

**3033R, 3039R, 3046R Tractors
(Serial No. PR000001-)
(North America)**



JOHN DEERE

OPERATOR'S MANUAL

**3033R, 3039R, 3046R Tractors
(North America)**

OMTR130415 ISSUE E3 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

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

If this product contains a gasoline engine:

⚠ WARNING

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

The State of California requires the above two warnings.

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



* D C Y *



* 0 M T R 1 3 0 4 1 5 *

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.

Contents

	Page		Page
General Information			
Product View	00-1	Transport Tractor Safely	00A-16
Trademarks	00-3	Service Cooling System Safely	00A-16
Glossary of Terms	00-3	Service Accumulator Systems Safely	00A-17
Regions and Country Versions	00-4	Service Tires Safely	00A-17
Machine Overview	00-5	Service Front-Wheel Drive Tractor Safely	00A-17
Safety			
Recognize Safety Information	00A-1	Tightening Wheel Retaining Bolts/Nuts	00A-17
Understand Signal Words	00A-1	Avoid High-Pressure Fluids	00A-18
Follow Safety Instructions	00A-1	Do Not Open High-Pressure Fuel System	00A-18
Prepare for Emergencies	00A-1	Store Attachments Safely	00A-18
Wear Protective Clothing	00A-2	Decommissioning — Proper Recycling and Disposal of Fluids and Components	00A-18
Protect Against Noise	00A-2	Safety Signs	
Handle Fuel Safely—Avoid Fires	00A-2	Replace Safety Signs	00B-1
Handle Starting Fluid Safely	00A-2	Starter	00B-1
Fire Prevention	00A-3	PTO Shield	00B-1
In Case of Fire	00A-3	Use Seat Belt Properly	00B-1
Avoid Static Electricity Risk When Refueling	00A-4	Operators Manual - OOS	00B-2
Keep ROPS Installed Properly	00A-4	Folding ROPS	00B-2
Use Foldable ROPS and Seat Belt Properly	00A-4	Canopy or Sunshade	00B-3
Stay Clear of Rotating Drivelines	00A-5	Engine Coolant Heater	00B-3
Use Steps and Handholds Correctly	00A-5	Use Seat Belt Properly - Cab	00B-4
Read Operator's Manuals for ISOBUS		Operators Manual - Cab	00B-4
Controllers	00A-6	Controls and Instruments	
Use Seat Belt Properly	00A-6	Operator Station Controls—OOS	10-1
Operating the Tractor Safely	00A-6	Operator Station Controls—Cab	10-2
Avoid Backover Accidents	00A-7	Floor Panel Operation—OOS	10-3
Limited Use in Forestry Operation	00A-7	Floor Panel Operation—Cab	10-3
Operating the Loader Tractor Safely	00A-8	HVAC Controls	10-3
Keep Riders Off Machine	00A-8	Instrument Cluster	10-4
Instructional Seat	00A-8	Information Display Icons	10-6
Use Safety Lights and Devices	00A-9	Information Display and Display Mode Switch	10-7
Use a Safety Chain	00A-9	Engine Operation	
Transport Towed Equipment at Safe Speeds	00A-9	Use Key Switch	20-1
Use Caution on Slopes, Uneven Terrain, and Rough Ground	00A-10	Use Throttle	20-1
Freeing a Mired Machine	00A-10	Use eThrottle	20-2
Avoid Contact with Agricultural Chemicals	00A-11	Use Fuel Shut off Valve	20-2
Handle Agricultural Chemicals Safely	00A-11	Start the Engine - Hydrostatic Transmission	20-2
Handling Batteries Safely	00A-12	Start the Engine—PowrReverser Transmission	20-4
Avoid Heating Near Pressurized Fluid Lines	00A-13	Stop Machine	20-6
Remove Paint Before Welding or Heating	00A-13	Air Intake, Fuel, Coolant, and Exhaust Operation	
Handle Electronic Components and Brackets Safely	00A-13	Using Fuel Shutoff Valve	30-1
Practice Safe Maintenance	00A-14	Fill Fuel Tank	30-1
Avoid Hot Exhaust	00A-14	Exhaust Filter System Overview	30-1
Clean Exhaust Filter Safely	00A-14	Aftertreatment Indicators Overview	30-2
Work In Ventilated Area	00A-15		
Support Machine Properly	00A-15		
Prevent Machine Runaway	00A-16		
Park Machine Safely	00A-16		

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.

Contents

	Page		Page
Electrical and Lighting Operation		Use Optional Rear Cast Iron Wheel Weights	80A-2
Use Lights and Turn Signals	40-1	Use Optional Rear Ballast Box	80A-2
Use Dome Light	40-1	Use Liquid Weight in Tires	80A-2
Use Display Mode Switch	40-1	Use Optional Front Weights	80A-2
Drivetrain Operation		Additional Equipment Operation	
Drive Machine—Hydrostatic Transmission	50-1	Additional Equipment Operation	80B-1
Drive Machine—PowrReverser Transmission	50-1	Operator Station Operation	
Transmission Operation		Entering and Exiting Machine	90-1
Operate Hydrostatic Transmission	50A-1	Adjust Seat	90-1
Operate PowrReverser Transmission	50A-1	Use Seat Belt	90-2
Use Cruise Control—If Equipped	50A-2	Raising and Lowering Roll-Over Protective Structure (ROPS)	90-2
Use LoadMatch	50A-2	HVAC Temperature Control—Cab	90-3
Use SpeedMatch	50A-3	Using Windshield Wiper and Washer—Cab	90-3
Use MotionMatch	50A-3	Defrost Windshield and Side Glass—Cab	90-4
MFWD and Front Axle Operation		Using Radio—Cab	90-4
Use Mechanical Front Wheel Drive (MFWD)	50B-1	Using Rear Window—Cab	90-5
Differential and Rear Axle Operation		Transport and Storage	
Use Differential Lock (Traction Assist)	50C-1	Transport Machine on Trailer	100-1
Power Take Off (PTO) Operation		Transport Machine	100-1
Stay Clear of Rotating Drivelines	50D-1	Push or Tow Machine	100-1
Use the PTO Safely	50D-1	Store Safety	100-2
Use Rear and Mid PTO (Operator on Seat)	50D-2	Prepare Machine for Storage	100-2
Use Rear PTO (Operator off Seat)	50D-3	Prepare Fuel and Engine For Storage	100-2
Steering and Brake Operation		Remove Machine from Storage	100-2
Use Brake Pedals	60-1	Maintenance Intervals	
Use Park Brake	60-1	Service Machine	200-1
Adjust Tilt Steering Wheel	60-2	Service Interval Charts	200-1
Hydraulics Operation		Service Interval Charts	200-2
Warm Hydraulic System Oil	70-1	Test Safety Systems	200-2
Hydraulics Information	70-1	Test the Neutral Start Switch (PowrReverser Only)	200-3
Hitch and Drawbar Operation		Test the Seat Switch	200-3
Use Attachments	70A-1	Avoid Damage to Plastic and Painted Surfaces	200-3
Use 3-Point Hitch	70A-1	Clean Plastic Surfaces	200-3
Use Drawbar Hitch (If Equipped)	70A-3	Clean and Repair Metal Surfaces	200-3
Use Optional iMatch Quick-Attach Hitch System	70A-5	Fuel, Lubricants, and Coolant	
Use Front 3-Point Hitch (If equipped)	70A-6	Carbon Dioxide Emissions (CO ₂)	200A-1
Selective Control Valve Operation		Emissions Performance and Tampering	200A-1
Avoid High-Pressure Fluids	70B-1	Diesel Fuel	200A-1
Connect Implement Hydraulic Hoses	70B-1	Handling and Storing Diesel Fuel	200A-2
Use Dual SCV Lever	70B-1	Testing Diesel Fuel	200A-2
Use Dual SCV Lock Lever	70B-2	Minimizing the Effect of Cold Weather on Diesel Engines	200A-2
Use Third SCV	70B-3	Alternative and Synthetic Lubricants	200A-3
Use Fourth and Fifth SCV (If Equipped)	70B-3	Engine Oil	200A-3
Use Diverter Rear Outlets (If Equipped)	70B-4	Diesel Engine Coolant	200A-4
Wheels and Tires Operation		Operating in Warm Temperature Climates	200A-4
Tire Combinations	80-1	Additional Information About Diesel Engine Coolants and John Deere COOL-GARD™ II Coolant Extender	200A-5
Ballast		Testing Diesel Engine Coolant	200A-5
Ballast Machine	80A-1	Testing Coolant Freeze Point	200A-6
Implement Codes	80A-1	Transmission and Hydraulic Oil	200A-6
		Front Axle and MFWD Oil	200A-7
		Grease	200A-7

	Page		Page
Maintenance—As Required		Differential and Rear Axle Maintenance	
Service—As Required	200B-1	Rear Axle	250C-1
Controls and Instruments Maintenance		Power Take Off (PTO) Maintenance	
Controls and Instruments Maintenance	210-1	PTO Maintenance	250D-1
Engine Maintenance		Steering and Brake Maintenance	
Required Emission-Related Information	220-1	Check and Adjust Toe-In	260-1
Emissions Service Information	220-1	Steering Maintenance	260-1
Daily Operation Checklist	220-1	Lubricate Brake Linkage	260-2
Exhaust Filter Maintenance and Service	220-1	Brake Maintenance	260-2
Avoid Fumes	220-2	Hydraulics Maintenance	
Check Engine Oil Level	220-2	Hydraulic Maintenance	270-1
Change Engine Oil and Filter	220-3	Hitch and Drawbar Maintenance	
Clean Dust Unloading Valve	220-3	Lubricate 3-Point Hitch	270A-1
Service the Alternator Belt	220-4	Lubricate Front Hitch	270A-1
Clean Front Grille Screens	220-4	Selective Control Valve Maintenance	
Air, Fuel, Coolant and Exhaust Maintenance		Check SCV	270B-1
Service Air Filter Elements	230-1	Wheels and Tires Maintenance	
Check Air Filter Intake Hose	230-2	Check Wheel Bolts and Hardware	280-1
Automatic (AUTO) Exhaust Filter Cleaning	230-2	Remove and Install Wheels	280-1
Disabled Exhaust Filter Cleaning	230-2	Check Tire Pressure	280-1
Parked Exhaust Filter Cleaning	230-3	Tire Inflation Pressures (Maximum)	280-1
Service Exhaust Filter Cleaning	230-4	Select Front Tire Rolling Direction	280-2
Check and Clean Fuel Filter Sediment Bowl and Replace Filter	230-5	Change Wheel Spacing and Tread Width	280-2
Fuel Injection Pump	230-6	Lifting Points for Jacking up the Tractor	280-2
Fuel Injection Nozzles	230-6	Ballasting Maintenance	
Service Cooling System Safely	230-6	Match Ballast to Work Load	280A-1
Service Cooling System	230-6	Additional Equipment Maintenance	
Check Radiator Hoses and Clamps	230-8	Additional Equipment Maintenance	280B-1
Clean Radiator Cooling Fins	230-9	Operator Station Maintenance	
Service the Air Conditioner Belt—Cab	230-9	Raise and Lower Hood	290-1
Clean Hood Vents	230-11	Remove and Install Side Panels	290-1
Service Air Conditioner	230-11	Hood Cowl Removal and Installation	290-2
Clean Cab Air Filter	230-12	Checking Cab Roll-Over Protection System Installation	290-2
Electrical and Lighting Maintenance		Troubleshooting	
Service Electrical	240-1	Use Troubleshooting Chart	300-1
Service the Battery Safely	240-1	Engine	300-1
Remove and Install Battery	240-1	Electrical System	300-2
Clean Battery and Terminals	240-2	Heater and Air Conditioning System	300-3
Use Booster Battery	240-2	Machine	300-4
Replace Headlight	240-3	Brakes	300-4
Replacing Tail/Turn and Warning Light Bulbs (OOS)	240-3	Steering	300-4
Replace Light Bulbs (Tractor with Cab)	240-4	On Board Diagnostics	
Replace Fuses and Relays	240-6	Service Alert and Information Display	300A-1
Drivetrain Maintenance		On Board Diagnostic Display	300A-1
Drivetrain Maintenance	250-1	On-Board Diagnostic (OBD) Tool	300A-1
Transmission Maintenance		Diagnostic Trouble Code (DTC)	300A-1
Check Transmission Oil Level	250A-1	Come Home Mode	300A-2
Change Transmission Oil and Hydraulic Suction Oil Filter	250A-1	MFWD and Front Axle Maintenance	
MFWD and Front Axle Maintenance		Check Front Axle Oil Level	250B-1
Check Front Axle Oil Level	250B-1	Change Front Axle Oil	250B-1
Change Front Axle Oil	250B-1	Adjust Front Axle Thrust Bolt Torque	250B-2
Adjust Front Axle Thrust Bolt Torque	250B-2	Lubricate Axle Trunnion	250B-2
Lubricate Axle Trunnion	250B-2		

Page

Specifications

How to Calculate Maximum Permissible
 Download on Trailer Hitch 400-1
How to Calculate Permissible Mass 400-1
Engine 400-2
Drivetrain 400-3
Hydraulic System 400-3
Electrical System 400-3
Fluid Capacities 400-3
Ground Speeds 400-4
Dimensions 400-4
Track Width 400-4
Height From Ground 400-5
Ground Clearance 400-5
Turning Radius 400-5
Weight 400-5
3-Point Hitch 400-6
Unified Inch Bolt and Screw Torque Values 400-6
Metric Bolt and Screw Torque Values 400-7

Identification Numbers

Product Identification Information 400A-1
Record Identification Numbers 400A-1

Certification and Warranty

Product Warranty 400B-1
Emission System Warranty 400B-1
Tire Warranty 400B-3
Limited Battery Warranty 400B-3

Service Records

After first 10 Hours 500-1
Every 10 Hours or Daily 500-1
Every 50 Hour Service 500-1
Every 100 Hour Service 500-2
Every 200 Hour Service or Annually 500-2
Every 400 Hour Service 500-2
Every 600 Hour Service 500-3
Annually 500-3
Every 1000 Hour Service 500-3
Every 2000 Hour Service or Every Two Years ... 500-4
Every 6000 Hour Service or Every Six Years ... 500-4
Change of Ownership 500-4
Change of Ownership 500-5
Change of Ownership 500-5

General Information

Product View



Cab

LV564853—UN—22FEB23



Open Operator's Station

LV564854—UN—09FEB23

i2649ku,1675658751143-19-22FEB23

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

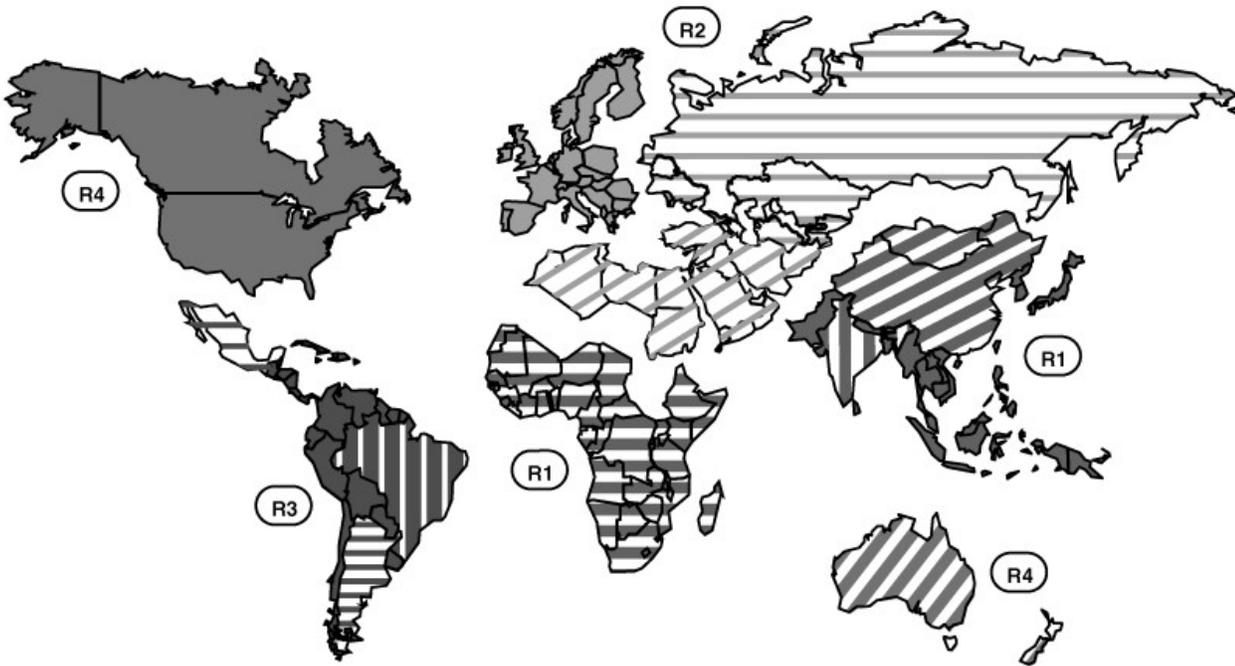
UP00731,0000111-19-27AUG18

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.

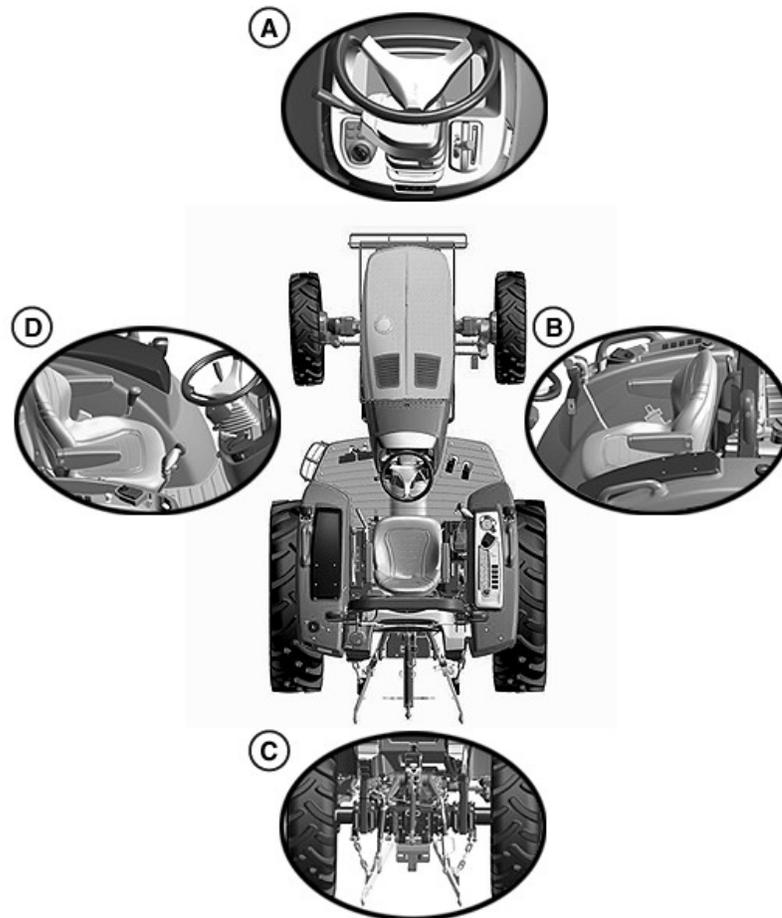
NOTE: Australia and New Zealand (R4B) are available as either region 4 and/or region 2 configurations, only using text-free safety signs.

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.



A—Front Console Controls
B—Right Side Controls

C—Rear Implement Interface
D—Left Side Controls

LV27954—UN—21MAR17

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.

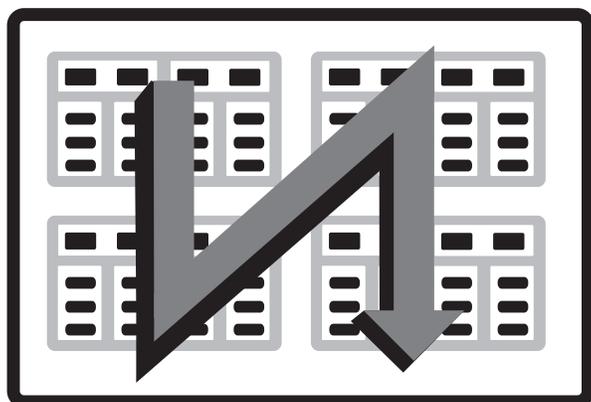
Using this Manual:

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

Safety

Recognize Safety Information



T81389—UN—28JUN13

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

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Follow Safety Instructions



TS201—UN—15APR13

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

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

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

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

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

DX,READ-19-01AUG22

Understand Signal Words



▲ 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.

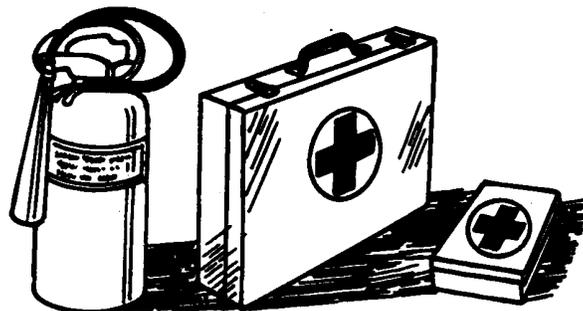
WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

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

Prepare for Emergencies



TS291—UN—15APR13

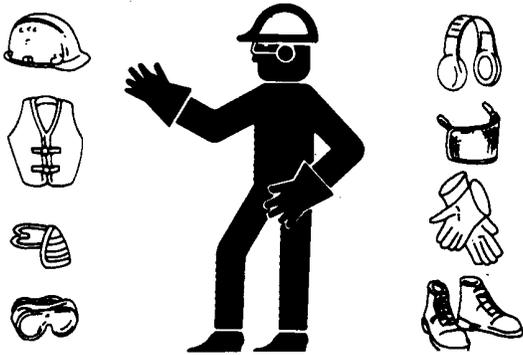
Be prepared if a fire starts.

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

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.

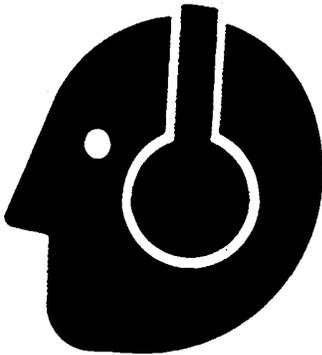
Use only an approved fuel container for transporting flammable liquids.

