4044M, 4044R, 4052M, 4052R, 4066M, 4066R, 4052M and 4066M Heavy Duty Tractors Operator's Manual (North America)

JOHN DEERE

OPERATOR'S MANUAL

4044M, 4044R, 4052M, 4052R, 4066M, 4066R, 4052M and 4066M Heavy Duty Tractors Operator's Manual (North America)

OMTR112287 ISSUE I0 (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.

Additional Proposition 65 Warnings can be found in this manual.

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

LV27953—UN—22MAR17

Open Operator's Station

UP00731,0000258-19-21MAR17

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
LoadMatch™	Trademark of Deere & Company
SpeedMatch™	Trademark of Deere & Company
MotionMatch™	Trademark of Deere & Company
iMatch™	Trademark of Deere & Company

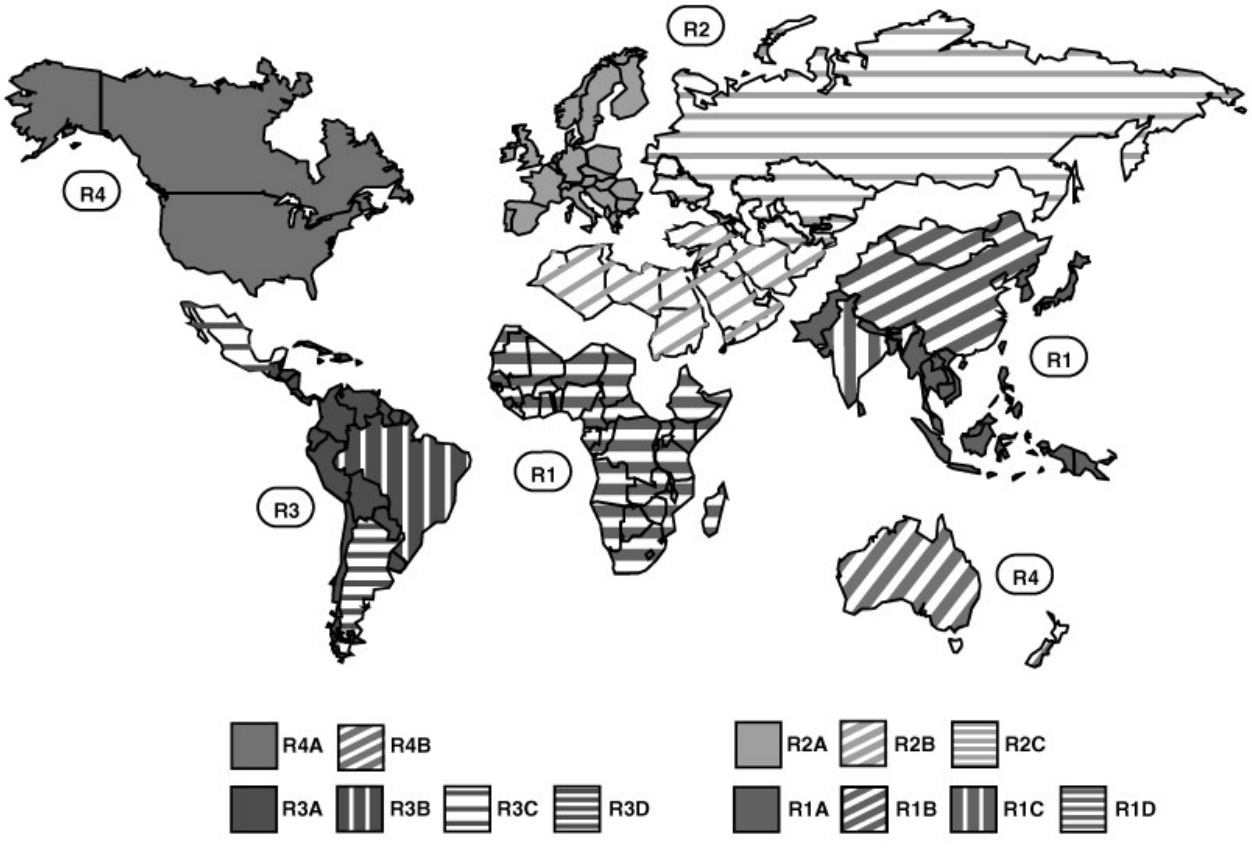
UP00731,0000111-19-27AUG18

Glossary of Terms

Abbreviation	Description
DTC	Diagnostic Trouble Code
ECU	Engine Control Unit
HST	Hydrostatic Transmission
MFWD	Mechanical Front Wheel Drive
OBD	On-Board Diagnostic
PTO	Power Take Off
RIO	Reverse Implement Option
ROPS	Roll-Over Protective Structure
SCV	Selective Control Valve

UP00731,0000112-19-27AUG18

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)

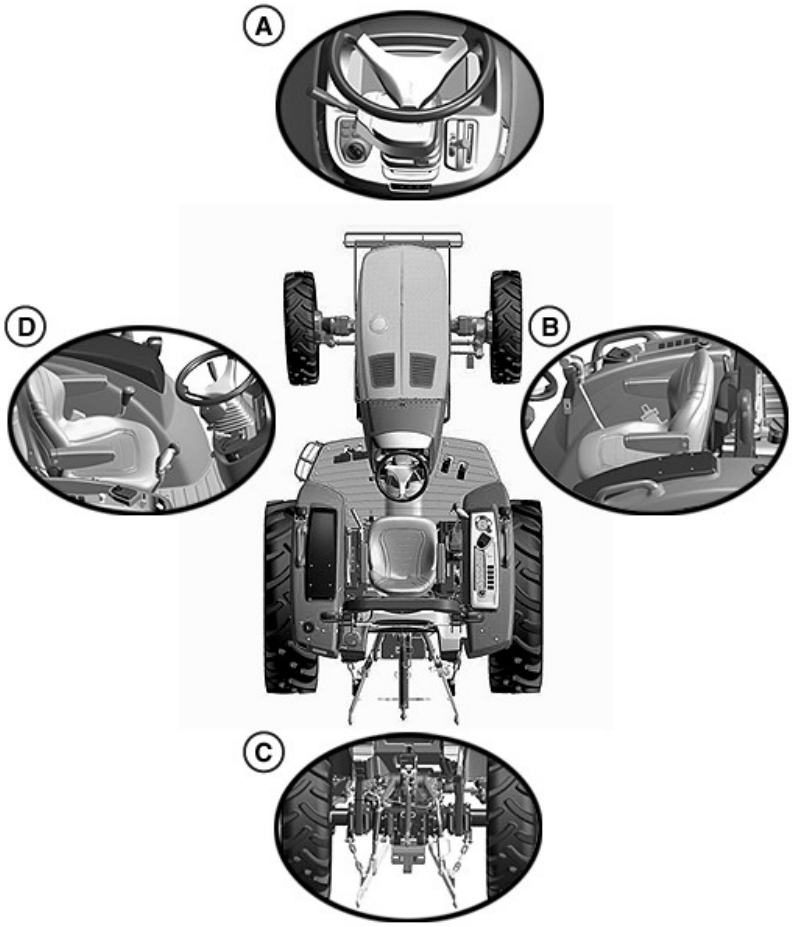
Regions 1, 2 and 3 equipment is traditionally manufactured with Economic Commission for Europe (ECE) features or systems.	**Region 4 equipment is traditionally manufactured with Society of Automotive Engineers (SAE) features or systems.**
Drive and signal lighting, traffic signs, safety signs, and braking 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 also be available in other languages. (See your John Deere dealer to order.)

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



LV27954—UN—21MAR17

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

Operating the Machine Introduction:

- Sit in the operator seat and fasten seat belt.
- Start engine. (See Engine Operation section.)
- Turn on lights or signals as required. (See Electrical and Lighting Operation section.)
- Operate transmission to move machine. (See Transmission Operation section.)
- Use steering and brakes as required. (See Steering and Brake Operation section.)
- Activate features and implements as required. (See Operational sections.)

Preliminary Overview

Use the following list as a reminder to inspect items before operation. Detailed operation and service information is available in Operational and Maintenance sections.

- 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 flat tires.
- Check machine for loose hardware, fuel level, all fluids and lubricants, air filters, and perform all daily maintenance.
- Check and prepare implements or attachments according to implement or attachment Operator Manuals.

Using this Manual:

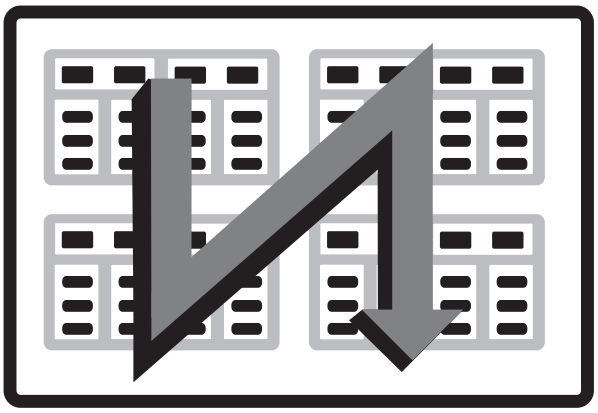
The information provided in this manual is divided into sections. The sections are organized with the typical

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.



W28329—UN—18OCT17
UP00731,000056E-19-27AUG18

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-19-29SEP98

Understand Signal Words

⚠ DANGER

⚠ WARNING

⚠ CAUTION

TS187—19—30SEP88

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

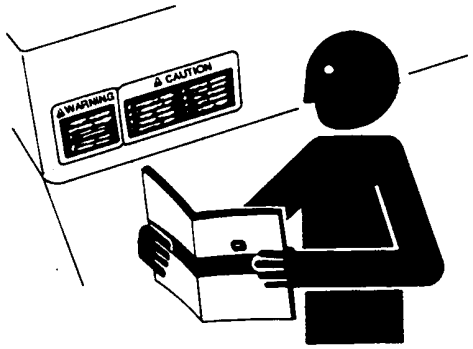
WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

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.

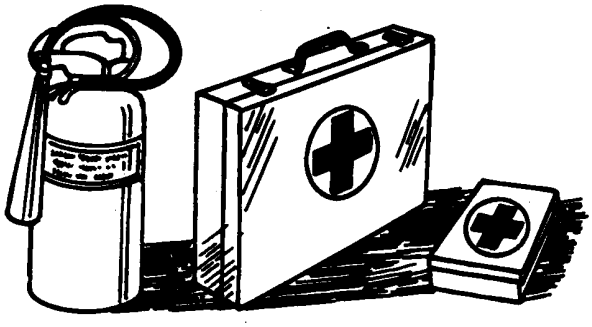
Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

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-19-16JUN09

Prepare for Emergencies



TS291—UN—15APR13

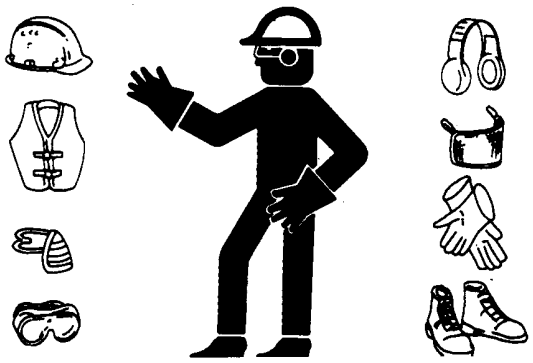
Be prepared if a fire starts.

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



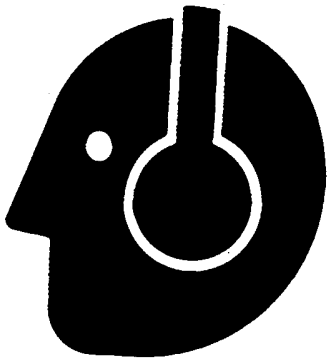
TS206—UN—15APR13

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.

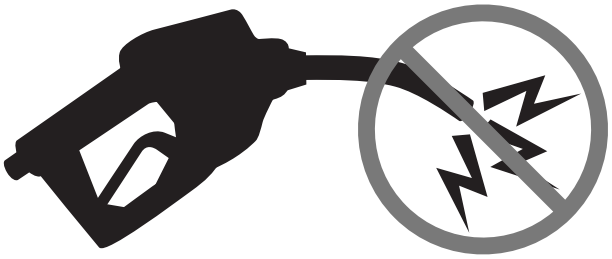
If your extinguisher does not have instructions, follow these general guidelines:

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.

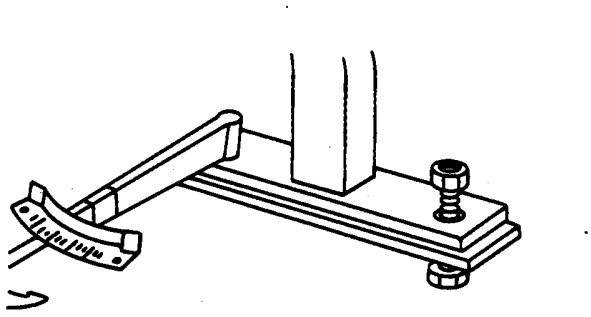
Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

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.

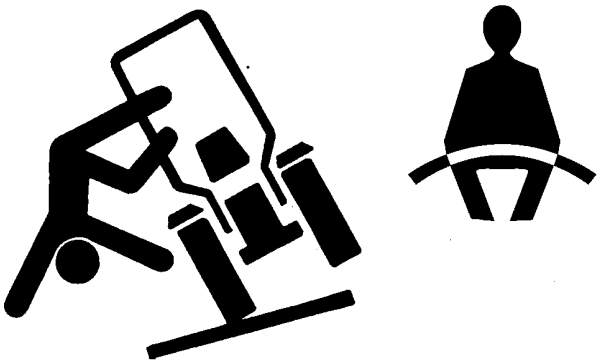
The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

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.

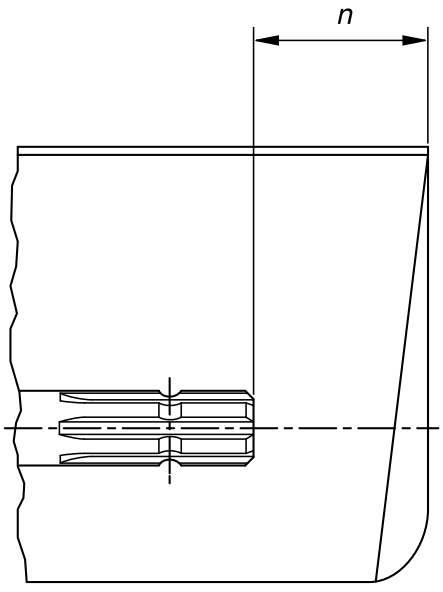
- Snug the seat belt across the hips.

- 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.

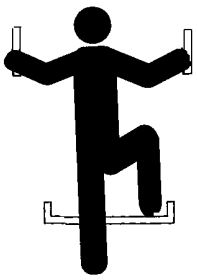
Do not raise implements high enough to damage the tractor master shield or guard of primary implement PTO driveshaft. Detach the PTO driveline shaft if it is necessary to increase implement height. (See Attching/ Detaching PTO Driveline)

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

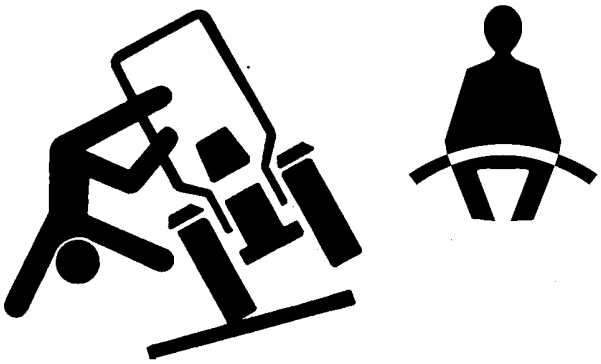
Read Operator's Manuals for ISOBUS Controllers

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

GreenStar is a trademark of Deere & Company

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

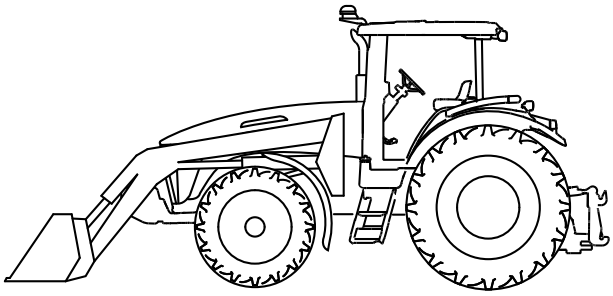
Limited Use in Forestry Operation

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.

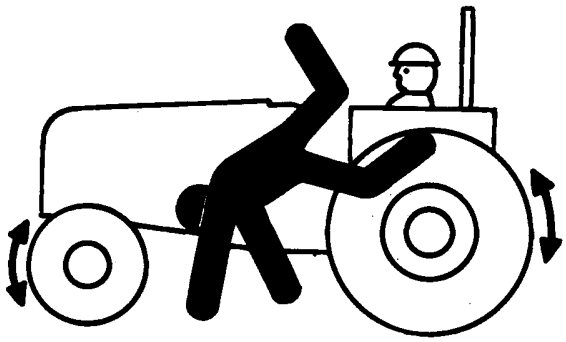
Lower loader to ground before leaving operators station.

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

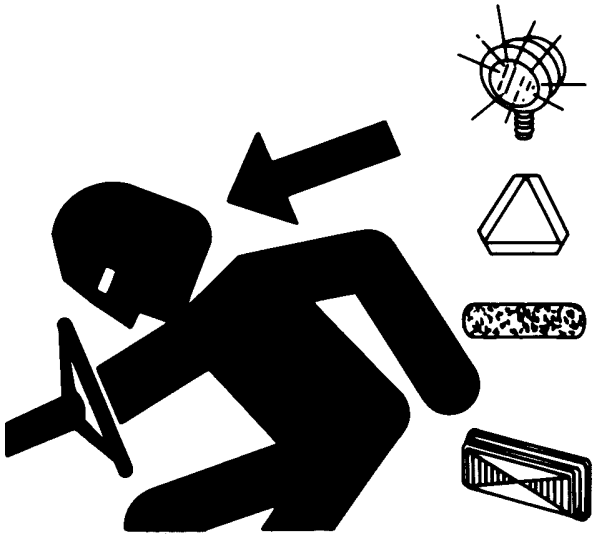
Instructional Seat

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



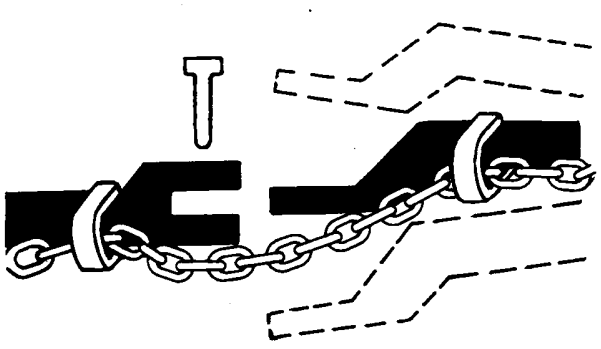
TS951—UN—12APR90

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

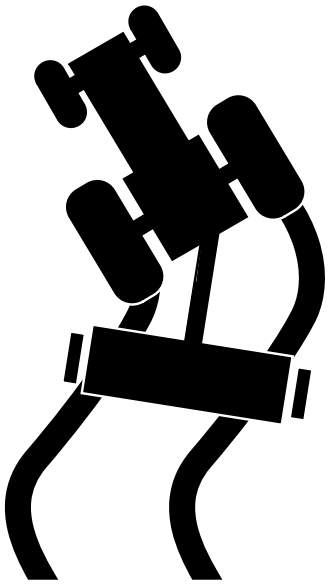
A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

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).

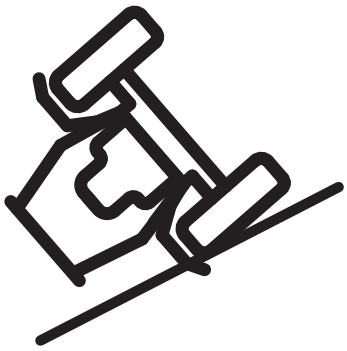
Implements with brakes:

- 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

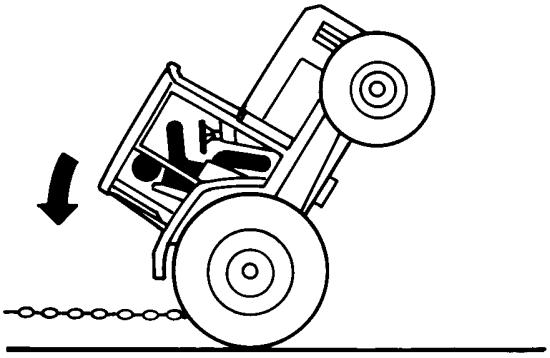
Choose a low ground speed so you will not have to stop or shift while on a slope.

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

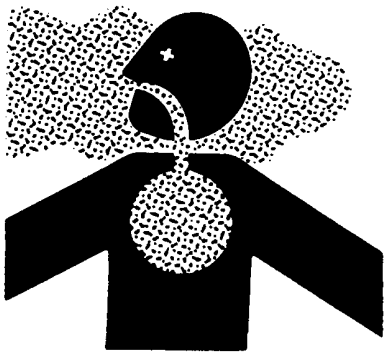
This enclosed cab does not protect against inhaling vapor, aerosol or dust. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.

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.

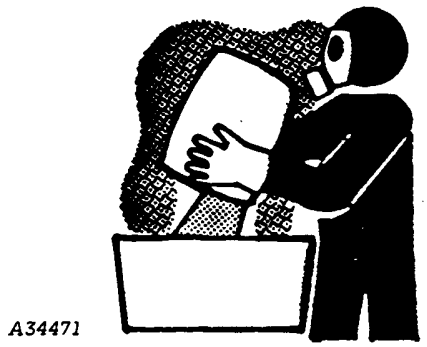
Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.

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:

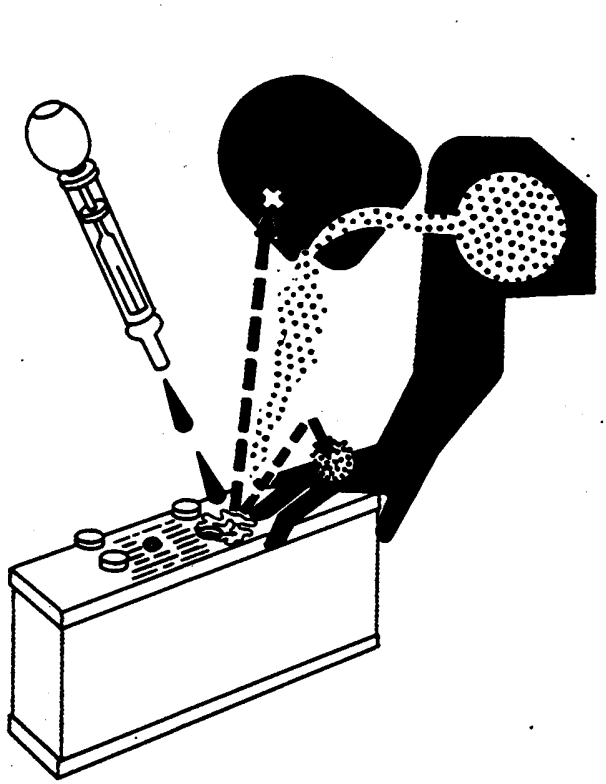
- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
  - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
  - Chemicals 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

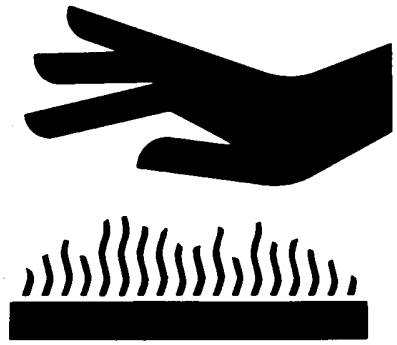
Servicing machine or attachments with engine running can result in serious personal injury. Avoid exposure and skin contact with hot exhaust gases and components.

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.

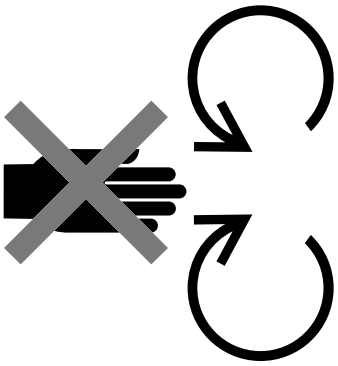
DX,EXHAUST-19-20AUG09

Clean Exhaust Filter Safely

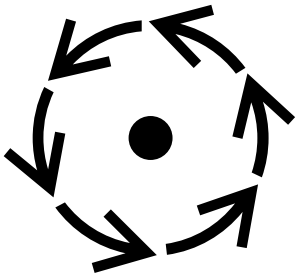
TS227—UN—15APR13



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

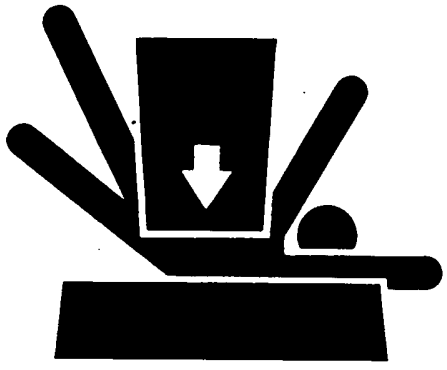
TS220—UN—15APR13

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

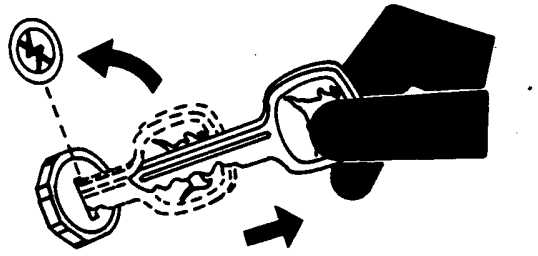
Avoid possible injury or death from machinery runaway.

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



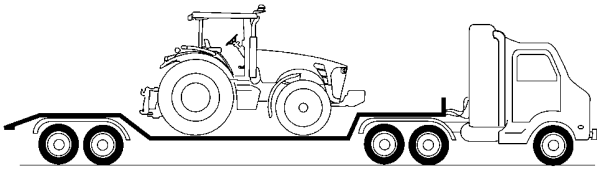
TS230—UN—24MAY89

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.

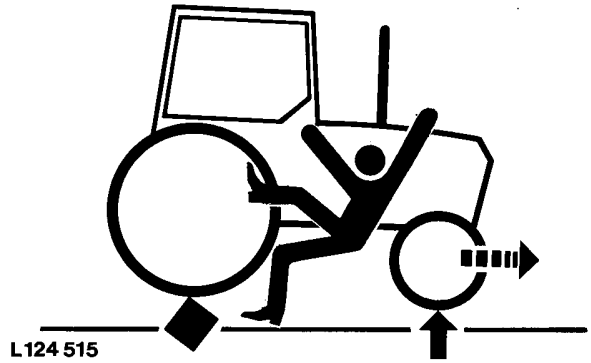
When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

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

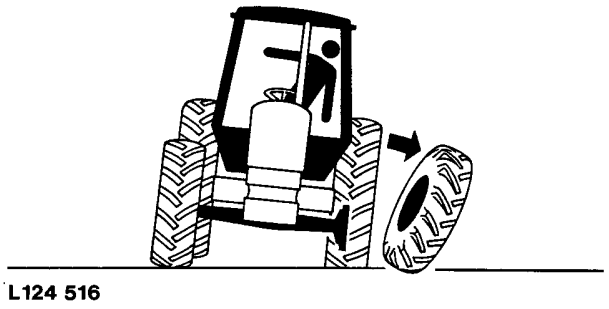


L124515—UN—06AUG94

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

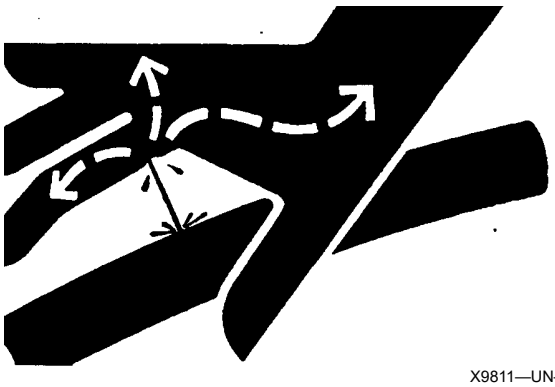


L124516—UN—03JAN95

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

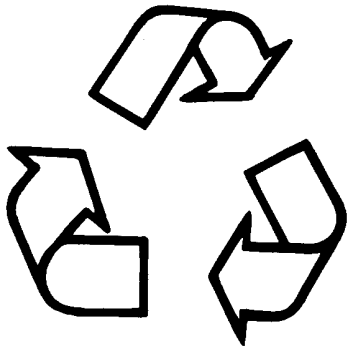
TS219—UN—23AUG88

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

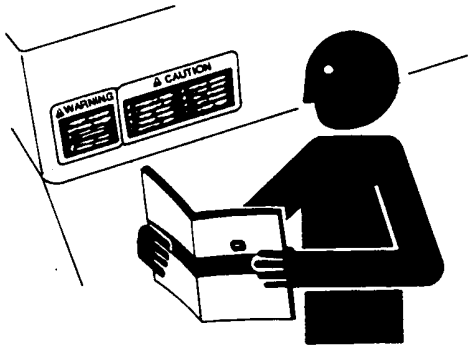
Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

- 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



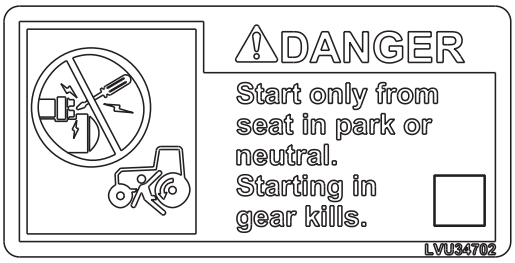
TS201—UN—15APR13

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

Starter - OOS



LV29024—UN—25JUL17

LV29102—UN—03AUG17

Starter—Open Operator Station

DANGER

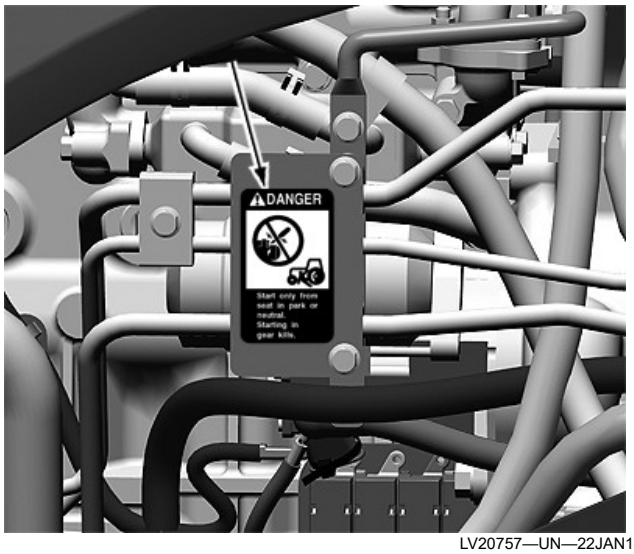
Start only from seat in park or neutral.

Starting in gear kills.

PP71895,000154B-19-24AUG20

Starter - Cab

LV28430—UN—18MAY17



LV20757—UN—22JAN14

Starter—Cab

DANGER

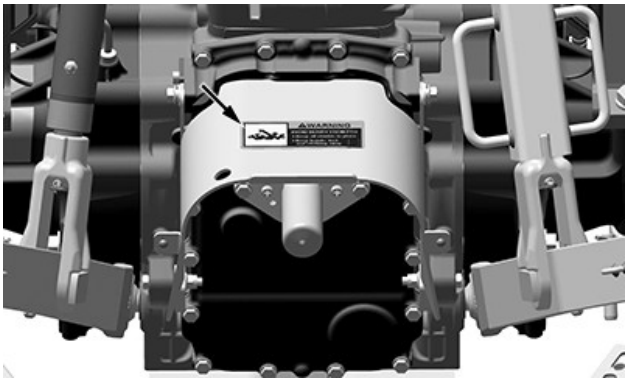
Start only from seat in park or neutral.

Starting in gear kills.

PP71895,000154C-19-24AUG20

PTO Shield

LV28429—UN—18MAY17



LV29013—UN—27JUL17

PTO

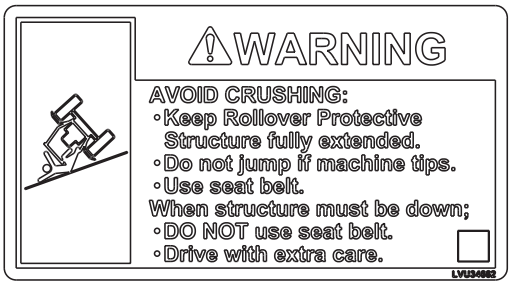
WARNING

AVOID INJURY FROM PTO

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

PP71895,000154D-19-24AUG20

Use Seat Belt Properly - OOS



LV29029—UN—25JUL17

LV29100—UN—03AUG17

Right-Hand Fender - Folding ROPS Tractors

WARNING

AVOID CRUSHING:

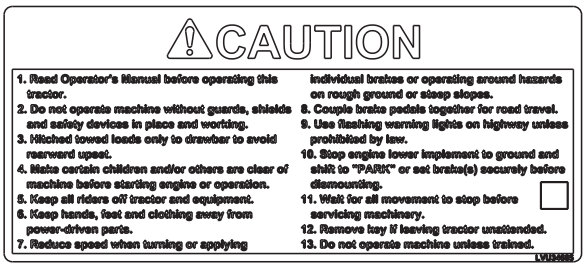
- **Keep Rollover Protective Structure fully extended.**
- **Do not jump if machine tips.**
- **Use seat belt.**

When structure must be down:

- **DO NOT use seat belt.**
- **Drive with extra care.**

PP71895,000154E-19-24AUG20

Operator's Manual - OOS



LV29030—UN—25JUL17

LV29101—UN—03AUG17

Right-Hand Fender—Folding ROPS Tractors

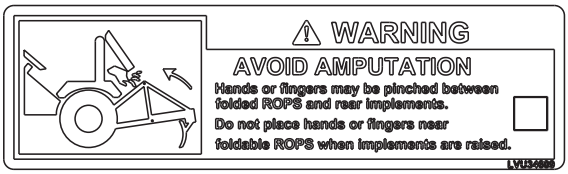
CAUTION

1. **Read Operator's Manual before operating this tractor.**
2. **Do not operate machine without guards, shields and safety devices in place and working.**
3. **Hitched towed loads only to drawbar to avoid rearward upset.**
4. **Make certain children and/or others are clear of machine before starting engine or operation.**
5. **Keep all riders off tractor and equipment.**
6. **Keep hands, feet and clothing away from power-driven parts.**
7. **Reduce speed when turning or applying individual brakes or operating around hazards on rough ground or steep slopes.**
8. **Couple brake pedals together for road travel.**

9. **Use flashing warning lights on highway unless prohibited by law.**
10. **Stop engine, lower implement to ground and shift to "PARK" or set brake(s) securely before dismounting.**
11. **Wait for all movement to stop before servicing machinery.**
12. **Remove key if leaving tractor unattended.**
13. **Do not operate machine unless trained.**

PP71895,000154F-19-24AUG20

Folding ROPS



LV28431—UN—18MAY17

LV18508—UN—31JUL13

Top of ROPS - Folding ROPS Tractors

WARNING

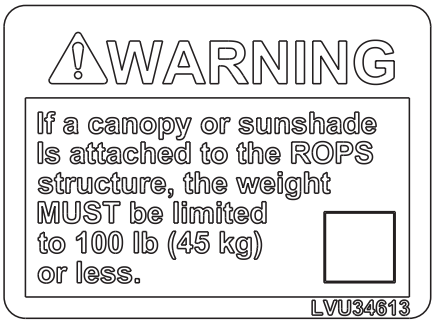
AVOID AMPUTATION

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.

PP71895,0001550-19-24AUG20

Canopy or Sunshade



LV28492—UN—01JUN17

LV29021—UN—25JUL17

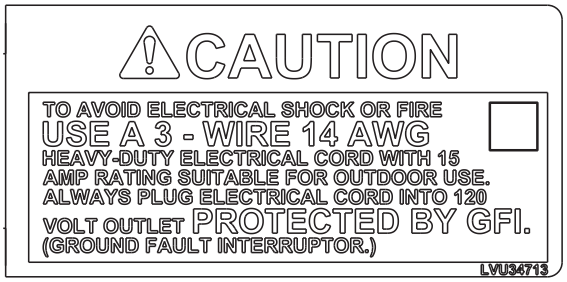
Right Side of ROPS

WARNING

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

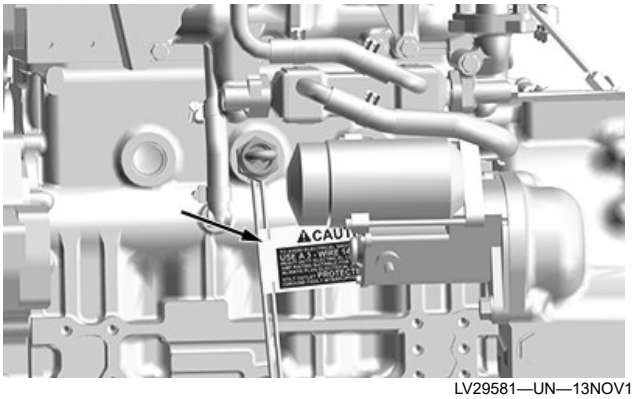
PP71895,0001551-19-24AUG20

Engine Coolant Heater



LV29578—UN—09NOV17

Engine Coolant Heater



LV29581—UN—13NOV17

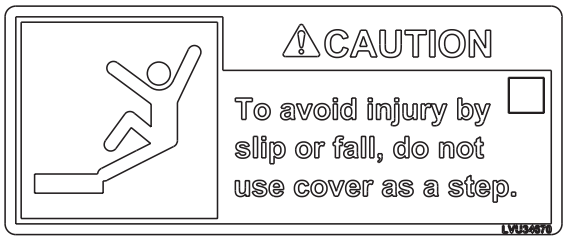
Engine Right-Hand Side

CAUTION

TO AVOID ELECTRICAL SHOCK OR FIRE USE A 3-WIRE 14 AWG HEAVY-DUTY ELECTRICAL CORD WITH 15 AMP RATING SUITABLE FOR OUTDOOR USE. ALWAYS PLUG ELECTRICAL CORD INTO 120 VOLT OUTLET PROTECTED BY GFI (GROUND FAULT INTERRUPTER.)

PP71895,0001552-19-24AUG20

No Step



LV29571—UN—18OCT17

LV29492—UN—18OCT17

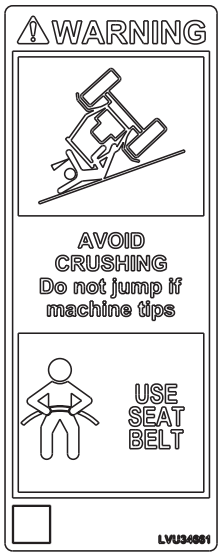
Battery Cover—Cab Tractor

CAUTION

To avoid injury by slip or fall, do not use cover as a step.

PP71895,0001553-19-24AUG20

Use Seat Belt Properly - Cab



LV29026—UN—25JUL17

LV29027—UN—25JUL17

Cab Tractor

WARNING

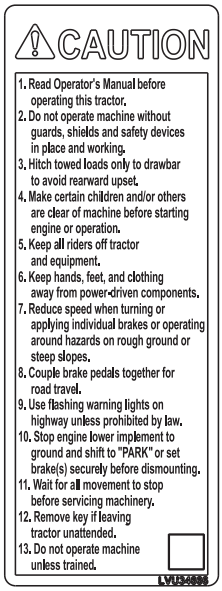
AVOID CRUSHING

Do not jump if machine tips

USE SEAT BELT

PP71895,0001554-19-24AUG20

Operator's Manual - Cab



LV29031—UN—27JUL17

LV29028—UN—25JUL17

Left-Hand Door Post

CAUTION

1. **Read Operator's Manual before operating this tractor.**
2. **Do not operate machine without guards, shields and safety devices in place and working.**
3. **Hitch towed loads only to drawbar to avoid rearward upset.**
4. **Make certain children and/or others are clear of machine before starting engine or operation.**
5. **Keep all riders off tractor and equipment.**
6. **Keep hands, feet, and clothing away from power-driven components.**
7. **Reduce speed when turning or applying individual brakes or operating around hazards on rough ground or steep slopes.**
8. **Couple brake pedals together for road travel.**
9. **Use flashing warning lights on highway unless prohibited by law.**
10. **Stop engine, lower implement to ground and shift to "PARK" or set brake(s) securely before dismounting.**
11. **Wait for all movement to stop before servicing machinery.**
12. **Remove key if leaving tractor unattended.**
13. **Do not operate machine unless trained.**

PP71895,0001555-19-24AUG20

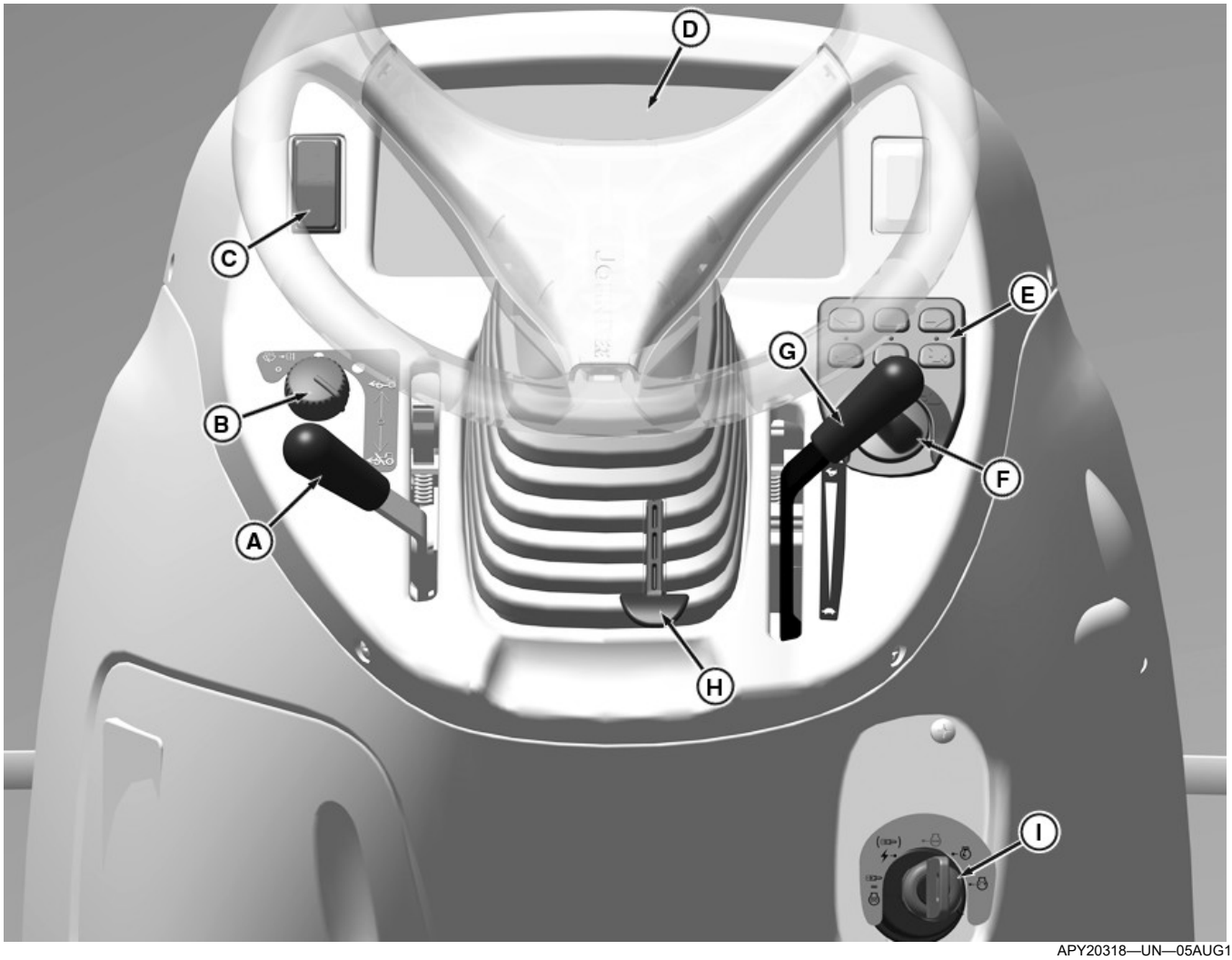
Front Console Controls

For OOS

LV28000—UN—22MAR17

A—Headlight/Worklight Switch
B—Dash Panel Module
C—Instrument Cluster
D—Throttle Lever
E—Tilt Steering Control Lever
F—Key Switch

For Cab

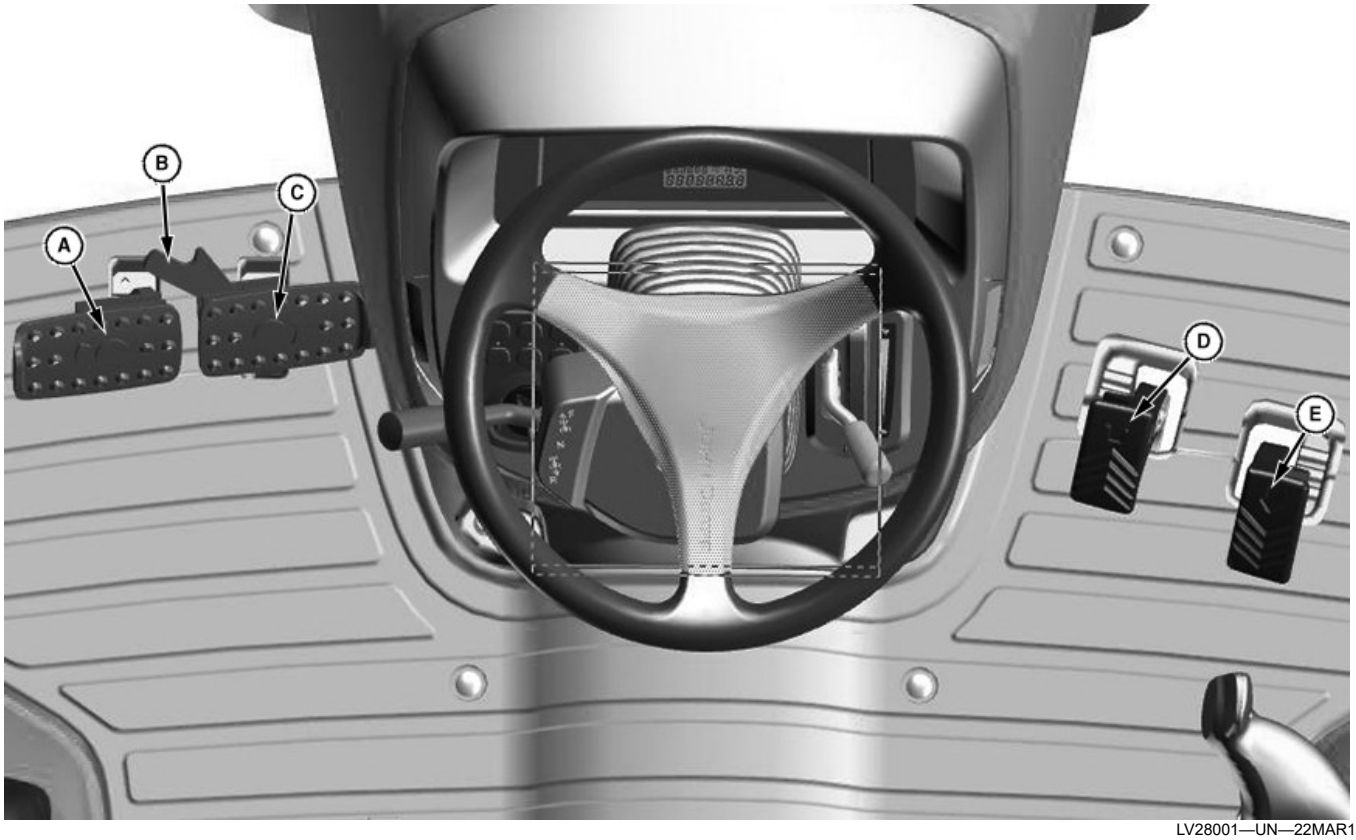


APY20318—UN—05AUG19

A—MFWD Control Lever
B—Wiper Switch Knob
C—Hitch Assist Switch
D—Instrument Cluster
E—Dash Panel Module
F—Headlight/Worklight Switch
G—Throttle Lever
H—Tilt Steering Control Lever
I—Key Switch

PS75950,000089C-19-07AUG19

Foot Operated Controls



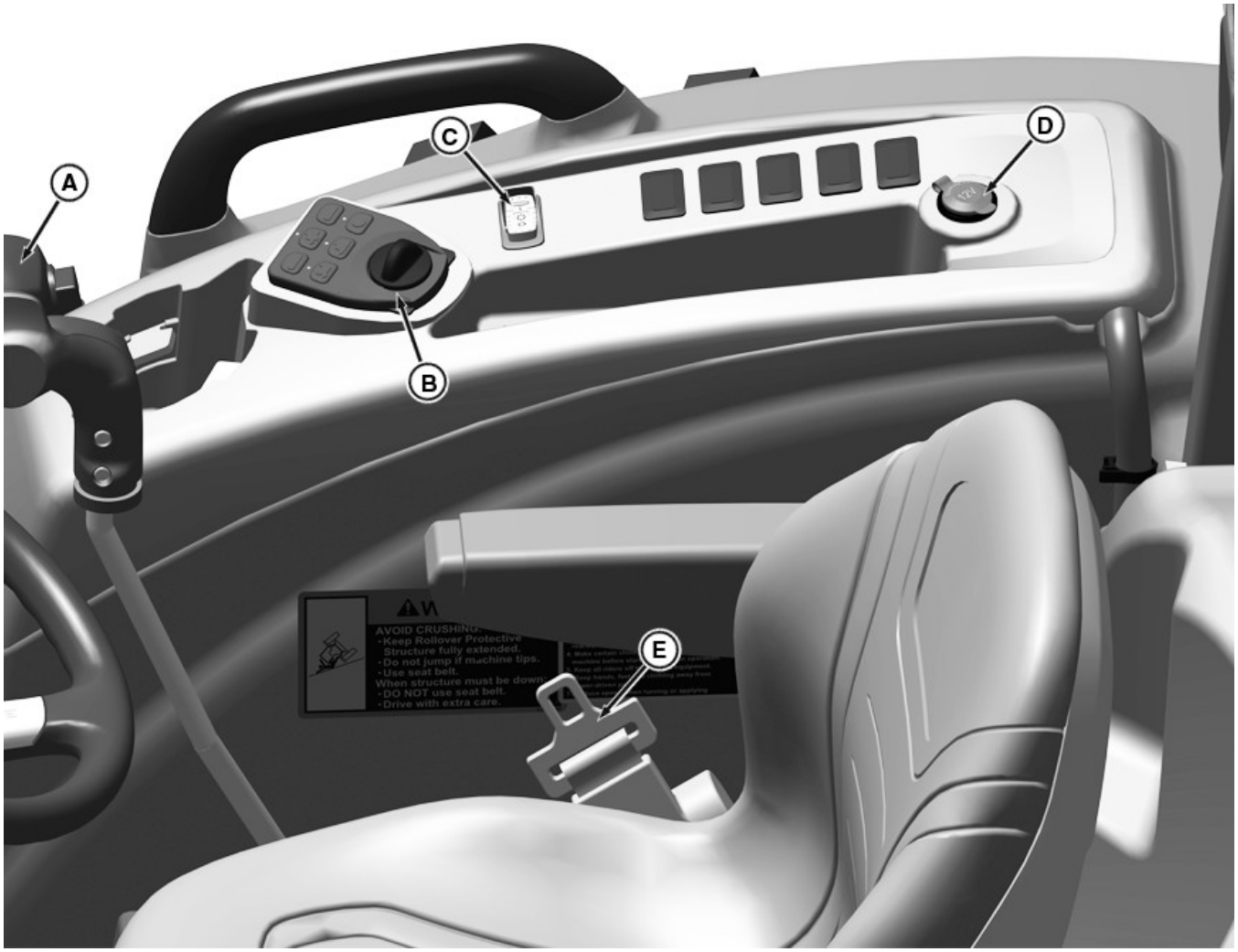
LV28001—UN—22MAR17

A—Left Brake Pedal
B—Brake Pedal Lock Tab
C—Right Brake Pedal
D—Forward Travel Pedal
E—Reverse Travel Pedal

UP00731,000027F-19-09AUG17

Right-Hand Console Controls

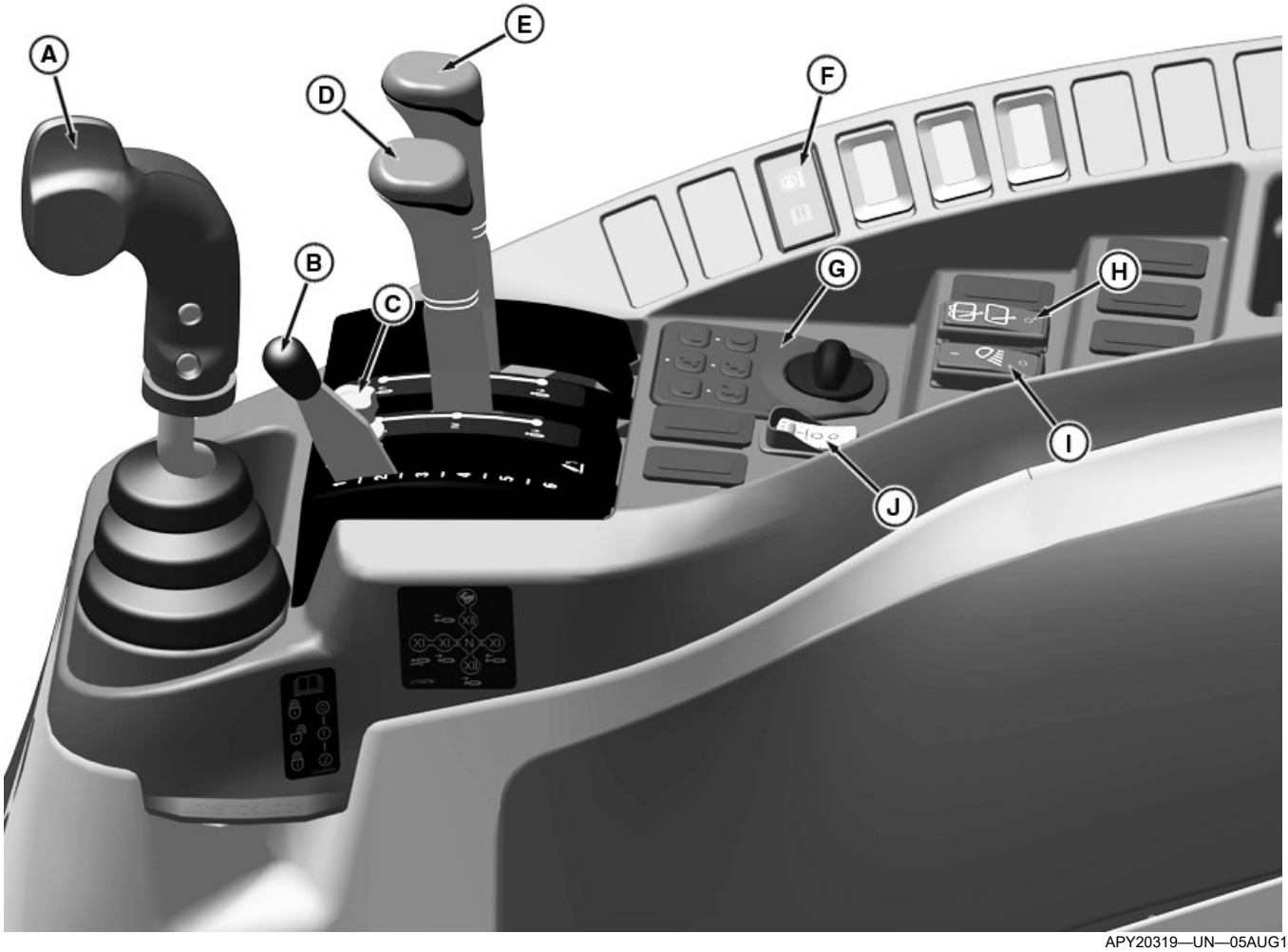
For OOS



LVP10032—UN—20SEP19

A—Selective Control Lever
B—Cruise Control Module
C—PTO Engagement Switch
D—110V Outlet
E—Seat Belt

For Cab



APY20319—UN—05AUG19

A—Dual Selective Control Valve (SCV) Lever
B—Rockshaft Control Lever
C—Rockshaft Depth Stop
D—Selective Control Lever
E—Selective Control Lever
F—Transmission Temperature Indicator
G—Cruise Control Module
H—Rear Wiper Switch
I—Rear Worklight Switch
J—PTO Switch

PS75950,000089D-19-19SEP19

Left-Hand Console Controls

For OOS

LV28003—UN—24MAR17

A—Hand Brake
B—Differential Lock Pedal
C—Seat Belt
D—Hitch Assist
E—MFWD Control Lever
F—Range Shift Lever

For Cab

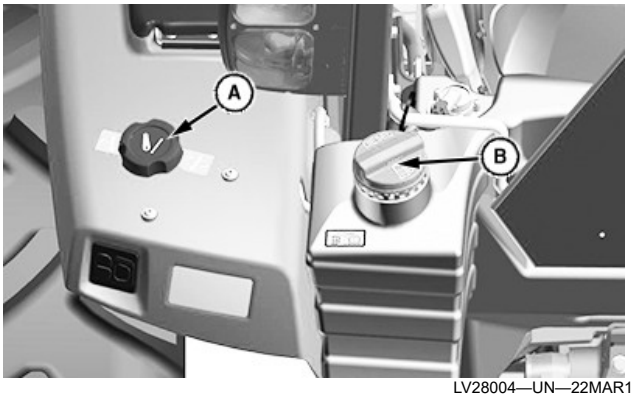
APY20320—UN—05AUG19

A—Power Port Outlet
B—Range Shift Lever
C—Seat Belt
D—Differential Lock Pedal
E—Hand Brake

PS75950,000089E-19-07AUG19

Fender Controls

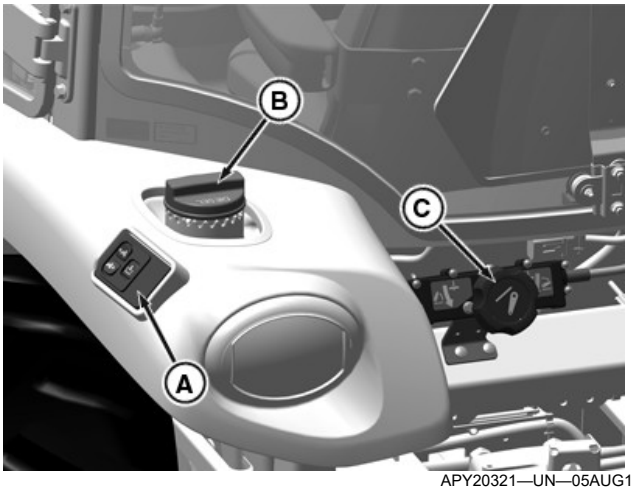
For OOS



LV28004—UN—22MAR17

A—Auxiliary Rockshaft Control
B—Fuel Cap

For Cab

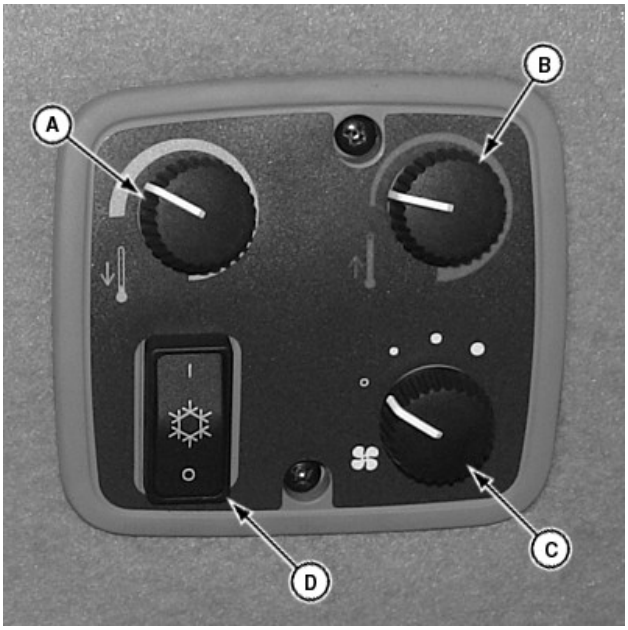


APY20321—UN—05AUG19

A—Hitch Assist Module
B—Fuel Cap
C—Auxiliary Rockshaft Control

PS75950,000089F-19-07AUG19

HVAC Controls



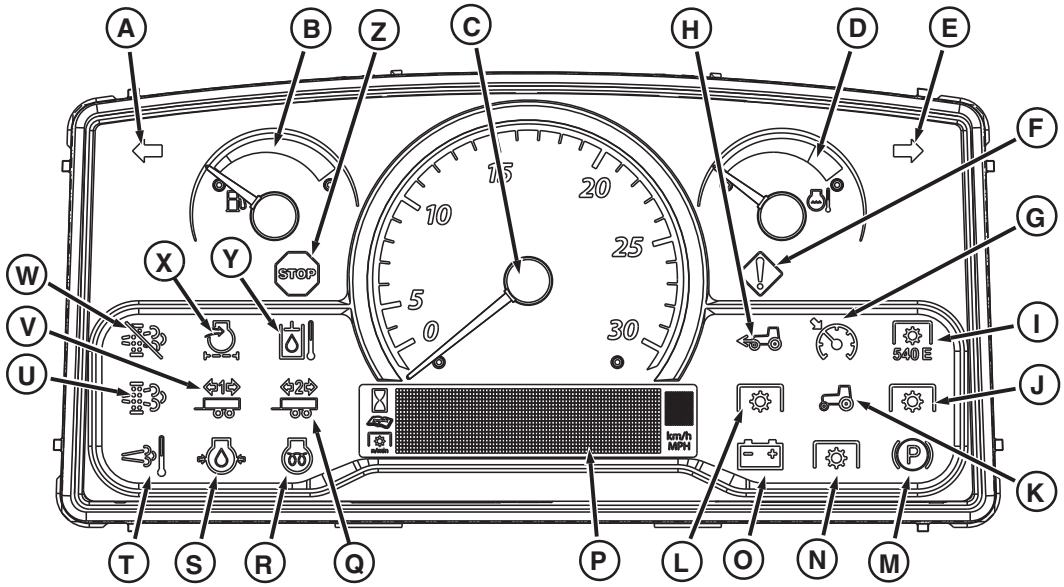
LV17722—UN—07MAY13

A—Air Conditioner Temperature Control Knob
B—Heater Temperature Control Knob
C—Blower Speed Knob
D—On/Off Switch

KN52281,10049FD-19-14NOV13

Instrument Cluster

Instrument Control Panel



LV30626—UN—24SEP19

Instrument Control Panel

A - Left Turn Signal/Warning Flasher Indicator Icon -

Left turn signal, hazard light, and the headlight/taillight ON indicator light.

