provides a single fixed mounting position (B) for towing.

CAUTION: Avoid injury! Hitch towed loads only to the rear hitch plate to avoid rearward upset. Do not use a safety chain for towing loads.

Maximum Hitch Loads

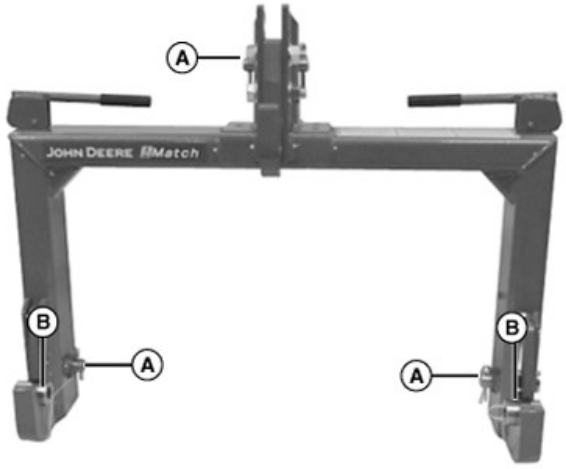
Certain heavy equipment such as a loaded single-axle trailer can place excessive strain on the hitch. Strain is greatly increased by speed and rough ground. Do not exceed the maximum static vertical load on the rear hitch at position (B), see specifications.

UP00731,00000BA-19-29NOV16

Operate Optional iMatch Quick-Attach Hitch System

The optional iMatch™ quick-attach hitch fits all Category I implements designed to the ASABE Cat I standard for quick-attach hitches.

Install iMatch Quick-Attach Hitch

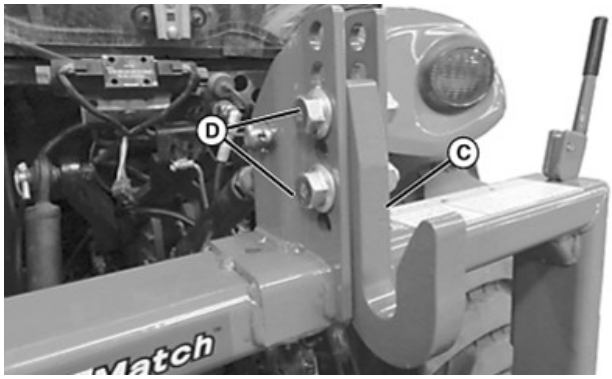


LVAL38290—UN—21AUG12

A—Drilled Pin (3 used)
B—Bushing (2 used)

1. Remove three drilled pins (A) and two bushings (B) from iMatch quick-attach hitch.
2. Use machine rockshaft lever to fully lower 3-point hitch draft links.
3. Park machine safely.

iMatch is a trademark of Deere & Company



LVAL38291—UN—21AUG12

C—Center Link Hook
D—Nut and Bolt

4. Center link hook (C) is set from the factory at standard height to accommodate most implements. Adjust center link hook, if necessary.
   - Remove nuts and bolts (D).
   - Raise or lower center link hook as required.
   - Install nuts and bolts. Torque bolts to specification before use of iMatch assembly.

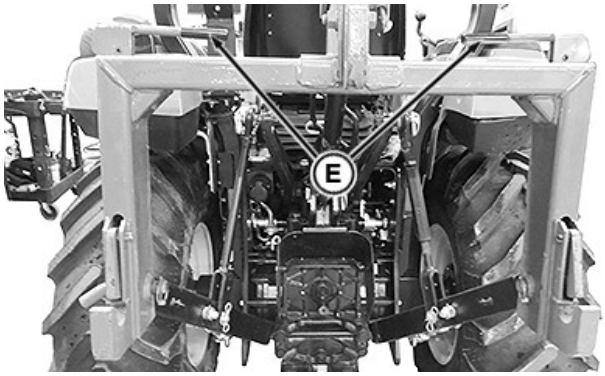
Specification

iMatch Bolts—Torque. . . . . 245—318 N·m

5. Position iMatch quick-attach hitch near draft links and adjust 3-point hitch sway links to align draft links with quick-attach hitch.
6. Install iMatch quick-attach hitch on the draft links using drilled pins.
7. Install 3-point hitch center link on iMatch quick-attach hitch using quick-lock pin and drilled pin.

Connect Implement

1. Install two bushings, included with the iMatch quick-attach hitch, on drilled pins in the draft link brackets.



LV25907—UN—26JUL16

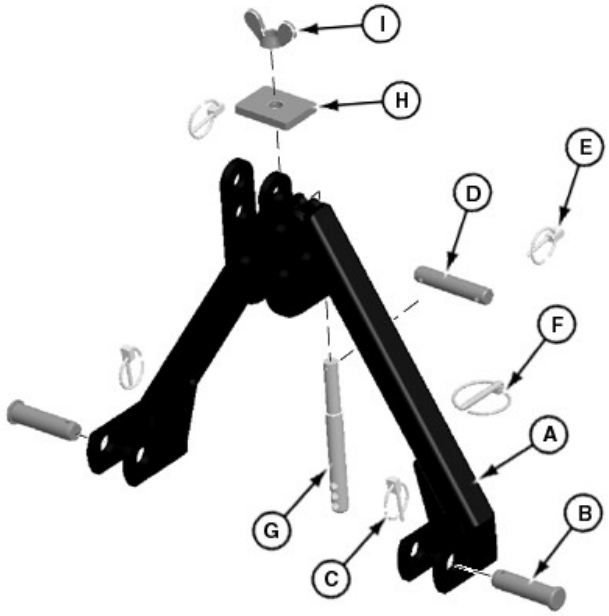
E—Levers

2. Move levers (E) on iMatch quick-attach hitch up to the unlocked position.
3. Back machine into position and align iMatch quick-attach hitch with implement lift brackets.
4. Use rockshaft lever to position iMatch quick-attach hitch under lift brackets and lift implement from ground.
5. Fully raise implement. Move levers (E) on iMatch quick-attach hitch down to the locked position.

UP00731,000020C-19-30MAY19

Use Front 3-Point Hitch (If equipped)

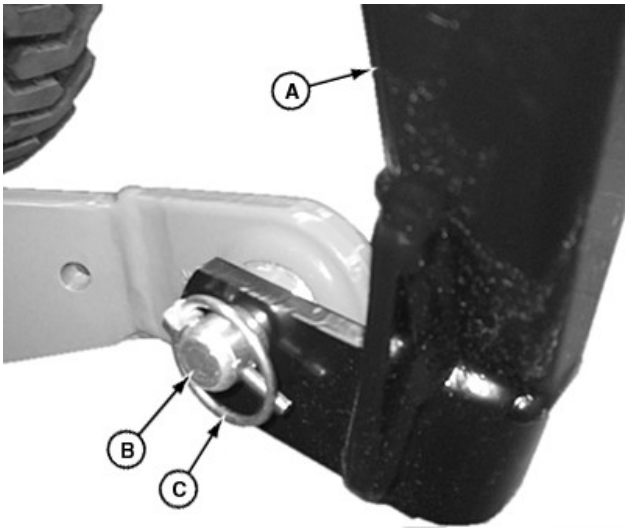
Installing A-Frame



LV17893—UN—31MAY13

A—A-Frame
B—Cylinder pins
C—Lynch pins
D—Hinge pin
E—Lynch pin
F—Quick lock pin
G—Retainer rod
H—Retainer plate
I—Wing nut

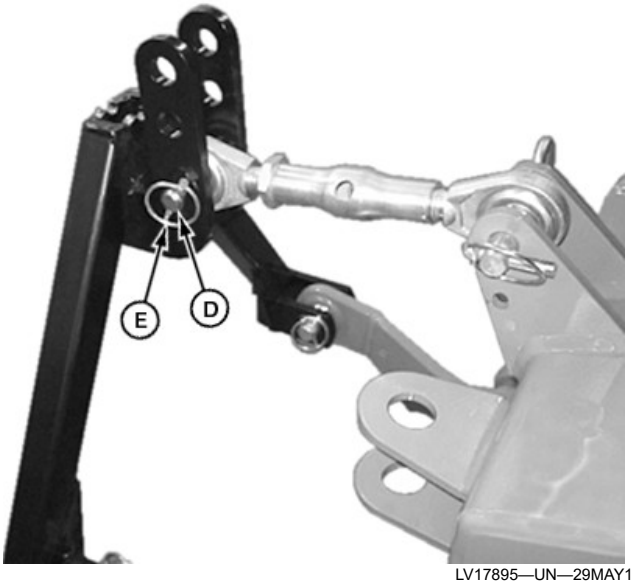
List of parts for reference:



LV17894—UN—29MAY13

A—A-Frame
B—Cylinder pins
C—Lynch pins

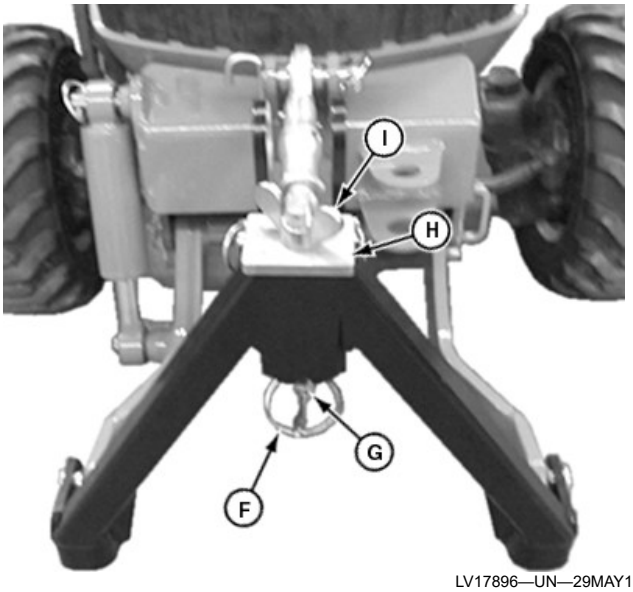
1. Install A-Frame (A) on lift arms. Insert cylinder pins (B) through A-Frame and lift arms and secure with lynch pins (C).



LV17895—UN—29MAY13

D—Hinge pin
E—Lynch pin

2. Install front hitch center link on bottom hole of A-Frame with hinge pin (D) and lynch pin (E).



LV17896—UN—29MAY13

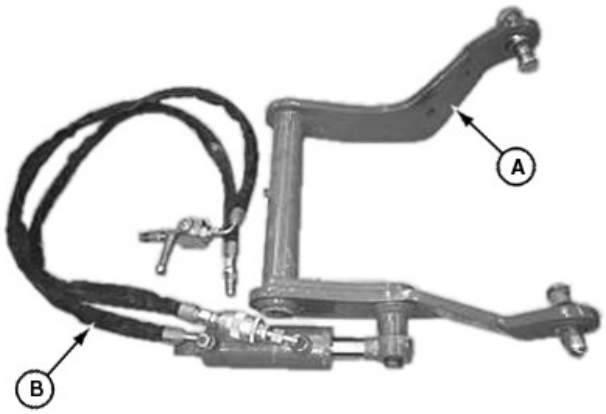
F—Quick lock pin
G—Retainer rod
H—Retainer plate
I—Wing nut

3. Install quick lock pin (F) in retainer rod (G). Install retainer rod on A-frame using retainer plate (H), wing nut (I) and quick lock pin.
4. Reverse procedure to remove A-frame.

Raising and Lowering Hitch

1. Check to be sure hitch is not in transport lock position.
2. Review instructions on using hydraulic dual selective control valve (SCV) and dual selective control valve lock lever included in your tractor operator's manual.
3. Move the tractor dual SCV lever:
   - To raise the hitch, move the lever rearward.
   - To lower the hitch, move the lever forward.

Operating and Installing Loader with Front Hitch Installed



LV17900—UN—29MAY13

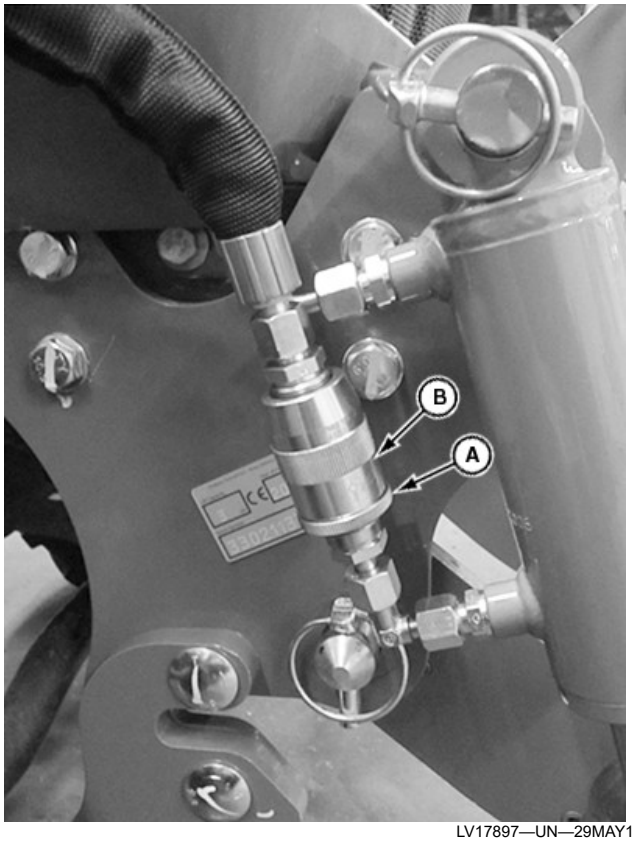
A—Lift Frame
B—Cylinder Assembly

1. Remove the front hitch lift frame (A) and cylinder assembly (B).
   a. Disconnect hydraulic hoses from mid SCV couplers.
   b. Remove the top retaining clip from the upper cylinder mount.
   c. Pull cylinder off the upper cylinder mount, replace retaining clip for future use.
   d. Remove the lift frame retaining clip from the lift frame pivot.
   e. Remove the lift frame pivot, lift frame, cylinder and hydraulic hose assembly.

NOTE: Loader cannot be used in combination with the mid driven front PTO. Remove the mid driven front PTO if installed.

2. Install and operate loader.

Using Rate of Drop Adjustment



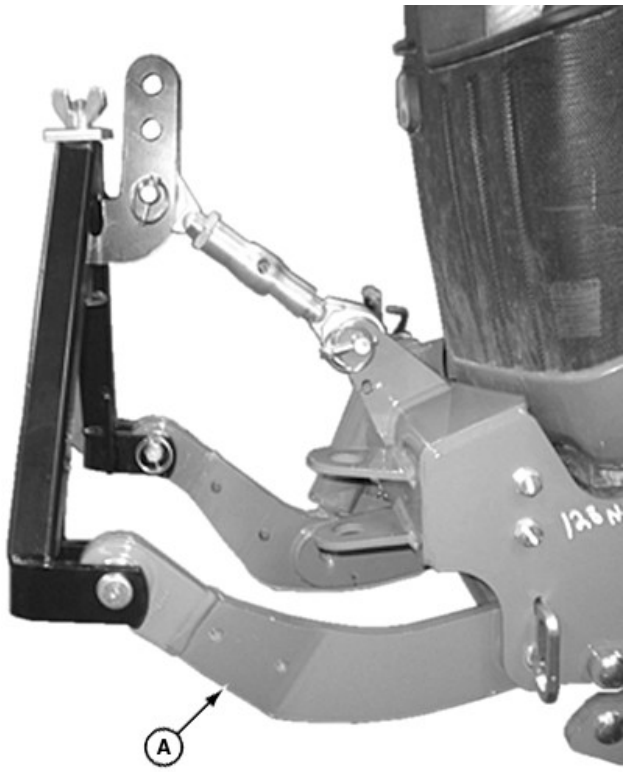
LV17897—UN—29MAY13

A—Lower nut
B—Fitting

To adjust the rate of drop:

1. Loosen lower nut (A).
2. Turn upper part of fitting (B) clockwise or counterclockwise to adjust.
3. Tighten lower nut (A) to lock fitting.

Using Transport Lock Position

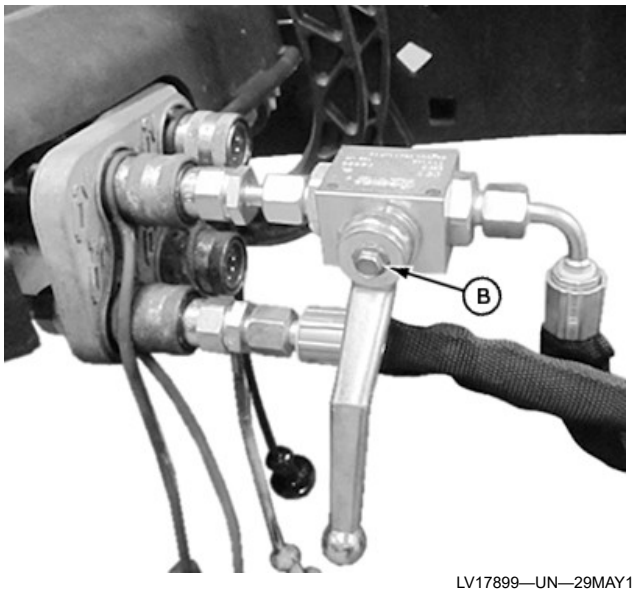


LV17898—UN—29MAY13

A—Lift frame

To place hitch in transport lock position:

1. Fully raise lift frame (A).



LV17899—UN—29MAY13

B—Valve

2. Rotate valve (B) to the lock position.

Installing Implements on Front Hitch with A-Frame

Installing Implement:

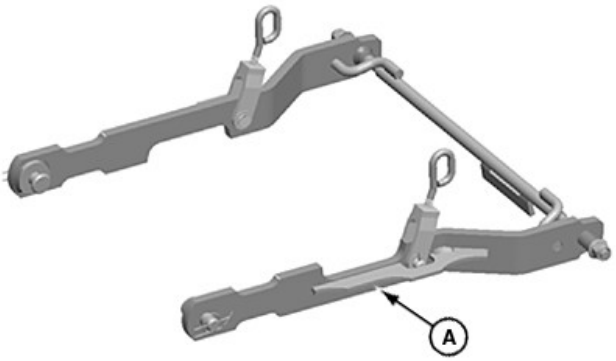
1. Loosen wing nut and remove quick-lock pin.
2. Remove retainer rod with wing nut and retainer plate from A-frame.
3. Check to be sure that the implement hydraulic hoses are out of the way if applicable.
4. Drive tractor forward slowly and align A-frame with mount on implement.
5. Raise hitch to install A-frame on mount.
6. Install retainer rod with wing nut and retainer plate through mount and A-frame. Position wing nut as needed to install quick-lock pin in retainer rod.
7. Tighten wing nut to secure implement to A-Frame.

Removing Implement:

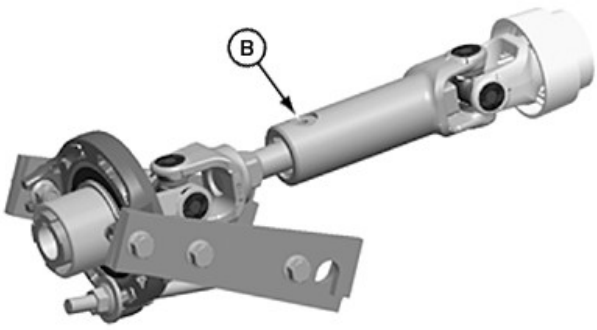
1. Loosen wing nut and remove quick-lock pin.
2. Remove retainer rod with wing nut and retainer plate from A-frame.
3. Disconnect and secure hydraulic hoses if applicable.
4. Lower the hitch to disengage A-frame from implement.
5. Back tractor away from implement slowly to remove A-frame from implement.
6. Install retainer rod with wing nut and retainer plate through mount and A-frame. Install quick-lock pin in retainer rod for future use.

Installing and Using Front Hitch with AutoConnect Mid-Mower

- When using the front hitch only, it is not necessary to remove any of the AutoConnect parts.



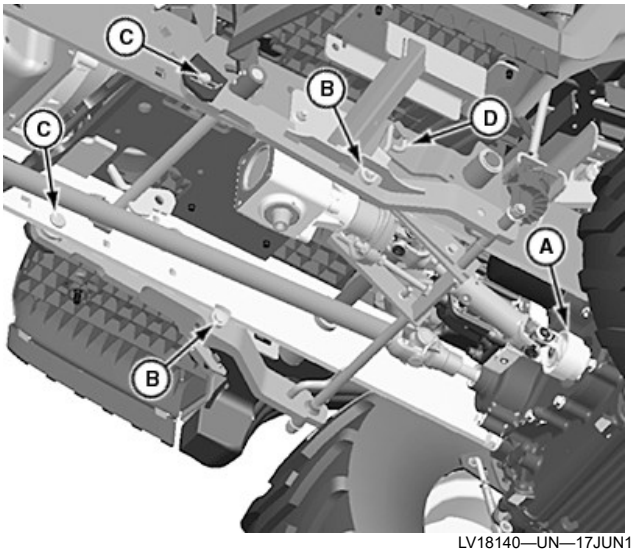
LV17966—UN—04JUN13



LV17967—UN—04JUN13

A—Mower Deck Lift Assembly
B—AutoConnect Drive Shaft

- When using the front hitch with a mid driven front PTO kit, the mower deck lift kit and AutoConnect drive shaft must be removed, if installed.
- To remove mower deck lift kit and AutoConnect drive shaft



LV18140—UN—17JUN13

a. Disconnect the AutoConnect drive shaft (A) from tractor.
b. Remove retaining clips and pins (B) from left and right side of mower deck lift arms.
c. Remove retaining clips and pins (C) from left and right side of mower deck lift arms
d. Rotate P-hooks (D) and remove from lift brackets from left and right side.

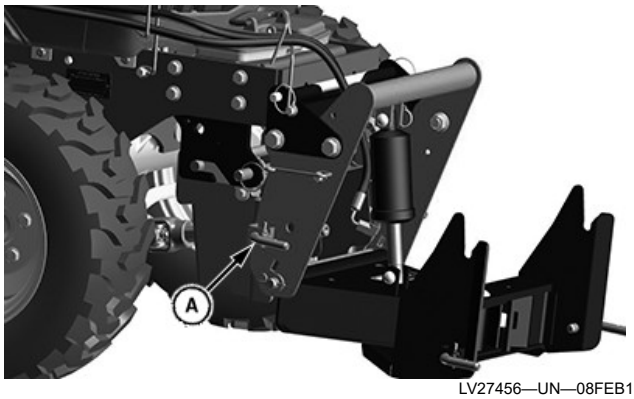
Installing mid mount mower with front hitch:

1. Make sure lift frame is in the transport / highest position.
2. Install mower deck.

YCWRHFR,000000F-19-18MAR22

Use Front Quick Hitch

Install and Remove Implement



LV27456—UN—08FEB17

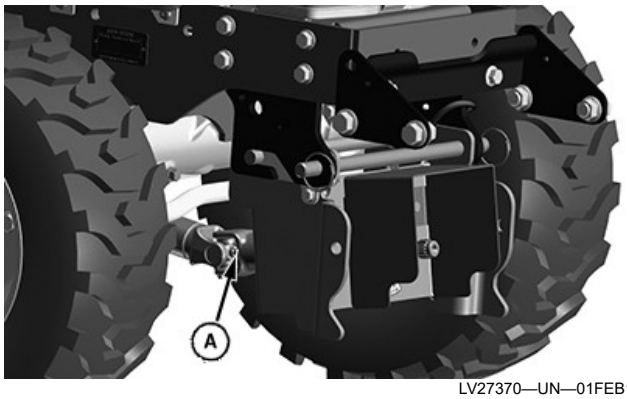
A—Locking Pin

1. Move the locking pins (A) to the open position.
2. Lower the hitch completely.
3. Drive up to the implement.
4. Raise the hitch, aligning the upper hooks.
5. Ensure the locking pins engage.
6. To remove:
   a. Move the locking pins (A) to the open position.
   b. Lower the hitch completely.
   c. Drive away from the implement.

UP00731,0000199-19-08FEB17

Front Quick Hitch Compatibility

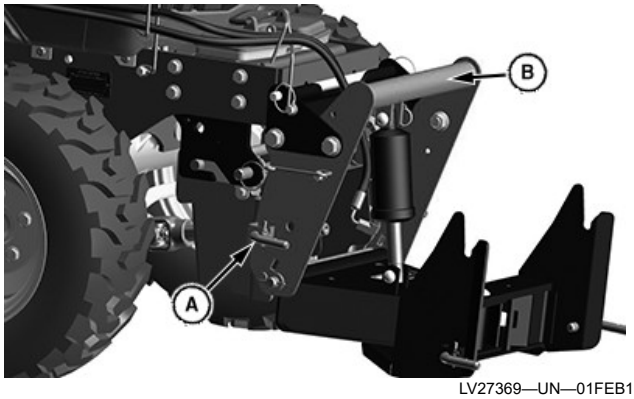
Compatibility—Quick Hitch and Mid Mower



LV27370—UN—01FEB17

A—Drive Shaft

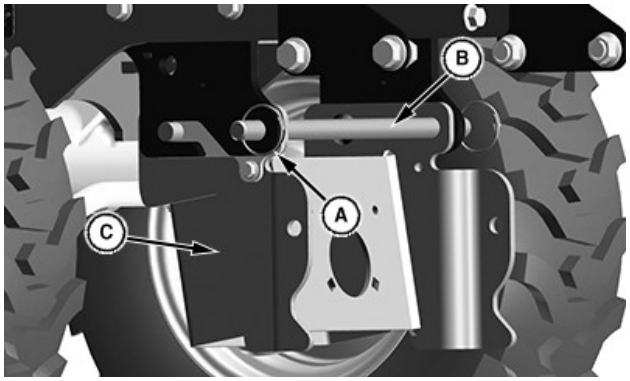
1. Remove the PTO drive shaft (A), if installed.



LV27369—UN—01FEB17

A—Locking Pin
B—Front Hitch

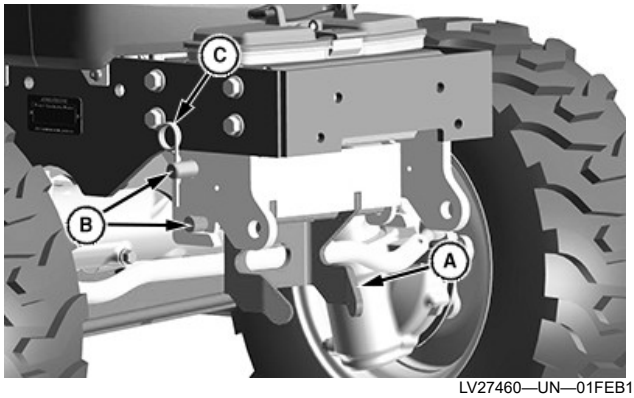
2. Move the locking pin (A) to the open position.
3. Remove the quick hitch (B).



LV27475—UN—01FEB17

A—Locking Ring
B—Front Hitch Pin
C—Mounting Assembly

4. Remove the locking ring (A) and remove front hitch pin (B)
5. Remove the mounting assembly (C).



LV27460—UN—01FEB17

A—Draft Link
B—Front Hitch Pin
C—Locking Pin

6. Install the front draft bracket for the mower.
   a. Install the front draft link (A) onto mounting brackets as shown.

b. Install front hitch pins (B).

c. Secure with locking pin (C).

7. Install the AutoConnect™ mower kit, if it was removed previously.
8. Install the mower deck.

Compatibility—Quick Hitch and Loader

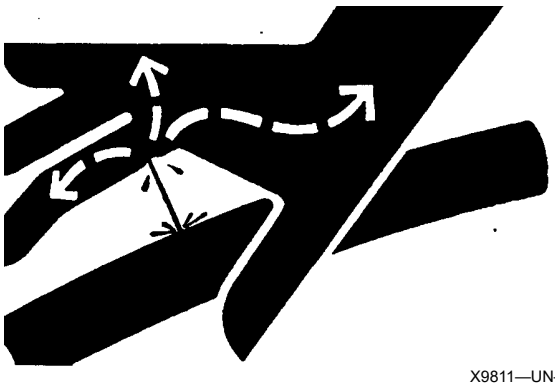
1. Remove the PTO drive shaft, if it is installed.
2. Remove the quick hitch.
3. Remove the quick hitch mounting bracket.
4. Install loader.

UP00731,00001D5-19-08FEB17

AutoConnect is a trademark of Deere & Company

Selective Control Valve Operation

Avoid High-Pressure Fluids



X9811—UN—23AUG88

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID-19-12OCT11

Connect Implement Hydraulic Hoses

CAUTION: Avoid injury! Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve hydraulic system pressure by moving hydraulic controls in all directions before connecting or disconnecting hydraulic lines.

1. Park machine safely.
2. Relieve all hydraulic pressure by moving SCV lever rearward-to-forward and side-to-side several times.
3. Refer to implement operator manual for instructions on connecting hydraulic hoses to couplers.

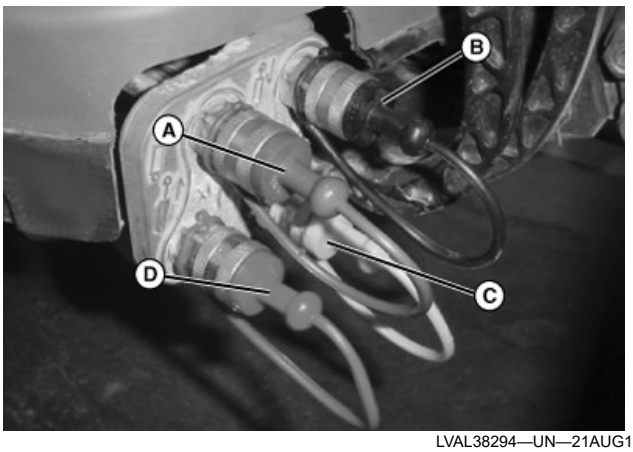
KN52281,1003EC7-19-29NOV16

Operate Hydraulic Dual Selective Control Valve (SCV)

CAUTION: Avoid injury! Escaping fluid under high pressure can penetrate the skin and cause serious injury. Avoid the hazard by relieving pressure before disconnecting or connecting hydraulic or other lines. Tighten all connections before applying pressure.

- **Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.**
- **If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene can result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A. In the United States and Canada only, this information is be obtained by calling 1-800-822-8262.**

These series of tractors are equipped with a hydraulic selective control valve (SCV) and hydraulic outlets to operate hydraulically driven implements.

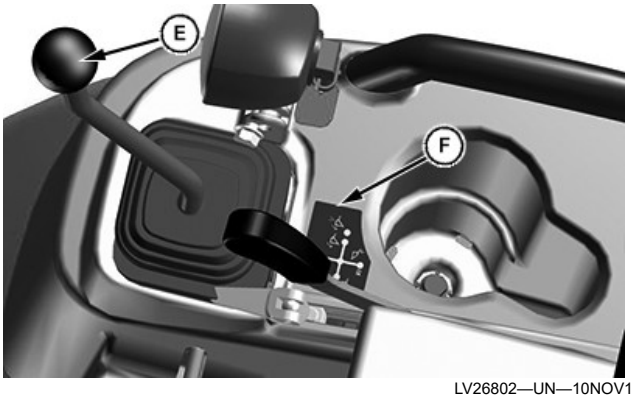


LVAL38294—UN—21AUG12

A—Blue
B—Black
C—Yellow
D—Red

The machine-mounted hydraulic outlets are female quick couplers color-coded for easy hookup.