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

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 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:

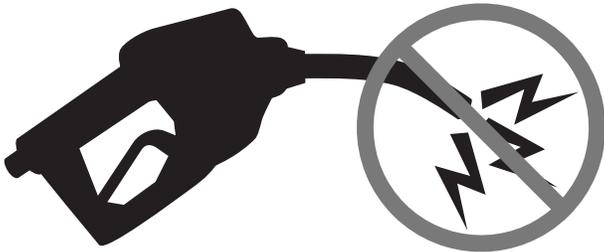
1. Pull the pin. Hold the extinguisher with the nozzle pointing away from you, and release the locking mechanism.
2. Aim low. Point the extinguisher at the base of the fire.
3. Squeeze the lever slowly and evenly.
4. Sweep the nozzle from side-to-side.

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.

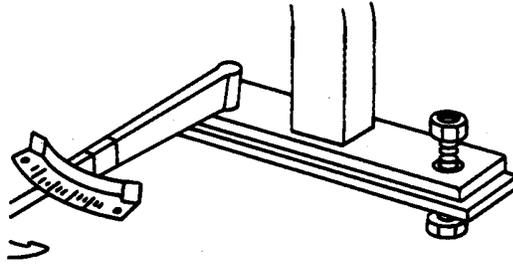
Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

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.

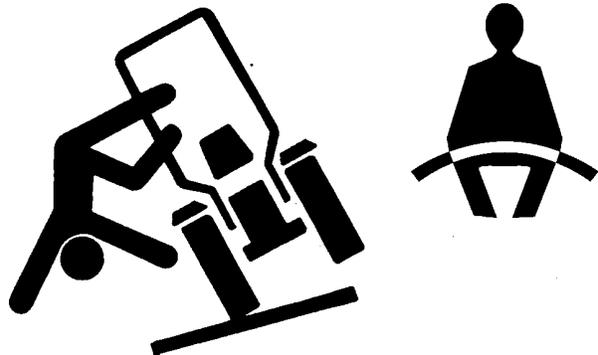
The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

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.

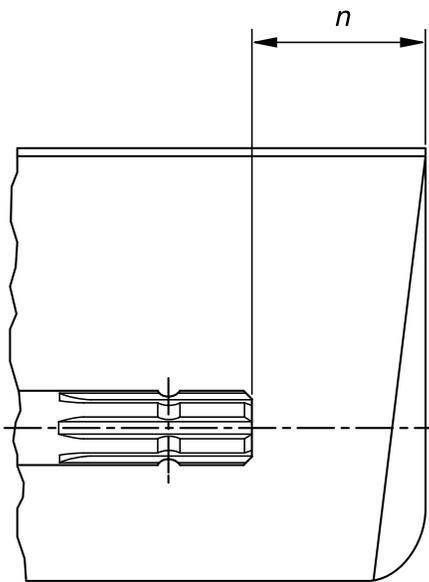
- Snug the seat belt across the hips.
- If this machine is operated with the ROPS folded (for example, to enter a low building), drive with extreme caution. DO NOT USE a seat belt with the ROPS folded.
- Return the ROPS to the raised, fully extended position as soon as the machine is operated under normal 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 driveshafes 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	$n \pm 5 \text{ mm (0.20 in.)}$
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

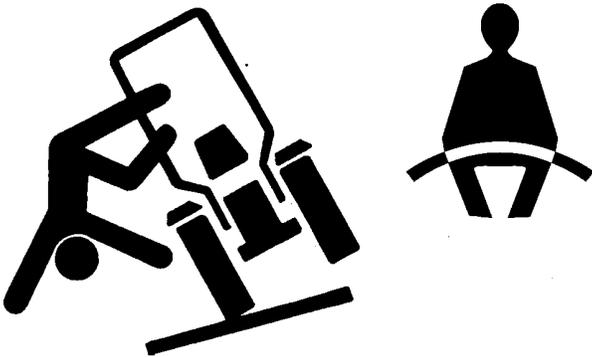
Read Operator's Manuals for ISOBUS Controllers

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

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

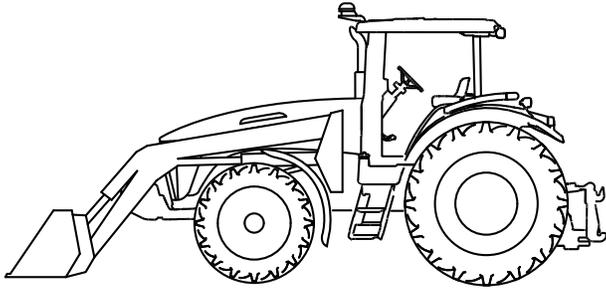
Limited Use in Forestry Operation

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.

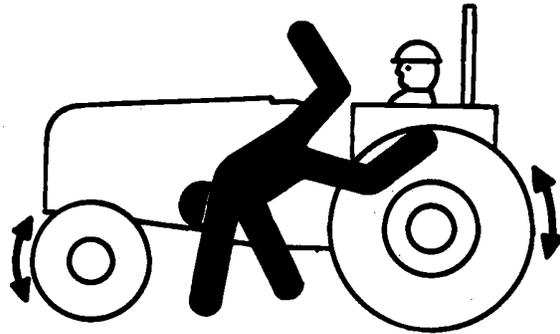
Lower loader to ground before leaving operators station.

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 claspers).

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

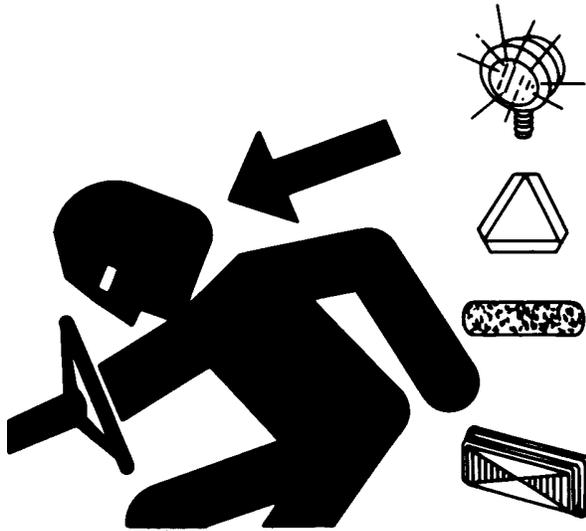


TS1730—UN—24MAY13

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



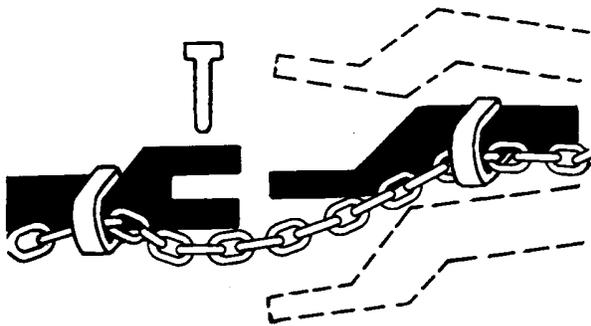
TS951—UN—12APR90

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.

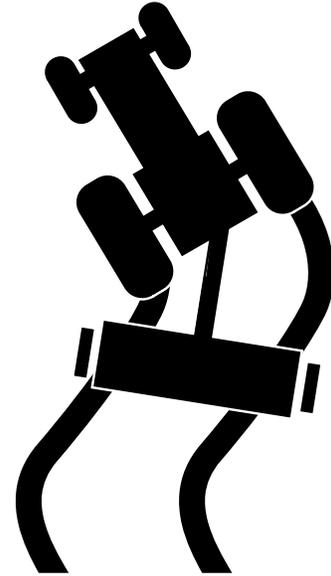
Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

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).

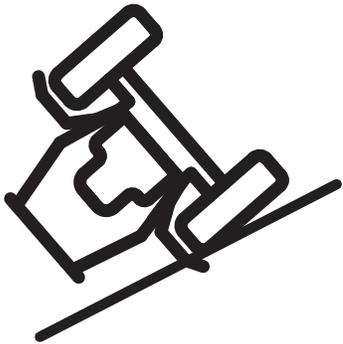
Implements with brakes:

- 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

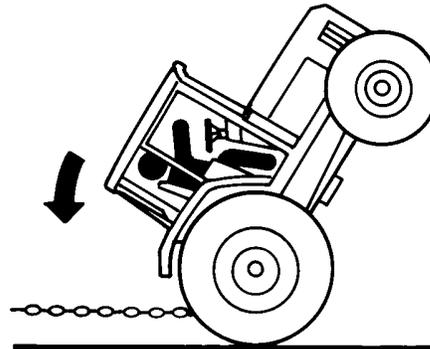
Choose a low ground speed so you will not have to stop or shift while on a slope.

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

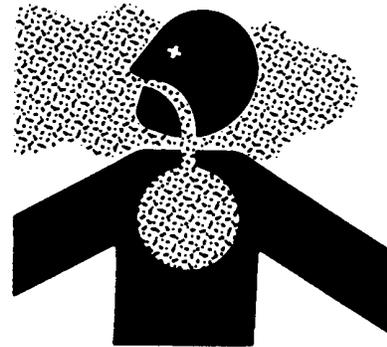
This enclosed cab does not protect against inhaling vapor, aerosol or dust. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.

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

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.

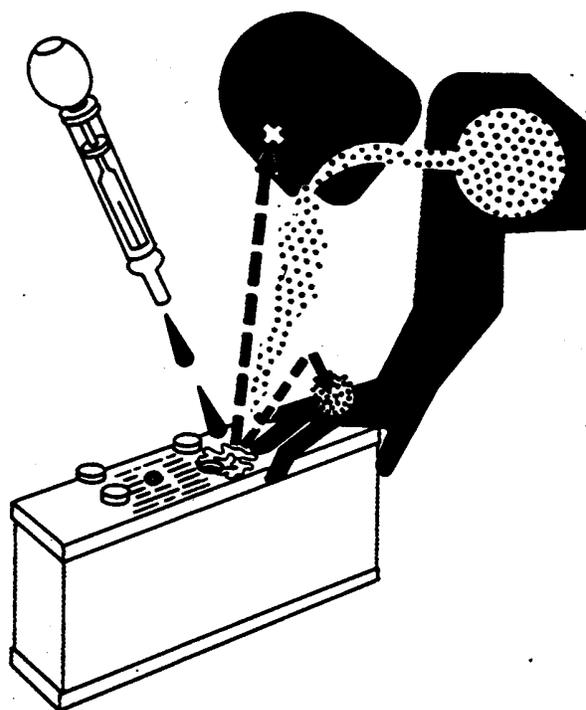
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer 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.

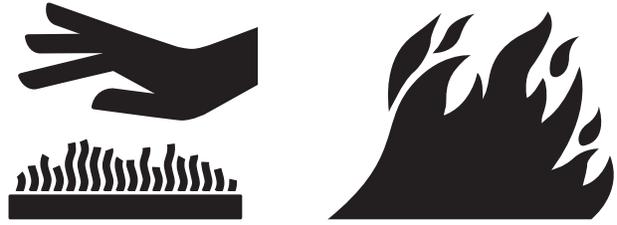
On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

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.

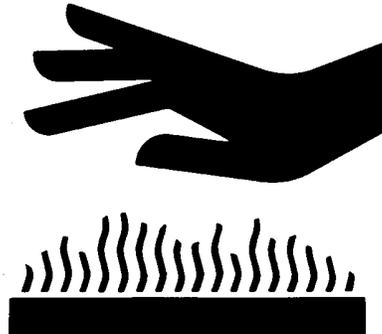
Exhaust parts and streams become very hot during operation. Exhaust gases and components reach temperatures hot enough to burn people, ignite, or melt common materials.

DX,EXHAUST-19-20AUG09

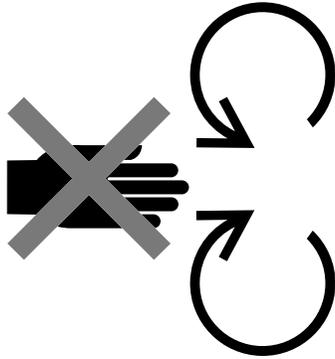
Clean Exhaust Filter Safely



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

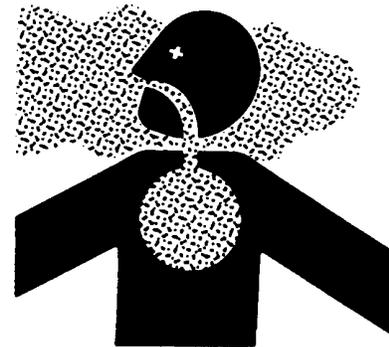
Keep hands, feet, and clothing away from power-driven parts.

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



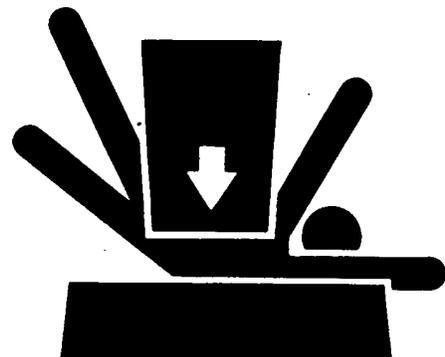
TS220—UN—15APR13

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

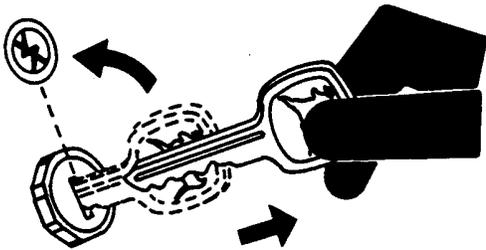
Avoid possible injury or death from machinery runaway.

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



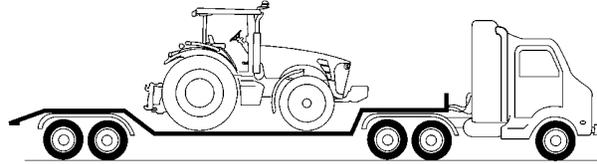
TS230—UN—24MAY89

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.

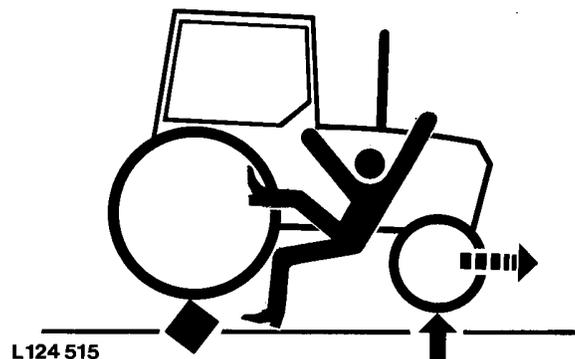
When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

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



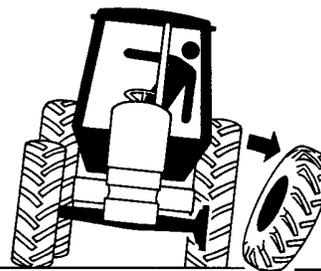
L124 515

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



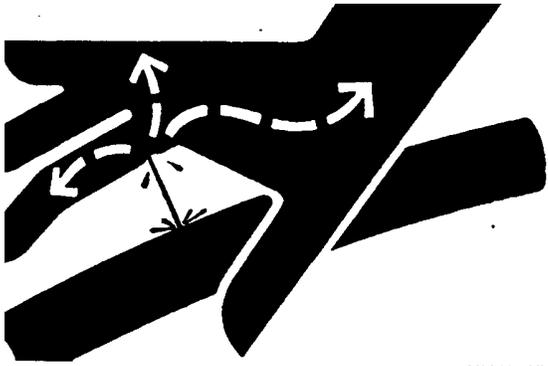
L124 516

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



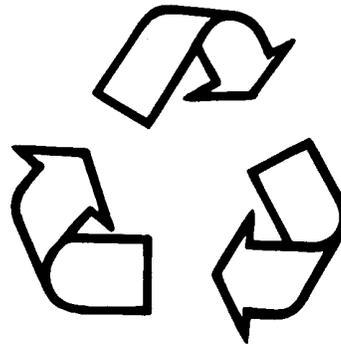
TS219—UN—23AUG88

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:

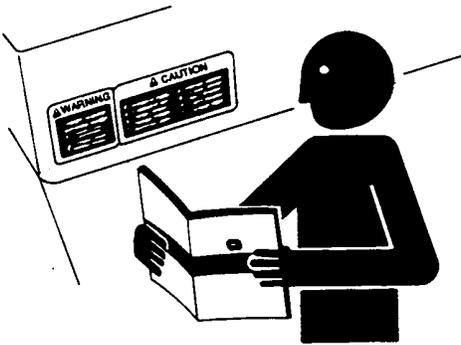
- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.

- 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

Safety Signs

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.

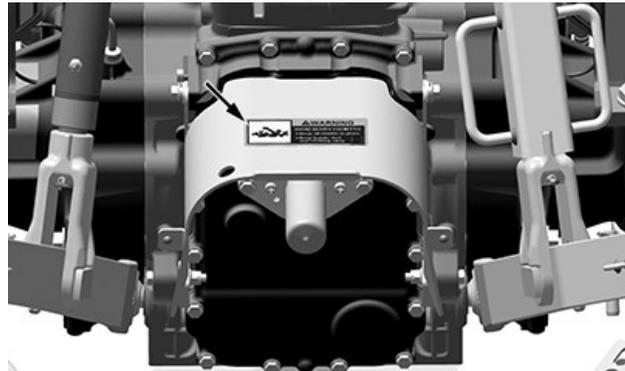
DX,SIGNS-19-18AUG09

PTO Shield



LVU34602

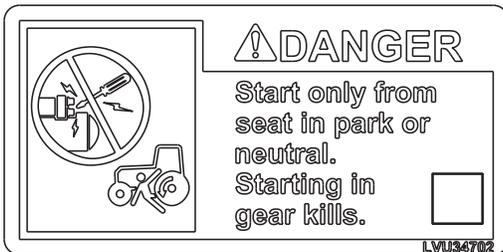
LV28429—UN—18MAY17



PTO

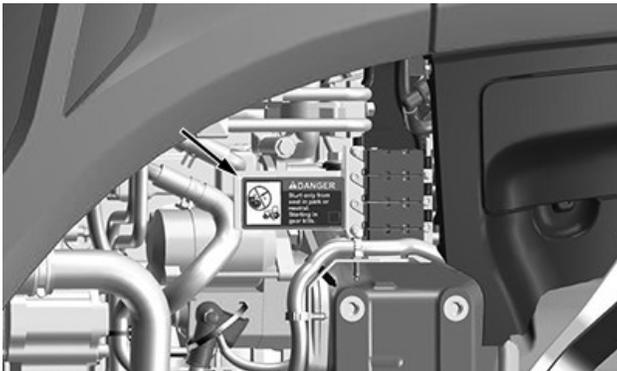
LV29013—UN—27JUL17

Starter



LVU34702

LV29024—UN—25JUL17



Starter

LV29025—UN—25JUL17

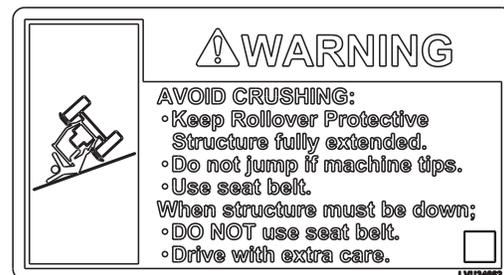
WARNING

AVOID INJURY FROM PTO

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

PP71895,0001586-19-25AUG20

Use Seat Belt Properly



LVU34602

LV29029—UN—25JUL17

DANGER

Start only from seat in park or neutral.

Starting in gear kills.

PP71895,0001585-19-25AUG20



LV29022—UN—25JUL17

Right-Hand Fender - Folding ROPS Tractors

WARNING

AVOID CRUSHING:

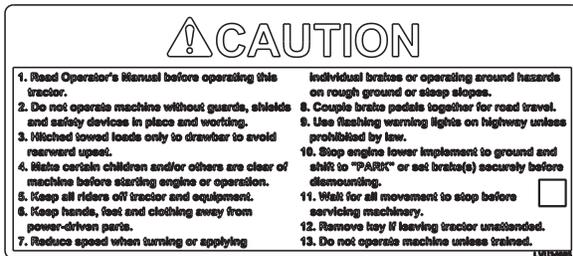
- Keep Rollover Protective Structure fully extended.
- Do not jump if machine tips.
- Use seat belt.

When structure must be down:

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

PP71895,0001587-19-25AUG20

Operators Manual - OOS



LV29030—UN—25JUL17



LV29023—UN—25JUL17

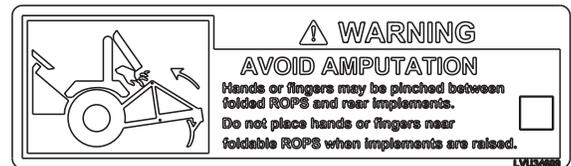
Right-Hand Fender—Folding ROPS Tractors

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.

PP71895,0001588-19-25AUG20

Folding ROPS



LV28431—UN—18MAY17

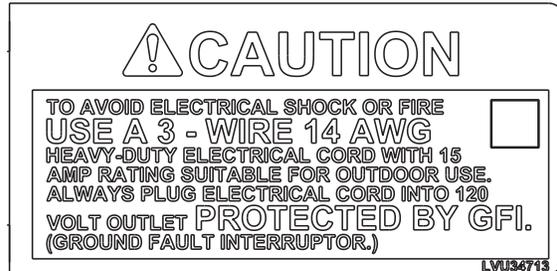


LV18508—UN—31JUL13
Top of ROPS - Folding ROPS Tractors

structure, the weight **MUST** be limited to **100 lb (45 kg)** or less.

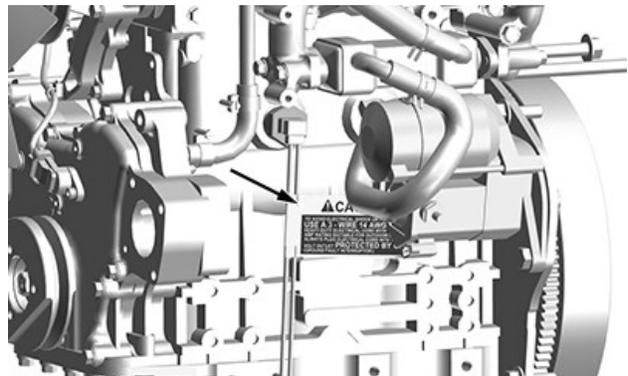
PP71895,000158A-19-25AUG20

Engine Coolant Heater



LV29578—UN—09NOV17

Engine Coolant Heater



LV29582—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.)