B - Fuel Gauge - Indicates the fuel level in the tank.

C - Tachometer - Displays engine speed in increments of 100.

D - Engine Coolant Temperature Gauge - Indicates the temperature of the cooling system.

E - Right Turn Signal/Warning Flasher Indicator Icon - Right turn signal, hazard light, and the headlight/taillight ON indicator light.

F - Service Alert Indicator Icon - Light flashes indicating performance or operational problem is detected that needs to be resolved as soon as possible.

G - Cruise Control Switch Icon - Illuminates when cruise control is switched on.

H - Front-Wheel Drive Indicator Icon - Illuminates when front-wheel drive is switched on (R models only).

I - 540E PTO Indicator Icon - Not used.

J - Rear PTO Indicator Icon - Illuminates when the rear PTO is engaged.

K - Tractor PTO Indicator Icon - Illuminates when any tractor PTO is engaged.

L - Front PTO Indicator Icon- Iluminates when the front PTO is engaged (if equipped).

M - Parking Brake Light- Illuminates when the ignition key is in the ON position and the parking brake is engaged.

N - Mid PTO Indicator Icon - Illuminates when the mid PTO is engaged, or both mid and rear PTO are engaged.

O - 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.

P - Information Display Screen - Displays operational information.

Q - Trailer 2 Indicator Icon - Not used.

R - Engine Glow Plug Indicator Icon - Illuminates when the engine controller (ECU) determines the need for engine pre-heating. Time depends on ambient temperature.

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

T - High Exhaust Temperature Icon - Illuminates when the temperature is high enough inside the exhaust filter to allow active filter cleaning.

U - Exhaust Filter Indicator Icon - Illuminates when soot levels in the filter are high and exhaust filter cleaning is needed.

V - Trailer 1 Indicator Icon - Not used.

W - Auto Cleaning Disabled Indicator Icon - Not used.

X - Air Filter Restriction Icon - Illuminates when air cleaner element is clogged, indicating air element needs to be cleaned or replaced.

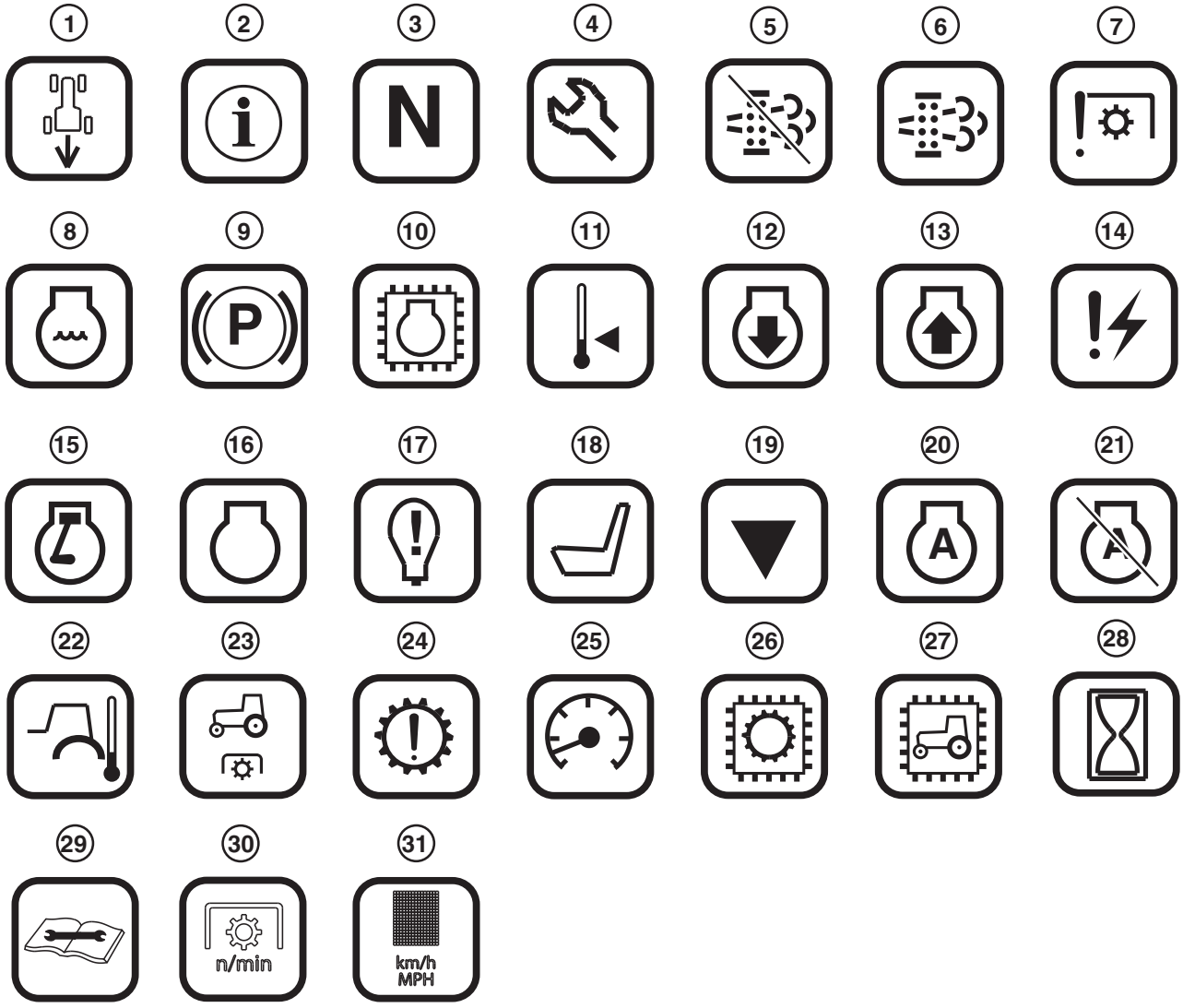
Y - Hydraulic Oil Temperature Icon - Illuminates when the hydraulic oil temperature is overheated (If equipped).

Z - STOP Indicator Icon - Light flashes when a serious malfunction is detected.

UP00731,0000945-19-01OCT19

Information Display Icons

The following icons will show up in the information display screen if applicable for your specific tractor.



LV30645—UN—12DEC19

Information Display Icons

1 - RIO Active Icon - Illuminates when reverse implement option is active.

2 - Important Icon - This symbol is associated with feedback to operator.

3 - Shift to Neutral Icon - Shift to neutral position..

4 - Wrench Icon - Illuminates when there is an active error shown on the information display panel. May be accompanied by a display message.

5 - Automatic Regeneration Off Icon - Automatic regeneration has been disabled.

6 - Diesel Particulate Filter—Exhaust Filter Icon - When shown on the LCD, this symbol is associated with the display of soot level and filter hours.

7 - Shut PTO Off Icon - Illuminates when the condition requires the PTO to be shutoff.

8 - Engine Overheat Icon - Illuminates when engine coolant temperature is too high.

9 - Apply Park Brake Icon - Illuminates when the condition requires park brake engaged. May be accompanied by a display message.

10 - ECU Regeneration Inhibited Icon - Illuminates if the ECU is preventing regeneration. See your John Deere dealer.

11 - Engine Cold Icon - Illuminates when regeneration requires engine to be above 60° C.

12 - Reduce Engine Speed Icon - Illuminates when regeneration requires initial low idle.

13 - Increase Engine Speed Icon - Illuminates when engine speed needs to be increase..

14 - Electrical System Fault Icon - Illuminates when an electrical fault is present. May be accompanied by a display message.

15 - Engine Run Fault Icon - Illuminates when the operator attempts to engage the starter when the engine is already running. May be accompanied by a display message.

16 - Engine Icon - This symbol is associated with the display of engine hours.

17 - Bulb Fault Icon - Left or right turn signal fault.

18 - Operator Out of Seat Icon - Illuminates when the operator should return to seat..

19 - Calibration Mode Icon - Illuminates when tractor is in calibration mode.

20 - eThrottle Active Icon - Illuminates when eThrottle is active.

21- eThrottle Off Icon - Illuminates when eThrottle is not active.

22- Ambient Temperature Icon - Illuminates to show ambient temperature.

23 - Mid PTO Icon - This symbol is associated with the display of Mid PTO speed.

24 - Ground Speed Missing Icon - Illuminates to show transmission fault.

25 -Active ICC Icon - Illuminates to show active ICC diagnostic trouble code.

26 - Active TCU Icon - Illuminates to show active TCU diagnostic trouble code.

27 - Tractor Side View Icon - This symbol is associated with the display of vehicle hours.

28 - Hour Meter Icon - Illuminates when the engine or PTO hour information is shown on the information display panel.

29 - Service Alert Icon - Illuminates when there is an active error shown on the information display panel. May be accompanied by a display message.

30 - PTO Speed - This symbol is associated with the display of PTO speed.

31 - Kilometers/Miles Per Hour - Shows the kilometers / miles per hour the tractor is traveling.

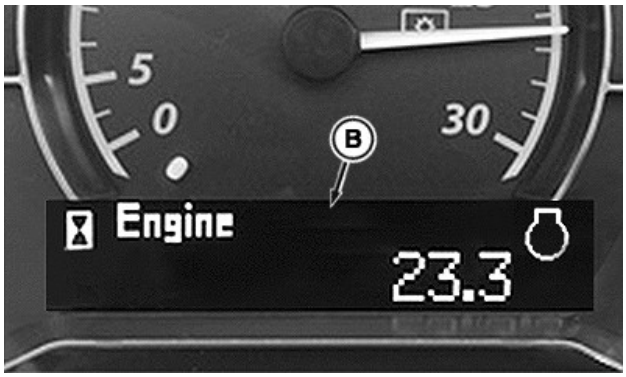
UP00731,0000983-19-17MAR20

Information Display and Display Mode Switch

Normal Operation

LV25014—UN—22APR16

Left-Hand Switch Module



LV25660—UN—23JUN16

Engine Hours

A—Display Mode Switch
B—Information Display Screen

Press Display Mode Switch (A) to navigate through or select information in the Information Display (B).

Information display screen (B) shows normal operational information in the following order:

Engine Hours ⇒ Vehicle Hours ⇒ PTO Hours ⇒ Soot Level ⇒ Hours since last Regeneration

IMPORTANT: Machine damage will occur if a machine operation continues after STOP indicator is displayed. Shut off engine immediately and call your John Deere dealer for assistance before machine operation continues.

Stop, service alert, information messages, and diagnostics are also provided on the information display screen. This information overrides normal operation. Press display mode switch (A) to acknowledge this information and return to the normal operational information.

For additional information on codes, icon descriptions, messaging, and diagnostics, see the On Board Diagnostic Display section.

Programming Mode (If Equipped)

Programming of the machine and can be performed with the display mode switch.

LV28765—UN—19DEC17

Release Message

C—Release Message

To enter programming mode, press and hold the Display Mode Switch until Release (C) appears on the display screen.

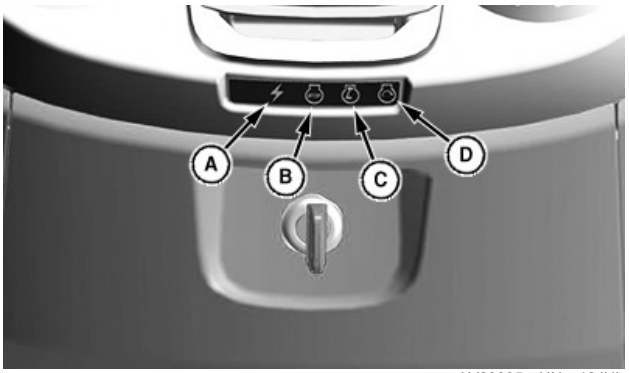
Programming mode shows programmable feature screens in the following order:

Brightness Mode ⇒ Dimmer Mode ⇒ Language

For more information on Instrument Cluster Display settings, see Electrical and Lighting Operation section.

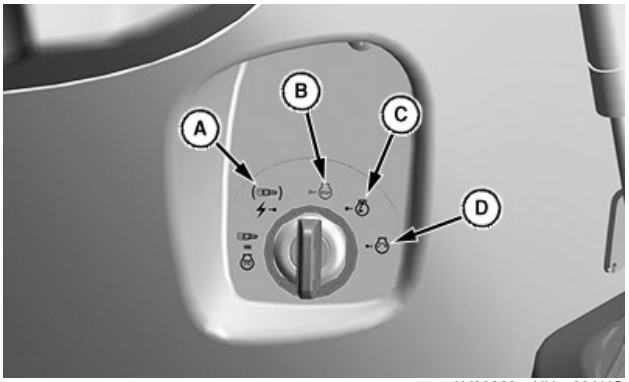
WS68074,00016C0-19-18MAR20

Use Key Switch



LV28005—UN—12JUL17

Open Operator Station Key Switch



LV29069—UN—28AUG17

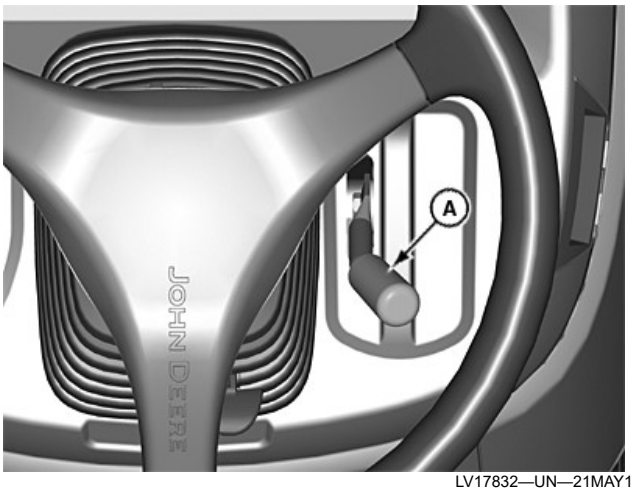
Cab Key Switch

A—Acc Position
B—Stop Position
C—Run Position
D—Start Position

- A—With key in the acc position (A), accessories can be used. Be careful not to accidentally move key to this position. Battery could be drained.
- With key in the off position (B), all switched power is off and the engine should not run.
- Turn key to the run position (C), and the engine oil pressure light and battery charge light will illuminate and activate glow plugs.
- Turn key to the start position (D) to start engine. Release the key after the engine has started. It will automatically return to the run position. Engine will continue to run and engine oil pressure light and battery charge light will turn off.

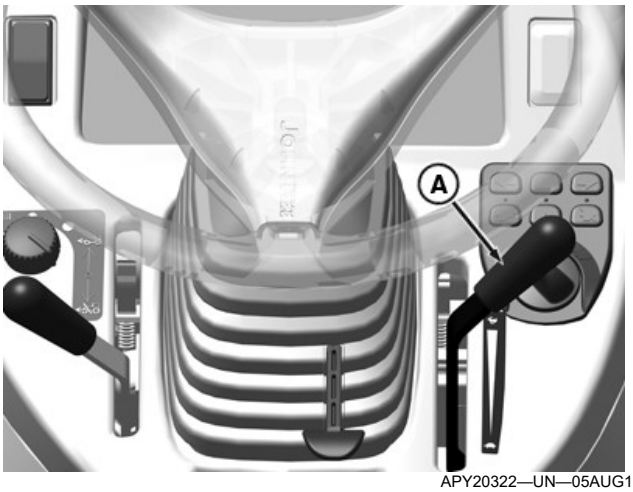
UP00731,0000287-19-19JAN18

Using Throttle



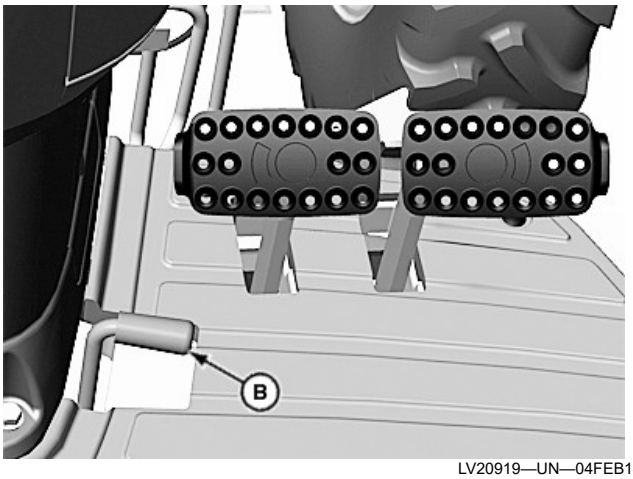
LV17832—UN—21MAY13

Hand Throttle (OOS Shown)



APY20322—UN—05AUG19

Hand Throttle (Cab Shown)



LV20919—UN—04FEB14

A—Hand Throttle
B—Foot Throttle

Hand Throttle

Use hand throttle to change engine speeds. Use hand

throttle in conjunction with tachometer to set engine speeds.

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

Engine Tachometer Speeds — Specification

Low Idle—Speed	950 rpm
Rated—Speed	2600 rpm
High Idle	2750 ± 50 rpm

Foot Throttle (PowrReverser Only)

Use the foot throttle to temporarily override and increase the hand throttle lever setting when the machine operation requires repeated engine speed change, such as when operating a loader.

1. Set the hand throttle lever at middle operating rpm.
2. Depress the foot throttle (B) to increase rpm and machine speed.
3. Release the foot throttle to return engine speed to the previously set hand throttle lever position.

PS75950,0000891-19-05AUG19

Using eThrottle (4052M, 4066M) — If Equipped

CAUTION: Avoid injury! When eThrottle is engaged, speed increases as travel pedals are depressed.

Using eThrottle enables the operator to increase or decrease the speed of the tractor by using the forward and reverse travel pedals.

NOTE: Using eThrottle is not recommended during PTO applications. With eThrottle engaged, constant PTO RPM cannot be maintained, which will result in reduced performance of implement.

1. Turn on key switch.

LV25108—UN—05MAY16

A—Display Mode Switch
B—Right Turn Switch

2. No error codes should be displayed. If any errors are displayed, activate the display mode switch (A) to acknowledge the error.
3. Press and hold the display mode switch until the display reads “Release”.
4. Press and hold the right turn switch (B) until the display reads “eThro”.
5. Press the display mode switch to select.
6. Press the right turn switch to change the desired setting between “On” and “Off”.
7. When the desired setting is displayed, activate the display mode switch to store the setting.

JC48530,000042F-19-13FEB20

Using eThrottle (4044R, 4052R, 4066R)

LV17696—UN—03MAY13

A—eThrottle Switch

CAUTION: Avoid injury! When eThrottle is engaged, speed increases as travel pedals are depressed.

Using eThrottle enables the operator to increase or decrease the speed of the tractor by using the forward and reverse travel pedals.

NOTE: Using eThrottle is not recommended during PTO applications. With eThrottle engaged, constant PTO RPM cannot be maintained, which will result in reduced performance of implement.

Press eThrottle switch (A) to engage.

Press again to disengage.

JC48530,000042E-19-13FEB20

Starting the Engine—Hydrostatic Transmission

NOTE: If attempting to restart the engine after a stall, wait at least 2 seconds before restarting.

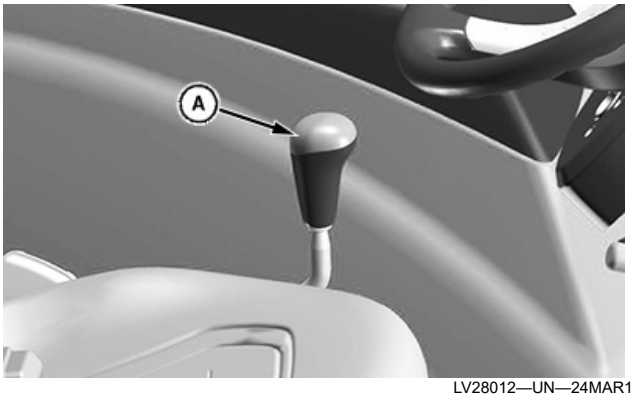
CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- **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 out the exhaust fumes.**

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

If temperature is below 0°C (32°F), follow the cold weather starting steps in this section.

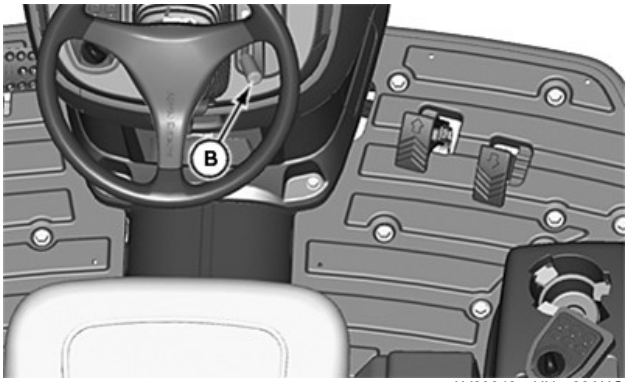
1. Apply park brake.



LV28012—UN—24MAR17

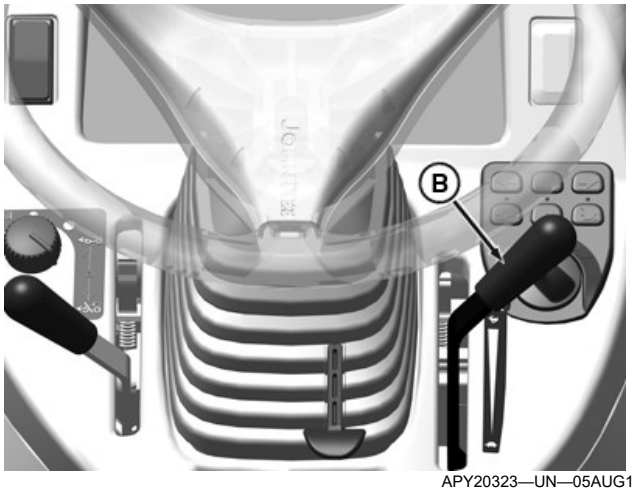
A—Transmission Range Shift Lever

2. Move the transmission range shift lever (A) to the N (neutral) position.



LV29343—UN—28AUG17

Open Operator Station



APY20323—UN—05AUG19

Cab

B— Hand Throttle

3. 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.

4. Lower any rear-mounted implement to the ground by pushing the rockshaft control lever forward.
5. Lower any front-mounted implement to the ground using the SCV lever (if equipped).
6. Set hand throttle (B) to the 1/2—3/4 fast position.
7. Turn key switch to the run position.
8. Check instrument panel indicator lights:
   - Alternator/battery charging light illuminates.
   - Engine oil pressure light illuminates.

IMPORTANT: Avoid damage! Glow plugs and air heater are operational during cranking. Using ether or starter fluid during cranking will cause damage to engine.

9. Turn key switch to the start position to start engine. Release the key after the engine has started.
10. Check indicator lights:
    - Engine oil pressure light goes out within 5 seconds.

    NOTE: If indicator light does not go out after 10 seconds, set engine speed at full throttle.

    - Alternator charging light should go out within 10 seconds.
    - If indicator lights stay on longer than the given time interval, stop engine and check for cause.
11. Set hand throttle to the 1/2 fast position for 1 minute without load.

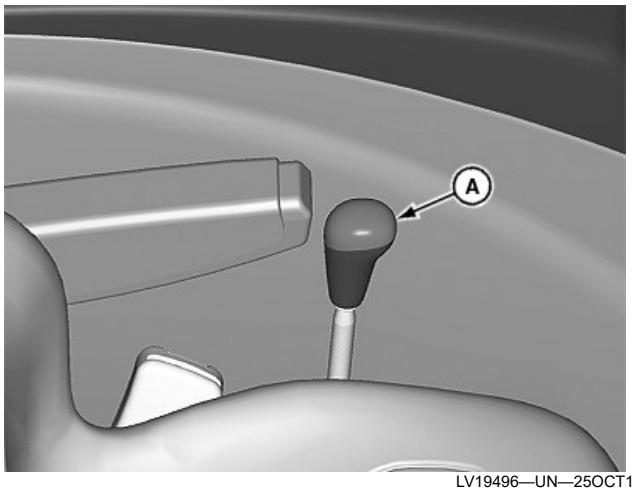
Cold Weather Starting

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 out the exhaust fumes.**

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

If temperature is below 0°C (32°F), follow the cold weather starting steps in this section.



LV19496—UN—25OCT13

A—Transmission Range Shift Lever

1. Apply park brake.
2. Move the transmission range shift lever (A) to the N (neutral) position.
3. Turn key switch to the run position.
4. When glow plug icon light turns off, turn key to the start position.

IMPORTANT: Avoid damage! Starter may be damaged if starter is operated for more than 20 seconds at a time.

Wait 2 minutes before trying again if engine does not start.

5. Release key when engine starts.
6. Check instrument panel indicator lights:
   - Engine oil pressure light will go out within 5 seconds.
   - Alternator/battery charging light will go out within 10 seconds.
7. If indicator light remains on after 10 seconds, set engine speed to full throttle. If indicator light continues to stay on, stop the engine and check for cause.

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 engine warm-up. The amount of exhaust smoke depends on air temperature.

8. Warm the engine:
   - In warm weather, set hand throttle to the 1/2 fast position for 1 minute without load.
   - In cold weather, set hand throttle to the 1/2 fast position for 5 minutes without load.

Idling Engine

NOTE: Allowing engine to idle for long periods of time wastes fuel and causes carbon buildup.

1. Adjust hand throttle to set engine at low idle.
2. Apply park brake.

Starting a Stalled Engine

IMPORTANT: Avoid damage! If engine stalls while operating under load, start engine immediately to prevent abnormal heat buildup in engine.

1. Remove foot from forward and reverse travel pedals.
2. Move transmission range shift lever to the N (neutral) position.
3. Start engine. Continue with normal operation, or set engine at low idle for 2 minutes before stopping engine.

PS75950,0000892-19-26SEP19

Starting the Engine—PowrReverser Transmission

NOTE: If attempting to restart the engine after a stall, wait at least 2 seconds before restarting.

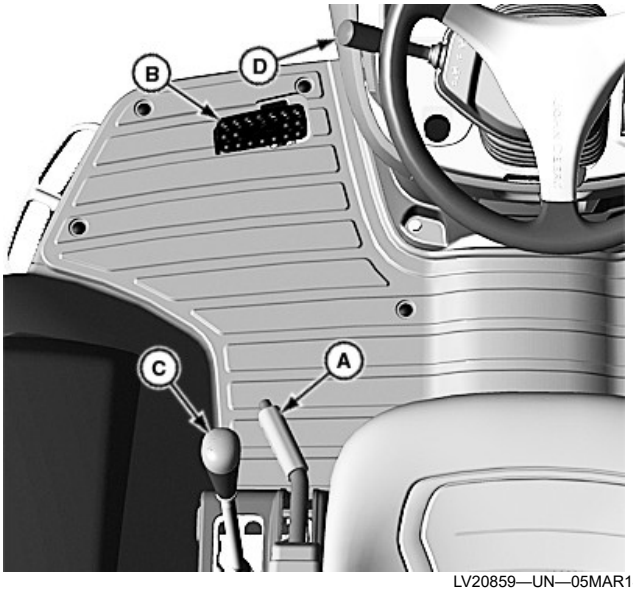
CAUTION: Avoid injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- **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 out the exhaust fumes.**

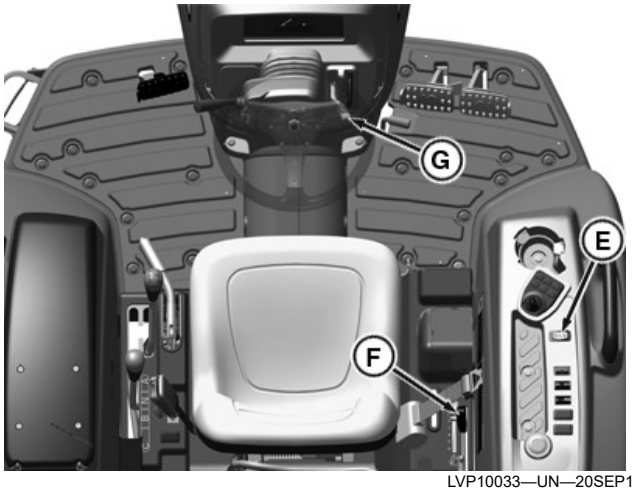
NOTE: It is recommended to install optional engine block heater, hydraulic oil heater, and battery heating pad if operating machine in temperatures below —18°C (0°F).

If temperature is below 0°C (32°F), follow the cold weather starting steps in this section.

1. Apply park brake (A).



LV20859—UN—05MAR14



LVP10033—UN—20SEP19

A—Park Brake
B—Clutch Pedal
C—Transmission Gear Shift Lever
D—Reverser Lever
E—PTO Switch
F—Rockshaft Control Lever
G—Hand Throttle

2. Depress clutch pedal (B) completely and move the transmission gear shift lever (C) and reverser lever (D) to the N (neutral) position.

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

3. Lower any rear-mounted implement to the ground by pushing the rockshaft control lever (F) forward.
4. Lower any front-mounted implement to the ground using the SCV lever.
5. Set hand throttle (G) to the 1/2—3/4 fast position.
6. Turn key switch to the run position.
7. Check instrument panel indicator lights:
   - Alternator/battery charging light illuminates.
   - Engine oil pressure light illuminates.

IMPORTANT: Avoid damage! Glow plugs and air heater are operational during cranking. Using ether or starter fluid during cranking will cause damage to engine.

8. Turn key switch to the start position to start engine. Release the key after the engine has started.
9. Check indicator lights:
   - Engine oil pressure light goes out within 5 seconds.

   NOTE: If indicator light does not go out after 10 seconds, set engine speed at full throttle.
   - Alternator charging light goes out within 10 seconds.
   - If indicator lights stay on longer than the given time interval, stop engine and check for cause.
10. Set hand throttle to the 1/2 fast position for 1 minute without load.

Cold Weather Starting

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.

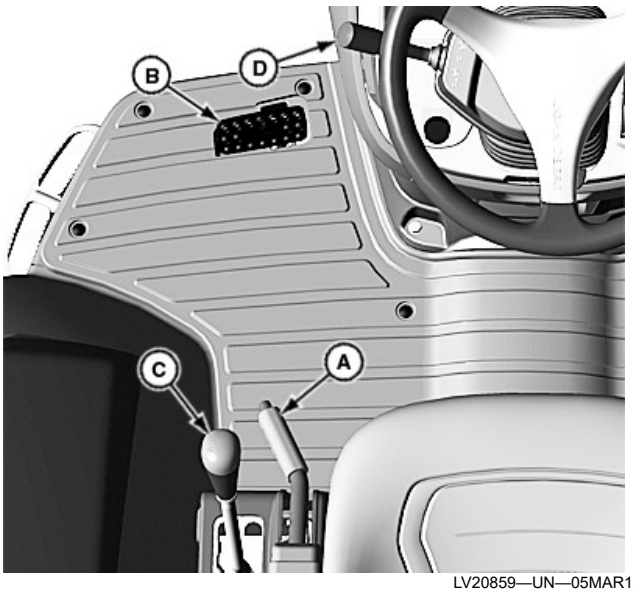
Do not run an engine in an enclosed area without adequate ventilation.

• 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 out the exhaust fumes.

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

If temperature is below 0°C (32°F), follow the cold weather starting steps in this section.



LV20859—UN—05MAR14

A—Park Brake
B—Clutch Pedal
C—Transmission Gear Shift Lever
D—Reverser Lever

1. Apply park brake (A).
2. Depress clutch pedal (B) and move the transmission gear shift lever (C) and reverser lever (D) to the N (neutral) position.

3. Turn key switch to the run position.
4. When glow plug icon light turns off, turn key to the start position.

IMPORTANT: Avoid damage! Starter damage can occur if starter is operated for more than 20 seconds at a time.

Wait 2 minutes before trying again if engine does not start.

5. Release key when engine starts.
6. Check instrument panel indicator lights:
   - Engine oil pressure light goes out within 5 seconds.
   - Alternator/battery charging light goes out within 10 seconds.
7. If indicator light remains on after 10 seconds, set engine speed to full throttle. If indicator light continues to stay on, stop the engine and check for cause.

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 engine warm-up. The amount of exhaust smoke depends on air temperature.

8. Warm the engine:
   - In warm weather, set hand throttle to the 1/2 fast position for 1 minute without load.
   - In cold weather, set hand throttle to the 1/2 fast position for 5 minutes without load.

Idling Engine

NOTE: Allowing engine to idle for long periods of time wastes fuel and cause carbon buildup.

1. Adjust hand throttle to set engine at low idle.
2. Apply park brake.

Starting a Stalled Engine

IMPORTANT: Avoid damage! If engine stalls while operating under load, start engine immediately to prevent abnormal heat buildup in engine.

1. Depress clutch pedal (B) and move transmission gear shift lever (C) and reverser lever (D) to the N (neutral) position.
2. Start engine.
3. Release park brake and continue with normal operation, or set engine at low idle for 2 minutes before stopping engine.

PS75950,0000902-19-26SEP19

Stopping Machine

Normal Stopping

1. Position machine on a firm, level surface.
2. Stop machine motion:
   - PRT—Depress clutch pedal completely and depress both brake pedals.
   - HST—Remove foot smoothly from forward or reverse travel pedal to stop motion.
3. Depress clutch pedal completely (PowrReverser™only) and move the transmission gear shift lever and reverser lever to the N (neutral) position.
4. Push PTO switch to the off position.

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

5. Lower any implements to the ground.

IMPORTANT: Avoid damage! Do not stop engine immediately after hard or extended operation. Keep engine running at low idle for about 2 minutes to prevent heat buildup.

6. Adjust hand throttle rearward to set engine speed at low idle speed. Allow engine to idle for 2 minutes.

CAUTION: Avoid injury! Always lock park brake and move transmission range shift lever to a position other than N (neutral) before leaving machine unattended.

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

Emergency Stopping

PowrReverser Transmission

1. Depress clutch pedal all the way down and depress both brake pedals.
2. Turn key switch to the off position. Do not release clutch pedal until all moving parts have stopped.
3. If possible, lock the park brake.

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Hydrostatic Transmission

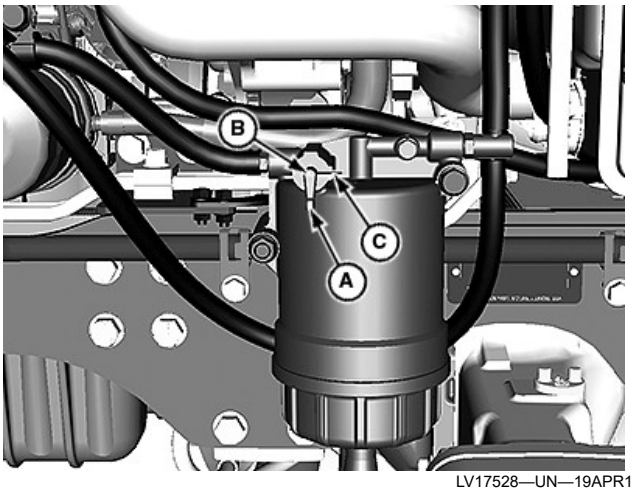
1. Remove foot from forward or reverse travel pedal.
2. Depress brake pedal.
3. Turn key switch to the stop position. Do not release brake pedal until all moving parts have stopped.
4. Apply park brake.

KN52281,1004BFB-19-06FEB14

Using Fuel Shutoff Valve

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

Locate fuel shutoff valve on the right side of machine on fuel sediment filter.



LV17528—UN—19APR13

A—Fuel Shutoff Valve Lever
B—Vertical Position
C—Horizontal Postion

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

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

UP00731,0000286-19-20JUN17

Filling Fuel Tank

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

- **Shut engine off 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 well 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 can cause engine damage:

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

Fill fuel tank at the end of each day's operation to prevent condensation and freezing during cold weather.

1. Park machine safely.
2. Allow engine to cool.
3. Remove any trash from area around fuel tank cap.
4. Remove fuel tank cap slowly to allow any pressure built up in tank to escape.
5. Fill fuel tank only to bottom of filler neck. Do not overfill.
6. Install fuel tank cap.

KN52281,10049C6-19-27AUG18

Exhaust Filter System Overview

APY20377—UN—10SEP19

A—Parked Cleaning Switch
B—Disable Cleaning Switch

Your machine is equipped with an emission-compliant engine, which cleans and filters the engine exhaust. Please read the Exhaust Filter Cleaning sections to understand when and where operator interaction is required.

IMPORTANT: Under normal machine operation, the system is in automatic mode and requires minimal operator interaction.

IMPORTANT: Soot builds up during times when engine exhaust gas temperature is lower (lower engine speed, lower engine load). Performing extended operations at either low engine speed (below 1500 rpm) or low engine load (such as backhoe work) could result in needing a parked exhaust cleaning. Periodically monitor the machine display during these operations to determine if parked exhaust cleaning is required.

To avoid unnecessary buildup of diesel particulates or soot in the exhaust filter system:

- Avoid unnecessary idling.
- Use proper engine oil. (See the Service Engine section for recommendations.)
- Use only ultra low sulfur fuel. (See the Service Miscellaneous section for recommendations.)

Under normal machine operation, the system is in automatic mode.

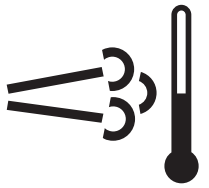
Use the control module to select parked cleaning switch (A), or disable cleaning switch (B).

IMPORTANT: When machine use is not suited for higher temperatures created by exhaust filter cleaning, use the disable switch (B). Be sure to deactivate the disable switch as soon as possible to avoid unnecessary soot buildup in exhaust filter.

Remember to select disable switch (B) when temporarily connected to an indoor ducted exhaust system during vehicle diagnostic and repair activities.

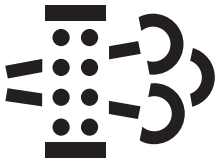
UP00731,000094F-19-13SEP19

Aftertreatment Indicators Overview



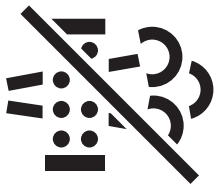
RG22488—UN—21AUG13

Engine Emissions Temperature Indicator



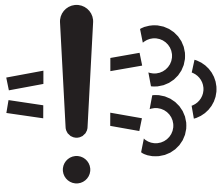
RG22489—UN—21AUG13

Exhaust Filter Indicator



RG22490—UN—21AUG13

Auto Cleaning Disabled Indicator



RG22491—UN—21AUG13

Engine Emissions System Malfunction Indicator

RG22492—UN—21AUG13

Warning Indicator

RG22493—UN—21AUG13

Engine Stop Indicator

IMPORTANT: The operator will be informed by the operator warning system when the emission control system does not function correctly and/or an engine malfunction is detected by the engine control unit. Ignoring the operator warning signals will lead to an emission related derate, resulting in an effective disablement of non-road mobile machinery operation.

It is essential to take prompt action to rectify any incorrect operation, use or maintenance of the emissions control system in accordance with the rectification measures indicated by the warnings referenced below.

When engine emissions temperature indicator illuminates exhaust gas temperature is high, exhaust filter cleaning is in process. The machine can be operated as normal unless the operator determines the machine is not in a safe location for high exhaust temperatures and disables auto cleaning.

When the exhaust filter indicator illuminates the exhaust filter cleaning is in process, aftertreatment system has a fault, or the exhaust filter is in need of cleaning and the operator has disabled auto exhaust filter cleaning. If

conditions are safe, the operator should enable the auto exhaust filter clean setting or perform manual service regeneration or follow DTC procedure.

The auto cleaning disabled indicator illuminates when the operator has engaged the request to disable the auto exhaust filter cleaning function. This icon remains illuminated until the operator re-engages automatic exhaust filter cleaning from the diagnostic gauge. Disabling auto mode is not recommended for any situation unless it is safety-related or if the fuel tank lacks the required fuel to complete the cleaning process.

The engine emissions system malfunction indicator illuminates when engine emissions are outside of normal operating range or engine emissions system fault. Follow DTC procedure or see your authorized servicing dealer.

When the engine emissions system malfunction indicator is combined with the warning indicator or engine stop indicator, engine performance is reduced by the ECU because the engine emissions are outside of normal operating range or engine emissions system fault. Follow DTC procedure or see your authorized servicing dealer.

PS75950,00008CA-19-21AUG19

Use Lights and Turn Signals

• A—Press button to activate or deactivate left turn signal.

• B—Press button to activate or deactivate right turn signal.

• C—Press button to activate or deactivate warning lights.

• D—Turn light switch counter clockwise to turn off lights.

• E—Turn light switch to the center to activate lights.

• F—Turn light switch clockwise to activate lights and work lights.

LV22244—UN—23JUN14
KN52281,10047E1-19-24JUN14

Use Display Mode Switch

LV22250—UN—23JUN14

A—Display Mode Switch

The display mode switch (A) can be used to scroll through hour meter and active error codes display on all machines. The display information changes automatically as long as the display mode switch is pressed in the current cycle.

By repeatedly pressing the display mode switch you can scroll through the functions in the following order.

1. Engine hour meter
2. Ground speed on all models, excluding PRT tractors
3. Vehicle hour
4. PTO hour
5. Soot percentage
6. Hour since last regeneration

Adjust Backlighting

NOTE: Both brightness and dimmer settings can be adjusted. Brightness is the term used when the light switch is “OFF”. When the light switch is “ON”, the backlight is referred to as dimmer. The backlight reflects the stored settings as the light switch is operated.

1. Press and hold the display mode switch for approximately 5 seconds until “Release” appears on the display. Display is now in command mode.

2. Use the turn signals to toggle to “Brightness” or “Dimmer”. (This depends on the position of the light switch.)
3. Press the display mode switch again to accept.
4. To toggle to the desired setting, press the left or right turn signal. The range for illumination is 1—9.
5. Press the display mode switch again to exit command mode.

Adjust Ground Speed Unit

1. Press and hold the display mode switch for approximately 5 seconds until “Release” appears on the display. Display is now in command mode.
2. Use the turn signals to toggle to “Units”.
3. Press the display mode switch again to accept.
4. Use the left or right turn signal to toggle between “km/h” and “mph”.
5. Press the display mode switch again to exit command mode.

Change Display Language

1. Press and hold the display mode switch for approximately 5 seconds until “Release” appears on the display. Display is now in command mode.
2. Use the turn signals to toggle to “Language”.
3. Press the display mode switch again to accept.
4. Use the left or right turn signal to toggle between available languages.
5. Press the display mode switch again to exit command mode. Selected language will appear after key switch is cycled OFF/ON.

JC48530,00000A1-19-25SEP19

Using Dome Light—Cab

LV17725—UN—07MAY13

A—Dome Light Switch

IMPORTANT: Before exiting cab, turn dome light to OFF or DOOR position to avoid causing battery to lose its charge.

Dome light switch (A) has three positions:

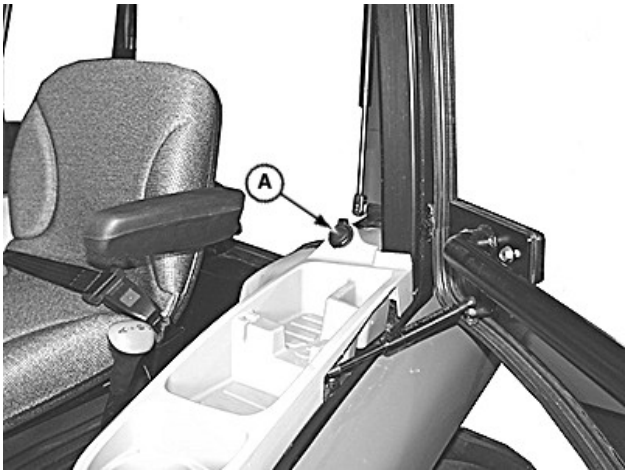
- Left Position: Light on with door open or closed.
- Right Position: Light on with door open and light off with door closed.
- Center Position: Light off with door open or closed.

KN52281,1004854-19-29JUL13

Using Power Port Outlet

LV20856—UN—03FEB14

Open Operator Station Power Port Outlet



LV18078—UN—11JUN13

Cab Power Port Outlet

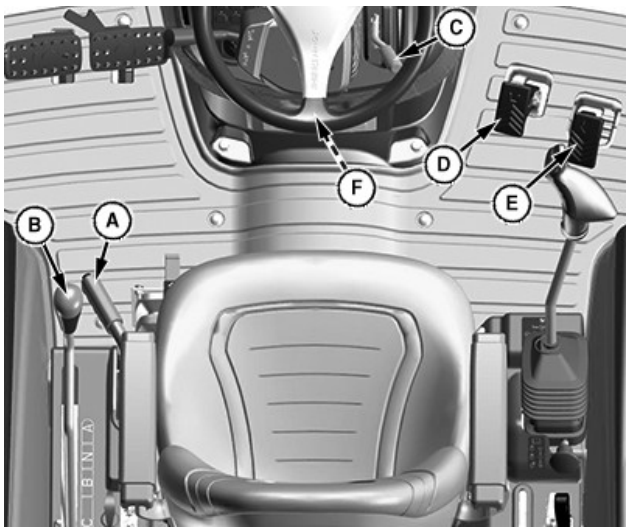
A—Power Port Outlet

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

NOTE: 10A Maximum current.

KN52281,1004C85-19-13MAR14

Drive Machine—Hydrostatic Transmission



LV28013—UN—24MAR17

A— Park Brake Lever
B— Transmission Range Shift Lever
C— Hand Throttle
D— Forward Travel Pedal
E— Reverse Travel Pedal
F— Key Switch

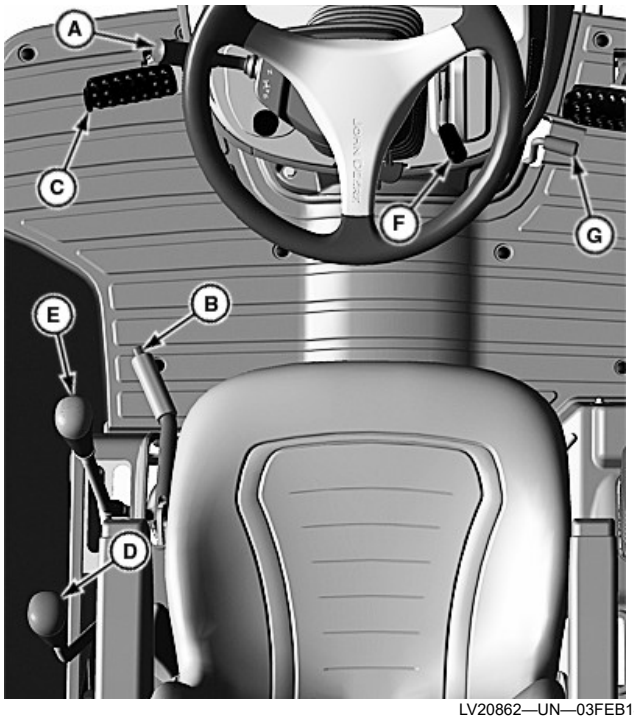
CAUTION: Avoid injury! Always check area around the machine for bystanders and obstacles before operating the machine.

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 lever (A).
3. Choose A, B, or C speed range on the range shift lever (B) to match work application.
4. Move hand throttle (C) to desired operating speed.
5. Slowly depress forward travel pedal (D) to move forward. Slowly depress reverse travel pedal (E) to move in reverse.
6. Release travel pedal to stop machine and change speed range.
7. Fully stop machine motion before turning key switch (F) to the stop position.

UP00731,000028B-19-14AUG17

Driving Machine—PowrReverser Transmission



LV20862—UN—03FEB14

A—Reverser Lever
B—Park Brake Lever
C—Clutch Pedal
D—Transmission Range Shift Lever
E—Transmission Gear Shift Lever
F—Hand Throttle
G—Foot Throttle

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

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

1. Start machine engine.
2. Move reverser lever (A) to N (neutral) position.
3. Unlock park brake lever (B).
4. Depress clutch pedal (C).
5. Choose A, B, or C speed range on transmission range shift lever (D) to match work application.
6. Move the transmission gear shift lever (E) to the desired gear position.
7. Move the reverser lever to the forward or reverse position.
8. Release clutch pedal gradually to take up load smoothly.

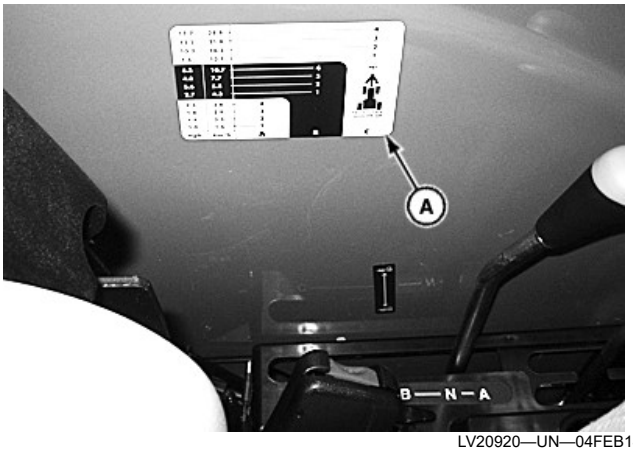
9. Continue to shift gears while moving under normal loads:
   - Depress clutch pedal and shift to next gear.
   - Release clutch pedal gradually to take up load smoothly.
10. Adjust throttle speed:
   - To maintain a constant operating speed, adjust the engine speed with the hand throttle (F).
   - To repeatedly increase and decrease engine speed, leave the hand throttle set at the middle position and use the foot throttle (G) to change engine speed.

CAUTION: Avoid injury! Always check area around machine for bystanders and obstacles before repositioning machine or changing machine direction.

11. To change travel direction:
   - Clutch use is not required.
   - Move the reverser lever to the forward or reverse position.