Implement hydraulic hoses are also color-coded. Match the color-coded hose ends to the color-coded hydraulic couplers on the machine when making connections.



LV26802—UN—10NOV16

E—Dual SCV Lever
F—Information Label

Dual selective control valve (SCV) lever (E) controls any hydraulically driven device connected to the mid selective control valve (SCV), most commonly a loader.

The label installed on the machine next to the dual selective control valve (SCV) lever shows the different lever positions.

Lever positions numbered 1—4 on the label match hydraulic line couplers numbered 1—4 on the label installed on the machine near the couplers. Moving the lever to position 1 supplies fluid to coupler 1 and return fluid through coupler 2, and so forth.

Move the lever to the full forward or “float” position to allow the bucket to follow the contour of the ground. The lever may be left in the “float” position.

Lever Position	Function
Forward	Boom Lower
Back	Boom Raise
Left	Bucket Roll (Curl)
Right	Bucket Tilt (Dump)

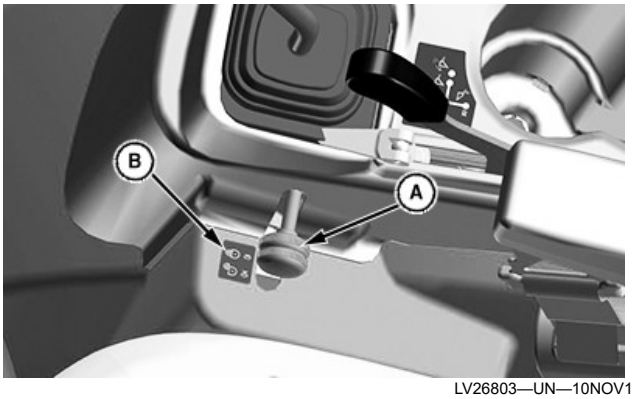
Refer to the information label (F) for assistance. See your implement operator manual for implement functions which correspond to lever positions.

IMPORTANT: Avoid damage! To prevent contamination of female quick couplers, install color-coded hose ends in the couplers when not being used.

UP00731,00000BB-19-23OCT19

Operate Selective Control Valve (SCV) Lock Lever

The selective control valve (SCV) lock lever (A) allows the operator to control the type of SCV lever movement needed for a particular operation or situation. Operation of the SCV lock lever is indicated on SCV lock lever label.



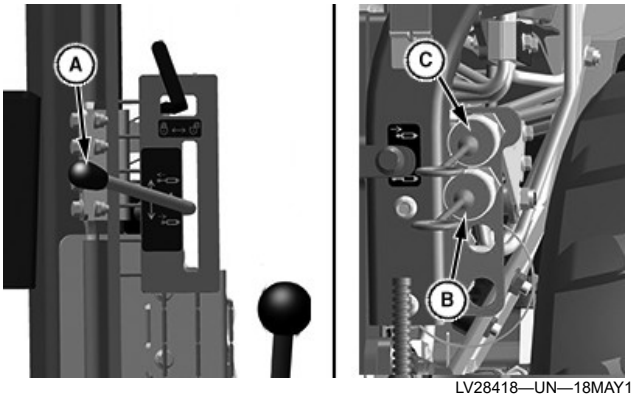
LV26803—UN—10NOV16

A—Lock Lever
B— Label

- Pull the lock lever (A) to allow SCV lever movement in all directions. Operation of the SCV is unlocked.
- Push the lock lever (A) to prohibit SCV lever movement in all directions. Operation of the SCV is locked.
- Operation of the lock lever is indicated on label (B).

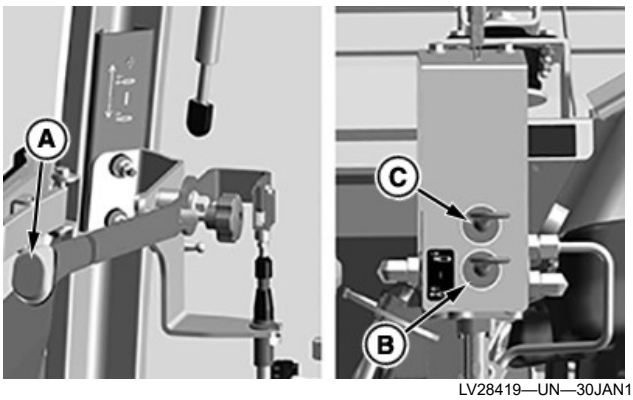
UP00731,00000BC-19-23OCT19

Operate Third Selective Control Valve (SCV)



LV28418—UN—18MAY17

Open Operator Station



LV28419—UN—30JAN19

Cab

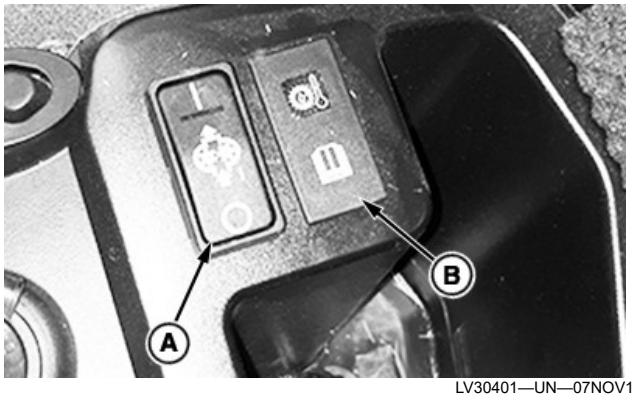
The third SCV provides flow functionality for operating rear motor-driven attachments.

Move control lever (A) up to allow flow to the bottom outlet (B). Move control lever (A) down to return flow to the top outlet (C).

PP71895,00014FF-19-01JUL20

Operate Selective Control Valve (SCV) Continuous Flow Switch

IMPORTANT: Machine damage can occur if the SCV is used in the continuous flow position for a long period of time. The hydraulic system becomes overheated and the hydraulic oil overheat light (B) illuminates.



LV30401—UN—07NOV18

Cab Tractor—Continuous Flow Switch

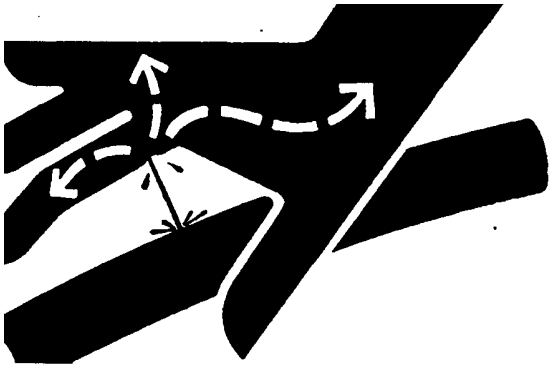
A—Continuous Flow Switch
B—Hydraulic Oil Temperature Overheat Light

1. Move the continuous flow switch (A) to the “I” position to enable the continuous flow for the SCV.
2. To return to the neutral position, move the switch to the “O” position.

UP00731,00005F2-19-31JAN19

Operate Third Function Selective Control Valve (If Equipped)

CAUTION: To avoid injury from escaping fluid under pressure, stop engine and relieve the pressure in the system before disconnecting or connecting hydraulic or other lines. Tighten all connections before applying pressure.



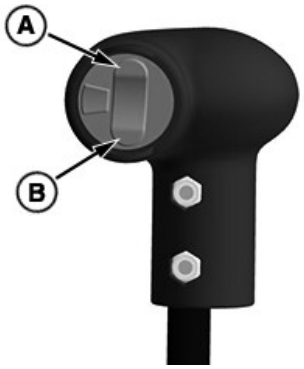
X9811—UN—23AUG88

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene can result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

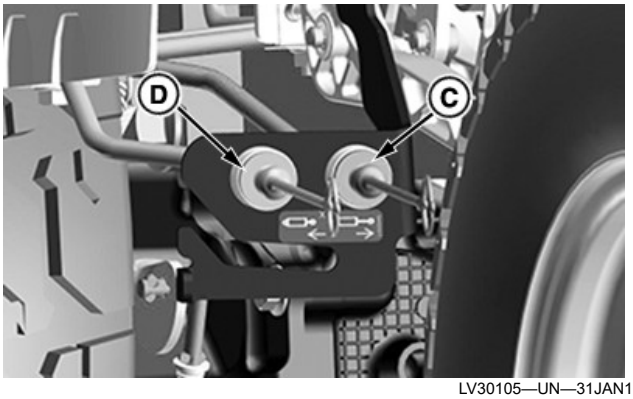
IMPORTANT: Avoid damage! To prevent contamination of female quick couplers, color-coded hose ends should be installed in the couplers when not being use.

The third function (SCV) outlet may be operated in a momentary condition to operate attachments such as extending or retracting a hydraulic cylinder. The attachment receives full hydraulic flow in direct response to the use of the control switch.



LV30098—UN—07JUN18

Third Function SCV



LV30105—UN—31JAN19

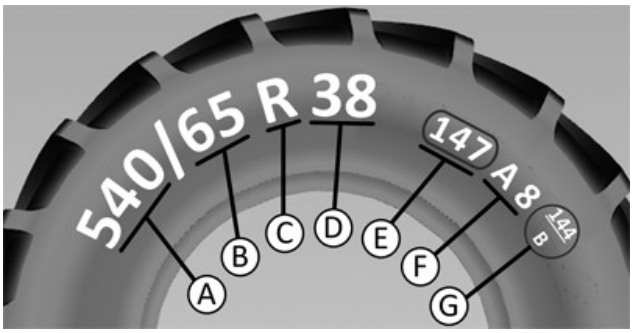
Mid Outlet

A—Top of the Third SCV Control Switch
B—Bottom of the Third SCV Control Switch
C—Cylinder Extend Outlet
D—Cylinder Retract Outlet

1. **Cylinder Extend**—Depress the bottom of the third SCV control switch (B) to allow flow from the circuit out through the extend outlet (C) and return to the machine through the retract outlet (D).
2. **Cylinder Retract**—Depress the top of the third SCV control switch (A) to allow flow from the circuit out through the retract outlet (D) and return to the machine through the extend outlet (C).

PP71895,00014FE-19-30JUN20

Tire Labeling, Ascertain the Load Capacity of Tires



LX299192—UN—18NOV16

Example of Manufacturers' Information on Sidewall of Tires

CAUTION: Load capacity of tires and permissible axle loads must not be exceeded under any circumstances.

Tire load capacities stated in the Operator's Manual apply for a ground speed of 40 km/h (25 mph).

Tire load capacity at a specific ground speed:
On the sidewall of the tire can be seen details of its load capacity (E) at maximum permissible ground speed (F).

If the tire manufacturer has approved the same tire for another ground speed, additional information (G) is provided. In this case, note especially that tire load capacity may change in relation to the maximum permissible ground speed.

A	Tire Width	Width in millimeters.
B	Tire Section	Ratio of tire height to tire width.
C	Type	"R" = radial, "—" = cross-ply (example: 18.4-38)
D	Rim Diameter	Diameter in inches.
E	Tire Load Index (LI)	Maximum permissible load capacity per tire, in relation to speed index (F).
F	Speed Index	Maximum permissible ground speed at which (E) applies.
G	Tire Load Index (LI) / Speed Index	Tire load capacity at an alternative permitted ground speed.

Apply to your tire dealership or directly to the tire manufacturer for more information on tires and tables concerning load index and ground speed.

Speed Index	**A6**	**A8**	**B**	**C**	**D**
km/h	30	40	50	60	65
mph	19	25	31	37	40

Example: Tire 540/65R38 147A8 (144/B)

- Tire Load Index (LI) . . . . . ***147*** ⇛ 3075 kg (6780 lb.) load capacity per tire
- Speed Index . . . . . ***A8*** ⇛ 40 km/h (25 mph)

+

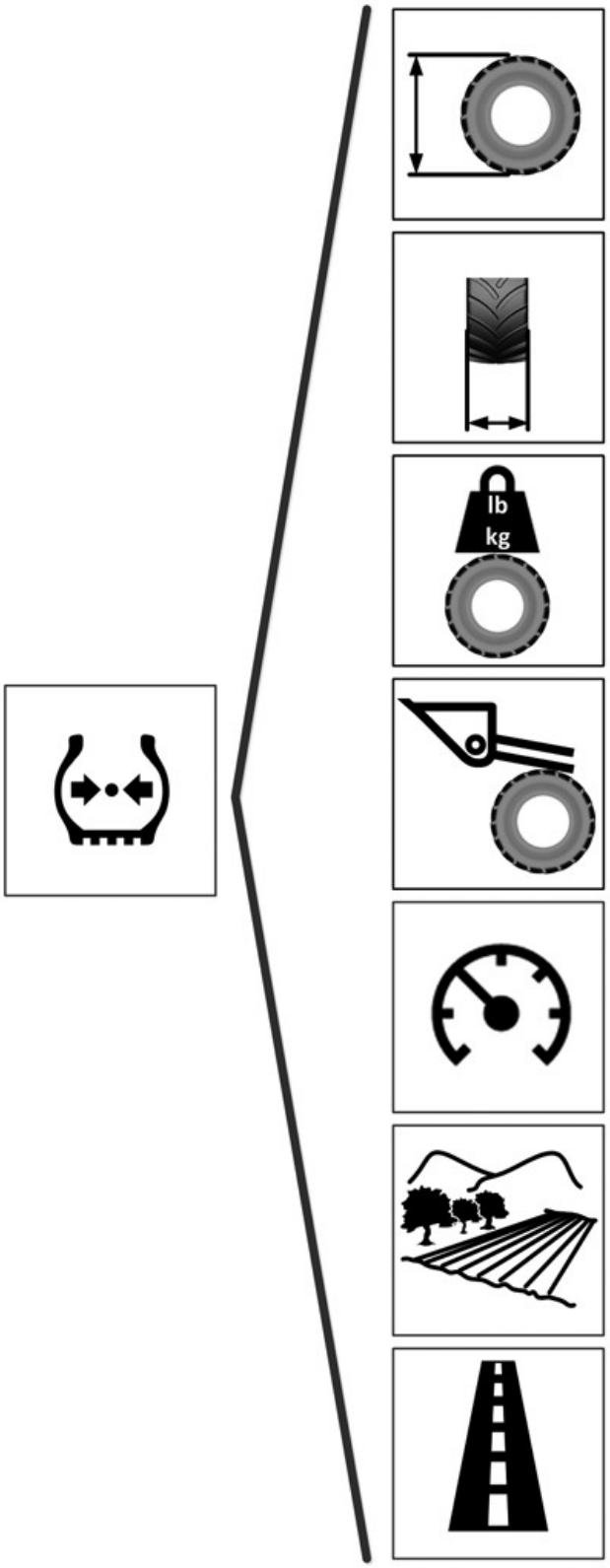
- Tire Load Index (LI) . . . . . ***(144)*** ⇛ 2800 kg (6175 lb.) load capacity per tire
- Speed Index . . . . . ***(B)*** ⇛ 50 km/h (31 mph)

Permissible deviation in load capacity in relation to speed index, in percent:

Speed Index	**Permissible Ground Speed**		**Permissible deviation in load capacity of tires at:**		
	km/h	**mph**	**30 km/h (19 mph)**	**40 km/h (25 mph)**	**50 km/h (31 mph)**
A6	30	19	± 0%	- 10%	—
A8	40	25	+ 7%	± 0%	- 9%
D	65	40	+ 15%	+ 9.5%	+ 5%

OULXA64,0003E9A-19-28NOV16

Select Tire Inflation Pressure



LX299189—UN—16NOV16

Tire inflation pressure plays a vital role in determining vehicle behavior, tractive force and fuel consumption.

Since the correct tire pressure is dependent on many different factors, it is not possible to make a general recommendation.

When selecting inflation pressure, take the following into account:

- Tire manufacturer
- Tire size
- Axle load of machine
- Ballast on machine
- Whether tire is used on a front or rear wheel
- Nature of the work to be done
- Soil conditions
- Expected travel speed

To ascertain the pressure for specific applications, refer to the inflation pressure tables provided by the tire manufacturers. Many tire manufacturers provide apps on their Internet portals which allow the recommended tire pressure to be calculated.

IMPORTANT: Any tire inflation quoted in this Operator's Manual is binding.

Tires must never be inflated to a pressure higher than the maximum value stated on the tire.

Use a tire pressure of 2 bar (29 psi) if no other pressure value is available.

Particular attention must be paid to inflation pressures for row-crop tires, special tires and tires with liquid ballast. If in doubt, obtain the correct inflation pressure from the tire manufacturer.

OULXBER,0002C32-19-01DEC16

Tire Combinations

In order to achieve maximum drawbar pull, maintain proper steering ability, and reduce tire wear and fuel consumption, comply with the correct tire combinations.

Tire Combinations	
Rear	12 – 16.5 - 4PR R3
Front	23 X 8.50 – 12 4PR R3
Rear	305/70 D16.5 6PR R4
Front	215/65 D12 6PR R4
Rear	280/70 R16
Front	220/55 R12

DN39857,00006A1-19-21MAR22

Front and Rear Tire Capacity

Front Tires—Capacity			
Tire Size	**Tread**	**kg**	**lb**
23 X 8.50 – 12 4PR R3	R3	450	992
215/65 D12 6PR R4	R4	560	1235
220/55 R12	R3	475	1047

Rear Tires—Capacity			
Tire Size	**Tread**	**kg**	**lb**
12 – 16.5 - 4PR R3	R3	975	2150
305/70 D16.5 6PR R4	R4	1285	2833
280/70 R16	R3	1120	2469

DN39857,00006A2-19-21MAR22

Ballast

Ballast Machine

CAUTION: Avoid injury! Ballasted machine becomes unstable when attachment is raised. Always drive slowly over uneven ground and when turning with raised attachment.

IMPORTANT: Avoid damage! Do not overload tires. Do not exceed maximum inflation pressure or maximum load capacity of tire.

Add weight to the machine front end if needed for stability. Heavy pulling and heavy rear mounted implements tend to lift front wheels. To maintain steering control and prevent tip over, ensure that enough ballast has been added. Remove weight when it is no longer needed.

IMPORTANT: Avoid damage! Remove ballast from the machine when no longer needed.

UP00731,00000D0-19-15JAN19

Implement Codes

Use the following tables to determine the number of front weights to use with John Deere implements. Implement code data can be found in the ballasting section of the implement operator's manual.

Match the implement code from the implement manual with the codes for your machine and type of hitch. If the code falls between two numbers in the table, use the next higher number for the number of front weights to use with that implement.

These codes are for ideal conditions. Actual field conditions can require additional ballast. Some John Deere implements require using a certain number of front weights rather than giving implement codes.

Maximum recommended implement codes:

- Base tractor: 15

Implement Code	Minimum Number of 19 kg (42 lb) Weights	Minimum Number of 19 kg (42 lb) Weights When Using iMatch™ Quick-Attach Hitch
15	0	0
20	1	2
23	2	3
25	3	4
27	4	5
29	5	6
31	5	6
33	6	7
35	7	Not recommended
37	Not Recommended	Not recommended

iMatch is a trademark of Deere & Company

UP00731,00002EA-19-10APR18

Use Optional Rear Cast Iron Wheel Weights

1. Mount rear wheels in the wide position for improved stability.

   CAUTION: Avoid injury! Machine component or attachment is heavy. Use a safe lifting device or get an assistant to help lift, install, or remove component or attachment.

2. Fasten weight to each rear wheel using a safe lifting device. Use up to three total weights per wheel. See your implement operator's manual for installation and number of weights to use.

   Rear wheel weights are available from your John Deere Dealer.

UP00731,00000D2-19-15JAN19

Use Optional Rear Ballast Box

CAUTION: Avoid injury! To improve front loader-machine stability, use of the ballast box is recommended. Use ballast as recommended in the loader operator's manual.

The rear ballast box is used for carrying ballast on the 3-point hitch. Approximate weight of different materials is given in the implement operator's manual.

UP00731,00000D3-19-29NOV16

Use Liquid Weight in Tires

CAUTION: Avoid injury! Installing liquid ballast requires special equipment and training. Exploding tires cause injury. Have the job done by your John Deere dealer or a tire service store.

IMPORTANT: Avoid Damage! Cover rim completely with solution to avoid corrosion, but never more than 90 percent full. More solution would leave too little air space to absorb shocks. Damage to tire could occur.

NOTE: Use of alcohol as ballast is not recommended. Calcium chloride solution is heavier and more economical.

A solution of water and calcium chloride provides safe economical ballast, and prevents freezing. If used properly, it will not damage tires, tubes, or rims.

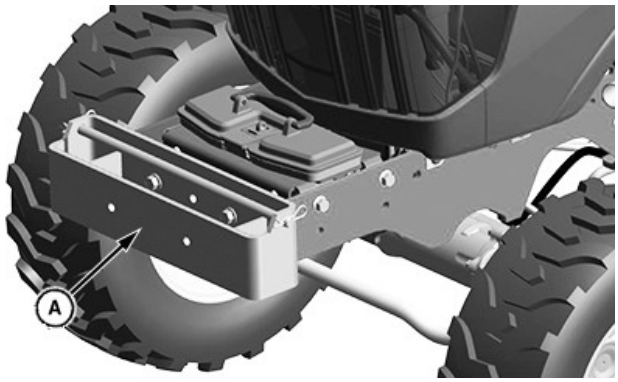
A mixture of 0.4 kg of calcium chloride per liter of water (3.5 lb per gallon), does not freeze solid above -45°C (-50°F).

Fill tubeless tires at least to the valve stem level (minimum 75% full). Less solution would expose part of rim, possibly causing corrosion.

Fill tube type tires to any level below 90%.

UP00731,00000D4-19-15JAN19

Use Optional Front Weights



LV26804—UN—10NOV16

A—Front Weight Bracket

IMPORTANT: Avoid damage! Do not install weights on the front bumper plate, damage to can occur to the front grille. Use optional bolt-on bracket for front weights.

The front weight bracket (A) is an optional extension bracket that bolts on to the front of the machine frame. The bracket holds up to seven Quik-Tatch™ weights.

Each weight is 19 kg (42 lb).

Quik-Tatch weights and attaching hardware are available at your John Deere dealer.

See your implement operator's manual for additional information and required number of weights to use.

UP00731,00000D5-19-09OCT18

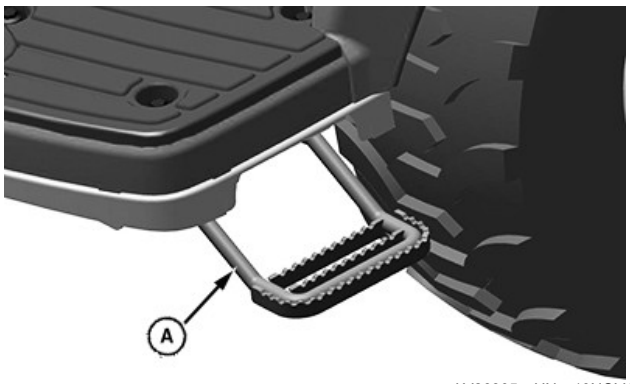
Quik-Tatch is a trademark of Deere & Company

Additional Equipment Operation

To operate attachments or implements, refer to relevant Operator’s Manual.

UP00731,0000206-19-26MAY17

Enter and Exit Machine



LV26805—UN—10NOV16

A—Step

Use Step

Step (A) is on the left side of machine. Use step for entering and exiting the operator station. Face machine when getting on and off and maintain 3-point contact with steps, handholds, and handrails.

UP00731,0000032-19-29NOV16

Adjust Seat

1. Sit on seat.

LV26806—UN—10NOV16

A—Seat Lever

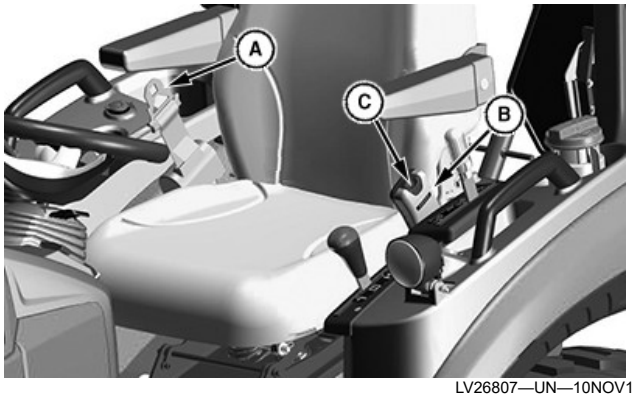
2. Pull seat lever (A) sideways to unlock seat position.
3. Slide seat forward or rearward to desired position where all controls can be easily reached.
4. Release lever to lock seat in position.

UP00731,000007C-19-29NOV16

Use Seat Belt

CAUTION: Avoid injury! Always wear seat belt when operating machine with non-folding Roll-Over Protective Structure (ROPS) or folding ROPS in upright position. Do not jump from machine if machine tips.

If folding ROPS must be folded to operate in a low clearance area, do not use seat belt. Raise ROPS and use seat belt as soon as conditions permit.



LV26807—UN—10NOV16

A—Seat Belt
B—Latch
C—Seat Belt Release

1. To fasten the seat belt: Extend the self-retracting seat belt (A) and insert it into latch (B) on the opposite side of the seat. The seat belt is self-retracting and it automatically adjusts to fit the operator.
2. To release the seat belt: Press the seat belt release (C) on the buckle.

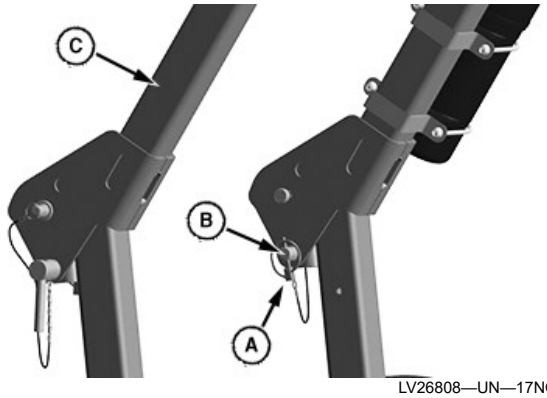
UP00731,000007D-19-16FEB17

Raise and Lower ROPS

CAUTION: Avoid injury! Always wear seat belt when operating machine with folding Roll-Over Protective Structure (ROPS) in upright position. Do not jump from machine if machine tips.

If ROPS must be folded to operate in a low clearance area, do not use seat belt. Raise ROPS and use seat belt as soon as conditions permit.

Lower ROPS Crossbar:

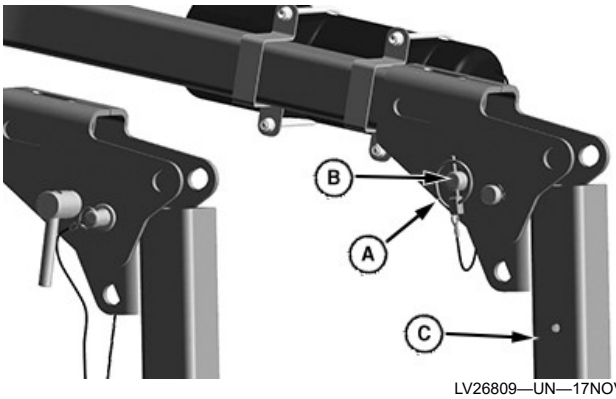


LV26808—UN—17NOV16

A—Spring Locking Pin
B—Drilled Pin

C—ROPS Crossbar

1. Remove spring locking pin (A) and drilled pin (B) on each side of the ROPS.
2. Carefully lower ROPS crossbar (C) about half way down.



LV26809—UN—17NOV16

A—Spring Locking Pin
B—Drilled Pin
C—ROPS Crossbar

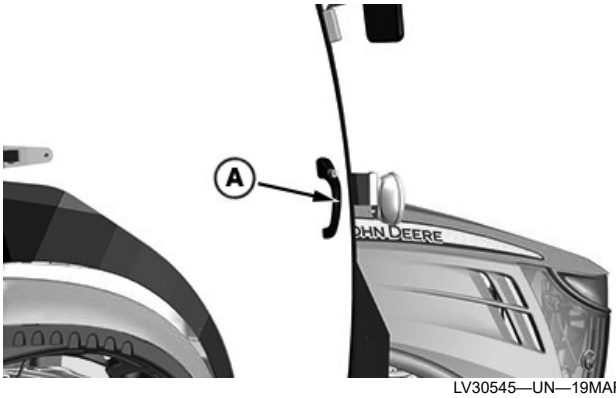
3. Install drilled pins (B) and spring locking pins (A) and lower crossbar (C) onto drilled pins (B).

Raise ROPS Crossbar

1. Raise the crossbar enough to remove spring locking pins (A) and drilled pins (B) on each side of the ROPS.
2. Carefully raise the ROPS crossbar (C) to the operating position.
3. Align crossbar bracket holes with the support bracket holes on each side of the ROPS.
4. To lock crossbar (C) in the raised position, Install drilled pins (B) and spring locking pins (A).

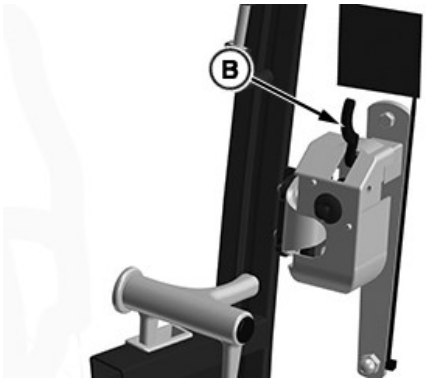
UP00731,00002AB-19-17APR17

Doors



LV30545—UN—19MAR19

Exterior Door Latch



LV30542—UN—19MAR19

Interior Door Latch

A—Exterior Door Latch
B—Interior Door Latch

Depress the latch (A) on the exterior door to release and pull to open the door.

Pull the latch (B) on the interior door to release and push to open the door.

UP00731,0000909-19-15APR19

Windows

Front Window

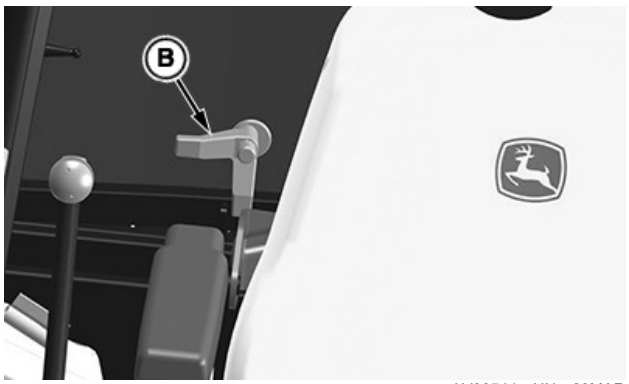
CAUTION: Avoid injury from broken glass. Windshield shatters if contacted by raised front-end loader. Do not operate the loader with the windshield open.

LV30543—UN—19MAR19

A—Front Window Latch

To open the front window, rotate the front window latch (A).