PP71895,000158B-19-25AUG20

WARNING

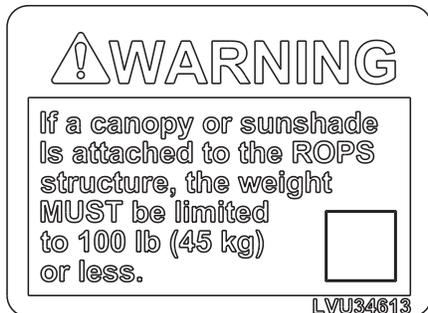
AVOID AMPUTATION

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.

PP71895,0001589-19-25AUG20

Canopy or Sunshade



LV28492—UN—01JUN17



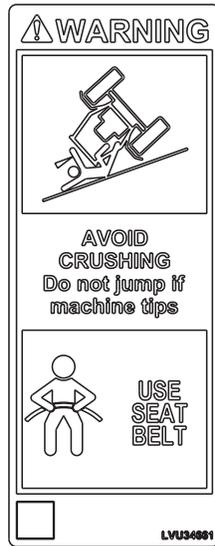
LV29021—UN—25JUL17

Right Side of ROPS

WARNING

If a canopy or sunshade is attached to the ROPS

Use Seat Belt Properly - Cab



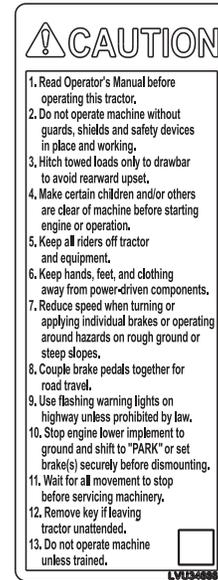
LV29026—UN—25JUL17



Cab Tractor

LV29027—UN—25JUL17

Operators Manual - Cab



LV29031—UN—27JUL17



Left-Hand Door Post

LV29028—UN—25JUL17

WARNING

AVOID CRUSHING

Do not jump if machine tips

USE SEAT BELT

PP71895,000158C-19-25AUG20

CAUTION

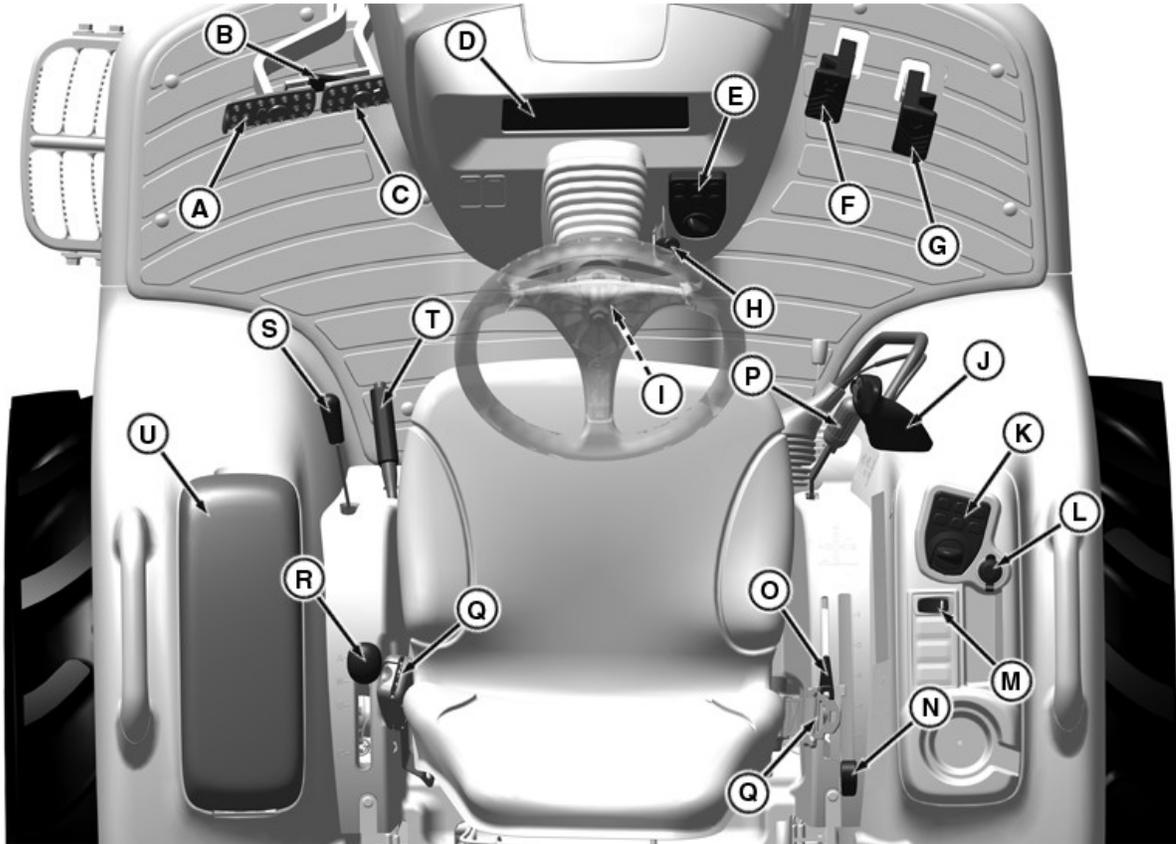
1. **Read Operator's Manual before operating this tractor.**
2. **Do not operate machine without guards, shields and safety devices in place and working.**
3. **Hitch towed loads only to drawbar to avoid rearward upset.**
4. **Make certain children and/or others are clear of machine before starting engine 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.**

PP71895,000158D-19-25AUG20

Controls and Instruments

Operator Station Controls—OOS



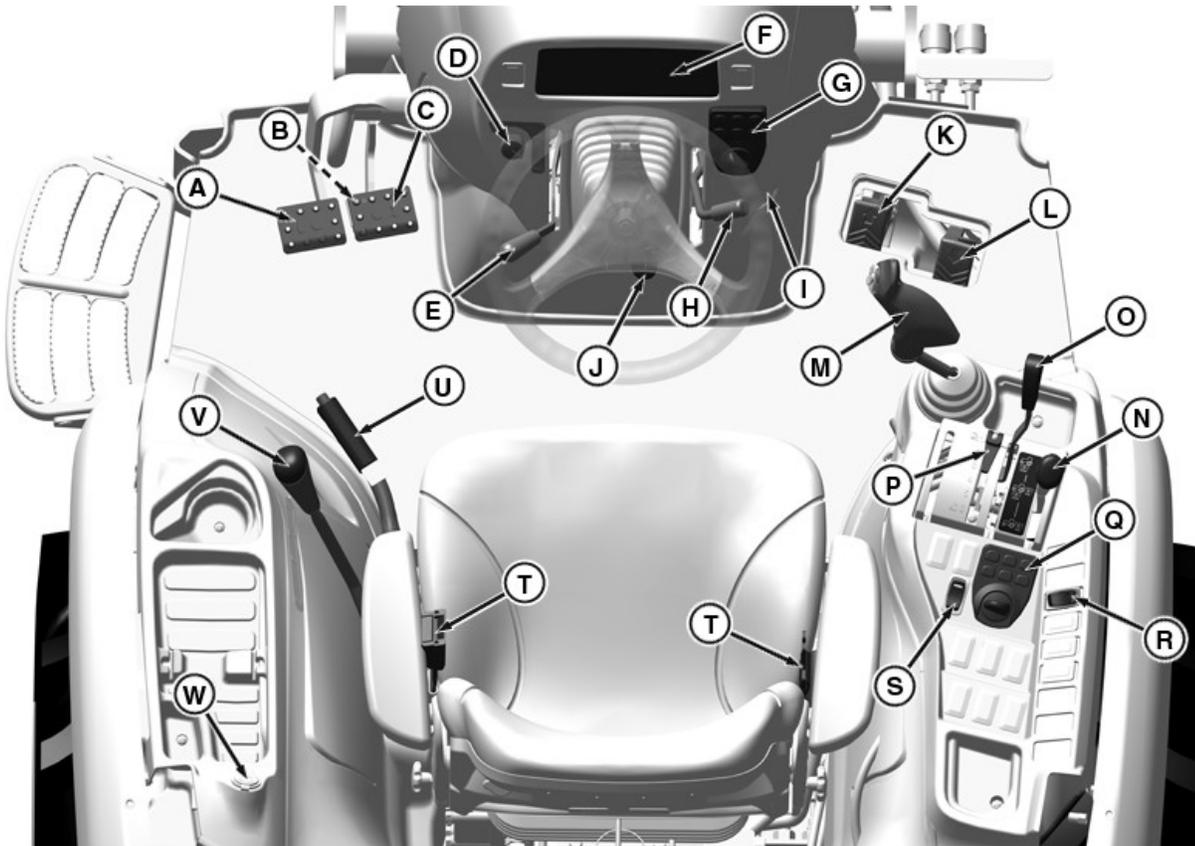
APY20395—UN—13SEP19

Open Operator Station Controls

- | | |
|--|---|
| A—Left Turn Brake Pedal | L—Aux Port |
| B—Brake Pedal Lock | M—PTO Engagement Switch |
| C—Right Turn Brake Pedal | N—Rockshaft Control Lever |
| D—Instrument Cluster | O—Rockshaft Depth Stop |
| E—Dash Panel Module | P—PTO Select Lever |
| F—Forward Travel Pedal | Q—Seat Belt |
| G—Reverse Travel Pedal | R—Transmission Range Shift Lever |
| H—Engine Speed Hand Throttle | S—Mechanical Front Wheel Drive (MFWD) Lever |
| I—Ignition Key Switch | T—Park Brake Lever |
| J—Dual Selective Control Valve (SCV) Lever | U—Operator's Manual Holder |
| K—Cruise Control Module | |

PS75950,00008F5-19-13SEP19

Operator Station Controls—Cab



APY20364—UN—10SEP19

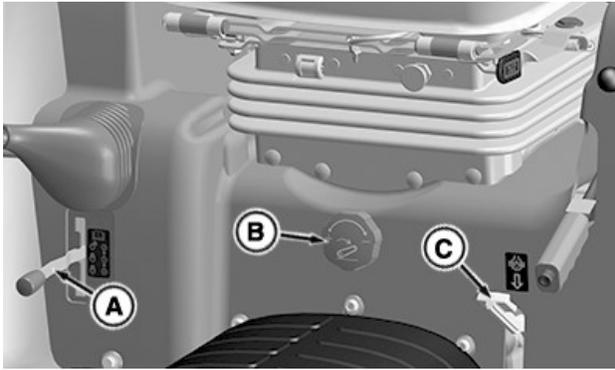
Cab Controls

- A—Left Turn Brake Pedal
- B—Brake Pedal Lock
- C—Right Turn Brake Pedal
- D—Wiper Knob
- E—Mechanical Front Wheel Drive (MFWD) Lever
- F—Instrument Cluster
- G—Dash Panel Module
- H—Engine Speed Hand Throttle
- I—Ignition Key Switch
- J—Tilt Lever
- K—Forward Travel Pedal
- L—Reverse Travel Pedal

- M—Dual Selective Control Valve (SCV) Lever
- N—PTO Selector Lever
- O—Rockshaft Control Lever
- P—Rockshaft Depth Stop
- Q—Cruise Control Module
- R—Rear Outlet Activation Switch
- S—PTO Engagement Switch
- T—Seat Belt
- U—Park Brake Lever
- V—Transmission Range Shift Lever
- W—Aux Port

PS75950,00008C5-19-20AUG19

Floor Panel Operation—OOS



LV28514—UN—19MAY17

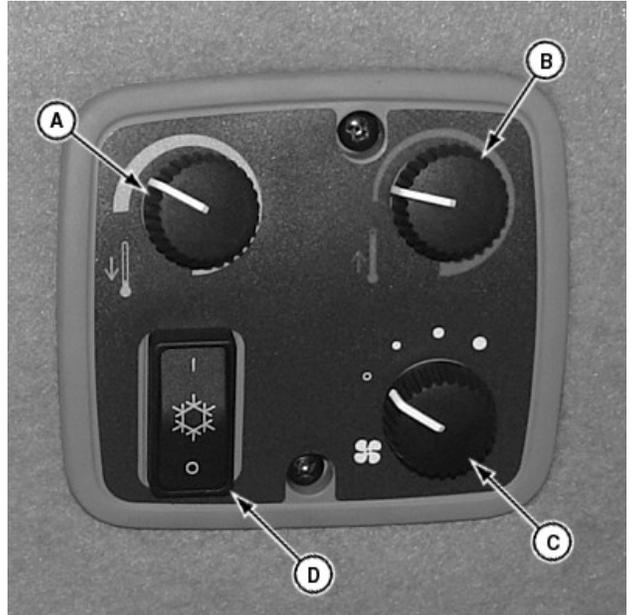
- A—Selective Control Valve (SCV) Lock (OOS shown)
- B—Rockshaft Rate-of-Drop Control Knob
- C—Differential Lock Pedal

DB71512,0000244-19-23MAY17

- A—Rockshaft Rate-of-Drop Control Knob
- B—Differential Lock Pedal

KN52281,100487A-19-23MAY13

HVAC Controls



LV17722—UN—07MAY13

- A—Air Conditioner Temperature Control Knob
- B—Heater Temperature Control Knob
- C—Blower Speed Knob
- D—Defrost Switch

KN52281,100487B-19-23MAY13

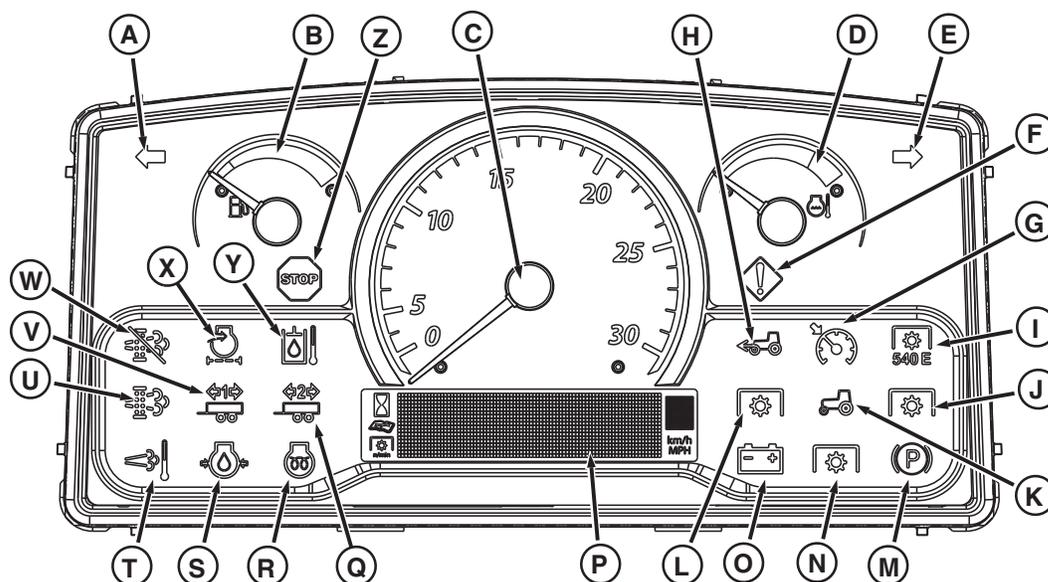
Floor Panel Operation—Cab



LV17726—UN—07MAY13

Instrument Cluster

Instrument Control Panel



Instrument Control Panel

LV30626—UN—24SEP19

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 - Illuminates 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.



Information Display Icons

LV30645—UN—12DEC19

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.

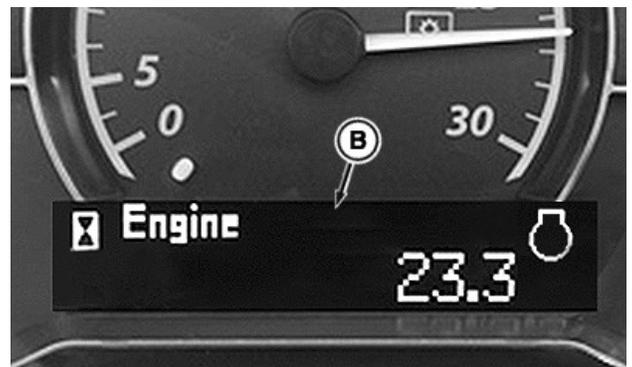
UP00731,0000983-19-17MAR20

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:

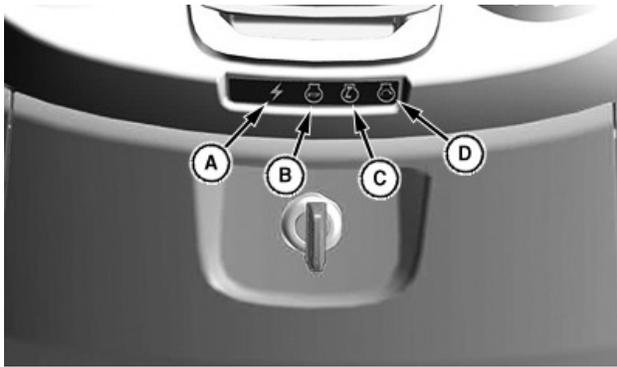
Brightness Mode ⇒ Dimmer Mode ⇒ Language

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

WS68074,00016C0-19-18MAR20

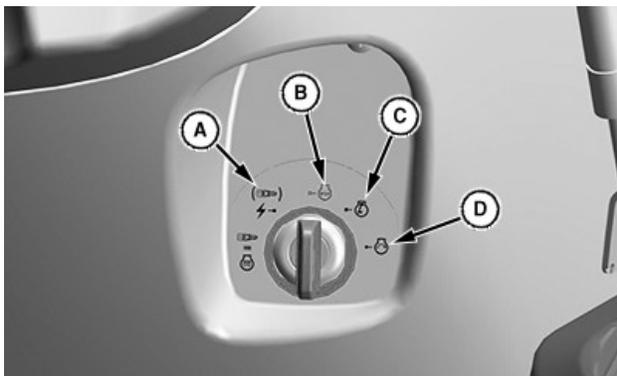
Engine Operation

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

Use Throttle



LV17510—UN—19APR13

A—Throttle Lever

Use throttle to change engine speeds. Use throttle in conjunction with tachometer to set engine speeds.

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

Engine/Tachometer Speeds — Specification

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

KN52281,10047D3-19-17OCT13

Use eThrottle



A—eThrottle Switch

LV17696—UN—03MAY13

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

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

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. The LED above the switch will illuminate.

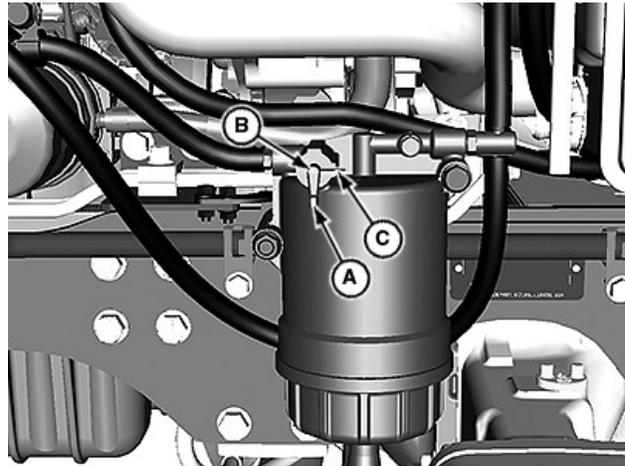
Press again to disengage.

KN52281,1004810-19-08AUG13

Use Fuel Shut off 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 Shut off Valve Lever
B—Vertical Position Marked “O”
C—Horizontal Position Marked “C”

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

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

KN52281,10047D4-19-21MAY13

Start the Engine - Hydrostatic Transmission

NOTE: Open Operator station shown cab similar

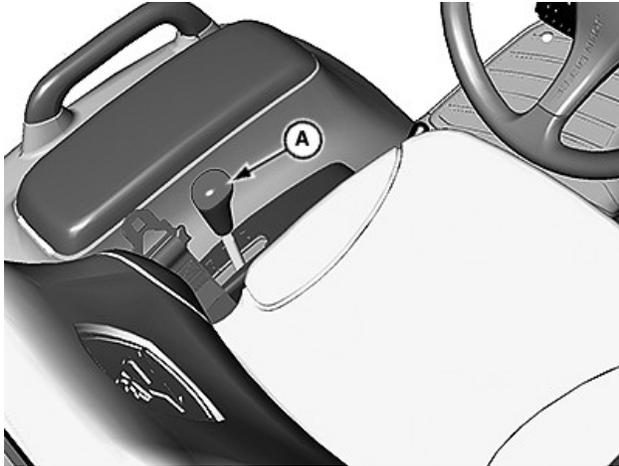
⚠ CAUTION: Avoid Injury! Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- 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 heat, 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.

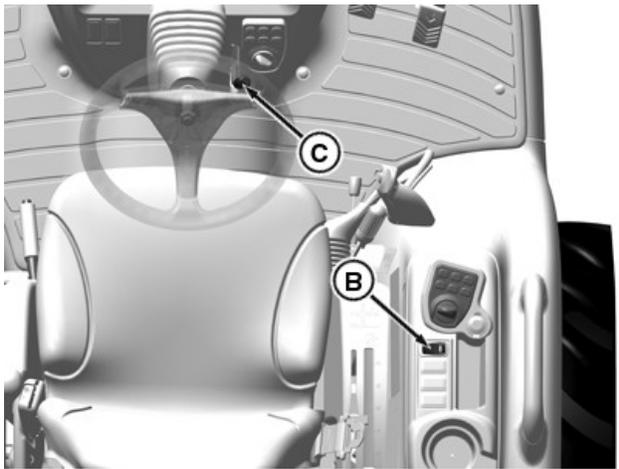
1. Apply park brake.



LV17529—UN—19APR13

A—Transmission Range Shift Lever

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



APY20396—UN—13SEP19

B— Hand Throttle Lever

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 (C) to the 1/2—3/4 fast position.
7. Turn key switch to the run position.
8. Check instrument panel indicator lights:
 - Alternator/battery discharging 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 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 .

- Battery 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.

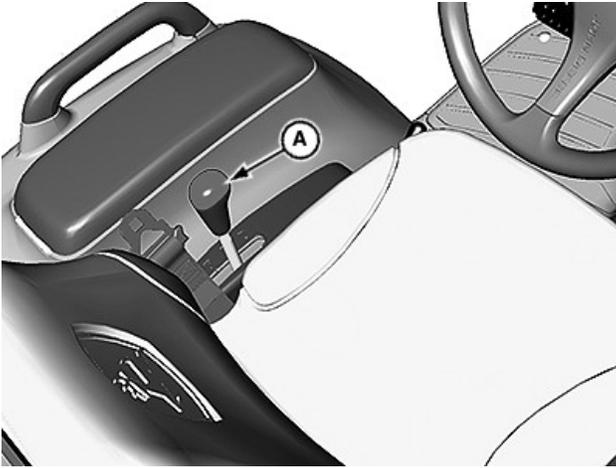
Do not run an engine in an enclosed area without adequate ventilation.