NOTE: Shuttle Shifting is not permitted at higher speeds. Transmission will default to neutral until a lower ground speed is reached.

Travel Speeds



LV20920—UN—04FEB14

A—Travel Speed Label

The travel speed label (A) located on the left fender can be used to determine your travel speed.

If the tire size on your machine is within the range indicated on the label, and you are traveling with the engine speed at the rpm indicated on the label, the approximate travel speed for each range and/or gear is shown.

UP00731,000028C-19-23MAY17

Transmission Operation

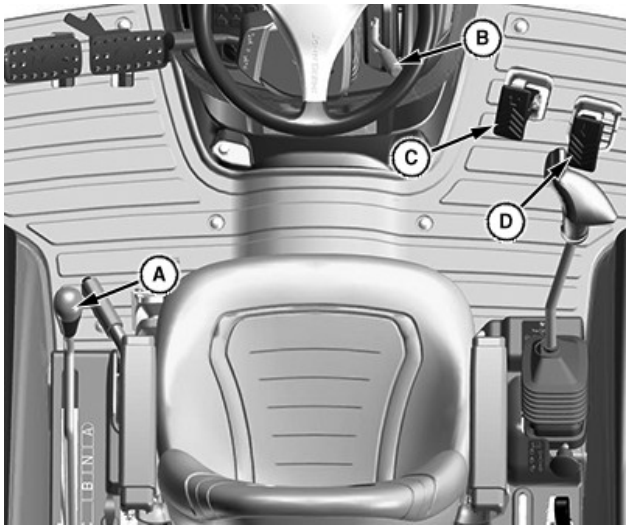
Operating Hydrostatic Transmission

IMPORTANT: Avoid damage! Select the proper speed range and gear 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 hand throttle (B) forward, engine is not overloaded.**

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

NOTE: Stop machine to change speed range.



LV28014—UN—24MAR17

Open Operator Station

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

2. Choose a speed range to match work application.
   - A—Low speed operations such as tilling hard soil, mowing long grass, and heavy hauling. Machine speed is decreased, but machine power is increased.
   - N—Neutral position.
   - B—Operations including moderate tilling, hauling, and grass mowing.
   - C—High speed operations such as transport and light mowing.

UP00731,000028D-19-23MAY17

Operating PowrReverser Transmission

LV20861—UN—03FEB14

A—Transmission Range Shift Lever
B—Transmission Gear Shift Lever
C—Reverser Lever
D—Clutch Pedal

The transmission range shift lever (A) provides three speed ranges. The transmission gear shift lever (B) provides four gear positions. The reverser lever (C) controls travel direction.

Use all three levers in different combinations to achieve 12 forward and 12 reverse speeds.

Machine motion must stop and the clutch pedal (D) must be depressed before changing ranges. Gears may be changed while machine is in motion if clutch pedal is depressed.

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

1. Choose a speed range to match work application:
   - A—Low speed operations such as tilling hard soil, mowing long grass, and heavy hauling. Machine speed is decreased, but machine power is increased.
   - B—Operations including moderate tilling, hauling, and grass mowing.
   - C—High speed operations such as transport and light mowing.

2. Choose a gear that matches the immediate power/speed requirements:
   - 1st Gear—High power, low speed operations.
   - 2nd Gear—Medium power, moderate speed operations.
   - 3rd Gear—Low power, moderate speed operations.
   - 4th Gear—Low power, high speed operations.

KN52281,1004BFD-19-23MAY17

Use PowrReverser Shuttle Control—If Equipped

LV20930—UN—04FEB14

A—PowrReverser Shuttle Control

PowrReverser™ shuttle control switch (A) adjusts load take-up and acceleration when making directional changes with Reverser lever, during repetitive cycle work such as loader operation:

- In full left (counterclockwise) position (as shown), load take-up and acceleration ramp-up are slower to respond.
- When operating with high load and ballast, turn control knob clockwise to increase acceleration ramp-up and load take-up response.

IMPORTANT: Premature tire wear can occur when operating in full right (clockwise) position on concrete or paved surfaces.

KN52281,1004C00-19-28APR14

Using Cruise Control—If Equipped

R-Series Cruise Control

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

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

Engaging Cruise Control

LV17526—UN—19APR13

A— Cruise Control SET/- Switch
B— Cruise Control Activation Switch
C— Cruise Control RES/+ Switch

1. Depress forward travel pedal until desired travel speed is reached.
2. Press cruise control activation switch (B).
3. Press cruise control SET/- switch (A).
4. Release forward travel pedal.
5. To increase travel speed or to resume travel speed, press cruise control RES/+ Switch (C).
6. To decrease travel speed press cruise control SET/- switch (A).

Disengaging Cruise Control

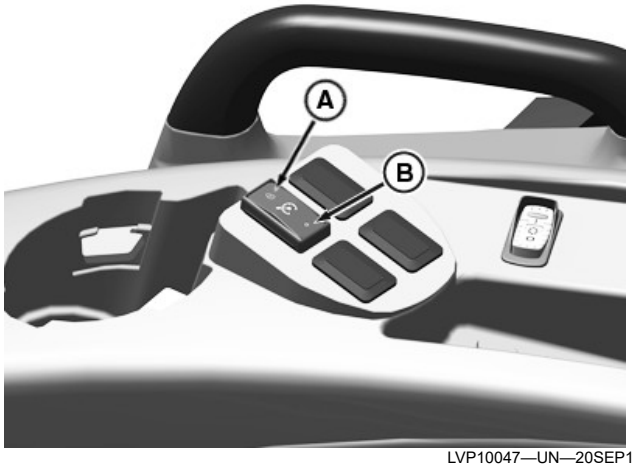
PowrReverser is a trademark of Deere & Company

NOTE: The machine will stop if cruise control is disengaged while the machine is in motion. To maintain forward motion, depress the forward travel pedal before disengaging cruise control.

One of the following actions will disengage the cruise control.

- Press cruise control activation switch (B).
- Press the brake pedal.
- Press reverse pedal.
- Enable SpeedMatch.

M-Series Cruise Control



LVP10047—UN—20SEP19

A—Top of Cruise Control Switch
B—Bottom of Cruise Control Switch

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

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

Engaging Cruise Control

1. Depress forward travel pedal until desired travel speed is reached.
2. Fully depress top of cruise control switch (A) to engage cruise control.
3. Release forward travel pedal.
4. To adjust travel speed, disengage cruise control and engage cruise control again at a different speed.

Disengaging Cruise Control

NOTE: The machine will stop if cruise control is disengaged while the machine is in motion. To maintain forward motion, depress the forward travel pedal before disengaging cruise control.

One of the following actions will disengage the cruise control.

- Fully depress bottom of cruise control switch (B).
- Depress the brake pedal.
- Press reverse pedal.

Instrument panel cruise control indicator light should go out when the cruise control is disengaged.

PS75950,0000904-19-20SEP19

Using LoadMatch—(4044M, 4052M, 4066M)

LoadMatch™ enables the operator to prevent the engine from stalling during heavy load applications such as operating with a loader.

Engaging LoadMatch

1. Determine if a heavy load application will be performed.
2. Turn key switch on.

LV25108—UN—05MAY16

A—Display Mode Switch
B—Right Turn Switch

3. No error codes should be displayed. If any errors are displayed, activate the display mode switch (A) to acknowledge the error.
4. Press and hold the display mode switch until the display reads “Release”.

LoadMatch is a trademark of Deere & Company

5. Press and hold the right turn switch (B) until the display reads “Load”.
6. Press the display mode switch to select.
7. Press the right turn switch to turn LoadMatch on and off.
8. When the desired setting is displayed, activate the display mode switch to store the setting.
9. The display will read “Load On”.

UP00731,0000931-19-06SEP19

Using LoadMatch—(4044R, 4052R, 4066R)

LV17697—UN—03MAY13

A—LoadMatch Switch

LoadMatch™ enables the operator to prevent the engine from stalling during heavy load applications such as operating with a loader.

Engaging LoadMatch

1. Determine if a heavy load application will be performed.
2. Press LoadMatch switch (A).

Disengaging LoadMatch

Press LoadMatch switch.

UP00731,0000139-19-05JUL16

LoadMatch is a trademark of Deere & Company

Using SpeedMatch—If Equipped

LV17698—UN—19JUL13

A—SpeedMatch Switch
B—RES/+ Switch
C—SET/- Switch

SpeedMatch™ enables the operator to set the desired maximum travel speed for the machine. Full forward or reverse pedal travel distance can be used to control machine travel speed between stop and the desired maximum travel speed.

Engaging SpeedMatch

1. Depress forward travel pedal until desired maximum travel speed is reached.
2. Press SpeedMatch switch (A) to activate SpeedMatch.
3. Press Set/- switch (C) to set SpeedMatch.
4. Release forward travel pedal. Completely depress forward travel pedal to achieve desired maximum speed.

Adjusting Maximum Travel Speed

- Fully depress RES/+ switch (B) repeatedly to increase speed by increments.
- Fully depress SET/- switch (C) repeatedly to decrease speed by increments.

SpeedMatch is a trademark of Deere & Company

Disengaging

Press SpeedMatch switch to disengage.

KN52281,1004852-19-03APR14

Using MotionMatch—(4044M, 4052M, 4066M)

MotionMatch™ enables the operator to adjust machine acceleration and deceleration rates. Shorter starting and stopping distances can be set for applications requiring rapid changes in direction, such as operating with a loader. Longer starting and stopping distances can be set to avoid turf damage in other applications.

1. Turn on key switch.

LV25108—UN—05MAY16

A—Display Mode Switch
B—Right Turn Switch

2. No error codes should be displayed. If any errors are displayed, activate the display mode switch (A) to acknowledge the error.
3. Press and hold the display mode switch until the display reads “Release”.
4. Press and hold the right turn switch (B) until the display reads “Coast”.
5. Press the display mode switch to select.
6. Press the right turn switch to change the desired setting between “Default”, “Short”, and “Long”.
   a. A MotionMatch setting of short is the shortest rolling (starting/stopping) distance.
   b. A MotionMatch setting of long is the longest rolling (starting/stopping) distance
7. When the desired setting is displayed, activate the display mode switch to store the setting.
8. The runtime menu has a new item of coast / short.

UP00731,0000932-19-06SEP19

Using MotionMatch—(4044R, 4052R, 4066R)

LV17699—UN—03MAY13

A—MotionMatch Switch
B—Longer Distance Icon
C—Shorter Distance Icon

MotionMatch™ enables the operator to adjust machine acceleration and deceleration rates. Shorter starting and stopping distances can be set for applications requiring rapid changes in direction, such as operating with a loader. Longer starting and stopping distances can be set to avoid turf damage in other applications.

- Turn MotionMatch switch (A) toward the longer distance icon (B) for longer acceleration and deceleration distances.
- Turn MotionMatch switch (A) toward the shorter

MotionMatch is a trademark of Deere & Company

distance icon (C) for shorter acceleration and deceleration distances.

UP00731,000013A-19-05JUL16

Using Mechanical Front Wheel Drive (MFWD)

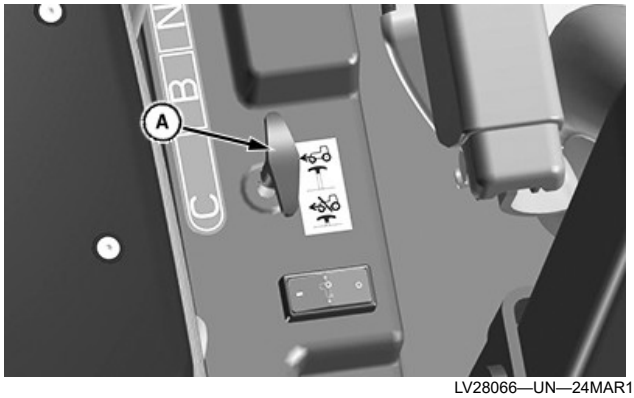
Mechanical front wheel drive (MFWD) enables the powertrain to drive both front and rear axles for improved traction on difficult ground conditions and provides four-wheel braking. MFWD can be engaged and disengaged on-the-go with light loads and on low traction surfaces.

CAUTION: Avoid injury! Use extra caution when driving on slopes. To increase traction and provide four-wheel braking, engage mechanical front wheel drive (MFWD) when driving on slopes. Be aware that MFWD can improve access to dangerously sloped terrain, thereby increasing the possibility of rollover.

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

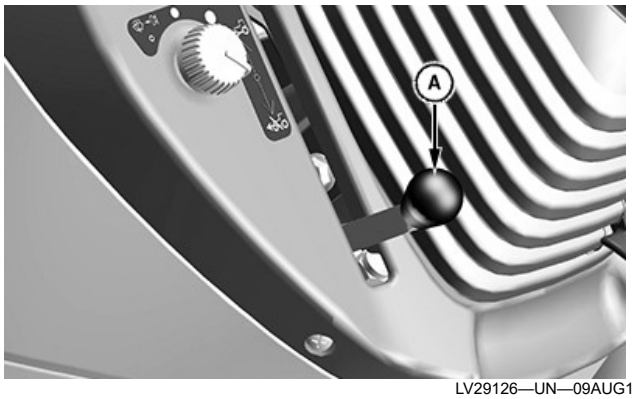
IMPORTANT: Avoid damage! Always disengage MFWD when driving on a paved surface.

Put the transmission levers in neutral to move the machine when the engine is not running.



LV28066—UN—24MAR17

Open Operator Station MFWD Lever



LV29126—UN—09AUG17

Cab MFWD Lever

A—MFWD Lever

NOTE: It may be necessary to reduce engine load to disengage front wheel drive.

- OOS—Pull up on MFWD lever (A) to engage. Push down MFWD lever to disengage.
- Cab—Push up on MFWD lever (A) to engage. Pull down MFWD lever to disengage.

Tips for Operating MFWD

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

UP00731,00003E0-19-09AUG17

Using Differential Lock (Traction Assist)

CAUTION: Avoid injury! Driving at high speeds with the traction assist engaged may result 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 rear wheels start to slip. Engaging differential lock will lock right and left rear axles together and cause both rear wheels to turn at equal speeds for maximum traction.

IMPORTANT: Avoid damage! Using the traction assist function improperly can damage the transaxle:

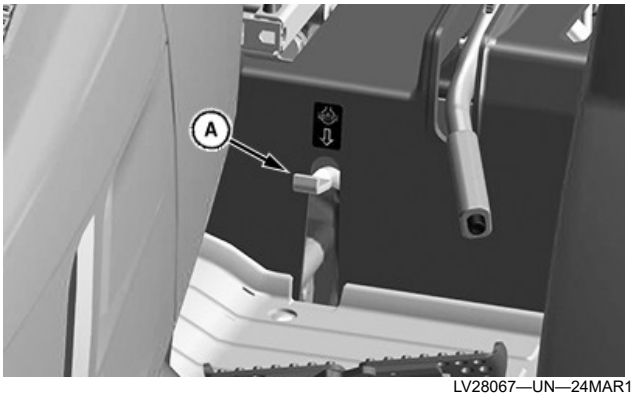
- **Reduce speed and allow drive wheels to rotate at same speed before engaging or disengaging traction assist.**
- **Disengage traction assist when driving on dry asphalt or concrete.**
- **Use traction assist only when necessary for improved ground engagement.**

NOTE: Turning radius is increased when the differential lock is engaged.

Engaging Differential Lock

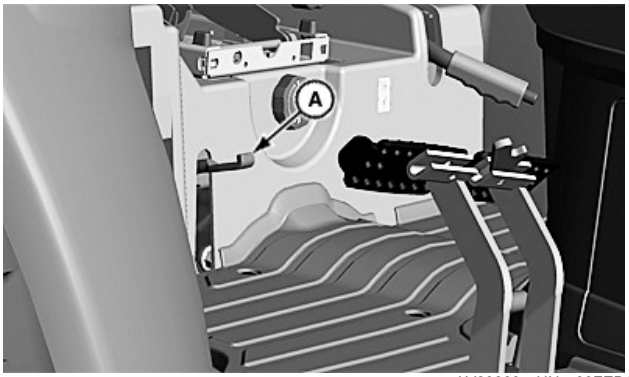
1. Stop or slow machine movement.

NOTE: Differential lock will remain engaged as long as rear wheel slippage occurs. If tires slip and regain traction repeatedly, hold down pedal with foot so differential lock remains engaged.



LV28067—UN—24MAR17

Hydrostatic Transmission Differential Lock



LV20863—UN—03FEB14

PowrReverser Transmission Differential Lock

A—Differential Lock Lever

2. Depress differential lock lever (A) to engage differential lock.

Disengaging Differential Lock

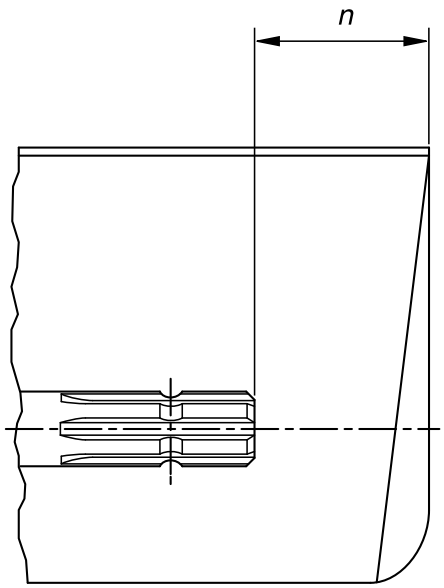
Rear wheel slippage will keep differential lock engaged. Lock will automatically disengage when traction equalizes.

UP00731,0000299-19-24MAR17

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.

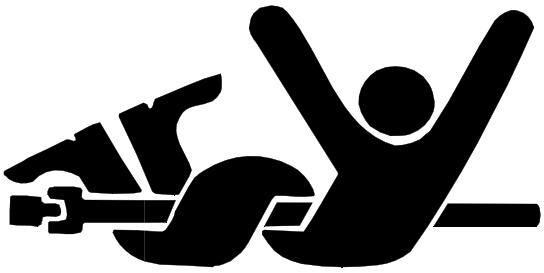
Do not raise implements high enough to damage the tractor master shield or guard of primary implement PTO driveshaft. Detach the PTO driveline shaft if it is necessary to increase implement height. (See Attching/ Detaching PTO Driveline)

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

Using the Power Take-Off (PTO) Safely



LVAL38277—UN—21AUG12

CAUTION: Avoid injury! Stay clear of rotating drivelines:

- **Entanglement in 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 PTO driveline is stopped before getting near it.**

KN52281,1004C02-19-07FEB14

Using Rear PTO Switch

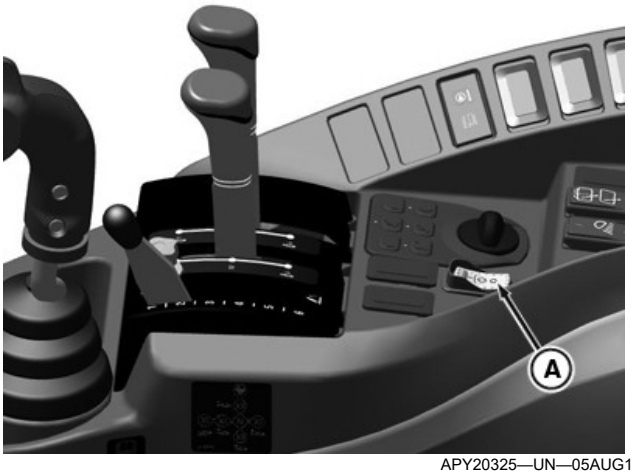
IMPORTANT: Use rear mounted equipment rated for 540 rpm. Do not operate rear PTO over 540 rpm mark on the instrument panel display.

Using Rear PTO Switch (Operator on Seat)

1. Start the engine.
2. Set engine speed to 1500 rpm or less.

LVP10034—UN—20SEP19

Open Operator Station PTO Switch



APY20325—UN—05AUG19

Cab PTO Switch

A—PTO Switch

3. Engage the PTO (A).
4. Adjust the hand throttle forward to the desired speed for the implement used.

NOTE:

- *At 2600 engine rpm the rear PTO speed is 540 rpm as indicated on the information display.*
- *If the engine overheats during the PTO operation "Engine Overheat" displays on the information display and the PTO automatically shuts off. Disengage the PTO switch, engage the park brake, then shut off the engine. 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 does not engage after the engine has cooled, see your local John Deere Dealer for service.*

Using Rear PTO Switch (Operator off Seat)

1. Sit on the operator seat.
2. Move transmission to neutral position:
   - PowrReverser Transmission—Depress the clutch pedal completely and move the transmission gear and range shift levers to the N (neutral) position. Move the reverser lever to the N (neutral) position.
   - Hydrostatic Transmission—Move the range shift lever to the N (neutral) position.
3. Lock the park brake.
4. Start the engine and adjust speed to 1500 rpm.
5. Engage the PTO.
6. Push and hold the PTO switch in the engaged position for at least 2 seconds. "Hold" is shown in the display.
7. Exit the seat when "Exit Seat" is shown in the display. After exiting, "Stationary PTO Active" is shown on the display.

NOTE: After exiting seat, if the seat switch is re-engaged (operator sits in the seat) and then disengaged (operator leaves the seat), the PTO will automatically disengage. "Operator Out of Seat" displays on the information display.

8. Adjust the throttle lever forward to the desired speed for the implement used.

Disengaging the PTO Switch

1. Adjust engine rpm to low idle.
2. Push PTO switch down to the off position.

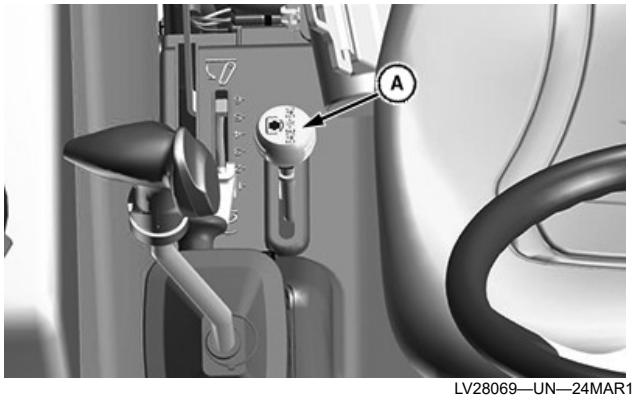
PS75950,0000905-19-10OCT19

Using the Two Speed Rear PTO—If Equipped

The Economy PTO Position should only be used with attachments that do not require full PTO power.

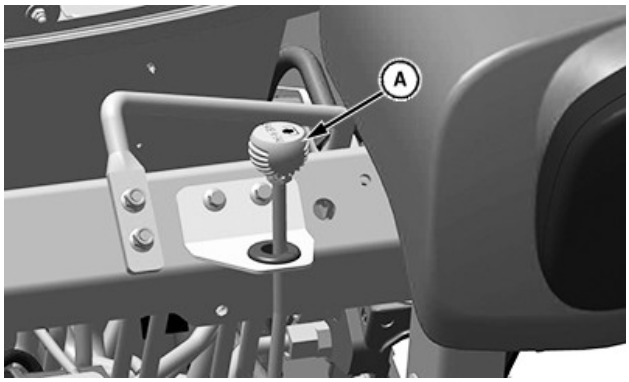
540 Economy Position

Operating in 540 Economy position will help conserve fuel and reduce operating noise.



LV28069—UN—24MAR17

Open Operator Station



LV29368—UN—05SEP17

Cab Tractor

1. Move the two speed rear PTO control lever to 540E position.
2. Adjust hand throttle lever until tachometer indicator is between 1700 and 1750 rpm.

   The rear PTO will operate at 540 rpm.

540 Position

1. Move the two speed rear PTO control lever to 540 position.
2. Adjust hand throttle lever until tachometer indicator points to the 540 marker.

   The rear PTO will operate at 540 rpm and the tachometer should indicate engine speed to be 2600 rpm.

Neutral Position

NOTE: When power and independent control is needed for front and mid-mounted implements only, move the two speed rear PTO control lever to the neutral position.

- Move the two speed rear PTO control lever to center position.
- When lever is moved to center position, the rear PTO will not rotate.

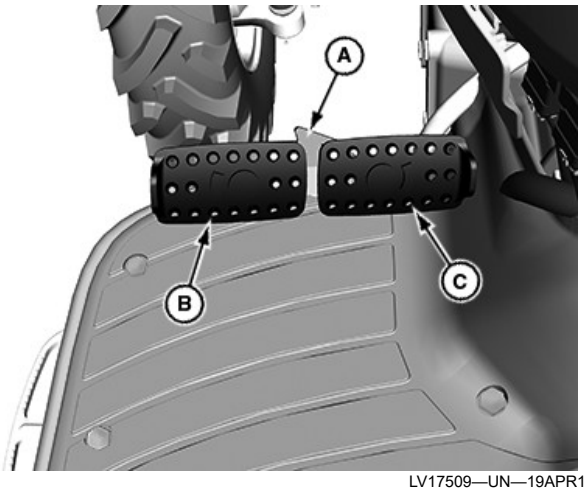
JC48530,00000AD-19-26SEP19

Use Brake Pedals

Using Brake Pedals as Driving Brake

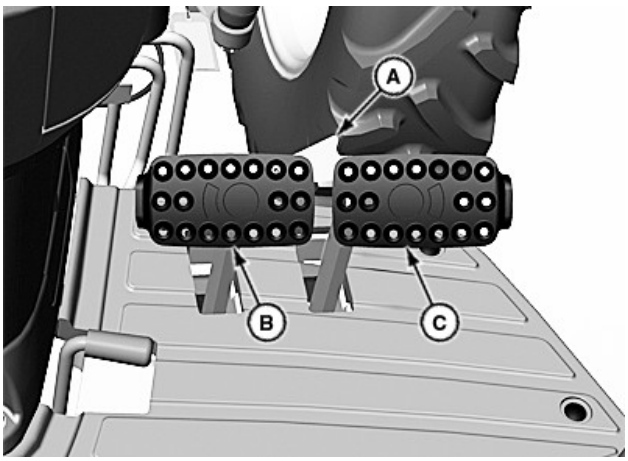
CAUTION: Avoid injury! Using unlocked brakes to stop the machine at high speeds may cause accidental turning or tipping.

- **Lock pedals together when not using the turn brakes or for road travel or transport.**
- **Slow down before making a turn.**



LV17509—UN—19APR13

Hydrostatic Transmission Brake Pedals



LV20857—UN—03FEB14

PowrReverser

A—Brake Pedal Lock
B—Left Turn Brake Pedal
C—Right Turn Brake Pedal

1. Rotate brake pedal lock (A).
   - HST—Counterclockwise until it locks into the left turn brake pedal (B).
   - PRT—Clockwise until it locks into the right turn brake pedal (C).
2. To slow or stop the machine, depress either brake pedal.
   - With latch down, brakes stop machine in a straight line.

Using Brake Pedals to Assist in Turning

IMPORTANT: Avoid damage! Do not apply turn brakes while an implement is engaged with the ground. Damage to the 3-point hitch and implement may occur.

NOTE: Turn brake pedals can be used to make tighter turns and may reduce unnecessary backing up.

Rotate brake pedal lock (A).

- HST—Clockwise until it stops against the right turn brake pedal (C).
- PRT—Counterclockwise until it stops against the left turn brake pedal (B).

The brake pedals now function independently.

- To make a tighter left turn, depress the left turn brake pedal (B) while turning to the left.
- To make a tighter right turn, depress the right turn brake pedal (C) while turning to the right.

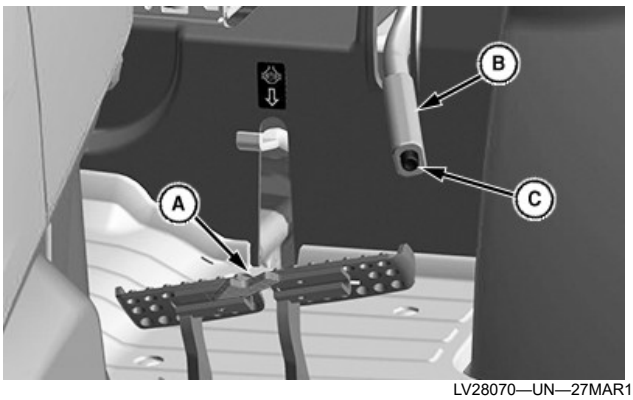
KN52281,1004BF6-19-27AUG18

Use Park Brake

Locking Park Brake

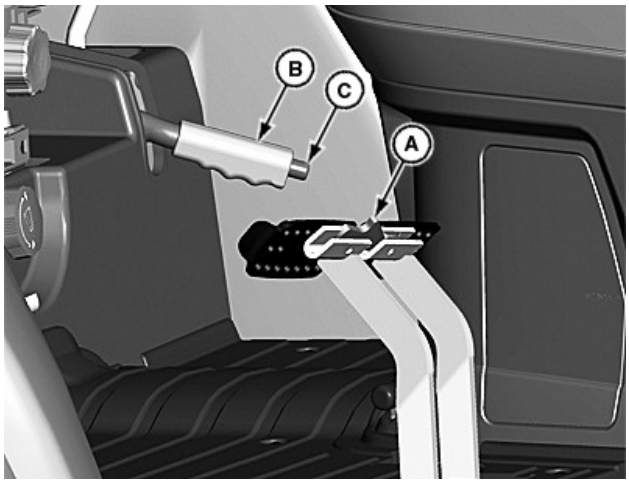
CAUTION: Avoid injury! Always lock park brake and move transmission range shift lever to a position other than N (neutral) before leaving machine unattended. Transmission will not prevent machine motion without the park brake locked.

1. Lock both brake pedals together using brake pedal lock (A).



LV28070—UN—27MAR17

Hydrostatic Transmission Park Brake



LV20853—UN—03FEB14

PowrReverser

A—Brake Pedal Lock
B—Park Brake Lever
C—Park Brake Release Button

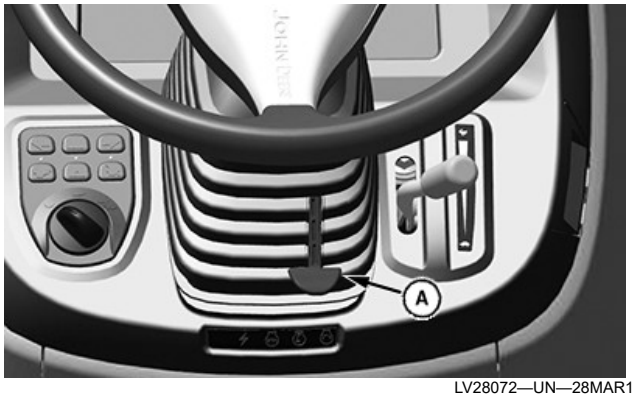
2. Pull park brake lever (B) up to the locked position. The park brake light should illuminate if the key switch is turned on.
3. Remove foot from brake pedals.

Unlocking Park Brake

1. Press down on brake pedals with foot.
2. Push park brake release button (C), and lower park brake lever (B) to the unlocked position. Park brake light should be off.
3. Remove foot from brake pedals.

UP00731,000029D-19-27MAR17

Adjusting Tilt Steering Wheel—If Equipped



LV28072—UN—28MAR17

A—Tilt Steering Control Lever

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 control lever (A) up to release steering wheel.
3. Adjust steering wheel to desired position.
4. Release tilt steering control lever to lock steering wheel in position.

UP00731,00002A3-19-30MAR17

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

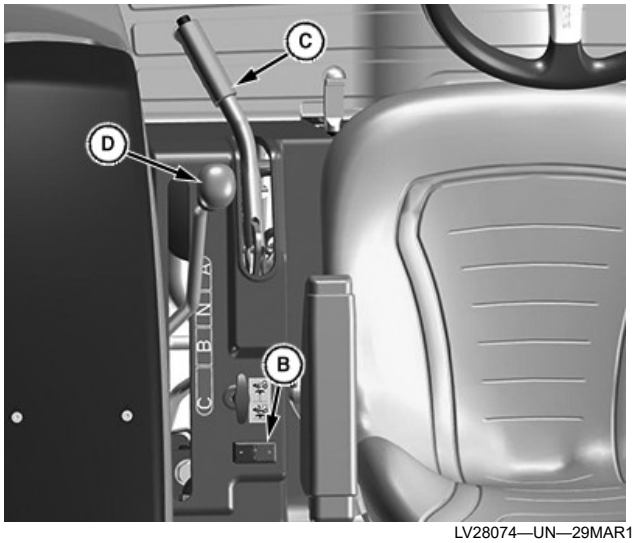
Using Hitch Assist—If Equipped

Activating Hitch Assist

NOTE: PTO must be off.

LV20964—UN—04FEB14

Cab



LV28074—UN—29MAR17

Open Operator Station

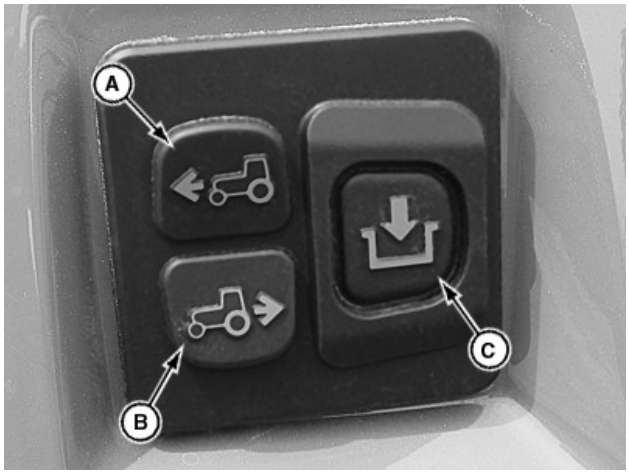
A—Hand Throttle
B—Hitch Assist Switch
C—Park Brake
D—Transmission Range Shift Lever

1. Sit on operator's seat with the engine running.
2. Hand throttle (A) must be at low idle.
3. Fully engage park brake (C); when fully engaged, park brake light on the instrument panel starts to blink.
4. Transmission range shift lever (D) must be in the "A" range.
5. Engage hitch assist switch (B). Warning lights begins to flash when feature is active.

NOTE: If any of the interlock conditions are not met, the instrument control panel displays which interlock needs attention.

6. When the operator gets out of the seat, five audible beeps signaling that hitch assist is engaged sound and the warning lights flash at low frequency.

Operating Hitch Assist



LV18008—UN—17JUL13

A—Forward Switch
B—Reverse Switch
C—Hitch Engagement Switch

Press forward switch (A) or reverse switch (B) while holding the hitch engagement switch (C).

Disabling Hitch Switch

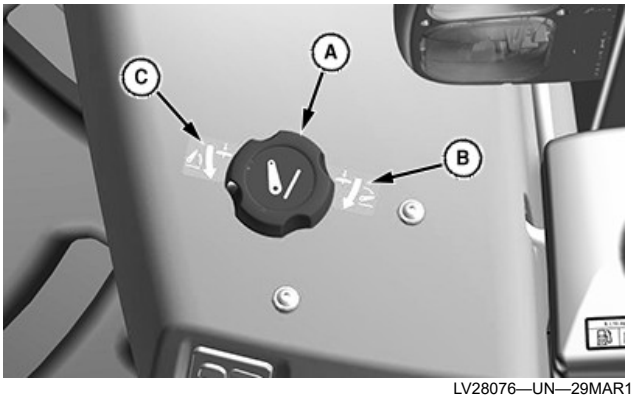
The rear controls can be disabled in three different ways:

- Sitting on the seat.
- Turning off the hitch assist switch.
- Any change in interlock state.

NOTE: To resume normal operation, hitch assist switch in the operator station must be turned off.

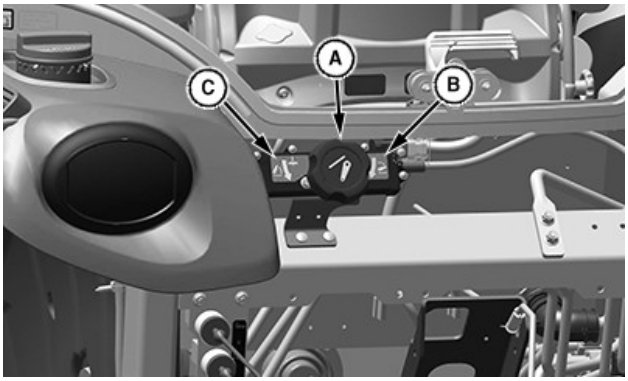
Using Auxiliary Rockshaft Control Knob

NOTE: Rockshaft control knob is used for raising or lowering rockshaft to attach equipment when using the hitch assist.



LV28076—UN—29MAR17

Open Operator Station



LV29345—UN—28AUG17

Cab Tractor

A—Auxiliary Rockshaft Control Knob
B—Lower Rockshaft
C—Raise Rockshaft

• Turn rockshaft control knob (A) clockwise to lower rockshaft (B).

• Turn rockshaft control knob (A) counterclockwise to raise rockshaft (C).

PS75950,0000894-19-05AUG19

Using Drawbar Hitch—If Equipped

CAUTION: Avoid injury! Use only the drawbar that was provided with the machine (if equipped) or the optional drawbar available from your John Deere dealer. Do not install or use any other type of drawbar.

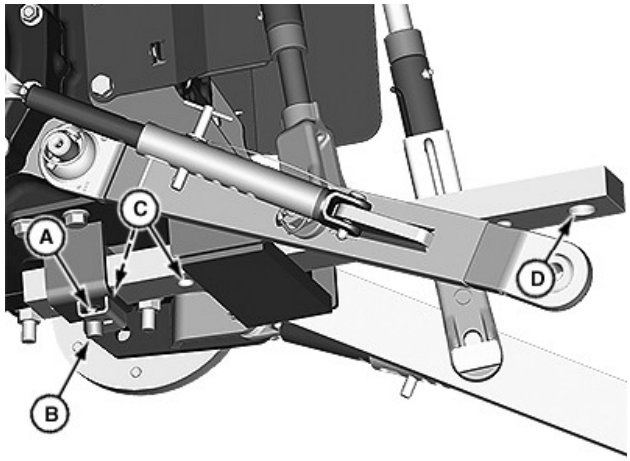
To avoid rearward upset, all towed loads must be attached to the drawbar, not just to the center link or draft arms.

IMPORTANT: Avoid damage! Maximum static vertical load on drawbar must not exceed maximum recommendations. Drive slowly with heavy loads.

Maximum Drawbar Loads

Certain heavy equipment such as a loaded single-axle trailer can place excessive strain on the drawbar. Speed and rough ground causes increased strain. Do not exceed the following maximum static vertical loads on drawbar. See Specifications section.

Adjusting Drawbar Length



LV21262—UN—26FEB14

A—Quick-Lock Pin
B—Drilled Pin
C—Operating Positions
D—Storage Position

IMPORTANT: Avoid damage! For drawn PTO-driven implements, the drawbar must be in the operating position.

The drawbar is equipped with two adjusting holes for changing drawbar length and one hole for storage.

1. Remove quick-lock pin (A) and drilled pin (B).
2. Adjust drawbar to one of two operating positions (C) or to storage position (D).
3. Install drilled pin (B) up from the bottom of machine. Secure with a quick-lock pin (A).

Towing 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.

Ensure that load does not exceed recommended weight. The tractor must be heavy and powerful enough with adequate braking power for the towed load. Use additional caution and reduce speed when towing loads under adverse surface conditions, when turning, and on inclines.

1. Hitch the towed load only to the drawbar. Lock the drawbar and pin in place.
2. Install a safety chain to the machine drawbar support 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 machine without having to use the brake pedal.

Using Safety Chain

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

IMPORTANT: Avoid damage! Secure the towed load to the drawbar. The safety chain is designed to help control the towed load if separation from the drawbar occurs.

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.

LV17806—UN—15MAY13

A—Safety Chain
B—Drawbar Support
C—Attaching Points

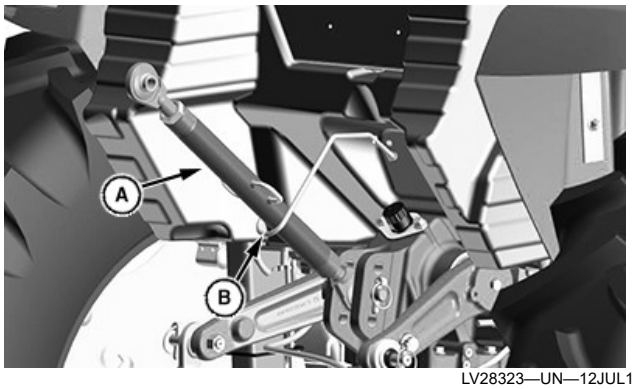
1. Attach safety chain (A) to drawbar support (B) and to towed load. Provide only enough slack to permit turning.
2. Install additional attaching points (C) for the chain on drawbar to reduce the slack in the chain when necessary.
3. Remove safety chain and store when not in use.

UP00731,0000013-19-27AUG18

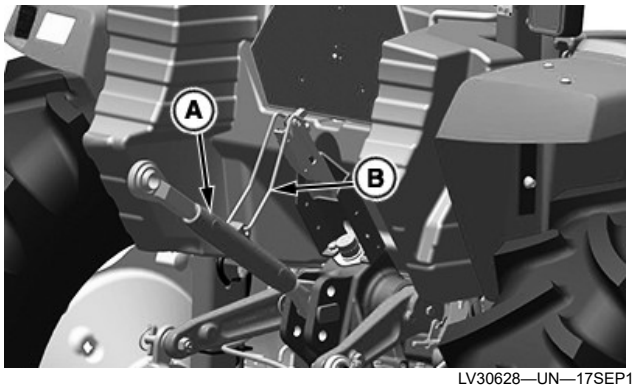
Use 3-Point Hitch

NOTE: The 3-point hitch on your machine is classified as a category I hitch.

Center Link Storage Position



LV28323—UN—12JUL17



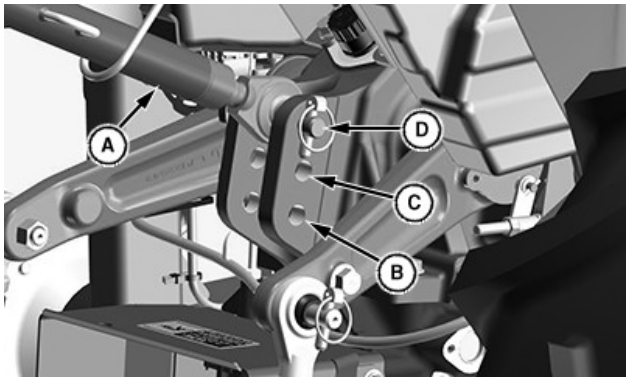
LV30628—UN—17SEP19

Heavy Duty Models

A—Center Link
B—Storage Hook

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

Position Center Link



LV28081—UN—03APR17

A—Center Link
B—Bottom Hole
C—Middle Hole
D—Top Hole

- **For light and medium draft loads:** Install center link

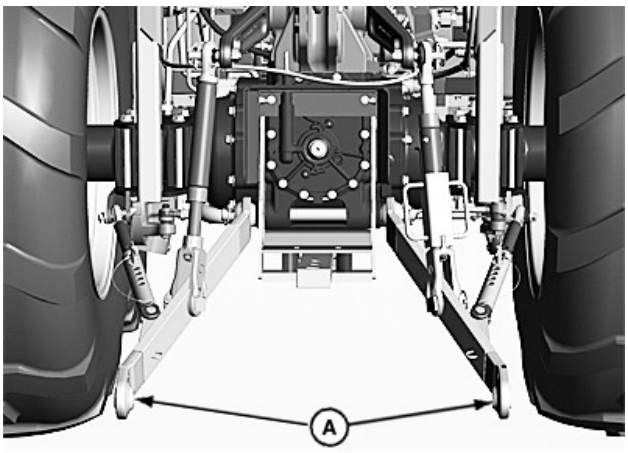
(A) in bottom hole (B) of mounting bracket. Example of a light or medium draft load implement is a landscape rake. A category I implement tilts forward while rising in this position.

- **For medium and heavy draft loads:** Install center link in middle hole (C) of mounting bracket. Example of a medium or heavy draft load implement is a tiller or box blade. A category I implement tilts forward slightly while rising in this position.
- **For very heavy draft loads:** Install center link in top hole (D) of mounting bracket. Example of a very heavy draft load implement is a plow or ripper. A category I implement rises, but angle remains constant.

Use the Draft Links

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.

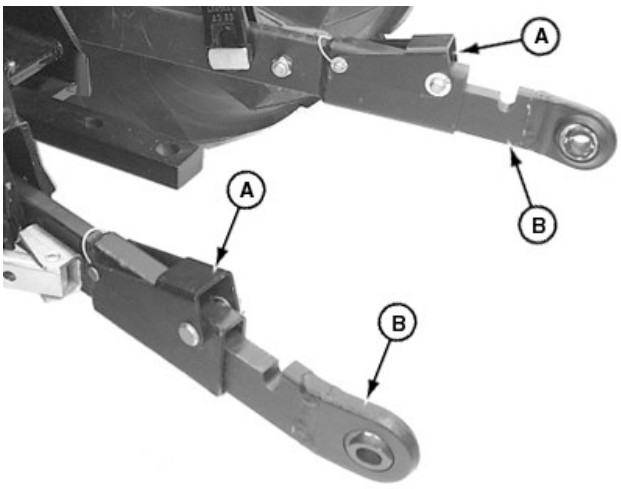


LV20866—UN—03FEB14

A—Draft Links

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

Telescoping Draft Link (Optional)



LV18421—UN—19JUL13

A—Locking Lever
B—Link

CAUTION: Avoid injury! Fingers and hands can be pinched or crushed. Be aware of potential pinch points and keep hands away.

IMPORTANT: Avoid damage! Telescoping draft link locking levers must be in locked position before operating the machine, or link damage could occur.

NOTE: Machines equipped with optional telescoping draft links can be connected two different ways.

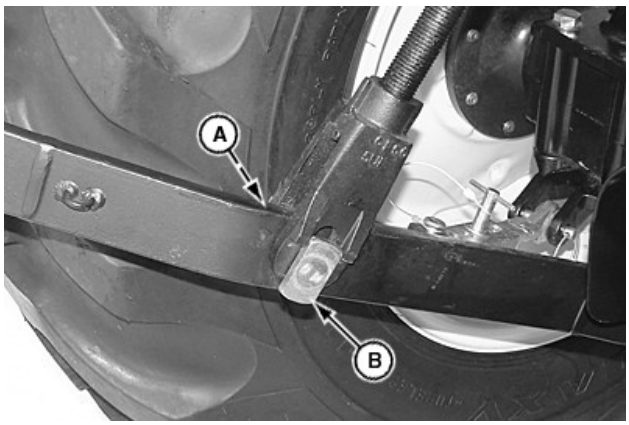
Option 1

1. Slowly back machine into position to align draft links with implement lift brackets.
2. Park machine safely.
3. Raise locking lever (A) and pull link (B) to extend as needed.
4. Connect draft links to the implement.

Option 2

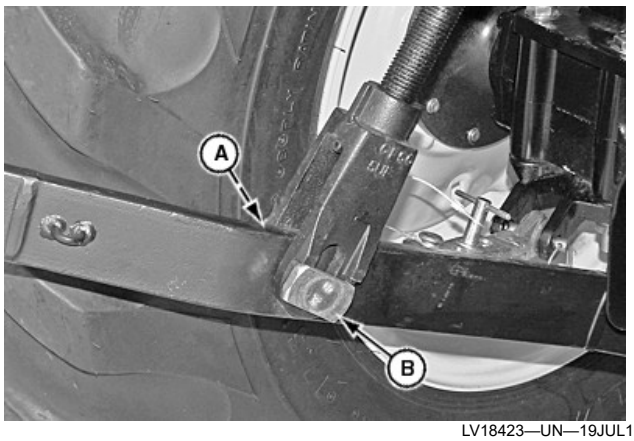
1. Sit on operator's seat and start engine.
2. Back machine until each lock lever snaps and secures each draft link in the locked position.

Adjust Draft Links to Float Position



LV18422—UN—19JUL13

Float Position



LV18423—UN—19JUL13

Rigid Position

A—Spring Locking Pin
B—Stop Pin

Adjusting 3-point hitch stops to the float position will allow both draft links to rise slightly as the implement follows ground contour.

Adjust stops to the float position for 3-point hitch implement such as a cultivator or mower. These implements have ground gauging skids or wheels, which may otherwise cause the implement to twist relative to the machine.

1. Park machine safely.
2. Remove spring locking pin (A) and rotate stop pin (B) 90 degrees to position shown.

Adjusting Draft Links to Rigid Position

Adjusting 3-point hitch stops to the rigid position will restrict movement of the draft links as the implement follows ground contour.

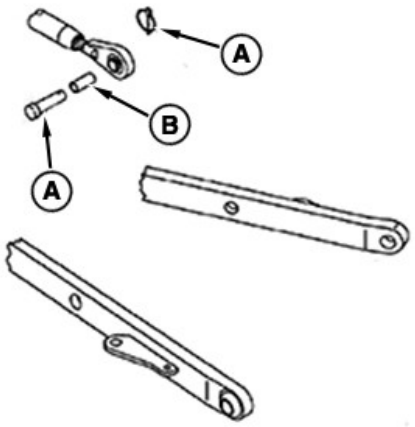
Adjust stops to the rigid position for 3-point hitch implements such as plows and ground engaging implements that should not twist relative to the machine.

1. Park machine safely.
2. Remove spring locking pin (A) and rotate stop pin (B) 90 degrees to position shown.

UP00731,00002A5-19-17SEP19

Hitch Conversion - Category II to I

4052M and 4066M Heavy Duty



LV30670—UN—24OCT19

A—Implement Pin
B—Center Link Reducing Bushing

NOTE: There is a hook end option for the center link and draft link ends. The adjustments are all made on the implement side for these ends.

To use Category II implements, convert draft link hook end balls to appropriate size of implement.

Center link end and draft link ends are sized for Category II implement attaching pins.

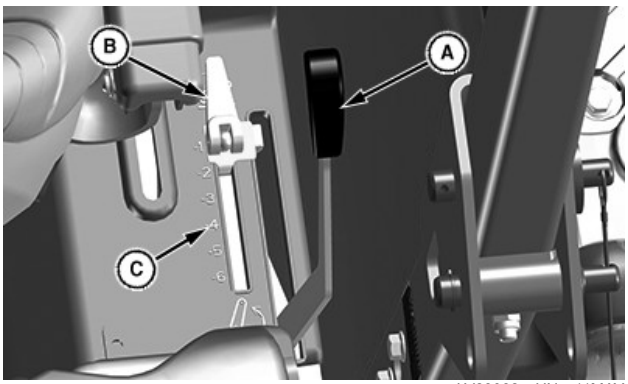
To use Category I implements, convert the Category II hitch:

- Insert center link reducing bushing (B) in the center link end.
- Use smaller implement pin (A) through the implement mast.

See your John Deere dealer for parts.

UP00731,0000962-19-25OCT19

Use Rockshaft Control Lever



LV28082—UN—11MAY17

Open Operator Station Rockshaft Control Lever

LV17865—UN—23MAY13

Cab Rockshaft Control Lever

A—Rockshaft Control Lever
B—Rockshaft Depth Stop
C—Rockshaft Position Identifiers

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

The six rockshaft position identifiers (C) do not signify specific operating depths. When rockshaft control lever is moved forward, draft arms lower closer to the ground.

Lower Implement: Push rockshaft control lever forward.

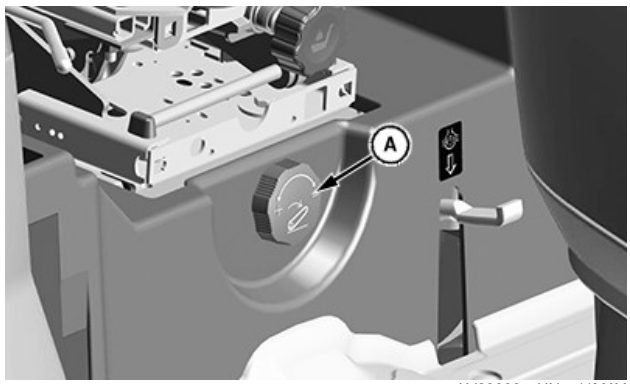
Raise Implement: Pull rockshaft control lever rearward.

The rockshaft depth stop (B) can be adjusted to maintain a particular implement operating depth. To use the depth stop knob:

1. Operate implement for a few minutes to determine the desired operating depth.
2. Loosen the depth stop knob.
3. Move knob against rockshaft control lever.
4. Tighten knob to keep the depth stop in position. Implement will operate in same position each time rockshaft control lever is pushed against the depth stop.

UP00731,00002FB-19-11MAY17

Use Rate-of-Drop



LV28083—UN—11MAY17

HST Shown; PRT Similar

A—Rate-of-Drop/Lock Valve Knob

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

The rate-of-drop/lock valve controls the rate of rockshaft drop when rockshaft control lever is operated. This valve provides direct rate-of-drop control for 3-point hitch mounted implements. the valve can be used to hydraulically lock rockshaft from lowering (3-point hitch) in a desired position. The tractor can be operated with rate-of-drop/lock valve closed. The rockshaft can be raised with the rate-of-drop/lock valve closed.

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

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

CAUTION: Avoid injury! Do not use the rate-of-drop/lock valve knob 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/lock valve knob (A) clockwise until tight.

Unlock 3-Point Hitch: Rotate rate-of-drop/lock valve knob (A) counterclockwise.

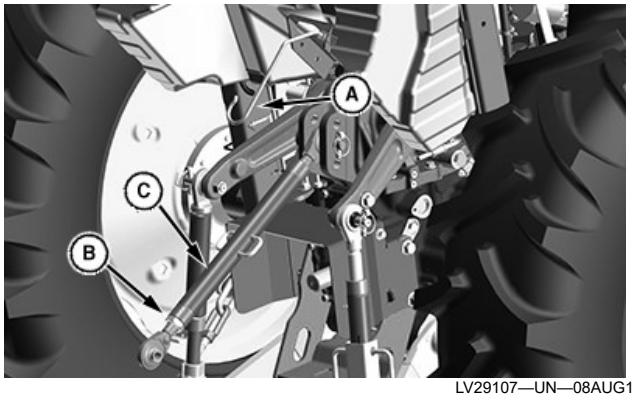
UP00731,00002FC-19-11MAY17

Level Hitch

Level Implement Front-to-Rear

1. Park machine safely.

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



LV29107—UN—08AUG17

A—Storage Hook
B—Lock Nut
C—Center Link Body

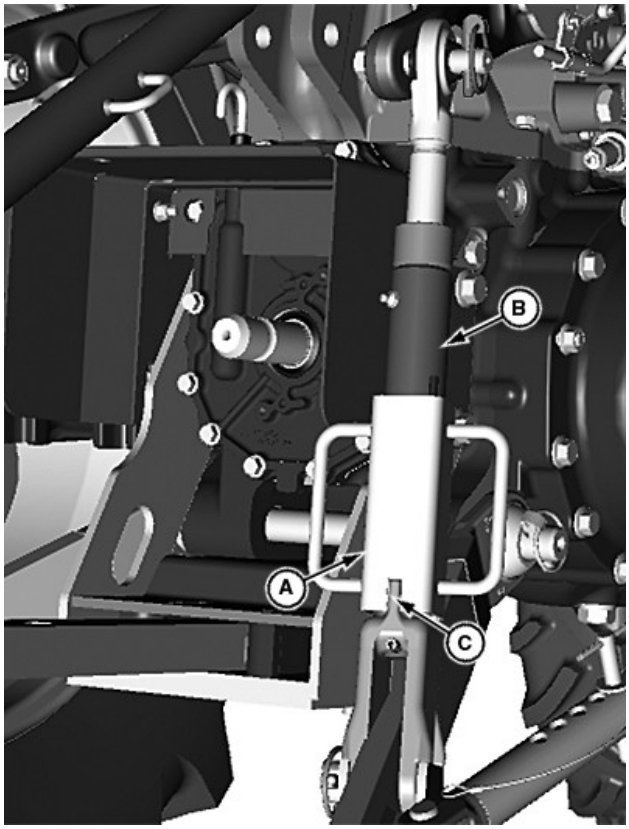
2. Lower implement to ground to relieve pressure on center link.
3. Loosen lock nut (B).

IMPORTANT: Avoid damage! Do not turn center link body past the stops, or threads may be damaged.

4. Rotate center link body (C) to lengthen or shorten the center link until implement is level from front to rear.
5. Tighten lock nut (B).

Level Implement Side-to-Side

Use turnbuckle collar (A) on the right adjustable lift link (B) to level a 3-point hitch implement side-to-side.