Rear Window



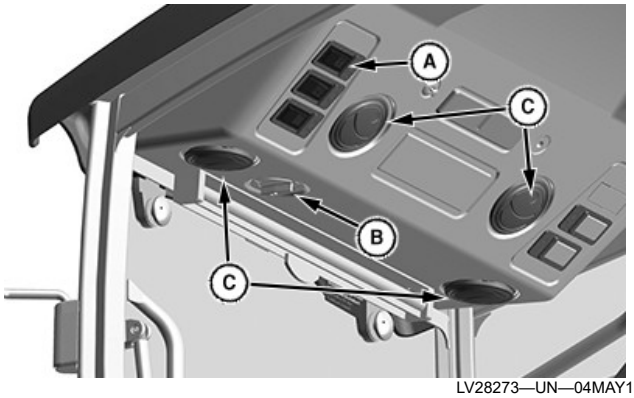
LV30544—UN—20MAR19

B—Rear Window Latch

To open the rear window, rotate the rear window latch (B).

UP00731,000090A-19-08APR19

Cab Heater Control



LV28273—UN—04MAY17

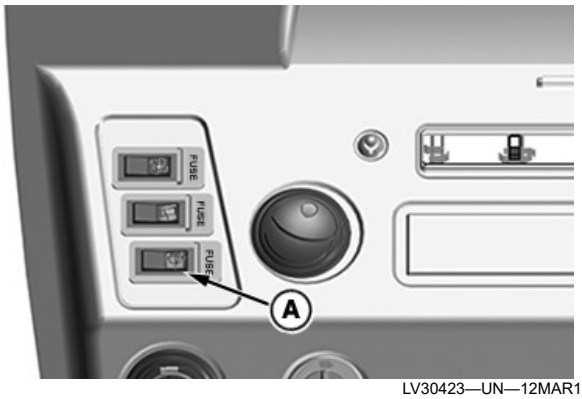
Cab Controls

A—Fan Switch
B—Temperature Control Knob
C—Vent

1. Push the fan switch (A) to turn on fan.
2. Turn the temperature control knob (B) to adjust the heater temperature.
3. Adjust vents (C) to desired position.

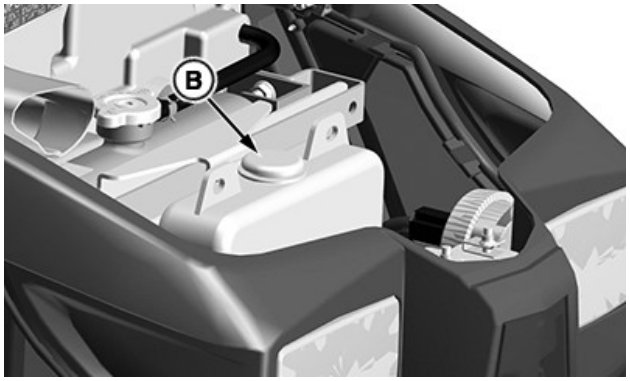
UP00731,00008D6-19-09JAN19

Front Windshield Wiper



LV30423—UN—12MAR19

Front Windshield Wiper Switche



LV30416—UN—12MAR19

Washer Fluid Reservoir

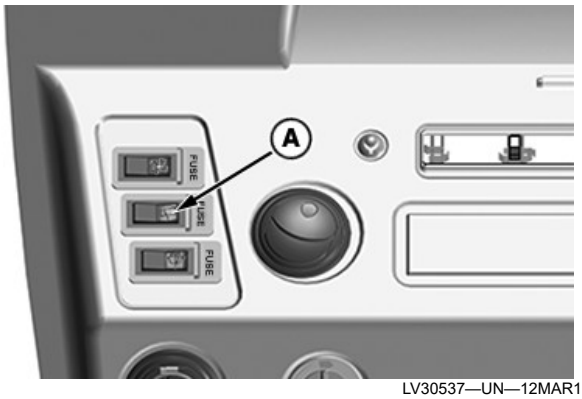
A—Front Windshield Wiper Switch
B—Fluid Reservoir

To turn the front windshield wiper on and off, use the wiper switch (A).

The washer fluid reservoir (B) is located under the hood of the tractor. Fill the reservoir with windshield washer fluid as required. In cold climates, fill with non-freezing windshield washer fluid. Reservoir only supplies the front wiper.

UP00731,00008E6-19-12MAR19

Rear Windshield Wiper (If Equipped)



LV30537—UN—12MAR19

Rear Windshield Wiper Switch

To turn the rear wiper on and off, use the rear wiper switch (A).

UP00731,00008FE-19-12MAR19

Transport and Storage

Transport Machine on Trailer

CAUTION: Avoid injury! Use extra care when loading or unloading the machine into a trailer or truck.

Close fuel shutoff valve, if the machine is equipped.

IMPORTANT: Avoid damage! Transporting a machine on a trailer at high speeds can result in hood raising and possibly coming off the machine. Ensure that the hood is secured before transporting.

- **Position machine on trailer so hood or engine cover opens from rear of trailer to prevent wind from blowing hood or cover open.**
- **Secure hood with existing machine locks or latches.**
- **If no locks or latches exist, secure hood with tie-down straps.**

NOTE: Use a heavy-duty trailer to transport the machine.

1. Drive or back machine onto trailer so hood or engine cover opens from rear of trailer.
2. Lower any implements to the trailer deck.
3. Lock the park brake.
4. Stop the engine.
5. Remove the key.
6. Close the fuel shutoff valve.
7. Remove or cover up the slow moving vehicle (SMV) sign.
8. Fasten machine to trailer with heavy-duty straps, chains, or cables. Both front and rear straps must be directed down and outward from machine. Trailer must have signs and lights as required by law.

KN52281,1003ECB-19-15JAN19

Transport Machine

Drive Machine Safely on Roads

CAUTION: Avoid injury! Use caution when operating machine at transport speeds. Reduce speeds if towed load weighs more than machine. Consult towed equipment operator's manual for recommended transport speeds.

Use additional caution when transporting towed loads under adverse surface conditions, especially when turning, and on inclined surfaces.

Use of warning lights and turn signals are recommended when traveling on public roads unless prohibited by state or local regulations. Lighting kits are available from a John Deere dealer.

Observe the following precautions when operating the machine on a road:

- Make sure SMV (Slow Moving Vehicle) emblem and warning lights are clean and visible. If towed or rear-mounted equipment obstructs these safety devices, install SMV emblem and warning lights on equipment.
- Turn on the warning lights and headlights, except if prohibited by law.
- Drive slowly enough to maintain safe control at all times. Slow down for hillsides, rough ground, and sharp turns, especially when transporting heavy, rear-mounted implements.
- To provide maximum stability, adjust tread width position of rear wheels.
- If equipped, disengage the MFWD to reduce tire wear.
- Never coast a machine downhill.

JZ81662,0000FC8-19-15JAN19

Push or Tow Machine

CAUTION: Avoid injury! Never tow machine faster than 10 km/h (6 mph). If possible, have someone operate steering and brakes of towed tractor.

IMPORTANT: Avoid damage! Push or tow machine for short distances only.

1. Push the PTO switch to the disengaged/off position.
2. Disengage the differential lock.
3. Disengage park brake.
4. Move the range-shift lever to the N (neutral) position.
5. Disengage the MFWD.

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Tow Loads

CAUTION: Avoid injury! Stopping distance increases with speed and weight of towed load, and on slopes. Towed loads with or without brakes that are too heavy for the machine or are towed too fast can cause loss of control. Consider the weight of the equipment and its load.

Observe these recommended maximum road speeds, or local speed limits if they are lower:

- **If towed equipment does not have brakes:**
  - **Do not travel more than 32 km/h (20 mph).**
  - **Do not tow loads more than 1.5 times the tractor weight.**
- **If towed equipment has brakes, do not travel more than 40 km/h (25 mph) and do not tow loads more than 4.5 times the machine weight.**

Ensure that the load does not exceed the recommended weight ratio. Add ballast to recommended maximum for machine, lighten the load, or get a heavier towing unit. The tractor must be heavy and powerful enough with adequate braking power for the towed load. Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.

1. Hitch the towed load only to the rear hitch plate.
2. Connect safety chains to the lower draft arm crossbar and to the towed load. Provide only enough slack to permit turning.
3. Before descending a hill, shift to a gear low enough to control the machine travel speed without having to use the brake pedal to brake the machine and installed implements.

KN52281,1003ECD-19-15JAN19

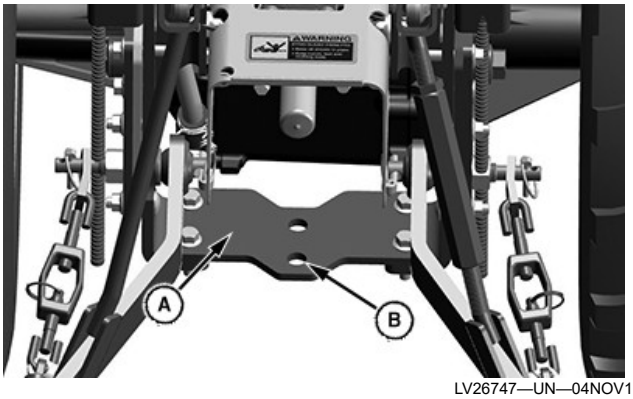
Use Safety Chain

CAUTION: Avoid injury! To avoid rearward upset, hitch towed loads only to the rear hitch plate. Do not use a safety chain for towing loads.

IMPORTANT: Avoid damage! Secure the towed load to the rear hitch plate. Safety chains are designed to help control the towed load if it separates from the hitch plate.

Use a chain with a strength rating greater than the gross weight of the towed load.

Replace or repair the safety chain if one or more links or fittings are broken, stretched, or damaged.



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A—Rear Hitch Plate

1. Secure the safety chain around the rear hitch plate (A).
2. Remove the safety chain and store when not in use.

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Store Safety

CAUTION: Avoid injury! Fuel vapors are explosive and flammable. Engine exhaust contain carbon monoxide and cause serious illness or death:

- **Run the engine only long enough to move the machine to or from storage.**
- **Do not store vehicle with fuel in the tank inside a building where fumes may reach an open flame or spark.**
- **Allow the engine to cool before storing the machine in any enclosure.**

KN52281,1003F62-19-29NOV16

Prepare Machine for Storage

1. Repair any worn or damaged parts. Replace parts if necessary. Tighten loose hardware.
2. To prevent rust, repair scratched or chipped metal surfaces.
3. Wash the machine and apply wax to metal and plastic surfaces.
4. To dry belts and pulleys, run machine for five minutes.
5. To prevent rust, apply a light coat of engine oil to pivot and wear points.
6. Lubricate grease points.
7. Check tire pressure.

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Prepare Fuel and Engine for Storage

Fuel:

If you have been using stabilized fuel, add stabilized fuel to the tank until the tank is full.

NOTE: Filling the fuel tank reduces the amount of air in the fuel tank and helps reduce deterioration of fuel.

If you are not using stabilized fuel:

1. Park machine safely in a well-ventilated area.

NOTE: Leave as little fuel in the fuel tank as possible for the season.

2. Turn on engine and allow to run until it runs out of fuel.
3. Turn key to OFF position.

IMPORTANT: Avoid damage! Stale fuel can produce varnish and plug injector components and affect engine performance.

- **Add fuel conditioner or stabilizer to fresh fuel before filling tank.**

4. Mix fresh fuel and fuel stabilizer in a separate container. Follow stabilizer instructions for mixing.
5. Fill fuel tank with stabilized fuel.
6. Run engine for a few minutes to allow fuel mixture to circulate through the fuel system.
7. Turn key to OFF position.

Engine:

Use engine storage procedure when vehicle is not to be used for longer than 60 days.

1. Change engine oil and filter while engine is warm.
2. Service air filter if necessary.
3. Clean debris from the air intake screen.
4. Clean the engine and engine compartment.
5. Remove the battery.
6. Clean the battery and battery posts.
7. Close fuel shutoff valve, if your machine is equipped.
8. To avoid the battery freezing, store it in a cool, dry place.

NOTE: Recharge the stored battery every 90 days.

9. Charge the battery.
10. Store the vehicle in a dry, protected place. If vehicle is stored outside, put a waterproof cover over it.

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Remove Machine from Storage

1. Check tire pressure.
2. Check engine oil level.
3. Charge battery if necessary.
4. Install battery.
5. Lubricate all grease points.
6. Open fuel shutoff valve, if your machine is equipped.
7. Run the engine 5 minutes without any attachments running to allow oil to be distributed throughout engine.
8. Be sure all shields and guards or deflectors are in place.

KN52281,1003F65-19-29NOV16

Maintenance Intervals

Service Your Machine

IMPORTANT: Avoid damage! Operating in extreme conditions require more frequent service intervals:

- **Engine components become dirty or plugged when operating in extreme heat, dust, or other severe conditions.**
- **Engine oil can degrade if machine is operated constantly at slow or low engine speeds or for frequent short periods of time.**

Use the following timetables to perform routine maintenance on your machine.

Park the vehicle safely.

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Maintenance Interval Chart—Daily to Every 400 Hours

Item	Every 10 Hours or Daily	Every 50 Hours	Every 200 Hours	Every 400 Hours
Test safety interlock systems.	•			
Check engine oil level.	•			
Check transmission oil level.	•			
Check air filter rubber dust valve.	•			
Check air intake and radiator screen.	•			
Check radiator coolant level.	•			
Check/Drain water separator.	•			
Lubricate grease points. (Wet conditions)	•			
Lubricate grease points. (Normal conditions)		•		
Check front axle oil level.		•		
Check cab mounting bolt torque.		•		
Clean or replace cab air filters.		•		
Lubricate 3 point hitch.		•		
Change transmission oil and filter / clean suction screen.			•	
Inspect alternator belt.			•	
Check air filter restriction indicator. (2R only)			•	
Check wheel bolt torque.			•	
Change engine oil and filter.				•
Drain water from fuel tank and replace fuel filter.				•

Maintenance Interval Chart — Daily to 400 Hours

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Maintenance Interval Chart—Every 600 Hours to Every 6000 Hours

Item	Every 600 Hours	Yearly	Every 1000 Hours	Every 2000 Hours or Annually [a]	Every 6000 Hours/Six Years[a]
Service air filter element and hoses.	•				
Change front axle oil.	•				
Check brake adjustment.	•				
Check wheel bolt torque.		•			
Change engine oil and filter if less than 400 hours of operation.		•			
Drain water from fuel tank and replace fuel filter if less than 400 hours of operation.		•			
Check all hoses and clamps.		•			
Check engine valve clearance. See your John Deere dealer.			•		
Drain, flush, and refill engine cooling system [b] when coolant is NOT checked annually or NOT				•	

Item	Every 600 Hours	Yearly	Every 1000 Hours	Every 2000 Hours or Annually [a]	Every 6000 Hours/Six Years[a]
serviced with the pre-diluted John Deere Cool-Gard™ II[c]					
Drain, flush, and refill engine cooling system [b] when coolant is checked annually and serviced with the pre-diluted John Deere Cool-Gard™					•

Maintenance Interval Chart — 600 Hours to 6000 Hours

Cool-Gard is a trademark of Deere & Company
[a]If Cool-Gard II is not used and coolant is not tested annually, service interval is 2000 hours/annually
[b]See your John Deere dealer for service.
[c]Service interval can be extended to six years and 6000 hours thereafter if tractor coolant has been checked annually and serviced with pre-diluted John Deere COOL-GARD II ™.

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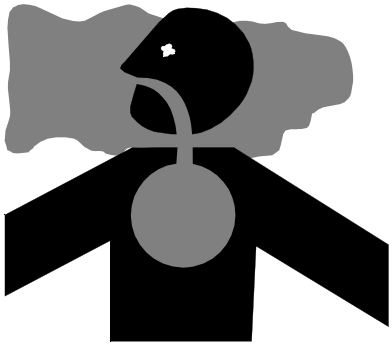
Test the Safety Interlock System Before Startup

Test Safety Systems



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CAUTION: Avoid Injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- **Move the machine to an outside area before running the engine.**
- **Ensure that there is adequate ventilation before running the engine in an enclosed area.**
- **To direct the exhaust fumes out of the area, connect a pipe extension to the engine exhaust pipe.**
- **To clear out the exhaust fumes, allow fresh outside air into the work area.**

Check the safety systems installed on your machine before each use. Be sure that you have read the machine operator manual and are familiar with the operation of the machine before performing these safety system checks.

Use the following checkout procedures to check for normal operation of machine.

If there is a malfunction during one of these procedures, do not operate machine. See your authorized dealer for service.

Perform these tests in a clear open area. Keep bystanders away.

Test the Neutral Start Switch

1. Sit on the operator seat.
2. Disengage PTO.
3. Move the transmission range-shift lever to the H (high) or L (low) position.
4. Turn key switch to START position.

   Result: Engine must not start.

Test the Seat Switch

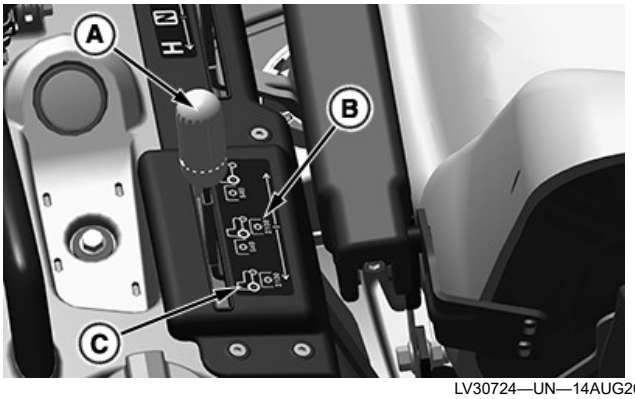
1. Sit on the operator seat.
2. Do not depress the hydrostatic travel pedals.
3. Lock the park brake.
4. Start the engine.
5. Engage the PTO.
6. Raise up slightly from the operator seat. Do not dismount the machine.

   Result: Engine must shut down.

Test Reverse Implement Option (RIO)

CAUTION: Avoid injury! Rotating blades are dangerous. Children or bystanders may be injured by runover and rotating blades.

Before backing up, carefully check the area around the machine.



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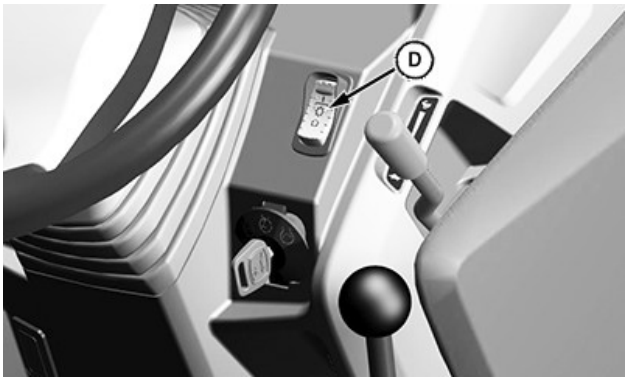
PTO Shift Lever



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PTO/RIO Switch

A—PTO Selector Lever
B—Mid/Rear PTO
C—Mid PTO
D—PTO/RIO Switch

Test 1

1. Park the machine safely.
2. Start the engine.
3. Set the engine speed to 1600 rpm or less.
4. Set the PTO selector lever to mid/rear or mid only position.
5. Engage the PTO.
6. Look behind and down before backing up to be sure that there are no bystanders and there is a clear path.
7. Begin reverse travel by depressing the reverse travel pedal.

   Result: Attachment and engine stops operation. If attachment or engine continues to operate while machine travels in reverse, do not continue operation.

Test 2

1. Park the machine safely.
2. Start the engine.
3. Set the engine speed to 1600 rpm or less.
4. Set the PTO selector lever to mid/rear or mid only position.
5. Engage the PTO.
6. Look behind and down before backing up to be sure that there are no bystanders and there is a clear path.
7. Press the PTO/RIO switch to the momentary position (RIO) to activate the reverse implement option.
8. Begin reverse travel by depressing reverse travel pedal.

   Result: Attachment remains in operation and the machine begins to travel in reverse.

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Avoid Damage to Plastic and Painted Surfaces

- Rinse the machine before wiping plastic parts. Using a dry cloth causes scratches.
- Insect repellent spray damages plastic and painted surfaces. Do not spray insect repellent near machine.
- Be careful not to spill fuel on the machine, it damages the surface. Wipe up spilled fuel immediately.
- Prolonged exposure to sunlight damages the hood surfaces.

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Clean Plastic Surfaces

IMPORTANT: Avoid damage! Improper care of machine plastic surfaces can damage that surface:

- **Do not wipe plastic surfaces when they are dry. Dry wiping results in minor surface scratches.**
- **Use a soft, clean cloth (bath towel, diaper, automotive mitt).**
- **Do not use abrasive materials, such as polishing compounds, on plastic surfaces.**

1. To remove the dirt and dust that scratches the surface, rinse hood and entire machine with clean water.
2. Wash surface with clean water and a mild liquid automotive washing soap.
3. Dry thoroughly to avoid water spots.
4. Wax the surface with a liquid automotive wax. Use products that specifically say “contains no abrasives.”

IMPORTANT: Avoid damage! Do not use a power buffer to remove wax.

5. Buff applied wax by hand using a clean, soft cloth.

KN52281,1003F50-19-29NOV16

Clean and Repair Metal Surfaces

Clean:

To care for the painted metal surfaces of the machine, follow automotive practices. To maintain the factory look of the machine painted surfaces, use a high-quality automotive wax regularly.

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Repair Minor Scratches (Surface Scratch):

1. Clean area to be repaired thoroughly.

IMPORTANT: Avoid damage! Do not use rubbing compound on painted surfaces.

2. Use automotive polishing compound to remove surface scratches.
3. Apply wax to the entire surface.

Repair Deep Scratches (Bare Metal or Primer Showing):

1. Clean area to be repaired with rubbing alcohol or mineral spirits.
2. To fill scratches, use a paint stick with factory-matched colors. Paint sticks are available from an authorized dealer. Follow directions included on the paint stick for use and for drying.
3. Smooth out surface using an automotive polishing compound. Do not use power buffer.
4. Apply wax to the entire surface.

KN52281,1003F51-19-15JAN19

Diesel Fuel

Use the proper diesel fuel to help prevent decreased engine performance and increased exhaust emissions. Failure to follow the fuel requirements listed can void your engine warranty.

Consult a local fuel distributor for properties of the diesel fuel available in the area.

In general, diesel fuels are blended to satisfy the low temperature requirements of the geographical area in which they are marketed.

Diesel fuels specified to ISO EN 590 or ASTM D975 are recommended.

Required fuel properties

In all cases, the fuel shall meet the following properties:

Cetane number of 45 minimum. Cetane number greater than 50 is preferred, especially when temperatures are below -20°C (-4°F) or elevations above 1500 m (5000 ft).

Cold Filter Plugging Point (CFPP) should be at least 5°C (9°F) below the expected lowest temperature or **Cloud Point** below the lowest ambient temperature.

Fuel lubricity should comply with ISO EN 590 or ASTM D975.

IMPORTANT: Avoid damage! Improper fuel additive usage causes damage on fuel injection equipment of diesel engines.

If a fuel of low or unknown lubricity is used, addition of John Deere PREMIUM DIESEL FUEL CONDITIONER at the specified concentration is recommended.

Sulfur Content

- Diesel fuel quality and sulfur content must comply with all existing emissions regulations for the area in which the engine operates.
- Use of diesel fuel with sulfur content less than 0.5% (5000 ppm) is required.
- Use of ultra low sulfur diesel (ULSD) fuel with a maximum of 0.0015% (15mg/kg) sulfur content is acceptable.

IMPORTANT: Avoid injury! Do not mix diesel engine oil or any other type of lubricating oil with diesel fuel.

Using Biodiesel Fuel

Biodiesel fuels may be used only if the biodiesel fuel properties meet the latest edition of ASTM D6751, ASTM D7467, EN14214, or equivalent specification.

The current maximum allowable biodiesel concentration is a 20% blend (also known as B20) in petroleum diesel fuel.

To learn of any changes to the recommendations for biodiesel usage with your diesel engine, ask your John Deere dealer.

Handling and Storing Diesel Fuel

CAUTION: Avoid injury! Handle fuel carefully. Do not fill the fuel tank when engine is running.

Do not smoke while you fill the fuel tank or service the fuel system.

IMPORTANT: Avoid damage! Do not use galvanized containers—diesel fuel stored in galvanized containers reacts with zinc coating in the container to form zinc flakes. If fuel contains water, a zinc gel forms. The gel and flakes quickly plug fuel filters and damage fuel injectors and fuel pumps.

- To prevent water condensation and freezing during cold weather, fill the fuel tank at the end of operation each day.
- When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize the fuel and to prevent water condensation. Contact your fuel supplier for recommendations.

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Handling and Storing Diesel Fuel

CAUTION: Reduce the risk of fire. Handle fuel carefully. DO NOT fill the fuel tank when engine is running. DO NOT smoke while you fill the fuel tank or service the fuel system.

To prevent water condensation and freezing during cold weather, fill the fuel tank at the end of operation each day.

Keep all storage tanks as full as practical to minimize condensation.

Ensure that all fuel tank caps and covers are installed properly to prevent moisture from entering. Monitor water content of the fuel regularly.

When using biodiesel fuel, the fuel filter requires more frequent replacement due to premature plugging.

Check engine oil level daily before starting the engine. Rising oil level indicates fuel dilution of the engine oil.

IMPORTANT: The fuel tank pressure is relieved through the filler cap. If a new filler cap is required, always replace it with an original John Deere replacement cap.

When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize

the fuel and prevent water condensation. Contact your fuel supplier or John Deere dealer for recommendations.

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Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as calculated cetane index, fuel type, sulfur content, water content, appearance, suitability for cold weather operations, bacteria, cloud point, acid number, particulate contamination, and whether the fuel meets ASTM D975 or equivalent specification.

Contact your John Deere dealer for more information on diesel fuel analysis.

DX,FUEL6-19-13JAN18

Minimizing the Effect of Cold Weather on Diesel Engines

John Deere diesel engines are designed to operate effectively in cold weather.

However, for effective starting and cold-weather operation, a little extra care is necessary. The following information outlines steps that can minimize the effect that cold weather may have on starting and operation of your engine. See your John Deere dealer for additional information and local availability of cold-weather aids.

Use Winter Grade Fuel

When temperatures fall below 0°C (32°F), winter grade fuel (No. 1-D in North America) is best suited for cold-weather operation. Winter grade fuel has a lower cloud point and a lower pour point.

Cloud point is the temperature at which wax begins to form in the fuel. This wax causes fuel filters to plug. **Pour point** is the lowest temperature at which movement of the fuel is observed.

NOTE: On average, winter grade diesel fuel has a lower Btu (heat content) rating. Using winter grade fuel may reduce power and fuel efficiency, but should not cause any other engine performance effects. Check the grade of fuel being used before troubleshooting for low-power complaints in cold-weather operation.

Air Intake Heater

An air intake heater is an available option for some engines to aid cold weather starting.

Ether

An ether port on the intake is available to aid cold weather starting.

CAUTION: Ether is highly flammable. Do not use ether when starting an engine equipped with glow plugs or an air intake heater.

Coolant Heater

An engine block heater (coolant heater) is an available option to aid cold weather starting.

Seasonal Viscosity Oil and Proper Coolant Concentration

Use seasonal grade viscosity engine oil based on the expected air temperature range between oil changes and a proper concentration of low silicate antifreeze as recommended. (See DIESEL ENGINE OIL and ENGINE COOLANT requirements in this section.)

Diesel Fuel Cold Flow Additive

Use John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula), which contains anti-gel chemistry, or equivalent fuel conditioner to treat non-winter grade fuel (No. 2-D in North America) during the cold-weather season. This generally extends operability to about 10° C (18°F) below the fuel cloud point. For operability at even lower temperatures, use winter grade fuel.

IMPORTANT: Treat fuel when outside temperature drops below 0°C (32°F). For best results, use with untreated fuel. Follow all recommended instructions on label.

Biodiesel

When operating with biodiesel blends, wax formation can occur at warmer temperatures. Begin using John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula) or equivalent at 5°C (41°F) to treat biodiesel fuels during the cold-weather season. Use B5 or lower blends at temperatures below 0°C (32°F). Use only winter grade petroleum diesel fuel at temperatures below -10°C (14°F).

Winterfronts

Use of fabric, cardboard, or solid winterfronts is not recommended with any John Deere engine. Their use can result in excessive engine coolant, oil, and charge air temperatures. This can lead to reduced engine life, loss of power and poor fuel economy. Winterfronts may also put abnormal stress on fan and fan drive components potentially causing premature failures.

If winterfronts are used, they should never totally close off the grill frontal area. Approximately 25% area in the center of the grill should remain open at all times. At no time should the air blockage device be applied directly to the radiator core.

Radiator Shutters

If equipped with a thermostatically controlled radiator shutter system, this system should be regulated in such a way that the shutters are completely open by the time

the coolant reaches 93°C (200°F) to prevent excessive intake manifold temperatures. Manually controlled systems are not recommended.

If air-to-air aftercooling is used, the shutters must be completely open by the time the intake manifold air temperature reaches the maximum allowable temperature out of the charge air cooler.

For more information, see your John Deere dealer.

DX,FUEL10-19-13JAN18

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Consult your John Deere dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to John Deere branded fluids or fluids that have been tested and/or approved for use in John Deere equipment.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

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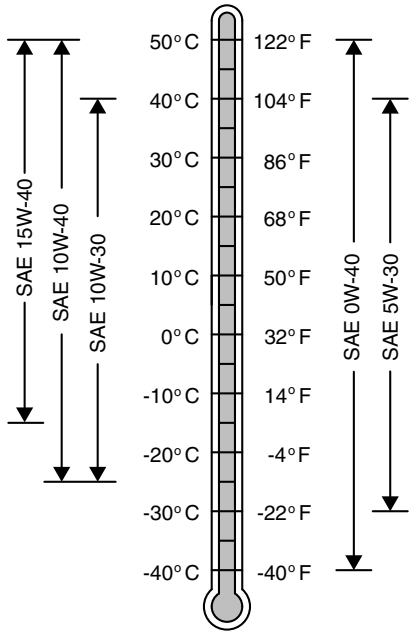
Engine Oil



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Oil Viscosities for Air Temperature Ranges

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following John Deere oils are preferred:

- Plus-50™ II
- Torq-Gard™ Supreme

Other oils may be used if above John Deere oils are not available, provided they meet the following specification:

- API Service Classification CD, CF, CF—4, CI—4, CJ—4 or CK—4
- ACEA Specification E—3, E—4, E—5 or E—6
- JASO Specification DH—1 or DH—2

Diesel fuel quality and fuel sulfur content must comply with all existing emissions regulations for the area in which the engine operates.

KN52281,1004A5F-19-03DEC19

Diesel Engine Coolant

Preferred coolants:

The following pre-mix engine coolants are preferred:

- **John Deere Cool-Gard™ II**
- **John Deere Cool-Gard™ II PG**

Not all Cool-Gard™ II pre-mix products are available in all countries.

Use Cool-Gard™ II PG when a non-toxic coolant formulation is required.

Additional Recommended Coolants

The following engine coolant is also recommended:

- John Deere Cool-Gard™ II Concentrate in a 40—60% mixture of concentrate with quality water.

IMPORTANT: Avoid damage! When mixing coolant concentrate with water, do not use less than 40% or greater than 60% concentration of coolant. Less than 40% gives inadequate additives for corrosion protection. Greater than 60% can result in coolant gelation and cooling system problems.