- 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 the exhaust fumes out.

NOTE: It is recommended to install optional engine block heat, 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.



LV17529—UN—19APR13

A—Transmission Range Shift Lever

1. Apply park brake.
2. Move the transmission range shift lever (A) to the N position.
3. Turn ignition key switch to the run position.
4. When glow plug icon light turns off, then turn key to 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 should go out within 5 seconds.
 - Alternator/battery charging light should 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 will waste fuel and cause carbon buildup.

Adjust hand throttle to set engine at low idle.

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 neutral position
3. Start engine. Continue with normal operation, or set engine at low idle for 2 minutes before stopping engine.

PS75950,00008F6-19-26SEP19

Start 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.
2. Depress clutch pedal completely and move the transmission gear shift lever and reverser lever 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 forward.
4. Lower any front-mounted implement to the ground.
5. Set hand throttle 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.

1. Apply park brake.

2. Depress clutch pedal and move the transmission gear shift lever and reverser lever 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.

Adjust hand throttle to set engine at low idle.

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 and move transmission gear shift lever and reverser lever 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.

JC48530,00000A0-19-25SEP19

Stop Machine

Normal Stopping

1. Position machine on a firm, level surface.
2. Remove foot smoothly from forward or reverse travel pedals to stop motion.
3. Push PTO switch to the disengaged/off position.

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

4. Lower any implements to the ground.

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

5. Adjust engine speed control lever rearward to set engine speed at slow 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. Transmissions will not prevent machine motion without the park brake locked.

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

Emergency Stopping

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

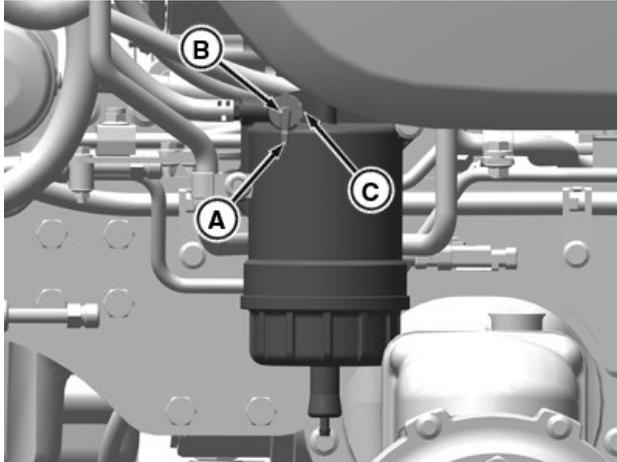
JZ81662,0000FB9-19-22FEB13

Air Intake, Fuel, Coolant, and Exhaust Operation

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.



APY20363—UN—10SEP19

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

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).

PS75950,00008C8-19-20AUG19

Fill 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. (See Parking Safely in the SAFETY section.)
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.

KN52281,10049C4-19-25MAY17

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.

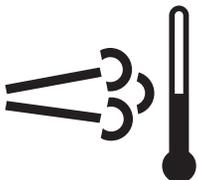
Use the control module to select parked cleaning switch (A), or disable cleaning switch (B).

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.

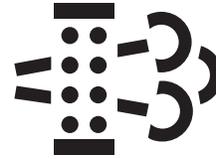
UP00731,000094F-19-13SEP19

Aftertreatment Indicators Overview



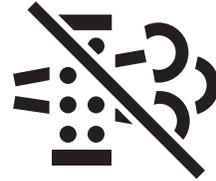
Engine Emissions Temperature Indicator

RG22488—UN—21AUG13



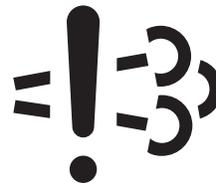
Exhaust Filter Indicator

RG22489—UN—21AUG13



Auto Cleaning Disabled Indicator

RG22490—UN—21AUG13



Engine Emissions System Malfunction Indicator

RG22491—UN—21AUG13



Warning Indicator

RG22492—UN—21AUG13



Engine Stop Indicator

RG22493—UN—21AUG13

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

Electrical and Lighting Operation

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 Dome Light

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



LV17725—UN—07MAY13

A—Dome Light Switch

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.

KN52281,100481A-19-22FEB18

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

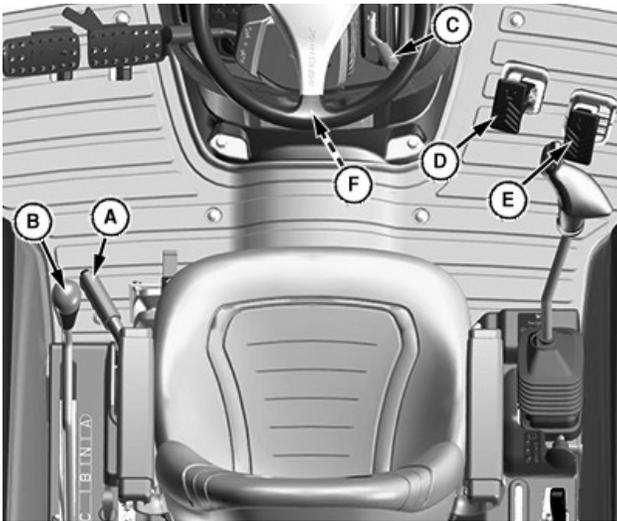
1. Press and hold the display mode switch for approximately 5 seconds until "Release" appears on the display. Display is now in command mode.
2. Use the turn signals to toggle to "Language".
3. Press the display mode switch again to accept.
4. Use the left or right turn signal to toggle between available 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

Drivetrain Operation

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

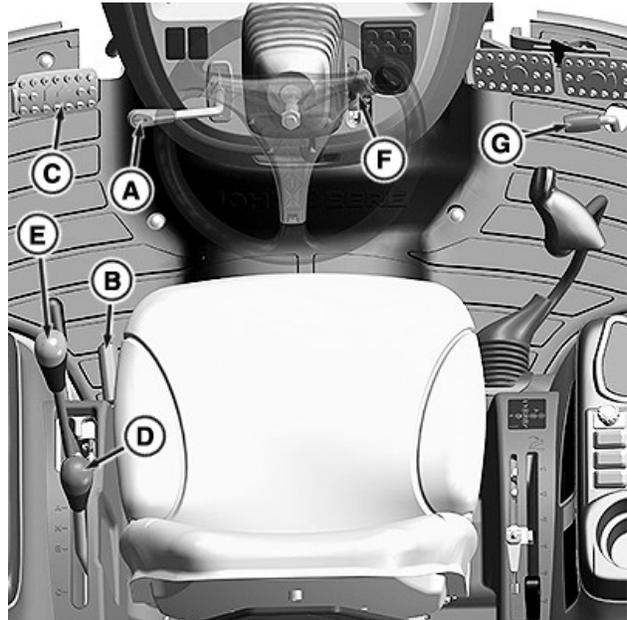
⚠ CAUTION: Avoid injury! Always check area around the machine for bystanders and obstacles before operating the machine.

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

Drive Machine—PowrReverser Transmission



LV28515—UN—25MAY17

- 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 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. 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 the range shift lever (D) to match work application.
6. Move the transmission gearshift 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 accelerator pedal (G) to change engine speed.

⚠ CAUTION: Avoid injury! Always check area around the 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 defaults to neutral until a lower ground speed is reached.

Travel Speeds



LV20920—UN—04FEB14

A—Travel Speed Label

The travel speed label (A) 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.

DB71512,0000245-19-21AUG17

Transmission Operation

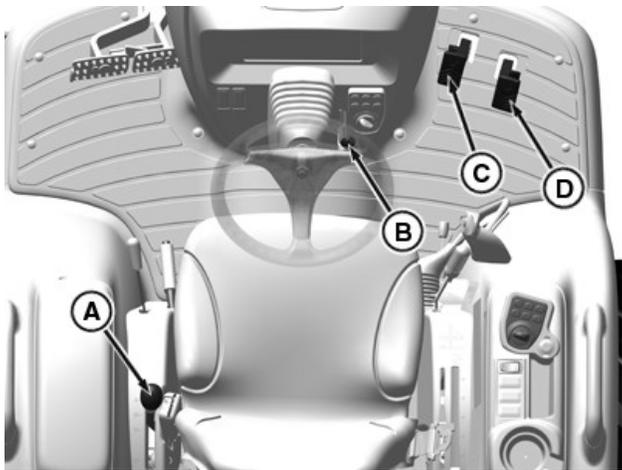
Operate Hydrostatic Transmission

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.



Open Operator Station

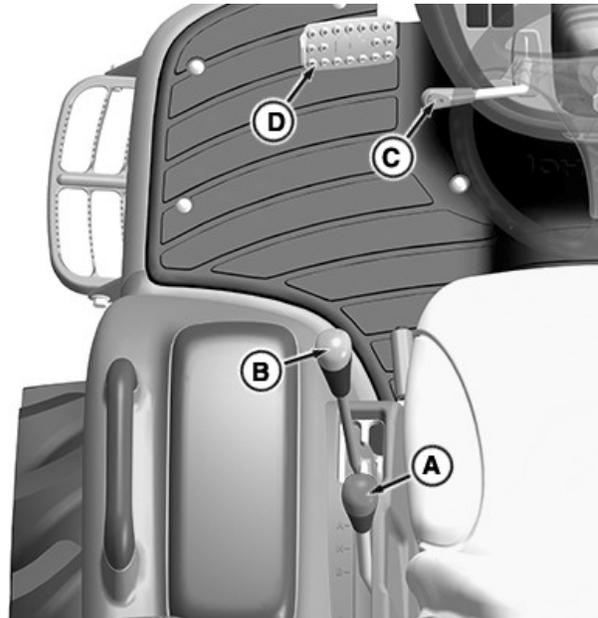
A—Transmission Range Shift Lever
B—Hand Throttle
C—Forward Travel Pedal
D—Reverse Travel Pedal

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. Lever must be in the N (neutral) position when starting the engine.
- B—Operations including moderate tilling, hauling, and grass mowing.
- C—High speed operations such as transport and light mowing.

PS75950,00008F7-19-13SEP19

Operate PowerReverser Transmission



LV28518—UN—19MAY17

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.

DB71512,0000248-19-23MAY17

Use Cruise Control—If Equipped

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

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.

DB71512,0000249-19-23MAY17

Use LoadMatch



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 heavy load application will be performed.
2. Press LoadMatch switch (A).

LoadMatch is a trademark of Deere & Company

Disengaging LoadMatch

Press LoadMatch switch (A).

KN52281,1004811-19-31OCT13

Use SpeedMatch



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

Disengaging

Fully depress SpeedMatch switch to disengage.

KN52281,1004812-19-31OCT13

Use MotionMatch



LV17699—UN—03MAY13

- A—MotionMatch Switch
- B—Counterclockwise
- C—Clockwise

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.

To use MotionMatch

- Turn MotionMatch switch (A) clockwise (C) for shorter acceleration and deceleration distances.

- Turn MotionMatch switch (A) counterclockwise (B) for longer acceleration and deceleration distances.

KN52281,1004813-19-31OCT13

MFWD and Front Axle Operation

Use 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 roll - over.

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.

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

Pull up on MFWD lever (A) to engage. Push 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.

UP00731,000033C-19-15JUN17



Open Operator Station

LV28701—UN—15JUN17



Cab

LV28704—UN—15JUN17

A—MFWD Lever Shown

Differential and Rear Axle Operation

Use 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:

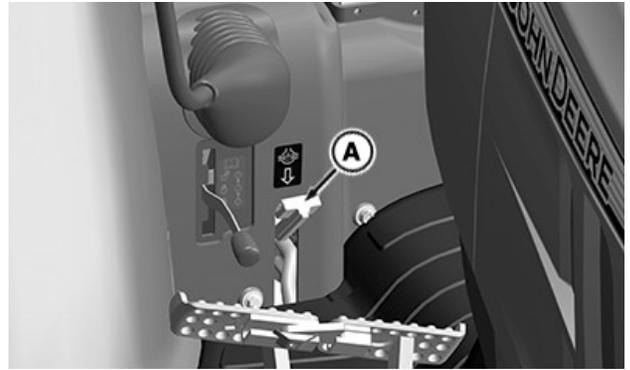
- Reduce speed and allow drive wheels to rotate at same speed before engaging or disengaging traction assist.
- Disengage traction assist when driving on dry asphalt or concrete.
- Use traction assist only when necessary for improved ground engagement.

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.



LV28521—UN—19MAY17

PowrReverser Transmission Differential Lock

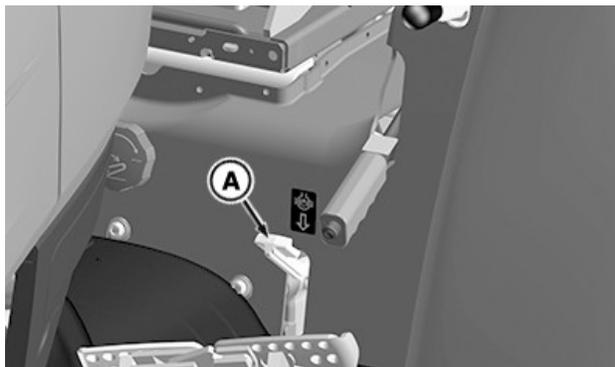
A—Differential Lock Lever

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.

DB71512,000024B-19-25MAY17



LV28520—UN—19MAY17

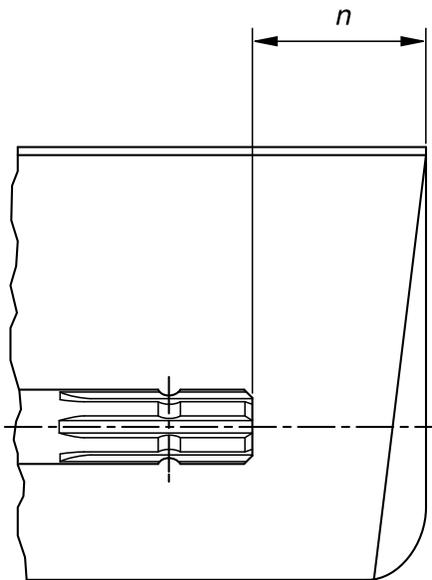
Hydrostatic Transmission Differential Lock

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 driveshfts with adequate guards and shields.

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

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

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

The angle at which the primary implement PTO

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

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

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

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

DX,PTO-19-28FEB17

Use the PTO Safely



LVAL38277—UN—21AUG12

⚠ CAUTION: Avoid injury! Stay clear of rotating drivelines:

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

KN52281,1003EC1-19-29NOV16

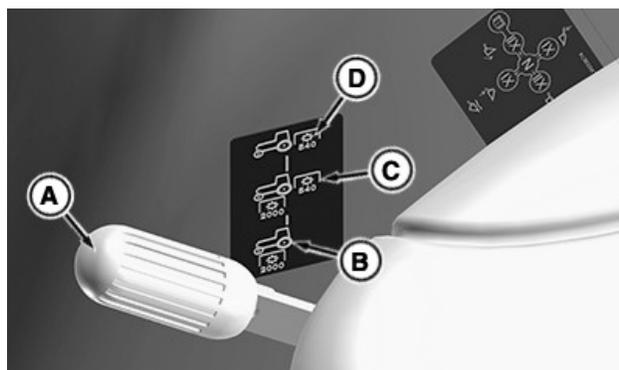
Use Rear and Mid PTO (Operator on Seat)

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

NOTE: The mid-PTO is only operational with the operator on the seat.

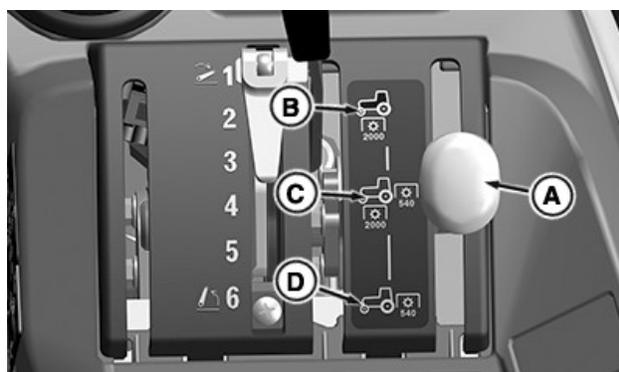
Engaging the PTO

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



PTO Selector OOS

LV28522—UN—19MAY17

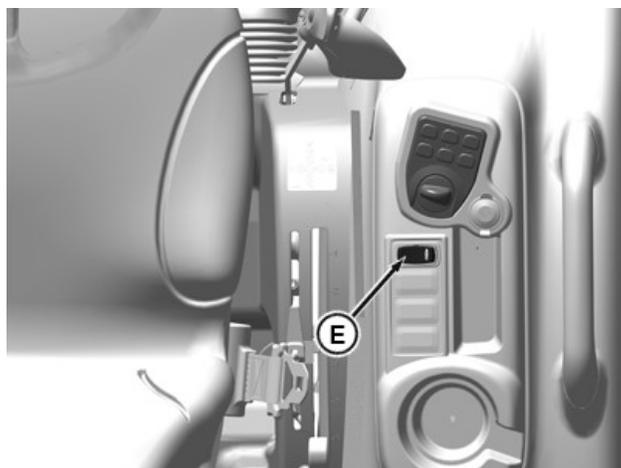


PTO Selector Cab

LV28523—UN—19MAY17

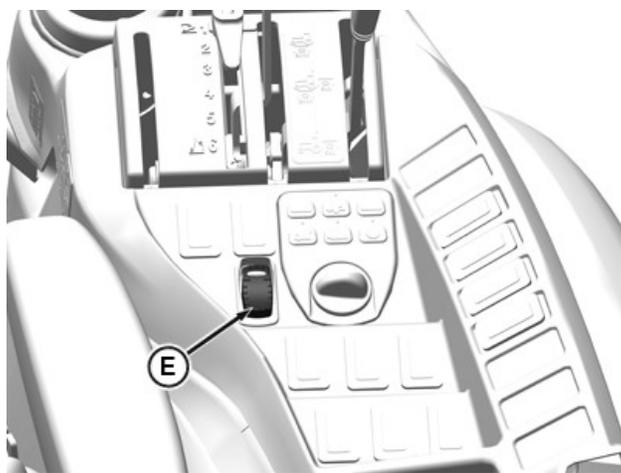
A—Selector Lever
B—Mid PTO
C—Mid and Rear PTO
D—Rear PTO

3. Move the PTO selector lever (A) to desired operating position.
 - Selector Lever (A)
 - Position (B) - Mid PTO only.
 - Position (C) - Mid and Rear PTO both.
 - Position (D) - Rear PTO only.



APY20398—UN—13SEP19

Open Operator Station



APY20365—UN—10SEP19

Cab

E—PTO Switch

4. Engage the PTO (E).
5. Adjust the throttle lever forward to the desired speed for the implement that is being used.

NOTE:

- At 2600 engine rpm the mid PTO speed is 2000 rpm and 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 will automatically shutoff. Disengage the PTO switch, engage the park brake and the shut the engine off. Allow sufficient time for the engine to cool. Check the coolant level and add coolant if necessary. Clean debris away from the radiator cooling fins and the front grill. If the PTO does not engage after the engine has cooled, see your local John Deere Dealer for service.

Using the RIO (Reverse Implement Option) Switch

⚠ CAUTION: Rotating blades are dangerous. Children or bystanders are injured by run over and rotating blades. Before backing up, carefully check the area around the machine.

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

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

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

3. To activate the reverse implement option, press the PTO/RIO switch down past the PTO engagement position.
4. Press the reverse travel pedal and release the RIO switch

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

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

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

Disengaging the PTO

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

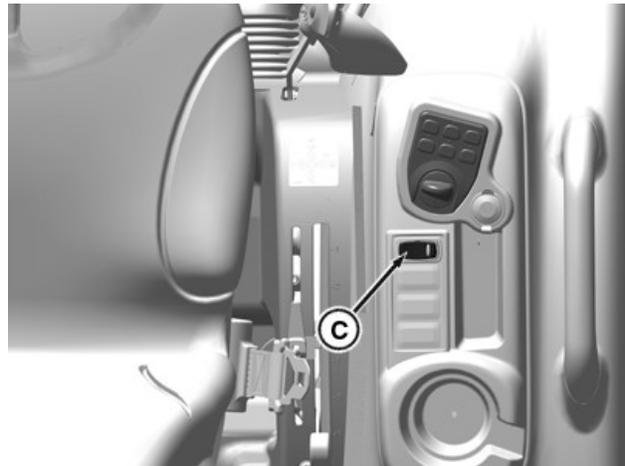
UP00731,000094A-19-25SEP19

Use Rear PTO (Operator off Seat)

NOTE: The mid-PTO operation for this machine is not intended to be used when the operator is off the seat. Rear PTO operation is possible out of seat, provided the proper sequence is followed.

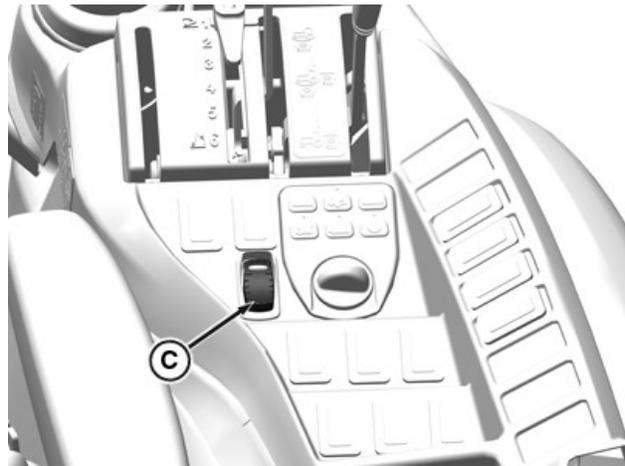
Engaging the PTO

1. Sit on the operator seat.
2. Lock the park brake.
3. Move the range shift lever to the N (neutral) position.



APY20399—UN—13SEP19

Open Operator Station

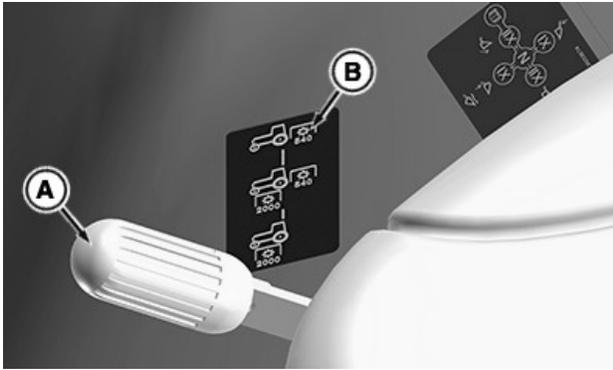


APY20366—UN—10SEP19

Cab

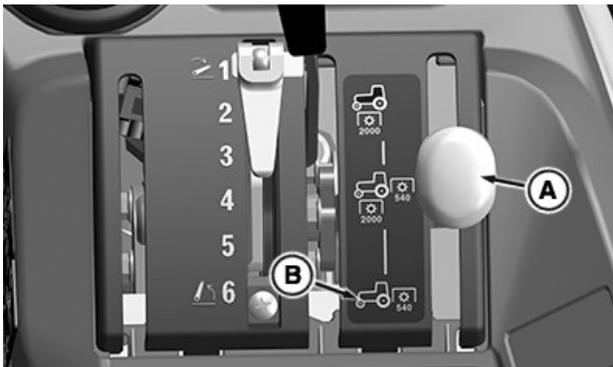
C—PTO Switch

4. Make sure the PTO switch (C) is in the disengaged position.
5. Start the engine.
6. Set engine speed to 1500 rpm or less.