LV17873—UN—23MAY13

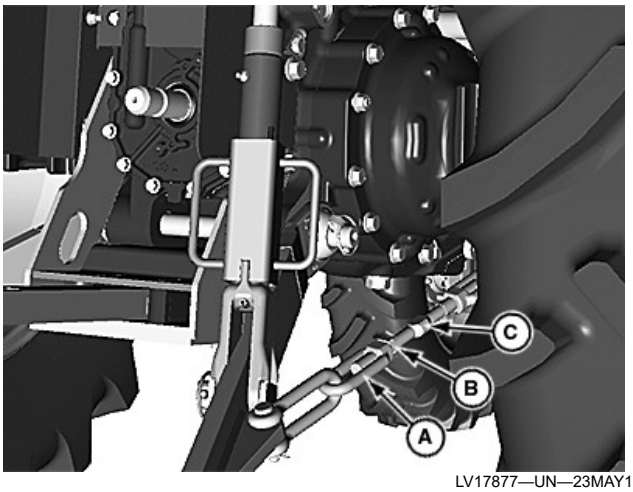
A—Turnbuckle Collar
B—Lift Link
C—Turnbuckle Collar Lock

1. Park machine safely.
2. Lower any rear-mounted implement to the ground.
3. Slide up and rotate turnbuckle collar (A) to raise or lower draft link until 3-point hitch mounted implement is level from side to side.
4. Slide down and line up the slot in turnbuckle collar (A) with turnbuckle collar lock (C) to secure position.

UP00731,00002FD-19-07AUG17

Adjust Hitch Side Sway

Adjust Implement Side-to-Side Sway Chains



LV17877—UN—23MAY13

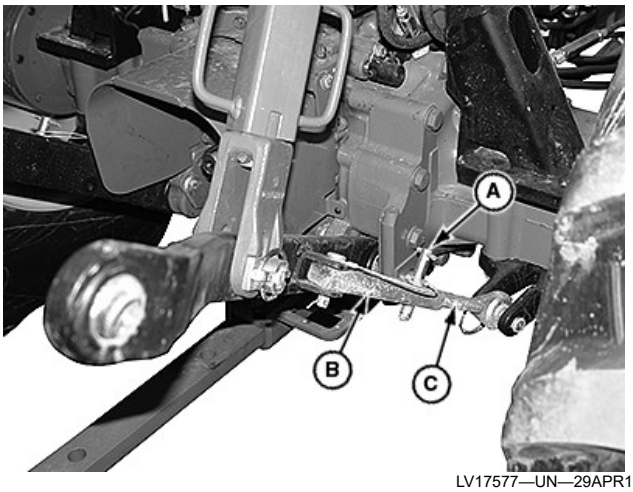
A—Sway Link
B—Lock Nut
C—Sway Link Adjusting Rod

NOTE: Check implement operator's manual procedure for adjusting sway links. When sway links have been properly adjusted, side sway of implement is controlled by position of links. A small amount of sway, 13—25 mm (1/2—1 in.), is needed for many implements.

Use left and right sway links (A) to adjust 3-point hitch implement side-to-side sway.

1. Park machine safely.
2. Lower any rear-mounted implement to the ground.
3. Loosen lock nut (B).
4. Rotate sway link adjusting rod (C) to adjust 3-point hitch implement side-to-side sway.
5. Tighten lock nut (B).

Adjust Implement Side-to-Side Sway Bars



LV17577—UN—29APR13

A—Locking Pin
B—Sway Link Adjusting Shaft
C—Sway Link

NOTE: Check implement operator's manual procedure for adjusting sway links. When sway links have been properly adjusted, side sway of implement is controlled by position of links. A small amount of sway, 13—25 mm (1/2—1 in.), is needed for many implements.

Use left and right sway links (C) to adjust 3-point hitch implement side-to-side sway.

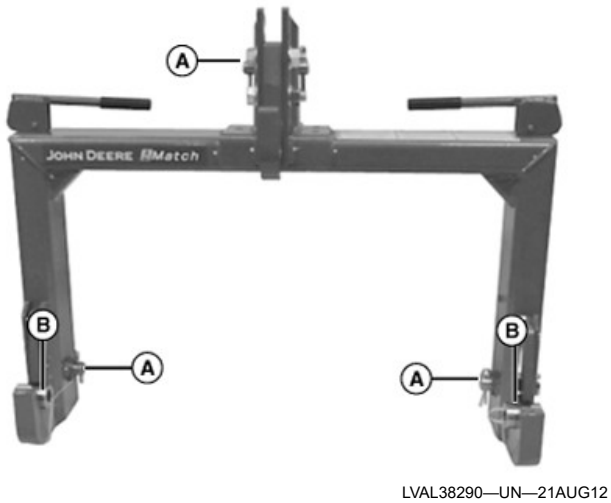
1. Park machine safely.
2. Lower any rear-mounted implement to the ground.
3. Remove locking pin (A).
4. Slide stabilizer sway link adjusting shaft (B) to adjust 3-point hitch implement side-to-side sway.
5. Replace locking pin (A).

UP00731,00002FE-19-19JUN17

Using Optional iMatch Quick-Attach Hitch System

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

Installing iMatch Quick-Attach Hitch

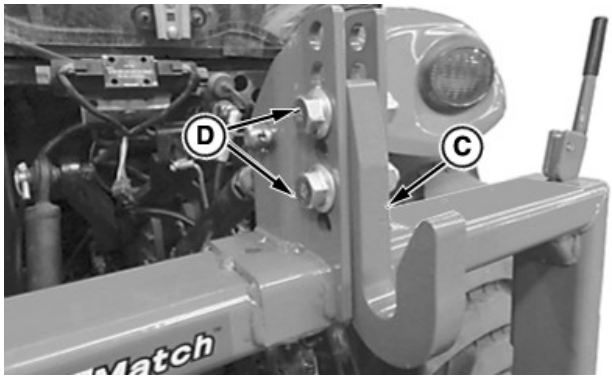


LVAL38290—UN—21AUG12

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 control lever to fully lower 3-point hitch draft links.
3. Park machine safely.

iMatch is a trademark of Deere & Company



LV30592—UN—29JUL19

C—Center Link Hook
D—Nuts and Bolts

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. Tighten bolts to specification before use of iMatch assembly.

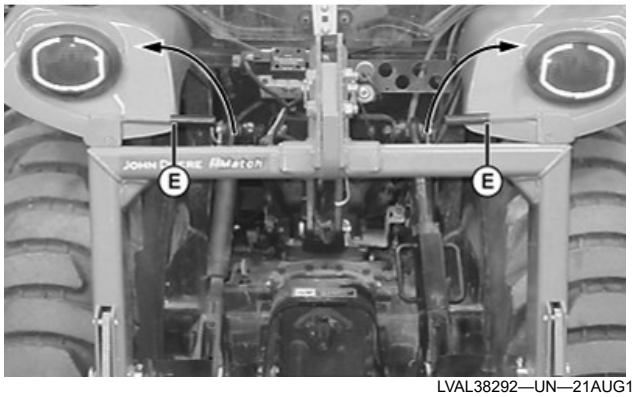
Specification

iMatch Bolt—Torque. . . . . 245—318 N·m (180.7—234.5 lb·ft)

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 center link quick-lock pin and drilled pin.

Connecting Implement

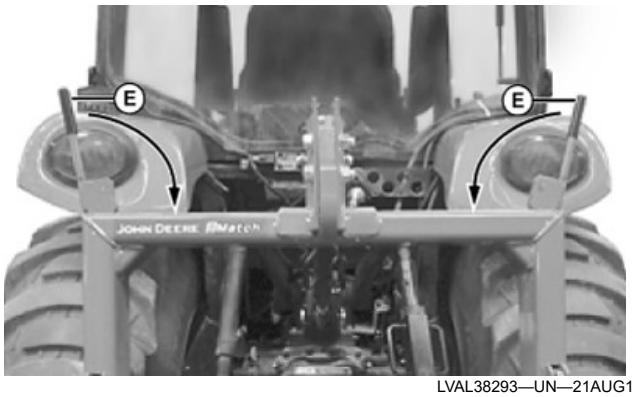
1. Install two bushings included with iMatch quick-attach hitch on drilled pins in the implement draft link lift brackets.



LVAL38292—UN—21AUG12

E—Levers

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



LVAL38293—UN—21AUG12

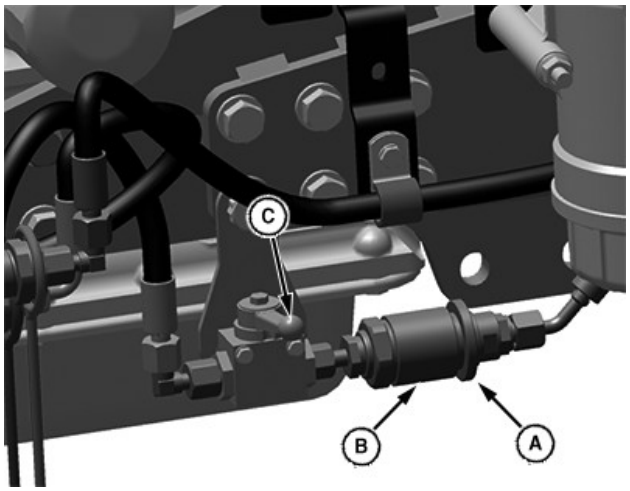
E—Levers

5. Fully raise implement. Move levers (E) on iMatch quick-attach hitch to locked position.

KN52281,1004865-19-29JUL19

Using Front 3-Point Hitch—If Equipped

Using Rate -of-Drop Adjustment



LV23871—UN—04MAR15

A—Jam Nut
B—Valve Body
C—Valve

To adjust the rate-of-drop, release the jam nut (A). Turn valve body (B) clockwise or counterclockwise to adjust the rate of drop. Tighten jam nut (A) to lock the valve body position.

Using Transport Lock Position

To place the hitch in transport lock position, fully raise hitch and rotate valve (C) to the lock position.

Raising and Lowering Hitch

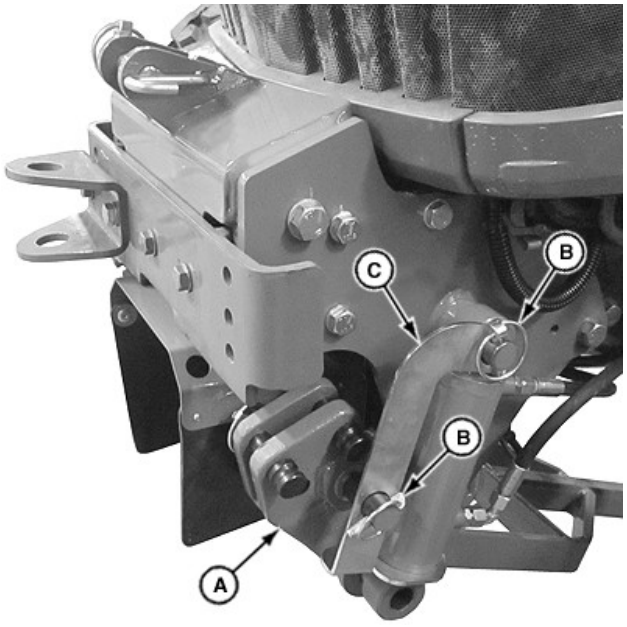
1. Check to be sure that hitch is not in transport lock position.
2. Review instructions on using the hydraulic dual SCV and dual SCV lock lever included in your tractor operator's manual.
3. Move tractor dual SCV lever:
   - To raise the hitch, move lever rearward.
   - To lower the hitch, move the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

Using Front Hitch Storage Position

The front hitch may remain installed on the tractor when not in use.

To change front hitch to storage position:

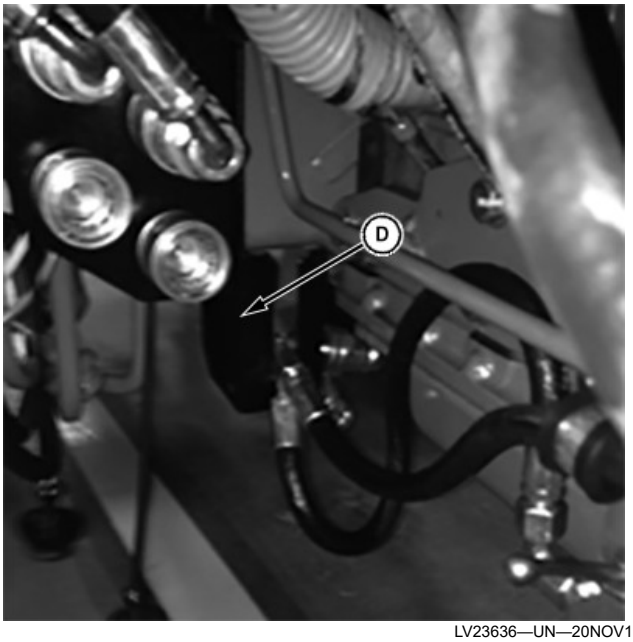
1. Raise hitch to highest lift position.
2. Move ball valve to transport locked position.
3. Remove A-frame if installed.



LV19398—UN—18OCT13

A—Lift Frame
B—Spring Clips
C—Brackets

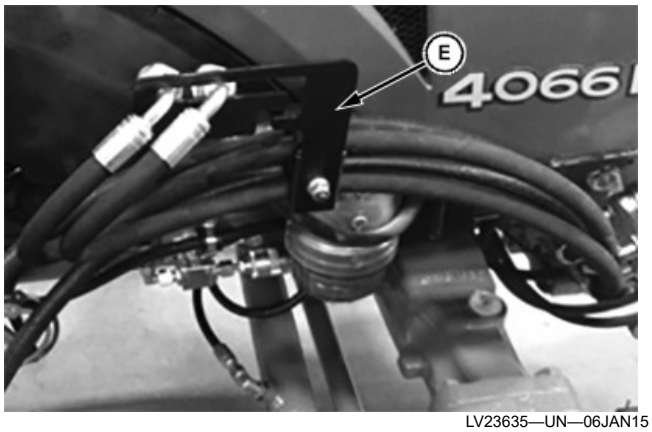
4. Remove lift arms from the lift frame (A) and center link from tractor, and set aside for future use.
5. Remove left and right cylinder retaining spring clips (B) from lift frame cylinder pins and hitch frame cylinder pins.
6. Rotate lift frame (A) upward and secure with left and right hitch storage brackets (C).
7. Replace left and right cylinder spring clips (B).



LV23636—UN—20NOV15

D—Storage Bracket

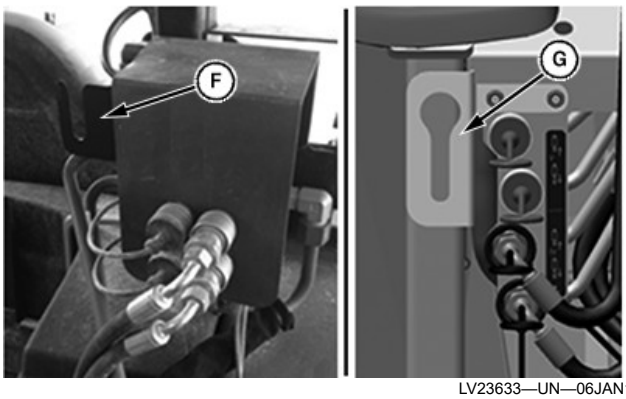
8. Disconnect front hitch cylinder hydraulic hoses from tractor and place in the storage bracket (D).



LV23635—UN—06JAN15

E—Storage Bracket

9. If the mid connect front coupler kit is installed, use storage bracket (E).



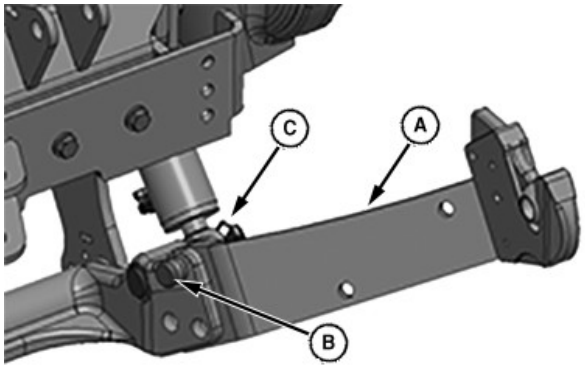
LV23633—UN—06JAN15

F—Storage Bracket for Open Station Tractors
G—Storage Bracket for Cab Tractors

10. If the rear connect front coupler kit is installed, use storage bracket (F) for open station tractors and storage bracket (G) for cab tractors.

UP00731,00002F1-19-27AUG18

Using Front Hitch Lift Arms—Category 1—If Equipped

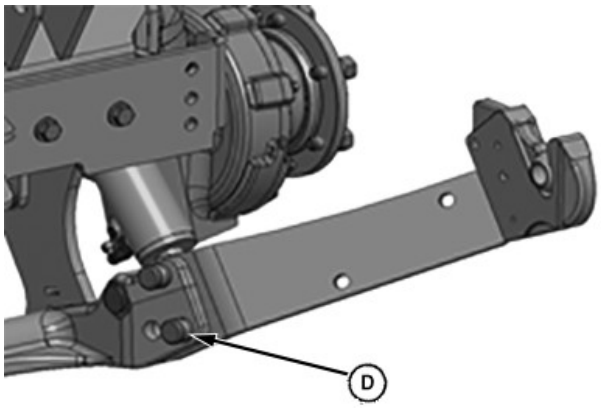


LV23644—UN—07JAN15

A—Lift Arm
B—Lift Arm Pin
C—Locking Pin

1. Place lift arm (A) into the lift frame fork. Insert upper lift arm pin (B) through fork and lift arm, secure with locking pin (C).
2. Category 1 lift arms may be installed in fixed position or float position.

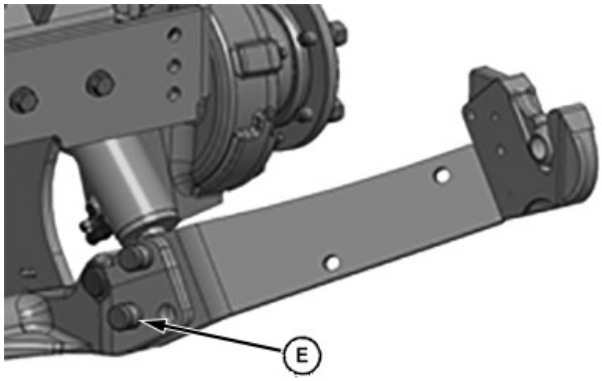
   NOTE: If the torsion tube is to be installed, arms must be installed in fixed position, not in the float position.



LV23645—UN—07JAN15

D—Lift Arm Pin

   a. Category 1 lift arms: To install lift arms into float position, insert second lift arm pin (D) into forward lower hole.



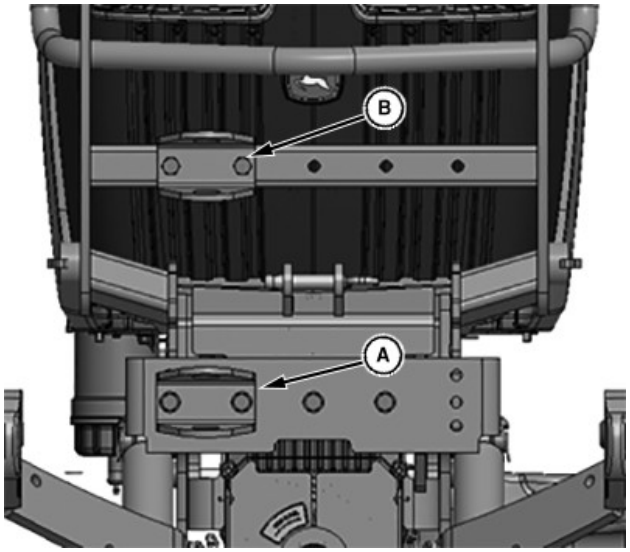
LV23646—UN—07JAN15

E—Lift Arm Pin

   b. Category 1 lift arms: To install lift arms into fixed position, insert second lift arm pin (E) into rearward lower hole.

UP00731,00002F3-19-27AUG18

Using Loader with Front Hitch—If Equipped



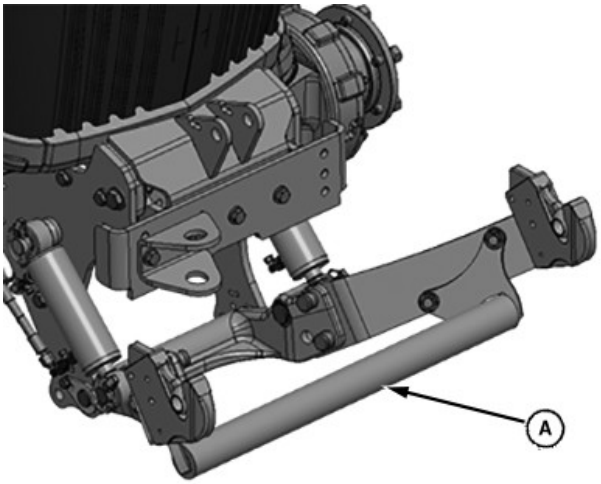
LV23632—UN—06JAN15

A—Tractor Frame
B—Hood Guard

1. Place hitch in storage position. See Storing section.
2. Relocate tow hook from the tractor frame (A) to hood guard (B).
3. Attach loader per loader operation instruction.

UP00731,00002C5-19-27AUG18

Using Torsion Tube—Category 1—If Equipped



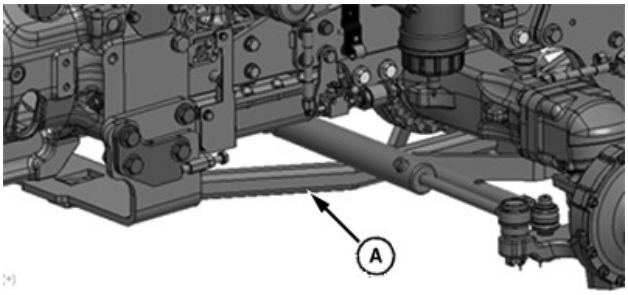
LV23650—UN—07JAN15

A—Torsion Tube

For heavy push applications, use of torsion tube (A) is recommended. If torsion tube is installed, lift arms must be in fixed position. To use lift arms in float position, torsion tube must be removed.

UP00731,00002F5-19-04MAR15

Using Heavy Duty Push Bar—Category 1—If Equipped



LV23651—UN—07JAN15

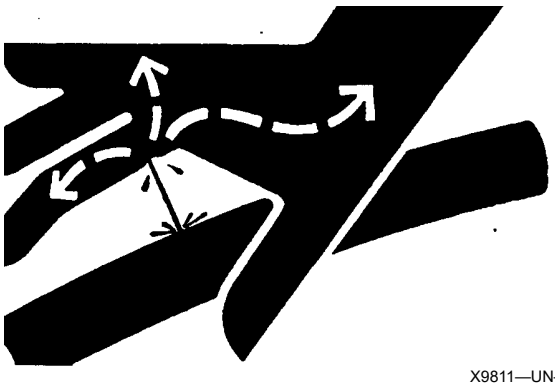
A—Push Bar

For heavy push application, use of push bar (A) is recommended.

UP00731,00002F6-19-04MAR15

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

Connecting Implement Hydraulic Hoses

CAUTION: Avoid injury! Escaping fluid under high pressure can penetrate the skin and cause serious injury. Avoid the hazard by relieving pressure before 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 may 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 may be obtained by calling 1-800-822-8262.**

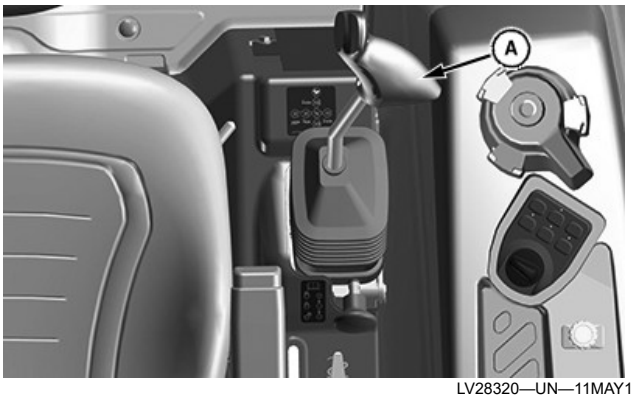
1. Park machine safely.
2. Relieve hydraulic pressure:
   - Move dual selective control valve (SCV) lever rearward-to-forward and side-to-side several times.
   - Move third SCV lever rearward-to-forward several times if equipped.
   - With key switch on, activate the third SCV upper and lower switches several times (if equipped).
3. See your implement operator's manual for specific instructions on connecting hydraulic hoses to couplers. Install hose ends in couplers with matching colors.
   - Colors for the couplers are shown on the label installed on the machine near the couplers.
4. See your implement operator's manual for specific instructions on operating SCV controls.

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

KN52281,1004867-19-19JUN17

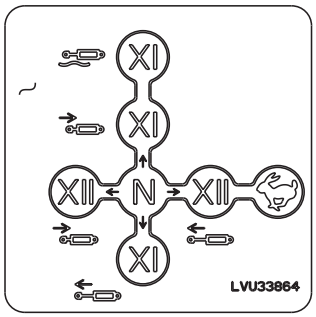
Using Dual Selective Control Valve Lever—If Equipped

CAUTION: Avoid injury! Overheated hydraulic oil can cause personal injury and component malfunctions. To prevent hydraulic oil from overheating, DO NOT hold control lever in operating position for an extended period.



LV28320—UN—11MAY17

Open Operator Station Shown; Cab is Similar



LV28324—UN—11MAY17

Control Valve Label

A—Dual Selective Control Valve (SCV) Lever

Dual selective control valve (SCV) lever (A) 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.

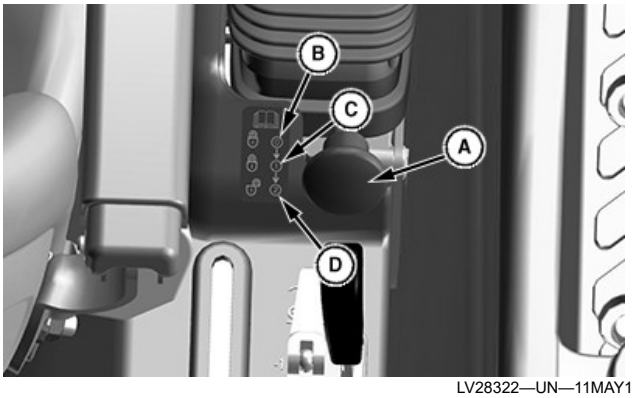
Lever positions numbered 1—4 on the label match hydraulic line couplers numbered 1—4 on the label installed on the machine near the couplers. Moving the lever to position 1 supplies fluid to coupler 1 and return fluid through coupler 2, and so forth.

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

Move the lever to the full right or “REGEN” position for faster loader bucket dumping.

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.

Selective Control Valve (SCV) Lever Lock—Open Operator Station



LV28322—UN—11MAY17

A—Selective Control Valve (SCV) Lever Lock

B—0 Position
C—1 Position
D—2 Position

CAUTION: To prevent loader movement, engage selective control valve (SCV) lever lock (A) before leaving the operator seat. Selective control valve lever must be in center (neutral) position for the lock to engage.

Selective control valve (SCV) lever lock does not lock out switch-operated third-function hydraulics, which are active anytime the key is ON.

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

- To prohibit movement of SCV lever in all directions, move SCV lever lock in to the 0 position (B). Operation of the SCV is locked.
- To prohibit engagement of the REGEN (regeneration) function of the SCV, pull lever lock to the middle or 1 position (C). This locks out the loader bucket function. REGEN cannot be used for hydraulic motors, and it causes a cylinder to extend regardless of connections. REGEN is intended to increase bucket dump speed and eliminate cavitation in bucket cylinders.
- To allow movement of SCV lever in all directions, move SCV lever lock to the 2 position (D). Operation of the SCV is unlocked.

Selective Control Valve (SCV) Lever Lock—Cab

Selective control valve (SCV) lever lock (A) allows the operator to control the type of dual SCV lever movement needed for a particular operation or situation.

LV25543—UN—03JUN16

A—SCV Lever Lock
B—SCV Lever
C—In Position
D—Center Position
E—Out Position

- • To prohibit movement of dual SCV lever in all directions, make sure SCV lever (B) is in center position, and press the SCV lever lock (A) to the in position (C). Operation of the dual SCV is locked.
- • To allow movement of dual SCV lever in all directions, move SCV lever lock to the center position (D). Operation of the dual SCV is unlocked.
- • To prohibit engagement of the REGEN (regeneration) function of the SCV, pull lever lock to the full out position (E). This locks out the loader bucket function. REGEN cannot be used for hydraulic motors, and it causes a cylinder to extend regardless of connections. REGEN is intended to increase bucket dump speed and eliminate cavitation in bucket cylinders.

NOTE: After extended use, the dual SCV lever may require cable adjustment to lock out.

UP00731,0000304-19-27AUG18

Using Third Selective Control Valve (SCV) Outlet—If Equipped

CAUTION: Avoid injury! Escaping fluid under high pressure can penetrate the skin and cause serious injury. Avoid the hazard by relieving pressure before 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.

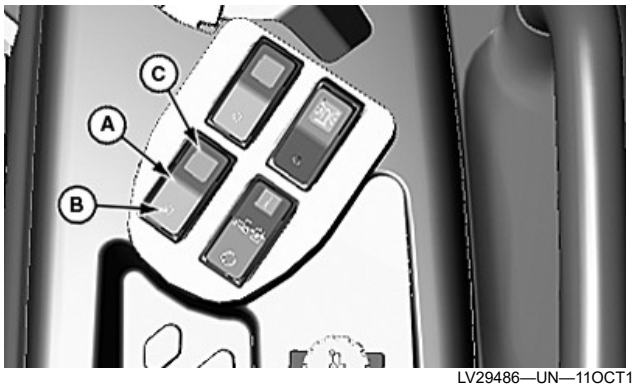
• If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical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

NOTE: Some continuous flow attachments can elevate tractor oil temperature. Make sure to refer to the operator's manual of the attachment and supply the device the proper flow rate. In the event that the tractor hydraulic system overheats, the valve will disengage, and the light will remain lit. Operate the tractor for 10 minutes at mid engine speed to cool it down, identify the cause of the overheating, and resume work.

This machine model series can be equipped with an optional third selective control valve (SCV) outlet kit to operate hydraulically driven implements from one set of outlets at the mid-mount position or the rear-mount position.

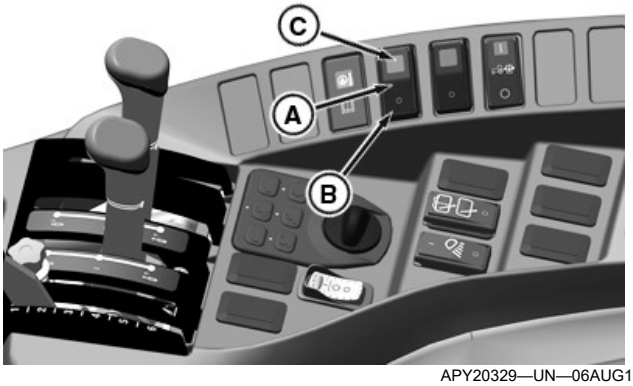
The machine-mounted hydraulic outlets are female quick couplers.

Using Third Selective Control Valve (SCV) Continuous Flow Switch



LV29486—UN—11OCT17

Third SCV Continuous Flow Switch Shown; M Series Tractor (HST Only)



APY20329—UN—06AUG19

Third SCV Continuous Flow Switch (Cab Shown; OOS Similar)

A—Continuous Flow Switch
B—Off
C—Enable/Activate

NOTE: Continuous flow is not available to the rear outlets on machines equipped with the third selective control valve and the diverter option.

• **Continuous Flow Switch (A):** This switch supplies continuous flow to a hydraulic device.

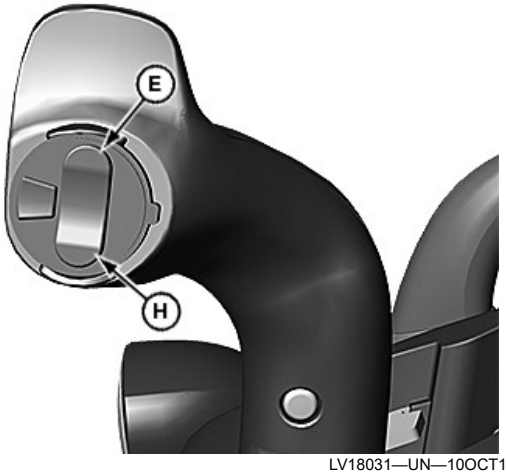
• **Off (B):** Place switch in this position to deactivate continuous flow from the third SCV outlet or depress the bottom of control switch.

NOTE: The green light in the switch will illuminate if continuous flow is activated.

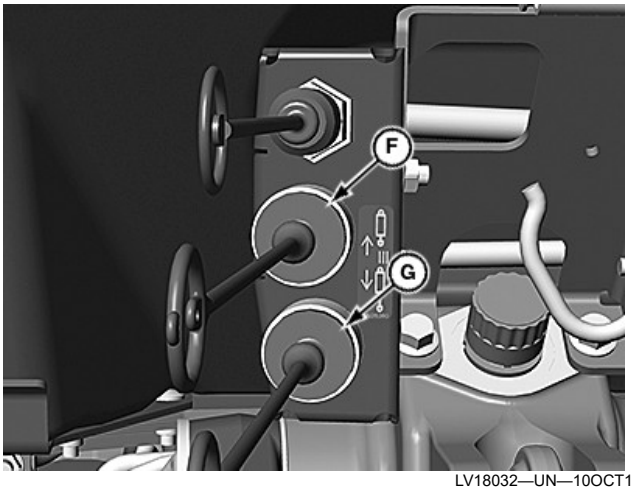
• **Enable/Activate (C):** This is a momentary position that will activate the third SCV continuous flow circuit. When the switch is depressed and released, it will return to the center on position. Turning the key switch off will deactivate the continuous flow circuit. When the key switch is turned on, the third SCV continuous flow circuit will not activate until after the operator presses and releases the switch in the momentary enable (C) position.

Using Third Selective Control Valve (SCV) Outlet Control

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

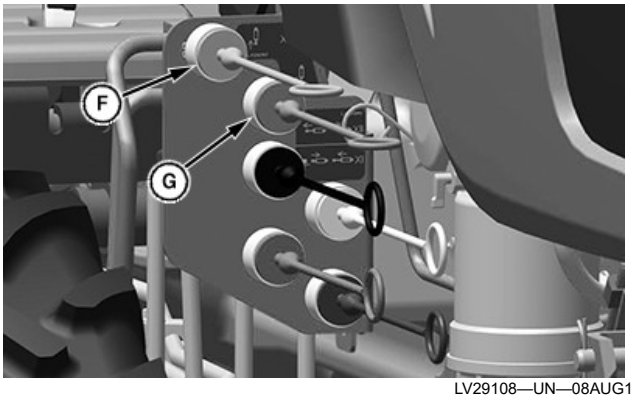


LV18031—UN—10OCT13



LV18032—UN—10OCT13

Rear Outlet



LV29108—UN—08AUG17

Mid Outlet

E—Third SCV Control Switch
F—Upper Outlet
G—Lower Outlet
H—Bottom of SCV Control Switch

1. Depress the top of the third (SCV) control switch (E) to allow flow from the circuit out the upper outlet (F) and return to the machine through the lower outlet (G).
2. Depress the bottom of the third (SCV) control switch (H) to allow flow from the circuit out the lower outlet

(G) and return to the machine through the upper outlet (F).

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

PS75950,0000899-19-06AUG19

Using Power Beyond Outlet—If Equipped

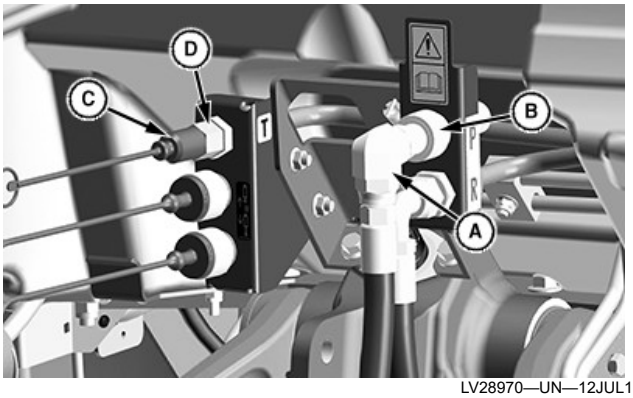
IMPORTANT: Avoid damage! Return oil from all circuits must return to either of two tank ports at the rear of the rockshaft manifold.

Routing return oil directly to sump will result in machine damage.

Do not return oil to the fill port or any other location.

Power beyond is designed for applications where continuous high volume hydraulic oil flow is needed.

Connecting to Power Beyond



LV28970—UN—12JUL17

A—Hose
B—Coupler
C—Outlet Cover
D—Power Beyond Coupler

1. Shut off engine.
2. Remove hose (A) from coupler (B).
3. Remove outlet cover (C) and place hose (A) into cover.
4. Attach implement pressure hose to power beyond coupler (B).
5. Attach implement return hose to coupler (D).

NOTE: When not in use, plug hose end into coupler for storage.

Parts for this attachment are available from your John Deere dealer.

UP00731,0000306-19-09AUG17

Using Fourth and Fifth Rear Outlet Selective Control Valve (SCV)—If Equipped

CAUTION: Avoid injury! Escaping fluid under high pressure can penetrate the skin and cause serious injury. Avoid the hazard by relieving pressure before 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 may 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 may be obtained by calling 1-800-822-8262.

This machine model series can be equipped with an optional fourth and fifth rear outlet selective control valve (SCV) and outlets to operate hydraulically driven implements.

The machine-mounted hydraulic outlets are female quick couplers.

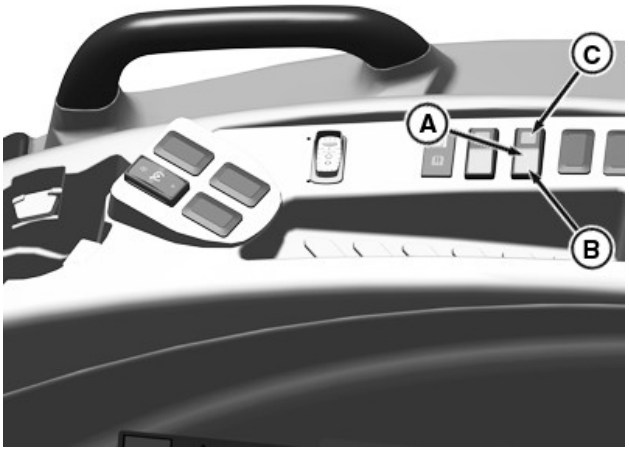
NOTE: Some continuous flow attachments can elevate tractor oil temperature. Make sure to refer to the operator's manual of the attachment and supply the device the proper flow rate. In the event that the tractor hydraulic system overheats, the valve will disengage, and the temperature overheat indicator (A) will light up. Operate the tractor for 10 minutes at mid engine speed to cool it down, identify the cause of the overheating, and resume work.

LVP10035—UN—20SEP19

Temperature Overheat Indicator

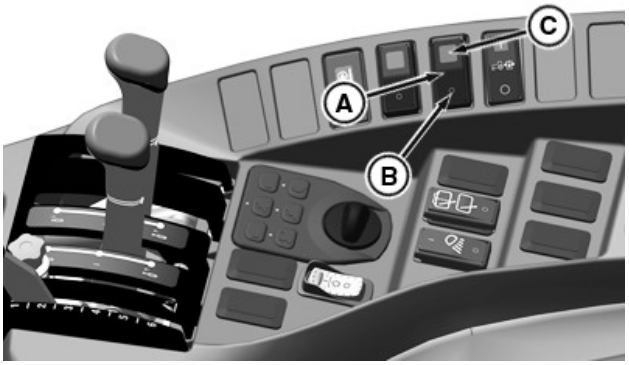
A—Temperature Overheat Indicator

Open Operator Station



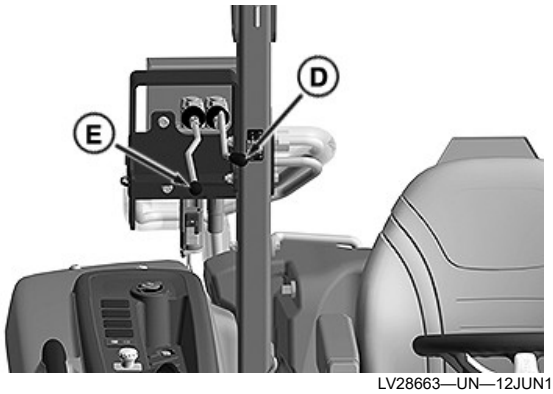
LVP10048—UN—24SEP19

Selective Control Switch M Series Tractor Shown (HST only)

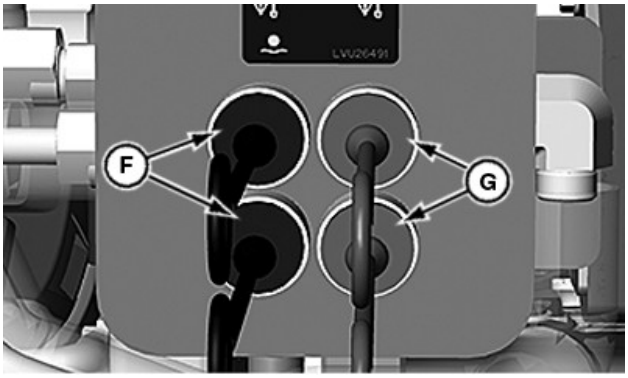


APY20330—UN—06AUG19

Selective Control Switch—Cab Tractor Shown



LV28663—UN—12JUN17



LV20948—UN—04FEB14

A—Switch
B—Position
C—Position
D—Control Lever
E—Control Lever
F—Right-Side Outlets
G—Left-Side Outlets

The fourth and fifth rear outlet selective control valve is mechanically operated using the control levers (D and E) on the right side of the machine.

- Lever (D) controls the flow to the right-side outlets (F).
- Lever (E) controls the flow to the left-side outlets (G).

Float Position

Float position allows implement to move up and down freely while traveling over rough ground.

- To engage float position, push control lever (D) down.
- To disengage float position, manually return control lever to neutral position.

Using the Rear Fifth Selective Control Valve Continuously

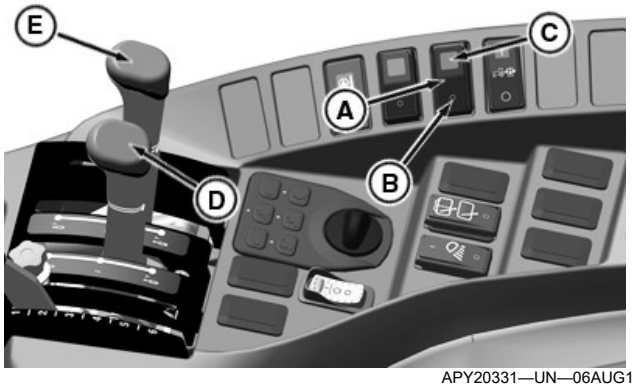
1. On selective control switch (A) press position (C) while raising control lever (E) to the upper stop position. Switch light indicator will be on to indicate switch enabled.
2. Release control lever (E).
3. To deactivate, press position (B) and slowly lower rear outlet lever.

See your implement operator's manual for implement functions which correspond to quick couplers used.

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

Some continuous flow attachments can elevate tractor oil temperature. Make sure to refer to the operator's manual of the attachment and supply the device the proper flow rate. In the event that the tractor hydraulic system overheats, the valve will disengage, and the light will remain lit. Operate the tractor for 10 minutes at mid engine speed to cool down, identify the cause of the overheating, and resume work.

Cab



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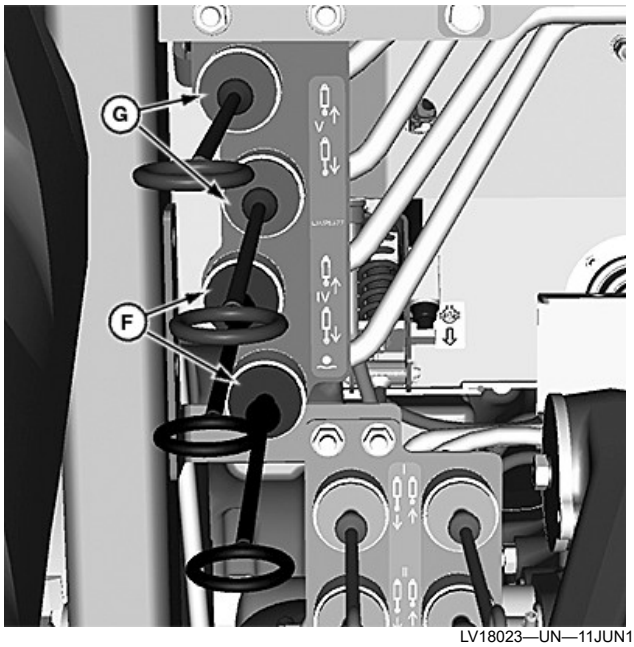


LV18023—UN—11JUN13

A—Switch
B—Position
C—Position
D—Control Lever
E—Control Lever
F—Lower Outlets
G—Upper Outlets

The fourth and fifth rear outlet selective control valve is mechanically operated using the control levers (D and E) on the right side of the machine.

- Lever (D) controls the flow to the lower outlets (F).
- Pull back on control lever (D) for detented position used for "float" operations.
- Lever (E) controls the flow to the upper outlets (G).

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

Using the Rear Selective Control Valve Continuously

1. On selective control switch (A) press position (C) while pulling control lever (E) rearward to the rear stop position. Switch light indicator will be on to indicate switch enabled.
2. Release control lever (E).
3. To deactivate press position (B) and slowly release rear outlet lever.

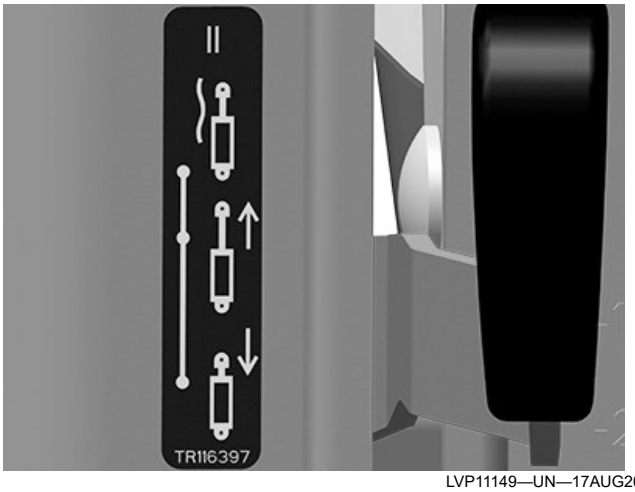
PS75950,000089A-19-23SEP19

Mechanical Rear Selective Control Valve (4M Heavy Duty Only) - If Equipped

IMPORTANT: Avoid damage by contamination! Install color-coded hose ends in the hydraulic couplers when not being used.

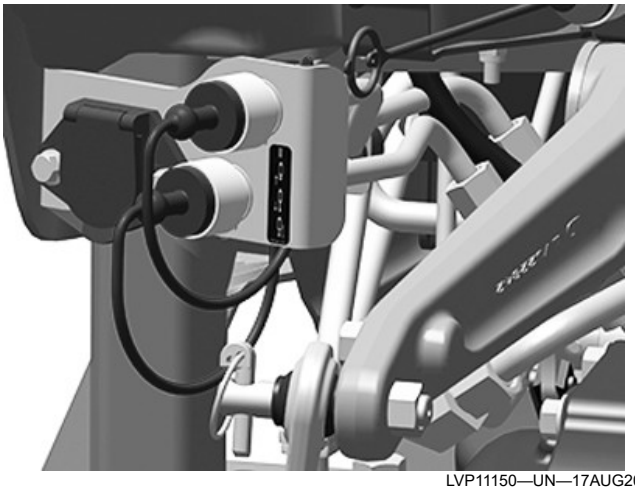
LVP11148—UN—17AUG20

Control Lever



LVP11149—UN—17AUG20

Control Valve Label



LVP11150—UN—17AUG20

Mechanical Rear SCV Couplers

A—Control Lever

This machine can be equipped with a mechanical rear selective control valve (SCV) to operate hydraulic driven implements.

The Mechanical Rear SCV is operated using control lever (A). Move control lever (A) forward to extend and backward to retract the hydraulic cylinder.

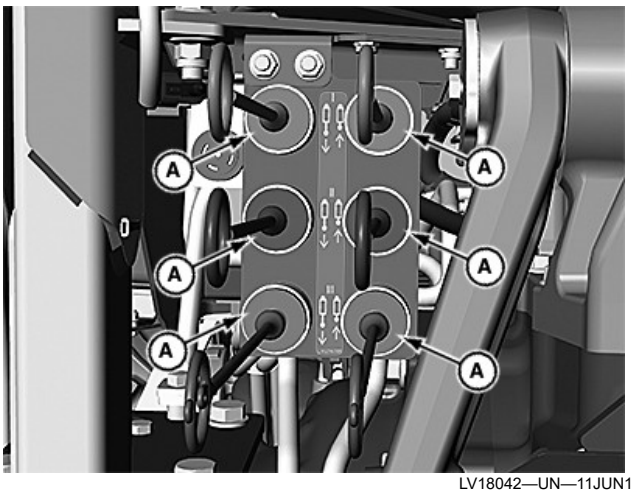
Float Position

Float position allows the implement to move up and down freely while traveling over rough ground.

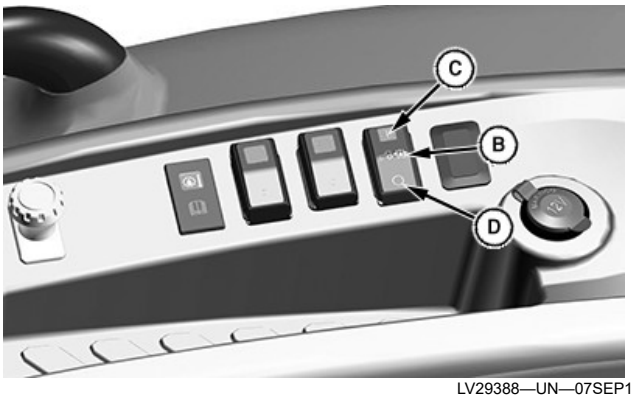
- To engage float position, move control lever (A) fully forward to “float” position.
- To disengage float position, manually return control lever (A) to the neutral position.

DN39857,00002F6-19-20AUG20

Using Diverter Rear Outlets—If Equipped

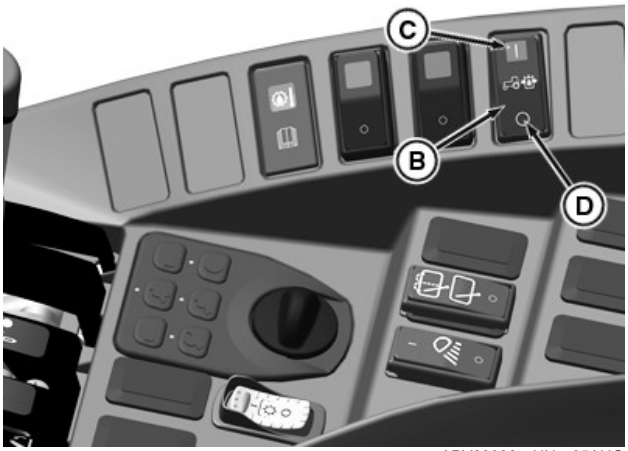


LV18042—UN—11JUN13



LV29388—UN—07SEP17

Open Operator Station Diverter Switch



APY20326—UN—05AUG19

Cab Diverter Switch

A—Hydraulic Outlets
B—Activation Switch
C—Indicator Light
D—Bottom of the Activation Switch

CAUTION: Avoid injury! Escaping fluid under high pressure can penetrate the skin and cause serious injury. Avoid the hazard by relieving pressure before 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 may 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 may be obtained by calling 1-800-822-8262.

NOTE: Continuous flow will not be available to the rear outlets on machines equipped with the third selective control valve and the diverter option.

This machine model series can be equipped with an optional diverter rear outlet kit to operate hydraulically driven implements with the SCV lever.

The machine-mounted hydraulic outlets (A) are female quick couplers.

NOTE: If the key switch is moved to the off position, the dual SCV lever will default to operating the mid SCV outlets. The key switch must be moved to the run position and the diverter system re-activated to operate the diverter rear outlets.

1. Press the top of the diverter activation switch (B) to activate the rear outlets. The switch indicator light (C) will go on.
2. Use the SCV lever to operate attachments connected to the diverter rear outlets.
3. Press the bottom of the activation switch (D) to disable the rear outlets. The switch indicator light will go off and the mid SCV outlets will be activated.

Relieving Pressure

To relieve pressure in the rear outlets

1. Place implement on ground.
2. Engine running and diverter engaged.
3. Press and hold diverter switch at location C throughout the next three steps.
   - Shut off engine.
   - Actuate mid SCV lever in front/back and left/right directions to relieve pressure, then put key switch back to run position.
   - Actuate 3rd SCV upper and lower switches to relieve pressure.

NOTE: This provides 20-30 seconds after engine shut down during which the pressure in the rear couplers can be relieved.

PS75950,0000895-19-05AUG19

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.

For all other information on tires, see “Wheels and Tires Maintenance”.

Tire Combinations	
Front	8.00-16 10PR
Rear	13.6-28 6PR
Front	280/70R16
Rear	380/70R28
Front	260/70D 16.5
Rear	420/85D24
Front	27x10.50-15
Rear	44x18.00-20 4PR
Front	250/75R16
Rear	360/80R28
Front	27x12LL-15
Rear	22.5LL-16.1 6PR

Tire Combinations - Heavy Duty Models	
Front	31.5X13.00-16.5, 10PR, R4
Rear	16.9-24, 8PR, R4
Rear	19.5L-24, 10PR, R4

UP00731,0000984-19-09OCT19

Ballast

Selecting Ballast

CAUTION: When determining front and rear axle ballast, ensure that permissible axle loads and the maximum permissible machine weight (including mounted implements) are not exceeded (see Specifications).

Comply with local regulations regarding installation and maximum permissible number of weights. In order to maintain steerability, at least 20% of unladen mass must be on the front axle. Unladen mass is the mass of the tractor without special equipment, attachments, trailer, or ballast, but with hydraulic oil and lubricants, a full fuel tank, and an operator weighing 75 kg.

CAUTION: Use suitable lifting tackle/hoists when handling weights.

Safety and performance of your tractor depend on correct ballasting of front axle (front weights) and rear axle (wheel weights, using tires with liquid ballast, pickup weight).

UP00731,0000195-19-01APR14

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.

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

- 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.
- See tire maximum inflation pressure and maximum load capacities in the Specifications section.
- Verify maximum tire inflation pressure and maximum load information if embossed into the tire side wall.

SK35149,0001161-19-29JAN18

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.

NOTE: Maximum allowable ballasted weight is 4000 kg (8820 lb.)

Open Operator Station Tractors

Implement Code	Minimum number of 19 kg (42 lb) weights	Minimum number of 19 kg (42 lb) weights when usingi-Match™	Minimum number of 32 kg (70 lb) weights	Minimum number of 32 kg (70 lb) weights when using iMatch
35	0	0	0	0
40	1	2	1	1
45	3	4	2	2
50	4	6	3	3
55	6	8	4	5
60	8	9	5	6
65	10	11	6	7
70	11	Not Recom-mended	7	8
75	Not Recom-mended	Not Recom-mended	8	9
80	Not Recom-mended	Not Recom-mended	9	10
85	Not Recom-mended	Not Recom-mended	10	11
90	Not Recom-mended	Not Recom-mended	11	12
95	Not Recom-mended	Not Recom-mended	12	Not Recom-mended
100	Not Recom-mended	Not Recom-mended	Not Recom-mended	Not Recom-mended

iMatch is a trademark of Deere & Company

Cab Tractors

Implement Code	Minimum number of 19 kg (42 lb) weights	Minimum number of 19 kg (42 lb) weights when usingi-Match™	Minimum number of 32 kg (70 lb) weights	Minimum number of 32 kg (70 lb) weights when using iMatch
10	0	0	0	0
15	0	0	0	0
20	0	0	0	0
25	0	0	0	0
30	0	0	0	0
35	0	0	0	0
40	0	0	0	0
45	1	2	1	1
50	2	4	2	2
55	4	6	3	3
60	6	7	4	5
65	8	9	5	6
70	9	11	6	7
75	11	No Recom-mended	7	8
80	No Recom-mended	No Recom-mended	8	12
85			No Recom-mended	No Recom-mended

iMatch is a trademark of Deere & Company

Heavy Duty Model Tractors

Base Tractor: 60

Tractor with 440R Loader: 105

Tractor with 440R Loader; bucket removed: 95

Implement Code	Minimum number of 45 kg (100 lb) weights	Minimum number of 45 kg (100 lb) weights when usingiMatch™
35	0	0
40	0	0
45	0	0
50	0	0
55	0	0
60	0	1
65	1	1
70	1	2
75	2	3
80	3	4
85	4	5
90	5	6
95	6	7
100	7	8
105	8	9
110	9	10
115	10	Not Recommended
120	Not Recommended	Not Recommended

iMatch is a trademark of Deere & Company
iMatch is a trademark of Deere & Company

Tire Capacities

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

If necessary ballast exceeds tire load capacity, reduce load or install other tires.