Other Coolants

Other ethylene glycol or propylene glycol base coolants may be used if they meet one of the following specifications:

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Torq-Gard is a trademark of Deere & Company
Cool-Gard is a trademark of Deere & Company

- Pre-mix coolant meeting ASTM D6210 requirements
- Coolant concentrates meeting ASTM D6210 requirements in a 40% to 60% mixture of concentrate with quality water
- Pre-mix coolant meeting ASTM D3306 requirements
- Coolant concentrates meeting ASTM D3306 requirements in a 40% to 60% mixture of concentrate with quality water

If coolant meeting one of these specifications is unavailable, use a coolant concentrate or pre-mix coolant that has a minimum of the following chemical and physical properties:

- Is formulated with a quality nitrite-free additive package.
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion.

Water Quality

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol base engine coolant concentrate.

Coolant Drain Intervals

Drain and flush the cooling system and refill with fresh coolant at the indicated interval, which varies with the coolant used.

When Cool-Gard™ II or Cool-Gard™ II PG is used, the drain interval is 6 years or 6000 operating hours.

If a coolant other than Cool-Gard™ II or Cool-Gard™ II PG is used, reduce the drain interval to 2 years or 2000 operating hours.

IMPORTANT: Avoid Damage!

- **Do not use cooling system sealing additives or antifreeze that contains sealing additives.**
- **Do not mix ethylene glycol and propylene glycol base coolants.**
- **Do not use coolants that contain nitrites.**

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Operating in Warm Temperature Climates

John Deere engines are designed to operate using recommended engine coolants.

Always use a recommended engine coolant, even when operating in geographical areas where freeze protection is not required.

IMPORTANT: Water may be used as coolant *in emergency situations only.*

Foaming, hot surface aluminum and iron corrosion, scaling, and cavitation occur when water is used as the coolant, even when coolant conditioners are added.

Drain cooling system and refill with recommended engine coolant as soon as possible.

DX,COOL6-19-17FEB20

Additional Information About Diesel Engine Coolants and John Deere COOL-GARD™ II Coolant Extender

Engine coolants are a combination of three chemical components: ethylene glycol (EG) or propylene glycol (PG) antifreeze, inhibiting coolant additives, and quality water.

Coolant Specifications

John Deere COOL-GARD™ II Premix either EG or PG, are fully formulated coolants that contain all three components in their correct concentrations. DO NOT add an initial charge of John Deere COOL-GARD II Coolant Extender to COOL-GARD II Premix. DO NOT add any other supplemental coolant additive or water to COOL-GARD II Premix.

John Deere COOL-GARD II Concentrate contains both ethylene glycol and inhibiting coolant additives. Mix this product with quality water, but DO NOT add an initial charge of John Deere COOL-GARD II Coolant Extender or any other supplemental coolant additive.

Replenish Coolant Additives

Some coolant additives will gradually deplete during engine operation. Periodic replenishment of inhibitors is required, even when John Deere COOL-GARD II Premix or COOL-GARD II Concentrate is used. Follow the recommendations in this manual for the use of John Deere COOL-GARD II Coolant Extender.

Why use John Deere COOL-GARD II Coolant Extender?

Operating without proper coolant additives will result in increased corrosion, cylinder liner erosion and pitting, and other damage to the engine and cooling system. A simple mixture of ethylene glycol or propylene glycol and water will not give adequate protection.

John Deere COOL-GARD II Coolant Extender is a chemically matched additive system designed to fortify the proprietary additives used in John Deere COOL-GARD II Premix and COOL-GARD II Concentrate and to provide optimum protection for up to six years or 6000 hours of operation.

COOL-GARD is a trademark of Deere & Company

Avoid Automotive-type Coolants

Never use automotive-type coolants (such as those meeting ASTM D3306). These coolants do not contain the correct additives to protect heavy-duty diesel engines. Do not treat an automotive engine coolant with supplemental coolant additives because the high concentration of additives can result in additive fallout.

Water Quality

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate. All water used in the cooling system should meet the following minimum specifications for quality:

Chlorides	<40 mg/L
Sulfates	<100 mg/L
Total dissolved solids	<340 mg/L
Total hardness	<170 mg/L
pH	5.5 to 9.0

Freeze Protection

The relative concentrations of glycol and water in the engine coolant determine its freeze protection limit.

Ethylene Glycol	Freeze Protection Limit
40%	-24°C (-12°F)
50%	-37°C (-34°F)
60%	-52°C (-62°F)
Propylene Glycol	**Freeze Protection Limit**
40%	-21°C (-6°F)
50%	-33°C (-27°F)
60%	-49°C (-56°F)

DO NOT use a coolant-water mixture greater than 60% ethylene glycol or 60% propylene glycol.

DX,COOL17-19-20APR11

Testing Diesel Engine Coolant

Maintaining adequate concentrations of glycol and inhibiting additives in the coolant is critical to protect the engine and cooling system against freezing, corrosion, and cylinder liner erosion and pitting.

Test the coolant solution at intervals of 12 months or less and whenever excessive coolant is lost through leaks or overheating.

Coolant Test Strips

Coolant test strips are available from your John Deere dealer. These test strips provide a simple, effective method to check the freeze point and additive levels of your engine coolant.

When Using John Deere COOL-GARD II

John Deere COOL-GARD II Premix™ , COOL-GARD II PG Premix and COOL-GARD II Concentrate are maintenance free coolants for up to six years or 6000 hours of operation, provided that the cooling system is topped off using only John Deere COOL-GARD II Premix or COOL-GARD II PG premix. Test the coolant condition annually with coolant test strips designed for use with John Deere COOL-GARD II coolants. If the test strip chart indicates that additive is required, add John Deere COOL-GARD II Coolant Extender as directed.

Add only the recommended concentration of John Deere COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

When Using Nitrite-Containing Coolants

Compare the test strip results to the supplemental coolant additive (SCA) chart to determine the amount of inhibiting additives in your coolant and whether more John Deere Liquid Coolant Conditioner should be added.

Add only the recommended concentration of John Deere Liquid Coolant Conditioner. DO NOT add more than the recommended amount.

Coolant Analysis

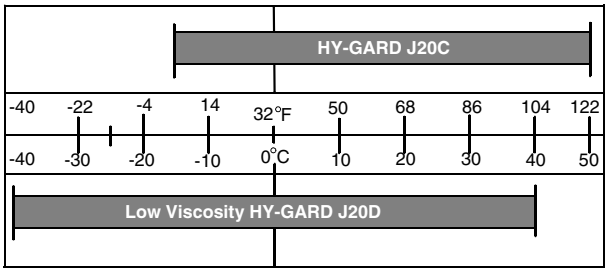
For a more thorough evaluation of your coolant, perform a coolant analysis. The coolant analysis can provide critical data such as freezing point, antifreeze level, pH, alkalinity, nitrite content (cavitation control additive), molybdate content (rust inhibitor additive), silicate content, corrosion metals, and visual assessment.

Contact your John Deere dealer for more information on coolant analysis.

DX,COOL9-19-11APR11

Transmission and Hydraulic Oil

IMPORTANT: Avoid damage! Transaxle is filled with John Deere HY-Gard™ (J20D) transmission oil at the factory. DO NOT mix oils.



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Do not use type “F” automatic transmission fluid.

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Use Low Viscosity Hy-Gard™ (J20D) transmission oil.

John Deere Low Viscosity Hy-Gard transmission oil is specially formulated for operation below -18°C (0)°F to provide maximum protection for the hydraulic system.

Use oil viscosity based on the expected air temperature range during the period between oil changes.

IMPORTANT: Avoid damage! Use recommended oil only. Do not use engine oil or "Type F" automatic transmission fluid.

Other oils may be used if they meet John Deere standard JDM J20D or J20C.

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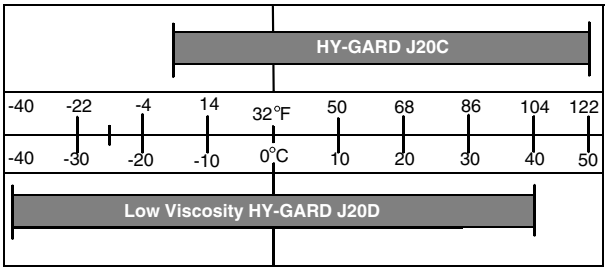
Front Axle and MFWD Oil



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Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere Hy-Gard™
- John Deere Low Viscosity Hy-Gard™

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

UP00731,000016D-19-11SEP15

Grease

IMPORTANT: Avoid Damage! Use recommended John Deere greases to avoid component failure and premature wear.

The recommended John Deere greases are effective within an average air temperature range of -29 to 135 degrees C (-20 to 275 degrees F).

If operating outside that temperature range, contact your Servicing dealer for a special-use grease.

The following greases are preferred:

- John Deere Multi-Purpose SD Polyurea Grease
- John Deere Multi-Purpose HD Lithium Complex Grease

If not using any of the preferred greases, be sure to use a general all-purpose grease with an NLGI grade No.2 rating.

Wet or high speed conditions may require use of a special-use grease. Contact your Servicing dealer for information.

The following lubricant is preferred:

- SUPER LUBE® lubricant.[1]

JZ81662,0000FD4-19-18MAR13

Hy-Gard is a trademark of Deere & Company

[1] SUPER LUBE is a registered trademark of Synco Chemical Corp.

Maintenance—As Required

Service—As Required

- Replace alternator belt.
- Replace air filter elements.
- Replace light bulbs.
- Replace fuses.
- Clean and replace battery.
- Replace radiator hoses and clamps.
- Check tire air pressure.
- Clean fuel tank overfill reservoir.
- Drain water and sediment from fuel sediment bowl, and service water separator.
- Check and clean front grille and side screens.
- Check and clean radiator cooling screen.
- Clean debris from engine compartment.

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Controls and Instruments Maintenance

For controls and instruments maintenance, see specific component in maintenance section.

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Engine Maintenance

Daily Startup Procedure

- Test safety systems. Perform safety interlock system checkout procedure.
- Check engine oil level.
- Check / drain water separator.
- Check transmission fluid level.
- Check coolant level.
- Clean air intake screen and radiator screen.
- Check air filter elements and dust valve.
- Check wheel bolt torques.
- Check tire pressure.
- Check fuel level.
- Remove grass and debris from machine.
- Check area below machine for leaks.

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Required Emission-Related Information

Service Provider

A qualified repair shop or person of the owner's choosing may maintain, replace, or repair emission control devices and systems with original or equivalent replacement parts. However, warranty, recall, and all other services paid for by John Deere must be performed at an authorized John Deere service center.

DX,EMISSIONS,REQINFO-19-12JUN15

Avoid Fumes

CAUTION: Avoid Injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- **Move the machine to an outside area before running the engine.**
- **Do not run an engine in an enclosed area without adequate ventilation.**
- **Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.**
- **Allow fresh outside air into the work area to clear the exhaust fumes out.**

KN52281,1003F09-19-25MAY17

Check Engine Oil Level

IMPORTANT: Avoid damage! Failure to check the oil level regularly could lead to a serious engine problem:

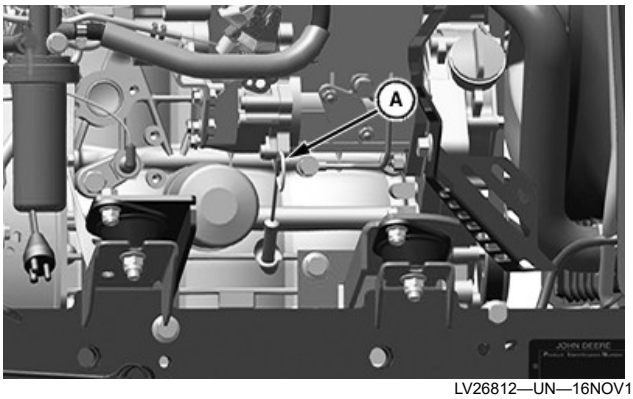
- **Check oil level before operating.**
- **Check oil level when the engine is cold and not running.**
- **Keep level between the Full and the Add marks.**
- **Shut off engine before adding oil.**

NOTE: Check engine oil when engine is cold. If engine is warm, allow to cool for at least 5 minutes before checking oil.

Check engine oil with the machine parked on a level surface.

1. Park the machine safely.

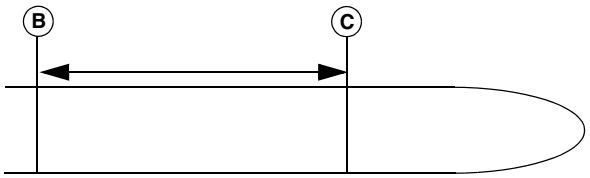
IMPORTANT: Avoid damage! Dirt and contamination can enter engine when checking oil level. Clean area around dipstick before loosening or removing.



LV26812—UN—16NOV16

A—Dipstick

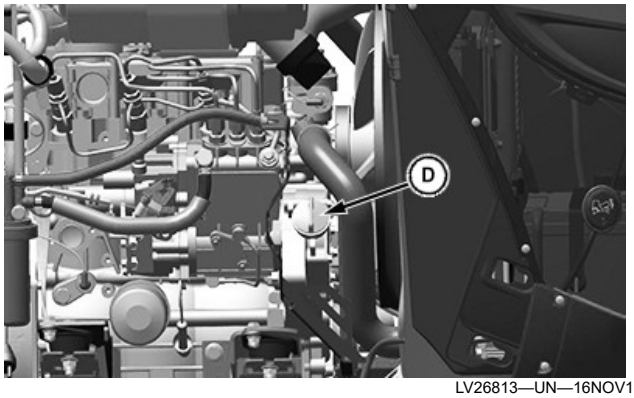
2. Remove dipstick (A), at the right side of the engine. Wipe with a clean cloth.
3. Install dipstick.
4. Remove dipstick.



LVAL38308—UN—21AUG12

B—Oil Level
C—Oil Level

5. Check oil level on dipstick. Oil level should be between levels (B) and (C) on dipstick.
6. If oil level is low:
   a. Raise hood.
   b. Remove right side panel.



LV26813—UN—16NOV16

D—Oil Fill Cap

   c. Remove oil fill cap (D).
   d. Add recommended engine oil until level is within operating range on dipstick. Do not overfill.
   e. Install dipstick.
7. If oil is above LEVEL (B) on dipstick, drain to the proper level.
8. Install right side panel.
9. Lower hood.

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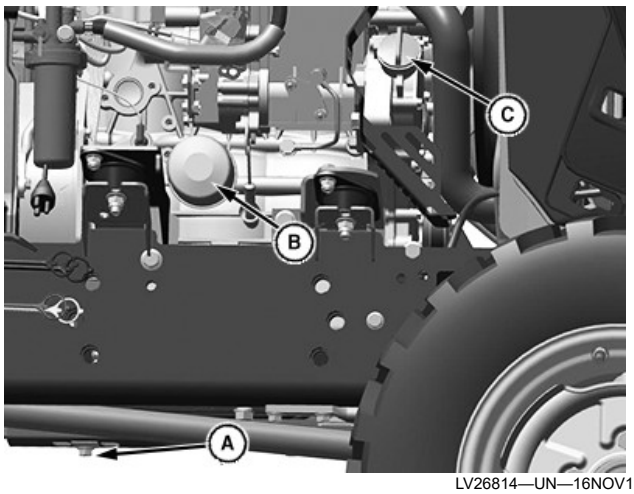
Change Engine Oil and Filter



LV26814—UN—16NOV16

A—Oil Drain Plug
B—Oil Filter
C—Oil Fill Cap

1. Run engine to warm the oil.
2. Park machine safely.
3. Place drain pan under oil drain plug (A) located on under side of engine.
4. Remove drain plug.
5. Wipe dirt from around oil filter (B).
6. Turn filter counterclockwise to remove.
7. Put a light coat of clean engine oil on gasket of new filter.
8. Install replacement oil filter by turning filter clockwise until gasket contacts filter base. Tighten additional one half turn.
9. Install drain plug. Do not overtighten.
10. Remove oil fill cap (C).
11. Add engine oil.

Specification	
Engine Crankcase—Oil—Capacity	2.7 L (2.9 qt)

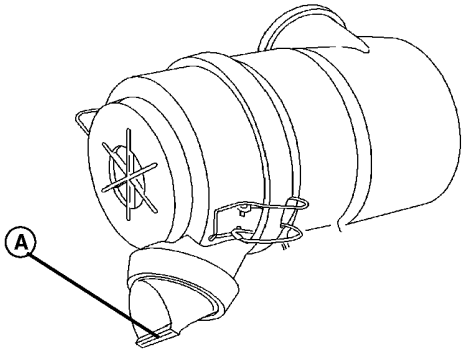
12. Install oil fill cap.
13. Start and run engine at idle to check for leaks.
14. Stop engine. Fix any leaks before operating.
15. Check engine oil level. Add oil if necessary.

UP00731,000007F-19-29NOV16

Clean Dust Unloading Valve

IMPORTANT: Avoid damage! Ensure air cleaner element and rubber dust unloading valve are installed before operating the engine.

1. Park the machine safely.
2. Allow engine to cool.
3. Access the engine compartment.



LVAL38312—UN—21AUG12

A—Dust Unloading Valve

4. Squeeze dust unloading valve (A) to clean. Remove and replace if damaged.

KN52281,1003F0E-19-12JUN17

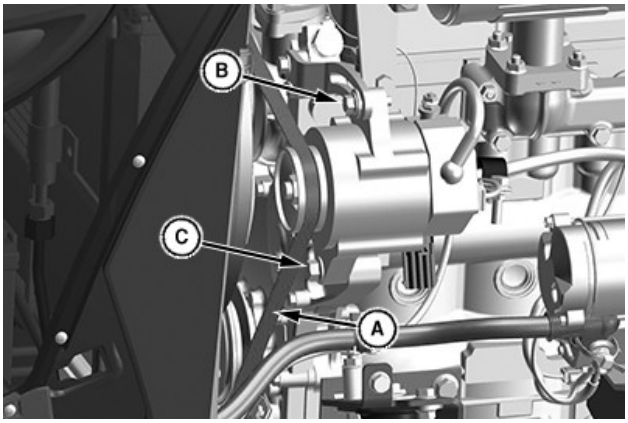
Service the Alternator Belt

CAUTION: Avoid injury! Rotating parts can catch fingers, loose clothing, or long hair. Wait for engine and all moving parts to stop before leaving the operator station to adjust or service machine.

NOTE: This procedure requires a John Deere belt tension gauge, or equivalent.

Check Belt Tension

1. Park machine safely. Allow engine to cool.
2. Raise hood.
3. Remove left side panel.



LV27655—UN—16FEB17

A—Belt Deflection Location
B—Adjusting Bolt
C—Pivot Bolt

4. Check tension by using the belt tension gauge to apply pressure to the belt midway between pulleys at location (A). Belt should deflect 9 mm (3/8 in) at 75 lb (334 N).
5. Adjust belt tension if not within specifications.

Specification	
Belt Tension—Force	75 lb (334 N)
Belt Tension—Inward Pressure	9 mm (3/8 in)

Adjust Belt Tension

1. Loosen adjusting bolt (B) and pivot bolt (C).
2. Apply outward pressure to the alternator housing until tension is correct.
3. Tighten bolts (B) and (C).
4. Check belt tension.
5. Install left side panel.
6. Lower hood.

Replace Belt

NOTE: Replace alternator belt if excessive wear, damage, or stretching is detected.

1. Park machine safely. Allow engine to cool.
2. Raise hood.
3. Remove left side panel.
4. Loosen adjusting bolt (B) and pivot bolt (C).
5. Apply inward pressure to the alternator housing.
6. Remove belt from alternator pulley, fan pulley, and crankshaft pulley.
7. Route belt over fan and remove.
8. Install new belt over the fan and onto pulleys.
9. Apply outward pressure to the alternator housing until tension is correct.

10. Tighten bolts (B) and (C).
11. Check belt tension. Adjust as necessary.
12. Install left side panel.
13. Lower hood.

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Clean Front and Side Grille Screens

IMPORTANT: Avoid damage! Grille and side screens must be clean to prevent engine from overheating and to allow adequate air intake.

1. Park machine safely.
2. Check front and side grille screens for dirt, grass clippings, and debris.
3. Raise hood and clean screens with a brush or cloth.
4. Lower hood.

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Clean Engine Compartment

Keep all the dirt and debris cleaned from inside of the engine compartment.

1. Park machine safely.
2. Clean all the dirt and debris from inside of the engine compartment.

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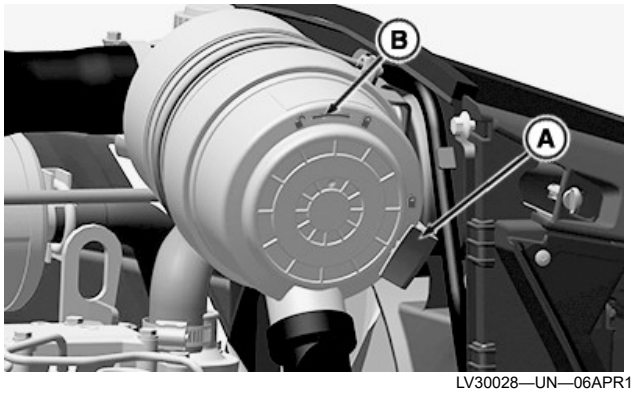
Service Air Filter Elements

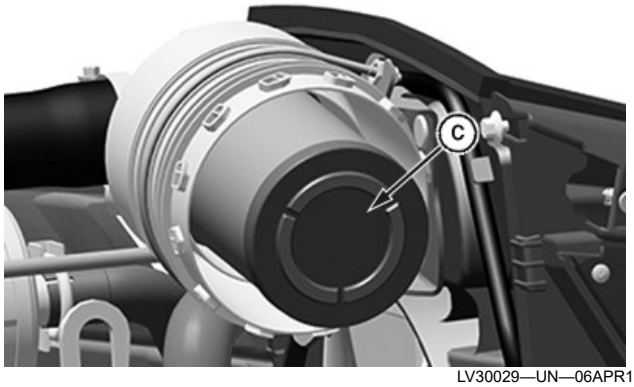
CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids are hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.

IMPORTANT: Avoid damage! Dirt and debris can enter the engine through a damaged filter element.

Service Primary Air Filter Element:



LV30028—UN—06APR18



LV30029—UN—06APR18

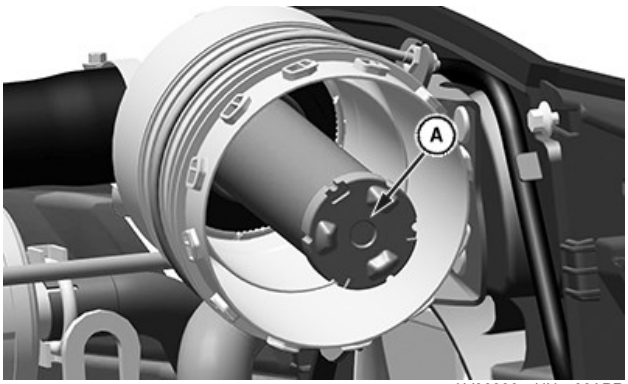
A—Latch
B—Canister Cover
C—Primary Element

1. Park machine safely.
2. Allow the engine to cool.
3. Raise the hood.
4. Remove the side panel.
5. Pull out latch (A) from canister cover.
6. Twist the canister cover (B) to the unlock position and remove.
7. Remove and discard the primary element (C). Clean out any dirt in canister, taking care not to damage the secondary filter element. Replace with a new primary filter element.
8. Install canister cover with rubber dust unloading valve pointing downward.
9. Twist the canister cover to the lock position.
10. Push in the latch to secure the canister cover.
11. Install the side panel.
12. Lower the hood.

Service Secondary Air Filter Element:

IMPORTANT: Avoid damage! Secondary element does not need routine replacement. Visually inspect it without removing from canister. Do not attempt to clean secondary element. If secondary element is replaced, install new primary and secondary element immediately to prevent dust from entering the air intake system.

1. Remove the canister cover.
2. Remove and discard primary air filter element.



LV30030—UN—06APR18

A—Secondary Element

3. Remove and discard secondary air filter element (A). Replace with a new secondary air filter element.
4. Install new primary air filter element.
5. Install canister cover.
6. Install canister cover with rubber dust unloading valve pointing downward.
7. Twist the canister cover to the lock position.
8. Push in the latch to secure the canister cover.
9. Install the side panel.
10. Lower the hood.

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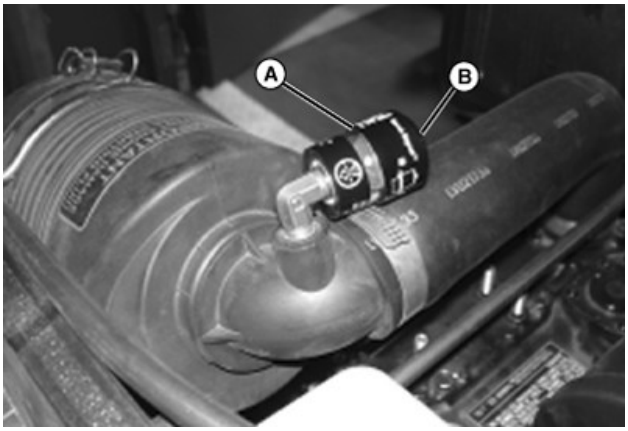
Check Air Restriction Indicator

1. Park the machine safely.
2. Raise hood.



LVAL38313—UN—21AUG12

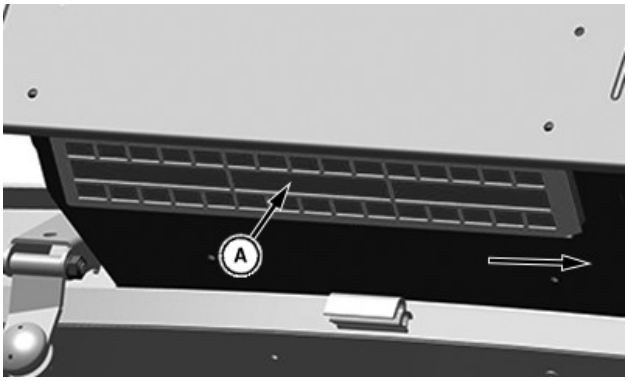
A—Service Window
B—Indicator Housing

3. Check the service window (A) on the indicator.
   a. Change the air filter if the service window is red.
   b. Press the top of the indicator housing (B) to reset the indicator after service.
4. Lower hood.

UP00731,00002CC-19-25APR17

Service Cab Air Filter

NOTE: This cab is a category 1 type cab, for protection against hazardous substances.



LV28425—UN—16MAY17

Cab Air Filter

1. Slide air filter (A) to the right to remove.
2. Clean the filter with compressed air. Inspect the filter for damage and replace if necessary.
3. Slide air filter back into housing.

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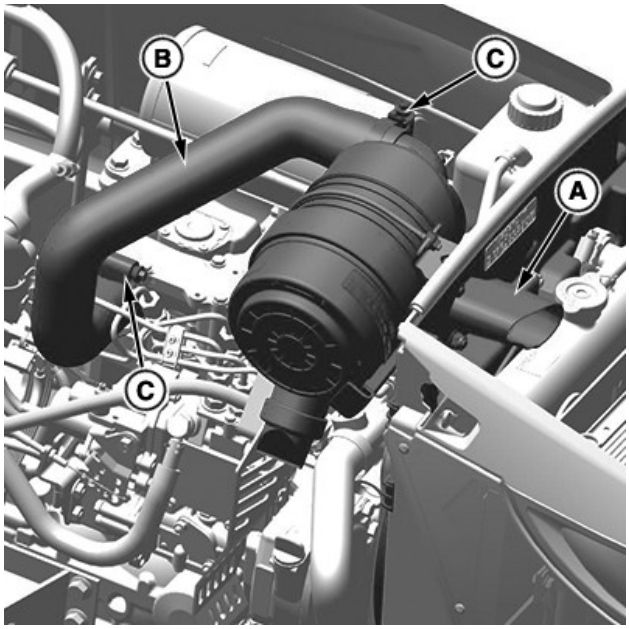
Check Air Filter Hose

NOTE: Inspect air intake system hoses and connections each time the air filter is changed, or at a minimum yearly.

1. Park machine safely.
2. Raise hood.

NOTE: Visually inspect hose for cracks and wear. Squeeze hose to check for deterioration. Hose should not be hard and brittle, nor soft or swollen.



LV30616—UN—15AUG20

A—Air Intake
B—Air Filter Hose
C—Hose Clamp

3. Check air intake (A) and air filter hose (B).
4. Tighten hose clamps (C) if necessary.
5. Lower hood.

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Check and Drain Water Separator

CAUTION: Avoid injury! Fuel vapors are explosive and flammable:

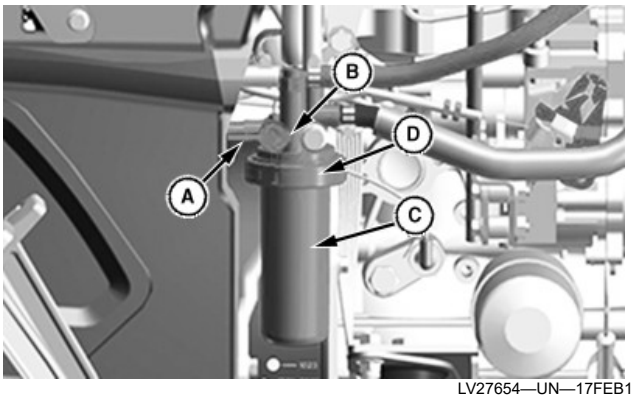
- **Do not smoke while handling fuel.**
- **Keep fuel away from flames or sparks.**
- **Shut off engine before servicing.**
- **Cool engine before servicing.**
- **Work in a well-ventilated area.**
- **Clean up spilled fuel immediately.**

NOTE: Change filter when fuel level is low.

Check Sediment Bowl

1. Park machine safely. Allow engine to cool.
2. Check fuel sediment bowl. If water and deposits are detected, remove bowl and replace fuel filter.

Clean Sediment Bowl and Replace Filter



LV27654—UN—17FEB17

A—Fuel shutoff Valve
B—"C" (Closed) Position
C—Sediment Bowl
D—Locking Collar

1. Move the fuel shutoff valve (A) to the "C" (closed) position (B).
2. Position drain pan under the sediment bowl (C).
3. Turn locking collar (D) counterclockwise to remove the bowl.
4. Remove and discard the fuel filter.
5. Clean bowl.
6. Install new filter to the filter head.
7. Install sediment bowl and locking collar.
8. Open fuel shutoff valve.

NOTE: Fuel system is self-bleeding.

9. Turn key to the ON position for 10-15 seconds before attempting to start. The electric pump purges air from the sediment bowl.

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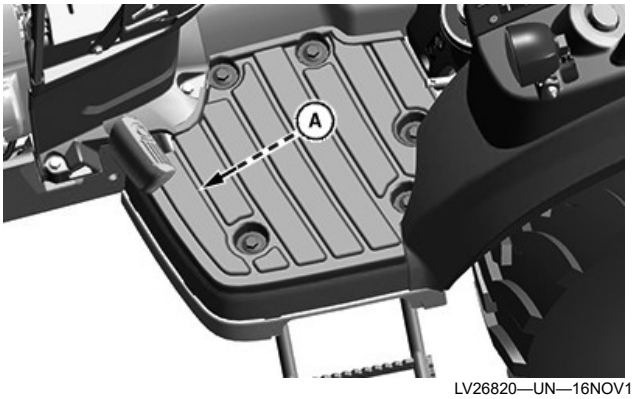
Replace Fuel Filter

NOTE: Replace the water separator filter in conjunction with the fuel filter. See Check and Drain Water Separator in this manual for the proper procedure.