PTO Lever OOS

LV28524—UN—19MAY17



PTO Lever Cab

LV28525—UN—19MAY17

A—PTO Selector Lever
B—Rear PTO Position

7. Move the PTO selector lever (A) to rear PTO position (B).
8. Engage the PTO.
9. Push and hold the PTO switch in the engaged position for at least 2 seconds. “Hold” is shown in the display.
10. 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.

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

Disengaging the PTO

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

UP00731,000094E-19-25SEP19

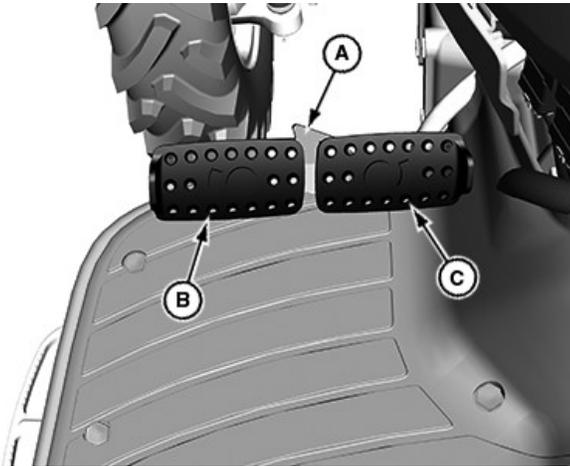
Steering and Brake Operation

Use Brake Pedals

Using Brake Pedals As Driving Brake

CAUTION: 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

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

1. Rotate brake pedal lock (A) clockwise until it locks into right turn brake pedal (C).
2. Depress either brake pedal to slow or stop the machine.
 - With latch down, brakes should stop machine in a straight line.

Using Brake Pedals to Assist In Turning

IMPORTANT: 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.

Rotate brake pedal lock (A) counterclockwise until it stops against left turn brake pedal (B). The brake pedals will now function independently.

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

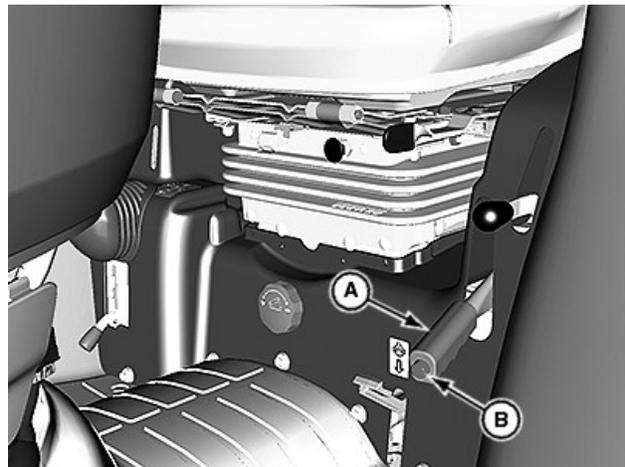
KN52281,10047D0-19-20MAY13

Use Park Brake

Locking Park Brake

CAUTION: 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.
2. Press down on brake pedals with foot.



LV17511—UN—19APR13

A— Park Brake Lever
B— Park Brake Release Button

3. Pull park brake lever (A) up to the locked position. The park brake light should illuminate.
4. Remove foot from brake pedals.

Unlocking Park Brake

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

KN52281,10047D1-19-21MAY13

Adjust Tilt Steering Wheel



LV17700—UN—06MAY13

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.

KN52281,1004814-19-21MAY13

Hydraulics Operation

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

Hitch and Drawbar Operation

Use Attachments

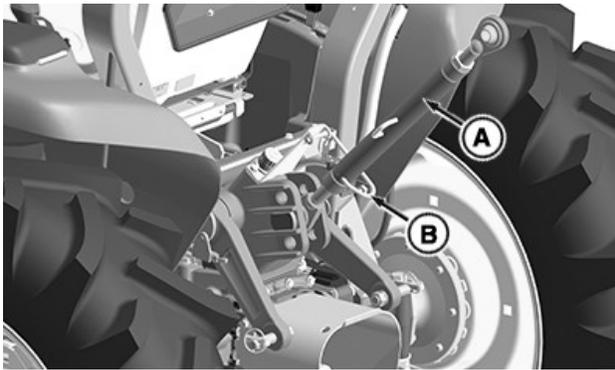
When using attachments, check full range of three point hitch travel each time a new attachment or implement is mounted. Watch for hoses and attachment parts throughout the three point hitch travel range. Adjust the depth stop as needed. Some attachments with short driveshafts require an upstop, see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

JZ81662,0000FC6-19-01MAR13

Use 3-Point Hitch

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

Center Link Storage Position

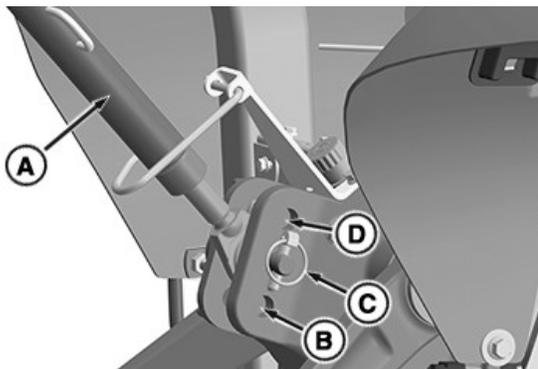


LV28526—UN—19MAY17

A—Center Link
B—Storage Hook

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

Positioning Center Link



LV28527—UN—19MAY17

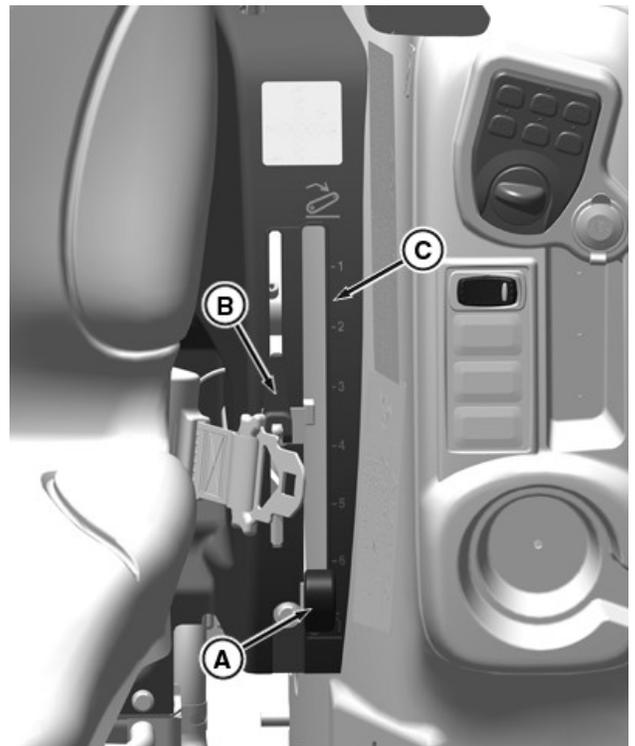
A—Center Link
B—Bottom Hole
C—Middle Hole
D—Top Hole

- **For light and medium draft loads:** Install center link (A) in bottom hole (B) of mounting bracket. Example of light and medium draft load implements include a

landscape rake. A category 1 implement tilts forward while raising in this position.

- **For medium and heavy draft loads:** Install center link in middle hole (C) of mounting bracket. Example of medium and heavy draft load implements include a tiller or box blade. A category 1 implement tilts forward slightly while raising in this position.
- **For very heavy draft loads:** Install center link in top hole (D) of mounting bracket. Example of very heavy draft load implements include a plow or ripper. A category 1 implement rises, but angle remains constant.

Using Rockshaft Control Lever



APY20400—UN—13SEP19

Open Operator Station Shown; Cab Similar

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 ground.

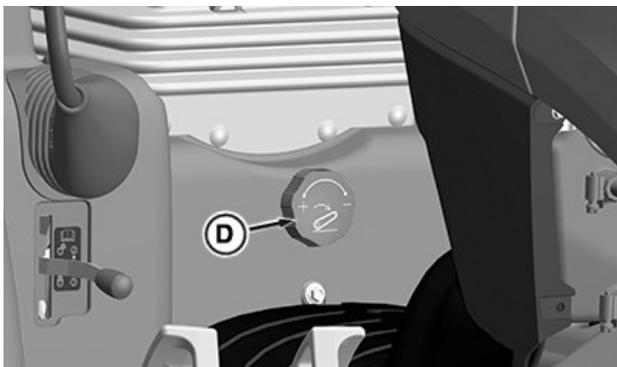
Lower Implement: Push rockshaft control lever forward.

Raise Implement: Pull rockshaft control lever rearward.

The adjustable 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.

Using Rate-of-Drop/Lock Valve



LV28529—UN—23MAY17

D—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.

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

NOTE: Do not use implements or controls with valve locked, damage to tractor could occur.

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

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

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

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

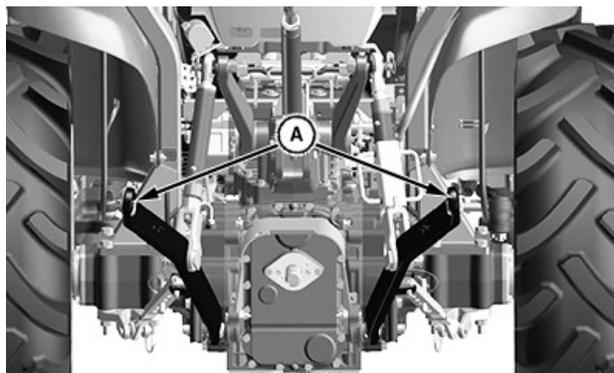
Lock 3-Point Hitch: Rotate rate-of-drop/lock valve knob (D) clockwise until tight.

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

Using 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.



LV28530—UN—29AUG17

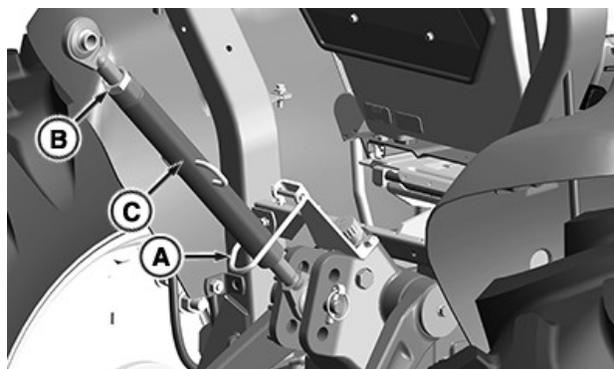
A—Draft Links

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

Leveling Implement Front-to-Rear

1. Park machine safely. (See Parking Safely in Safety section.)

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



LV28531—UN—18MAY17

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

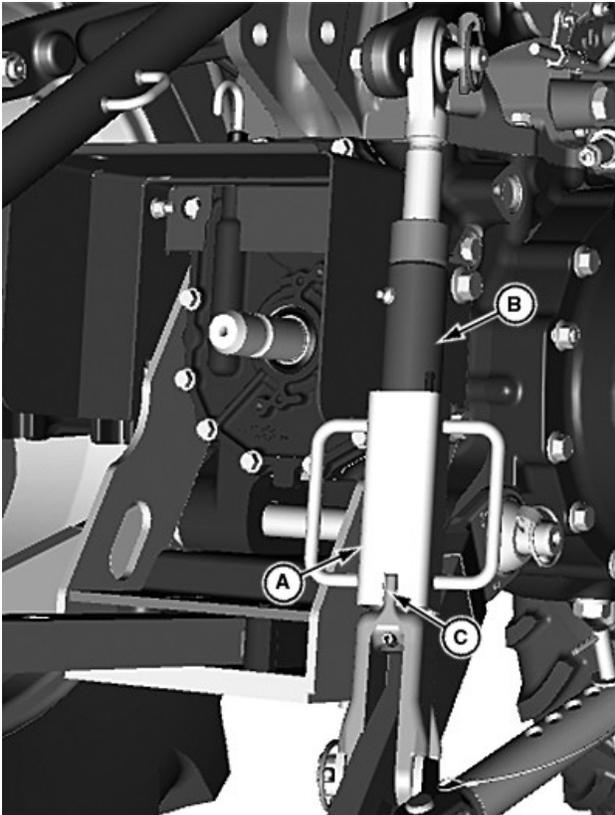
2. Lower implement to ground to relieve pressure on center link.

- Loosen lock nut (B).

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

- Rotate center link body (C) to lengthen or shorten the center link as needed.
- Tighten lock nut (B).

Leveling Implement Side-to-Side



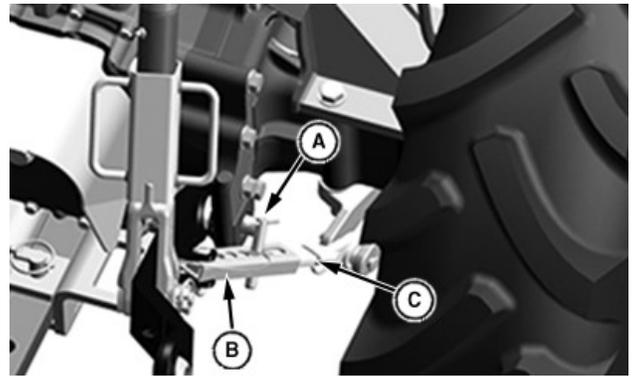
LV17873—UN—23MAY13

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

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

- Park machine safely. (See Parking Safely in Safety section.)
- Lower any rear mounted implement to the ground.
- 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.
- Slide down and line up the slot in turnbuckle collar (A) with turnbuckle collar lock (C) to secure position.

Adjusting Implement Side-to-Side Sway



LV29350—UN—29AUG17

- 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:

- Park machine safely. (See Parking Safely in Safety section.)
- Lower any rear mount implement to the ground.
- Remove locking pin (A).
- Slide stabilizer Sway Link Adjusting Shaft (B) to adjust 3-point hitch implement side-to-side sway.
- Replace locking pin (A).

PS75950,00008F8-19-13SEP19

Use 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 should not exceed maximum recommendations. Drive slowly with heavy loads.

Maximum Drawbar Loads

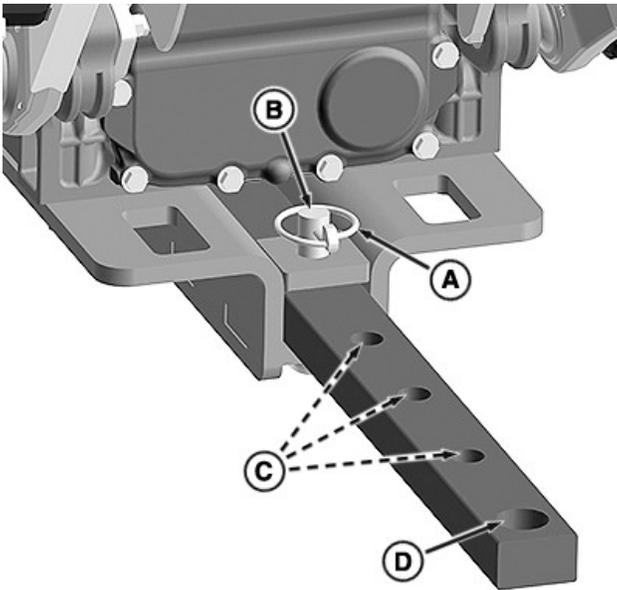
Certain heavy equipment such as a loaded single-axle

trailer can place excessive strain on the drawbar. Strain greatly increases by speed and rough ground. Do not exceed the maximum static vertical loads. See Specifications section.

Adjusting Drawbar Length

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

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



LV28532—UN—25MAY17

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

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

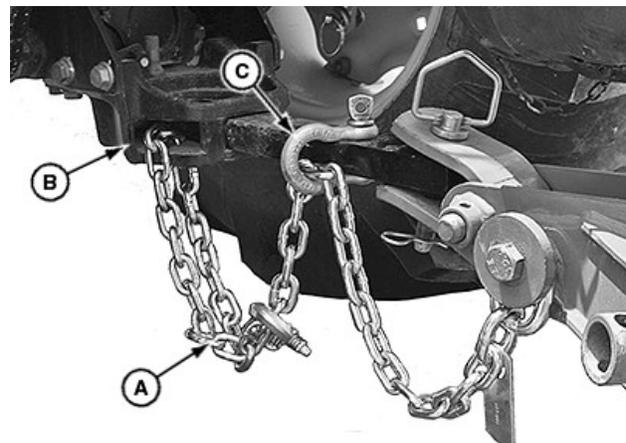
Using Safety Chain

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 in case of separation from the drawbar.

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

the drawbar to reduce the slack in the chain when necessary.

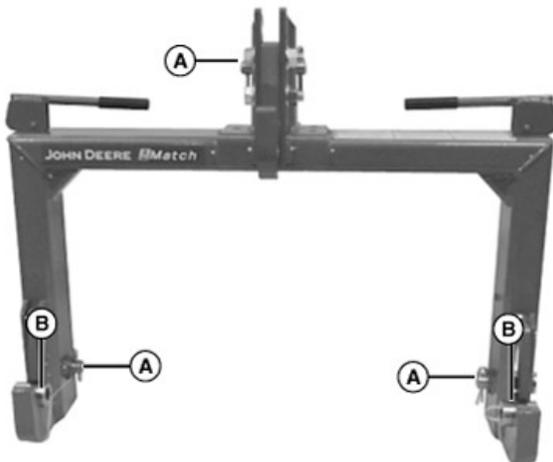
3. Remove safety chain and store when not in use.

DB71512,000024F-19-29JAN19

Use Optional iMatch Quick-Attach Hitch System

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

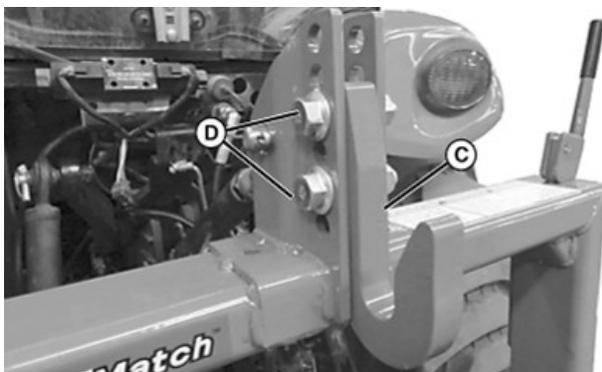
Installing iMatch Quick-Attach Hitch



LVAL38290—UN—21AUG12

- A—Drilled Pins (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.



LVAL38291—UN—21AUG12

- C—Center Link Hook
- D—Nuts And Bolts

4. Center link hook (C) is set from factory at standard

height to accommodate most implements. Adjust center link hook, if necessary.

- Remove nuts and bolts (D).
- Raise or lower center link hook as required.
- Install nuts and bolts. Torque bolts to specification before use of iMatch assembly.

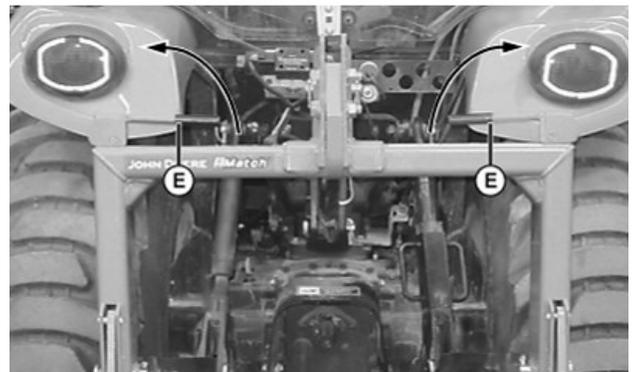
Specification

iMatch Bolts—Torque. 245—318 N·m

5. Position iMatch quick-attach hitch near draft links and adjust 3-point hitch sway links to align draft links with quick-attach hitch.
6. Install iMatch quick-attach hitch on 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 implement draft link lift brackets.