Recommended operating pressures for Golf tires are 6 psi rear and 8 psi front. Operate at reduced loads. If MFWD is engaged with tires at maximum air pressure, front axle damage may result.

See tire maximum inflation pressure and maximum load capacities in the Specifications section.

Verify maximum tire inflation pressure and maximum load information if embossed into the tire side wall.

UP00731,00009DC-19-25OCT19

Use Optional Rear Cast Iron Wheel Weights

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.

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

1. Mount rear wheels in the wide position for improved stability.
2. Fasten weight to each rear wheel using a safe lifting device. A total of three weights per wheel may be used. See your implement operator's manual for installation and number of weights to use.

   Rear wheel weights are available from your John Deere Dealer.

SK35149,0001163-19-29JAN18

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.

SK35149,0001164-19-20JUL17

Use Liquid Weight in Tires

CAUTION: Avoid injury! Installing liquid ballast requires special equipment and training. Injury will occur from the exploding tire. 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.

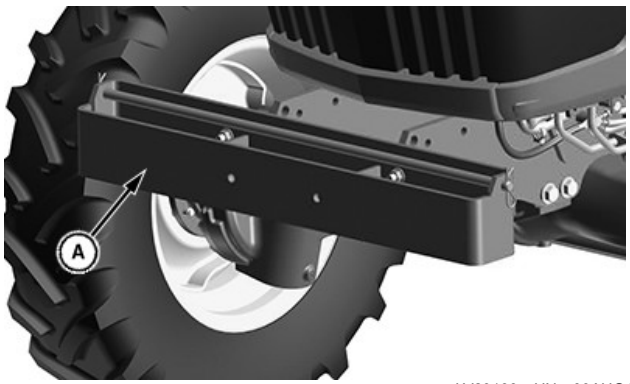
A mixture of 0.4 kg of calcium chloride per liter of water (3.5 lb per gallon), does not freeze solid above -45°C (-50°F).

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

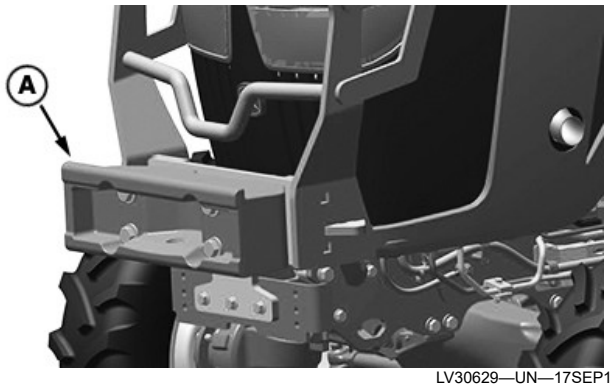
Tube-type tires may be filled to any level below 90%.

SK35149,0001165-19-20JUL17

Use Optional Front Weights



LV29130—UN—09AUG17



LV30629—UN—17SEP19

Heavy Duty Models

A—Front Weight Bracket

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

Quik-Tatch™ weights and attaching hardware are available at your John Deere dealer. Each weight is 19 kg (42 lb.) or 32 kg (70 lb.).

An optional front weight bracket extension kit (A) is available at your John Deere dealer. The front weight bracket extension is standard on the heavy duty mode tractors. This optional front weight bracket extension kit holds up to ten Quik-Tatch weights.

UP00731,0000951-19-23OCT19

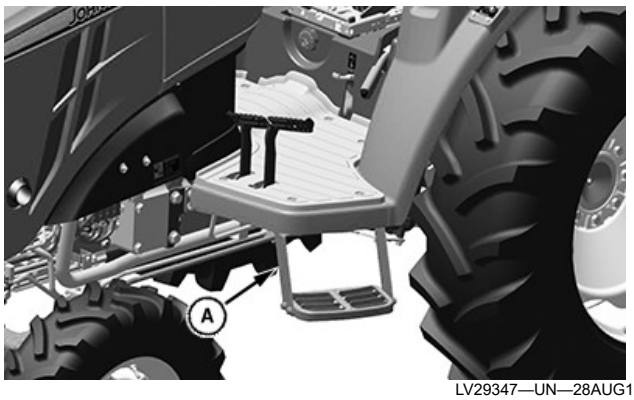
Quik-Tatch is a trademark of Deere & Company

Additional Equipment Operation

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

UP00731,0000206-19-26MAY17

Entering and Exiting Machine



LV29347—UN—28AUG17

Open Operator Station

LV29109—UN—08AUG17

Cab Tractor

A—Step
B—Handle

Using Step

Step (A) is located on the left side of machine. Use step for entering and exiting the operator station.

Using Left Side Door (Tractor with Cab)

To enter cab, press button on handle (B) and open door. Close door until door locks in closed position.

To exit cab, push lever on inside of door handle and open door.

Emergency Exit

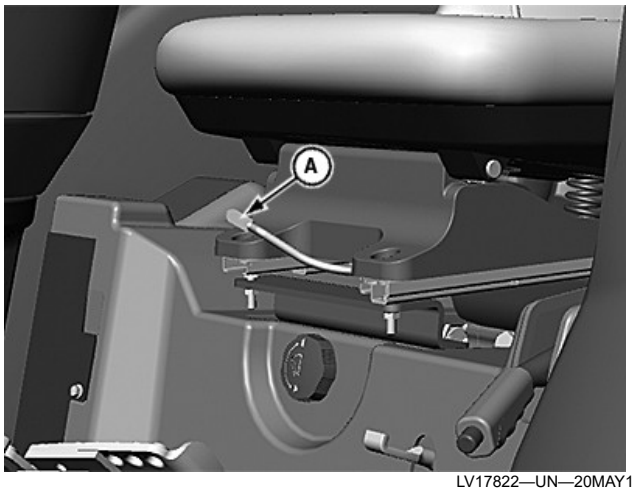
In an emergency situation, open glass panel on right side of cab to exit.

UP00731,00003D8-19-28AUG17

Adjusting Seat

CAUTION: To avoid accidents, adjust seat before driving.

M—Model Open Station



LV17822—UN—20MAY13

M—Model

A— Adjustment Lever

Adjust to each operator's personal preference.

Forward or Backward: Slide adjustment lever (A) to the left to move seat to desired position.

R—Model Open Station

LV21354—UN—14MAR14

R—Model

A—Weight Adjustment Knob
B— Adjustment Lever
C—Swivel Control Lever

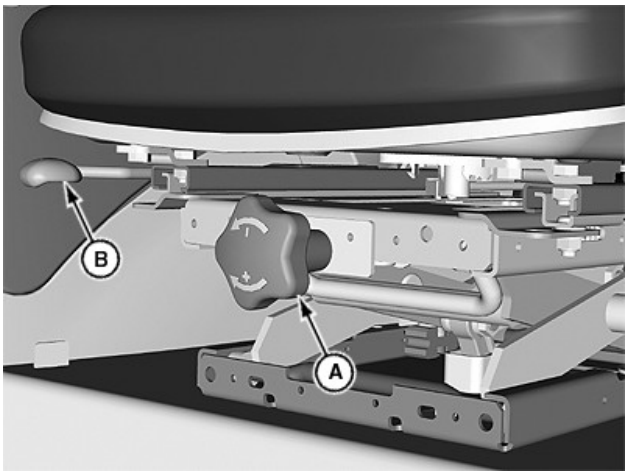
Adjust to each operator's personal preference; there are three available seat adjustments:

Weight: While seated, turn weight adjustment knob (A) to adjust seat travel.

Forward or Backward: Pull adjustment lever (B) forward to move seat to desired position.

Swivel: Lift swivel control lever (C) up to turn seat.

Standard Seat Adjustment—Cab



LV19988—UN—27NOV13

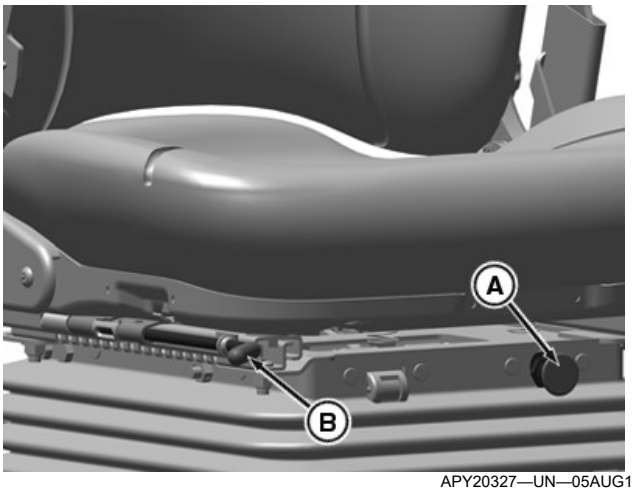
A—Weight Adjustment Knob
B— Adjustment Lever

Adjust to each operator's personal preference; there are two available seat adjustments:

Weight: Turn knob (A) clockwise or counterclockwise to reach desired suspension travel for operator weight. Adjust so seat does not bottom out when properly adjusted.

Forward or Backward: Lift adjustment lever (B) to move seat to desired position.

Deluxe Seat Adjustment—Cab



APY20327—UN—05AUG19

A—Weight Adjustment Knob
B— Adjustment Lever

Adjust to each operator's personal preference; there are two available seat adjustments:

Weight: While seated with the engine running, pull weight adjustment knob (A) out to increase air pressure. Push adjustment knob in to decrease air pressure. Release knob to lock in position.

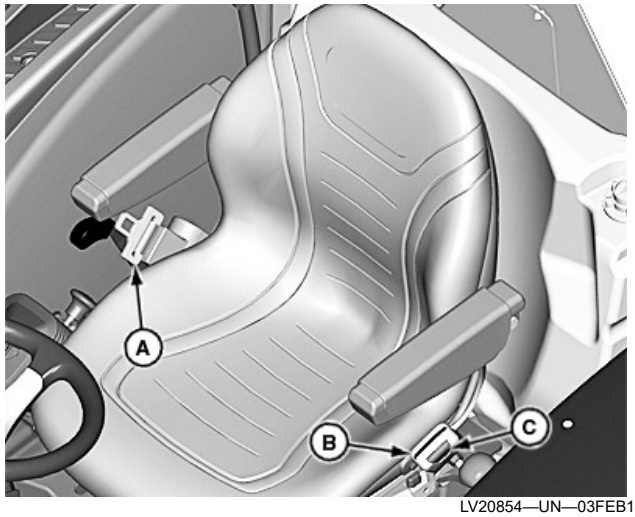
Forward or Backward: Lift adjustment lever (B) up to move seat to desired position.

PS75950,0000896-19-05AUG19

Using Seat Belt

CAUTION: Avoid injury! Always wear seat belt when operating machine with non-folding roll-over protective structure (ROPS). Do not jump from machine if machine tips.

Fasten Seat Belt



LV20854—UN—03FEB14

A—Seat Belt
B—Latch
C—Button

1. Extend self-retracting seat belt (A) and insert into latch (B) on opposite side of seat. Seat belt is self-retracting and will automatically adjust to fit operator.

Release Belt

1. Press red button (C) on latch (B) to release seat belt end.

KN52281,1004B8E-19-27JAN14

Raising and Lowering Roll-Over Protective Structure (ROPS)

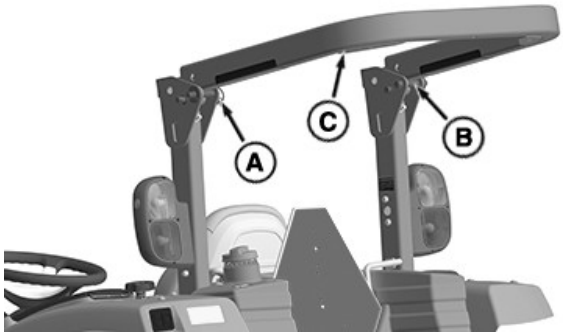
CAUTION: Avoid injury! Always wear seat belt when operating machine with folding roll-over protective structure (ROPS) in upright position. Do not jump from machine if machine tips.

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.

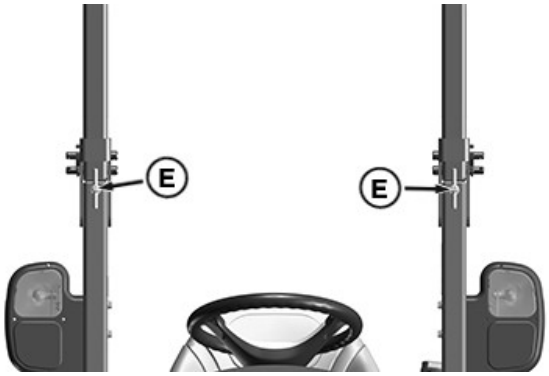
CAUTION: If canopy or sunshade is attached to the ROPS structure, the weight MUST be limited to 45 kg (100 lb.) or less.

NOTE: When removing drilled pin (B) from the ROPS be careful not to loose ROPS pin isolator(D).

LV28675—UN—14JUN17



LV28717—UN—14JUN17



LV28718—UN—14JUN17

A—Spring Locking Pin
B—Drilled Pin
C—ROPS Crossbar
D—ROPS Pin Isolator
E—Adjustment Screw

Lowering ROPS Crossbar

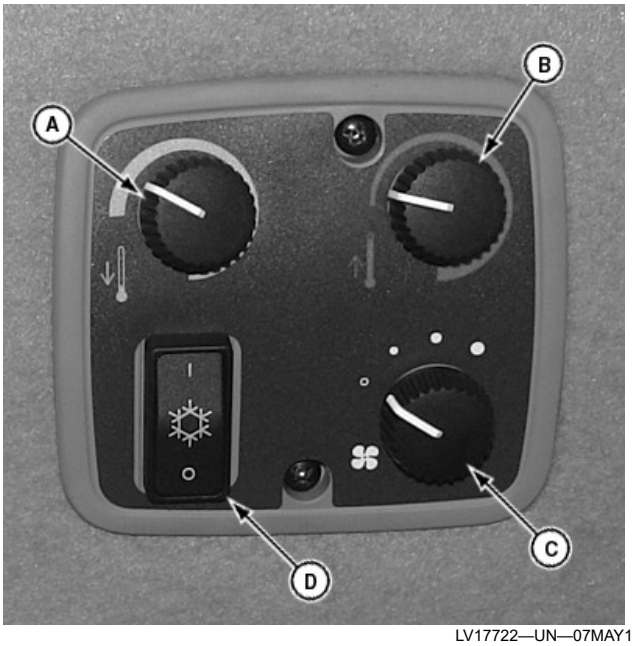
1. Loosen the adjustment screw (E) on each side of the ROPS
2. Remove spring locking pin (A) and drilled pin (B) on each side of the ROPS.
3. Install drilled pins (B) and spring locking pins (A) on each side of the ROPS in the rear hole.
4. Carefully lower ROPS crossbar (C) onto drilled pins (B).

Raising ROPS Crossbar

1. Carefully raise ROPS crossbar (C) to the operating position.
2. Align crossbar bracket holes with support bracket holes on each side of the ROPS.
3. Remove spring locking pins (A) and drilled pins (B) on each side of the ROPS.
4. Install drilled pins (B) and spring locking pins (A) to lock crossbar (C) in the raised position.
5. Retighten the adjustment screw (E) on each side of the ROPS

CM74493,000000D-19-14JUN17

HVAC Temperature Control—Cab



LV17722—UN—07MAY13

A—Air Conditioner Temperature Control Knob
B—Heater Temperature Control Knob
C—Blower Speed Knob
D—ON/Off Switch

Push top half of ON/Off switch (D) to turn air conditioning ON, and push bottom half to turn it OFF.

Turn air conditioner temperature control knob (A) to adjust air conditioner temperature.

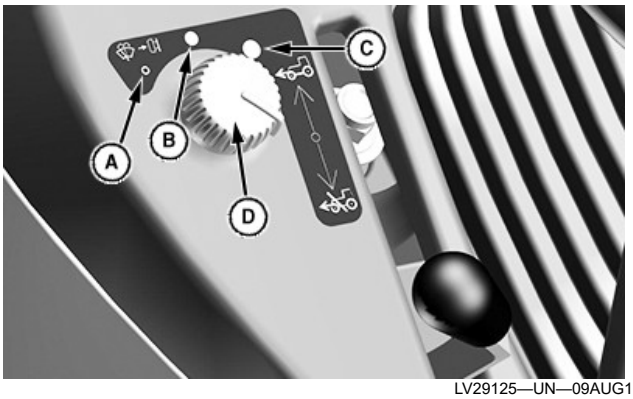
Turn heater temperature control knob (B) to adjust heater temperature.

Turn blower speed knob (C) to adjust blower speed.

KN52281,1004855-19-18NOV13

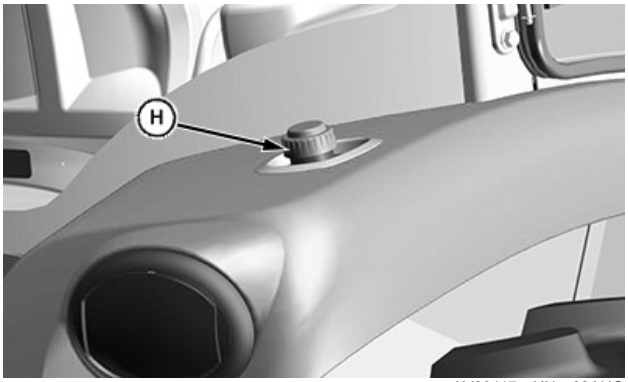
Using Windshield Wiper and Washer—Cab

Front Wiper



LV29125—UN—09AUG17

LV19637—UN—05NOV13



LV29117—UN—09AUG17

A—Off
B—Slow
C—Fast
D—Wiper Switch Knob
E—Wash
F—On
G—Off
H—Reservoir

NOTE: The front wiper will return to the park position when it is switched off.

The front wiper switch has three positions:

- OFF (A)
- SLOW (B)
- FAST (C)

Depress the wiper switch knob (D) to activate the front washer:

Rear Wiper (Optional)

NOTE: The rear wiper will stop in any position when it is switched off.

The rear wiper switch has three positions.

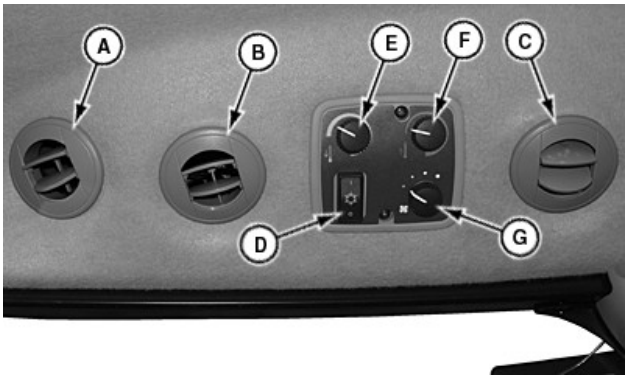
- WASH (E)—Hold top of switch down to activate washer.
- ON (F)
- OFF (G)

Filling Washer Fluid Reservoir

Washer fluid reservoir (H) is located at rear of machine. Fill reservoir with non-freezing windshield washer fluid.

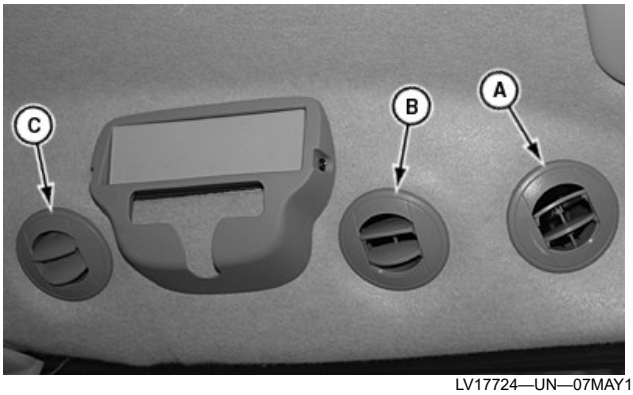
UP00731,00003DF-19-09AUG17

Defrost Windshield and Side Glass—Cab



LV17723—UN—07MAY13

Right Side



LV17724—UN—07MAY13

Left Side

A—Front Vents
B—Middle Vents
C—Rear Vents
D—On/Off Switch
E—Air Conditioner Temperature Control Knob
F—Heater Temperature Control Knob
G—Blower Speed Knob

1. Aim two front vents (A) toward windshield.
2. Aim middle vent (B) toward side window.

NOTE: Closing middle and rear vents (C) helps clear windshield faster.

3. Press top half of On/Off Switch (D) and turn air conditioner temperature control knob (E) to full counterclockwise position.
4. Turn heater temperature control knob (F) clockwise to obtain desired temperature.
5. Adjust blower speed knob (G) to desired speed.

KN52281,1004856-19-18NOV13

Using Radio—Cab

LV21361—UN—14MAR14

Radio Shown May Be Different

A—Tray

The radio is mounted in the headliner of the cab. A tray (A) is provided in the radio bezel that is used for storage of an iPod® or other mobile digital device (not provided). Refer to the operator's manual supplied by the radio manufacturer for operating instructions.

KN52281,10048FF-19-17MAR14

Using Rear Window—Cab

LV17730—UN—09MAY13

A—Latch

Opening and Closing Rear Window

IMPORTANT: Avoid damage! Check to be sure 3-point hitch arms and attached rear implements are out of the way before opening the rear window.

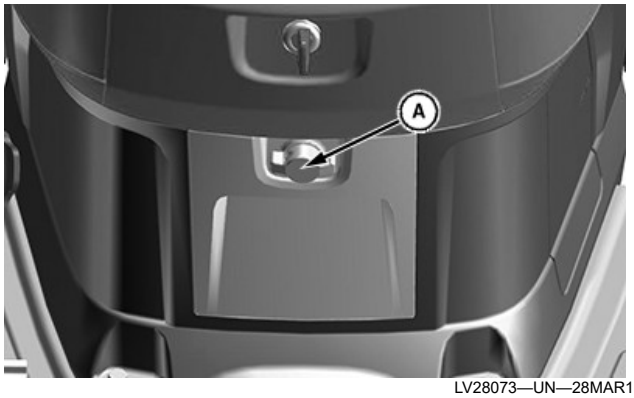
Release latch (A) on inside of rear window and push window out to open. Pull window in to close and secure latch.

Emergency Exit

Exit through rear window if cab doors are blocked in an emergency.

KN52281,1004857-19-29JUL13

Using Toolbox—If Equipped



LV28073—UN—28MAR17

A—Toolbox Latch

Turn toolbox latch (A) clockwise to open.

UP00731,000029E-19-28MAR17

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

Transporting Machine

Driving 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 is recommended when traveling on public roads unless prohibited by state or local regulations. An implement safety lighting kit is available from your 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 flashing 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.
- Adjust tread width position of rear wheels to provide maximum stability.
- If equipped, disengage the MFWD to reduce tire wear.
- Never coast machine downhill.

KN52281,1004BC1-19-04MAR14

Pushing or Towing Machine

CAUTION: Avoid injury! Never tow machine faster than 16 km/h (10 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 off position.
2. Disengage the differential lock.
3. Disengage park brake.
4. Move transmission to neutral position:
   - PRT—Depress clutch pedal completely and move the transmission gear and range shift levers to the N (neutral) position. Move the reverser lever to the N (neutral) position.
   - HST—Move the range shift lever to the N (neutral) position.
5. Disengage the MFWD.

KN52281,1004BC2-19-30JAN14

Towing 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 which may be lower:

- **If towed equipment does not have brakes, do not travel more than 32 km/h (20 mph) and 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 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 machine 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 drawbar.
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, make sure speed is low enough to control machine without having to use the brake pedal to brake the machine and any installed implements.

UP00731,00002E9-19-25AUG16

Safety Chain

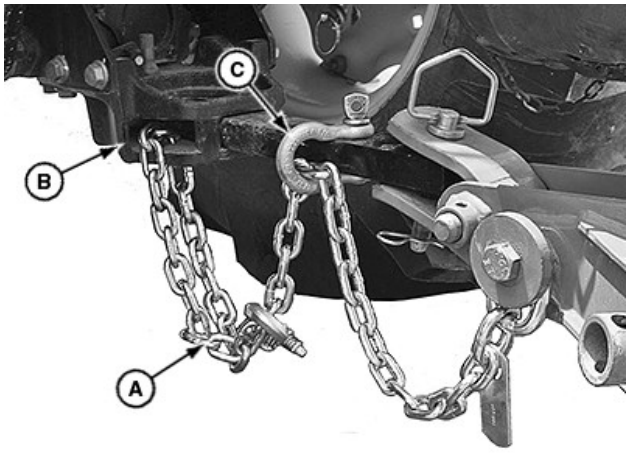
CAUTION: Avoid injury! Hitch towed loads only to the drawbar to avoid rearward upset. Do not use the safety chain for towing loads.

IMPORTANT: Avoid damages! Secure the towed load to the drawbar. The safety chain is designed to help control the towed load in case of separation from the drawbar.

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

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

Do not use an intermediate support as the primary attaching point.



LV17806—UN—15MAY13

A—Safety Chain
B—Attachment Point
C—Intermediate Support

1. Attach safety chain (A) to attachment point (B) and to towed load. Provide only enough slack to permit turning.
2. Install additional intermediate support point (C) for chain on drawbar to reduce slack in chain when necessary.
3. Remove safety chain and store when not in use.

UP00731,000020F-19-24AUG16

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.

KN52281,1003F63-19-15JAN19

Prepare Fuel and Engine For Storage

Fuel:

If you have been using Stabilized Fuel, add stabilized fuel to 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: Try to anticipate the last time the machine will be used for the season so very little fuel is left in the fuel tank.

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 carburetor or 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 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 fuel system.
7. Turn key to OFF position

Engine:

Engine storage procedure should be used 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 engine air intake screen.
4. Clean the engine and engine compartment.
5. Remove battery.
6. Clean the battery and battery posts. Check the electrolyte level on batteries requiring maintenance.
7. Close fuel shut-off valve, if your machine is equipped.
8. Store the battery in a cool, dry place where it will not freeze.

NOTE: The stored battery should be recharged 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.

KN52281,1003F64-19-23AUG12

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.

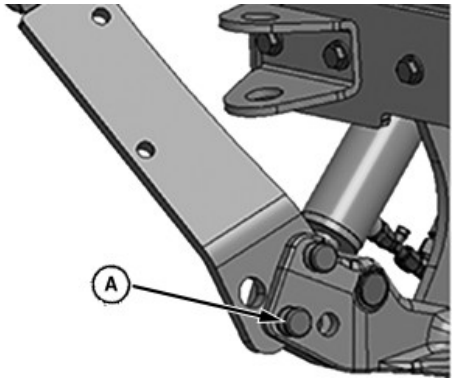
KN52281,1003F65-19-29NOV16

Placing Front Hitch Lift Arms in Storage Position—Category 1—If Equipped

Lift arms maybe placed into a storage position when hitch is not in use. To place lift arms into storage position:

NOTE: Attaching implement to front hitch while lift arms are in storage position may result in damage. Move arms to operating position before attaching implement.

1. After implement is removed, raise hitch lift frame to full height.
2. Lock front hitch into position using lock out valve supplied with hitch.



LV23649—UN—07JAN15

A—Lift Pin

3. Remove lower lift arm pin from lift frame and rotate lift arm. Align rear lift arm hole with forward lift arm hole in lift frame Insert lift pin (A) in forward hole. Repeat for opposite side lift arm.

UP00731,00002F7-19-04MAR15

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.

UP00731,0000223-19-29NOV16

Maintenance Interval Chart—Daily to Every 400 Hours

Item	After First 10 Hours	Every 10 Hours or Daily	Every 50 Hours	Every 100 Hours	Every 200 Hours	Every 400 Hours
Check cab rollover protection system mounting hardware torque.	•					
Check windshield wiper arm mounting hardware torque.	•					
Check wheel bolt torque.	•				•	
Test safety systems.		•				
Check engine coolant level. Refill with correct coolant and conditioner as required.		•				
Grease trunnions when used in wet land applications.		•				
Check engine oil level.		•				
Check transmission oil level.		•				
Check air filter rubber dust valve.		•				
Check front axle oil level.			•			
Lubricate machine.			•			
Check cab protection system mounting hardware torque.			•			
Clean or replace cab air filters.			•			
Check hardware torque on front hitch (If equipped).			•			
Check front hitch hydraulic connections for leaks.				•		
Change engine oil and filters.						•
Check and adjust alternator belt/fan.					•	
Check and adjust air conditioner compressor belt (if equipped).					•	
Check air restriction indicator light.					•	
Change transmission oil and filters.[a]						•
Replace front PTO gearbox oil (JD20D) and oil filter, if equipped.						•

Maintenance Interval Chart — Daily to Every 400 Hours

[a] Transmission oil can be changed every 1200 hours or 3 years if the specific requirements are met, see Transmission Maintenance for additional information.

JC48530,00000AE-19-25OCT19

Maintenance Interval Chart—Every 400 Hours or Annually to Every 6000 Hours

Item	Every 400 Hours or Annually	Every 600 Hours	Yearly	Every 1000 Hours	Every 2000 Hours or Annually [a]	Every 6000 Hours/Six Years[a]
Replace primary fuel filter. Drain water and sediment from fuel sediment bowl, and service water separator.	•					
Replace final fuel filters.	•					

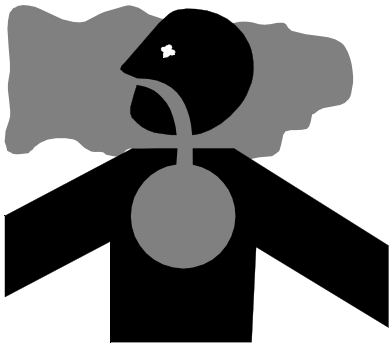
Item	Every 400 Hours or Annually	Every 600 Hours	Yearly	Every 1000 Hours	Every 2000 Hours or Annually [a]	Every 6000 Hours/Six Years[a]
Service air filter element, intake, hoses, and clamps. Replace as required.		•				
Change front axle oil		•				
Check axle thrust bolt torque		•				
Check brake adjustment.		•				
Change engine oil and filter if less than 400 hours of operation.			•			
Drain water from fuel tank and replace fuel filter			•			
Check all hoses and clamps			•			
Inspect air intake system hoses and connections each time the air filter is changed.			•			
Check wheel bolt torque.			•			
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 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™ II						•

Maintenance Interval Chart — 400 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 ™.

JC48530,00000AF-19-10FEB20

Test Safety Systems



LVAL38264—UN—21AUG12

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.**

The safety systems installed on your machine should be checked before each machine use. Be sure you have read the machine operator manual and are completely 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.

KN52281,1003EAD-19-22AUG12

Test the Neutral Start Switch (PowrReverser Only)

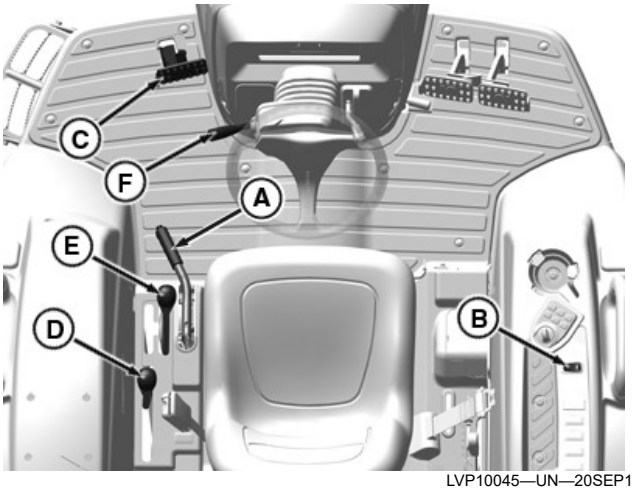
1. Sit on operator's seat.
2. Disengage PTO.
3. Move the transmission range shift lever to the H (high) or L (low) position.
4. Turn key switch to START position.

   Result: Engine must not crank.

JC48530,00000A3-19-26SEP19

Testing the Seat Switch

PowrReverser Transmission



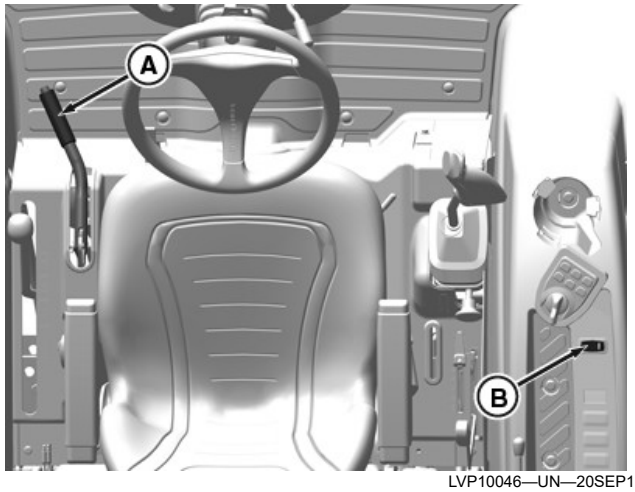
LVP10045—UN—20SEP19

A—Park Brake
B—PTO Switch
C—Clutch Pedal
D—Transmission Range Shift Lever
E—Transmission Gear Shift Levers
F—Reverser Lever

1. Sit on operator's seat.
2. Lock park brake (A).
3. Depress clutch pedal (C) and move the transmission range shift lever (D), transmission gear shift levers (E), and reverser lever (F) to the N (neutral) position.
4. Start engine.
5. Engage the PTO.
6. Raise up slightly from operator's seat. Do not dismount machine.

   Result: PTO will disengage and engine will remain running.

Hydrostatic Transmission



LVP10046—UN—20SEP19

A—Park Brake
B—PTO Switch

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

   Result: PTO will disengage and engine will remain running.

JC48530,00000B0-19-26SEP19

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.

KN52281,1003EA4-19-15JAN19

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.

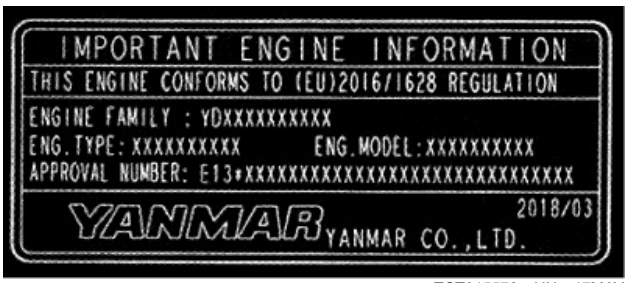
2. Use automotive polishing compound to remove surface scratches.
3. Apply wax to the entire surface.

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

Carbon Dioxide Emissions (CO_2)



TCT015573—UN—17MAY18

To identify the carbon dioxide (CO_2) output, locate the engine emissions label. Find the appropriate family on the emissions label and reference the chart.

Engine Family	CO_2 Output
YD099PNLNV2A	1048 g/kWh
YD085PNLNV2A	995 g/kWh
YD112PNLNV2A	932 g/kWh
YD127PNLVN2A	1017 g/kWh
YD164DNMNV2B	839 g/kWh
YD219DNCDV3A	835 g/kWh
YD209DTCDV4A	837 g/kWh
YD209DHCDV4A	756 g/kWh
YD332DNCDV4A	792 g/kWh
YD332DTCDV4A	738 g/kWh
YD305DHCSV5A	732 g/kWh

This CO_2 measurement results from testing over a fixed test cycle under laboratory conditions a(n) (parent) engine representative of the engine type (engine family) and shall not imply or express any guarantee of the performance of a particular engine.

UP00731,0000930-19-24SEP19

Emissions Performance and Tampering

Operation and Maintenance

The engine, including the emissions control system, shall be operated, used, and maintained in accordance with the instructions provided in this manual to maintain the emissions performance of the engine within the requirements applicable to the engine's category/ certification.

Tampering

No deliberate tampering with or misuse of the engine emissions control system shall take place; in particular with regard to deactivating or not maintaining an exhaust gas recirculation (EGR) or a DEF dosing system. Tampering with an engine's emissions control system will void the European Union (EU) type approval and applicable emissions-related warranties.

DX,EMISSIONS,PERFORM-19-12JAN18

Diesel Fuel

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

Consult your local fuel distributor for properties of the diesel fuel in your 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 may cause 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 fuel sulfur content must comply with all existing emissions regulations for the area in which the engine operates.
- Use only ultra low sulfur diesel (ULSD) fuel with a maximum of 0.0015% (15mg/kg) sulfur content.

IMPORTANT: Avoid damage! 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.

Use of B6-B20 fuel will require special procedures for fuel handling and machine storage.

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 will also form. The gel and flakes will quickly plug fuel filters and damage fuel injectors and fuel pumps.

- Fill the fuel tank at the end of each day's operation to prevent water condensation and freezing during cold weather.
- 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.

UP00731,0000023-19-06SEP18

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.

Fill the fuel tank at the end of each day's operation to prevent water condensation and freezing during cold weather.

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 may require more frequent replacement due to premature plugging.

Check engine oil level daily prior to starting engine. A rising oil level may indicate fuel dilution of the engine oil.

IMPORTANT: The fuel tank is vented through the filler cap. If a new filler cap is required, always replace it with an original vented 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. Keeping the free water drained and treating the bulk fuel storage tank quarterly with a maintenance dose of a biocide will prevent microbial growth. Contact your fuel supplier or John Deere dealer for recommendations.

DX,FUEL4-19-13JAN18

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.

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.

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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.

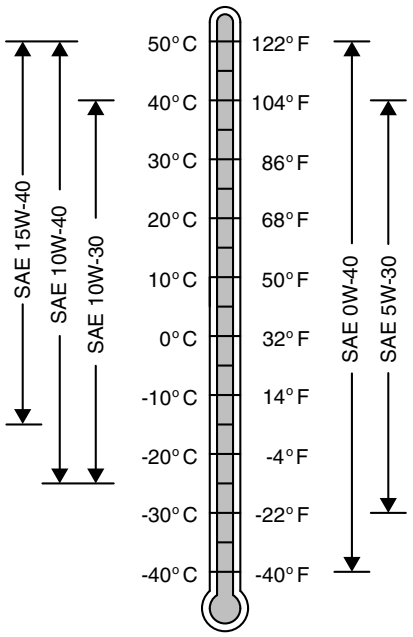
Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

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.

DX,ALTER-19-13JAN18

Engine Oil



TS1691—UN—18JUL07

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:

- John DeerePlus-50™ II

Plus-50 is a trademark of Deere & Company

- John DeereTorq-Gard™ Supreme

Other oils may be used if John Deere oils are not available, provided they meet one of the following specifications:

- API Service Classification CJ-4, or CK-4
- ACEA Specification E6 or E9
- JASO Specification DH-2

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

UP00731,1004800-19-12JAN17

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:

- 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.**

UP00731,0000022-19-17JAN19

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.

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Cool-Gard is a trademark of Deere & Company

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.

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

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COOL-GARD is a trademark of Deere & Company

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.

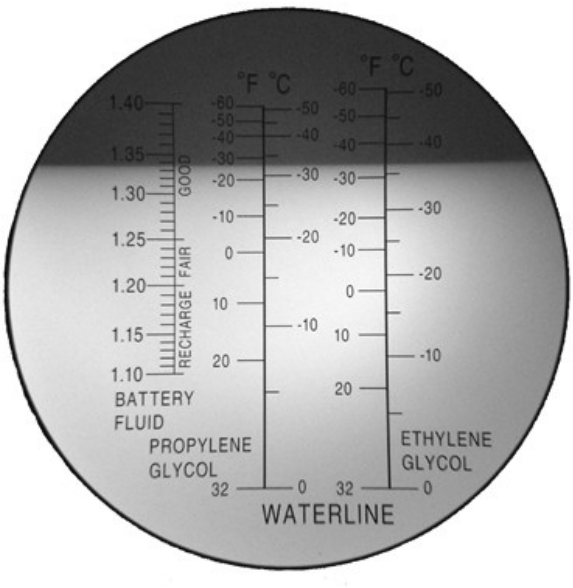
Contact your John Deere dealer for more information on coolant analysis.

DX,COOL9-19-11APR11

Testing Coolant Freeze Point

TS1732—UN—04SEP13

SERVICEGARD™ Part Number 75240



TS1733—UN—04SEP13

Image with a Drop of 50/50 Coolant Placed on the Refractometer Window

The use of a handheld coolant refractometer is the quickest, easiest, and most accurate method to determine coolant freeze point. This method is more accurate than a test strip or a float-type hydrometer which can produce poor results.

A coolant refractometer is available through your John Deere dealer under the SERVICEGARD™ tool program. Part number 75240 provides an economical solution to accurate freeze point determination in the field.

To use this tool:

1. Allow cooling system to cool to ambient temperatures.
2. Open radiator cap to expose coolant.
3. With the included dropper, collect a small coolant sample.
4. Open the lid of the refractometer, place one drop of coolant on the window and close the lid.
5. Look through the eyepiece and focus as necessary.
6. Record the listed freeze point for the type of coolant (ethylene glycol coolant or propylene glycol) being tested.

DX,COOL,TEST-19-13JUN13

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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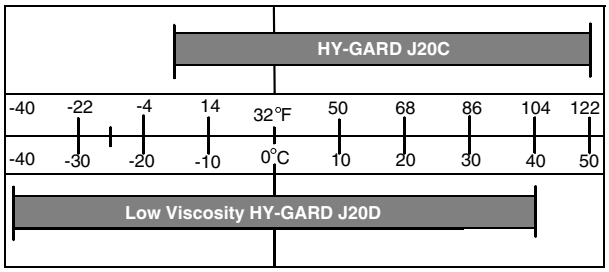

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Do not use type “F” automatic transmission fluid.

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.

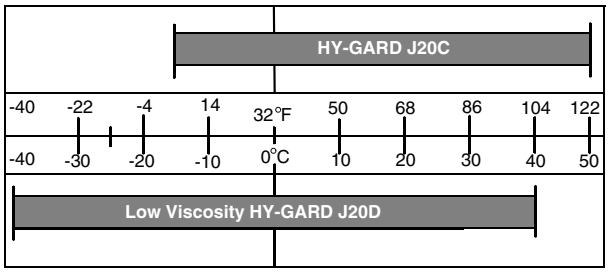
Use oil viscosity based on the expected air temperature range during the period between oil changes.

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.

KN52281,1003F22-19-22AUG12

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.
- Inspect air intake system hoses and connections each time the air filter is changed, or at a minimum yearly.
- Replace cab air filters.
- Replace light bulbs.
- Replace fuses.
- Clean and replace battery.
- Replace radiator hoses and clamps.
- Check and clean radiator fins.
- Check tire air pressure.
- Check primary fuel filter. Drain water and sediment from fuel sediment bowl, and service water separator.
- Check and adjust front wheel toe-in.
- Check and clean front grille and side screens.
- Check engine coolant level. Refill with correct coolant and conditioner as required.
- Clean debris from engine compartment.
- Monitor engine exhaust filter and perform cleaning as required.
- Keep exhaust vent area clean of debris and obstruction.
- Adjust all cables as required (cabs).

UP00731,0000261-19-17JUL17

Controls and Instruments Maintenance

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

UP00731,0000224-19-27JUN16

Engine Maintenance

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

Emissions Service Information

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.

Within the warranty period, John Deere will reimburse reasonable service costs incurred at service providers outside the John Deere authorized network only in an unsafe, emergency condition if an authorized John Deere dealer is not available and the failure does not arise from the owner's misuse or failure to perform required maintenance. An emergency situation exists under this section if, after 30 days, the authorized John Deere network is unable to perform the repairs or source replacement parts.

Emission Control System Certification Label

NOTE: Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by EPA and/or CARB authorized service centers. Contact your John Deere Retailer concerning emission controls and component questions.

The presence of an emissions label signifies that the engine has been certified with the United States Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB).

The emissions warranty applies only to those engines marketed by John Deere that have been certified by the EPA and/or CARB; and used in the United States and Canada in off-road mobile equipment.

Altitude Adjustment (Gasoline or Propane Converted Engines Only)

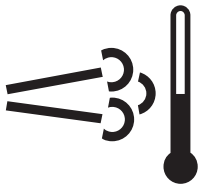
If your engine features a carburetor it is calibrated by the engine manufacturer and is not adjustable.

If your engine is operated at altitudes below 610 m (2,000 ft.), a high altitude carburetor jet kit is not required. If your engine is operated at altitudes above 610 m (2,000 ft.), a high altitude carburetor jet kit may be required for proper engine performance and emissions control. Operating the engine with the wrong carburetor configuration at a given altitude may increase the engine's emissions and decrease fuel efficiency and performance.

See a qualified service provider for details on jet kit requirements for your specific product.

UP00731,000092C-19-06AUG19

Aftertreatment Indicators Overview



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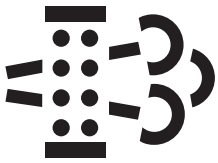
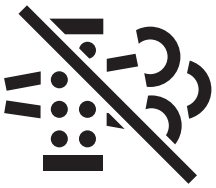
Engine Emissions Temperature Indicator



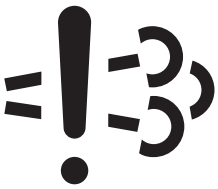
RG22489—UN—21AUG13

Exhaust Filter Indicator



RG22490—UN—21AUG13

Auto Cleaning Disabled Indicator



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Engine Emissions System Malfunction Indicator

RG22492—UN—21AUG13

Warning Indicator

RG22493—UN—21AUG13

Engine Stop Indicator

IMPORTANT: The operator will be informed by the operator warning system when the emission control system does not function correctly and/or an engine malfunction is detected by the engine control unit. Ignoring the operator warning signals will lead to an emission related derate, resulting in an effective disablement of non-road mobile machinery operation.

It is essential to take prompt action to rectify any incorrect operation, use or maintenance of the emissions control system in accordance with the rectification measures indicated by the warnings referenced below.

When engine emissions temperature indicator illuminates exhaust gas temperature is high, exhaust filter cleaning is in process. The machine can be operated as normal unless the operator determines the machine is not in a safe location for high exhaust temperatures and disables auto cleaning.

When the exhaust filter indicator illuminates the exhaust filter cleaning is in process, aftertreatment system has a fault, or the exhaust filter is in need of cleaning and the operator has disabled auto exhaust filter cleaning. If conditions are safe, the operator should enable the auto exhaust filter clean setting or perform manual service regeneration or follow DTC procedure.

The auto cleaning disabled indicator illuminates when the operator has engaged the request to disable the auto exhaust filter cleaning function. This icon remains illuminated until the operator re-engages automatic exhaust filter cleaning from the diagnostic gauge. Disabling auto mode is not recommended for any situation unless it is safety-related or if the fuel tank lacks the required fuel to complete the cleaning process.

The engine emissions system malfunction indicator illuminates when engine emissions are outside of normal operating range or engine emissions system fault. Follow DTC procedure or see your authorized servicing dealer.

When the engine emissions system malfunction indicator is combined with the warning indicator or engine stop indicator, engine performance is reduced by the ECU because the engine emissions are outside of normal operating range or engine emissions system fault. Follow DTC procedure or see your authorized servicing dealer.

UP00731,000092E-19-06AUG19

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.

UP00731,0000262-19-16MAR17

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

Checking Engine Oil Level

IMPORTANT: Avoid damage! Failure to check the oil level regularly could lead to serious engine problems if oil level is low:

- **Check oil level before operating.**

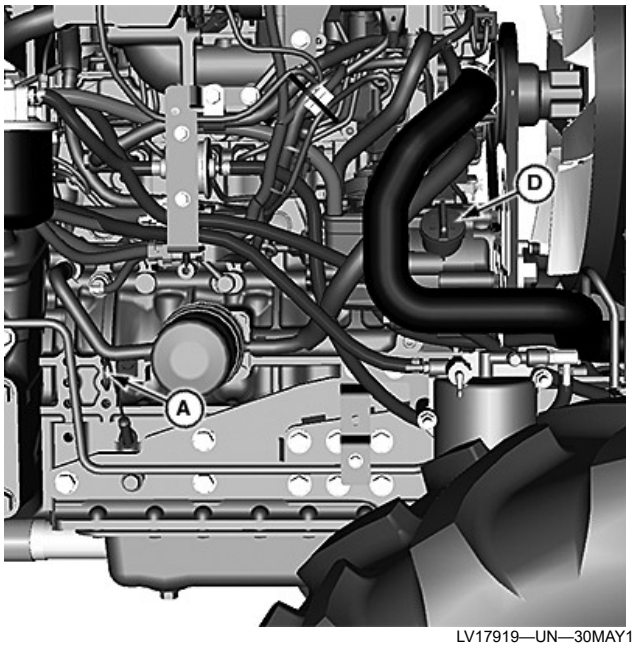
- **Check oil level when the engine is cold and not running.**
- **Keep level between the Full and the Add marks.**
- **Shut off engine before adding oil.**

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 machine parked on a level surface.

1. Park machine safely.

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



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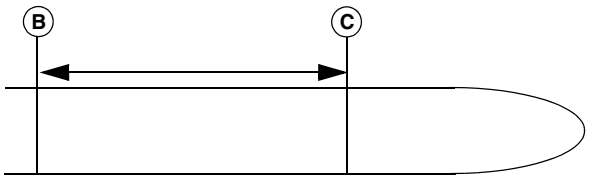

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A—Dipstick
B—Full Level
C—Add Level
D—Oil Fill Cap

2. Remove dipstick (A), located at the right side of the engine. Wipe with a clean cloth.
3. Install dipstick.
4. Remove dipstick.
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 (See Side Panel Removal and Installation in the Miscellaneous section).
   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 full level (B) on dipstick, drain to proper level.
8. Install right side panel.
9. Lower hood.

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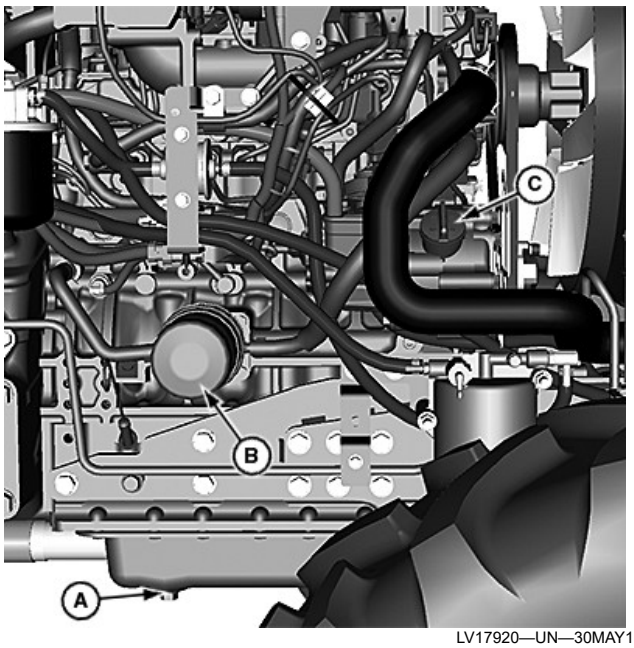
Changing Engine Oil and Filter



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

1. Run engine to warm the oil.
2. Park machine safely.
3. Remove right side panel.
4. Place drain pan under oil drain plug (A), located on underside of engine.
5. Remove drain plug.

6. Wipe dirt from around oil filter (B).
7. Turn filter counterclockwise to remove.
8. Put a light coat of clean engine oil on gasket of new filter.
9. Install replacement oil filter by turning filter clockwise until gasket contacts filter base. Tighten additional 1/2 turn.
10. Install drain plug. Do not overtighten.

Specification	
Drain Plug—Torque	54 N·m (40 lb·ft)

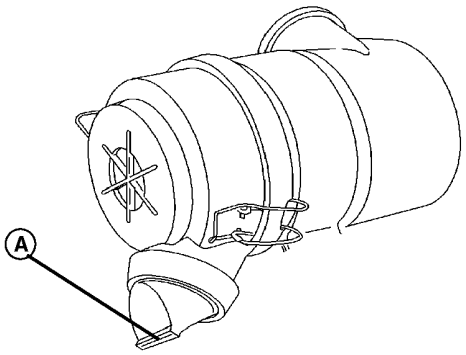
11. Remove oil fill cap (C).
12. Add engine oil to specification.
13. Install oil fill cap.
14. Start and run engine at idle to check for leaks.
15. Stop engine. Fix any leaks before operating.
16. Check engine oil level. Add oil if necessary.
17. Install right side panel.

KN52281,1004888-19-08SEP17

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

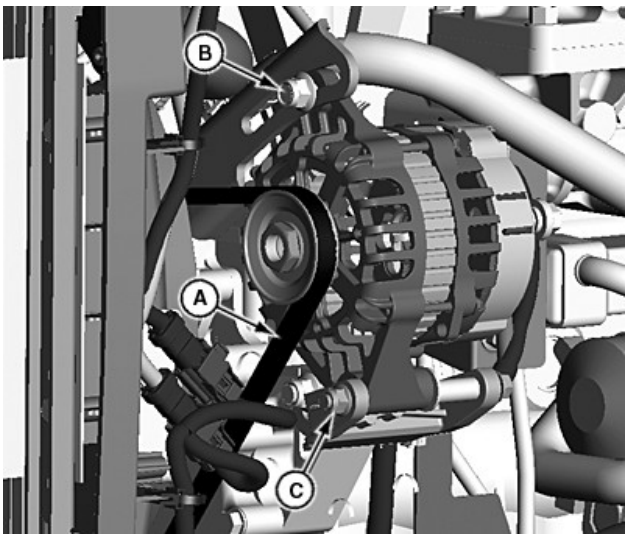
Servicing the Alternator Belt

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

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

Checking Belt Tension

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



LV17240—UN—26MAR13

A—Thumb Position
B—Adjusting Bolt
C—Pivot Bolt

5. 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).
6. Adjust belt tension if not within specifications.

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

Adjusting Belt Tension

1. Loosen adjusting bolt (B) and pivot bolt (C).
2. Apply outward pressure to alternator housing until tension is correct.
3. Tighten bolts (B and C).
4. Check belt tension.

5. Install left side panel.
6. Lower hood.

Replacing 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 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 fan and onto pulleys.
9. Apply outward pressure to 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.

KN52281,1004C1A-19-21DEC17

Servicing the Air Conditioner Belt—Cab

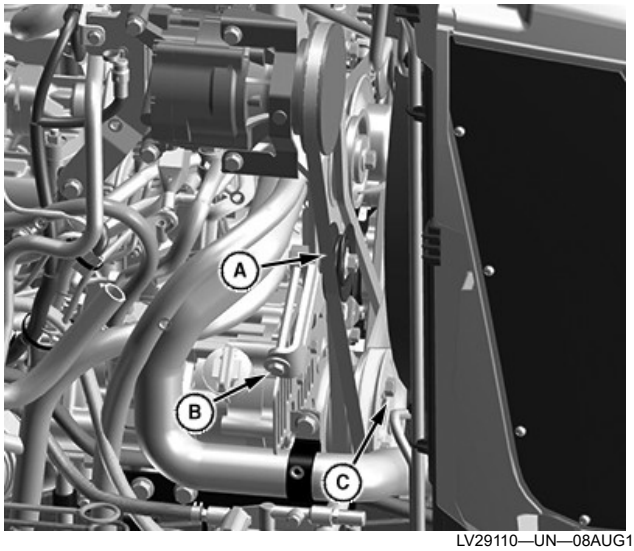
CAUTION: Avoid injury! Rotating parts can catch fingers, loose clothing, or long hair. Wait for engine and all moving parts to stop before leaving operator station to adjust or service machine.

NOTE: Front PTO needs to be removed when replacing belt. See authorized dealer for service if front PTO needs to be removed.

Equipment: JDG529 or JDST28 Belt Tension Gage.