1. Park machine safely. Allow engine to cool.
2. Close fuel shutoff valve.

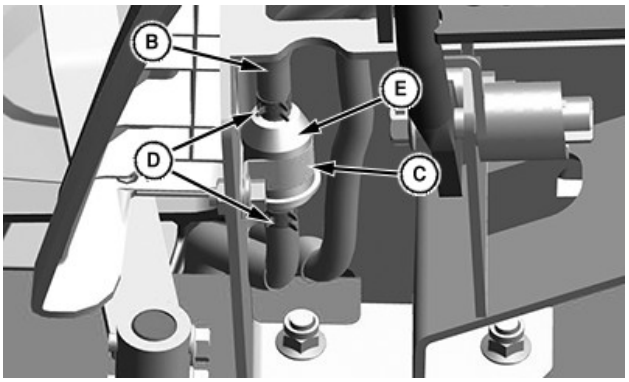


LV26820—UN—16NOV16

Fuel Filter Location

A—Fuel Filter Location, Under Deck

3. Inline fuel filter is located under the left foot deck (A).
4. Position drain pan under the fuel filter.
5. Wipe dirt from around filter.



LV26821—UN—16NOV16

B—Fuel Line Clamp Location
C—Clamp
D—Spring Clamp
E—Fuel Filter

6. Clamp fuel line (B) between filter and tank to prevent fuel draining from the fuel tank.
7. Remove clamp (C) that secures fuel filter to the foot deck.
8. Remove two spring clamps (D).
9. Remove old filter (E) and install new filter.
10. Install clamp around the fuel filter and secure to foot deck.
11. Install two spring clamps.
12. Remove clamp used between filter and tank.
13. Start and run engine at idle to check for leaks.

UP00731,0000082-19-14AUG20

Fuel Injection Pump

IMPORTANT: Avoid damage! Do not clean a warm or hot fuel injection pump with steam or water. Clean with compressed air if pump is not cooled.

NOTE: The fuel injection pump is calibrated by the engine manufacturer and should not require any adjustments.

If engine is hard to start, lacks power, or runs rough, see Troubleshooting Section of this manual.

After performing the check in the troubleshooting section and your engine is still not performing correctly, contact your John Deere dealer.

KN52281,1003F19-19-22AUG12

Fuel Injection Nozzles

IMPORTANT: Avoid damage! Do not service or remove fuel injection nozzles. Service life of injection nozzles may be shortened by overheating, improper operation, poor fuel quality, or excessive idling.

If injection nozzles are not working correctly or are dirty, engine will run poorly. See your John Deere dealer for service.

KN52281,1003F1A-19-22AUG12

Drain and Flush Fuel Tank

See your John Deere dealer for draining and flushing the fuel tank.

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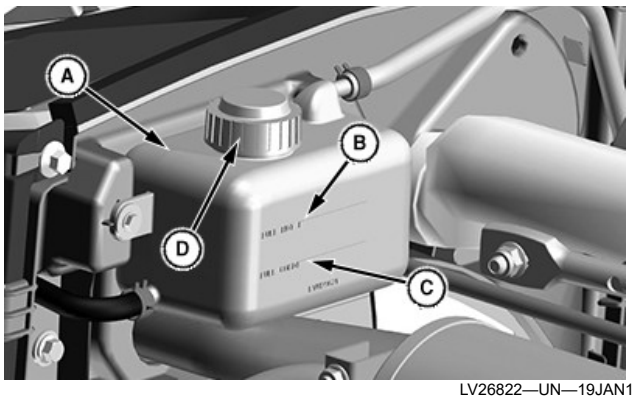
Check Coolant Level

1. Park machine safely.
2. Raise hood.



LV26822—UN—19JAN17

A—Recovery Tank
B—Full Hot
C—Full Cold
D—Tank Cap

3. Check coolant level in the recovery tank (A):
   - If engine is at operating temperature, coolant level is at the FULL HOT line (B).
   - If engine is cold, coolant level is at the FULL COLD line (C) on the recovery tank.
4. To add coolant, remove recovery tank cap (D).

IMPORTANT: Avoid damage! Using incorrect coolant mixture can damage the radiator:
- **Do not operate engine with plain water.**
- **Do not exceed a 50% mixture of coolant and water.**
- **Aluminum engine blocks and radiators require approved ethylene glycol-based antifreeze.**

NOTE: John Deere Cool-Gard™ coolant is recommended when adding new coolant to the cooling system.

Follow the directions on the container for the correct mixture ratio.

5. Add recommended coolant if needed.
6. Install recovery tank cap.
7. Lower hood.

UP00731,0000085-19-10JAN19

Drain and Flush Cooling System

1. Park machine safely.

CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

2. Allow engine to cool.
3. Raise hood.

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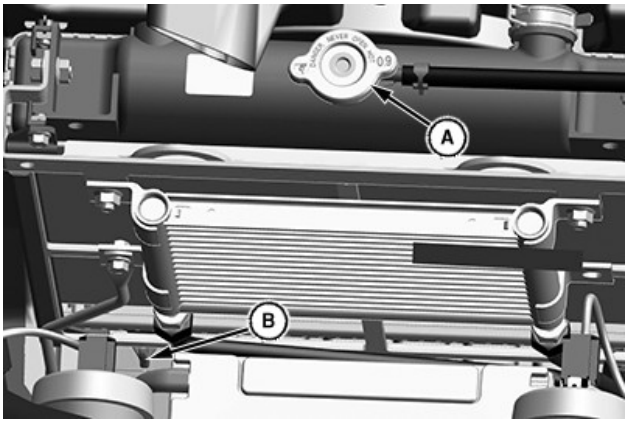
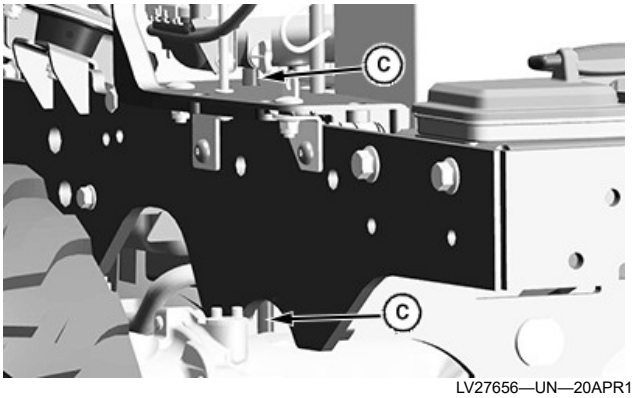
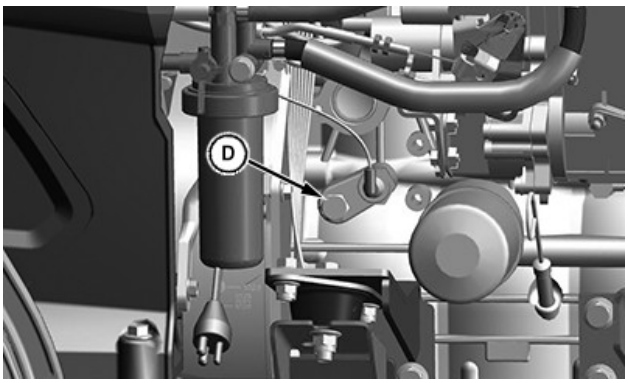


LV26823—UN—16NOV16



LV27656—UN—20APR17



LV26912—UN—17FEB17

A—Radiator Cap
B—Radiator Drain Plug
C—Drain Tube
D—Drain Plug

4. Slowly open radiator cap (A) to the first stop to release all pressure.
5. Close radiator cap tightly.
6. Position a pan under the radiator drain tube (C).
7. Open the drain plug (B) and allow the coolant to drain from the system.
8. Remove the drain plug (D) from the engine block and finish draining coolant.
9. When coolant drains from the recovery tank, remove the radiator cap.
10. Close radiator drain plug (B) and install drain plug (D).
11. Fill the cooling system with clean water. Run engine until water passes through the thermostat to stir up possible rust or sediment.
12. Stop engine immediately and drain water from the system before rust and sediment settles.
13. Fill cooling system with clean water and John Deere Cooling System Cleaner, or John Deere Cooling System Quick Flush or an equivalent. Follow directions on the container.
14. After cleaning the system, drain cleaner and fill the system with clean water to flush the system.
15. Start and run engine until water passes through the thermostat.
16. Stop engine, and drain flushing water from the system.

IMPORTANT: Avoid damage! Using incorrect coolant mixture can damage the radiator:

- **Do not operate engine with plain water.**
- **Do not exceed a 50% mixture of coolant and water.**
- **Aluminum engine blocks and radiators require approved ethylene glycol-based antifreeze.**

NOTE: John Deere Cool-Gard™ coolant is recommended when adding new coolant to the cooling system.

Follow the directions on the container for the correct mixture ratio.

17. Close all drain orifices and fill cooling system to specification.
18. Install radiator cap and run engine until it reaches operating temperature.
19. Stop engine and check coolant level. Add coolant if necessary
20. Lower hood.

UP00731,0000086-19-14AUG20

Fill Cooling System

IMPORTANT: Avoid damage! Using incorrect coolant mixture can damage the radiator:

- **Do not operate engine with plain water.**
- **Do not exceed a 50% mixture of coolant and water.**
- **Aluminum engine blocks and radiators**

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require approved ethylene glycol based antifreeze.

NOTE: John Deere Cool-Gard™ coolant is recommended when adding new coolant to the cooling system.

Follow the directions on the container for the correct mixture ratio.

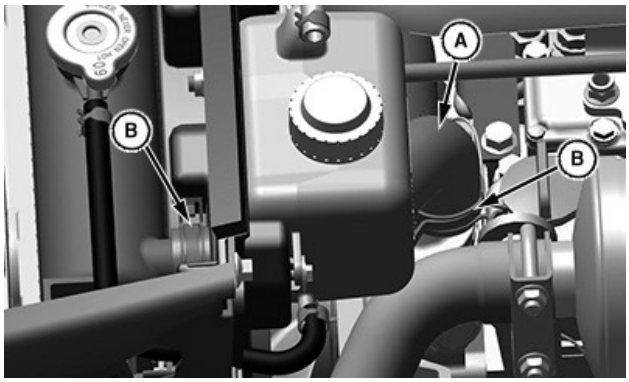
1. Allow radiator to cool.
2. Fill cooling system.
3. Install and tighten radiator cap.
4. Run engine until it reaches operating temperature.
5. Stop engine.
6. Check coolant level in the recovery tank and add coolant if necessary
7. Lower hood.

UP00731,00000C9-19-10JAN19

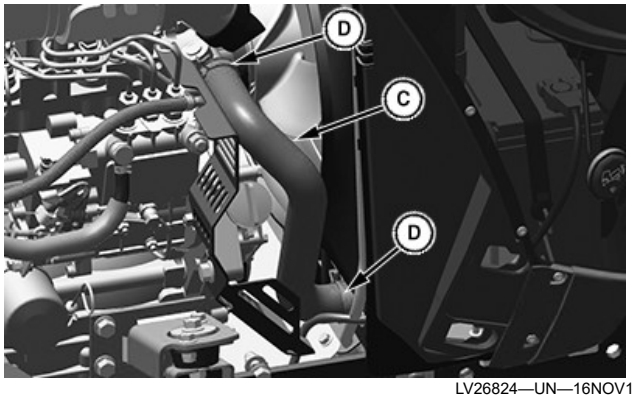
Check Radiator Hoses and Clamps

1. Park machine safely.
2. Raise hood.
3. Remove right and left-hand side panels.

NOTE: Visually inspect hoses for cracks and wear. Squeeze hoses to check for deterioration. Hoses should not be hard and brittle, nor soft or swollen.



LV26825—UN—16NOV16



LV26824—UN—16NOV16

A—Upper Radiator Hose
B—Hose Clamp
C—Lower Radiator Hose
D—Hose Clamp

4. Check upper radiator hose (A) for damage or cracking. Replace if necessary.
5. Check hose clamps (B) as needed.
6. Check lower radiator hose (C) for damage or cracking. Replace if necessary.
7. Check hose clamps (D) as needed.
8. Install right and left-hand side panels.
9. Lower hood.

UP00731,0000087-19-29NOV16

Clean Radiator, Fuel, and Transmission Cooling Fins

CAUTION: Avoid injury! Compressed air can cause debris to fly a long distance.

- **Clear work area of bystanders.**
- **Wear eye protection when using compressed air for cleaning purposes.**
- **Reduce compressed air pressure to 210 kPa (2.1 bar) (30 psi).**

IMPORTANT: Avoid damage! Reduced air intake can cause overheating. Keep radiator cooling fins clean.

Do not use pressure washers to clean radiator cooling fins. The force produced by pressure washers can damage the radiator and cooling fins.

Reduce compressed air pressure to 210 kPa (2.1 bar) (30 psi) when cleaning radiator and cooling fins. Spray compressed air straight into radiator. Do not spray the radiator on an angle or cooling fins can be bent.

1. Park machine safely. Allow engine to cool.
2. Raise hood.

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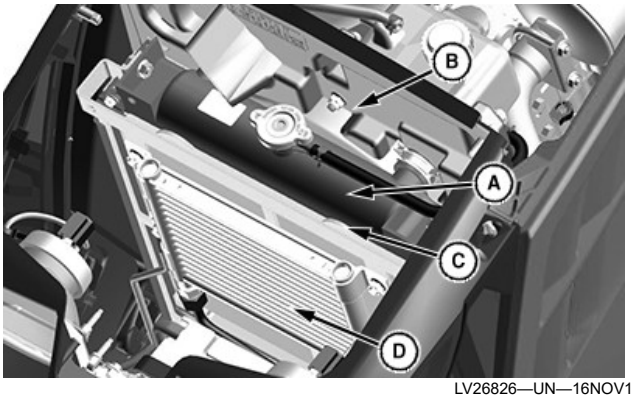


LV26826—UN—16NOV16

A—Radiator
B—Fan Shroud
C—Radiator Screen
D—Transmission Oil Cooler

3. Slide radiator screen (C) up out of retaining slot.
4. Clean screen with compressed air, brush, or cloth.
5. Using compressed air or water, remove all dirt and debris from fins at front and rear of the following:
   - Radiator (A), including fan shroud (B).
   - Transmission oil cooler (D).
6. Lower hood.

UP00731,0000088-19-29NOV16

Service Electrical

WARNING: Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

KN52281,1003F32-19-25MAY17

Service the Battery Safely

LVAL38348—UN—21AUG12

CAUTION: Avoid injury! Battery electrolyte contains sulfuric acid. It is poisonous and can cause serious burns:

- **Wear eye protection and gloves.**
- **Keep skin protected.**
- **If electrolyte is swallowed, get medical attention immediately.**
- **If electrolyte is splashed into eyes, flush immediately with water for 15-30 minutes and get medical attention.**
- **If electrolyte is splashed onto skin, flush immediately with water and get medical attention if necessary.**

The battery produces a flammable and explosive gas. The battery may explode:

- **Do not smoke near battery.**
- **Wear eye protection and gloves.**
- **Do not allow direct metal contact across battery posts.**
- **Remove negative cable first when disconnecting.**
- **Install negative cable last when connecting.**

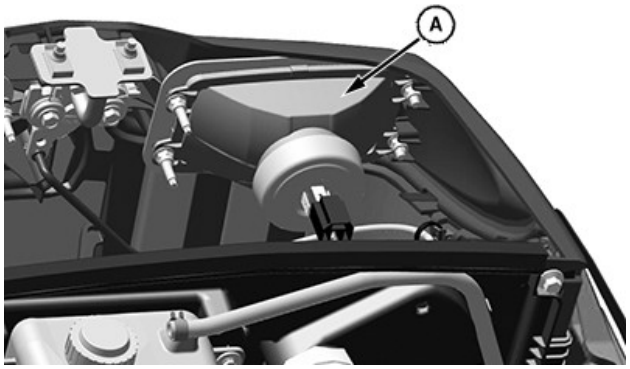
KN52281,1003F33-19-22AUG12

Remove and Install Battery

Remove:

1. Park machine safely.
2. Raise the hood.

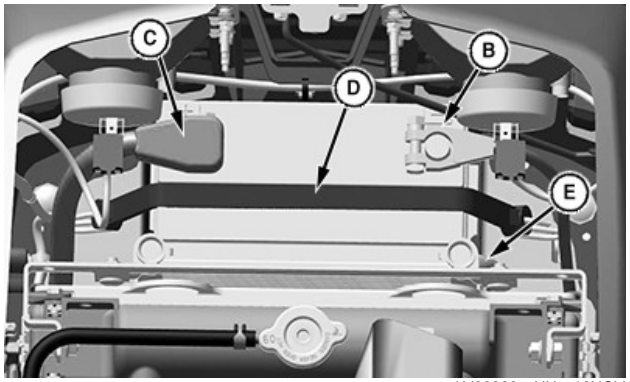
NOTE: To have clearance to the battery, remove one headlight.



LV26827—UN—16NOV16

A—Headlight

3. Remove one headlight (A).



LV26828—UN—16NOV16

B—Negative (-) Cable
C—Positive Terminal Cover
D—Hold Down Strap
E—Vent Tube

4. Disconnect black negative (-) cable (B) from the battery terminal first.
5. Slide red positive terminal cover (C) back and disconnect red positive (+) cable from the battery terminal.
6. Remove hold down strap (D) from the tabs on the battery tray.
7. Pull battery vent tube (E) from the battery tray.
8. Remove the battery.

Install:

1. Position battery in the machine.
2. Route battery vent tube through the hole in the battery tray.
3. Install hold down strap securing battery to the battery tray.

4. Connect positive (+) cable to battery first, then attach negative (-) cable to the battery.
5. To help prevent corrosion, apply spray lubricant on the battery terminals.
6. Position red positive battery terminal cover on the red positive (+) cable.
7. Install the headlight.
8. Lower the hood.

UP00731,0000089-19-20FEB17

Clean Battery and Terminals

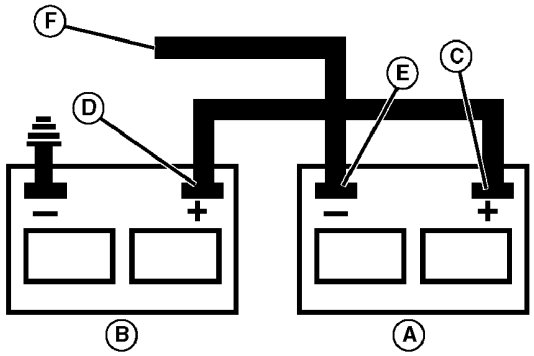
1. Park machine safely.
2. Disconnect and remove battery.
3. Wash battery with solution of four tablespoons of baking soda to one gallon of water. Be careful not to get the soda solution into the cells.
4. Rinse the battery with plain water and dry.
5. Clean terminals and battery cable ends with wire brush until bright.
6. Install battery.
7. Attach cables to battery terminals, beginning with the positive cable.
8. Apply spray lubricant to terminal to prevent corrosion.

KN52281,1003F36-19-17FEB17

Use Booster Battery

CAUTION: Avoid injury! The battery produces a flammable and explosive gas. The battery may explode:

- **Do not smoke or have open flame near the battery.**
- **Wear eye protection and gloves.**
- **Do not jump-start or charge a frozen battery. Warm battery to 16°C (60°F).**
- **Do not connect the negative (-) booster cable to the negative (-) terminal of the discharged battery. Connect at a good ground location away from the discharged battery.**



LVAL38352—UN—21AUG12

A—Booster Battery
B—Disabled Vehicle Battery
C—Booster Battery Positive (+) Post
D—Disabled Vehicle Battery Positive (+) Post
E—Booster Battery Negative (-) Post
F—Disabled Vehicle Battery Negative (-) Post

1. Connect positive (+) booster cable to the booster battery (A) positive (+) post (C).
2. Connect the other end of positive (+) booster cable to the disabled vehicle battery (B) positive (+) post (D).
3. Connect negative (–) booster cable to the booster battery negative (–) post (E).

IMPORTANT: Avoid damage! Electric charge from the booster battery can damage machine components. Do not install negative booster cable to the machine frame. Install only to the engine block.

Install negative booster cable away from moving parts in the engine compartment, such as belts and fan blades.

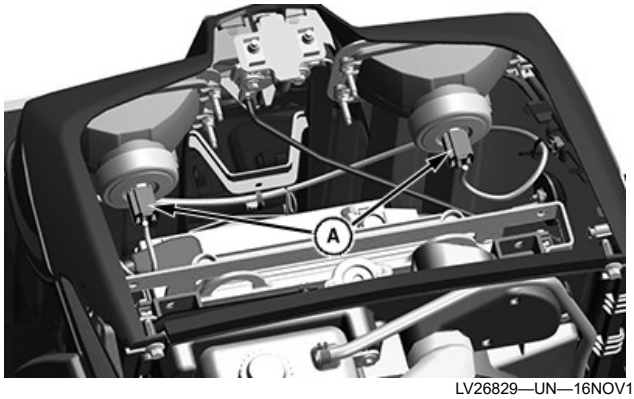
4. Connect the other end (F) of negative (–) booster cable to a metal part of the disabled machine engine block away from battery.
5. Start the engine of the disabled machine and run machine for several minutes.
6. Carefully disconnect the booster cables in the exact reverse order: negative cable first and then the positive cable.

KN52281,1003F37-19-16FEB17

Replace Headlight Bulb

IMPORTANT: Avoid damage! Do not touch glass headlight bulb with bare skin. Contact with bare skin could cause bulb to fail prematurely. Use gloves or a cloth when inspecting or replacing the bulb.

1. Park machine safely.
2. Raise hood.



LV26829—UN—16NOV16

A—Headlight Bulb

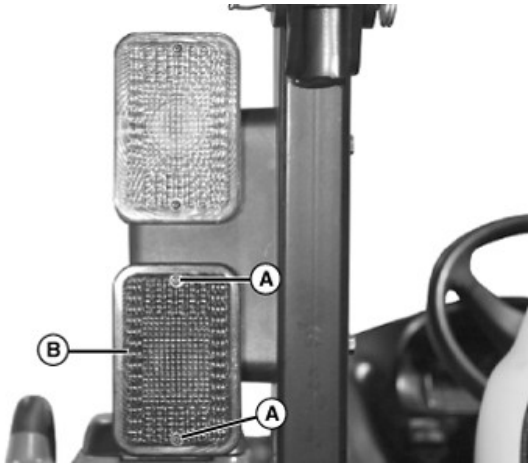
3. Remove connector from base of headlight bulb (A).
4. Rotate base counterclockwise to remove bulb assembly from housing.
5. Insert new bulb in housing and turn clockwise to secure.
6. Insert connector into base of bulb.
7. Lower hood.
8. Check operation of headlights.

UP00731,00000C0-19-14NOV16

Replace Tail/Turn Light Bulb

NOTE: Taillight can be serviced by removing the rear assembly lens only.

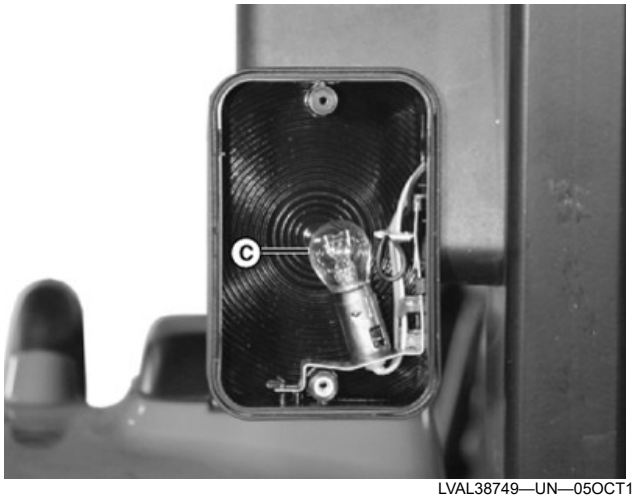
1. Park machine safely.



LVAL38748—UN—05OCT12

A—Screw
B—Lens

2. Remove two screws (A) and red lens (B).



LVAL38749—UN—05OCT12

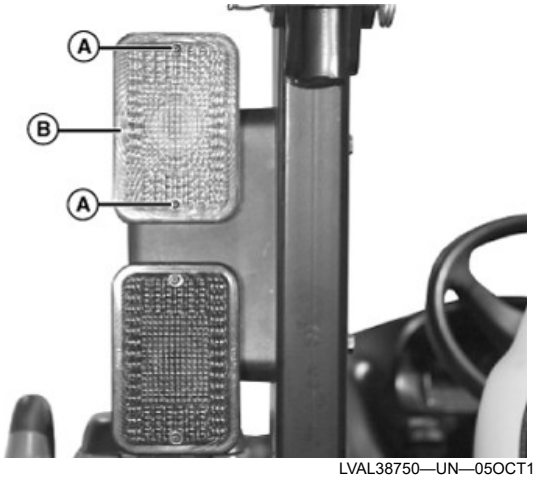
C—Bulb

3. Push down and rotate bulb (C) to remove. Do not twist bulb.
4. Push down and rotate new bulb into socket.
5. Check operation of tail lights and turn signals.
6. Install lens and screws.

UP00731,00001B1-19-15MAY19

Replace Warning Light Bulb

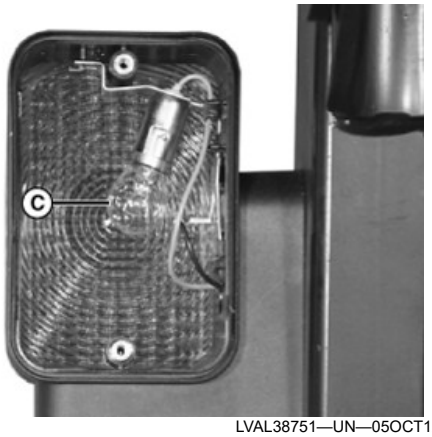
1. Park machine safely.



LVAL38750—UN—05OCT12

A—Screw
B—Lens

2. Remove two screws (A) and amber lens (B).



LVAL38751—UN—05OCT12

C—Bulb

3. Push up and rotate bulb (C) to remove. Do not twist bulb.
4. Push up and rotate new bulb into socket.
5. Check operation of turn signal and warning lights.
6. Install lens and screws.

UP00731,00001B2-19-29NOV16

Replace Fuses and Relays

IMPORTANT: Avoid damage! If incorrect replacement fuses are used, the electrical system can be damaged. Replace the bad fuse with a fuse of the same amperage rating.

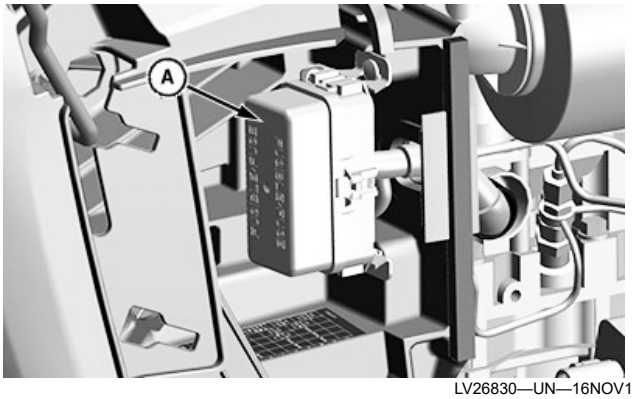
Locate Fuses and Relays

All electrical circuits are protected by fuses. Ampere rating is marked on each fuse, plus fuses are color coded to ensure proper replacement.

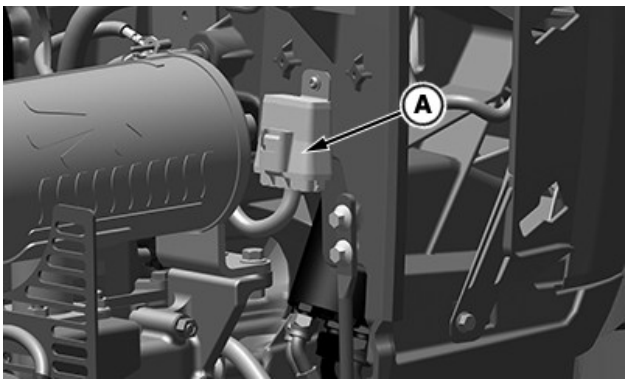
Fuses	
Fuse Rating	**Color**
10A	Red
15A	Blue
20A	Yellow
30A	Green

Fuse Location

1. Park machine safely.
2. Remove right side panel.



LV26830—UN—16NOV16



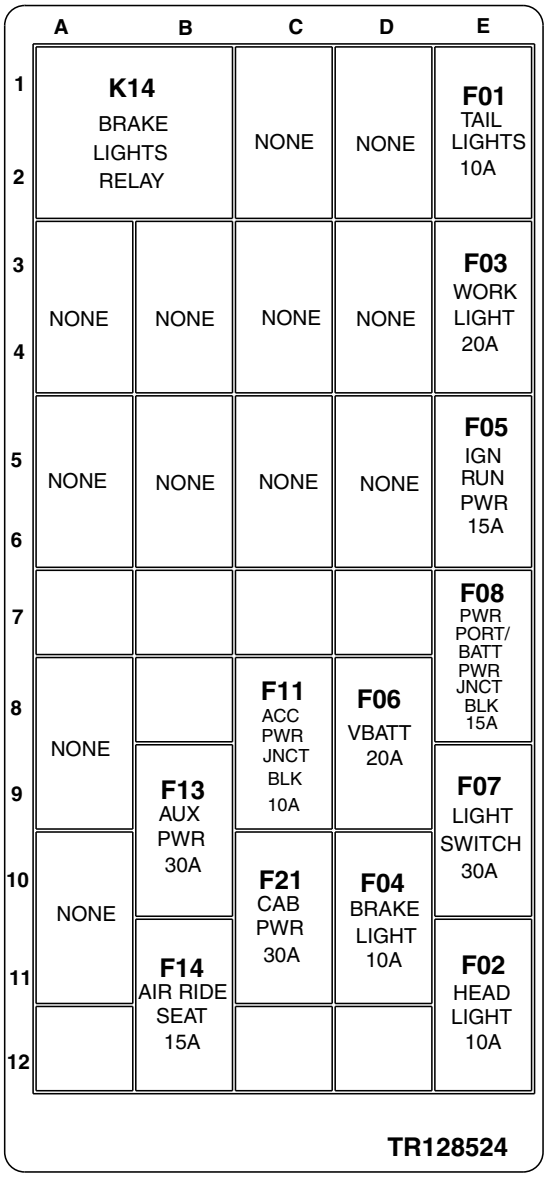
LV30309—UN—21SEP18

Relay Load Center - Third Function (If equipped)

A—Load Center Cover

3. Remove load center cover (A).
4. Identify fuse or relay in the fuse block.
5. Pull out the defective relay or fuse.
6. Replace with the new relay or fuse.
7. Install load center cover.
8. Install side panel.