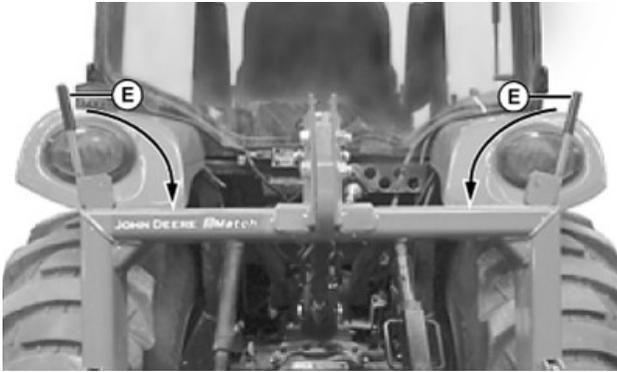


LVAL38292—UN—21AUG12

- 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.

iMatch is a trademark of Deere & Company

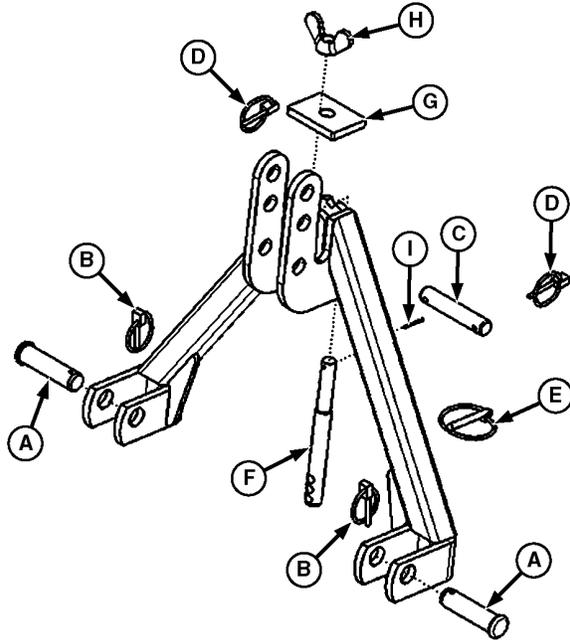


LVAL38293—UN—21AUG12

E—Levers

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

JZ81662,0000FC5-19-30MAY19



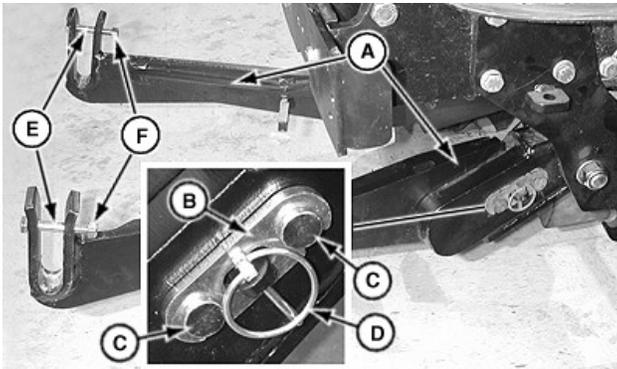
LV19384—UN—18OCT13

- A—Cylinder Pin
- B—Lynch Pin
- C—Hinge Pin
- D—Lynch Pin
- E—Quick Lock Pin
- F—Retainer Rod
- G—Retainer Plate
- H—Wing Nut
- I—Cotter Pin

1. Install cylinder pins (A) in frame with lynch pins (B).
2. Install hinge pin (C) in middle hole in frame with lynch pins (D).
3. Install quick-lock pin (E) in retainer rod (F). Install retainer rod on frame with retainer plate (G), wing nut (H) and cotter pin (I).

Use Front 3-Point Hitch (If equipped)

Installing Lift Arms



LV19383—UN—18OCT13

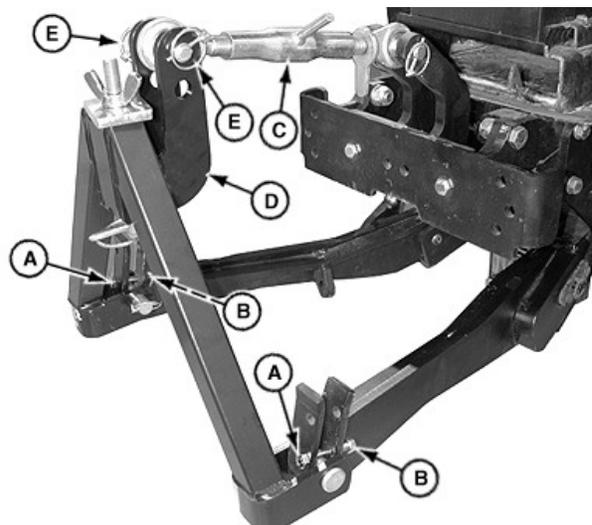
- A—Lift Arms
- B—Plate
- C—Pins
- D—Lynch Pin
- E—Lift Arm Screws
- F—Lift Arm Locknuts

Install lift arms (A) on pivot bracket with pin retainer plate (B), two lift arm retention pins (C) and lynch pin (D).

Assemble A-Frame

List of parts for reference:

Install A-Frame



A—Screws

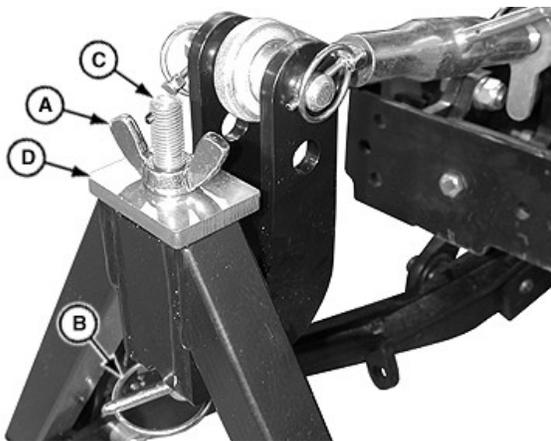
LV19385—UN—18OCT13

B—Locknuts
C—Center Link
D—Hinge Pin
E—Lynch Pins

1. Remove screws (A) and locknuts (B) in front hitch lift arms.
2. Install A-frame on lift arms as shown.
3. Install front hitch center link (C) on A-frame with hinge pin (D) and lynch pins (E).
 - Center link may be installed on top or middle hole in A-frame to allow for more or less implement tilt.
4. Install screws (A) and locknuts (B) in front hitch lift arms.
 - Install screws in top holes in lift arms for implement float position.
 - Install screws in bottom holes in lift arms for implement fixed position.

Installing Implements on Front Hitch with A-Frame

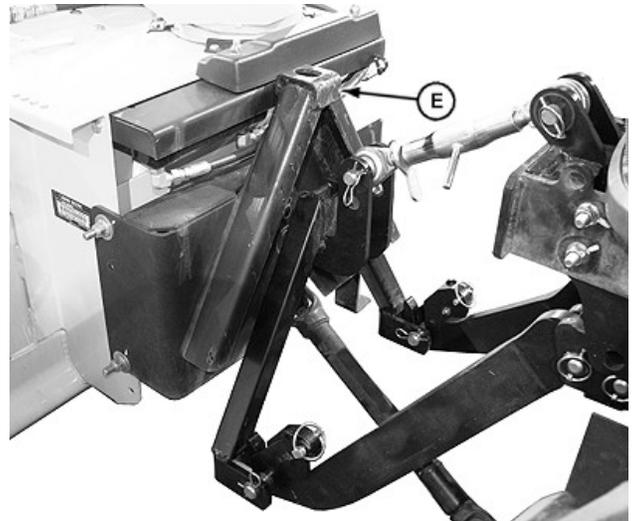
Installing Implement:



LV19386—UN—18OCT13

A—Wing Nut
B—Quick Lock Pin
C—Retainer Rod
D—Retainer Plate

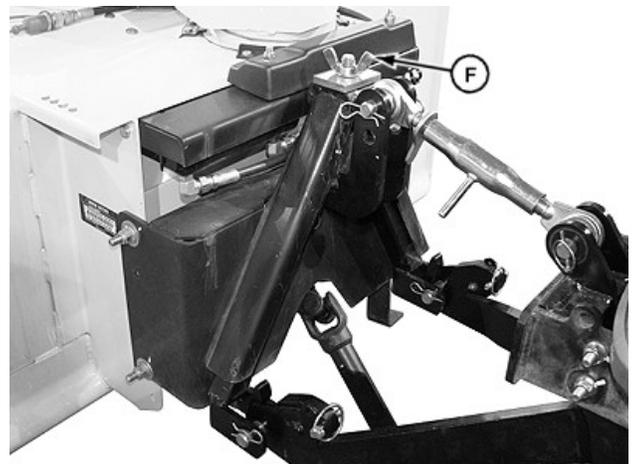
1. Loosen wing nut (A) and remove quick-lock pin (B).
2. Remove retainer rod (C) with wing nut and retainer plate (D) from A-frame.
3. Check to be sure that the implement hydraulic hoses are out of the way if applicable.



LV19387—UN—18OCT13

E—Mount

4. Drive tractor forward slowly and align A-frame with mount (E) on implement.
5. Raise hitch to install A-frame on mount.



LV19388—UN—18OCT13

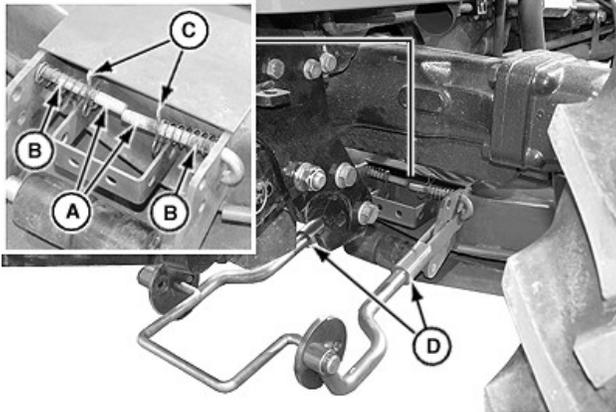
F—Wing Nut

6. Install retainer rod with wing nut and retainer plate through mount and A-frame. Position wing nut (F) as needed to install quick-lock pin in retainer rod.
7. Tighten wing nut to secure implement to A-Frame.

Installing and Removing Mid-Mount Mower

Assemble and Install Front Draft Pivot Assembly:

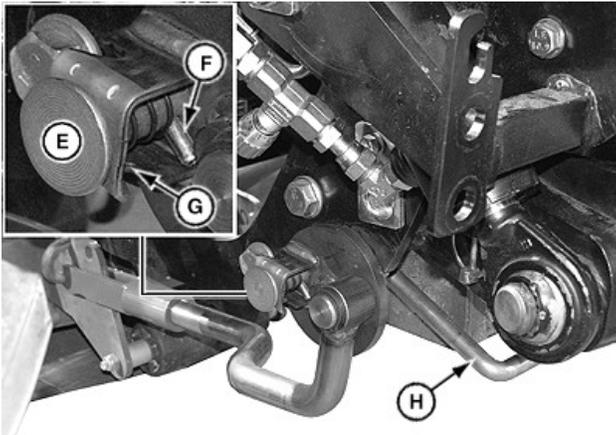
1. Park machine safely.
2. Follow installing instructions in mid-mount mower operator's manual.
3. Remove yokes installed on front draft pivot assembly supplied with mid-mount mower.
4. Remove spring locking pins, J-pins and springs on front of mower.



LV19389—UN—18OCT13

A—J-Pins
B—Locking Pins
C—Cotter Pins
D—Yokes

5. Install J-pins (A), spring locking pins (B) and cotter pins (C) on front of mower as shown.
6. Install yokes (D) on front draft pivot assembly for front hitch. Thread yokes 2.5 cm (1 in.) onto rods.
7. Install front draft pivot assembly on mower as shown. Check to be sure J-pins are locked.



LV19390—UN—18OCT13

E—Drilled Pin
F—Roll Pin
G—Notch
H—Shaft

8. Pull back on drilled pin (E) on front draft pivot assembly and insert roll pin (F) into notch (G).
9. Install front draft pivot assembly on front hitch as shown.
10. Move pivot shaft (H) upward until the drilled pin snaps into hole.
11. Follow the adjusting upstop clearance instructions in mid-mount mower operator's manual.

Removing Mid-Mount Mower:

1. Park machine safely.

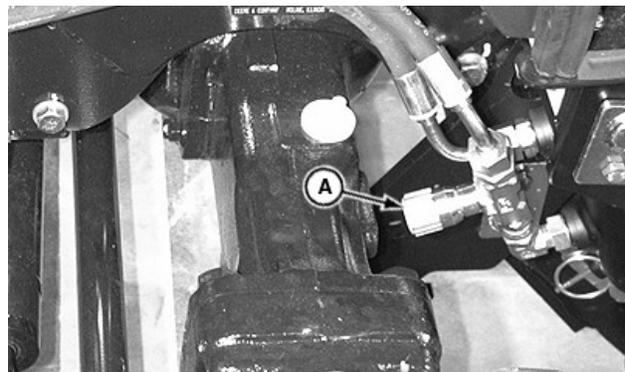
2. Following removing mower instructions in mid-mount mower operator's manual.
3. Pull back on drilled pin on front draft pivot assembly and insert roll pin into notch.
4. Move pivot shaft downward and remove front draft pivot assembly from front hitch.
5. Pull both J-pins on front of mower outward and turn to unlocked position.
6. Remove front draft pivot assembly from mower brackets and out from under tractor.
7. Follow remaining Removing Mower instructions in mid-mount mower operator's manual to move mower out from under tractor.

Operating Front Hitch

Raising and Lowering Hitch

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

Adjusting Hitch Control Valve



LV19414—UN—18OCT13

A—Knob

- Rotate knob (A) on valve to adjust the speed at which the hitch raises and lowers.
- Rotate knob (A) to close the valve and place the hitch in transport lock position.

Removing and Storing

Removing Implement

1. Park machine safely.
2. Loosen wing nut.
3. Remove quick-lock pin in retainer rod.
4. Remove retainer rod with retainer plate.

5. Lower the hitch to remove A-frame from implement mount, and slowly back tractor away from implement.
6. Install retainer rod with retainer plate on A-frame with quick-lock pin.

Removing A-frame

1. Remove locknuts and screws in front hitch lift arms.
2. Remove lynch pins and hinge pin and remove front hitch center link from A-frame. Remove A-frame.
3. Install screws and locknuts in front hitch lift arms.

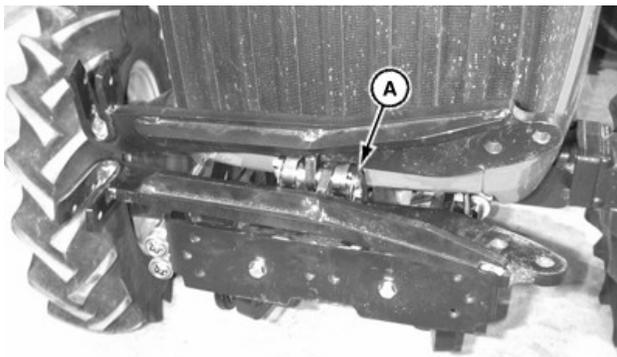
Removing Hitch

- Front hitch may be left on tractor when not in use.
- Lift arms should be removed when front hitch is not in use, and must be removed for loader operation.
- Lift arms and center link may be removed and stored.
- To remove front hitch, reverse the order of assembly:
 - Remove lift arms.
 - Remove hydraulic hoses.
 - Remove center link.
 - Remove front PTO support.
 - Remove hydraulic cylinder.
 - Remove pivot bracket and mount brackets.

Storing

NOTE: Lift arms should be removed when front hitch is not in use.

1. Remove lynch pins, pin retainer plates and lift arm retention pins, and remove lift arms from lower pivot bracket.
2. Store plates and pins in lower pivot bracket.



LV19391—UN—18OCT13

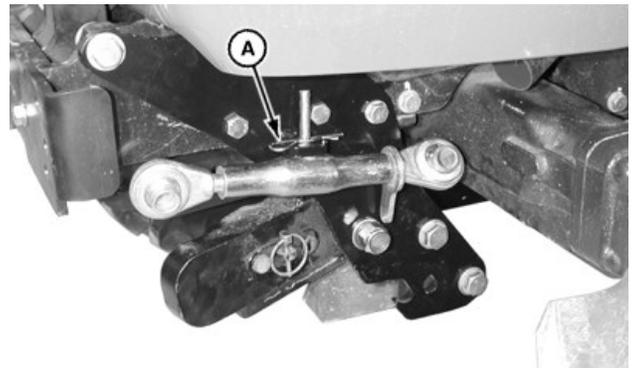
A—Link Pin

3. Use link pin (A) and two lynch pins to secure lift arms to center link bracket.

Storing Center Link

1. Remove A-frame from front hitch.

2. Remove link pin and two lynch pins to remove center link from center link bracket.
3. Store link pin and lynch pins in center link bracket.



LV19392—UN—18OCT13

A—Locking Pin

4. Install center link on mount on left mount bracket with spring locking pin (A).

UP00731,00000D4-19-12OCT17

Selective Control Valve Operation

Avoid High-Pressure Fluids



X9811—UN—23AUG88

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

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

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

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

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

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

DX,FLUID-19-12OCT11

Connect Implement Hydraulic Hoses

CAUTION: Avoid injury! Escaping fluid under 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.

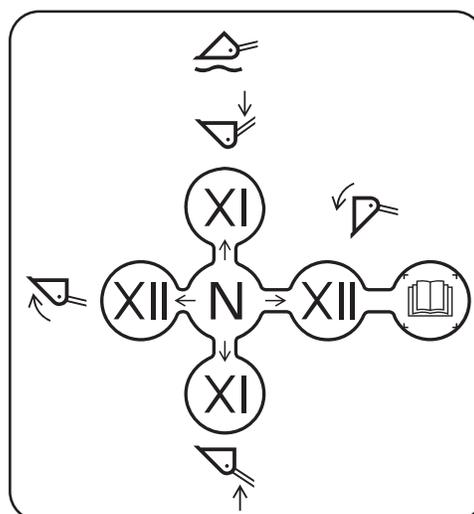
Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A. In the United States and Canada only, this information may be obtained by calling 1-800-822-8262.

1. Park machine safely. (See Parking Safely in the Safety section.)
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.
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.

KN52281,100482E-19-09MAY13

Use Dual SCV Lever



LV28545—UN—19MAY17

Standard Dual SCV Lever Label

Dual SCV lever label is installed next to the dual SCV lever and shows available positions.

Movement of SCV lever supplies hydraulic oil to corresponding SCV port and allows hydraulic oil to return through alternate SCV port of that SCV.

Raise and Lower:

- Move SCV lever backward to raise the loader.
- Move SCV lever forward to lower the loader.
- Move SCV lever fully forward into the detent position for float. Float allows the loader to float and follow the ground contour.

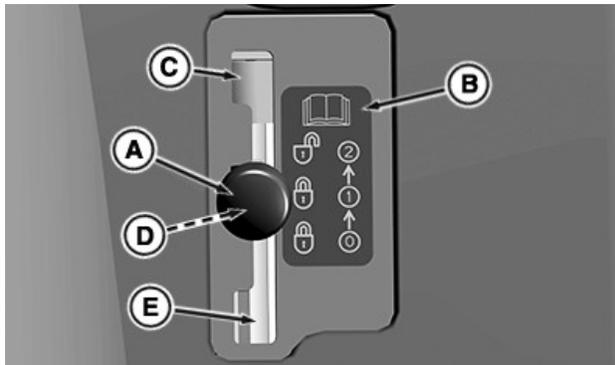
Dump and Curl::

- Move SCV lever left to curl position.
- Move SCV lever right to dump position.
- Move SCV lever fully right into the detent position for regen. Regen allows for faster loader bucket dumping.

DB71512.0000260-19-12JUN17

Use Dual SCV Lock Lever

Tractor without Cab



LV28533—UN—18MAY17

- A—Selective Control Valve Lock Lever**
- B—Lock Lever Label**
- C—Top Position**
- D—Middle Position**
- E—Bottom Position**

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

- To allow movement of dual SCV lever in all directions, move lock lever to the top position (C). Operation of the dual SCV is totally unlocked.
- To prohibit engagement of the regen (regeneration) function of the dual SCV, move lock lever to the middle position (D). This position is recommended for all implements except for the front loader. Loader buckets will dump more rapidly when the regen function is engaged.

function is engaged. The regen function is available only with the lock lever in top position C.

- To prohibit movement of dual SCV lever in all directions, move lock lever to the bottom position (E). Operation of the dual SCV is totally locked.

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.



LV28534—UN—27SEP17

SCV Lever Shown with Optional Rear Outlet SCV control switch

- A—Selective Control Valve Lock Lever**
- B—Lock Lever Label**
- C—Selective Control Valve Lever**
- D—Bottom Position**
- E—Center Position**
- F—Top Position**

- To prohibit movement of dual SCV lever in all directions, make sure SCV lever (C) is in center position, and pull the lock lever all the way out to the bottom position (D) as shown on lock lever label (B). Operation of the dual SCV is totally locked.
- To allow movement of dual SCV lever in all directions, move the lock lever to the center position (E). Operation of the dual SCV is totally unlocked.
- To prohibit engagement of the regen (regeneration) function of the dual SCV, push the lock lever all the way in to the top position (F). This position is recommended for all implements except for the front loader. Loader buckets will dump more rapidly when the regen function is engaged.

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

DB71512,0000251-19-23MAY17

Use Third SCV

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.

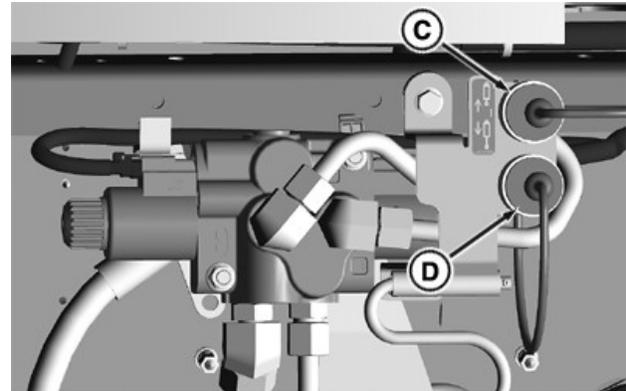
This machine model series can be equipped with an optional hydraulic third selective control valve (SCV) and hydraulic outlets to operate hydraulically driven implements.

The machine-mounted hydraulic outlets are female quick couplers.

Using Third SCV Control Switch



LV28562—UN—23MAY17



LV28563—UN—23MAY17

Cab Shown; Open Operator Station Similar

- A—Top of Control Switch
- B—Bottom of Control Switch
- C—Upper Outlet
- D—Lower Outlet

The third SCV 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

1. Depress the top of control switch (A) to allow flow from the circuit out the lower outlet (D) and return to the machine through the upper outlet (C).
2. Depress the bottom of control switch (B) to allow flow from the circuit out the upper outlet (C) and return to the machine through the lower outlet (D).

NOTE: Before connecting or disconnecting couplers, relieve pressure on both rear outlets. Lower the implement to the ground, tractor off and the ignition in the on position. Cycle the SCV control switch (A and B) a few times.

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

DB71512,0000252-19-01AUG18

Use Fourth and Fifth SCV (If Equipped)

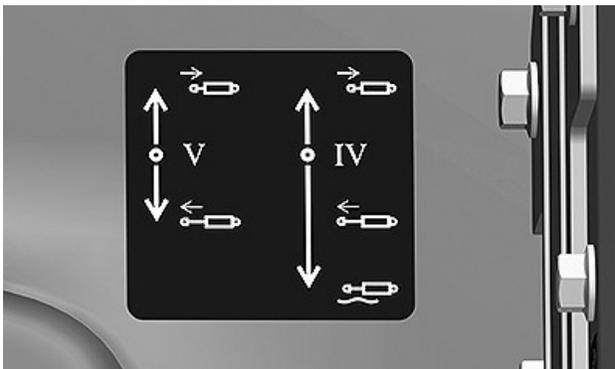
CAUTION: Avoid injury! Escaping fluid under high pressure can penetrate the skin and cause serious injury. Avoid the hazard by relieving pressure before connecting hydraulic or other lines. Tighten all connections before applying pressure.