Checking Belt Tension

1. Park machine safely. (See Parking Safely in the Safety section.)
2. Allow engine to cool.
3. Raise hood.
4. Remove right side panel. (See Removing and Installing Side Panels in the Miscellaneous section.)



LV29110—UN—08AUG17

Remove Belt

A—Belt
B—Adjusting Bolt
C—Adjustment Pulley Nut

5. Use belt tension gage or apply moderate thumb pressure to belt (A) halfway between the pulleys.
6. Adjust belt tension if not within specifications.

Specification	
Belt Tension—Force	75 LB (or 334 N)
Belt Deflection—Inward Pressure	9 mm (3/8 in.)

Adjusting Belt Tension

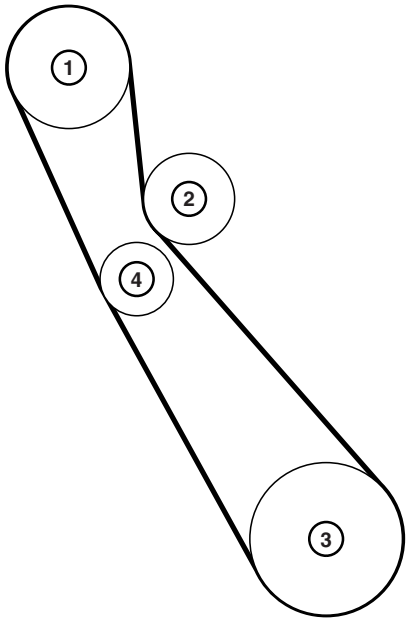
1. Loosen adjustment pulley nut (C).
2. Turn adjusting bolt (B) clockwise to tighten counterclockwise to loosen the air conditioner belt.
3. Adjust belt tension to specifications.
4. Tighten adjustment pulley nut (C).
5. Recheck belt tension.
6. Install right side panel.
7. Lower hood.

Replacing Belt

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

1. Park machine safely. (See Parking Safely in the Safety section.)
2. Allow engine to cool.
3. Raise hood.
4. Remove right side panel.
5. Loosen adjustment pulley nut (C).

6. Loosen adjusting bolt (B) to release tension on the belt.
7. Remove belt from air conditioning compressor pulley, idler pulley, and crankshaft pulley.
8. Install new belt in reverse order of removal.



LV19590—UN—30OCT13

Belt Routing

Belt Routing	
1	Air Conditioning Compressor Pulley
2	Idler Pulley
3	Crankshaft Pulley
4	Adjustment Pulley

NOTE: If necessary the idler pulley bolt can be loosened and the idler pulley moved inboard in the slot. After belt is positioned around pulleys, the idler pulley should be moved outboard to take up the belt slack, and the idler pulley bolt tightened.

9. Check belt tension (Refer to Adjusting Belt Tension in this section.)
10. Install right side panel.
11. Lower hood.

UP00731,00003D9-19-08AUG17

Clean Front Grille Screens

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

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

KN52281,1003F1B-19-22AUG12

Checking Engine Oil Level

IMPORTANT: Avoid damage! Failure to check the oil level regularly could lead to serious engine problems if oil level is low:

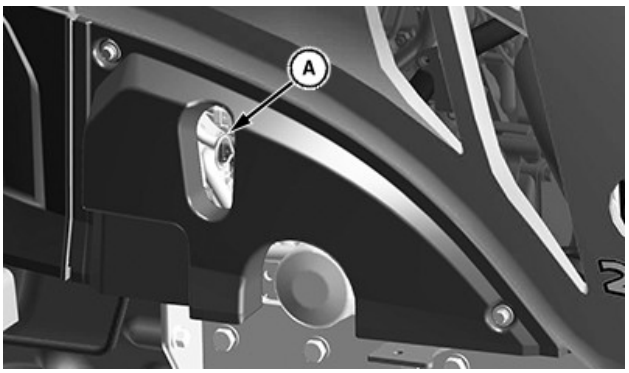
- **Check oil level before operating.**
- **Check oil level when the engine is cold and not running.**
- **Keep level between the Full and the Add marks.**
- **Shut off engine before adding oil.**

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 machine parked on a level surface.

1. Park the machine safely.

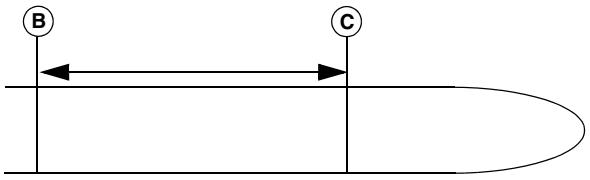
IMPORTANT: Avoid damage! Dirt and contamination can enter engine when checking oil level. Clean area around dipstick before loosening or removing.



LV25487—UN—01JUN16

A—Dipstick

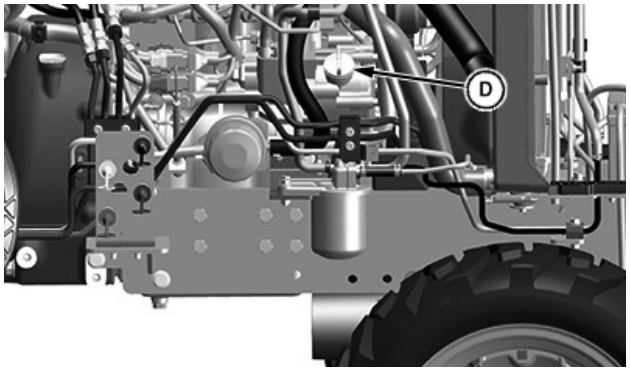
2. Remove dipstick (A), located at the right side of the engine. Wipe with a clean cloth.
3. Install dipstick.
4. Remove dipstick.



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.



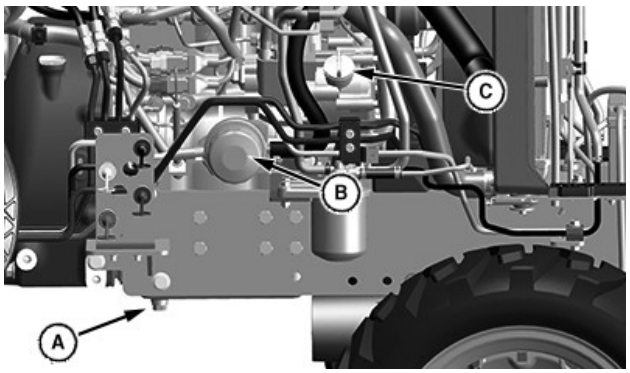
LV25489—UN—02JUN16

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 proper level.
8. Install right side panel.
9. Lower hood.

UP00731,00001AA-19-27JUL16

Changing Engine Oil and Filter



LV25488—UN—30JUN16

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	4.3 L (4.5 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.

UP00731,00001AB-19-13SEP16

Cleaning 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. Check front and side grille screens for dirt, grass clippings and debris.

2. Raise hood and clean screens with a brush or cloth.
3. Lower hood.

UP00731,00002A0-19-12JUL16

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.

UP00731,00002A1-19-16FEB17

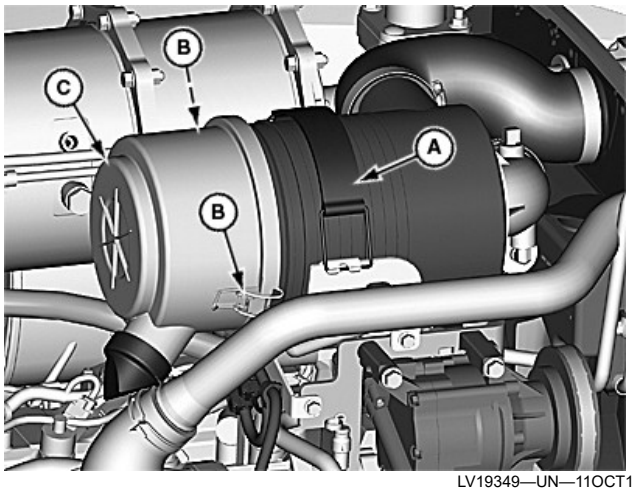
Servicing Air Filter Elements

CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids will be 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:

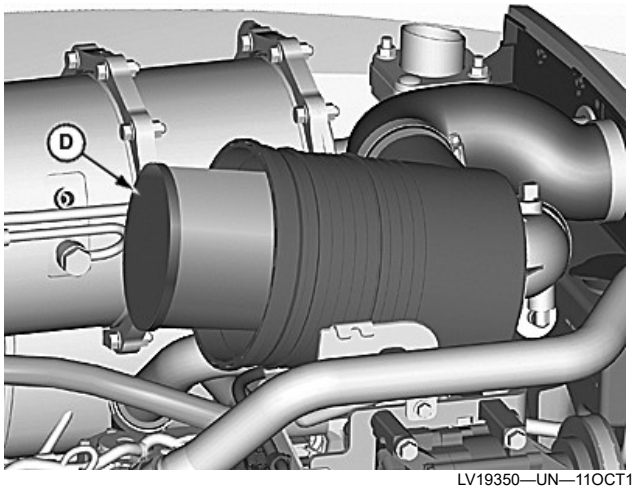
NOTE: All air filter assemblies are similar.

Servicing Primary Air Filter Element



LV19349—UN—11OCT13

4066 Shown; Others Similar



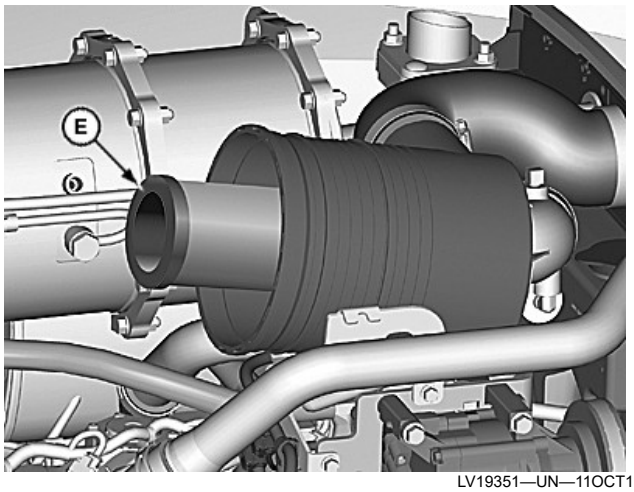
LV19350—UN—11OCT13

4066 Shown; Others Similar

A—Hold-Down Strap
B—Latches
C—Air Filter Canister Cover
D—Primary Filter Element

1. Park machine safely.
2. Allow engine to cool.
3. Raise hood.
4. Remove hold-down strap (A).
5. Tilt canister up, release latches (B), and remove air filter canister cover (C).
6. Remove and discard primary filter element (D). Clean out any dirt in canister, taking care not to damage secondary filter element. Replace with a new primary filter element.
7. Install air filter canister cover with rubber dust unloading valve pointing downward.
8. Secure latches.
9. Position canister back in place and install hold-down strap.
10. Check instructions molded into canister cover for proper installation.
11. Lower hood.

Servicing Secondary Air Filter Element



LV19351—UN—11OCT13

4066 Shown; Others Similar

E—Secondary Filter Element

IMPORTANT: Avoid damage! Secondary filter 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 filter elements immediately to prevent dust from entering air intake system.

1. Remove air filter canister cover.
2. Remove and discard primary filter element.
3. Remove and discard secondary filter element (E). Replace with a new secondary filter element.
4. Install new primary filter element.
5. Replace air filter canister cover.

6. Position canister back in place and install hold-down strap.
7. Lower hood.

KN52281,1004C17-19-19JUN17

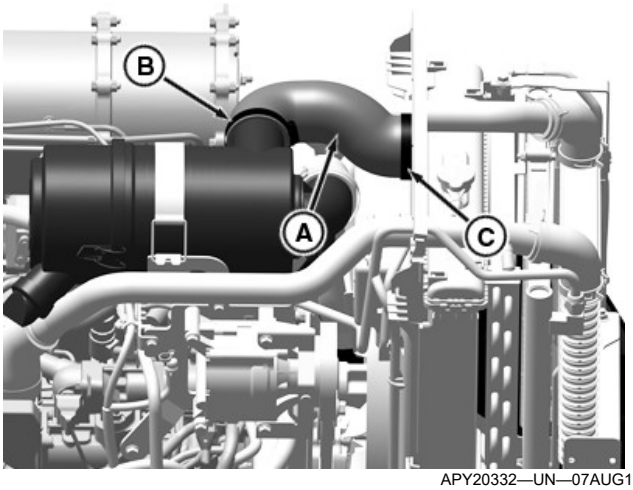
Checking Air Filter Intake Hose

NOTE: All air filter hoses are checked similarly.

1. Park machine safely.
2. Raise hood.

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

Visually inspect hose for cracks and wear. Squeeze hose to check for deterioration. Hose should not be hard and brittle, or soft or swollen. If one or more are present see your John Deere dealer.



APY20332—UN—07AUG19

A—Hose
B—Clamp
C—Clamp

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

PS75950,000089B-19-07AUG19

Exhaust Filter Maintenance and Service

IMPORTANT: Performing recommended exhaust filter cleaning will help to reduce ash build up and extend the life. Refer to the "Operating" section of the OM for exhaust filter cleaning directions.

See your John Deere dealer for exhaust filter maintenance. Ensure that exhaust filter cleaning has been performed first as this may resolve problems. If exhaust filter cleaning has been performed and the service exhaust filter indicator light (Stop and exhaust filter) on the dash turns on after a short period, exhaust filter service may be required.

The Exhaust Filter includes the Diesel Oxidation Catalyst (DOC) and Diesel Particulate Filter (DPF). The DPF retains residual ash, which is the noncombustible result of additives used in crankcase lubrication oils and the fuel. The exhaust filter provides many hours of maintenance free operation. At some point the exhaust filter will require replacement to remove the accumulated ash.

The exact number of hours of operation before replacement or service is required will vary depending upon the engine's power category, duty cycle and operating conditions, engine oil ash content, and fuel quality. Adhering to John Deere's recommended oil and fuel specifications will maximize the hours of operation before service is required.

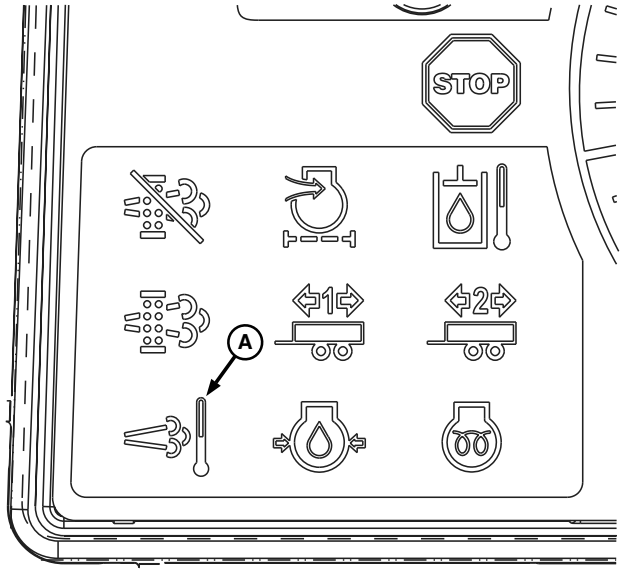
During normal equipment operation the DPF service interval will depend on the rate at which ash accumulates in it. An ECU will provide an alert when ash cleaning is required. This does not occur until at least 3,000 hours and may be longer depending on usage. As ash levels rise in the DPF, the capacity for soot storage is reduced and the back pressure of the exhaust system will rise more frequently. The exhaust filter indicator will indicate when cleaning or service is needed.

The removal and disposal of DPF ash must be done by a professional, see your John Deere dealer. Do not attempt to remove ash by using water or other chemicals. Removing ash by these methods may damage the material securing the DPF in its canister, resulting in the loosening of the DPF element in the canister and subjecting it to damage from vibration.

Failure to follow the approved ash removal methods may damage the exhaust filter resulting in potential denial of the Exhaust Filter emissions warranty. Take your machine to an authorized John Deere dealer for service.

UP00731,0000177-19-17OCT19

Automatic (AUTO) Exhaust Filter Cleaning



LV17670—UN—02MAY13

A—High Exhaust Temperature Indicator

Automatic exhaust filter cleaning is started when soot in the exhaust filter reaches a certain level. This occurs less frequently if the engine is operated for long periods under conditions where passive exhaust filter cleaning takes place. Automatic exhaust filter cleaning is initiated and performed without any intervention on the part of the operator.

If the system determines that soot buildup in the exhaust filter requires cleaning, an automatic cleaning is initiated and performed without any intervention on the part of the operator. High exhaust temperature indicator (A) remains illuminated during the exhaust filter cleaning.

Do not disable automatic exhaust filter cleaning unless it is absolutely necessary.

CAUTION: To prevent fires, be sure to routinely clear any combustible materials (crop debris, animal nests, etc.) from the area of the engine and exhaust filter. Exhaust filter cleaning uses extremely high temperature.

IMPORTANT: See also *Clean Exhaust Filter Safely* in the Safety section.

KN52281,1004A70-19-22OCT13

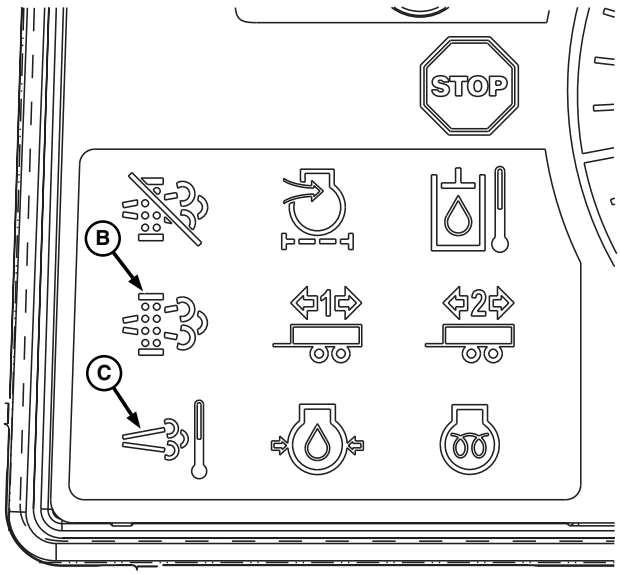
Disabled Exhaust Filter Cleaning

IMPORTANT: Under normal machine operation, the system is in automatic mode and requires minimal operator interaction.

If your vehicle must be used in a situation not suited for higher temperatures created during exhaust filter cleaning, the system can be temporarily disabled. Press exhaust filter disable switch (A) to disable exhaust filter cleaning mode. The LED above the switch will illuminate, indicating it is disabled.**Be sure to return to automatic exhaust filter cleaning mode as soon as possible** by pressing exhaust filter disable switch (A) again to avoid soot buildup in the exhaust filter.

LV17597—UN—21MAY13

Exhaust Filter Cleaning Switch



LV17598—UN—01MAY13

A—Exhaust Filter Disable Switch
B—Exhaust Filter Cleaning Indicator
C—High Exhaust Temperature Indicator

While in disabled mode, if the system determines that soot buildup in the exhaust filter requires cleaning, exhaust filter cleaning indicator (B) comes on. Press exhaust filter disable switch (A) to return to automatic mode.

Do not disable automatic exhaust filter cleaning unless it is absolutely necessary. If disabled mode is used frequently, the system will eventually activate a parked exhaust filter cleaning. This means that the engine performance is reduced and will not return to normal until a parked exhaust filter cleaning is performed.

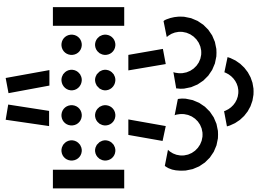
KN52281,1004A71-19-29OCT13

Parked Exhaust Filter Cleaning

IMPORTANT: If operator disregards indicators and continues to operate machine without allowing an automatic cleaning, engine performance is reduced. A parked exhaust filter cleaning procedure must be performed.

H94831—UN—13OCT09

Service Alert Indicator



H94828—UN—13OCT09

Exhaust Filter Cleaning Indicator

The following occurs when exhaust filter becomes restricted:

- Service alert and exhaust filter cleaning indicators (on dash) are illuminated.
- Engine power is reduced.

At this time, a parked exhaust filter cleaning is required.

Before a parked exhaust filter cleaning can be completed, the following criteria must be met:

- Set engine rpm at low idle.
- Coolant temperature **must** be above 60°C (140°F).
- Transmission **must** be in neutral.
- Zero ground speed commanded.
- Park brake **must** be engaged.
- PTO **must** be turned off.

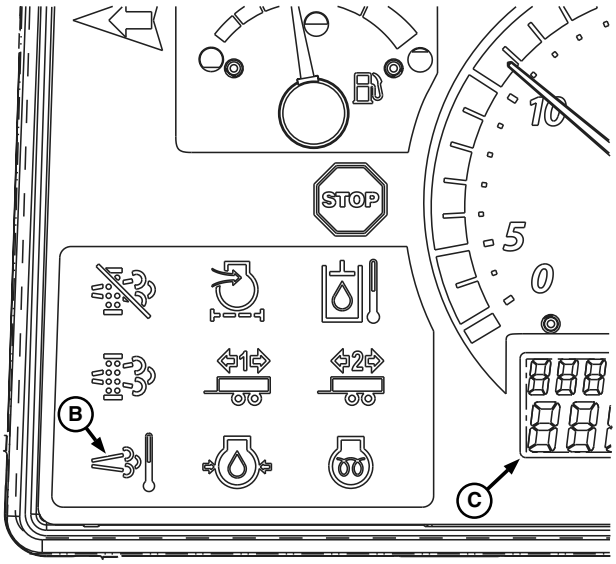
IMPORTANT: Select a suitable space to park the machine and lower all implements to the ground.

No other machine functions can be used while exhaust filter cleaning is taking place with the machine parked. Excluded from this are functions that are required for an emergency shutdown of the machine.

Do not start exhaust filter cleaning if the fuel gauge has been showing a low fuel level for a long time.

Only stop engine if absolutely necessary due to heat build up in the engine compartment.

LV17599—UN—29OCT13



LV17600—UN—01MAY13

A—Exhaust Filter Cleaning Switch
B—High Exhaust Temperature Indicator
C—Information Display
D—Filter Cleaning Disable Switch

1. Press and hold the exhaust filter cleaning switch (A) in the parked cleaning position for 5 seconds; LED above the switch will start blinking if all conditions are met. Release, then push for another 3 seconds; the icon should remain lit.

NOTE: If cancellation of a parked exhaust filter cleaning process is necessary, your best option is to push filter cleaning disable switch (D).

2. During the parked cleaning process, the high

exhaust temperature indicator (B) and the LED above the Exhaust Filter Cleaning Switch (A) illuminate.

3. The engine speed elevates to 2200 rpm.
4. When the parked cleaning process is complete, the LED above the Exhaust Filter Cleaning Switch turns off. High exhaust temperature indicator (B) remains on for 30 seconds after completion and the engine speed returns to low idle.

NOTE: If not returning machine to operation, allow engine time to return to normal operating temperature before stopping engine.

5. After high exhaust temperature indicator (B) turns off, the system defaults to automatic exhaust filter cleaning mode and machine can be operated as normal.

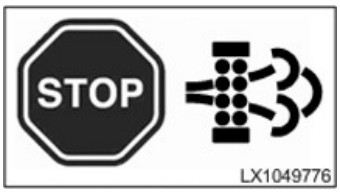
IMPORTANT: If operator disregards indicators and continues to operate machine without allowing a parked cleaning, engine performance is reduced. A service exhaust cleaning procedure by a John Deere dealer is required.

KN52281,1004A72-19-06NOV14

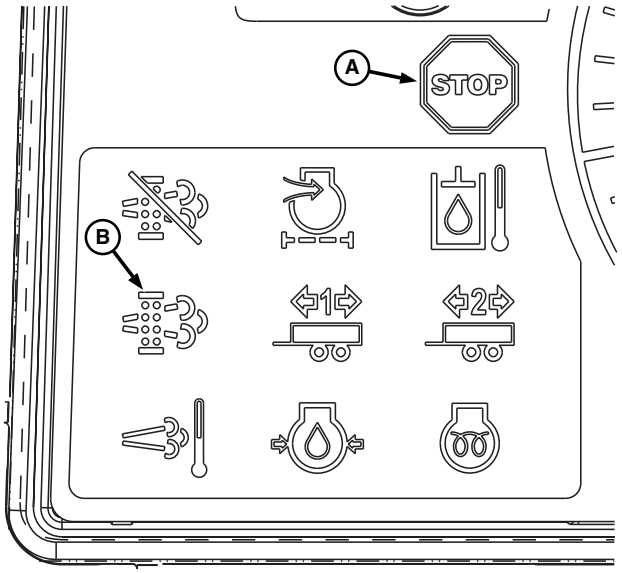
Service Exhaust Filter Cleaning

IMPORTANT: Repeated cancellation or ignoring indicators to perform a parked exhaust filter cleaning causes additional engine power limitations, which eventually lead to a dealer required service.

When STOP indicator (A) and exhaust filter cleaning indicator (B) are illuminated at the same time, contact your John Deere dealer.



LX1049776—UN—22JUL10



LV17601—UN—01MAY13

A—Stop Indicator
B—Exhaust Filter Cleaning Indicator

If level of soot at exhaust filter is extreme, the icon shown opposite appears and engine power is reduced. In this case, contact your John Deere dealer to service and clean the exhaust filter.

Automatic exhaust filter cleaning and parked exhaust filter cleaning are no longer possible at this time.

*NOTE: If the tractor is switched off after this icon appears, it will not reappear immediately if the engine is restarted, and the tractor is **briefly** capable of operating, albeit with reduced power. This action is intentional; the intention being to allow the dealer to perform service cleaning.*

Tips for avoiding service cleaning:

- Do not disable exhaust filter cleaning unless absolutely necessary.
- Avoid unnecessary idling.
- Do not interrupt cleaning process unless absolutely necessary.
- If possible, do not shut off the engine while the exhaust filter cleaning indicator light is on.
- Take note of information displayed for the operator, and act accordingly.

KN52281,1004A73-19-22OCT13

Checking and Cleaning Fuel Filter Sediment Bowl and Replacing Filter

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

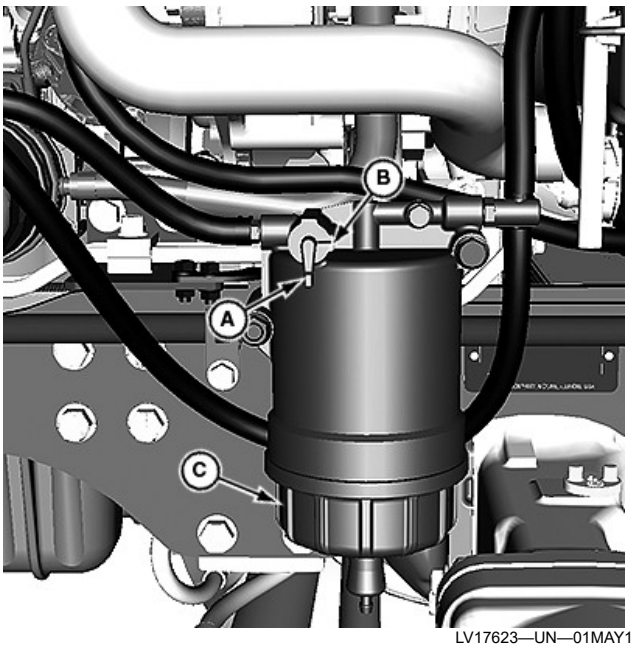
- **Do not smoke while handling fuel.**
- **Keep fuel away from flames or sparks.**

- **Shut off engine before servicing.**
- **Cool engine before servicing.**
- **Work in a well-ventilated area.**
- **Clean up spilled fuel immediately.**

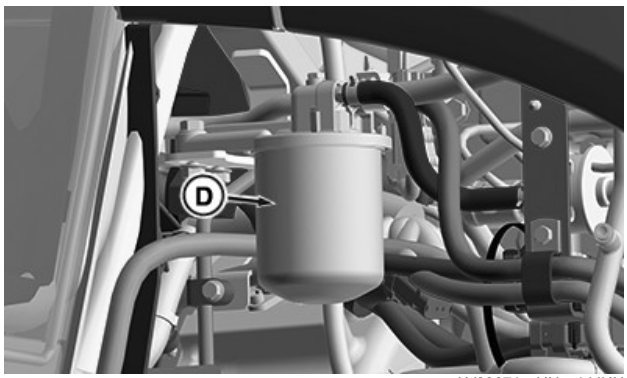
Checking Sediment Bowl

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.

Cleaning Sediment Bowl and Replacing Fuel Filter and Inline Fuel Filter



LV17623—UN—01MAY13



LV28671—UN—14JUN17

Fuel Filter

A—Fuel Shutoff Valve
B—Closed Position
C—Sediment Bowl
D—Fuel Filter

1. Move the fuel shutoff valve (A) to the closed position (B).
2. Position drain pan under fuel filter sediment bowl (C).
3. Turn sediment bowl counterclockwise to remove.
4. Remove and discard the fuel filter.
5. Clean bowl.
6. Install new filter to filter head.
7. Install sediment bowl.

NOTE: If just replacing the sediment bowl filter go to step 13

8. Lift the hood
9. Remove right side panel.
10. Position drain pan under fuel filter (A).
11. Wipe dirt from around filter.
12. Turn filter counterclockwise to remove.
13. Install replacement filter by turning filter clockwise until gasket contacts filter base. Tighten additional 1/2 turn.
14. Open fuel shutoff valve.

NOTE: Fuel system is self-bleeding.

15. Turn key to the ON position for 10—15 seconds before attempting to start; electric pump purges air from sediment bowl and the filter.
16. Start and run engine at idle to check for leaks.

KN52281,1004BE5-19-19JUN17

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

Service Cooling System Safely

LVAL38318—UN—21AUG12

CAUTION: Avoid injury! The radiator will be hot and can burn skin. Built-up pressure may cause explosive release of coolant when the radiator cap is removed:

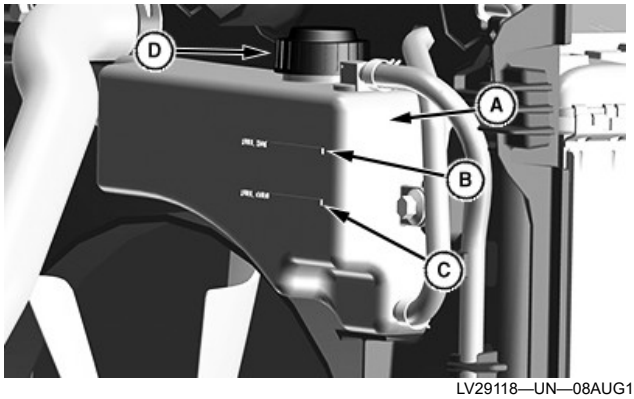
- **Shut off the engine and allow to cool.**
- **Do not remove the cap unless the radiator and the engine are cool enough to touch with bare hands.**
- **Slowly loosen the cap to the first stop to release all pressure. Then remove the cap.**

KN52281,100488B-19-30MAY13

Servicing Cooling System

Checking Cooling System

1. Park machine safely.
2. Allow engine to cool.
3. Raise hood.



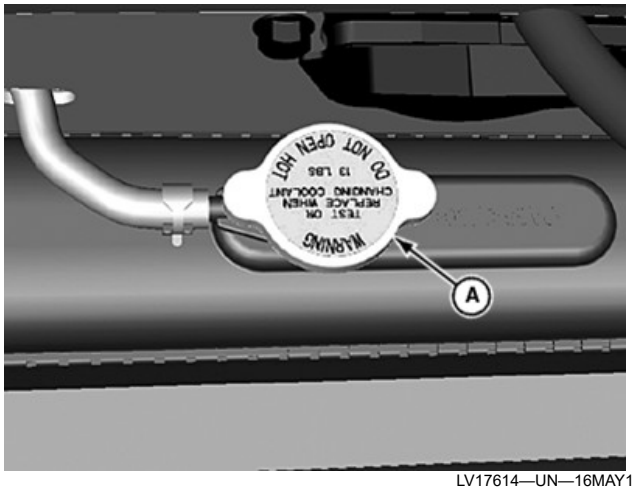
LV29118—UN—08AUG17

A—Recovery Tank
B—Full Line
C—Low Line
D—Tank Cap

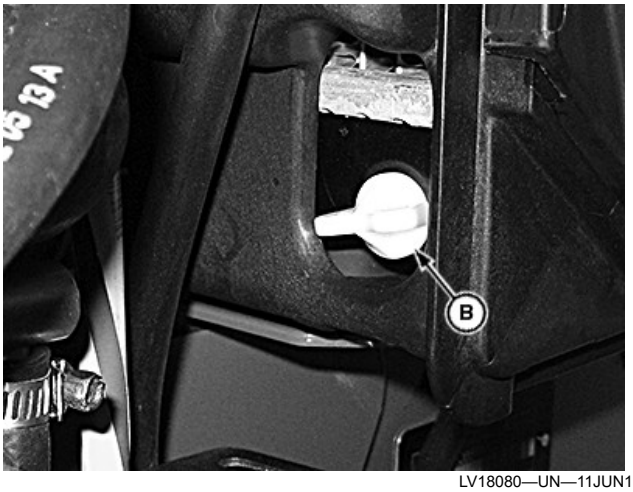
4. Check recovery tank (A) coolant level:
   - If engine is warm, coolant level should be between the FULL line (B) and the LOW line (C).
   - If engine is cold, coolant level should be at the LOW line (C) on the recovery tank.
5. Remove recovery tank cap (D) if needed to add coolant.
6. Add recommended coolant.
7. Install recovery tank cap.
8. Lower hood.

Draining Cooling System

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



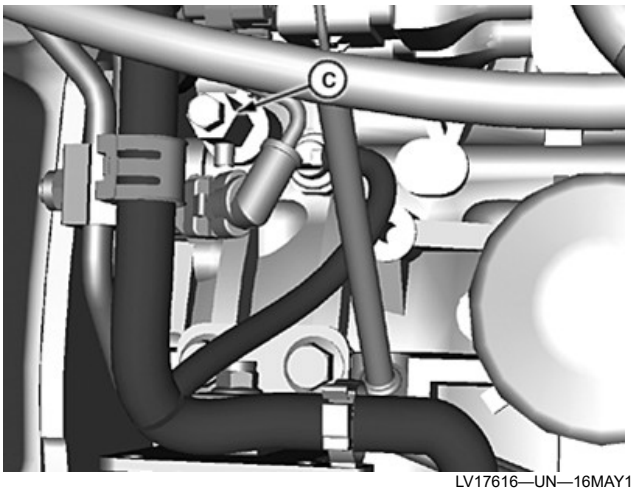
LV17614—UN—16MAY13



LV18080—UN—11JUN13

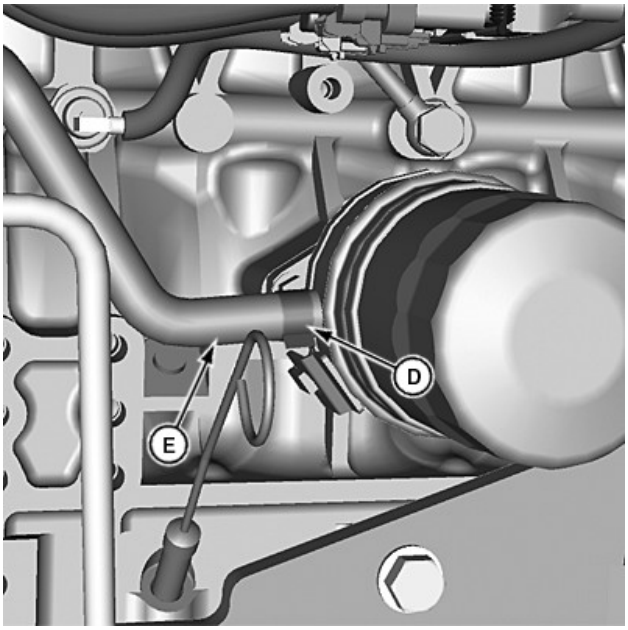
A—Radiator Cap
B—Petcock

5. Slowly open radiator cap (A) to the first stop to release all pressure.
6. Close radiator cap tightly.
7. Position drain pan under radiator. Open petcock (B) and drain coolant.



LV17616—UN—16MAY13

Engine Coolant Drain Plug, if Equipped



LV17922—UN—31MAY13

Engine Coolant Hose, if Equipped

C—Engine Block Drain Plug
D—Clamp
E—Engine Coolant Hose

8. Drain coolant from engine depending on model.
   - Locate engine block drain plug (C) at right side of engine, behind oil filter. Position drain pan under drain plug, remove drain plug, and allow all coolant to drain.
   - Locate engine coolant hose (E) at right side of engine, connected to oil filter. Position drain pan under hose, remove hose clamp (D), and allow all coolant to drain.
9. When coolant drains from the recovery tank, remove the radiator cap.
10. Close radiator petcock and install engine block drain plug or coolant hose and clamp.
11. Flush cooling system.

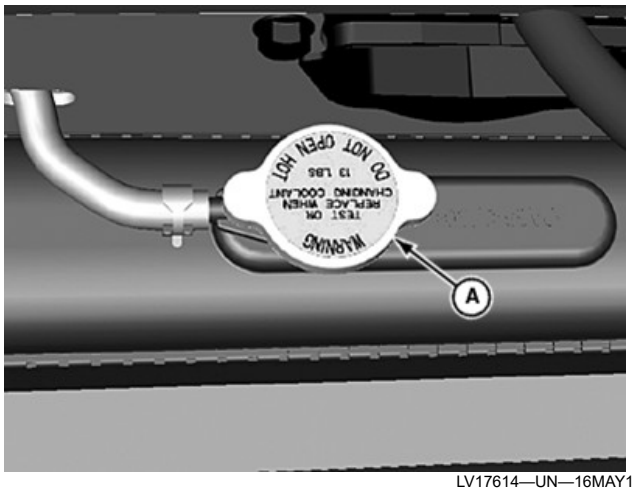
Flushing Cooling System

1. 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.
2. Install and tighten radiator cap.
3. Start and run engine until it reaches operating temperature.
4. Stop engine.
5. Open petcock and engine block drain plug or coolant hose and clamp.
6. Drain cooling system immediately before rust and dirt settle.

7. Close petcock and engine block drain plug or coolant hose and clamp.

Filling Cooling System

IMPORTANT: Avoid damage! Using incorrect coolant mixture can damage the radiator:



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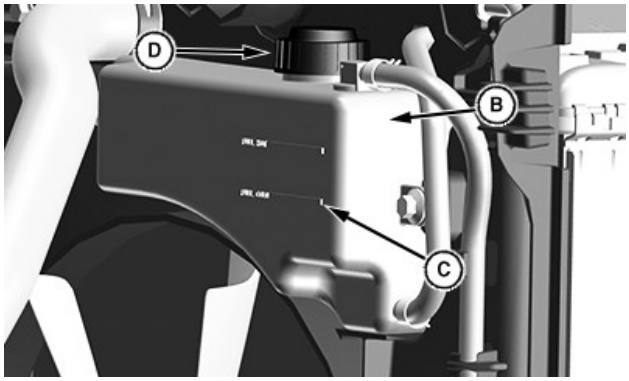


LV29123—UN—08AUG17

A—Radiator Cap
B—Coolant Recovery Tank
C—Full Cold Line
D—Coolant Recovery Tank Cap

- **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 base coolant.**

NOTE: John Deere COOL-GARD™ coolant is recommended when adding new coolant to the cooling system.

Follow the directions on the container for correct mixture ratio.

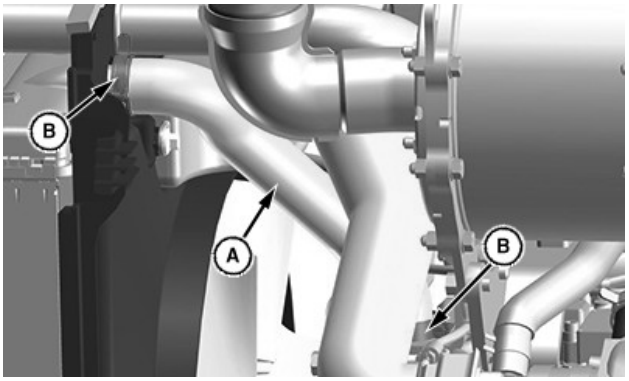
1. Allow radiator to cool.
2. Remove radiator cap (A).
3. Fill cooling system to specification.
4. Install and tighten radiator cap.
5. Run engine until it reaches operating temperature.
6. Stop engine.
7. Allow engine to cool. (Some coolant may be drawn into the radiator from the recovery tank during cool down.)
8. Check recovery tank (B) coolant level.
   - After engine cools, coolant level should be at the FULL COLD line (C) on the recovery tank.
9. Remove cap (D) from recovery tank to add coolant if necessary.
10. Install right side panel.
11. Lower hood.

UP00731,00003DA-19-08SEP17

Checking Radiator Hoses and Clamps

1. Park machine safely.
2. Raise hood.
3. Remove right and left side panels.

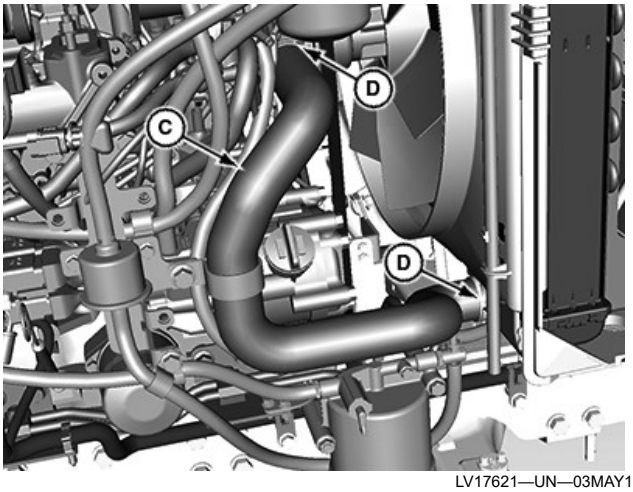
NOTE: Visually inspect hoses for cracks and wear. Squeeze hoses to check for deterioration. Hoses should not be hard and brittle, or soft or swollen.



LV29112—UN—08AUG17

4066R shown, other models are similar.

COOL-GARD is a trademark of Deere & Company



LV17621—UN—03MAY13

4066R shown, other models are similar

A—Upper Radiator Hose
B—Hose Clamps
C—Lower Radiator Hose
D—Hose Clamps

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 side panels.
9. Lower hood.

UP00731,00003DC-19-08AUG17

Cleaning Cooling Fins

CAUTION: Avoid injury! Compressed air can cause debris to fly a long distance.

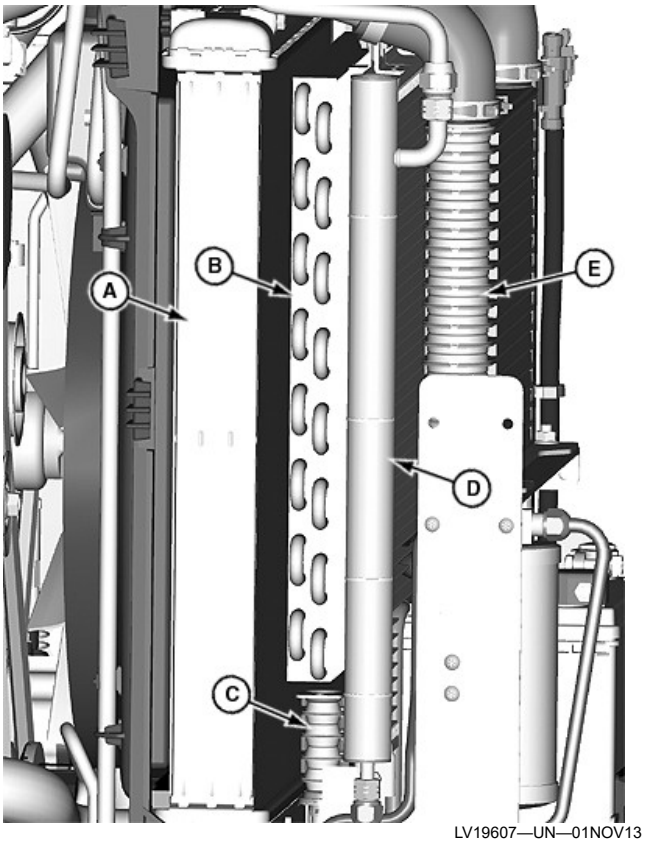
- **Clear work area of bystanders.**
- **Wear eye protection when using compressed air for cleaning purposes.**
- **Reduce compressed air pressure to 210 kPa (2.1 bar) (30 psi).**

IMPORTANT: Avoid damage! Reduced air intake can cause overheating. Keep radiator cooling fins clean.

Do not use pressure washers to clean radiator and 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 radiator on an angle or cooling fins can be bent.

1. Park machine safely.
2. Allow engine to cool.
3. Raise hood.



LV19607—UN—01NOV13

A—Radiator
B—Transmission Oil Cooler
C—Fuel Cooler (If Equipped)
D—Air Conditioning Condenser (Cab Models Only)
E—Charge Air Cooler (If Equipped)

4. Using compressed air or water, remove all dirt and debris from fins at front and rear of the following:
   - Radiator (A), including fan shroud.
   - Transmission oil cooler (B).
   - Fuel cooler (C) (If Equipped).
   - Air conditioning condenser (D) (Cab models only).
   - Charge air cooler (E) (If Equipped)
5. Lower hood.

KN52281,1004C19-19-17AUG17

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:

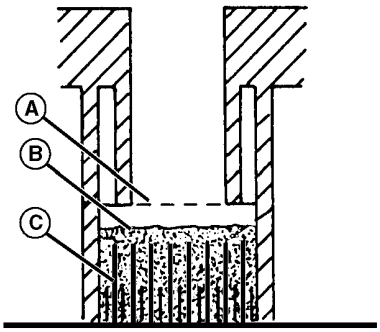
- **Do not smoke near battery.**
- **Wear eye protection and gloves.**
- **Do not allow direct metal contact across battery posts.**
- **Remove negative cable first when disconnecting.**
- **Install negative cable last when connecting.**

KN52281,1003F33-19-22AUG12

Check Battery Electrolyte Level

NOTE: Add only distilled water to replace battery electrolyte.

1. Park the machine safely.
2. Remove battery cell caps. Make sure cap vents are not plugged.



LVAL38349—UN—21AUG12

A—Filler Neck
B—Electrolyte
C—Top of Plates

3. Check electrolyte level. Electrolyte (B) should be approximately halfway between bottom of filler neck (A) and top of plates (C).

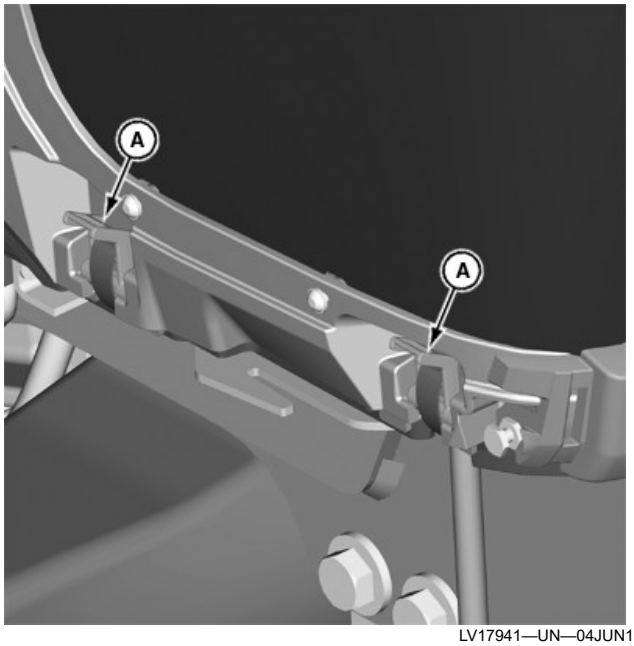
IMPORTANT: Avoid damage! Do not overfill battery. Electrolyte can overflow when battery is charged and cause damage.

4. Add only distilled water if necessary.
5. Install battery cell caps.

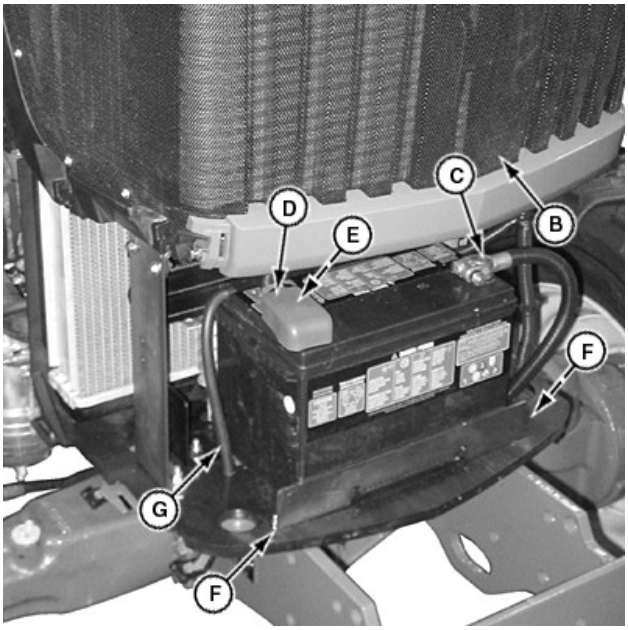
KN52281,1003F34-19-19JUN17

Removing and Installing Battery

Removing Battery—OOS



LV17941—UN—04JUN13



LV17950—UN—04JUN13

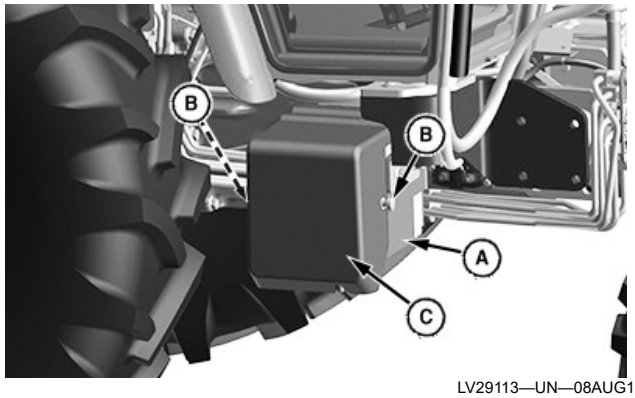
A—Grille Latch (4 used)
B—Grille
C—Black Negative Cable
D—Red Positive Terminal Cover
E—Red Positive Cable
F—Bolt (2 used)
G—Vent Tube

1. Park machine safely.
2. Raise hood.
3. Remove side panels.
4. Release grille latch (A) and unhook from grill frame.
5. Disconnect headlight wiring harness.
6. Raise grill (B), rotate rearward, and lower slightly into slide track detentes.
7. Disconnect black negative (—) cable (C) from battery terminal first.
8. Slide red positive terminal cover (D) back and disconnect red positive (+) cable (E) from battery terminal.
9. Remove bolt (F) from each side of the battery hold-down bracket.
10. Pull battery vent tube (G) from battery tray.
11. Remove battery.

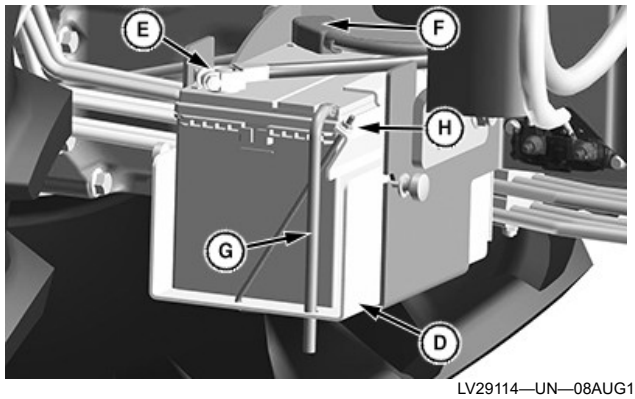
Installing Battery—OOS

1. Position battery in machine.
2. Route battery vent tube (G) through hole in battery tray.
3. Install hold-down bracket and install bolt (F) securing battery to battery tray.
4. Connect red positive (+) cable (E) to battery first, then attach black negative (—) cable (C) to battery.
5. Apply spray lubricant on battery terminals to help prevent corrosion.
6. Position red positive terminal cover (D) on red positive (+) cable.
7. Lower grille (B) and attach grille latch (A).
8. Connect headlight wiring harness.
9. Install side panels.
10. Lower hood.

Removing Battery—Cab



LV29113—UN—08AUG17



LV29114—UN—08AUG17

A—Battery Box
B—Thumb Screws
C—Battery Box Cover
D—Battery Tray
E—Negative (—) Battery Cable
F—Red Cover
G—Vent Tube
H—Nut

1. Park machine safely.
2. Locate battery box (A) on the right side of tractor.
3. Loosen thumb screws (B) on both sides of the battery box.
4. Slide battery box cover (C) off.
5. Slightly lift battery tray (D) and pull out.
6. Disconnect negative (-) battery cable (E).
7. Push red cover (F) back away from positive (+) battery cable and remove cable from battery.

8. Lift vent tube (G) from vent tube hole.
9. Remove nut (H) and remove battery hold down rod.
10. Remove battery.

Installing Battery—Cab

1. Position battery in battery tray.
2. Apply spray lubricant to terminals to prevent corrosion.
3. Connect positive (+) cable to battery positive (+) terminal first, then negative (—) cable to battery negative (—) terminal.
4. Slide red cover over positive battery cable.
5. Support battery tray and slide back into position slightly lifting.
6. Install battery hold down nut and battery hold down rod.
7. Slide vent tube into vent tube hole.
8. Slide battery cover on and tighten thumb screws.

UP00731,00003DD-19-08AUG17

Clean Battery and Terminals

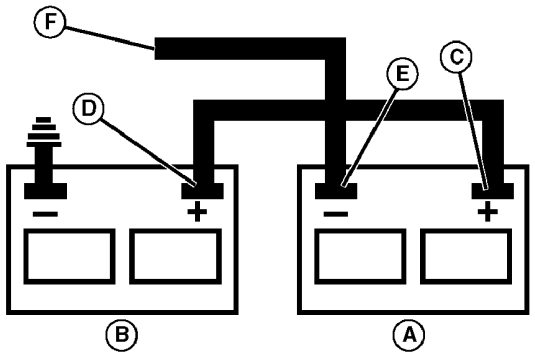
1. Park machine safely.
2. Disconnect and remove battery.
3. Wash battery with solution of four tablespoons of baking soda to one gallon of water. Be careful not to get the soda solution into the cells.
4. Rinse the battery with plain water and dry.
5. Clean terminals and battery cable ends with wire 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.

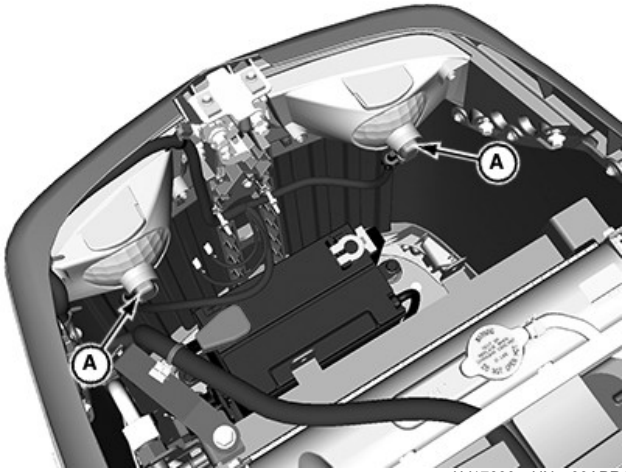
4. Connect the other end (F) of negative (–) booster cable to a metal part of the disabled machine engine block away from battery.
5. Start the engine of the disabled machine and run machine for several minutes.
6. Carefully disconnect the booster cables in the exact reverse order: negative cable first and then the positive cable.

KN52281,1003F37-19-16FEB17

Replacing 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.



LV17630—UN—30APR13

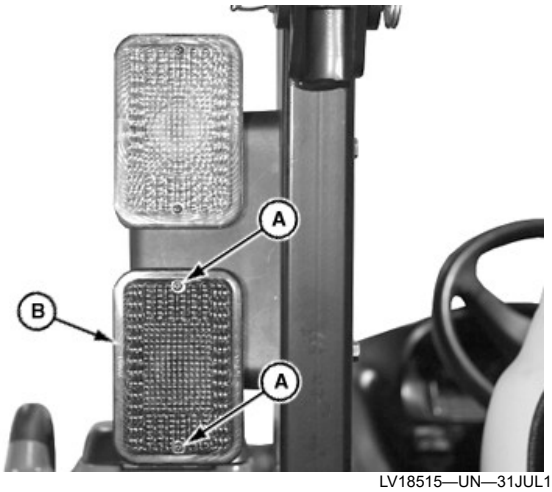
A—Headlight Bulb

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.