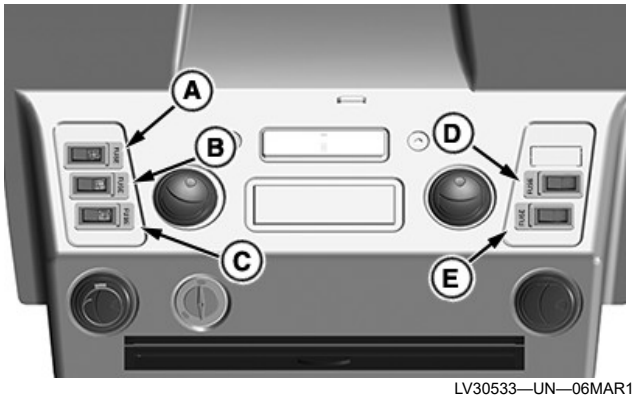
Fuse and Relay Size and Function



LVP15559—UN—14APR22

TR128524

F01—Tail Lights Fuse (10A)
F02—Head Lights Fuse (10A)
F03—Work Lights Fuse (20A)
F04—Brake Lights Fuse (10A)
F05—Ignition Power Fuse (15A)
F06—V Battery Fuse (20A)
F07—Light Switch Fuse (30A)
F08—Power Port/Battery Power/Junction Block Fuse (15A)
F11—Accessory Power/Junction Block Fuse (10A)
F13—Auxiliary Power Fuse (30A)
F14—Air Ride Seat Fuse (15A)
F21—Cab Power Fuse (30A)
K14—Brake Lights Relay



LV30533—UN—06MAR19

Fuse Location - Cab Options

A—Fan Fuse (10 A)
B—Rear Wiper Fuse (7.5 A)
C—Front Wiper Fuse (7.5 A)
D—Work Light Fuse (5 A)
E—Beacon Light Fuse (10 A)

LV30536—UN—11MAR19

Relay Load Center - Third Function (If equipped)

A—Third Function Retract Relay
B—Third Function Extend Relay

DN39857,0000699-19-14APR22

Drivetrain Maintenance

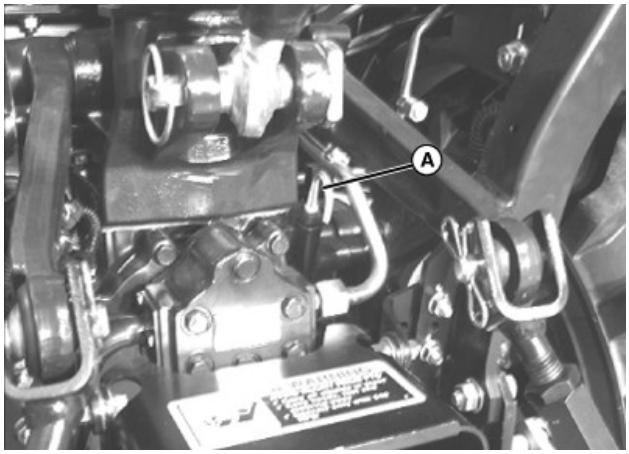
See specific drivetrain component for maintenance information.

UP00731,0000208-19-22JUN16

Check Transmission Oil Level

1. Park machine safely. Allow machine to cool down for at least 1 hour.

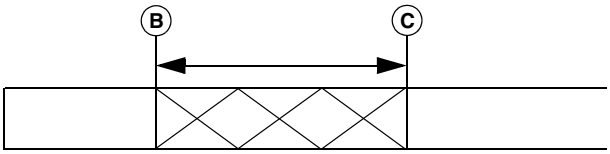
IMPORTANT: Avoid damage! Dirt and contamination can enter transmission when checking oil level. Clean area around dipstick before removing.



LVAL38335—UN—21AUG12

A—Dipstick

2. Pull to remove dipstick (A), at the right side of the transmission. Wipe with a clean cloth.
3. Install dipstick.
4. Remove dipstick.



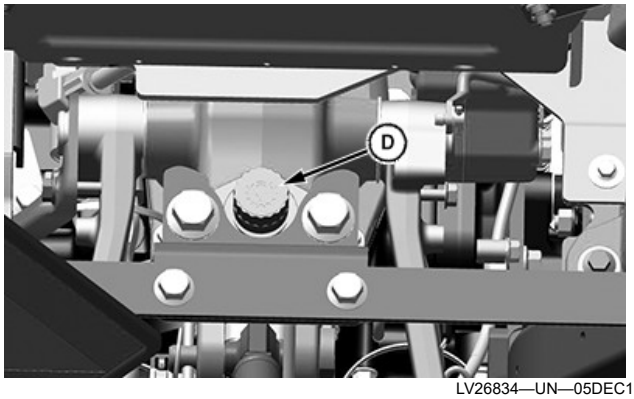
LVAL38336—UN—21AUG12

B—Oil Level Mark
C—Oil Level Mark

5. Check oil level on dipstick. Ensure that oil level is between levels (B) and (C) on dipstick.

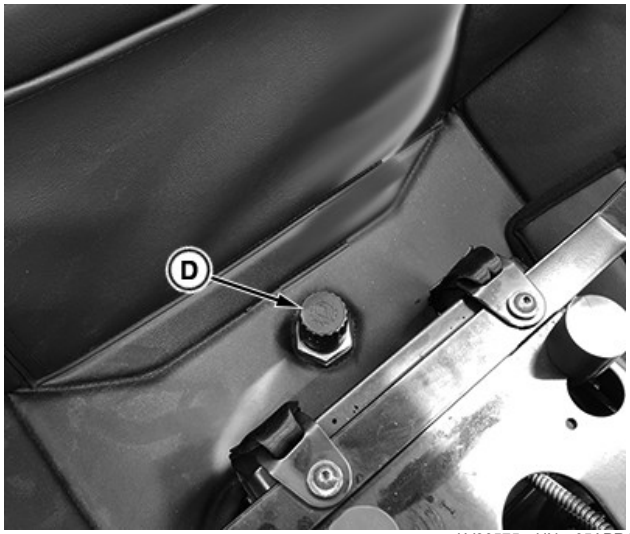
IMPORTANT: Avoid damage! Help prevent dirt and other contaminants from entering the transmission. Clean area around fill cap before removing.

Do not overfill transmission. Oil expands during operation and could overflow.



LV26834—UN—05DEC16

Fill Cap—Open Operator Station Tractor



LV30575—UN—05APR19

Fill Cap—Cab Tractor

D—Oil Fill Cap

6. If oil level is low:
   - Remove fill cap (D).
   - Add recommended oil through fill opening until oil level is correct.
7. If oil is above the top mark on the dipstick, drain to the proper level.
8. Install dipstick.
9. Install and tighten fill cap.

UP00731,0000911-19-05APR19

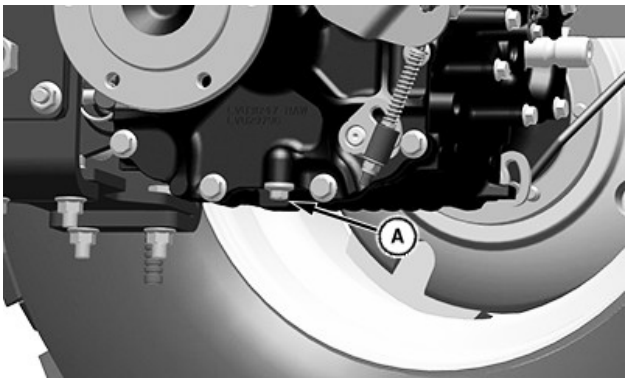
Change Transmission Oil and Filter

CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids are hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.

IMPORTANT: Avoid damage! Contamination of hydraulic fluid could cause transmission damage or failure. Do not remove cap from fill opening unless necessary.

Severe or unusual conditions may require a more frequent service interval.

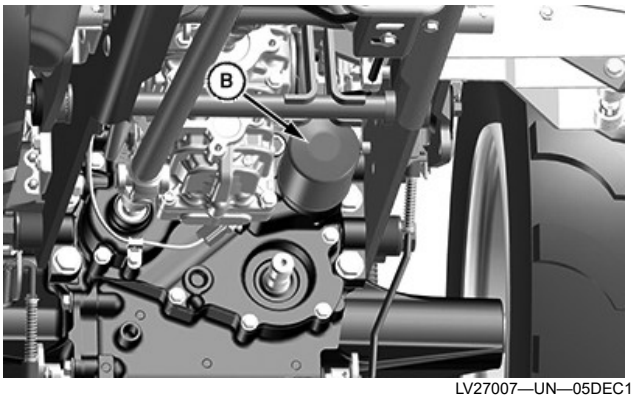
1. Run the engine a few minutes to warm the transmission oil.
2. Park machine safely.



LV27006—UN—05DEC16

A—Transmission Drain Plug

3. Position the drain pan under the transmission drain plug (A). Remove the plug and allow oil to drain completely.



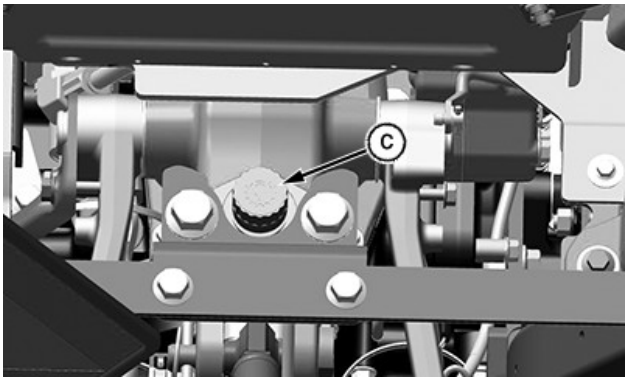
LV27007—UN—05DEC16

B—Transaxle Oil Filter

4. Position the drain pan under the transaxle oil filter (B). Remove and discard the filter. Allow residual oil to drain completely.
5. Put a film of clean transmission oil on the seal of the new filter.
6. Fill the filter 1/3 - 1/2 full of oil.
7. Install the filter and turn clockwise until the gasket contacts the mounting surface. Tighten 1/2 - 3/4 turn after gasket contact.
8. Install and tighten the drain plug.

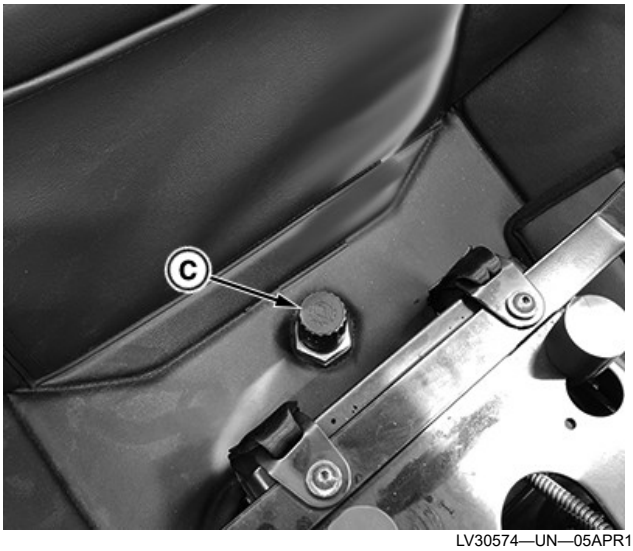
IMPORTANT: Avoid damage! Help prevent dirt and other contaminants from entering the transmission. Clean area around the fill cap before removing.

Do not overfill the transmission. Oil expands during operation and could overflow.



LV27008—UN—05DEC16

Fill Cap—Open Operator Station



LV30574—UN—05APR19

Fill Cap—Cab Tractor

C—Fill Cap

9. Remove the fill cap (C).
10. Add transmission oil into the fill opening.
11. Install the fill cap.
12. Start the engine. Check for oil leaks.
13. Stop the engine.
14. Check the transmission oil level. Add oil if necessary.

UP00731,0000912-19-05APR19

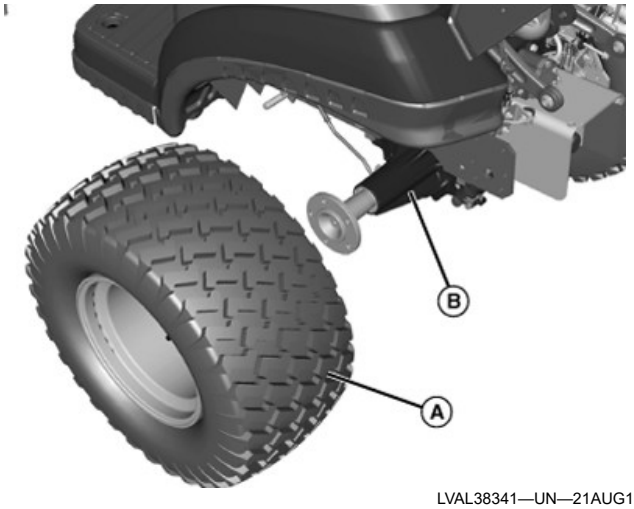
Remove and Install Oil Suction Screen

1. Park the machine safely.

2. Remove backhoe, if installed.

CAUTION: Avoid injury! The machine can fall or slip from an unsafe lifting device or supports.

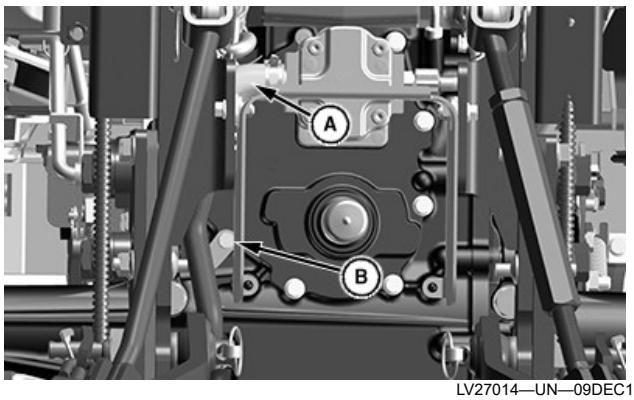
- **Use a safe lifting device rated for the load to be lifted.**
- **Lower machine onto jack stands or other stable supports and block wheels before servicing.**



LVAL38341—UN—21AUG12

A—Left Rear Wheel
B—Jackstand Location

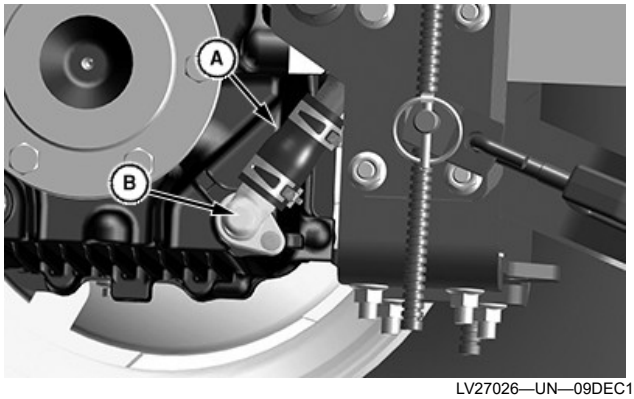
3. Raise rear of machine, and remove left rear wheel (A).
4. Lower machine onto the jackstand under the left side of transmission (B).
5. Place a drain pan under the left side of transmission. Drain transmission.



LV27014—UN—09DEC16

A—Suction Hose
B—Bolt

6. Remove bolt (B) from suction pipe.
7. Remove suction hose (A) from the hydraulic pump.

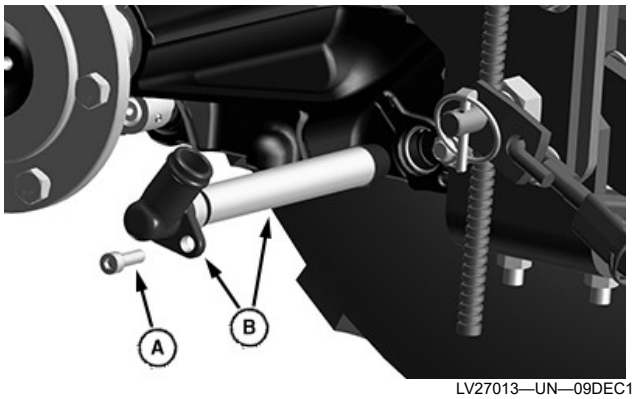


LV27026—UN—09DEC16

A—Hose
B—Manifold

8. Remove hose (A) from manifold (B).

NOTE: If the suction screen does not come out with the lower manifold, reach in and remove screen from transmission. Be certain all O-rings remain on assemblies.

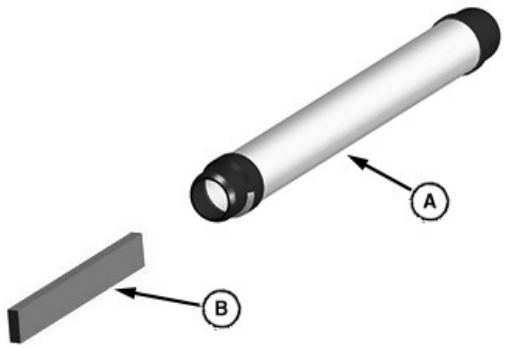


LV27013—UN—09DEC16

A—Bolt
B—Suction Screen Assembly

9. Remove bolt (A) and suction screen assembly (B).

NOTE: Machines have one, two, or four magnets in screen.

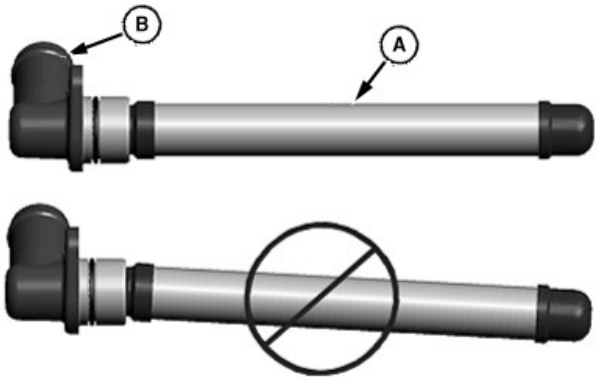


LV27011—UN—08DEC16

A—Suction Screen
B—Magnet

10. Clean the suction screen (A). Remove the magnets

(B) from the screen. Clean magnets and install into screen.



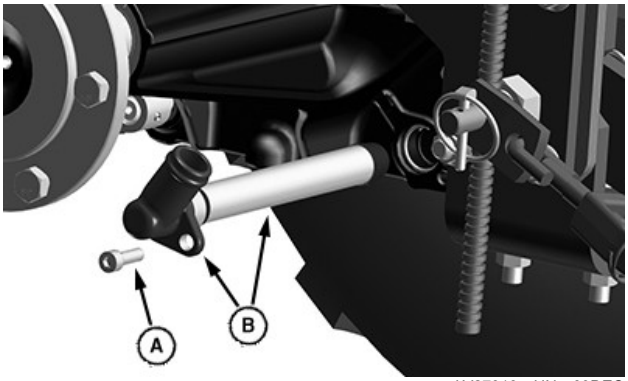
LV27012—UN—08DEC16

A—Suction Screen
B—Lower Manifold

11. Lubricate and install the suction screen (A) to lower manifold (B). Make sure that the screen is fitted straight into the elbow to aide proper alignment to transmission side cover.

IMPORTANT: Make sure that the free end of the suction screen is aligned and fitted to the socket in the right side cover of the transmission during installation. Improper installation could result in crushing of the suction screen and subsequent hydraulic pump failure.

NOTE: Suction screen must remain perpendicular to lower manifold as shown to align properly into flange area on the opposite side of transmission.



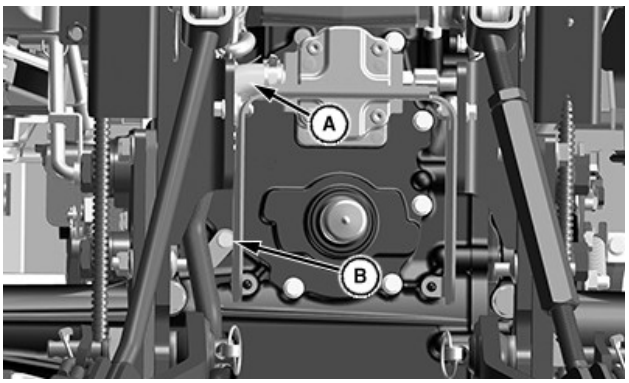
LV27013—UN—09DEC16

A—Bolt
B—Suction Screen Assembly

12. Install suction screen assembly (B) into transmission. Make sure the end of screen fits into the socket inside right side cover of the transmission.
13. Install bolt (A). Tighten bolt to specification.

Specification

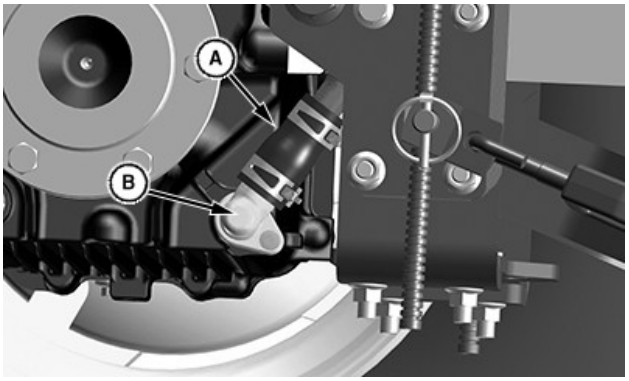
Bolt—Torque. . . . . 28 N·m
21 lb·ft



LV27014—UN—09DEC16

A—Suction Hose
B—Bolt

14. Install suction hose (A) onto the hydraulic pump. Secure with the hose clamp.



LV27026—UN—09DEC16

A—Hose
B—Manifold

15. Install hose (A) onto manifold (B). Secure with the hose clamp.
16. Install bolt (B) into suction pipe.

Specification

Bolt—Torque. . . . . 11 N·m
97 lb·in

17. Fill transmission with oil. Check for the proper oil level.

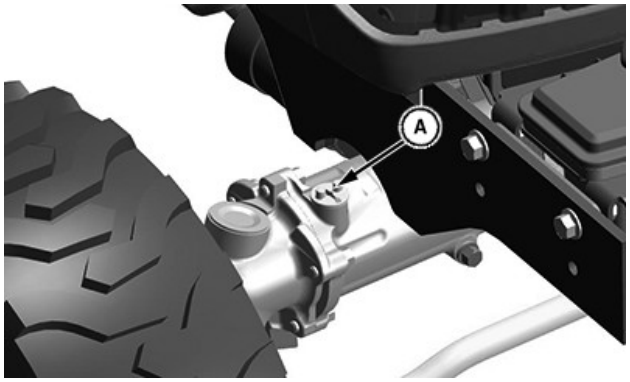
UP00731,000008D-19-29AUG18

Check Front Axle Oil Level

NOTE: To ensure accurate dipstick reading, allow oil to settle for one hour before checking. Repeat oil level check after several hours of operation.

1. Park machine safely on level surface. Allow machine to cool down for at least one hour.

IMPORTANT: Dirt and debris cause damage to the transaxle. Clean area around opening before removing dipstick.



LV26835—UN—16NOV16

A—Dipstick

2. Loosen and remove dipstick (A) located on right side of front axle.
3. Wipe dipstick clean with a rag. Install dipstick but do not tighten. Allow dipstick to rest on top of threads.

LVAL38331—UN—21AUG12

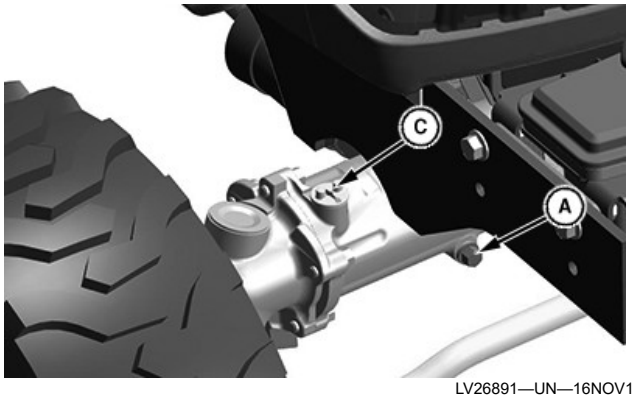
B—High Oil Level
C—Low Oil Level

4. Remove dipstick. Oil level should be between high (B) and low (C) levels on dipstick. If oil level is low:
   a. Add recommended oil through dipstick fill opening until oil level is correct.
   b. Install and tighten dipstick.
5. Check front axle oil level again after the first several hours of operation.

UP00731,000008E-19-17JAN17

Change Front Axle Oil

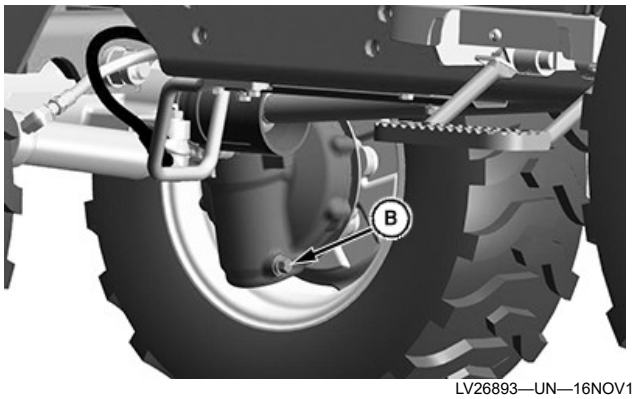
1. Warm front axle oil by operating machine.
2. Park machine safely.



LV26891—UN—16NOV16

A—Drain Plug
C—Dipstick

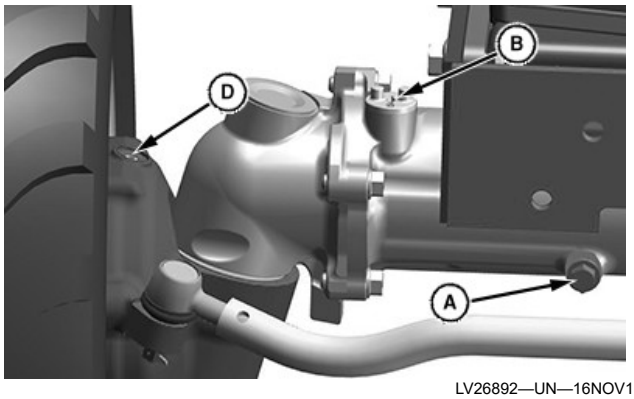
3. Position drain pan under the differential drain plug (A).
4. Remove the differential drain plug and allow oil to drain.



LV26893—UN—16NOV16

B—Drain Plug

5. Position drain pan under each front axle drain plug (B).
6. Remove both drain plugs and allow oil to drain.
7. Install and tighten both drain plugs after all oil has drained.



LV26892—UN—16NOV16

A—Drain Plug
C—Dipstick
D—Vent Plug

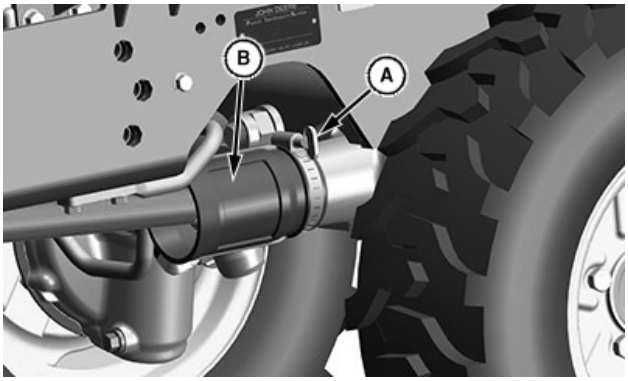
8. Remove dipstick (C) on the right side of the front axle and vent plug (D).
9. Add approximately 2.8 L (3.0 qt) of recommended oil through dipstick fill opening until oil level is correct.
10. Install and tighten the dipstick.

NOTE: To ensure accurate dipstick reading, allow oil to settle for 1 hour before checking. Repeat oil level check after several hours of operation.

11. Check front axle oil level.

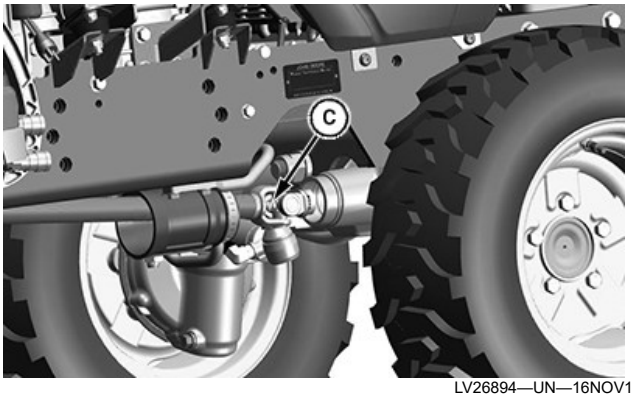
UP00731,000008F-19-15NOV16

Lubricate MFWD Driveshaft



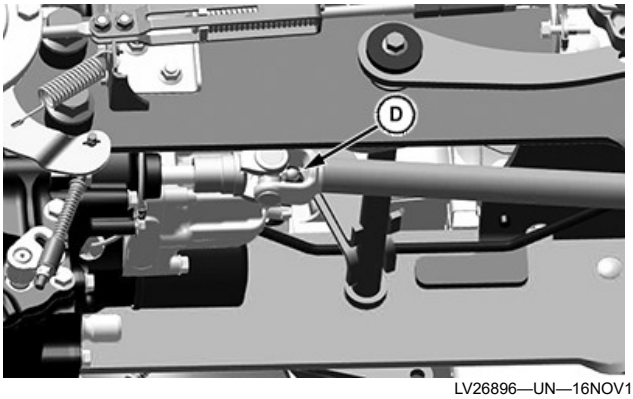
LV26895—UN—16NOV16

Front MFWD Driveshaft Shield



LV26894—UN—16NOV16

Front MFWD Driveshaft



LV26896—UN—16NOV16

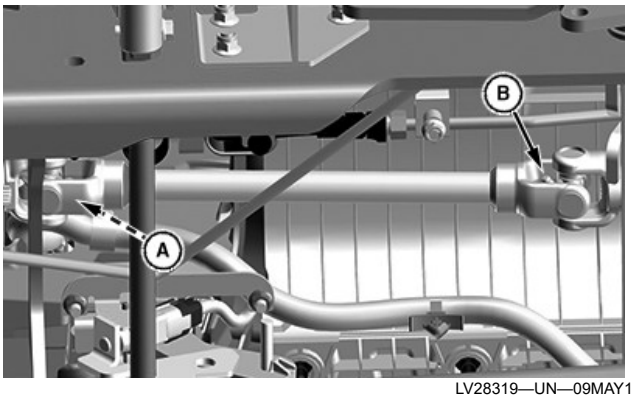
Rear MFWD Driveshaft

A—Hose Clamp
B—Front MFWD Driveshaft Shield
C—Front MFWD Driveshaft Grease Fitting
D—Rear MFWD Driveshaft Grease Fitting

- Loosen the hose clamp (A) and remove front MFWD driveshaft shield (B) from housing.
- Lubricate front MFWD driveshaft grease fitting (C) and rear MFWD driveshaft grease fitting (D) with John Deere multi-purpose grease.
- Install MFWD shield (B) on housing and tighten the hose clamp (A).

UP00731,0000090-19-29AUG18

Lubricate Main Driveline



LV28319—UN—09MAY17

Main Driveline

A—Main Driveline—Front
B—Main Driveline—Rear

Lubricate the front (A) and rear (B) main driveline grease fittings using John Deere multi-purpose grease.

UP00731,00002EF-19-09MAY17

Differential and Rear Axle Maintenance

Rear Axle

The rear axle is part of the transmission. See Transmission Maintenance for the rear axle information.