- 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.

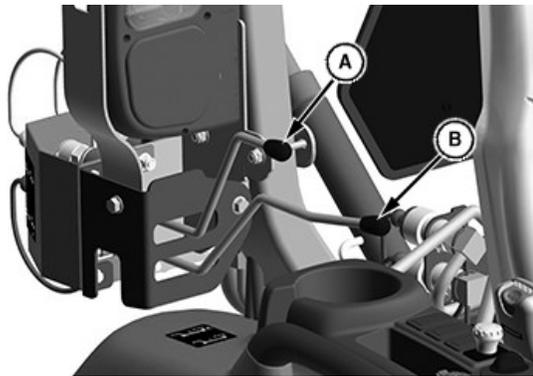
This machine can be equipped with optional hydraulic fourth and fifth SCV's to operate hydraulically driven implements.

The hydraulic outlets are female quick couplers.



LV28569—UN—24MAY17

Fourth and Fifth SCV Label



LV29395—UN—19SEP17

Fourth and Fifth SCV Control Levers

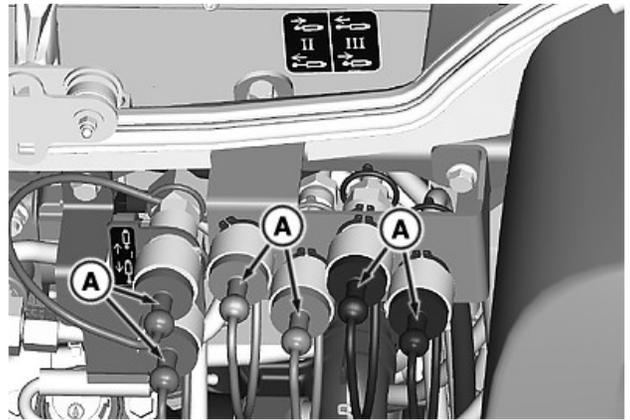
A—SCV IV Lever
B—SCV V Lever

Pull SCV IV lever (A) or SCV V lever (B) towards operator station to extend detent for that SCV.

Push SCV IV lever (A) or SCV V (C) lever away from operator station to retract detent for that SCV.

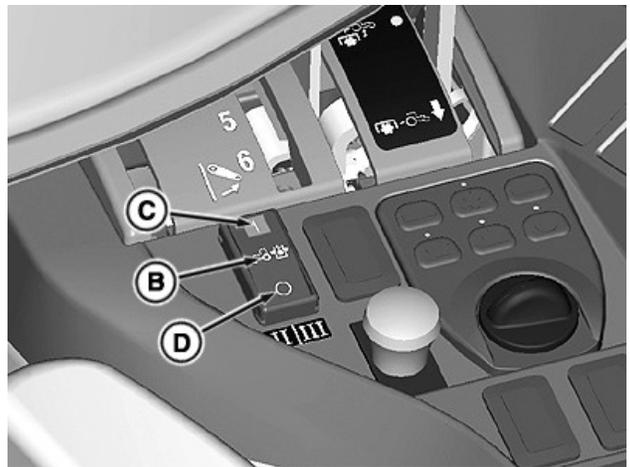
UP00731,0000452-19-01MAY23

Use Diverter Rear Outlets (If Equipped)



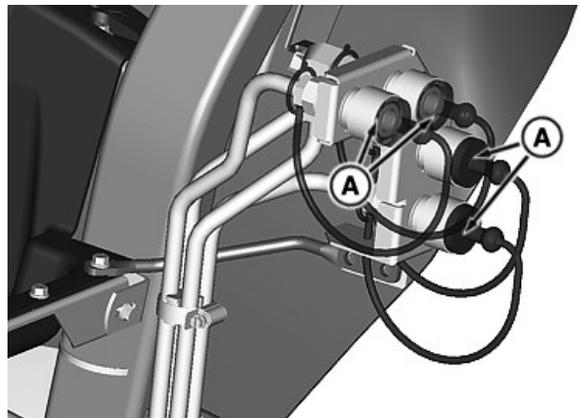
RXA0187047—UN—29APR22

Cab Hydraulic Outlets



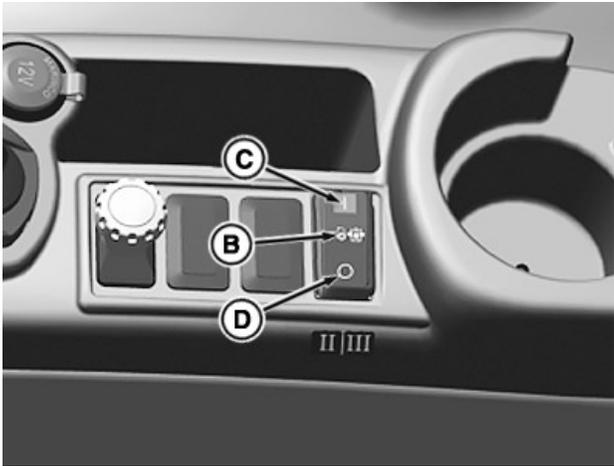
RXA0187049—UN—29APR22

Cab Diverter Switch



RXA0187048—UN—29APR22

OOS Hydraulic Outlets



RXA0187050—UN—29APR22

OOS Diverter Switch

- A—Rear SCV Outlet (6 or 4)
- B—Activation Switch
- C—Indicator Light
- D—Bottom of 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 is not 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 rear SCV outlets (A) are female quick couplers.

NOTE: If the key switch is moved to the off position, the dual SCV lever defaults to operating the mid SCV outlets. The key switch must be moved to the run position and the diverter system reactivated 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) illuminates.
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 goes off and the mid-mount SCV outlets are 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 the top of the diverter switch throughout the next three steps.
 - Shut off engine.
 - Actuate mid SCV lever in front/back and left/right directions.
 - Turn the key switch back to the run position.
 - Actuate 3rd SCV upper and lower switches.

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

GS25068,0001B82-19-29APR22

Wheels and Tires Operation

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	27 x 8.50-15 6PR
Rear	43 x 16-20 4PR
Front	25 x 8.50-14 6PR
Rear	15 x 19.5 6PR
Front	27 x 8.5-15 6PR
Rear	41 x 14-20 4PR
Front	180 x 95-14 6PR
Rear	11.2 x 24 6PR
Front	25 x 10.50LL-15 6PR
Rear	41LL x 18-16.1 6PR

UP00731.0000408-19-15SEP17

Ballast

Ballast Machine

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

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

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.

i2649ku,1676008943464-19-10FEB23

Implement Codes

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

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

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

Maximum recommended implement codes for Open Operator Station:

Implement Code	Minimum number of 19 kg (42 lb) weights	Minimum number of 19 kg (42 lb) weights when using iMatch™	Minimum number of 32 kg (70 lb) weights	Minimum number of 32 kg (70 lb) weights when using iMatch™
35	0	0	0	0
37	0	1	0	1
39	0	1	0	1
41	1	2	1	2
42	1	3	1	2
43	2	3	1	2

Implement Code	Minimum number of 19 kg (42 lb) weights	Minimum number of 19 kg (42 lb) weights when using iMatch™	Minimum number of 32 kg (70 lb) weights	Minimum number of 32 kg (70 lb) weights when using iMatch™
45	2	4	2	2
46	3	4	2	3
47	3	5	2	3
49	4	5	3	3
51	5	6	3	4
53	5	7	3	4
55	6	8	4	5
57	7	9	4	5
59	8	9	5	6
61	8	10	5	6
63	9	11	6	7
65	10	12	6	7
67	11	Not Recommended	6	8
69	11	Not Recommended	7	8
71	12	Not Recommended	7	9
73	Not Recommended	Not Recommended	8	9
75	Not Recommended	Not Recommended	8	10
77	Not Recommended	Not Recommended	9	10
79	Not Recommended	Not Recommended	9	10
81	Not Recommended	Not Recommended	10	11
83	Not Recommended	Not Recommended	10	11
85	Not Recommended	Not Recommended	10	12
87	Not Recommended	Not Recommended	11	12
89	Not Recommended	Not Recommended	11	Not Recommended
91	Not Recommended	Not Recommended	12	Not Recommended
93	Not Recommended	Not Recommended	12	Not Recommended
95	Not Recommended	Not Recommended	Not Recommended	Not

Implement Code	Minimum number of 19 kg (42 lb) weights	Minimum number of 19 kg (42 lb) weights when using iMatch™	Minimum number of 32 kg (70 lb) weights	Minimum number of 32 kg (70 lb) weights when using iMatch™
				Recommended

Implement Codes for OOS

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

i2649ku,1676008951165-19-10FEB23

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.

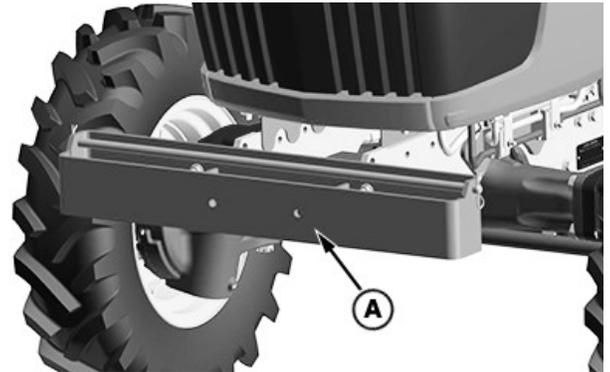
A mixture of 0.4 kg of calcium chloride per liter of water (3.5 lb per gallon), does not freeze solid above -45°C (-50°F).

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



LV30100—UN—12JUN18

A—Front Weight Bracket

IMPORTANT: Avoid Damage! Do not install weights on the 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. This optional front weight bracket extension kit holds up to 12 Quik-Tatch weights.

UP00731,0000593-19-12JUN18

Quik-Tatch is a trademark of Deere & Company

Additional Equipment Operation

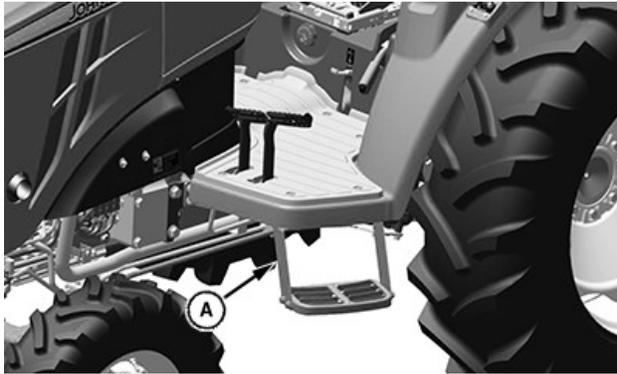
Additional Equipment Operation

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

UP00731,0000206-19-26MAY17

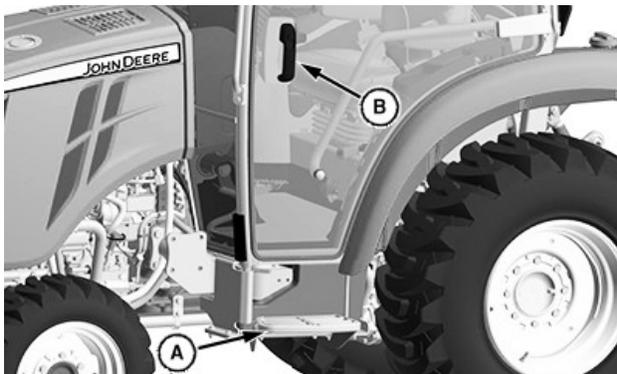
Operator Station Operation

Entering and Exiting Machine



Open Operator Station

LV29347—UN—28AUG17



Cab Tractor

LV29351—UN—29AUG17

- 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

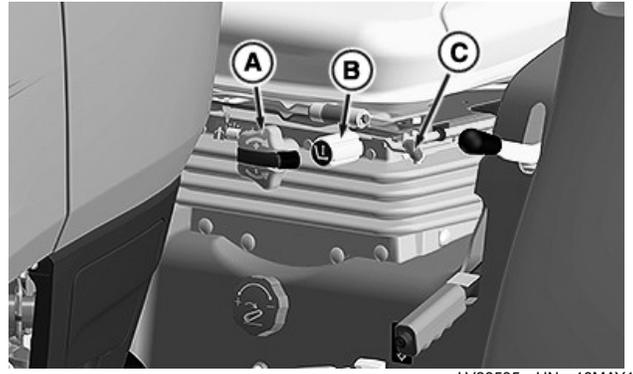
In an emergency situation, open glass panel on right side of cab to exit.

UP00731,0000430-19-29AUG17

Adjust Seat

CAUTION: To avoid accidents, adjust seat before driving.

Standard Seat Adjustment



LV28535—UN—18MAY17

- A—Height Adjustment Knob
- B—Seat Level Adjustment Knob
- C—Forward/Backward Adjustment Lever

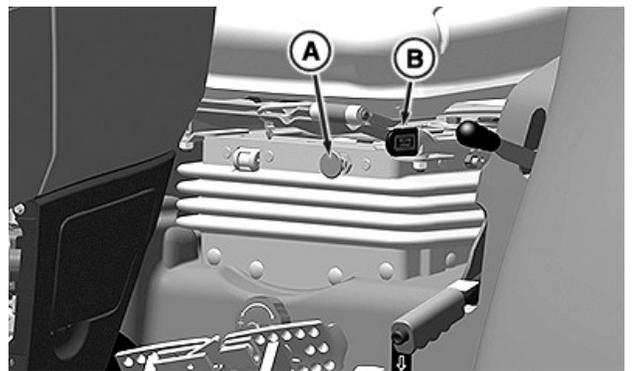
Adjust to each operator's personal preference; there are three available seat adjustments:

Height: While seated, pull height adjustment knob (A) out to raise seat. Push adjustment knob to lower seat. Release knob to lock in position.

Level: While seated, turn seat level adjustment knob (B) to adjust to preferred level.

Forward or Backward: Rotate forward/backward Adjustment Lever (C) counterclockwise to move seat to desired position.

Deluxe Seat Adjustment



LV28536—UN—18MAY17

- A—Weight Adjustment Knob
- B—Forward/Backward 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 lower seat pressure. Release knob to lock in position.

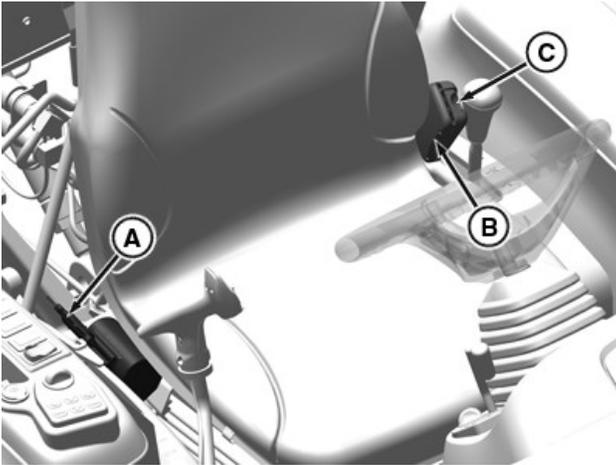
Forward or Backward: Rotate forward/backward Adjustment Lever (B) counterclockwise to move seat to desired position.

DB71512,0000253-19-23MAY17

Use 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



APY26301—UN—13SEP19

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.

PS75950,00008F9-19-13SEP19

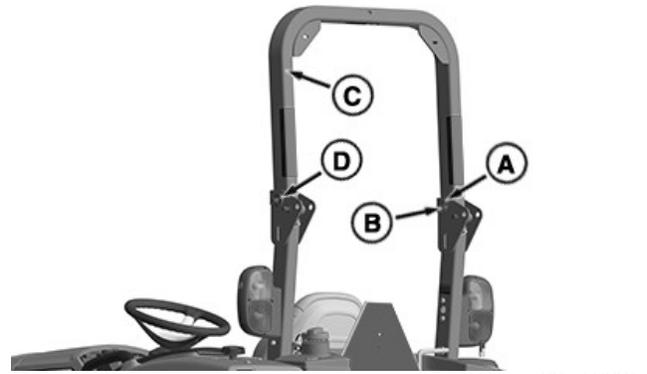
Raising and Lowering Roll-Over Protective Structure (ROPS)

⚠ 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.

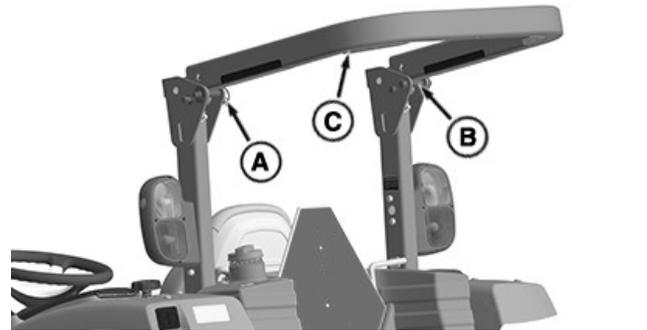
If ROPS must be folded to operate in a low clearance area, do not use seat belt. Raise ROPS and use seat belt as soon as conditions permit.

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

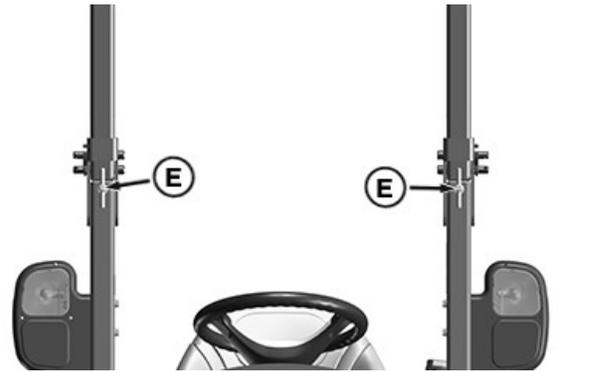
NOTE: When removing drilled pin (B) from the ROPS be careful not to loose ROPS pin isolator(D).



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).

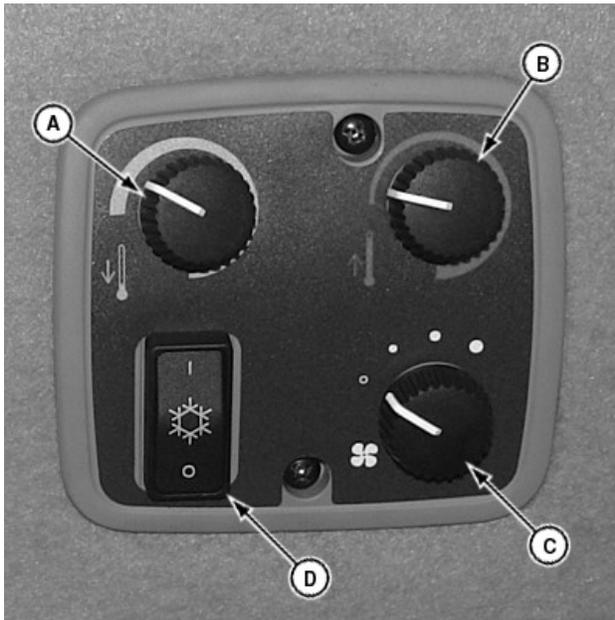
Raising ROPS Crossbar

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

UP00731,0000391-19-25JUL17

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.

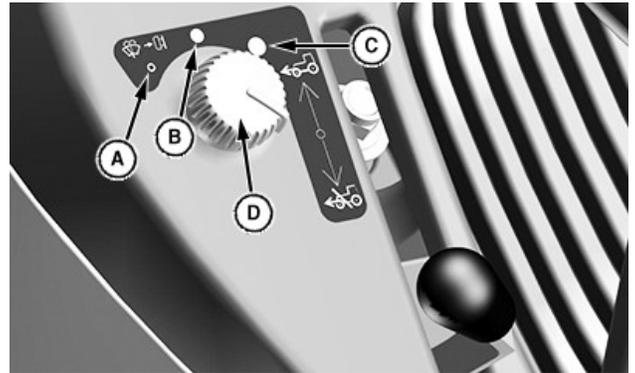
Turn heater temperature control knob (B) to adjust heater temperature.

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

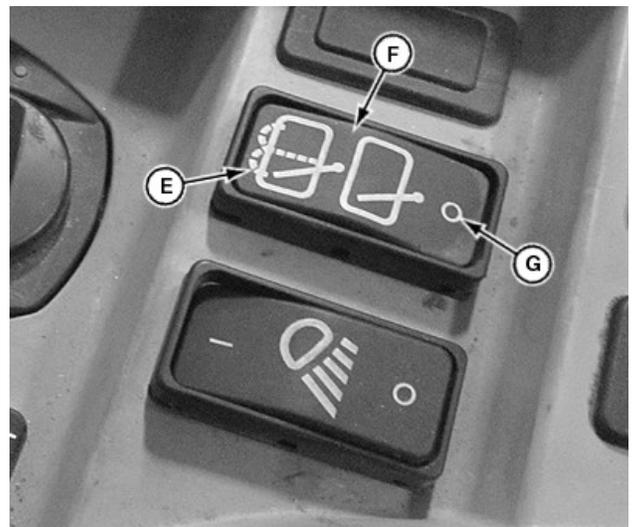
KN52281,1004855-19-18NOV13

Using Windshield Wiper and Washer—Cab

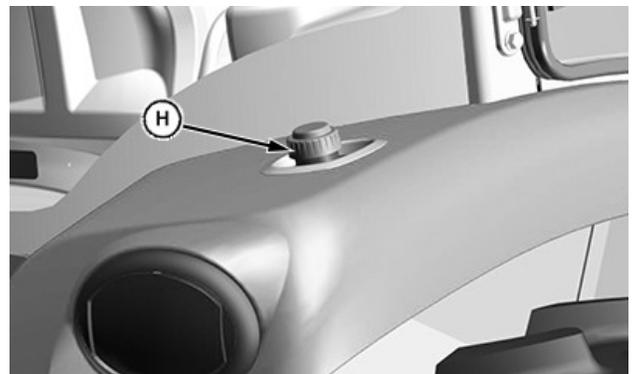
Front Wiper



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.