KN52281,1004897-19-19JUN17

Replacing Light Bulbs—Open Station

Replacing 4M Tail/Turn Light Bulb



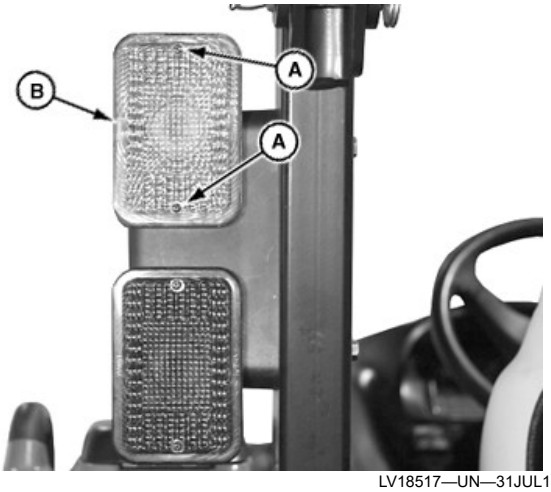
LV18515—UN—31JUL13

LV18516—UN—31JUL13

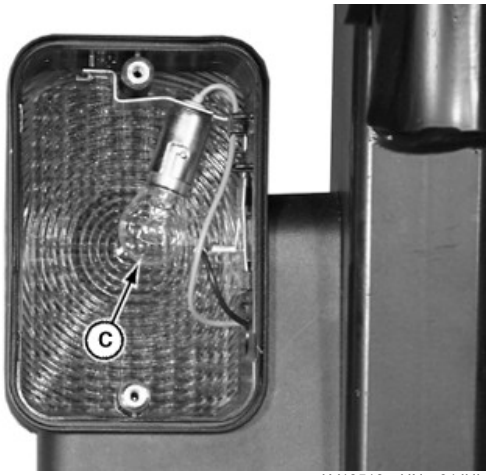
A—Screws
B—Red Lens
C—Bulb

1. Park machine safely.
2. Remove two screws (A) and red lens (B).
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.

Replacing Warning Light Bulb



LV18517—UN—31JUL13

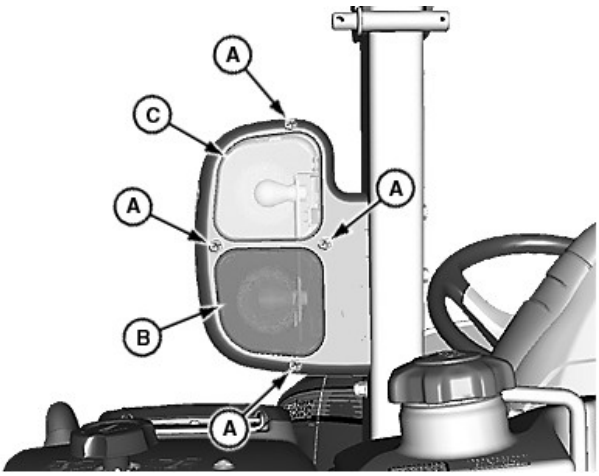


LV18518—UN—31JUL13

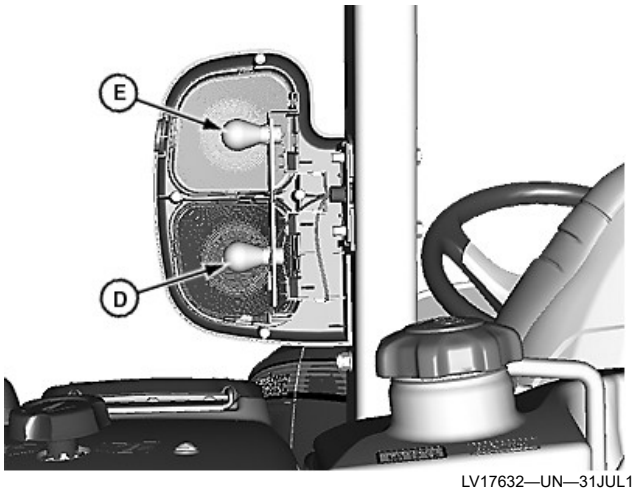
A—Screws
B—Amber Lens
C—Bulb

1. Park machine safely.
2. Remove two screws (A) and amber lens (B).
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 signals and warning lights.

Replacing 4R Tail/Turn and Warning Light Bulb



LV17631—UN—31JUL13



LV17632—UN—31JUL13

A—Screws
B—Red Lens
C—Amber Lens
D—Tail Light and Turn Signal Bulb
E—Warning Light Bulb

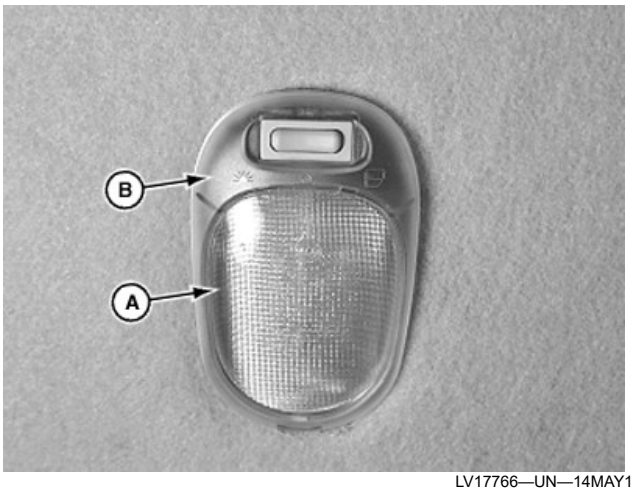
NOTE: Tail lights and warning lights can be serviced by removing the rear assembly lens only.

1. Park machine safely.
2. Remove four screws (A), red lens (B), and amber lens (C).
3. Push down and rotate tail light and turn signal bulb (D) to remove. Push down and rotate warning light bulb (E) to remove. Do not twist bulb.
4. Push down and rotate new bulb into socket.
5. Check operation of tail lights, turn signals, and warning lights.
6. Install lenses and screws.

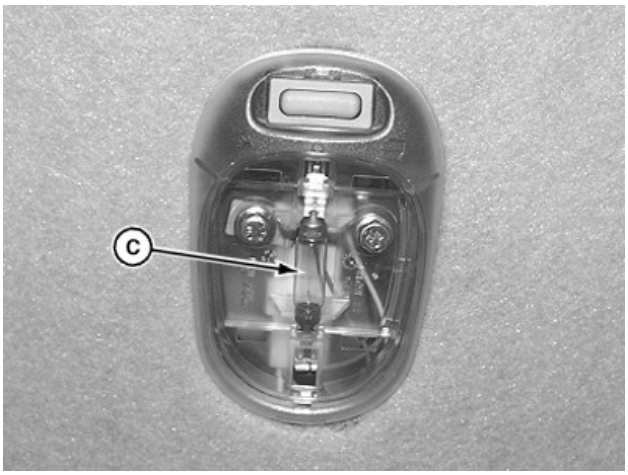
KN52281,1004C62-19-19JUN17

Replacing Light Bulbs—Cab

Dome Light Bulb



LV17766—UN—14MAY13

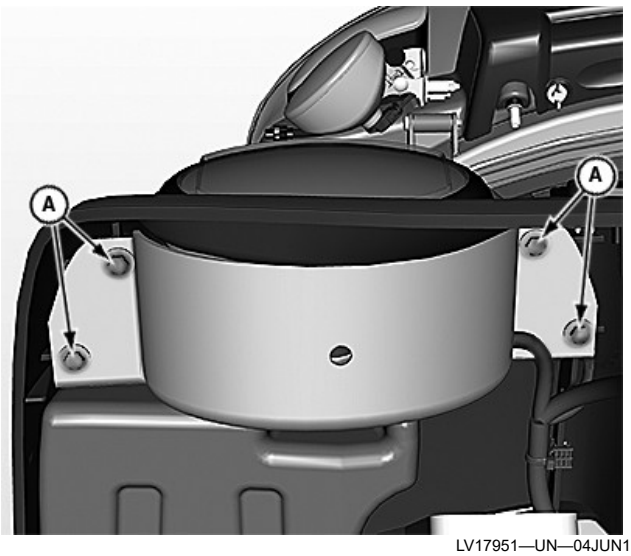


LV17767—UN—14MAY13

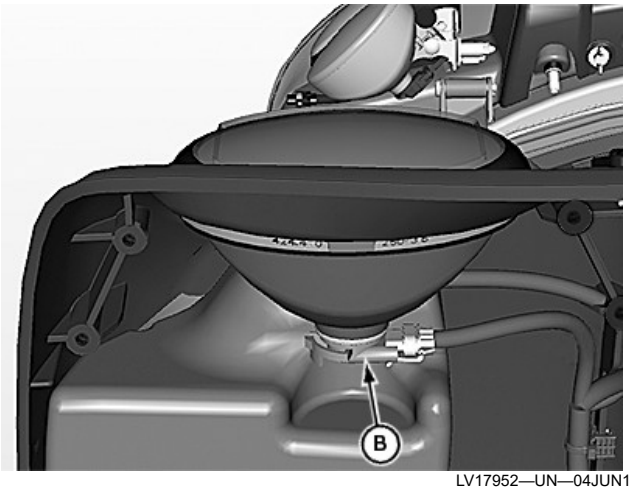
A—Cover
B—Bulb Housing
C—Bulb

1. Remove cover (A) from bulb housing (B) using a screwdriver.
2. Pull bulb (C) from socket
3. Install new bulb and cover.

Tail Light Bulb



LV17951—UN—04JUN13

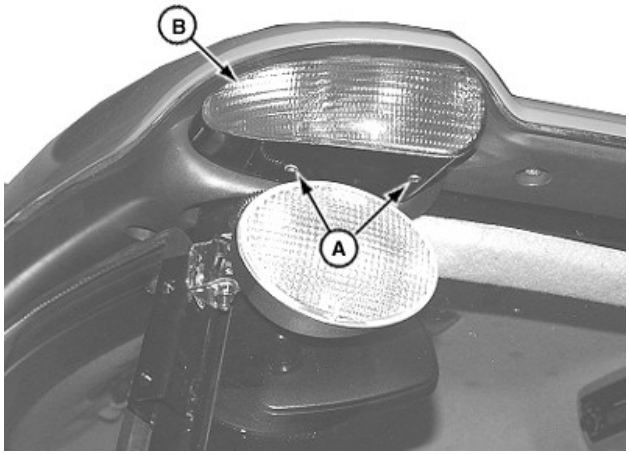


LV17952—UN—04JUN13

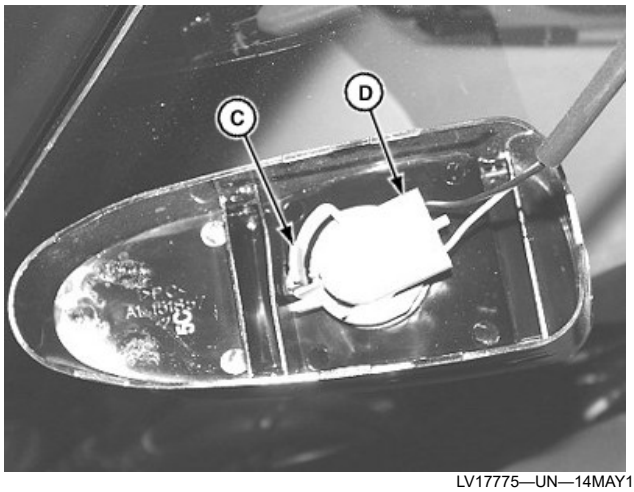
A—Screw (4 used)
B—Socket

1. Remove screws (A) and cover under fender.
2. Rotate socket (B) and remove from housing.
3. Install new bulb and socket in housing.
4. Install cover and screws to fender.

Warning Light Bulb



LV17774—UN—14MAY13



LV17775—UN—14MAY13

A—Screws
B—Lens Assembly
C—Tab
D—Socket

NOTE: Bulb replacement procedures for front and rear warning lights are similar. On rear warning light, bracket for the work light is also removed when removing two screws. Front right side shown.

1. Remove two hex socket head screws (A) and lens assembly (B) from cab roof panel.
2. Push in tab (C) and rotate socket (D) counterclockwise to remove from housing. Install new bulb into socket.
3. Install socket and rotate clockwise to lock tab into position.
4. Install housing with two hex socket head screws.

Work Light Bulb

LV17776—UN—14MAY13

A—Harness Connector
B—Bulb Base

NOTE: Bulb replacement procedures for front and rear work lights and optional auxiliary work lights are the same. Rear left side shown.

1. Disconnect wiring harness connector (A).
2. Rotate bulb base (B) counterclockwise and remove from housing.
3. Install new bulb into housing and rotate bulb base clockwise to install.
4. Connect wiring harness connector.

KN52281,1004C63-19-04MAR14

Replacing Fuses and Relays

IMPORTANT: Avoid damage! The electrical system can be damaged if incorrect replacement fuses are used. Replace the defective fuse with a fuse of the same ampere rating.

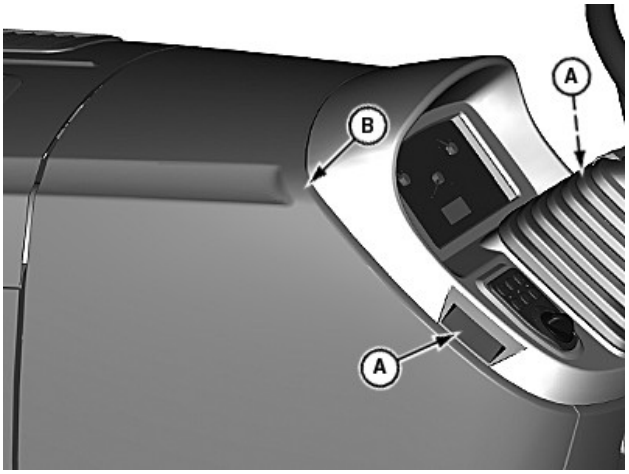
Locating Fuses and Relays

All electrical circuits are protected by fuses. Ampere rating is marked on each fuse, plus fuses are color coded to ensure proper replacement.

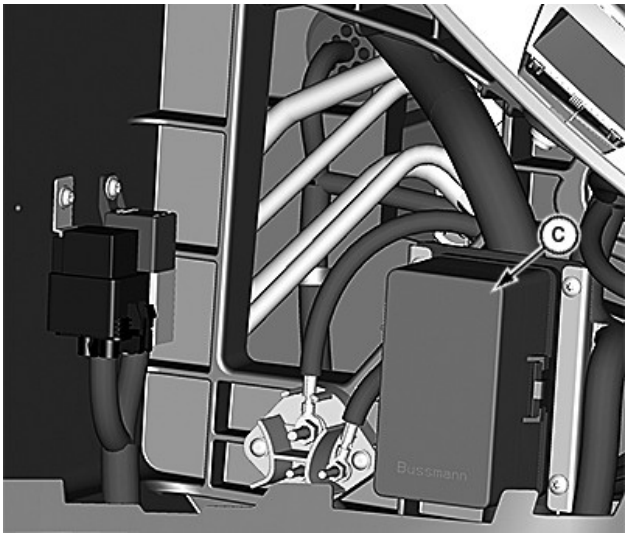
Fuses	
Fuse Rating	**Color**
10A	Red
15A	Blue
20A	Yellow
30A	Green

Fuse Location—Open Operator Station

1. Park machine safely.
2. Open hood.



LV17953—UN—04JUN13



LV17954—UN—04JUN13

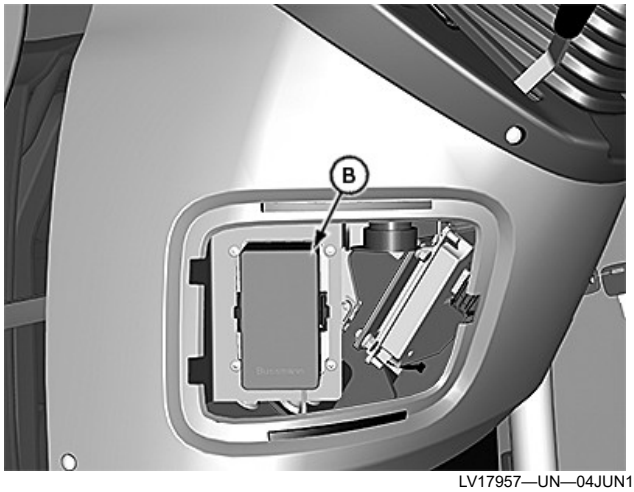
A—Hood Cowl Latch
B—Hood Cowl
C—Load Center Cover

3. Pull hood cowl latch (A) out and up on both sides.
4. Remove hood cowl (B).
5. Remove load center cover (C).
6. Identify fuse or relay in the fuse block.
7. Pull out defective relay or fuse.
8. Replace with the new relay or fuse.
9. Install load center cover.
10. Line up hood cowl and gently slide into place.
11. Close hood.

Fuse Location—Cab

1. Park machine safely.

LV17956—UN—04JUN13



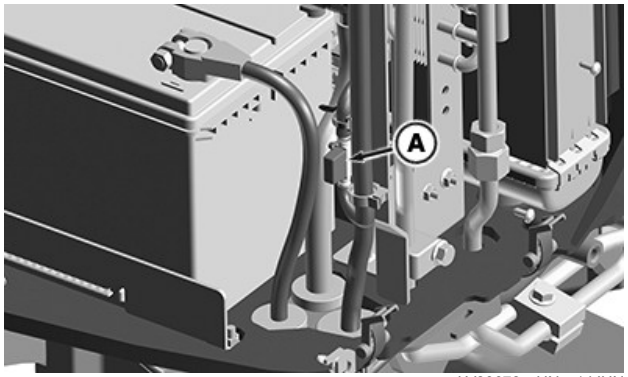
LV17957—UN—04JUN13

A—Fuse Cover
B—Load Center Cover

2. Pull fuse cover (A) out.
3. Remove load center cover (B).
4. Identify fuse or relay in the fuse block.
5. Pull out defective relay or fuse.
6. Replace with the new relay or fuse.
7. Install load center cover.
8. Replace fuse cover.

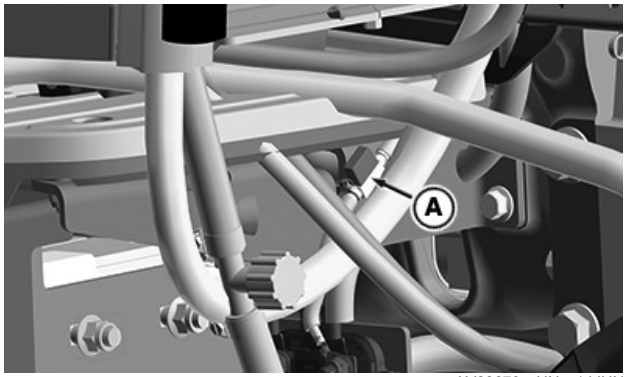
Fuse Location—ECU and Junction Block

NOTE: ECU and Junction block fuses are located near the battery.



LV28672—UN—14JUN17

Open Station—Front Grill Area Near the Battery—30 A fuse



LV28673—UN—14JUN17

Cab—Right Side of Cab Near Battery Box—30 A fuse

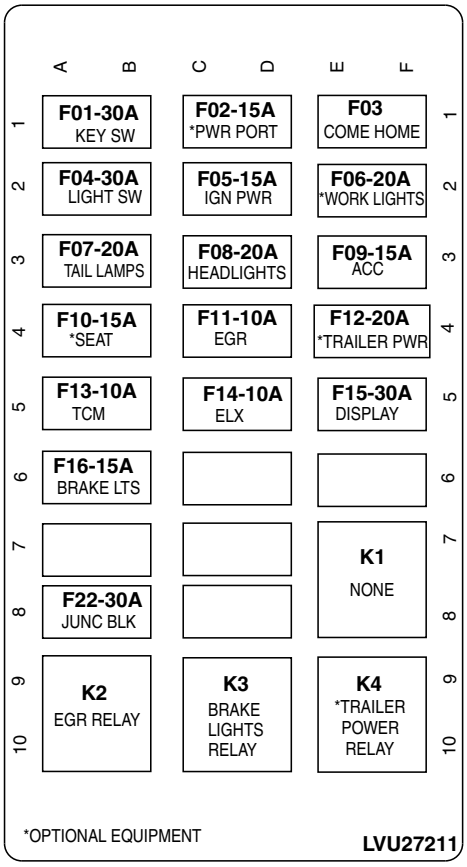
A—20 A Junction Block Fuse

1. Park machine safely.
2. Identify defective fuse.
3. Pull out defective fuse.
4. Replace with the new fuse.

Fuse and Relay Size and Function

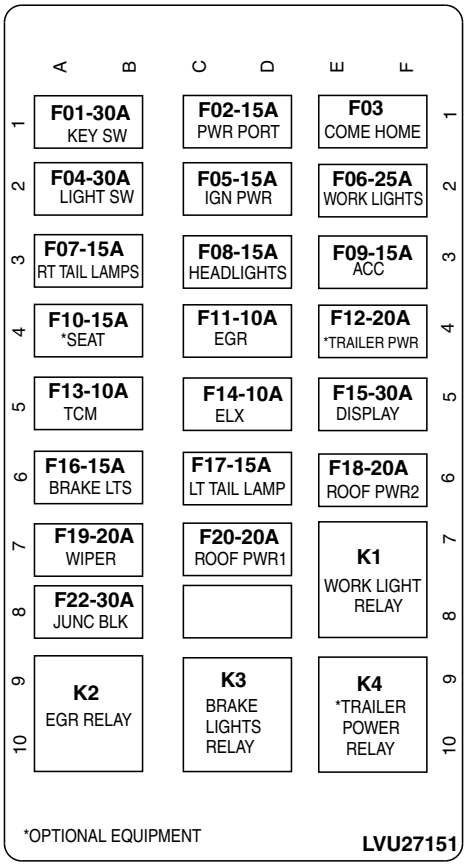
NOTE: Some fuses and relays shown may not pertain to your tractor.

Open Operator Station



LVP11019—UN—02JUN20

Open Operator Station - LVU27211



LVP11020—UN—02JUN20

Cab - LVU27151

F01—Key Switch Fuse (30A)
F02—Power Port Fuse (Option) (15A)
F03—Come Home Fuse
F04—Light Switch Fuse (30A)
F05—Ignition Power Fuse (15A)
F06—Work Light Fuse (Option) (20A)
F07 —Tail Light Fuse (20A)
F08—Headlight Fuse (20A)
F09—Accessory Fuse (15A)
F10—Air Ride Seat Fuse (Option) (15A)
F11—EGR Fuse (10A)
F12—7 Pin Trailer Fuse (Option) (20A)
F13—TCM Fuse (10A)
F14—ELX Fuse (10A)
F15—Display Panel Fuse (30A)
F16—Brake Light Fuse (15A)
F22—Junction Block Fuse (30A)
K1—Spare
K2—EGR Valve Relay
K3—Brake Light Relay
K4—7 Pin Trailer Relay (Option)

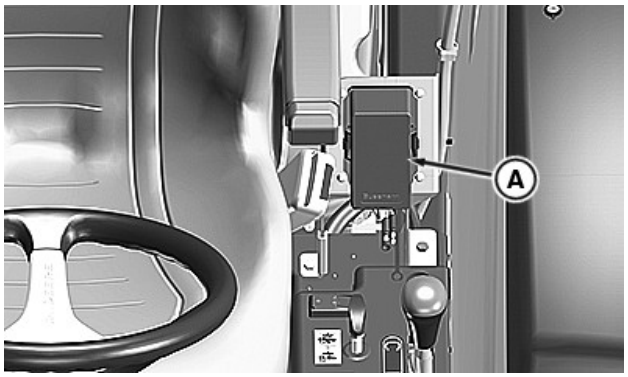
Cab

F01—Key Switch Fuse (30A)
F02—Power Port Fuse (15A)
F03—Come Home Fuse
F04—Light Switch Fuse (30A)
F05—Ignition Power Fuse (15A)
F06—Work Light Fuse (25A)
F07 —Right Tail Light Fuse (15A)
F08—Headlight Fuse (15A)
F09—Accessory Fuse (15A)
F10—Air Ride Seat Fuse (Option) (15A)
F11—EGR Fuse (10A)
F12—7 Pin Trailer Fuse (Option) (20A)
F13—TCM Fuse (10A)
F14—ELX Fuse (10A)
F15—Display Panel Fuse (30A)
F16—Brake Light Fuse (15A)
F17—Left Tail Light Fuse (15A)
F18—Roof Power 2 Fuse (20A)
F19—Wiper Fuse (20A)
F20—Roof Power 1 Fuse (20A)
F22—Junction Block Fuse (30A)
K1—Work Light Relay
K2—EGR Valve Relay
K3—Brake Light Relay
K4—7 Pin Trailer Relay (Option)

Rear Outlet SCV Load Center Fuse and Relays—If Equipped

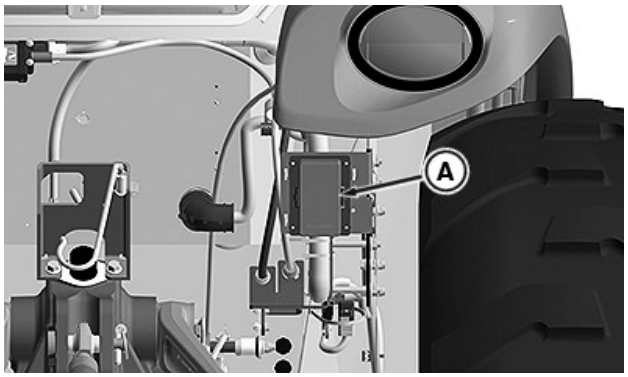
NOTE: SCV load center is on the left side of the seat on Open Operator Station and on a Cab tractor, next to the right rear tire on the back of the tractor.

1. Park machine safely.



LV28664—UN—12JUN17

Open Operator Station



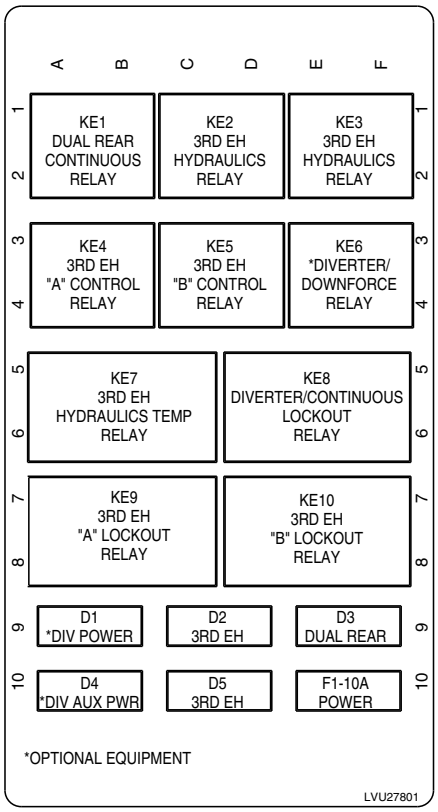
LV28665—UN—12JUN17

Cab

A—Access Cover

2. Pry open tabs on the load center access cover (A) and lift to remove.
3. Pull defective fuse or relay from socket.
4. Push new fuse or relay into socket.
5. Install load center access cover.

Fuse and Relay Size and Function



LV19399—UN—15OCT13

LVU27801

D1—Diverter Power Diode
D2—Third EH Diode
D3—Dual Rear Diode
D4—Diverter Auxiliary Power Diode
D5—Third EH Diode
F1—EH Hydraulics Power Fuse (10A)
KE1—KE1 Dual Rear Continuous Relay
KE2—Third EH Hydraulics Relay
KE3—Third EH Hydraulics Relay
KE4—Third EH A Control Relay
KE5—Third EH B Control Relay
KE6—Diverter Downforce Relay
KE7—Third EH Hydraulics Temperature Relay
KE8—KE8 Diverter-Continuous Lockout Relay
KE9—Third EH A Lockout Relay
KE10—Third EH B Lockout Relay

PP71895,000145E-19-08JUN20

Drivetrain Maintenance

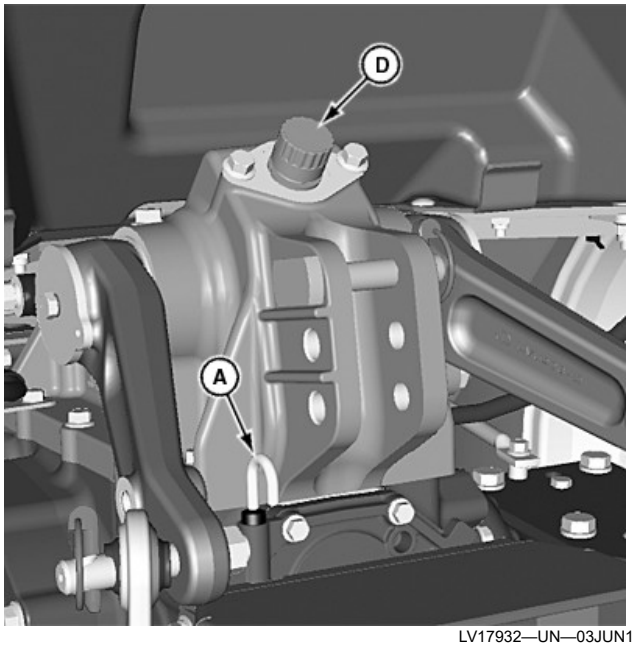
See specific drivetrain component for maintenance information.

UP00731,0000208-19-22JUN16

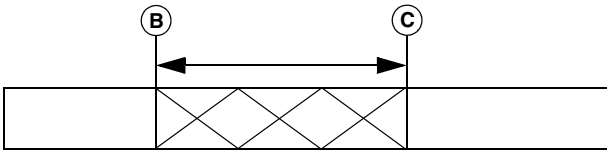
Checking Transmission Oil Level

1. Park machine safely. On level ground. 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.



LV17932—UN—03JUN13



LVAL38336—UN—21AUG12

A—Dipstick
B—Oil Level Mark
C—Oil Level Mark
D—Oil Filler Cap

2. Pull to remove dipstick (A) from the transaxle. Wipe with a clean cloth.
3. Install dipstick.
4. Remove dipstick.
5. Check oil level on dipstick. Correct oil level is between marks (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.

6. If oil level is low:
   - Remove filler cap (D).
   - Add recommended oil through fill opening until oil level is correct.
7. If oil exceeds top mark on the dipstick, drain to proper level.
8. Install dipstick.
9. Install and tighten filler cap.

KN52281,1004894-19-13JUN17

Changing Transmission Oil and Hydraulic Suction Oil Filter

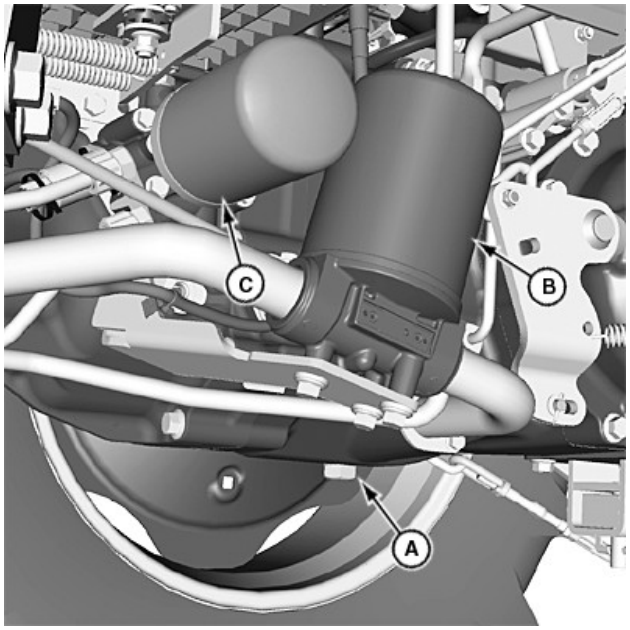
CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids are hot when engine has been running. Allow the engine to cool before servicing or working near the engine and components.

IMPORTANT: Avoid damage! If there is evidence of severe oil contamination, it may be necessary to change the oil several times.

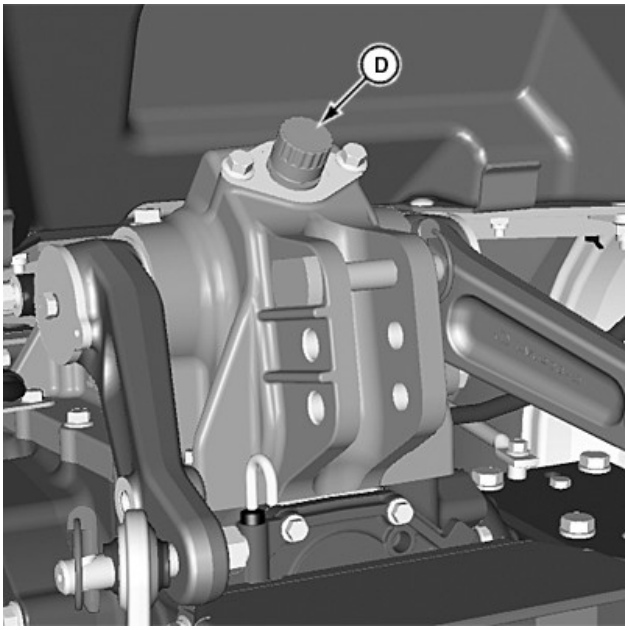
Contamination of hydraulic fluid could cause transmission damage or failure.

Severe or unusual conditions require a more frequent service interval.

1. Drive tractor a few minutes to warm and mix transmission oil.
2. Park machine safely.



LV17939—UN—04JUN13



LV17940—UN—04JUN13

A—Transmission Drain Plug
B—Hydraulic Suction Filter
C—Transmission Filter
D—Oil Fill Cap

3. Position drain pan under transmission drain plug (A) and hydraulic suction filter (B). Remove plug and allow oil to drain.
4. Wipe away dirt and debris from seal area of hydraulic suction filter (B) and transmission filter (C) to prevent oil contamination.
5. Remove hydraulic suction filter (B) and allow oil to drain.
6. Remove transmission filter (C) and allow oil to drain.
7. Install transmission drain plug.
8. Replace filters.
9. Remove oil fill cap (D).
10. Add recommended oil through filler opening.
11. Start engine. Check for oil leaks around filter cover and drain plugs.
12. Stop engine.
13. Check transmission oil level. Add oil if necessary.

NOTE: Transmission oil can be changed every 1200 hours or 3 years if the following requirements are met:

- *Use John Deere Hy-Gard™ or Lo-Vis Hy-Gard oil.*
- *Suction and transmission filter are both changed every 400 hours.*
- *Perform oil-scan of transmission oil every 400 hours or once per year.*

Hy-Gard is a trademark of Deere & Company

NOTE: To change filters without changing oil, position a shop vacuum on transmission oil filler opening and seal with a rag if needed.

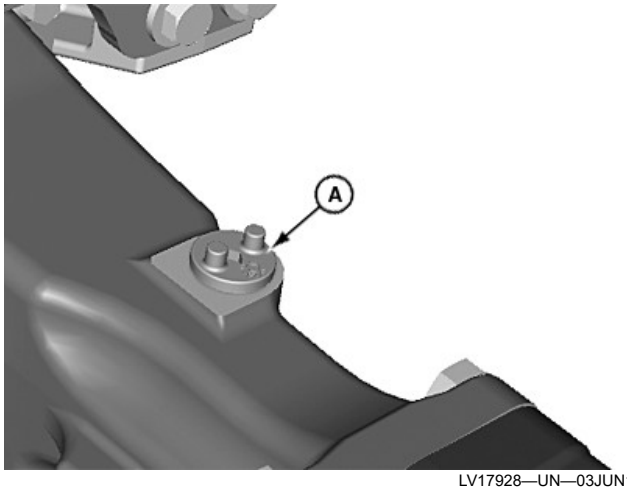
KN52281,1004BD9-19-19JUN17

Checking Front Axle Oil Level

IMPORTANT: Avoid damage! Allow oil 1 hour to settle before checking level to ensure accurate dipstick reading. Repeat oil level check after several hours of operation.

1. Park machine safely.
2. Allow machine to cool down for at least 1 hour.

IMPORTANT: Avoid damage! Dirt and debris in oil damages the transaxle. Clean area around opening before removing dipstick.



LV17928—UN—03JUN13

LVAL38331—UN—21AUG12

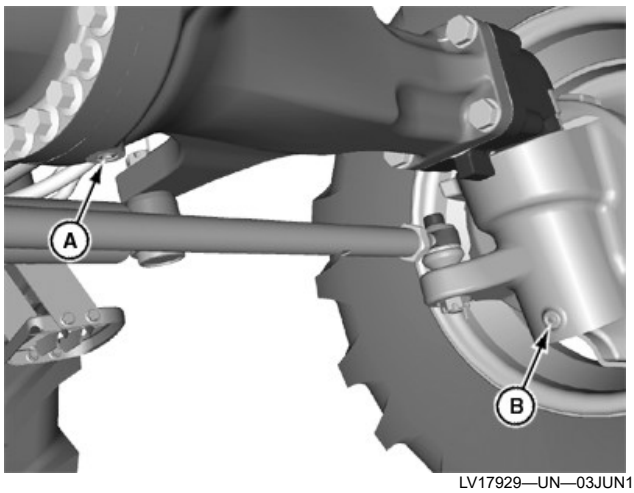
A—Dipstick
B—High Oil Level
C—Low Oil Level

3. Loosen and remove dipstick (A) located on right side of front axle.
4. Wipe dipstick clean with a rag. Install dipstick but do not tighten. Allow dipstick to rest on top of threads.
5. Remove dipstick. Correct oil level is between high oil level (B) and low oil level (C) 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.
6. Check front axle oil level again after the first several hours of operation.

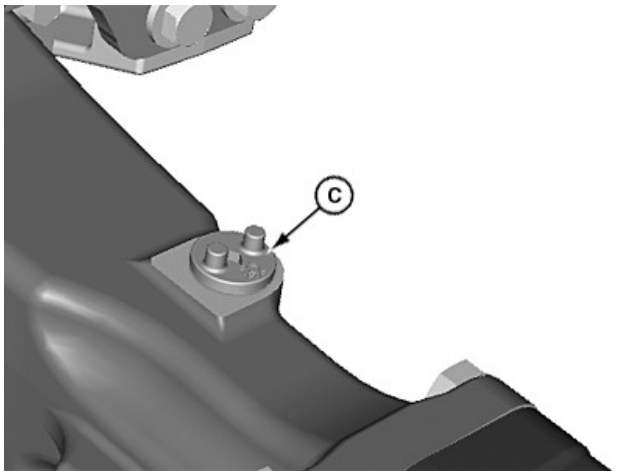
KN52281,1004891-19-19JUN17

Changing Front Axle Oil

1. Operate machine to warm front axle oil.
2. Park machine safely.



LV17929—UN—03JUN13



LV17930—UN—03JUN13

A—Differential Drain Plug
B—Front Axle Drain Plug
C—Dipstick

3. Position drain pan under differential drain plug (A).
4. Remove differential drain plug and allow oil to drain.
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.
8. Remove dipstick (C) located on right side of front axle.
9. Add recommended oil through dipstick fill opening until oil level is correct.
10. Install and tighten dipstick.

IMPORTANT: Avoid damage! Drive tractor for 1 minute at low speed, in both forward and reverse, to help fill wheel ends with oil.

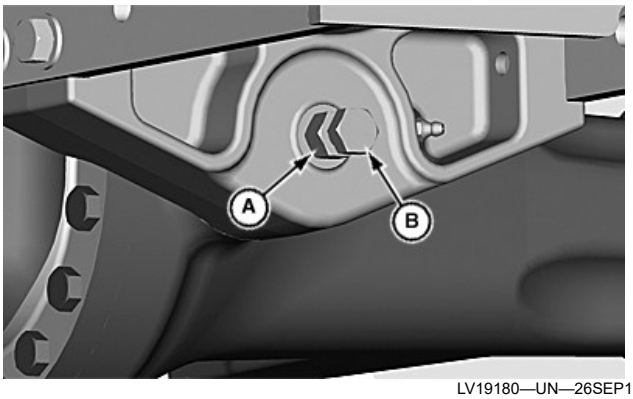
Allow oil 1 hour to settle before checking level to ensure accurate dipstick reading. Repeat oil level check after several hours of operation.

11. Check front axle oil level.

KN52281,1004892-19-19JUN17

Adjusting Front Axle Thrust Bolt Torque

NOTE: Adjust bolt torque at required service interval to prevent excessive forward or rearward movement of front axle.



LV19180—UN—26SEP13

A—Jam Nut
B—Thrust Bolt

1. Park machine safely.

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 jackstands or other stable supports and block wheels before servicing.**

2. Raise front axle off ground to take machine weight off the front axle.
3. Lubricate axle trunnions.
4. Loosen jam nut (A).
5. Tighten thrust bolt (B) to specification.

Specification	
Thrust Bolt—Torque	30 N·m (22.12 lb.-ft.)

Do not overtighten.

6. Oscillate axle from stop to stop 3 times. Check torque.
7. Hold thrust bolt and tighten jam nut to specification.

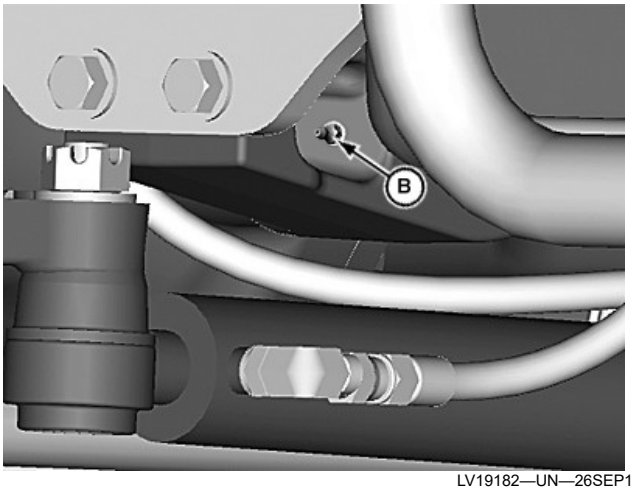
Specification	
Jam Nut—Torque	70 N·m (51.63 lb.-ft.)

8. Lower front axle to ground.

KN52281,1004A11-19-13JUN17

Lubricating Axle Trunnion

LV19181—UN—26SEP13



LV19182—UN—26SEP13

A—Front Trunnion Grease Fitting
B—Rear Trunnion Grease Fitting

- Lubricate front trunnion grease fitting (A) and rear trunnion grease fitting (B) with John Deere multi-purpose grease.

KN52281,10049F3-19-08JUN17

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.

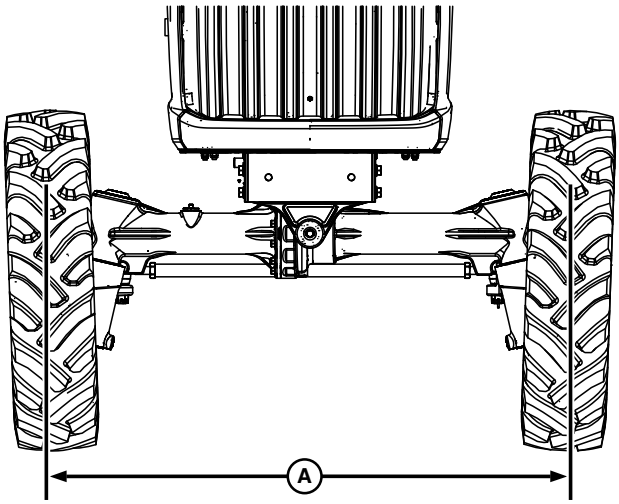
UP00731,00001BE-19-03JAN18

Check and Adjust Toe-In

1. Stop machine on a firm, level surface.
2. Disengage MFWD if equipped.
3. Turn steering wheel so front wheels are pointing straight ahead.
4. Park machine safely.

Check Toe-In

NOTE: If front axle is equipped with bar tires, use either an outside or inside bar of each tire for marking the centerline.



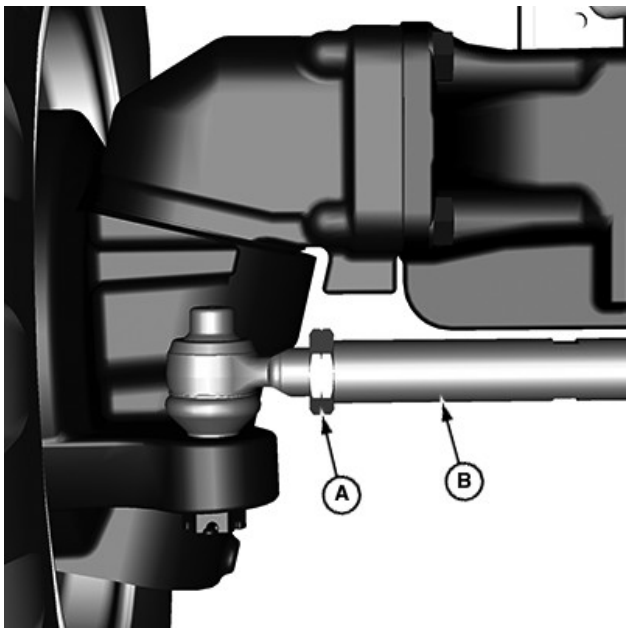
LV17448—UN—12APR13

1. Mark the centerline of each tire at hub height and to the front of the axle using chalk.
2. Measure and record distance (A) between center lines of each tire.
3. Drive machine forward or rearward slightly until chalk mark moves 180° to rear of axle.
4. Park machine safely.
5. Measure and record distance (A) again between the chalk marks.
6. Determine the difference between front and rear measurements. The front measurement should be less than the rear measurement per specification. Adjust toe-in if necessary.

Specification

Toe-in (A)—Distance. . . . . 0—3 mm
0—0.125 in

Adjust Toe-In



LV17669—UN—02MAY13

A—Nuts
B—Tie Rod

1. Loosen nuts (A) on both ball joints.
2. Rotate tie rod (B) clockwise or counterclockwise to adjust the amount of toe-in. Adjust tie rod until toe-in measurement is within specification.

NOTE: Rotating threaded rod in 1/2- turn increments equals 1.5 mm (1/16 in.).

3. Tighten nuts to specification..

Specification

Nut (A)—Torque. . . . . 120 N·m
88 lb·ft

4. Check toe-in setting. Repeat procedure if further adjustment is required.

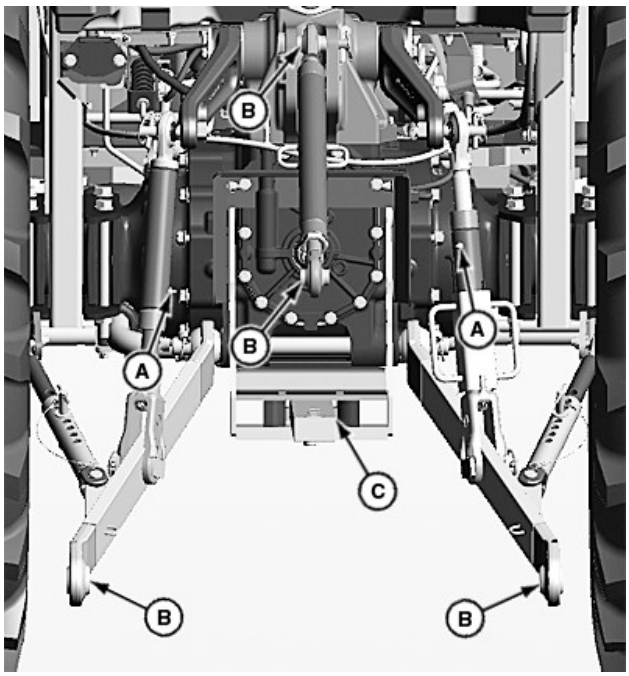
KN52281,10048A0-19-14AUG17

Hydraulic Maintenance

See the Transmission Maintenance section for servicing the hydraulic oil and filters.

UP00731,0000117-19-03JAN18

Lubricating 3-Point Hitch



LV20895—UN—04FEB14

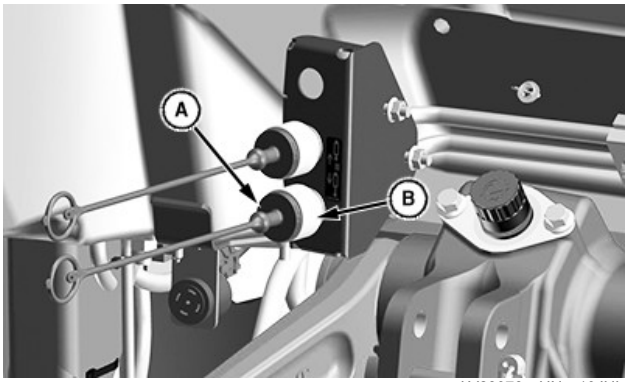
A—Lift Link Grease Fitting
B—Ball Joints
C—Drawbar

- Lubricate lift link grease fitting (A) with recommended grease or equivalent.
- Lubricate ball joints (B) and drawbar (C) with SUPER LUBE® lubricant.[1]

KN52281,1004BE8-19-05FEB14

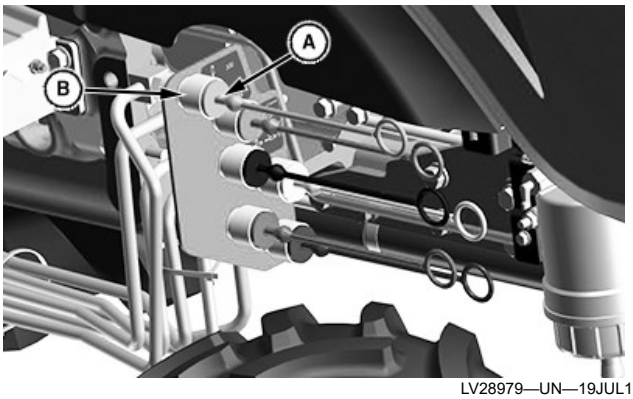
[1] *SUPER LUBE is a registered trademark of Synco Chemical Corp.*

Check Selective Control Valve



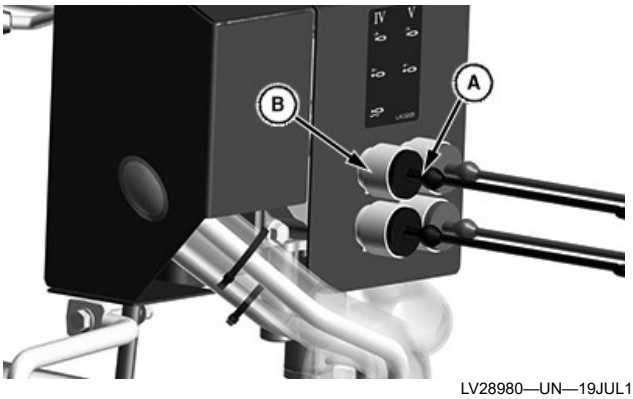
LV28978—UN—19JUL17

Rear Third SCV Couplers (If Equipped)



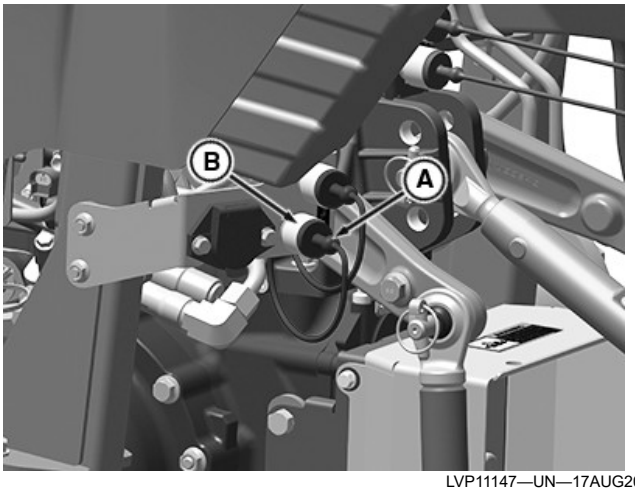
LV28979—UN—19JUL17

Mid-Mount SCV Couplers



LV28980—UN—19JUL17

Fourth and Fifth SCV Couplers (If Equipped)



LVP11147—UN—17AUG20

Mechanical Rear SCV Couplers (If Equipped)

A—Dust Plugs
B—Coupler

1. Check dust plugs (A) for damage, replace as needed.
2. Clean dirt and debris from selective control valve couplers (B)
3. Check selective control valve couplers (B) for oil leakage. Contact your John Deere dealer for service.

DN39857,00002F5-19-17AUG20

Checking Wheel Bolts and Hardware

CAUTION: Avoid injury! Check rim, hub, and axle hardware periodically to prevent possible machine roll-over.

When machine is new or anytime wheel hardware is loosened, tighten all bolts after 1 hour of operation and every 4 hours thereafter until proper torque values are maintained.

Tightness of wheel hardware must be maintained according to service interval recommendations. Check wheel bolt torque and tighten as follows:

Front Wheel Bolts

Tighten front wheel bolts alternately to 140 N·m (103 lb.-ft.)

Rear Wheel Bolts

Tighten rear wheel bolts alternately to 140 N·m (103 lb.-ft.)

KN52281,100489D-19-15AUG13

Removing and Installing Wheels

CAUTION: Avoid injury! Remove wheels safely.

- **Use a safe lifting device and support machine securely on jackstands.**
- **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 in a star pattern to 140 N·m (103 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 partially tighten bolts.
2. Raise rear of machine, remove support stands, and lower machine to floor.
3. Tighten wheel bolts in a star pattern to 140 N·m (103 lb.-ft.).

KN52281,100489E-19-24OCT13

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

NOTE: Pressures listed are standard factory inflations. For additional tire pressure information for your specific application, contact your John Deere dealer.

Front Tires—Standard Factory Inflation					
Tire Size	**Load Index**	**Speed Category**	**Tread**	**kPa**	**psi**
8.00-16 10PR	102	A6	R1	190	27.6
280/70R16	112	B	R1	241	35.0
260/70D16.5	110	A8	R4	310	45.0
27x10.50-15	108	B	R3	210	30.5
250/75R16	120	G	R1	450	65.3
27x12LL-15	100	A6	Golf	69	10.

Front Tires—Standard Factory Inflation—Heavy Duty Models					
Tire Size	**Load Index**	**Speed Category**	**Tread**	**kPa**	**psi**
31.5X13.00-16.5, 10PR, R4	139	A2	R4	210	30

Rear Tires—Standard Factory Inflation					
Tire Size	**Load Index**	**Speed Category**	**Tread**	**kPa**	**psi**
13.6-28 6PR	117	A8	R1	120	17.4
380/70R28	127	B	R1	207	30.0
420/85D24	136	A8	R4	170	24.7
44x18.00-20 4PR	123	B	R3	140	20.3
360/80R28	146	A8	R1	320	46.4
22.5LL-16.1 6PR	145	A6	Golf	42	6.1

Rear Tires—Standard Factory Inflation—Heavy Duty Models					
Tire Size	**Load Index**	**Speed Category**	**Tread**	**kPa**	**psi**
16.9-24, 8PR, R4	142	A8	R4	190	28
19.5L-24, 10PR, R4	146	A8	R4	165	24

UP00731,0000985-19-09OCT19

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 manly 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-19-03JAN18

Changing Wheel Spacing and Tread Width

In special cases, front tires can be set to wide position; however, wide position cannot be used with a loader. Using wide position during loader operation reduces front axle life.

Rear tires can be mounted in one position only.

Do not install the front wheels in the wide position for the 4052M and 4066M heavy duty models.

CAUTION: Avoid injury! Remove wheels safely.

- **Use a safe lifting device and support machine securely on jackstands.**
- **Block front and rear of wheel not raised to prevent machine movement**
- **Wheel can be heavy or difficult to handle when removing.**

Mounting Guidelines

- To keep tire rotation in right direction, move each rim to opposite side of machine, rather than turning the rim around.
- Dished wheels can be reversed.
- Tighten all bolts to specifications, see removing and installing wheels.
- Wide position—Install the wheel with the valve stem to the inside.
- Narrow position—Install the wheel with the valve stem to the outside.

Rear Wheel Positions

For eight position wheels, the mounting flanges on the rear rims are closer to one edge of the rim than the other, allowing the inner wheels to be mounted in different positions. By changing this position of the wheel on the rim, up to eight different tread widths can be achieved on some machines.