UP00731,00001CA-19-03JAN18

Power Take Off (PTO) Maintenance

PTO Maintenance

See the specific system for maintenance.

UP00731,00001BE-19-03JAN18

Steering and Brake Maintenance

Steering Maintenance

See your John Deere dealer if steering problems exist on the machine.

UP00731,0000110-19-12DEC16

Brake Maintenance

See your John Deere dealer if brake problems exist on the machine.

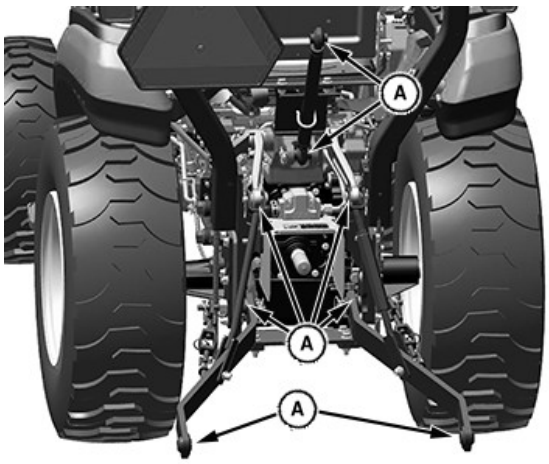
UP00731,0000111-19-12DEC16

Hydraulic Maintenance

See the Transmission Maintenance section for servicing the hydraulic oil and filters.

UP00731,0000117-19-03JAN18

Lubricate 3-Point Hitch



LV26897—UN—16NOV16

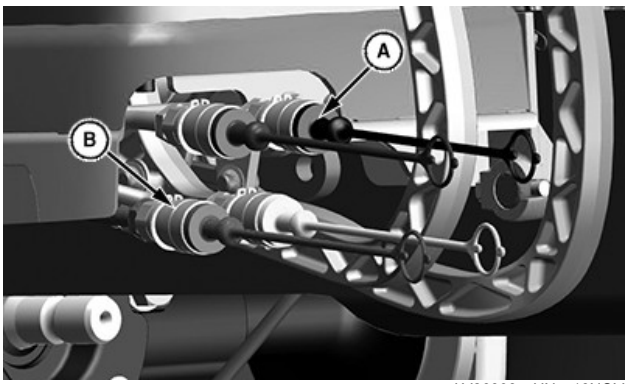
A—Ball Joints

Lubricate ball joints (A) with the SUPER LUBE® lubricant.[1]

UP00731,0000093-19-16NOV16

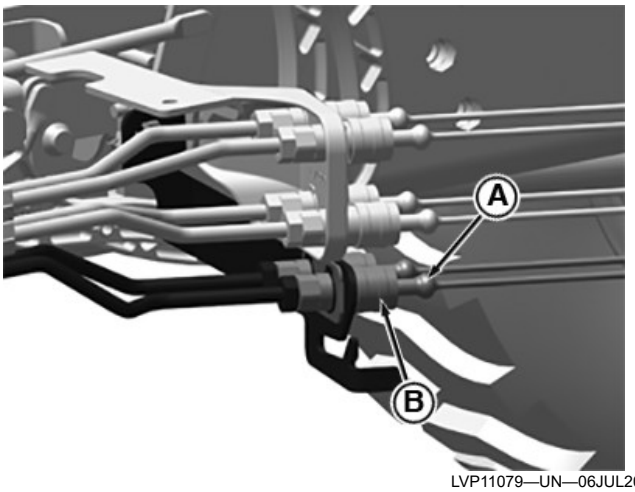
[1] *SUPER LUBE is a registered trademark of Synco Chemical Corp.*

Check Selective Control Valve



LV26898—UN—16NOV16

SCV Coupler



LVP11079—UN—06JUL20

Third Function SCV Coupler (If equipped)

A—Dust Plug
B—Coupler

1. Check the dust plugs (A) for damage, replace as needed.
2. Clean dirt and debris from the selective control valve couplers (B).
3. Check selective control valve couplers (B) for oil leakage. Contact your John Deere dealer for service.

PP71895,00014FD-19-01JUL20

Check Wheel Bolts and Hardware

CAUTION: Avoid injury! Check rim, hub, and axle hardware periodically to prevent possible machine roll-over.

When machine is new, check wheel bolt torque after first ten hours of use.

Anytime wheel hardware is loosened, tighten all bolts after one hour of operation and every four hours thereafter until proper torque values are maintained.

Tightness of wheel hardware must be maintained according to service interval recommendations.

Check wheel bolt tightness and torque to specification.

UP00731,00001AE-19-02FEB17

Remove and Install Wheels

CAUTION: Avoid injury! Remove wheels safely.

- **Use a safe lifting device and support machine securely on jack stands.**
- **Block front and rear of wheel not raised to prevent machine movement.**
- **Wheel can be heavy or difficult to handle when removing.**

Front Wheel Removal

1. Loosen lug bolts slightly before raising front axle.
2. Raise front of machine and lower onto support stands so that front axle supports machine.

NOTE: If the front wheels are being removed to perform work on the front axles, lower machine onto suitable stands that support the machine by the frame.

3. Remove lug bolts and wheel.

Front Wheel Installation

1. Install wheels onto axle, insert lug bolts, and lightly tighten bolts.
2. Raise front of machine, remove support stands and lower machine to floor.
3. Tighten wheel bolts alternately to specification.

Specification

Wheel Bolt —Torque. . . . . 95 N·m (70 lb·ft)

Rear Wheel Removal

1. Loosen lug bolts slightly before raising machine rear axle.
2. Raise rear of machine and lower onto support stands so that rear axle supports machine.
3. Remove lug bolts and wheel.

Rear Wheel Installation:

1. Install wheels onto axle, insert lug bolts, and lightly tighten bolts.
2. Raise rear of machine, remove support stands and lower machine to floor.
3. Tighten wheel bolts alternately to specification.

Specification

Wheel Bolt —Torque. . . . . 95 N·m (70 lb·ft)

UP00731,00001AF-19-02FEB17

Check Tire Pressure

CAUTION: Avoid injury! Explosive separation of tire and rim parts is possible when they are serviced incorrectly:

- **Do not attempt to mount a tire without the proper equipment and experience to perform the job.**
- **Do not inflate the tires above the recommended pressure.**
- **Do not weld or heat a wheel and tire assembly. Heat can cause an increase in air pressure resulting in an explosion. Welding can structurally weaken or deform the wheel.**
- **Do not stand in front or over the tire assembly when inflating. Use a clip-on chuck and extension hose long enough to allow you to stand to one side.**

1. Check the tires for damage.
2. Check the tire pressure with an accurate gauge.
3. Add or remove air as necessary.

KN52281,1003F4E-19-07MAY18

Tire Inflation Pressure Chart

Front Tires—Standard Factory Inflation				
Tire Size	**Tread**	**kPa**	**bar**	**psi**
23 X 8.50 – 12 4PR R3	R3	150	1.5	22
215/65 D12 6PR R4	R4	340	3.4	49
220/55 R12	R3	240	2.4	35

Rear Tires—Standard Factory Inflation				
Tire Size	**Tread**	**kPa**	**bar**	**psi**
12 – 16.5 - 4PR R3	R3	170	1.7	25
305/70 D16.5 6PR R4	R4	280	2.8	41
280/70 R16	R3	240	2.4	35

DN39857,00006A3-19-21MAR22

Select Front Tire Rolling Direction

The machines are equipped with directional type tires (such as bar tires) and have directional arrows on the tire sidewall. Install the tires with the directional arrow pointing in the direction of travel.

To increase tire life when the tractor is used mainly for loader operations and improve traction while backing out of dirt piles, reverse the lug direction.

If the tractor is mainly used for loader operations, lug direction may be reversed on the MFWD axle for improved tire wear and increased traction.

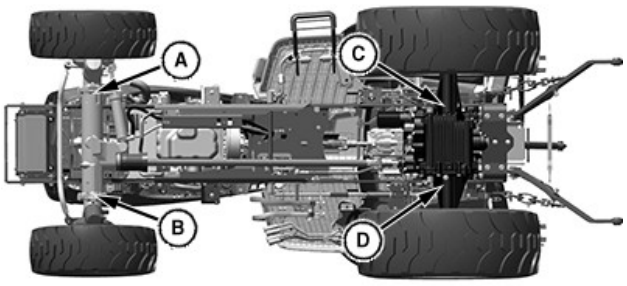
Change the tire rolling direction by moving the wheel from one side of the machine to the other.

Install the wheel with the valve stem facing outwards.

KN52281,1003F4F-19-01MAY23

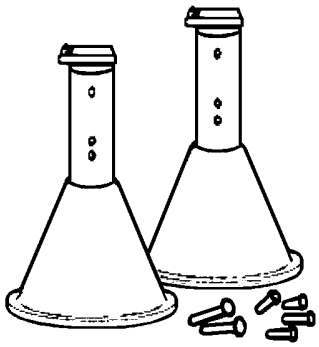
Lift Points for Jacking up the Tractor

The illustrations show the recommended lifting points for jacking up the tractor. Use a stable lifting jack with sufficient lifting force.



LV26900—UN—12APR17

A—To remove left front wheel, raise left end of axle at this point.
B—To remove right front wheel, raise right end of axle at this point.
C—To remove left rear wheel, raise left rear of tractor at this point.
D—To remove right rear wheel, raise right rear of tractor at this point.

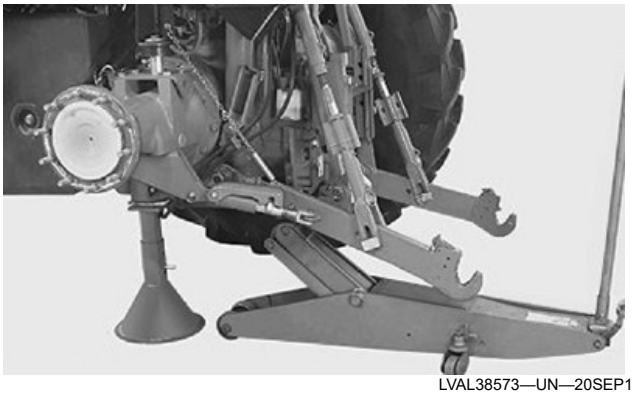


LVAL38572—UN—20SEP12

Jack Stands JT02043 and JT02044

JT02043 - Jackstand, 482 mm to 736 mm (19 in to 29 in)

JT02044 - Jackstand, 863 mm to 1117 mm (34 in to 44 in)



LVAL38573—UN—20SEP12

Jackstand Position Example

CAUTION: Use approved lifting equipment only.

Jack up the tractor on firm, level ground only.

Before doing any further work on the tractor, first secure it using suitable jack stands. The special John Deere tools shown can be used for this purpose. These jack stands are available from your John Deere dealer.

UP00731,0000097-19-30NOV16

Match Ballast to Work Load

Use no more ballast than necessary and remove ballast when it is no longer required.

Rather than weighing tractor down to pull heavy loads, try to reduce load. Pulling a lighter load is more economical and more efficient.

Not Enough Ballast	Too Much Ballast
Excessive wheel slip	Increased load
Power loss due to churning of soil	Power loss due to carrying extra weight
Tire wear	Tire strain
Fuel waste	Soil compaction
Lower productivity	Fuel waste
	Lower productivity

UP00731,00001D0-19-26MAY17

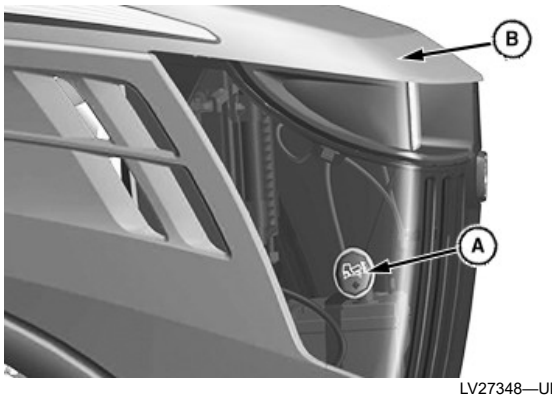
Additional Equipment Maintenance

To service additional equipment, refer to the additional equipment operator's manual.

UP00731,0000207-19-26MAY17

Raise and Lower Hood

1. Park machine safely.



LV27348—UN—25JAN17

A—Hood Release
B—Hood

2. Insert a screw driver, or something similar, into the hood release (A) to release latch.
3. Raise hood (B).
4. To lower, gently push down on both sides of front of hood to lock latch.

UP00731,0000180-19-20FEB17

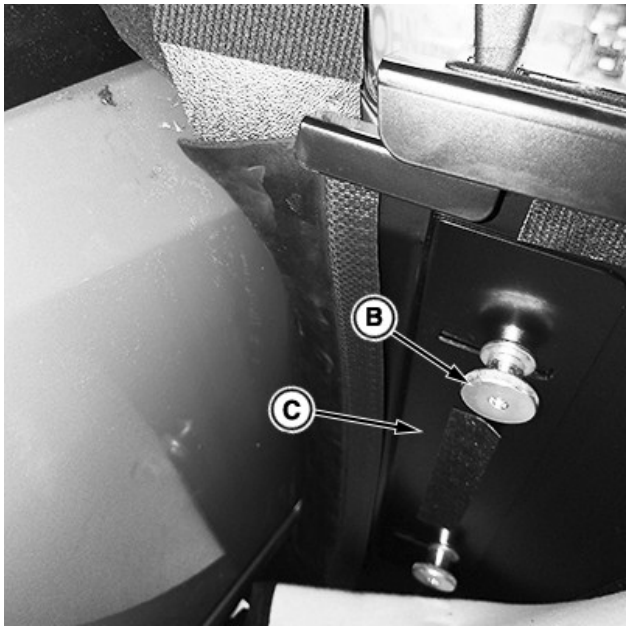
Remove and Install Side Panels

To Remove the Side Panels:

1. Park machine safely.
2. Raise hood.
3. On cab tractors:

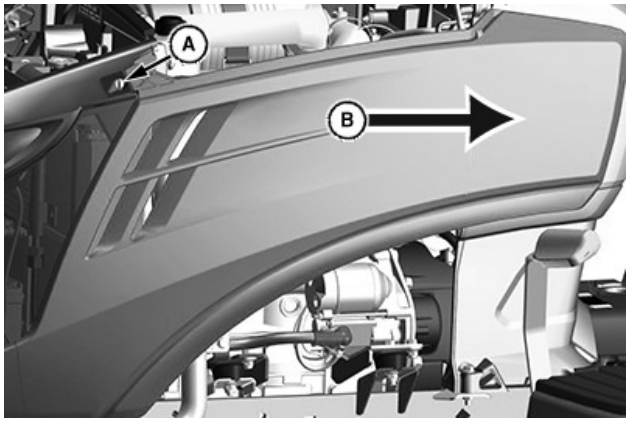
LV30572—UN—04APR19

Front Foam Padding—Cab Tractor



LV30573—UN—04APR19

a. Pull the front foam padding (A) back enough to gain access to the three finger screws (B).
b. Loosen the finger screws (B) and slide the closeout plate away from the side panel.



LV27349—UN—25JAN17

Left side shown.

A—Locking Pin
B—Rear Of Machine

4. To release the side panel, turn the locking pin (A) a 1/4 turn.
5. Slide the side panel toward the rear (B) of the machine until all the tabs clear their mounting slots in the machine. Remove the side panel.

IMPORTANT: Damage can result to locking pin when closing the hood. Make sure that locking pin is back into place before closing the hood.

6. Push locking pin (A) back into place.

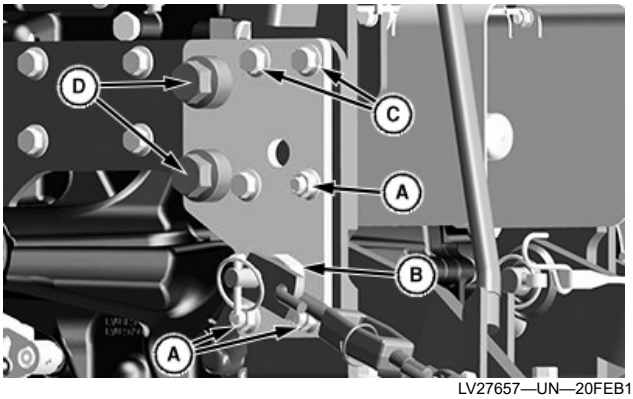
To Install Side Panels:

1. Align the panel mounting tabs with the mating slots in the machine.
2. Pull locking pin and slide the panel forward to install. Turn locking pin a 1/4 turn to lock into place.
3. On cab tractors:
   a. Slide closeout plate back into position against the side panel.
   b. Tighten the three finger screws.
   c. Install the front foam padding and secure back into place.
4. Lower the hood.

UP00731,0000910-19-03APR19

Inspect ROPS for Loose Hardware

CAUTION: Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque. The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.



LV27657—UN—20FEB17

A—Nut (3 each side)
B—Nut
C—Bolt (2 each side)
D—Bolt (2 each side)

Check all ROPS attaching hardware for tightness. Torque to the specification listed if loose.

Item	Measurement	Specification
Nuts (A)	Torque	120 N·m 89 lb·ft
Nuts (B)	Torque	485 N·m +/- 49 N·m 358 lb·ft +/- 36 lb·ft
Mounting Bolts (C)	Torque	120 N·m 89 lb·ft
Mounting Bolts (D)	Torque	490 N·m +/- 98 N·m 362 lb·ft +/- 72 lb·ft

UP00731,0000112-19-14AUG17

Troubleshooting

Engine

Symptom	Problem	Solution
Engine Will Not Start Or Is Hard To Start	Transmission gearshift lever is not in neutral position	Place range shift lever to Neutral
	Engine throttle lever not pushed forward	Move throttle to half throttle
	Fuel shutoff valve CLOSED (OFF)	Open fuel shutoff valve at the water separator
	Stale fuel/improper fuel/fuel level	Drain stale or improper fuel and fill to capacity
	Wrong engine oil viscosity	Change engine oil and fill with correct viscosity oil for conditions
	Cold start system not being used, or malfunctioning	Verify that cold start system is utilized during required temperatures or see your John Deere dealer
	Plugged fuel filter	Replace fuel filter
	Plugged air intake filter	Clean or replace air filter elements
	Dirty or faulty fuel injectors	See your John Deere dealer
	Blown fuse	Check and replace and faulty fuses
Engine Runs Rough Or Stalls	Fuel shutoff valve partially closed	Open fuel shutoff valve at the water separator
	Plugged fuel filter	Replace fuel filter
	Plugged air intake system	Clean or replace air filter elements
	Stale or improper fuel/fuel level	Drain stale or improper fuel and fill to capacity
	Dirty or faulty fuel injectors	See your John Deere dealer
	Low coolant temperature	See your John Deere dealer
	Fuel pump not functioning properly	See your John Deere dealer
Engine Overheats	Dirt or debris accumulation on hood screen or radiator fins	Clean debris and dirt from the front screen and radiator fins
	Coolant level is below specification	Add coolant as specified
	Leak in the coolant system	Check for leaks and repair or see your John Deere dealer
	Improperly adjusted or broken fan belt	Tighten or replace fan belt

Symptom	Problem	Solution
	Cooling system needs flushing	See your John Deere dealer
	Defective radiator cap	Replace radiator cap
	Defective thermostat	See your John Deere dealer
	Defective water temperature indicator or sensor.	See your John Deere dealer
	Loose or defective alternator belt	Tighten or replace belt
	Engine speed too low for load. Do not operate at low idle	Raise engine speed to match load requirements
	Operating at too fast ground speed for conditions	Reduce speed to match operating conditions
Engine Knocks	Fuel shutoff valve partially closed	Open fuel shutoff valve at the water separator
	Plugged fuel filter	Replace fuel filter
	Plugged air intake system	Clean or replace air filter elements
	Stale or improper fuel/fuel level	Drain stale or improper fuel and fill to capacity
	Dirty or faulty fuel injectors	See your John Deere dealer
	Low coolant temperature See your John Deere Dealer	See your John Deere dealer
	Fuel pump not functioning properly	See your John Deere dealer
Low Oil Pressure	Engine oil level low	Add oil to specification
	Plugged engine oil filter	Replace oil filter
	Improper type of engine oil	Verify correct engine oil. Drain system and fill with the correct oil type
	Oil leaks	Check for leaks and repair or see your John Deere dealer
Engine Uses Too Much Oil	Oil leaks	Check for leaks and repair or see your John Deere dealer
	Improper type of engine oil	Verify correct engine oil. Drain system and fill with the correct oil type
Engine Emits White Smoke	Stale or improper fuel/fuel level	Drain stale or improper fuel and fill to capacity

Symptom	Problem	Solution
	Internal coolant leak	See your John Deere dealer
Engine Emits Black or Gray Exhaust Smoke	Stale or improper fuel/fuel level	Drain stale or improper fuel and fill to capacity
	Dirty or faulty fuel injectors	See your John Deere dealer
	Fuel pump not functioning properly	See your John Deere dealer
High Fuel Consumption	Stale or improper fuel/fuel level	Drain stale or improper fuel and fill to capacity
	Dirty or faulty fuel injectors	See your John Deere dealer
	Fuel pump not functioning properly	See your John Deere dealer
	Failed fuel solenoid	See your John Deere dealer
	Operating at too fast ground speed for conditions	Reduce speed to match operating conditions
	Improper valve clearance	See your John Deere dealer
	Plugged air intake system	Clean or replace air filter elements

UP00731,00002E7-19-30NOV16

Electrical System

Symptom	Problem	Solution
Battery Will Not Charge	Poor electrical connection at alternator	Check for proper electrical connections at alternator
	Loose or corroded connections	Clean connections at alternator and battery terminals
	Check for a blown fuse	Check starting circuit fuses and replace if necessary
	Loose or defective alternator belt	Tighten or replace belt
	Defective battery	Replace battery or see your John Deere dealer
	Defective alternator	See your John Deere dealer
Battery Discharge Indicator Stays On With Engine Running	Poor electrical connection at alternator	Check for proper electrical connections at alternator
	Loose or corroded connections	Clean connections at alternator and battery terminals
	Loose or defective alternator belt	Tighten or replace belt

Symptom	Problem	Solution
	Defective battery	Replace battery or see your John Deere dealer
	Defective alternator	See your John Deere dealer
Starter Will Not Work	Poor electrical connection at battery or starter motor	Check for proper electrical connections
	Loose or corroded connections	Clean connections at alternator and battery terminals
	Low battery charge	Charge battery to proper specification
	Defective battery	Replace battery or see your John Deere dealer
	Defective starter motor	See your John Deere dealer
	Check for a blown fuse	Check starting circuit fuses and replace if necessary
	Neutral start switch faulty or not adjusted properly	See your John Deere dealer
	Key switch or starter faulty	See your John Deere dealer
	Range transmission lever not in neutral position	Place range transmission lever in neutral
Starter Turns Slowly	Loose or corroded connections	Clean connections at alternator and battery terminals
	Low battery charge	Charge battery to proper specification
	Defective battery	Replace battery or see your John Deere dealer
	Defective starter motor	See your John Deere dealer
Light Circuit Not Working	Defective bulb	Check and replace faulty bulbs
	Check for a blown fuse	Check light circuit fuses and replace if necessary
	Faulty switch	See your John Deere dealer

UP00731,00002E8-19-25AUG16

Machine

Symptom	Problem	Solution
Operation Sluggish, Slow	Water in hydraulic oil	Replace hydraulic oil with correct oil type or see your John Deere dealer

Symptom	Problem	Solution
	Plugged hydraulic oil filter	Replace oil filter
	Improper type of hydraulic oil	Verify correct hydraulic oil. Drain system and fill with correct oil type
	Oil leaks	Check for leaks and repair or see your John Deere dealer
Poor Hydraulic Performance	Water in hydraulic oil	Replace hydraulic oil with correct oil type or see your John Deere dealer
	Plugged hydraulic oil filter	Replace oil filter
	Improper type of hydraulic oil	Verify correct hydraulic oil. Drain system and fill with correct oil type
	Oil leaks	Check for leaks and repair or see your John Deere dealer
Machine Will Not Move With Engine Running	Park brake engaged	Release park brake
	Transmission oil level low	Fill hydraulic oil with correct oil type as specified, or see your John Deere dealer
	Transmission oil cold	Allow engine to warm before operating
	Transmission range shift lever in neutral position	Place range transmission lever in high or low range
3-point Hitch Fails To Lift	Transmission oil level low	Fill hydraulic oil with correct oil type to specification or see your John Deere dealer
	Transmission oil cold	Allow engine to warm before operating
	Rate-of-drop valve closed	Open rate-of-drop valve to desired setting
	Excessive load on hitch	Reduce load on hitch
	Plugged hydraulic oil filter	Replace oil filter
	Worn hydraulic pump	See your John Deere dealer
3-point Hitch Lifts Slowly	Transmission oil level low	Fill hydraulic oil with correct oil type as specified, or see your John Deere dealer
	Transmission oil cold	Allow engine to warm before operating
	Excessive load on hitch	Reduce load on hitch

Symptom	Problem	Solution
	Plugged hydraulic oil filter	Replace oil filter
	Worn hydraulic pump	See your John Deere dealer
3-point Hitch Drops Slowly Or Does Not Drop	Rate-of-drop valve set too slow	Adjust rate-of-drop valve to desired setting
3-point Hitch Drops Too Fast	Rate-of-drop valve set too fast	Adjust rate-of-drop valve to desired setting
	Excessive load on hitch	Reduce load on hitch
Noise Is Coming From PTO During Operation	Too low engine speed	Increase to rated engine speed

WS68074,00016B2-19-30NOV16

Brakes

Symptom	Problem	Solution
Rear Brakes Not Working	Brakes out of adjustment	Adjust brakes to specification
	Worn or damaged brake linkage or brake disks	See your John Deere dealer

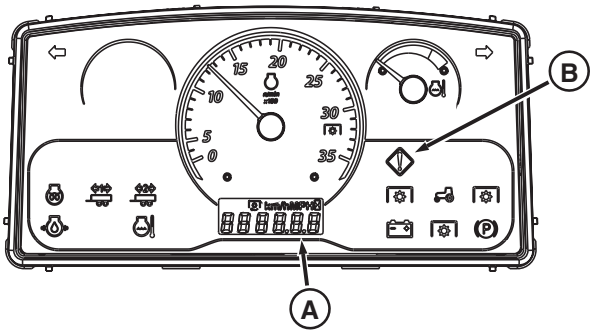
WS68074,00016C5-19-17AUG16

Steering

Symptom	Problem	Solution
Steering Not Working	Improper tire inflation	Inflate tires to proper specification
	Hydraulic oil level low	Fill hydraulic oil with correct oil type as specified, or see your John Deere dealer
	Hydraulic oil cold	Allow engine to warm before operating
	Plugged hydraulic oil filter	Replace hydraulic oil filter
	Excessive play in steering	See your John Deere Dealer
	Worn hydraulic pump or steering gear	See your John Deere dealer

WS68074,00016B4-19-30NOV16

Service Alert and Information Display



LV27005—UN—05MAY17

A—Information Display
B—Service Alert Indicator

On-board diagnostic information is displayed using the indicator lights and the information display (A). If the control unit software detects a malfunction or a status “out of the permissible range”, an error message or diagnostic trouble code is displayed. These numbers identify the machine system and problem type.

Service Alert Indicator (B): The light flashes and indicates a performance problem or malfunction that has to be resolved as soon as possible. If appropriate corrective action is not taken soon (maintenance, repair, change of operating mode), a significant reduction in performance and/or machine damage occurs.

UP00731,000009A-19-15MAY19

Specifications

Engine Specifications

Engine Manufacturer	Yanmar
Engine Model	3TNV80F-NCJT
Type	Diesel
Gross Horsepower	17.8 kW (23.9 hp)
Manufacturer's Estimated PTO Horsepower	12.8 kW (17.2 hp)
Low Idle Speed	1575 rpm
Rated Engine Speed	3200 rpm
High Idle Speed	3370 rpm
Operating Range	1575—3370 rpm
Engine Torque @ Rated Speed	53.1 (39.2 lb·ft)
Maximum Torque @ 1625 rpm	62 N·m (45.7 lb·ft)
Displacement	1.267 L
Cylinders	3
Cooling System	Water Pump
Oil Filter	Single Element
Air Cleaner	Dry with Safety Element
Starting Aid	Glow Plug

NOTE: Engine Power rated according to SAE J1995.

UP00731,000009C-19-14AUG20

Drivetrain Specifications

Transmission Type	Hydrostatic / 4-Wheel Drive
Speeds	2 Range
Mechanical Front-Wheel Drive	Standard
Final Drive	Spur Gear
Rear Axle Weight Capacity (Continuous)	1100 kg (2425 lb)
Front Axle Weight Capacity (Continuous)	612 kg (1349 lb)

UP00731,000009D-19-12JAN17

Hydraulic System Specifications

Pump Type	Gear
Hydrostatic Pump Type	Open Center
System Relief Pressure	13700 kPa (1987 psi)
Implement Flow @ 3200 RPM	13.4 L/min (3.5 gpm)
Steering Flow @ 3200 RPM	13.4 L/min (3.5 gpm)
Total Pump Flow	26.8 L/min (7.1 gpm)
Maximum Operating Pressure	2000 +/- 150 PSI

YCWRHFR,0000019-19-22MAR22

Electrical System Specifications

Battery Voltage	12 V
Battery Cold Cranking Amps @ -18 °C (0 °F)	500
Alternator Capacity	40 A

UP00731,000009F-19-12JAN17

Fluid Capacities

Fuel Tank	20.4 L (5.3 gal)
Cooling System OOS	3.7 L (3.9 qt)
Cooling System Cab	4.6 L (4.9 qt)
Crankcase with Filter	2.7 L (2.9 qt)
Transmission and Hydraulic System	14.4 L (3.8 gal)
Front Axle	2.8 L (3.0 qt)

JC48530,0000498-19-14AUG20

Ground Speeds

NOTE: All ground speed calculations shown are with machine equipped with R4 tires and operated at 3200 engine rpm.

Forward and Reverse Low Range	9.0 km/h (5.6 mph)
Forward and Reverse High Range	19.8 km/h (12.3 mph)

UP00731,00000A1-19-12JAN17

Dimensions

NOTE: Machine equipped with R4 tires.

Wheelbase	1600 mm (63 in)
Overall Length—Base Tractor	2808 mm (111 in)
Overall Width	1255 mm (49 in)

YCWRHFR,000001A-19-22MAR22

Height from Ground

NOTE: Machine equipped with R4 tires.

Overall Height (R4 Tires)	2383 mm (94 in)
Height to top of ROPS folded (R4 Tires)	1809 mm (72 in)

YCWRHFR,000001B-19-22MAR22

Ground Clearance

Front Axle Clearance	316 mm (12.5 in.)

UP00731,00000A4-19-12JAN17

Turning Radius

Turning Radius	2.65 m (8.7 ft)

UP00731,00000A5-19-12JAN17

Machine Weight

NOTE: Machine equipped with a ROPS, 3-point hitch, standard R4 tires and all fluids.

Base Tractor Weight	851 kg (1876 lb)

YCWRHFR,000001C-19-22MAR22

3-Point Hitch Specification

3-Point Hitch Type	Limited Category 1
3-Point Hitch Lift Capacity—61 cm (24 in.) behind arms	415 kg (914 lb)
3-Point Hitch Lift Capacity—at lift link ends	574 kg (1265 lb)

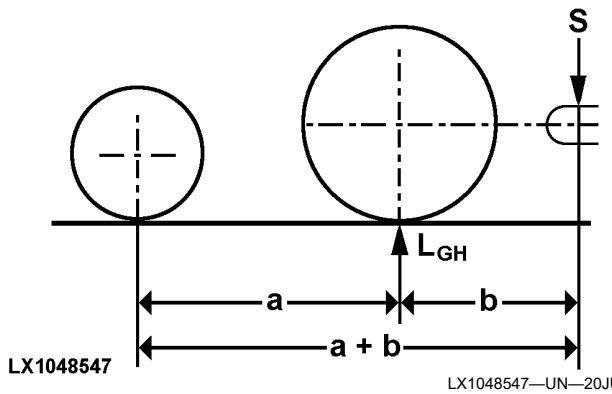
YCWRHFR,000001D-19-22MAR22

Coupling Devices

Coupling Devices	Hitch Plate
Maximum Vertical Load (kg)	296
Maximum Horizontal Load (kg)	1370

UP00731,00000A8-19-19JAN17

How to Calculate Maximum Permissible Download on Trailer Hitch



LX1048547—UN—20JUL09

Calculation of maximum permissible download at the trailer hitch in relation to Load Index (LI)

- The load index can be read on the sidewall of the tire. If the index is not provided, refer to the tire's load capacity as quoted by the tire manufacturer.
- The load index is quoted in conjunction with a Speed index (SI)
- As a rule, the load capacity of the tire in kg can be derived directly from the LI; see the following table:

LI	kg	LI	kg	LI	kg	LI	kg
90 . .	600	111 . .	1090	132 . .	2000	153 . .	3650
91 . .	615	112 . .	1120	133 . .	2060	154 . .	3750
92 . .	630	113 . .	1150	134 . .	2120	155 . .	3875
93 . .	650	114 . .	1180	135 . .	2180	156 . .	4000
94 . .	670	115 . .	1215	136 . .	2240	157 . .	4125
95 . .	690	116 . .	1250	137 . .	2300	158 . .	4250
96 . .	710	117 . .	1285	138 . .	2360	159 . .	4375
97 . .	730	118 . .	1320	139 . .	2430	160 . .	4500
98 . .	750	119 . .	1360	140 . .	2500	161 . .	4625
99 . .	775	120 . .	1400	141 . .	2575	162 . .	4750
100 . .	800	121 . .	1450	142 . .	2650	163 . .	4875
101 . .	825	122 . .	1500	143 . .	2725	164 . .	5000
102 . .	850	123 . .	1550	144 . .	2800	165 . .	5150
103 . .	875	124 . .	1600	145 . .	2900	166 . .	5300
104 . .	900	125 . .	1650	146 . .	3000	167 . .	5450
105 . .	925	126 . .	1700	147 . .	3075	168 . .	5600
106 . .	950	127 . .	1750	148 . .	3150	169 . .	5800
107 . .	975	128 . .	1800	149 . .	3250	170 . .	6000
108 . .	1000	129 . .	1850	150 . .	3350	171 . .	6150
109 . .	1030	130 . .	1900	151 . .	3450	172 . .	6300
110 . .	1060	131 . .	1950	152 . .	3550	173 . .	6500

As a general rule, SI A8 implies a top speed of 40 km/h (25 mph), while SI B implies a top speed of 50 km/h (31 mph). If the SI is different, the manufacturer's instructions apply.

Calculate maximum trailer hitch download as follows:

$$S = \frac{(H_{max} - L_{GH}) * a}{a + b}$$, where

$H_{max.}$ = the smaller value from 2*load capacity of a tire on the rear axle and the maximum permissible rear axle load in kg

L_{GH} = the mass in kg acting on the ground through the rear wheels (to be ascertained by weighing)

a = the wheelbase (the horizontal distance between the front and rear axles)

b = the rear overhang (the horizontal distance between the center of the rear axle and center of the hitch point)

Example of how to calculate maximum trailer hitch download:

Given that:

Empty mass on rear axle L_{GH} = 1800 kg

Wheelbase a = 2100 mm

Overhang b = 600 mm

Tire marking = 130A8

Maximum permitted speed of tractor = 40 km/h (25 mph)

Permissible rear axle load = 3500 kg

$H_{max.}$ = 3500 kg
(1900 kg * 2 = 3800 kg, rear axle load = 3500 kg)

$$S = \frac{(3500\ kg - 1800\ kg) * 2100\ mm}{2100\ mm + 600\ mm} = 1322\ kg$$

CAUTION: At least 20% of the vehicle's total unladen mass must be on the front axle.

Trailer hitch download must not exceed the trailer hitch limit specified by the manufacturer.

UP00731,0000192-19-13SEP18

How to Calculate Permissible Mass

Calculating permissible tractor mass and permissible trailer mass on the basis of the D value

EC-approved, dynamically tested hitches are always provided with a D value. This is calculated as follows:

$$D = \frac{G * A * B}{A + B}$$, where

D = D value of hitch

G = Gravitational constant 9.81 m/s^2

A = Tractor mass

B = Trailer mass

To calculate trailer mass for a given D value and a given tractor mass, and to calculate tractor mass for a given D value and a given trailer mass, use the following formulas:

$$\text{Tractor mass } A = \frac{D * B}{G * B - D}$$

$$\text{Trailer mass } B = \frac{D * A}{G * A - D}$$

*NOTE: If when calculating A the product of G*B is less than the D value, or if when calculating B the product of G*A is less than the D value, then the result of this calculation is negative. Even so, the D value is sufficient for every combination of tractor mass and trailer mass.*

Example of how to calculate permissible trailer mass:

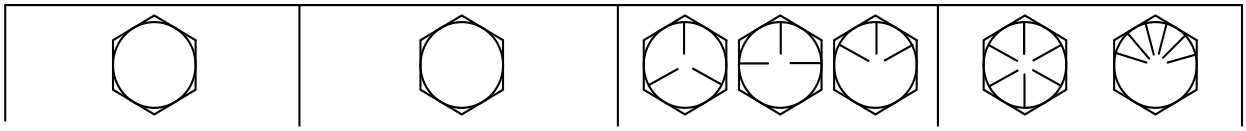
Given that: D value, D = 55 kN = 55000 N
Tractor mass A = 7000 kg

$$B = \frac{55000\ N * 7000\ kg}{9.81\ m/s^2 * 7000\ kg - 55000\ N} = 28163\ kg$$

Pay close attention to permissible towed mass and tractor mass!

UP00731,0000193-19-13SEP18

Unified Inch Bolt and Screw Torque Values



TS1671—UN—01MAY03

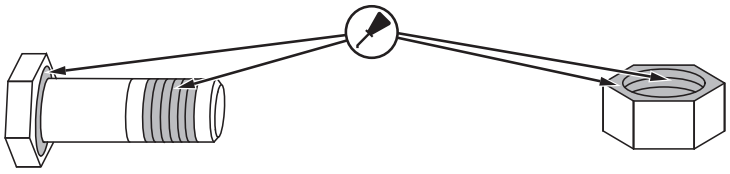
Bolt or Screw Size	SAE Grade 1[a]				SAE Grade 2[b]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
1/4	3.1	27.3	3.2	28.4	5.1	45.5	5.3	47.3	7.9	70.2	8.3	73.1	11.2	99.2	11.6	103
													N·m	lb·ft	N·m	lb·ft
5/16	6.1	54.1	6.5	57.7	10.2	90.2	10.9	96.2	15.7	139	16.8	149	22.2	16.4	23.7	17.5
									N·m	lb·ft	N·m	lb·ft				
3/8	10.5	93.6	11.5	102	17.6	156	19.2	170	27.3	20.1	29.7	21.9	38.5	28.4	41.9	30.9
					N·m	lb·ft	N·m	lb·ft								
7/16	16.7	148	18.4	163	27.8	20.5	30.6	22.6	43	31.7	47.3	34.9	60.6	44.7	66.8	49.3
	N·m	lb·ft	N·m	lb·ft												
1/2	25.9	19.1	28.2	20.8	43.1	31.8	47	34.7	66.6	49.1	72.8	53.7	94	69.3	103	75.8
9/16	36.7	27.1	40.5	29.9	61.1	45.1	67.5	49.8	94.6	69.8	104	77	134	98.5	148	109
5/8	51	37.6	55.9	41.2	85	62.7	93.1	68.7	131	96.9	144	106	186	137	203	150
3/4	89.5	66	98	72.3	149	110	164	121	230	170	252	186	325	240	357	263
7/8	144	106	157	116	144	106	157	116	370	273	405	299	522	385	572	422
1	216	159	236	174	216	159	236	174	556	410	609	449	785	579	860	634
1-1/8	305	225	335	247	305	225	335	247	685	505	751	554	1110	819	1218	898
1-1/4	427	315	469	346	427	315	469	346	957	706	1051	775	1552	1145	1703	1256
1-3/8	564	416	618	456	564	416	618	456	1264	932	1386	1022	2050	1512	2248	1658
1-1/2	743	548	815	601	743	548	815	601	1665	1228	1826	1347	2699	1991	2962	2185

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench.
DO NOT use these values if a different torque value or tightening procedure is given for a specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

Bolt or Screw Size	SAE Grade 1[a]		SAE Grade 2[b]		SAE Grade 5, 5.1 or 5.2		SAE Grade 8 or 8.2	
	Hex Head[c]	Flange Head[d]	Hex Head[c]	Flange Head[d]	Hex Head[c]	Flange Head[d]	Hex Head[c]	Flange Head[d]
For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.								

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.

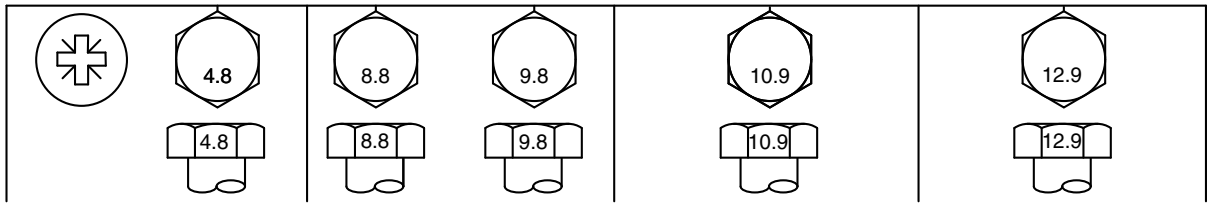


TS1741—UN—22MAY18

[a]*Grade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.*
[b]*Grade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.*
[c]*Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.*
[d]*Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.*

DX,TORQ1-19-09MAY22

Metric Bolt and Screw Torque Values

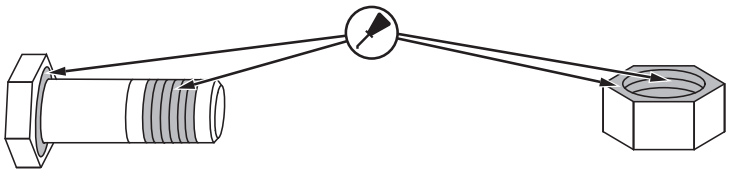


TS1742—UN—31MAY18

Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497
M24	—	—	—	—	468	345	518	382	666	491	738	544	780	575	864	637
M27	—	—	—	—	683	504	758	559	973	718	1080	797	1139	840	1263	932
M30	—	—	—	—	932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265
M33	—	—	—	—	1258	928	1398	1031	1788	1319	1986	1465	2092	1543	2324	1714
M36	—	—	—	—	1617	1193	1789	1319	2303	1699	2548	1879	2695	1988	2982	2199

Bolt or Screw Size	Class 4.8		Class 8.8 or 9.8		Class 10.9		Class 12.9	
	Hex Head[a]	Flange Head[b]	Hex Head[a]	Flange Head[b]	Hex Head[a]	Flange Head[b]	Hex Head[a]	Flange Head[b]
The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.					Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.			

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.



TS1741—UN—22MAY18

[a]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[b]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2-19-09MAY22

Identification Numbers

Product Identification Information

Each machine has its own unique Product Identification Number (PIN). The PIN number is broken down as follows:

1	L	V	3	0	4	6	R	#	#	A	1	0	0	0	0	1
WMC	Build Factory		Machine Series	Engine Hp			Machine Family	Check Letter	Calendar Year	Model Year	Operator Station Identifier	Build Sequence				
			Model Number								Serial Number					

WMC: World Manufacturing Code.

Build Factory: represents manufacturing location.

Machine Series: represents tractor series.

Engine Hp: represents approximate engine horsepower.

Machine Family: represents overall machine configuration.

Check Letter: calculated based on values and positions of the other characters in the PIN.

Calendar Year = represents calendar year of manufacture (2010 = A, 2031 = 1, 2041 = A again).

Model Year = represents number of years manufactured.

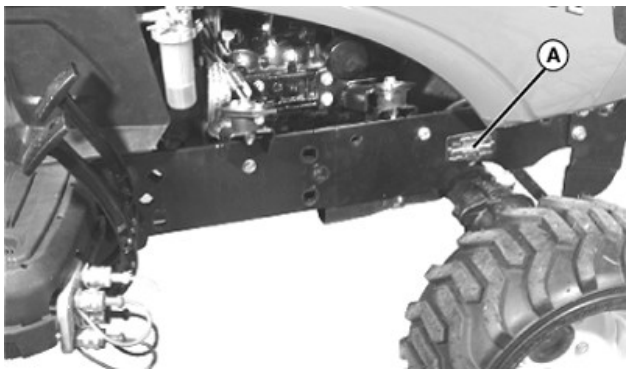
Operator Station = represents style of cab or open operation station.

Build Sequence = represents consecutive number of machines built with same machine series through operator station.

Model Number: made up of series, Hp, and family; example shown 3046R.

Serial Number: made up of model year, operator station, and build sequence.

UP00731,0000203-19-29JAN16

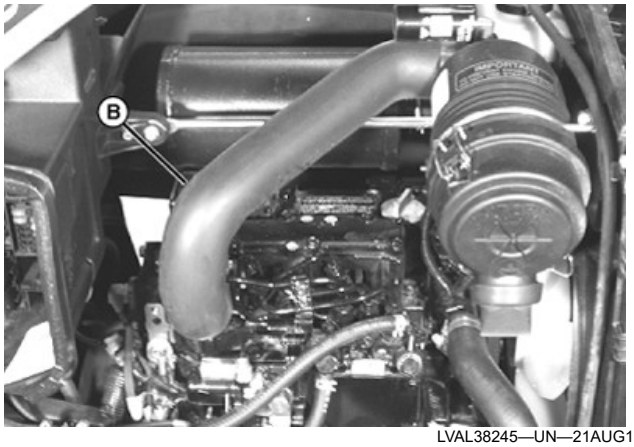


LVAL38244—UN—21AUG12

Product Identification Number Plate

Product Identification Number (A):

— — — — — — — — — — — — — — — — —



LVAL38245—UN—21AUG12

Engine Serial Number (B):

— — — — — — — — — — — — — — — — —

UP00731,0000919-19-01MAY19

Record Identification Numbers

Compact Utility Tractor

2025R—PIN (HH100001—)

If you need to contact an Authorized Service Center for information on servicing, always provide the product model and identification numbers.

You will need to locate the identification numbers for the product. Record the information in the spaces provided below.

Date of Purchase:

_____

Dealer Name:

_____

Dealer Phone:

_____

Product Warranty

John Deere offers a standard warranty on new John Deere products. For a copy of the product warranty statement or for details on the warranty terms and conditions for products purchased in the United States and Canada, please contact your local John Deere Dealer or utilize the following resources:

United States

Website:

http://www.deere.com/en_US/services_and_support/warranty/warranty.page

Toll Free: 1-800-537-8233

Dealer Locator:

http://dealerlocator.deere.com/servlet/country=US

Canada

Website (English):

http://www.deere.ca/en_CA/services_and_support/service_plans_warranties/service_plans_warranties.page

Website (French):

http://fr.deere.ca/en_CA/services_and_support/service_plans_warranties/service_plans_warranties.page

Toll Free: 1-800-537-8233

Dealer Locator:

http://dealerlocator.deere.com/servlet/country=CA

Emission-related warranties are included in this Operator's Manual, and applicable if required by law or regulation.

For products purchased in a country other than the United States or Canada, please contact your local John Deere dealer for assistance.

MP47322,00F4690-19-01JUN22

John Deere, California and U.S. EPA Emission Control System Warranty (Non-Road Diesel)

Your Warranty Rights and Obligations:

The California Air Resources Board (CARB), the United States Environmental Protection Agency (EPA) and John Deere are pleased to explain the **emission control system warranty** on your 2022, 2023, or 2024 model year industrial compression-ignition engine. California-certified, new off-road compression-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In the remaining forty nine (49) states, new non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

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

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

Manufacturer's Warranty Period:

2022, 2023, or 2024 model year off-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is found to be defective during the applicable warranty period, the part will be repaired or replaced by John Deere.

If your engine is certified as	And its maximum power is	And its rated speed is	Then its warranty period is
Variable speed or constant speed	kW <19	Any speed	1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 ≤ kW <37	3000 rpm or higher	1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 ≤ kW <37	Less than 3,000 rpm	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed	19 ≤ kW <37	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed or constant speed	kW ≥ 37	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.

Warranty Coverage:

This warranty is transferable to each subsequent purchaser for the duration of the warranty period. Repair or replacement of any warranted part will be performed at an authorized John Deere service provider.

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

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

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

Warranted Parts:

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

(A) Fuel injection system (including Altitude compensation system)

(B) Cold start enrichment system

(C) Intake manifold and Air intake throttle valve

(D) Turbocharger systems

(E) Exhaust manifold

(F) Positive crankcase ventilation system

(G) Charge Air Cooling systems

(H) Exhaust Gas Recirculation (EGR) systems

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

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

(K) Hoses, belts, connectors and assemblies used in above systems

(L) Emission Control Information Labels

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

Exclusions:

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

Owner’s Warranty Responsibilities:

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

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

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

You are responsible for initiating the warranty process. You must present your engine to a John Deere service provider as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have a question about your emissions warranty coverage, how to make an emissions warranty claim or how to make arrangements for emissions-related authorized repairs, you should contact your John Deere Turf and Utility retailer, or the John Deere Customer Contact Center at 1-800-537-8233, or e-mail John Deere from https://www.deere.com/en/our-company/contact-us/.

MK71445,0000417-19-21JAN22

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

Your warranty rights and obligations:

The California Air Resources Board (CARB), the United States Environmental Protection Agency (EPA) and YANMAR POWER TECHNOLOGY CO., LTD., hereafter referred to as YANMAR, are pleased to explain the **emission control system warranty** on your 2020, 2021, or 2022 model year industrial compression-ignition engine. California-certified, new off-road compression-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In the remaining forty nine (49) states, new non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions standards. YANMAR must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

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

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

Manufacturer's warranty period:

2020, 2021, or 2022 model year off-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is found to be defective during the applicable warranty period, the part will be repaired or replaced by YANMAR.

If your engine is certified as	And its maximum power is	And its rated speed is	Then its warranty period is
Variable speed or constant speed	kW < 8	Any speed	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Variable speed or constant speed	8 ≤ kW < 19	Any speed	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 ≤ kW <37	3,000 rpm or higher	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 ≤ kW <37	Less than 3,000 rpm	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed	19 ≤ kW <37	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed or constant speed	kW ≥ 37	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.

Warranty coverage:

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

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

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

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

Warranted parts:

This warranty covers engine components that are a part of the emission control system of the engine as

delivered by YANMAR to the original retail purchaser. Such components may include the following:

(A) Fuel injection system (including Altitude compensation system)

(B) Cold start enrichment system

(C) Intake manifold and Air intake throttle valve

(D) Turbocharger systems

(E) Exhaust manifold and exhaust throttle valve

(F) Positive crankcase ventilation system

(G) Charge Air Cooling systems

(H) Exhaust Gas Recirculation (EGR) systems

(I) Exhaust gas after treatment (Diesel Particulate Filter (DPF) system, urea SCR system)

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

(K) Hoses, belts, connectors and assemblies used in above systems

(L) Emission Control Information Labels

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

Exclusions:

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

Owner's warranty responsibilities:

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

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

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

You are responsible for initiating the warranty process. You are responsible for presenting your engine to an authorized YANMAR dealer or distributor as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, or would like information on the nearest YANMAR dealer or authorized service center, you should contact YANMAR America Corporation.

Website: https://www.yanmar.com

E-mail: CS_support@yanmar.com

Toll free telephone number: 1-800-872-2867, 1-855-416-7091

What the emergency stationary type engine owner must do:

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

mk71445,1681748727253-19-18APR23

Emission System Warranty

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

Your Warranty Rights and Obligations:

The California Air Resources Board (CARB), the United State Environmental Protection Agency (EPA) and YANMAR POWER TECHNOLOGY CO., LTD. hereafter referred to as YANMAR, are pleased to explain the **emission control system warranty** on your 2023, 2024, or 2025 model year compression-ignition engine. In California, new heavy-duty off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In the remaining forty nine (49) states, new non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions standards. YANMAR must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as

the fuel injection system, the air induction system, the electronic control system, EGR (Exhaust Gas Recirculation) system and the exhaust gas after treatment (diesel particulate filter system, urea SCR system). Also included may be hoses, belts, connectors, and other emission-related assemblies.

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

Manufacturer's Warranty Period:

2023, 2024, or 2025 model year heavy-duty off-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is defective, the part will be repaired or replaced by YANMAR.

If your engine is certified as	And its maximum power is	And its rated speed is	Then its warranty period is
Variable speed or constant speed	kW <8	Any speed	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Variable speed or constant speed	8<=kW<19	Any speed	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 <=kW <37	3000 rpm or higher	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 <=kW <37	Less than 3,000 rpm	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed	19 <=kW <37	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed or constant speed	kW ≥ 37	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.

Warranty Coverage:

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

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

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

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

The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty.

Warranted Parts:

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

- Fuel injection system (including Altitude compensation system)
- Cold start enrichment system
- Intake manifold and Air intake throttle valve
- Turbocharger systems
- Exhaust manifold and exhaust throttle valve
- Positive crankcase ventilation system
- Charge Air Cooling systems
- Exhaust Gas Recirculation (EGR) systems
- Exhaust gas after treatment (Diesel Particulate Filter (DPF) system, urea SCR system)
- Electronic Control units, sensors, solenoids and wiring harnesses used in above systems

- Hoses, belts, connectors and assemblies used in above systems
- Emission Control Information Labels

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

Exclusions:

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

Owner's Warranty Responsibilities:

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

As the off-road engine owner, you should however be aware that YANMAR may deny your warranty coverage if your off-road compression-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

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

You are responsible for initiating the warranty process. The ARB and EPA suggest that you present your off-road engine to a YANMAR dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible. If you have any questions regarding your warranty rights and responsibilities, you should contact YANMAR America Corporation. If you would like to find the nearest YANMAR dealer or authorized service center, you should contact YANMAR America Corporation.

Website: https://www.yanmar.com

E-mail: CS_support@yanmar.com

Toll free telephone number: 1-800-872-2867, 1-855-416-7091

What the Emergency Stationary Type Engine Owner must Do:

The engines for emergency stationary type generators certified by Federal Law (40 CFR Part 60) are limited to emergency use only, and the operation for maintenance checks and verification test for functions is required. The total operating hours for maintenance and verification test for functions should not exceed 100 hours per year. However, there is no limitation on the operating hours for emergency use. Keep a log of the number of hours the engine is operated for both emergency use and non-emergency use. Also, note the reason for the operation.

mk71445,1679915954842-19-30MAR23

Tire Warranty

John Deere warranty applies for tires available through the John Deere parts system. For tires not available through the John Deere parts system, the tire manufacturer's warranty applicable to your machine may not apply outside the U.S. (See your John Deere dealer for specific information.)

KN52281,1003F90-19-22AUG12

Limited Battery Warranty

NOTE: Applicable in North America only. For complete machine warranty, reference a copy of the John Deere warranty statement. Contact your John Deere dealer to obtain a copy.

To Secure Warranty Service

The purchaser must request warranty service from a John Deere dealer authorized to sell John Deere batteries, and present the battery to the dealer with the top cover plate codes intact.

Replacement

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship will be eligible for warranty consideration.

This Warranty Does Not Cover

Breakage of the container, cover, or terminals.

Depreciation or damage caused by lack of reasonable and necessary maintenance or by improper maintenance.

Transportation, mailing, or service call charges for warranty service.

Limitation of Implied Warranties and Purchaser's Remedies

To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations or promises as to the quality,

performance or freedom from defect of the products covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE ADJUSTMENT PERIOD SET FORTH HERE. THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON JOHN DEERE BATTERIES ARE THOSE SET FORTH HERE. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages. So these limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have some rights which vary from state to state.

No Dealer Warranty

The selling dealer makes no warranty of it's own and the dealer has no authority to make any representation or promise on behalf of John Deere, or to modify the terms or limitations of this warranty in any way.

DX,BATWAR,NA-19-06AUG21

Service Records

Every 10 Hour or Daily Service

SERVICE PROCEDURE	
□ Test safety interlock system.	□ Check air intake and radiator screen.
□ Check engine oil level.	□ Check radiator coolant level.
□ Check transmission oil level.	□ Check/Drain water separator.
□ Check air filter rubber dust valve.	□ Lubricate grease points. (Wet conditions)

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,000048B-19-10AUG20

Every 50 Hour Service

SERVICE PROCEDURE	
□ Lubricate grease points. (Normal conditions)	□ Clean or replace cab air filters.
□ Check front axle oil level.	□ Lubricate 3 point hitch.
□ Check cab mounting bolt torque.	

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,000048D-19-10AUG20

Every 200 Hour Service

SERVICE PROCEDURE	
□ Change transmission oil and filter / clean suction screen.	□ Check air filter restriction indicator. (2R only)
□ Inspect alternator belt.	□ Check wheel bolt torque.

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,000048E-19-10AUG20

Every 400 Hour Service

SERVICE PROCEDURE	
□ Change engine oil and filter.	□ Drain water from fuel tank and replace fuel filter.

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,000048F-19-10AUG20

Every 600 Hour Service

SERVICE PROCEDURE	
□ Service air filter element and hoses.	□ Check brake adjustment.
□ Change front axle oil.	

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,0000490-19-10AUG20

Yearly Service

SERVICE PROCEDURE	
□ Check wheel bolt torque.	□ Drain water from fuel tank and replace fuel filter if less than 400 hours of operation
□ Change engine oil and filter if less than 400 hours of operation.	□ Check all hoses and clamps.

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,0000491-19-10AUG20

Every 1000 Hour Service

SERVICE PROCEDURE	
□ Check engine valve clearance. See your John Deere dealer.	

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,0000492-19-10AUG20

Every 2000 Hour Service or Every Two Years

SERVICE PROCEDURE	
□ Drain, Flush, and Refill Engine Cooling System [a]	

[a] *When coolant is NOT checked annually or NOT serviced with the pre-diluted John Deere Cool-Gard II*

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,0000493-19-10AUG20

Every 6000 Hour Service or Every Six Years

SERVICE PROCEDURE	
□ Drain, Flush, and Refill Engine Cooling System[a]	

[a] *When coolant is checked annually and serviced with the pre-diluted John Deere Cool-Gard II*

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

JC48530,0000494-19-10AUG20

Service as Required

SERVICE PROCEDURE	
□ Replace alternator belt.	□ Replace air filter elements.
□ Replace light bulbs.	□ Replace fuses.
□ Clean and replace battery.	□ Replace radiator hoses and clamps.
□ Check tire air pressure.	□ Clean fuel tank overfill reservoir.
□ Drain water and sediment from fuel sediment bowl, and service water separator.	□ Check and clean front grille and side screens.
□ Check and clean radiator cooling screen.	□ Clean debris from engine compartment.

Hours: Date: Work Carried Out By:	Comments:	Dealer’s Stamp

JC48530,0000495-19-10AUG20

Change of Ownership

Serial Number																	
Engine Number																	

Previous Owner:
Address:
Purchase Date:
Hours at Purchase:

Machine Model:
Registration No.:
New Owner:
Address:
Dealer's Stamp (only if sold through dealer)

UP00731,0000233-19-22FEB18

Change of Ownership

Serial Number																	
Engine Number																	

Previous Owner:
Address:
Purchase Date:
Hours at Purchase:

Machine Model:
Registration No.:
New Owner:

Address:
Dealer’s Stamp (only if sold through dealer)

UP00731,0000234-19-22FEB18

Change of Ownership

Serial Number																	
Engine Number																	

Previous Owner:
Address:
Purchase Date:
Hours at Purchase:

Machine Model:
Registration No.:
New Owner:
Address:
Dealer’s Stamp (only if sold through dealer)

UP00731,0000235-19-22FEB18

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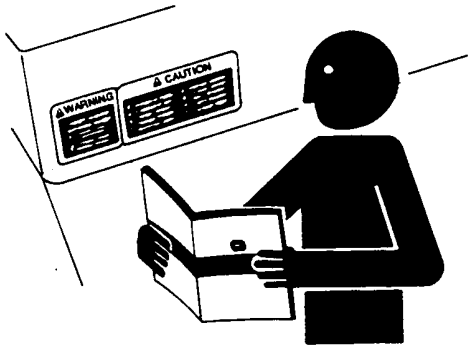
John Deere Service

John Deere Is At Your Service



TS201—UN—15APR13

CUSTOMER SATISFACTION is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts and service:

–Maintenance and service parts to support your equipment.

–Trained service technicians and the necessary diagnostic and repair tools to service your equipment.

CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

Your John Deere dealer is dedicated to supporting your equipment and resolving any problem you may experience.

1. When contacting your dealer, be prepared with the following information:

–Machine model and product identification number

–Date of purchase

–Nature of problem

2. Discuss problem with dealer service manager.

3. If unable to resolve, explain problem to dealership manager and request assistance.

4. If you have a persistent problem your dealership is unable to resolve, ask your dealer to contact John Deere for assistance. Or contact the Ag Customer Assistance Center at 1-866-99DEERE (866-993-3373) or e-mail us at www.deere.com/en_US/ag/contactus/.

DX,IBC,2-19-02APR02

Technical Information

Technical information can be purchased from John Deere. Publications are available in print or CD-ROM format.

Orders can be made using one of the following:

- John Deere Technical Information Store: **www.JohnDeere.com/TechInfoStore**
- Call 1-800-522-7448
- Contact your John Deere dealer

Available information includes:

TS189—UN—17JAN89

PARTS CATALOGS list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.

TS191—UN—02DEC88

OPERATOR'S MANUALS providing safety, operating, maintenance, and service information.

TS224—UN—17JAN89

TECHNICAL MANUALS outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic

information. Some components, such as engines, are available in a separate component technical manual.

TS1663—UN—10OCT97

EDUCATIONAL CURRICULUM including five comprehensive series of books detailing basic information regardless of manufacturer:

- Agricultural Primer series covers technology in farming and ranching.
- Farm Business Management series examines “real-world” problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
- Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
- Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.
- Fundamentals of Compact Equipment manuals provide instruction in servicing and maintaining equipment up to 40 PTO horsepower.

DX,SERVLIT-19-07DEC16