Various positions cannot be used because the tires would strike the fenders. Certain other positions may result in equal tread widths.

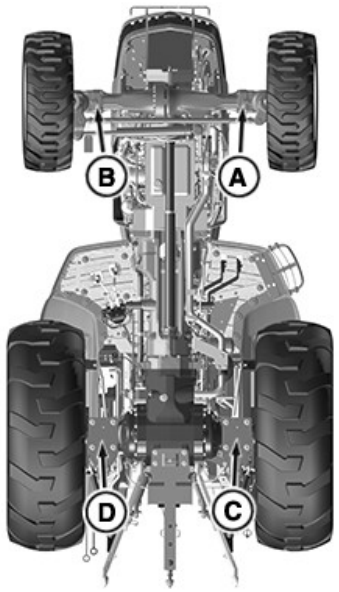
Tread width is measured from the centerline-to-centerline of each tire.

Tire Combinations		Track Width (minimum)	Track Width (maximum)	Positions (Available/ Total)
Front	8.00-16 10PR	1359.5	1362.5	2/2
Rear	13.6-28 6PR	1319.0	1617.0	4/8
Front	280/70R16	—	1520.0	1/2
Rear	380/70R28	1319.0	1617.0	4/8
Front	260/70D 16.5	1324.4	1415.1	2/2
Rear	420/85D24	—	1371.8	1/2
Front	27x10.50-15	1332.0	1412.0	2/2
Rear	44x18.00-20 4PR	—	1408.0	1/2
Front	250/75R16	—	1522.7	1/2
Rear	360/80R28	1319.0	1617.0	4/8
Front	27x12LL-15	1342.5	1413.9	2/2
Rear	22.5LL-16.1 6PR	—	1490.6	1/2

UP00731,00009DA-19-21OCT19

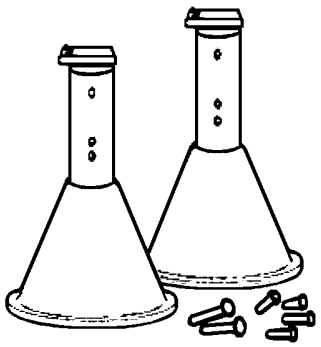
Lifting Points for Jacking up the Tractor

The illustrations show the recommended lifting points for jacking up the tractor. Use a stable lifting jack with sufficient lifting force.



LV28674—UN—14JUN17

- A - Raise left end of axle at this point to remove left front wheel.
- B - Raise right end of axle at this point to remove right front wheel.
- C - Raise left rear of tractor at this point to remove left rear wheel.
- D - Raise right rear of tractor at this point to remove right wheel.



LVAL38572—UN—20SEP12

Jack Stands JT02043 and JT02044

JT02043 - Jack Stand, 482mm to 736mm (19 in. to 29 in.)

JT02044 - Jack Stand, 863mm to 1117mm (34 in. to 44 in.)

LVAL38573—UN—20SEP12

Jack Stand Position Example

CAUTION: Use approved lifting equipment only.

Jack up 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.

CM74493,000000A-19-19JUN17

Front and Rear Tire Capacity

Front Tires—Capacity			
Tire Size	**Tread**	**kg**	**lb**
8.00 x 16 6PR	R1	800	1763
10.00 x 16.5 6PR	R4	800	1763
27 x 12LL-15 6PR	R3	800	1763
27 x 10.50-15 4PR	Golf	800	1763
Heavy Duty Models			
31.5 X13 - 16.5 10PR	R4	1650	3630

Rear Tires—Capacity			
Tire Size	**Tread**	**kg**	**lb**
13.6 x 28 4PR	R1	1250	2755
16.9 x 24 6PR	R4	1250	2755
22.5LL x 16.1 6PR	R3	1250	2755
44 x 18.00-20 4PR	Golf	1250	2755
Heavy Duty Models			
16.9-24 8PR	R4	2650	5830
	R4	2725	5995

UP00731,00009DB-19-21OCT19

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

Raising and Lowering Hood

LV28667—UN—12JUN17

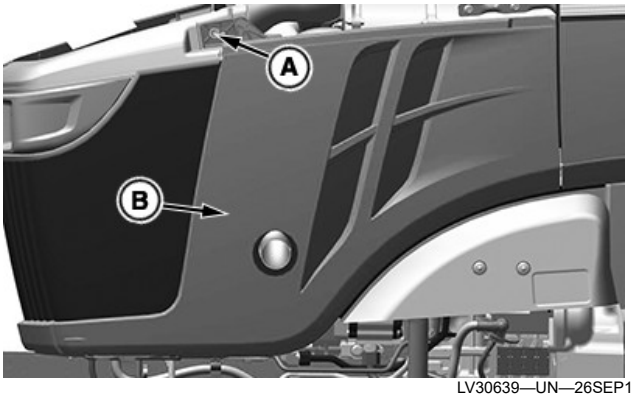
A—Hood Release
B—Hood

1. Park machine safely
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 the front of the hood to lock latch.

CM74493,0000004-19-13JUN17

Side Panel Removal and Installation

Removal



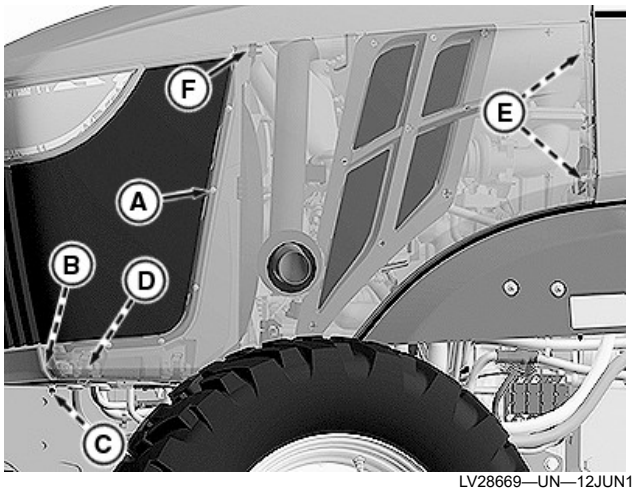
LV30639—UN—26SEP19

Left Side Shown; Right Side is Similar

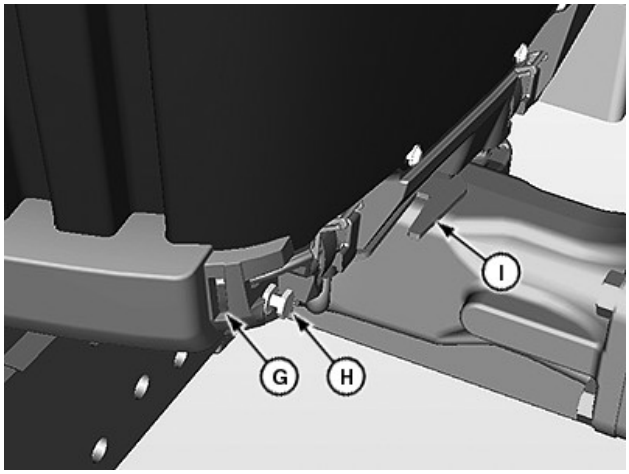
A—Twist Tab
B—Side Panel

1. Park machine safely.
2. Raise hood.
3. Pull tab (A) out and twist to line up the slots.
4. Tilt side panel (B) away from machine and slide forward.

Installation



LV28669—UN—12JUN17



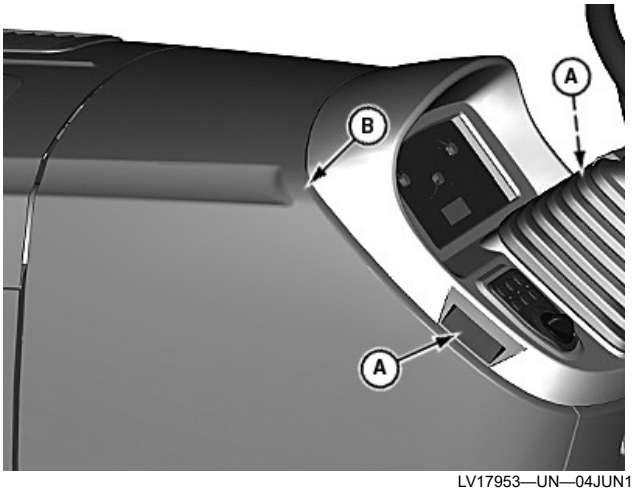
LV20980—UN—14MAR14

A—Side Panel
B—Front Mounting Tab
C—Mounting Hook
D—Mounting Tab
E—Alignment Pins
F—Twist Tab
G—Front Mounting Slot
H—Mounting Pin
I—Mounting Hook

1. Align the side panel (A) front mounting tab (B) with front mounting slot (G), align mounting hook (C) with mounting pin (H), and align mounting tab (D) with mounting hook (I) on machine.
2. Slide side panel back while aligning holes on rear of panel with alignment pins (E).
3. Line twist tab (F) with slot in the panel, tip panel in pull twist tab out and twist to lock position.
4. Lower hood.

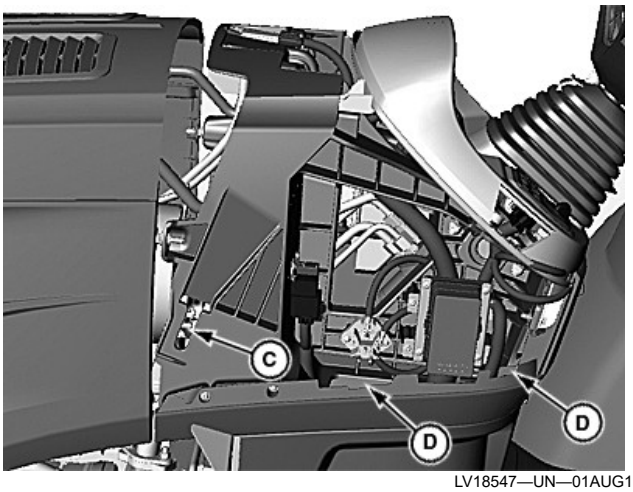
CM74493,0000005-19-26SEP19

Hood Cowl Removal and Installation



LV17953—UN—04JUN13

HST Shown PRT similar



LV18547—UN—01AUG13

A—Hood Cowl Latch
B—Hood Cowl
C—Alignment Slots
D—Alignment Slots

Removal

1. Park machine safely.
2. Open hood.

IMPORTANT: Cowl seal can be damaged if hood is not opened prior to removal and installation of cowl

3. Pull hood cowl latch (A) out on both sides.
4. Slide hood cowl (B) up.

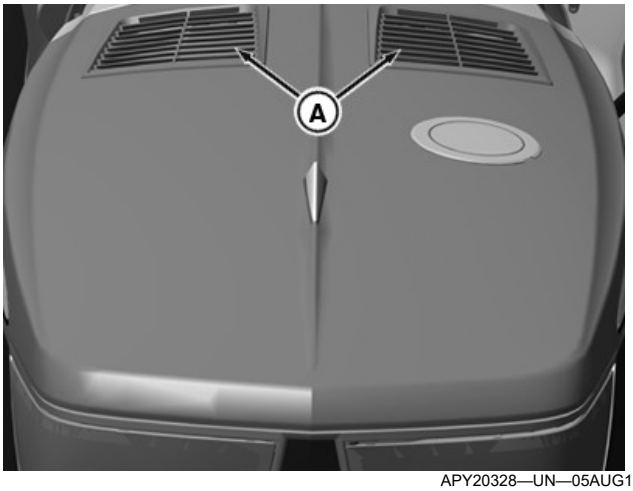
Installation

1. Align hood cowl tabs with alignment slots (C and D).
2. Gently slide cowl into position.
3. Pull hood cowl latch out and release.
4. Close hood.

KN52281,1004BCF-19-19JUN17

Cleaning Hood Vents

IMPORTANT: Avoid damage! Hood vents must be kept free of debris and obstruction to allow for adequate air flow.



APY20328—UN—05AUG19

A—Engine Hood Vent

1. Park machine safely.
2. Allow engine to cool.
3. Raise hood.
4. Check engine hood vent (A) for obstruction or debris.
5. Check vent area for any obstructions.
6. Lower hood.

PS75950,0000898-19-05AUG19

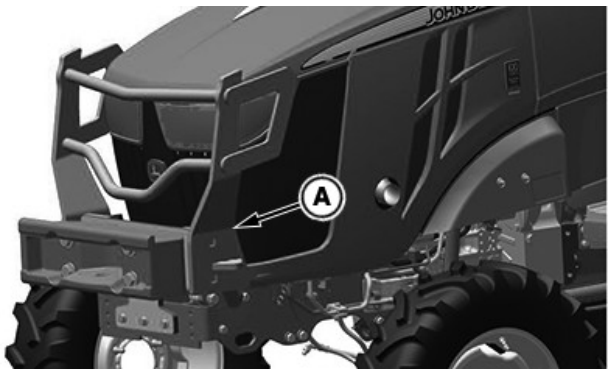
Inspect ROPS for Loose Hardware

CAUTION: Avoid crushing injury due to a machine rollover. 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 is impaired when subjected to structural damage, involved in an overturn incident, or altered by welding, bending, drilling, or cutting. A damaged ROPS must be replaced, not reused.

Tighten the ROPS attaching bolts on each side of ROPS to specification.

Specification	
Mounting Bolts—Torque	230 N·m 170 lb·ft

4052M and 4066M Heavy Duty Models:



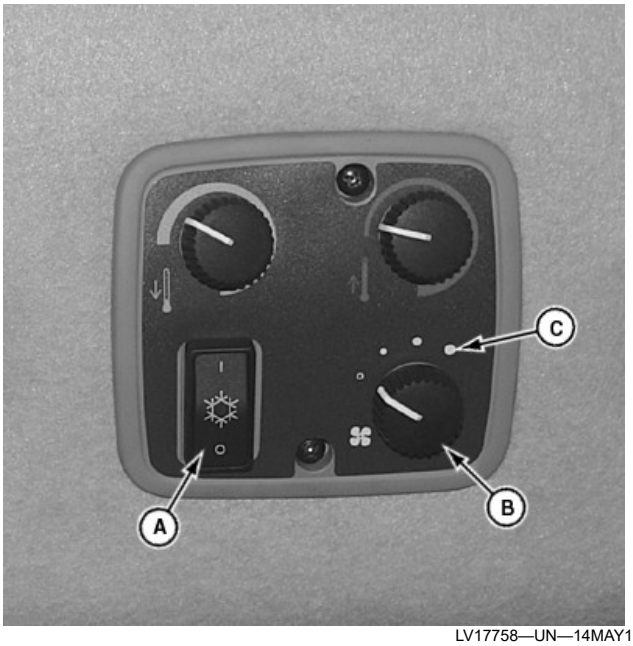
LV30649—UN—16OCT19

Heavy Duty Models

CAUTION: Avoid crushing injury due to a machine rollover. Do not remove or alter the hood guard (A). Replace the damaged hood guard with a John Deere approved hood guard for your tractor.

UP00731,00009B9-19-16OCT19

Servicing Air Conditioner



LV17758—UN—14MAY13

A—On/Off Switch
B—Blower Control Knob
C—High Position

Air Conditioner Checks

Check the following if air conditioner will not cool, or if cooling is intermittent:

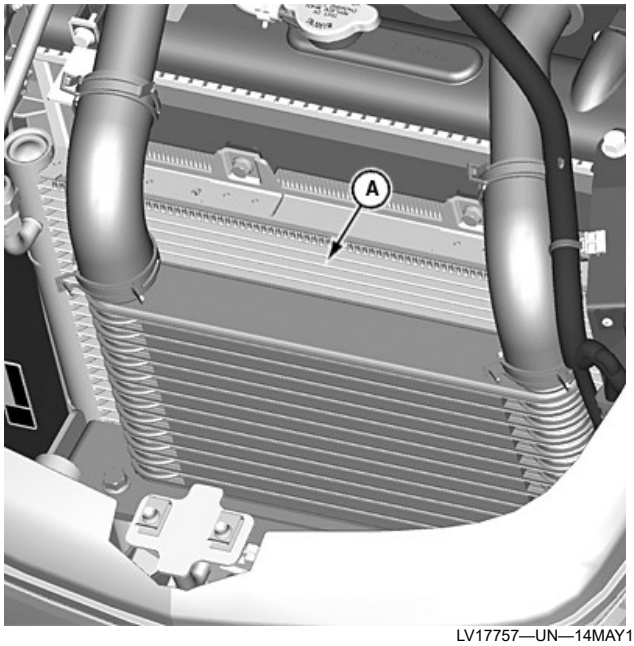
CAUTION: Avoid injury! Refrigerant under pressure. Improper servicing may cause refrigerant to penetrate eyes and skin or cause burns.

IMPORTANT: Avoid damage! R134a refrigerant must be used. This requires special equipment and procedures. See your John Deere dealer.

NOTE: Some oil seepage from compressor shaft seal, on the lower front, is normal.

1. If air conditioner clutch slips after tractor has been in storage, compressor may be stuck.
   - Stop engine and turn key switch to stop (off) position.
   - Raise hood and rotate clutch hub back and forth to free compressor.
2. Run engine at 2000 rpm. Push top half of On/Off Switch (A) and set blower control knob (B) to high position (C). If cooling is intermittent, clean hood grille, radiator, and condenser. If problem is not solved, see your John Deere dealer.
3. Inspect operator enclosure (cab) filter for restriction. If problem persists, see your John Deere dealer to have evaporator core cleaned.

Cleaning Air Conditioner Condenser



LV17757—UN—14MAY13

A—Air Conditioner Condenser

CAUTION: Avoid injury! Compressed air can cause debris to fly a long distance.

- **Clear work area of bystanders.**

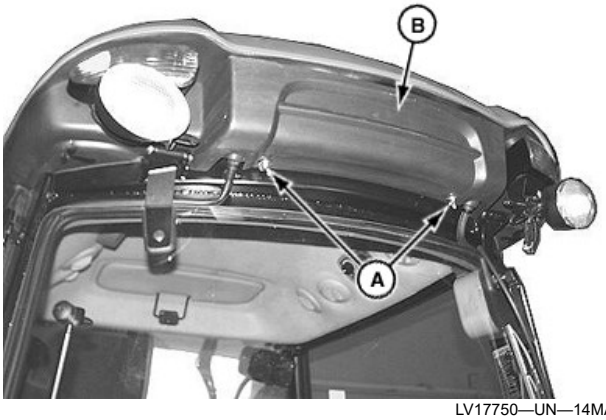
- **Wear eye protection when using compressed air for cleaning purposes.**
- **Reduce compressed air pressure to 210 kPa (30 psi).**

1. Raise hood and check air conditioner condenser (A) for dirt and debris. Clean condenser using a brush or compressed air.
2. If a more thorough cleaning is necessary, clean radiator from behind with compressed air or water. Straighten any bent fins.

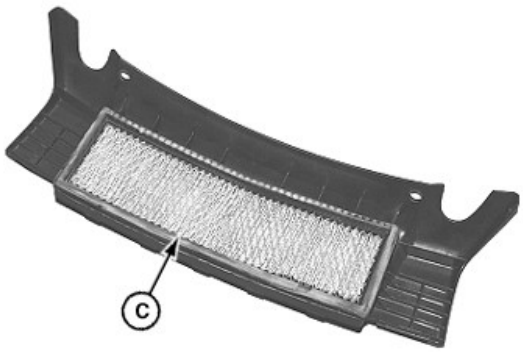
KN52281,10048A2-19-14NOV13

Cleaning Cab Air Filter

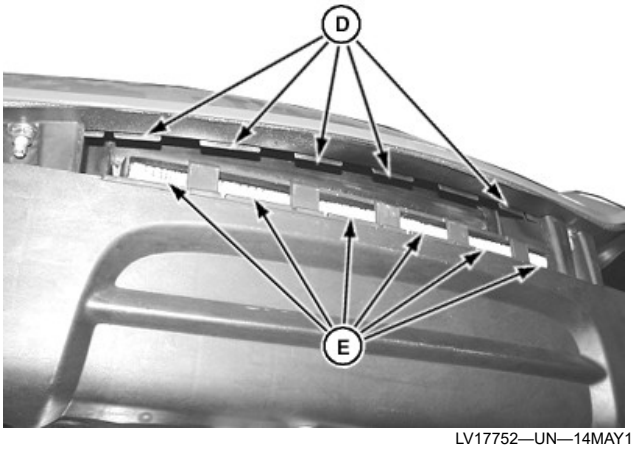
IMPORTANT: Avoid damage! Remove any rear implement before servicing cab air filter. Do not stand on 3-point hitch or PTO shield.



LV17750—UN—14MAY13



LV17751—UN—14MAY13



LV17752—UN—14MAY13

A—Wing Bolts
B—Filter Base
C—Filter
D—Tabs
E—Slots

1. Remove two wing bolts (A), washers, and filter base (B).
2. Remove filter (C) from filter base, and clean with compressed air. Inspect filter for damage. Replace if necessary.
3. Install filter into base.
4. Install filter base, making sure six tabs (D) on roof panel are installed into slots (E) in filter base. Secure base assembly into roof panel with two washers and wing nuts.

KN52281,10048A3-19-04JUN13

Checking Cab Roll-Over Protection System Installation

CAUTION: Avoid injury! To maintain operator protection and ROPS certification:

- **Do not repair or revise the ROPS.**
- **Any alteration of the ROPS must be approved by the manufacturer.**

IMPORTANT: Avoid damage! Make certain all parts are installed correctly. If cab protection system is loosened or removed for any reason, tighten mounting cap screws to specification.

The protection offered by cab protection system will be impaired if cab protection system is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged cab protection system should be replaced, not reused. Any alteration to the cab protection system must be approved by the manufacturer.

LV29129—UN—09AUG17

LV17764—UN—14MAY13

A—Floor Mat
B—Mounting Hardware

1. When installation of equipment on a machine necessitates loosening or removing cab protection system, mounting cap screws should be tightened to specification.
2. Inspect cab protection system mounting hardware every 50 hours for proper torque or replacement.
3. Lift up rubber floor mat (A) to access front mounting hardware.
4. Remove fastener and pull insulation liner away from fender to access rear mounting hardware (B).
5. Tuck the insulation liner under the fender panels when complete.
6. Tighten the mounting hardware to 260 N•m (192 lb.-ft.)

UP00731,00003E1-19-09AUG17

Troubleshooting

Engine

If	Check
Engine Will Not Start or Is Hard to Start	Engine throttle lever not pushed forward. Fuel shutoff valve CLOSED (OFF). Stale fuel, improper fuel, or fuel level. Wrong engine oil viscosity. Cold start system not being used, or malfunctioning. Plugged fuel filter. Plugged air intake filter. Dirty or faulty fuel injectors. Blown fuse. Other electrical problem.
Engine Will Not Start After a Stall	Wait at least 2 seconds and then retry.
Engine Runs Rough or Stalls	Fuel shutoff valve partially closed. Plugged fuel filter. Plugged air intake system. Fuel cap vent dirty. Faulty seat switch. Stale fuel, improper fuel, or fuel level. Dirty or faulty fuel injectors. Low coolant temperature. See your John Deere dealer. Fuel pump not functioning properly. See your John Deere dealer.
Engine Overheats	Dirty grille, radiator screen, or radiator cooling fins. Plugged air intake filter. Low coolant level. Cooling system needs flushing. Defective radiator cap. Defective thermostat. Defective water temperature indicator or sender. Low oil level. Loose or defective alternator belt. Engine speed too low for load. Do not operate at low idle. Operating at too fast ground speed for conditions.
Engine Knocks	Engine oil level low. Injection pump out of time. See your John Deere dealer. Low coolant temperature. See your John Deere dealer. Engine overheating. Idle speed too low.
Engine Lacks Power	Exhaust filter restriction. See your John Deere dealer. Improper type of fuel. Plugged air intake system. Plugged fuel filter. Engine overheating. Operating at too fast ground speed for conditions. Engine oil viscosity too high. Low coolant temperature. See your John Deere dealer. Improper valve clearance. See your John Deere dealer. Dirty or faulty fuel injectors. See your John Deere dealer. Injection pump out of time. See your John Deere dealer. Implement improperly adjusted, causing drag on machine. See implement operator's manual. Rate-of-drop valve closed, causing hydraulic load on engine.
Low Oil Pressure	Engine oil level low. Plugged oil filter. Improper type of oil. Oil leaks.
Engine Uses Too Much Oil	Find and correct oil leaks. Incorrect engine oil. Plugged air intake filter.
Engine Emits White Smoke	Improper type of fuel. Low engine temperature. Defective thermostat. See your John Deere dealer. Engine out of time. See your John Deere dealer.
Engine Emits Black or Gray Exhaust Smoke	Improper type of fuel. Plugged air intake system. Operating at too fast ground speed for conditions. Dirty or faulty fuel injectors. See your John Deere dealer. Engine out of time. See your John Deere dealer.
High Fuel Consumption	Improper type of fuel.

If	Check
	Plugged air intake system. Operating at too fast ground speed for conditions. Improper valve clearance. See your John Deere dealer. Dirty or faulty fuel injectors. See your John Deere dealer. Engine out of time. See your John Deere dealer. Implement improperly adjusted, causing drag on machine. See implement operator's manual. Low engine temperature. Restricted air intake system. Plugged crankcase vent tube or baffle. Brakes dragging.

JC48530,00000B1-19-26SEP19

Electrical System

If	Check
Battery Will Not Charge	Check to ensure 2-pin connector on alternator is plugged in properly. Loose or corroded connections. Check for a blown fuse. Loose or defective alternator belt. Dead cell in battery. Defective battery—check electrolyte level (if applicable). Defective alternator.
Battery Discharge Indicator Stays On With Engine Running	Low engine speed. Check to ensure 2-pin connector on alternator is plugged in properly. Check for a blown fuse. Loose or defective alternator belt. Defective battery. Defective alternator.
Starter Will Not Work	Loose or corroded battery connections. Blown fuse. Low battery output—check electrolyte level (if applicable). Key switch or starter faulty—See your John Deere dealer. Check for active fault codes.
Starter Turns Slowly	Low battery output—check electrolyte level (if applicable). Low battery power—charge battery. Engine oil viscosity too heavy. Loose or corroded battery connections.
Light Circuit Not Working	Fuse blown.
Cruise Control Does Not Engage or Shuts Off	Adjust service brake switch.

JC48530,00000B2-19-26SEP19

Heater and Air Conditioning System

If	Check
All Cab Electrical Switches Do Not Work	Loose, defective or blown fusible link. See your John Deere dealer.
Blower Malfunctioning	Blown fuses. Blower does not work. See your John Deere dealer.
Blower Operates Only in High Position	One of two fuses blown. Blown blower resistance assembly. See your John Deere dealer.
Heater Does Not Work	Low coolant level. Check coolant level; add if necessary. Faulty thermostat. See your John Deere dealer. Heater control valve not functioning properly. See your John Deere dealer. Heater core or hoses clogged or damaged. Flush cooling system. See your John Deere dealer. Replace heater core or hoses. See your John Deere dealer.
Air Conditioning Does Not Work	Blown fuse.

If	Check
	Faulty wiring or loose connections. Fan belt loose or slipping. Defective switch. See your John Deere dealer. Defective compressor clutch. See your John Deere dealer.
Drafts	Poor air distribution. Adjust directional air louvers. Set blower switch to medium or low position.
Inadequate Air Flow	Clogged air filters. Evaporator core air flow restricted. Faulty blower fan motors. See your John Deere dealer. Defective blower switch. See your John Deere dealer. Faulty wiring or loose connections.
Water Leaking or Dripping from Evaporator Core Compartment	Loose hose clamp. Evaporator condenser pan dirty. A/C drain tubes plugged.
Strange Odors Inside Operator'S Cab	Dirty air filters. Evaporator condenser pan dirty. A/C drain tubes plugged. Tobacco smoke and tar on evaporator exterior.
Partial Frosting and Sweating of Lines Combined with Poor Cooling	Fan belt slipping. Loss of refrigerant. See your John Deere dealer. Restricted or clogged liquid line. See your John Deere dealer Expansion valve malfunctioning. See your John Deere dealer.
Ice Flecks Blowing from Evaporator	Control dial set too low. Adjust temperature control to a warmer position.
Failure to Cool	Insufficient blower speed. Dirty air filters. Debris on front grille. Lint or dirt on condenser fins. Refrigerant is lost or extremely low. See your John Deere dealer. Loose fan belt. Compressor clutch not engaging. See your John Deere dealer. Expansion valve not functioning. See your John Deere dealer. Restriction in refrigerant system. See your John Deere dealer. Faulty wiring or loose connections. Defective temperature control switch. See your John Deere dealer. Outside temperature too low, below 21 °C (70°F). Wait until day gets warmer. If there is a malfunction in system, see your John Deere dealer. Condenser is overheating. Clean condenser screens, cores and fins of condenser and radiator. Severe restriction in high side. See your John Deere dealer. Burned out clutch field or faulty field. See your John Deere dealer. Short circuit in control circuit or failure of a switch in circuit. See your John Deere dealer.
Hissing Noise at Expansion Valve	Loss of refrigerant. See your John Deere dealer. Restriction in refrigerant system. Check receiver-dryer for uniformity of temperature. See your John Deere dealer.

KN52281,10048BB-19-26SEP19

Machine

If	Check
Operation Sluggish, Slow	Suction side filter may need replacement.
Poor Hydraulic Performance	Suction side filter may need replacement. Water in oil.
Excessive Machine Vibration	Engine speed too slow.
Machine Will Not Move with Engine Running	Electrical problems. Park brake locked. Transmission oil level low. Transmission oil cold—allow engine to warm. Transmission range shift lever in neutral position. Suction side filter may need replacement. Operator not in seat.
3-point Hitch Fails to Lift	Low oil level.

If	Check
	Worn hydraulic pump. Rate-of-drop valve closed. Excessive load on hitch. Hydraulic oil too cold. Hydraulic oil suction filter plugged.
3-point Hitch Lifts Slowly	Suction side filter may need replacement. Worn hydraulic pump.
3-point Hitch Drops Slowly or Does Not Drop	Rate-of-drop valve closed. Rate-of-drop valve set too slowly.
3-point Hitch Drops Too Fast	Rate-of-drop valve set too fast. Load too heavy.
Noise Is Coming from PTO During Operation	Noise may occur at low engine speeds, increase to rated engine speed.
Hitch Assist Disengages When Exiting the Tractor	Park brake is not fully engaged.

KN52281,1004C1E-19-06FEB14

Brakes

If	Check
Rear Wheel Brakes Not Working	Brakes out of adjustment. Worn or damaged brake linkage. See your John Deere Dealer.

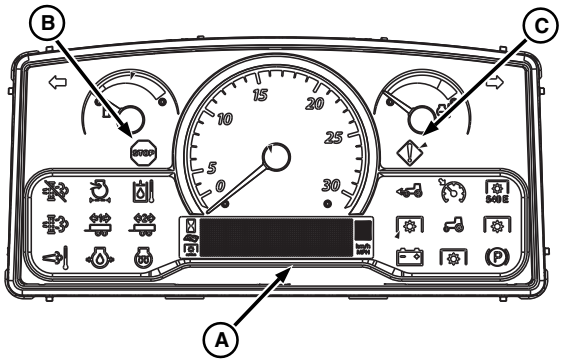
JZ81662,0000FFE-19-11APR13

Steering

If	Check
Steering Not Working	Suction side filter may need replacement. Improper tire inflation. Low oil level. Excessive play in steering. See your John Deere Dealer. Worn hydraulic pump.

JZ81662,0000FFF-19-11APR13

Service Alert and Information Display



LV30635—UN—25SEP19

A—Information Display
B—Stop Indicator
C—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.

STOP Indicator (B): The light illuminates and indicates the tractor requires immediate attention or the tractor will be damaged. Correct problem before restarting the engine. See your John Deere dealer if the issue can not be resolved.

Service Alert Indicator (C): The light flashes and indicates a performance problem or malfunction that has to be resolved as soon as possible. Continued operations during a service alert can result in the STOP indicator lighting up. If appropriate corrective action is not taken soon (maintenance, repair, change of operating mode), a significant reduction in performance and/or machine damage will occur.

Whenever a STOP indicator is displayed, switch the transmission to the park position and shut down the engine.

JC48530,00000A8-19-25SEP19

On Board Diagnostic Display

Information Display acts as a visual, user interface device for machine functions and operation. The information display provides normal operational information, such as display settings, performance monitoring and more for selected machine features or functions.

Certain conditions associate displayed text along with instrument cluster icons.

LV25997—UN—15AUG16

Information Display

For more information on instrument cluster icon descriptions see Controls and Instruments section.

For more information on display messages see the Troubleshooting section.

WS68074,00016BC-19-17AUG16

On-Board Diagnostic (OBD) Tool

On-board diagnostic tool is not available on this tractor.

WS68074,00016BD-19-16AUG16

Diagnostic Trouble Code (DTC)

IMPORTANT: When a DTC occurs; make note of operating conditions and information alert indicators. Contact your John Deere dealer for service assistance.

LV25998—UN—15AUG16

If a control unit software detects a malfunction or a status fault, a Diagnostic Trouble Code (DTC) is registered. A DTC number consist of the control unit software abbreviation, suspect parameter number (SPN), and a failure mode indicator number (FMI). A DTC identifies which machine system is experiencing a certain type of problem.

Software	SPN	FMI
ECU	3251	.04

Example of an Engine Control Unit (ECU) Diagnostic Trouble Code

If the DTC is accompanied by the STOP warning

indicator, cease machine operation immediately and correct problem before resuming operation. See your John Deere dealer if the issue can not be resolved.

LV25014—UN—22APR16

A—Display Mode Switch

For DTCs that are not accompanied by a Service Alert Indicator, press the display mode switch (A) to acknowledge the condition and resume the current operation. Resolve the DTC as soon as possible. An unresolved DTC can result in a STOP condition if left unresolved.

WS68074,00016BE-19-15AUG16

Come Home Mode

Come Home Mode allows the operator to move a tractor having mechanical problems.

NOTE: A 10A fuse (not supplied) is required to enter this mode. This fuse is referred to as the Come Home fuse in this procedure.

The Transmission Control Unit (TCU) must detect the Come Home fuse on initial ignition start-up before it enters come home mode. If the Come Home fuse is inserted after ignition start-up, the ignition must be powered off and back on before Come Home Mode will be activated.

Hydrostatic Transmission: The pedals must be in neutral position after Come Home Mode is activated before any motion is commanded.

PowrReverser Transmission: Reverser lever on dash must be in neutral position after Come Home Mode is activated before any motion is commanded.

Inserting the Come Home fuse generates a DTC (523966.01—Come Home Mode Procedure Detected). This code stays active until the Come Home mode fuse is removed.

Perform the following to enter the tractor into Come Home Mode:

1. With key switch OFF, insert the Come Home fuse (10A) into F03 in the tractor fuse panel.

NOTE: For more information on fuse location, see "Locating Fuses and Relays".

2. Start engine.
3. When the instrument cluster displays "Seat", toggle the seat switch (operator gets out of the seat and sits down again).
4. Display beeps five times and the Service Indicator Light illuminates.
5. Move tractor.

Vehicle Response in Come Home Mode:

- PTO Operation Disabled
- Hitch Assist Disabled
- LoadMatch Disabled
- MotionMatch Disabled
- eThrottle Disabled
- Cruise Control Disabled
- Creep2Reposition Disabled
- Shuttle Shifts Disabled
- Fault Codes Ignored
- Transmission calibration is not permitted

JC48530,00000B4-19-27SEP19

Specifications

Engine Specifications

NOTE: Engine Power rated according to SAE J1995.

Engine			
Model	**4044M, 4044R**	**4052M, 4052R**	**4066M, 4066R**
Engine Manufacturer	Yanmar	Yanmar	Yanmar
Engine Model	4TNV88C-MJTV	4TNV86CT-MJTV	4TNV86CHT-MJTV
Type	Diesel	Diesel	Diesel
Gross Horsepower	31.7 kW (42.5 hp)	37.9 kW (50.8 hp)	48.5 kW (65 hp)
Manufacturer's Estimated PTO Horsepower	24.1 kW (32.3 hp)	30.5 kW (40.8 hp)	38.7 kW (51.9 hp)
Low Idle Speed	950 rpm	950 rpm	950 rpm
Rated Engine Speed	2600 rpm	2600 rpm	2600 rpm
High Idle	2750 rpm	2750 rpm	2750 rpm
Operating Range	950—2750 rpm	950—2750 rpm	950—2750 rpm
Engine Torque @ Rated Speed	117 N·m (86 lb·ft)	139 N·m (103 lb·ft)	178 N·m (131 lb·ft)
Maximum Torque @ 1690 rpm	141 N·m (104 lb·ft)	168 N·m (124 lb·ft)	207 N·m (153 lb·ft)
Displacement	2.2 L (133.6 in^3)	2.1 L (127.6 in^3)	2.1 L (127.6 in^3)
Cylinders	Four	Four	Four
Bore and Stroke	88 x 90 mm (3.46 x 3.54 in)	86 x 90 mm (3.39 x 3.54 in)	86 x 90 mm (3.39 x 3.54 in)
Compression Ratio	19:1	19:1	19:1
Cooling System	Water Pump	Water Pump	Water Pump
Oil Filter	Single Element	Single Element	Single Element
Air Cleaner	Dry Type with Safety Element	Dry Type with Safety Element	Dry Type with Safety Element

JC48530,00000B3-19-04OCT19

Drivetrain Specifications

Drivetrain		
Item	**Measurement**	**Specification**
HST Transmission	Type	3 Range Hydrostatic
	Number of Speeds	Infinite / 3Range
PRT Transmission	Type	12 x 12 PowrReverser
	Number of Speeds	12 Forward, 12 Reverse
Clutch	Type	Wet, 13 cm (5.1 in)
Mechanical Front Wheel Drive (MFWD)		Standard
MFWD	Capability	All Ranges
MFWD	Engagement	On-the-Go
Final Drive	Type	Spur Gear
Rear Axle Weight	Capacity	(Continuous) 2500 kg (5512 lb)
Front Axle Weight	Capacity	(Continuous) 1500 kg (3307 lb)

GS25068,0003AE6-19-07SEP17

Hydraulic System Specifications

Hydraulic System		
Item	**Measurement**	**Specification**
Pump	Type	Open Center
Hydrostatic Pump	Type	PV Axial Piston

Hydraulic System		
Item	**Measurement**	**Specification**
System Relief Pressure		17237 kPa (2500 psi)
Implement Flow @ Rated Speed	Capacity	38.7 L/min (10.2 gpm)
Steering Flow @ Rated Speed	Capacity	21.5 L/min (5.7 gpm)
Total Pump Flow @ Rated Speed	Capacity	60.2 L/min (15.9 gpm)

GS25068,0003AE7-19-07SEP17

Electrical System Specifications

Electrical System		
Item	**Measurement**	**Specification**
Electrical System	Type	12 Volt
	Battery Size	770 Cold Cranking Amps @ -18 °C (0 °F)
	Alternator	75 Amp

GS25068,0003AE8-19-07SEP17

Fluid Capacities

Fluid Capacities		
Item	**Measurement**	**Specification**
Fuel Tank—OOS	Capacity	56.9 L (15 gal)
Fuel Tank—Cab	Capacity	55.6 L (14.7 gal)
Cooling System—OOS	Capacity	6.4 L (6.8 qt)
Cooling System—Cab	Capacity	7.6 L (8.0 qt)
Crankcase with Filter	Capacity	5.3 L (5.6 qt)
Transmission and Hydraulic System	Capacity	47.3 L (12.5 gal)
Front Axle	Capacity	5.0 L (5.3 qt)

UP00731,0000444-19-08OCT19

Ground Speeds

NOTE: All ground speed calculations shown are with machine equipped with standard rear tires and operated at 2500 engine rpm.

Ground Speeds—HST		
Item	**Measurement**	**Specification**
Forward and Reverse	Range Low	6.8 km/h (4.2 mph)
Forward and Reverse	Range Medium	14.4 km/h (8.9 mph)
Forward and Reverse	Range High	30 km/h (18.6 mph)

Ground Speeds—PRT		
Item	**Measurement**	**Specification**
Range—A	Gear 1	1.7 km/h (1.1 mph)
Range—A	Gear 2	2.4 km/h (1.5 mph)
Range—A	Gear 3	3.1 km/h (1.9 mph)
Range—A	Gear 4	4.1 km/h (2.5 mph)
Range—B	Gear 1	4.7 km/h (2.9 mph)
Range—B	Gear 2	6.4 km/h (4.0 mph)
Range—B	Gear 3	8.4 km/h (5.2 mph)
Range—B	Gear 4	11.0 km/h (6.8 mph)
Range—C	Gear 1	13.2 km/h (8.2 mph)
Range—C	Gear 2	17.9 km/h (11.1 mph)
Range—C	Gear 3	23.7 km/h (15.0 mph)
Range—C	Gear 4	30. km/h (18.6 mph)

UP00731,0000449-19-13SEP17

Dimensions

NOTE: Machine equipped with 13.6 x 28 6PR R1 rear tires and 8.0 x 16 10PR R1 front tires.

Dimensions		
Item	**Measurement**	**Specification**
Machine Deminsions	Wheelbase	1854.92 mm (73 in)
	Overall Length with 3-point Hitch	3318.4 mm (130.6 in)
	Overall Width	1987.1 mm (78.2 in)

GS25068,0003B02-19-07SEP17

Dimensions—Heavy Duty Models

NOTE: Machine equipped with 16.9-24 R4 rear tires and 31.5x16.5 R4 front tires.

Dimensions		
Item	**Measurement**	**Specification**
Machine Deminsions	Wheelbase	1854.92 mm (73 in)
	Overall Length with 3-point Hitch	3421.6 mm (134.7 in)
	Overall Width	1811.8 mm (71.3 in)

UP00731,00009C3-19-15OCT19

Height From Ground

NOTE: Machine equipped with 13.6 x 28 6PR R1 rear tires and 8.0 x 16 10PR R1 front tires.

Height From Ground		
Item	**Measurement**	**Specification**
To Top of ROPS Extended	Height	2545.9 mm (100.2 in)
To Top of ROPS Folded	Height	2044.4 mm (80.5 in)
To Top of Cab	Height	2474.0 mm (97.4 in)

GS25068,0003B03-19-07SEP17

Height From Ground—Heavy Duty Models

NOTE: Machine equipped with 16.9-24 R4 rear tires and 31.5x16.5 R4 front tires.

Height From Ground		
Item	**Measurement**	**Specification**
To Top of ROPS Extended	Height	2426.1 mm (95.5 in)
To Top of ROPS Folded	Height	1771.9 mm (69.8 in)

UP00731,00009C4-19-15OCT19

Ground Clearance

NOTE: Machine equipped with 13.6 x 28 6PR R1 rear tires and 8.0 x 16 10PR R1 front tires.

Ground Clearance		
Item	**Measurement**	**Specification**
Front Axle	Clearance	395.1 mm (15.6 in.)
Drawbar Support	Clearance	377 mm (14.8 in.)

GS25068,0003B04-19-07SEP17

Track Width

NOTE: Machine equipped with 13.6 x 28 6PR R1 rear tires and 8.0 x 16 10PR R1 front tires.

Track Width		
Item	**Measurement**	**Specification**
Front	Width	1362 mm (53.6 in)
Rear	Width	1522 mm (59.9 in)

GS25068,0003B05-19-07SEP17

Track Width—Heavy Duty Models

NOTE: Machine equipped with 16.9-24 R4 rear tires and 31.5x16.5 R4 front tires.

Track Width		
Item	**Measurement**	**Specification**
Front	Width	1362.6 mm (53.6 in)
Rear	Width	1371.8 mm (54 in)

UP00731,00009C8-19-15OCT19

Turning Radius

NOTE: Machine equipped with 13.6 x 28 6PR R1 rear tires and 8.0 x 16 10PR R1 front tires.

Turning Radius		
Item	**Measurement**	**Specification**
MFWD Off	Turning Radius—With Brakes	4.6 m (15.1 ft)
MFWD Off	Turning Radius—Without Brakes	4.5 m (17.1 ft)

GS25068,0003B06-19-07SEP17

Machine Weight

NOTE: Machine equipped with a ROPS, 3-point hitch, standard tires and all fluids

Machine Weight		
Item	**Measurement**	**Specification**
Machine	Weight	1710 kg (3770 lb)
Machine with Cab	Weight	2120 kg (4675 lb)

GS25068,0003AF0-19-08SEP17

Machine Weight—Heavy Duty Models

NOTE: Machine equipped with a ROPS, 3-point hitch, standard tires and all fluids

Machine equipped with 16.9-24 R4 rear tires and 31.5x16.5 R4 front tires.

Machine Weight		
Item	**Measurement**	**Specification**
Machine	Weight	1934 kg (4255 lb)

UP00731,00009C9-19-15OCT19

3-Point Hitch Specification

3-Point Hitch		
Item	**Measurement**	**Specification**
3-Point Hitch	Type	Limited Category 1
3-Point Hitch	Lift Capacity—61 cm (24 in) Behind Hitch Ball	1134 kg (2500 lb)
3-Point Hitch	Lift Capacity—at Hitch Ball	1420 kg (3130 lb)

3-Point Hitch		
Item	**Measurement**	**Specification**
Drawbar	Max Vertical Load	500 kg (1103 lb)

UP00731,00009D8-19-18OCT19

3-Point Hitch Specification—Heavy Duty Models

3-Point Hitch		
Item	**Measurement**	**Specification**
3-Point Hitch	Type	Telescopic Category 1/2
3-Point Hitch	Lift Capacity—61 cm (24 in) Behind Hitch Ball	1134 kg (2500 lb)

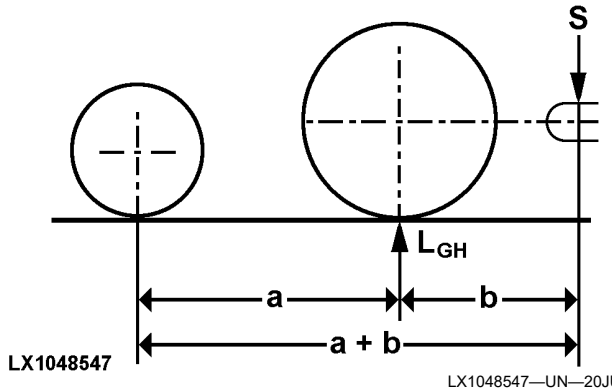
UP00731,00009C6-19-15OCT19

3-Point Hitch Specification—Front Hitch

3-Point Hitch		
Item	**Measurement**	**Specification**
Front 3-Point Hitch	Type	Category 1
Front 3-Point Hitch	Lift Capacity—61 cm (24 in) Behind Hitch Ball	700 kg (1540 lb)
Front 3-Point Hitch	Lift Capacity—at Hitch Ball	1540 kg (3400 lb)

UP00731,00009D9-19-18OCT19

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:

$$S = \frac{(H_{max} - L_{GH}) * a}{a + b}, \text{ where}$$

$H_{max.}$ = 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:

$$D = \frac{G * A * B}{A + B}, \text{ where}$$

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:

Tractor mass $A = \frac{D * B}{G * B - D}$

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:

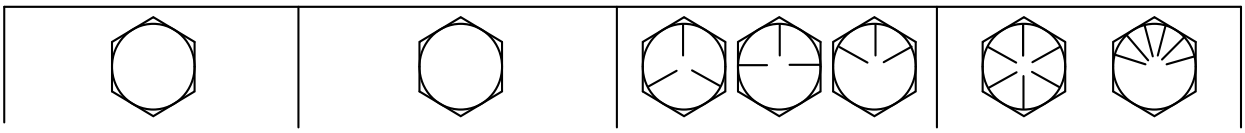
Given that: D value, D = 55 kN = 55000 N
Tractor mass A = 7000 kg

$$B = \frac{55000\ N * 7000\ kg}{9.81\ m/s^2 * 7000\ kg - 55000\ N} = 28163\ kg$$

Pay close attention to permissible towed mass and tractor mass!

UP00731,0000193-19-13SEP18

Unified Inch Bolt and Screw Torque Values



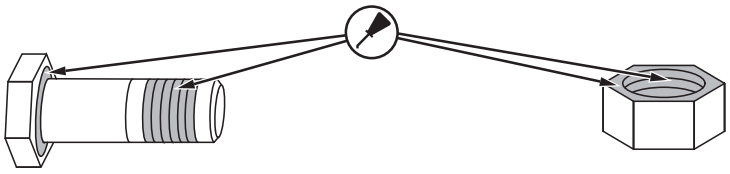
TS1671—UN—01MAY03

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.
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.

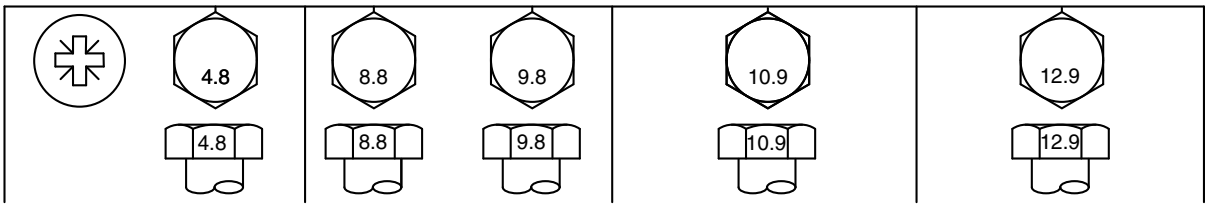


TS1741—UN—22MAY18

[a]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,TORQ1-19-30MAY18

Metric Bolt and Screw Torque Values



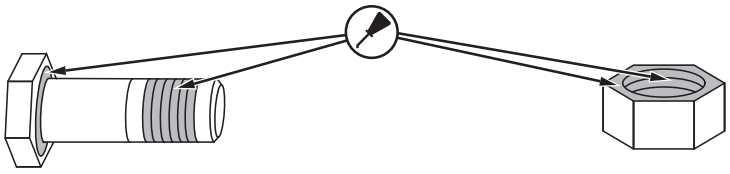
TS1742—UN—31MAY18

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

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,TORQ2-19-30MAY18

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

Record Identification Numbers

Compact Utility Tractor

Open Station - KL100001-

Cab – KL400001-

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:

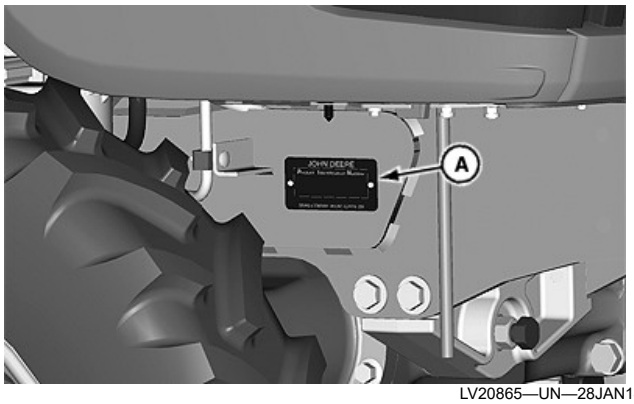
_____

DEALER PHONE:

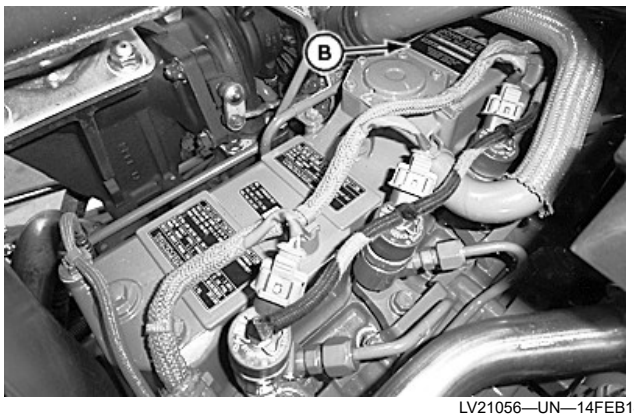
_____

PRODUCT IDENTIFICATION NUMBER (A):

— — — — — — — — — — — — — — — — —



LV20865—UN—28JAN14



LV21056—UN—14FEB14

ENGINE SERIAL NUMBER (B):

— — — — — — — — — — — — — — — — —

LV28670—UN—12JUN17

Cab Serial Number Location

CAB SERIAL NUMBER (C):

— — — — — — — — — — — — — — — — — —

UP00731,0000937-19-10SEP19

Certification and Warranty

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.

MP47322,00F4690-19-09JUL15

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 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. 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 exhaust gas after treatment (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:

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 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 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 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)

(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. 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 are responsible for presenting your engine to an authorized 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 any questions regarding 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 Compact Tractor 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/.

JC48530,000047B-19-13AUG20

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.

Free Replacement

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within 90 days of purchase will be replaced free of charge. Installation costs will be covered by warranty if (1) the unserviceable battery was installed by a John Deere factory or dealer, (2) failure occurs within 90 days of purchase, and (3) the replacement battery is installed by a John Deere dealer.

Pro Rata Adjustment

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship more than 90 days after purchase, but before the expiration of the applicable adjustment period, will be replaced upon payment of the battery's current list price less a pro rata credit for unused months of service. The applicable adjustment period is determined from the Warranty Code printed at the top of the battery and chart below. Installation costs are not covered by warranty after 90 days from the date of purchase.

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.

Pro Rata Months of Adjustment

Warranty Code	Warranty Period
A	40 Months
B	36 Months
C	24 Months

NOTE: If your battery is not labeled with a warranty code, it is a warranty code "B".

DX,BATWAR,NA-19-16APR92

Service Records

Every 10 Hour Service

SERVICE PROCEDURE	
□ Check safety interlock system.	□ Radiator coolant level.
□ Check engine oil level.	□ Lubricate grease points (Wet Conditions).
□ Check transmission oil level.	
□ Clean air filter rubber dust valve.	

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,0000003-19-26MAY17

Every 50 Hour Service

SERVICE PROCEDURE	
□ Check front axle oil level.	□ Clean or replace cab air filter.
□ Lubricate machine.	□ Check hardware torque on front hitch (If equipped).
□ Check cab rollover protection system mounting hardware torque.	

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,0000004-19-26MAY17

Every 100 Hour Service

SERVICE PROCEDURE	
□ Check front hitch hydraulic connections for leaks.	

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,000000F-19-26MAY17

Every 200 Hour Service or Annually

SERVICE PROCEDURE	
□ Check and adjust alternator/fan belt.	Check and adjust air conditioner compressor belt (If equipped).
□ Check wheel bolt torque.	Check air restriction indicator light.

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,00009AD-19-03OCT19

Every 400 Hour Service

SERVICE PROCEDURE	
□ Change Transmission Oil and Filter[a] .	□ Replace front PTO gearbox oil (JD20D) and filter, if equipped.
□ Replace primary fuel filter / water separator.	□ Replace final fuel filter.
□ Change engine oil and filter.	

[a]Transmission oil can be changed every 1200 hours or 3 years if specific requirements are met., see transmission maintenance for additional information.

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,00009AE-19-03OCT19

Every 400 Hour Service or Annually

SERVICE PROCEDURE	
□ Replace primary fuel filter / water separator.	□ Replace final fuel filter.

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,0000010-19-26MAY17

Every 600 Hour Service

SERVICE PROCEDURE	
□ Service air filter element , intake, and hoses, and clamps. Replace as required.	□ Check axle thrust bolt torque
□ Check front axle oil.	□ Check brake adjustment.

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,0000007-19-26MAY17

Annually

SERVICE PROCEDURE	
□ Change engine oil and filter if less than 400 hours of operation.	□ Check all hoses and clamps
□ Drain water from fuel tank and replace fuel filters.	□ Inspect air intake system hoses and connections each time the air filter is clogged.
Check wheel bolt torque.	

Hours: Date: Work Carried Out By:	Comments:	Dealer's Stamp

UP00731,00009AF-19-03OCT19

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

UP00731,00002E4-19-26MAY17

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

UP00731,0000012-19-14MAY18

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

UP00731,00002AE-19-27MAR20

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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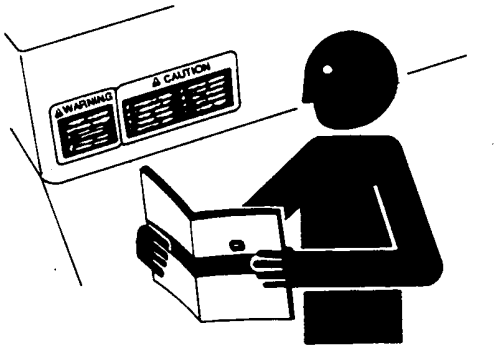
John Deere Service

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