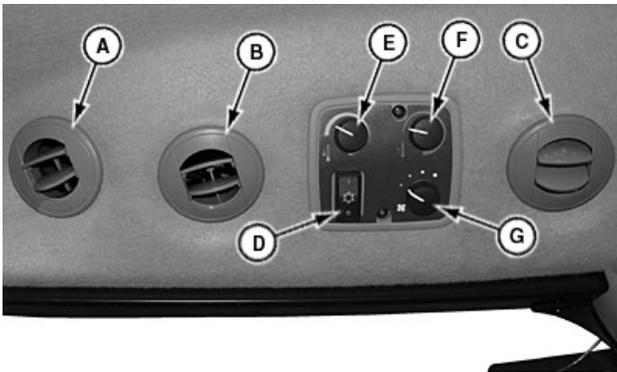
- WASH (E)—Hold top of switch down to activate washer.
- ON (F)
- OFF (G)

Filling Washer Fluid Reservoir

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

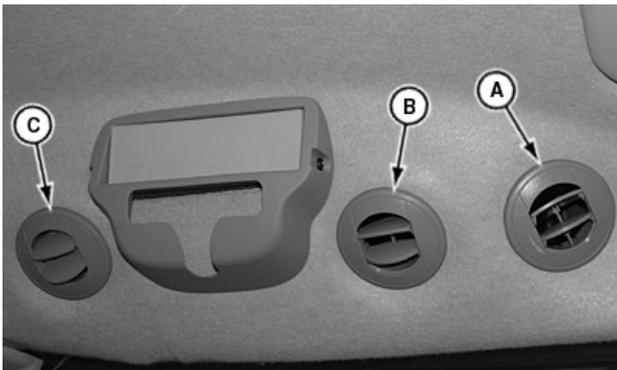
UP00731,00003DF-19-09AUG17

Defrost Windshield and Side Glass—Cab



Right Side

LV17723—UN—07MAY13



Left Side

LV17724—UN—07MAY13

- 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

Transport and Storage

Transport Machine on Trailer

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

Close fuel shutoff valve, if the machine is equipped.

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

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

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

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

KN52281,1003ECB-19-15JAN19

Transport Machine

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 are 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.

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 PTO switch knob to the disengaged/off position.
2. Disengage differential lock.
3. Disengage park brake.
4. Place transmission range shift lever in the N (neutral) position.
5. Disengage the MFWD.

KN52281,100483F-19-20MAY13

Push or Tow 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 knob to the disengaged/off position.
2. Disengage the differential lock.
3. Disengage park brake.
4. Move the transmission range shift lever to the N (neutral) position.
5. Disengage the MFWD.

KN52281,1004840-19-20MAY13

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

Maintenance Intervals

Service Machine

operated constantly at slow or low engine speeds or for frequent short periods of time.

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

- Engine components may become dirty or plugged when operating in extreme heat, dust or other severe conditions.
- Engine oil can degrade if machine is

Please use the following timetables to perform routine maintenance on your machine.

Park the vehicle safely. (See Parking Safely in Safety Section.)

KN52281,1003EE0-19-22AUG12

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 wheel bolt torque.	•					
Check cab rollover protection system mounting hardware torque.	•					
Check windshield wiper arm mounting hardware torque.	•					
Check safety interlock system.		•				
Check engine oil level.		•				
Check transmission oil level.		•				
Check air filter rubber dust valve.		•				
Check radiator coolant level.		•				
Grease trunnions when used in wet land applications.		•				
Check front axle oil level.			•			
Lubricate machine.			•			
Check cab rollover protection system mounting hardware torque.			•			
Check 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.					•	
Check wheel bolt torque.					•	
Check and adjust air conditioner compressor belt (if equipped).					•	
Check air filter restriction indicator light.					•	
Change transmission oil and filters. ^a						•
Replace front PTO gearbox oil (JD20D) and filter, if equipped.						•
Replace primary fuel filter/water separator.						•
Replace final fuel filter.						•

Maintenance Interval Chart — Daily to Every 400 Hours

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

JC48530,00000AB-19-12MAY20

Maintenance Interval Chart—Every 600 Hours to Every 6000 Hours

Item	Every 600 Hours	Yearly	Every 1000 Hours	Every 2000 Hours or Annually ^a	Every 6000 Hours/Six Years ^a
Service air filter element, intake, hoses, and clamps. Replace as required.	•				
Change front axle oil	•				
Check front axle thrust bolt torque.	•				
Check brake adjustment.	•				
Clean front axle breather valve.	•				
Change engine oil and filter if less than 400 hours of operation.		•			
Drain water from fuel tank and replace fuel filters.		•			
Check all hoses and clamps		•			
Inspect air intake system hoses and connections each time the air filter is changed, or at a minimum check yearly.		•			
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 — 600 Hours to 6000 Hours

COOL-GARD II is a trademark of Deere & Company

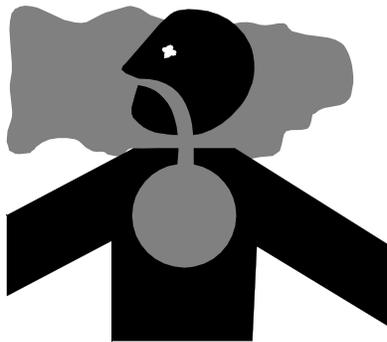
^aIf COOL-GARD II is not used and coolant is not tested annually, service interval is 2000 hours/annually

^bSee your John Deere dealer for service.

^cService 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™.

JC48530,00000AC-19-26SEP19

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

Test the Seat Switch

1. Sit on operator's seat.
2. Do not depress the hydrostatic travel pedals.
3. Lock park brake.
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 if only the rear PTO was engaged. If the mid PTO was engaged, the engine should stop immediately.

JC48530,00000A5-19-25SEP19

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.

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.

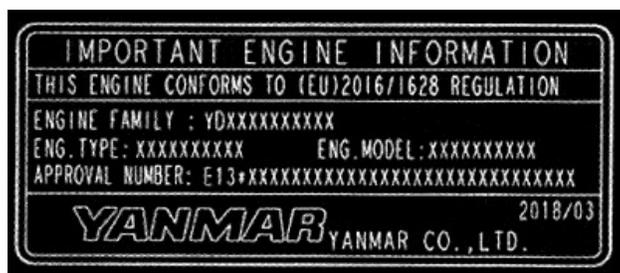
Repair Deep Scratches (Bare Metal or Primer Showing):

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

Fuel, Lubricants, and Coolant

Carbon Dioxide Emissions (CO₂)



TCT015573—UN—17MAY18

To identify the carbon dioxide (CO₂) 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
YD219DNCVD3A	835 g/kWh
YD209DTCVD4A	837 g/kWh
YD209DHCDV4A	756 g/kWh
YD332DNCVD4A	792 g/kWh
YD332DTCVD4A	738 g/kWh
YD305DHCSV5A	732 g/kWh

This CO₂ 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.

JC48530,00000AA-19-02OCT19

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.

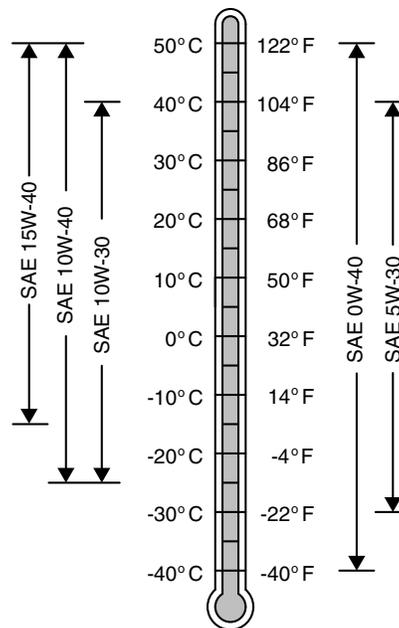
Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

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 Deere Torq-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

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

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.

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

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.

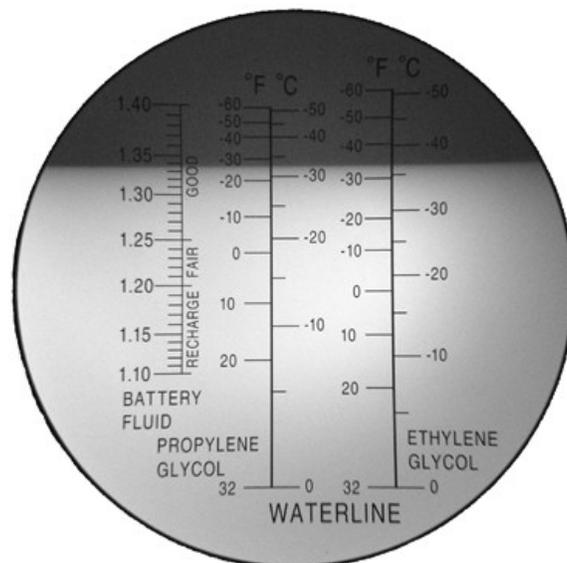
Contact your John Deere dealer for more information on coolant analysis.

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:

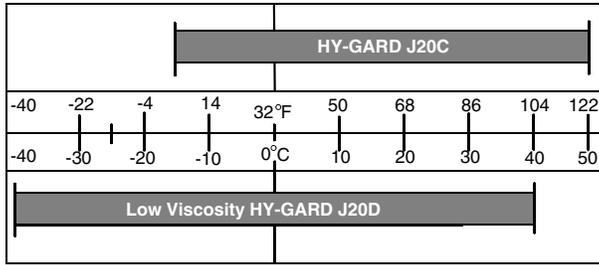
1. Allow cooling system to cool to ambient temperatures.
2. Open radiator cap to expose coolant.
3. With the included dropper, collect a small coolant sample.
4. Open the lid of the refractometer, place one drop of coolant on the window and close the lid.
5. Look through the eyepiece and focus as necessary.
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.

SERVICEGARD is a trademark of Deere & Company



LVAL38329—UN—21AUG12

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.

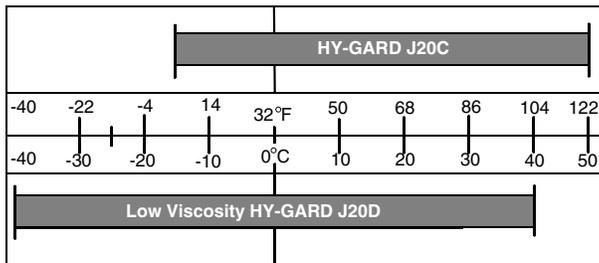
Use oil viscosity based on the expected air temperature range during the period between oil changes.

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



LVAL38329—UN—21AUG12

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

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.
- Clean fuel tank overfill reservoir.
- Check primary fuel filter.
- 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 and clean radiator cooling screen.
- Check engine coolant level. Refill with correct coolant and conditioner as required.
- Clean debris from engine compartment.
- Keep exhaust vent area clean of debris and obstruction.
- Adjust all cables to acquire appropriate travel for engagement (cabs).

UP00731.0000363-19-27JUN17

Controls and Instruments Maintenance

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

Daily Operation Checklist

- 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.
- Keep exhaust vent area clear of debris and obstructions.

KN52281,10047DF-19-20MAY13

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

Avoid Fumes

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

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

KN52281,1003F09-19-25MAY17

Check Engine Oil Level

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

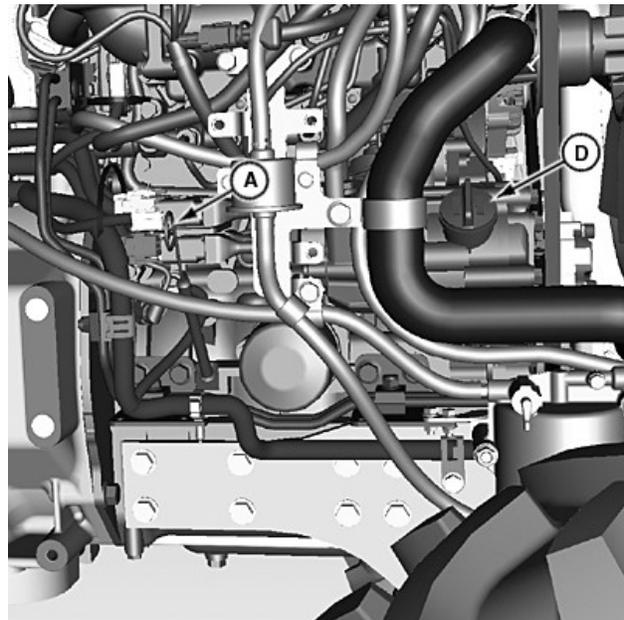
- Check oil level before operating.
- Check oil level when the engine is cold and not running.
- Keep level between the Full and the Add marks.
- Shut off engine before adding oil.

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. (See Parking Safely in Safety section.)

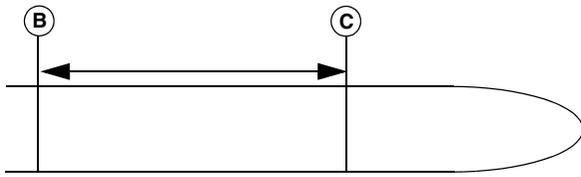
IMPORTANT: Avoid damage! Dirt and contamination can enter engine when checking oil level. Clean area around dipstick before loosening or removing.



LV17603—UN—30APR13

A—Dipstick
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.



LVAL38308—UN—21AUG12

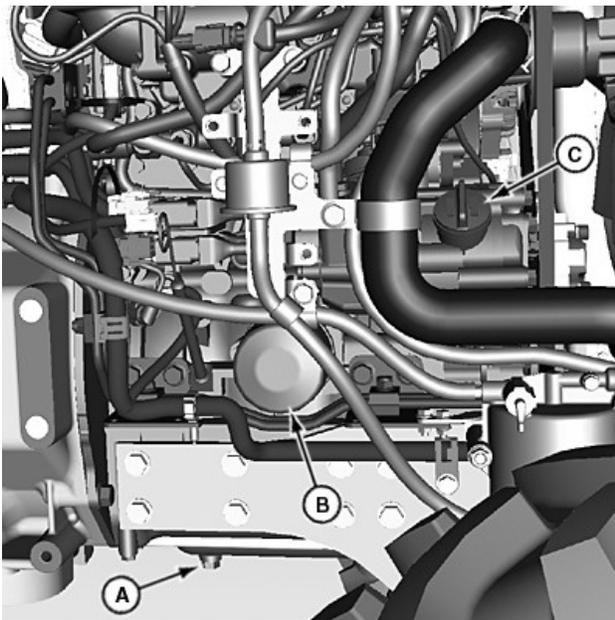
B—Full
C—Add

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.
 - 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.

KN52281,10047F6-19-20MAY13

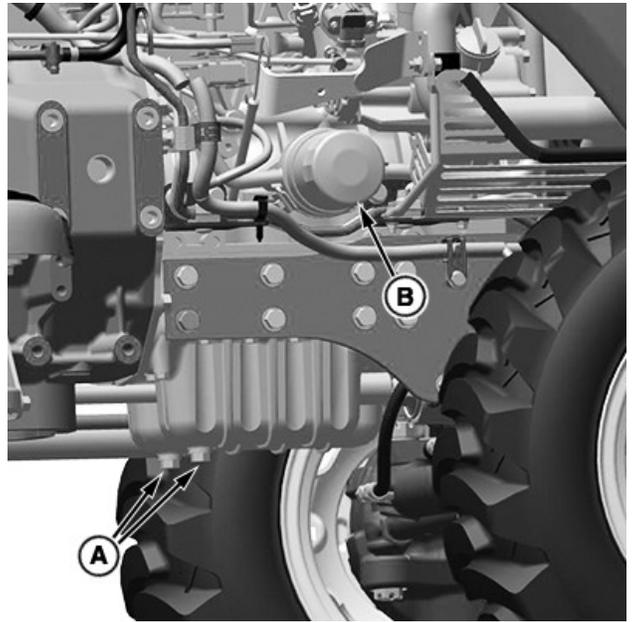
Change Engine Oil and Filter

1. Run engine to warm the oil.
2. Park machine safely.



LV17604—UN—30APR13

3033R, 3039R Tractor



LV30576—UN—18APR19

3046R Tractor

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

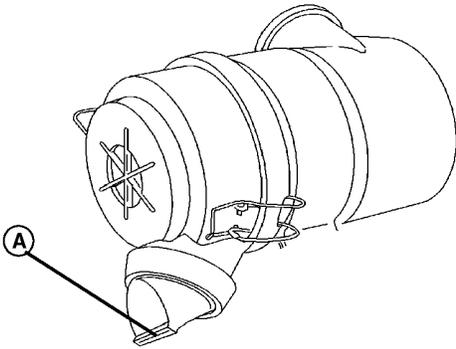
3. Place drain pan under the oil drain plug (A) on the underside of engine.
4. Remove drain plug.
5. Wipe dirt from around the oil filter (B).
6. Turn filter counterclockwise to remove.
7. Put a light coat of clean engine oil on gasket of the new filter.
8. Install replacement oil filter by turning filter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

KN52281,10047F7-19-24SEP19

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.



A—Dust Unloading Valve

LVAL38312—UN—21AUG12

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

KN52281,1003F0E-19-12JUN17

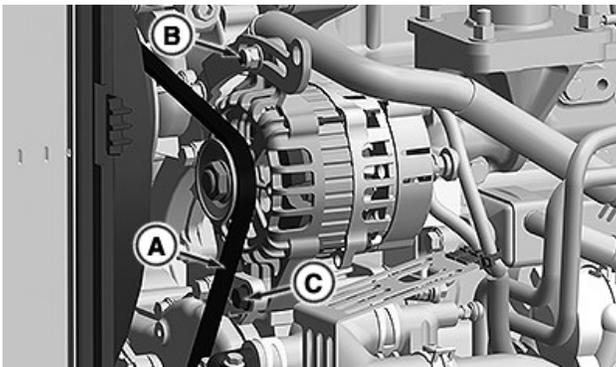
Service the Alternator Belt

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

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

Checking Belt Tension

1. Park machine safely. (See Parking Safely in Safety Section.) Allow engine to cool.
2. Raise hood.
3. Remove left side panel.



LV28537—UN—19MAY17

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

4. Check tension by using the belt tension gauge to

apply pressure to the belt midway between pulleys at location (A). Belt should deflect 9 mm (3/8 in) at 75 lb (334 N).

5. Adjust belt tension if not within specifications.

Specification

Belt Tension—Force. 75 LB (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. (See Parking Safely in Safety Section.) 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.

DB71512,0000254-19-21DEC17

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

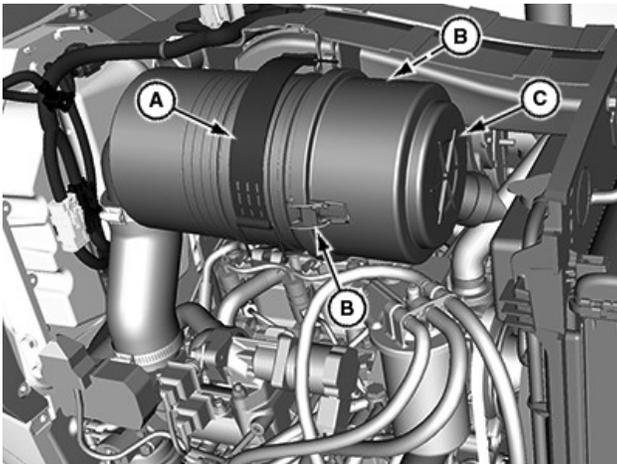
Air, Fuel, Coolant and Exhaust Maintenance

Service Air Filter Elements

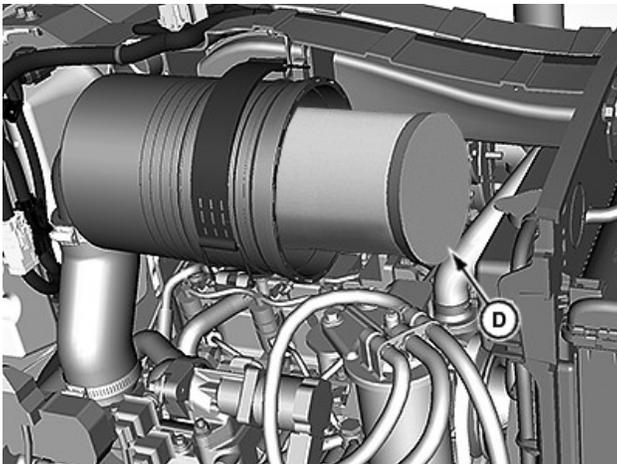
⚠ CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids will be hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.

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

Servicing Primary Air Filter Element



LV17606—UN—30APR13



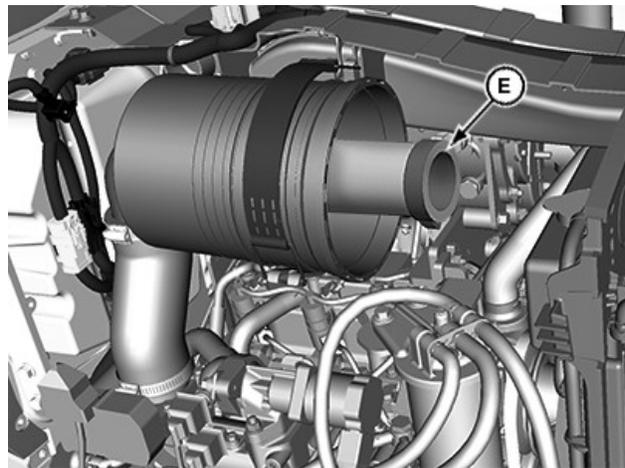
LV17607—UN—30APR13

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

1. Park machine safely. (See Parking Safely in Safety section.)
2. Allow engine to cool.
3. Raise hood.
4. Remove hold down strap (A).
5. Tilt canister up and release latches (B) and remove air filter canister cover (C).

6. Remove and discard primary 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



LV17608—UN—30APR13

E—Secondary Element

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

1. Remove air filter canister cover.
2. Remove and discard primary air filter element.
3. Remove and discard secondary air filter element (E). Replace with a new secondary air filter element.
4. Install new primary air filter element.
5. Replace air filter canister cover.
6. Position canister back in place and install strap.
7. Lower hood.

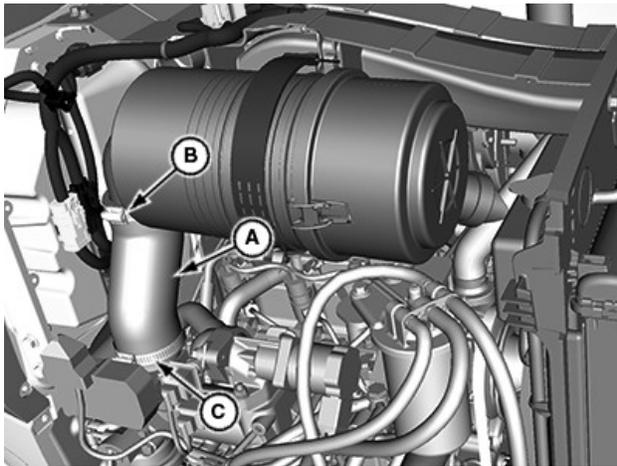
KN52281,10047F8-19-03JUN13

Check Air Filter Intake Hose

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

1. Park machine safely. (See Parking Safely in Safety section.)
2. Raise hood.

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



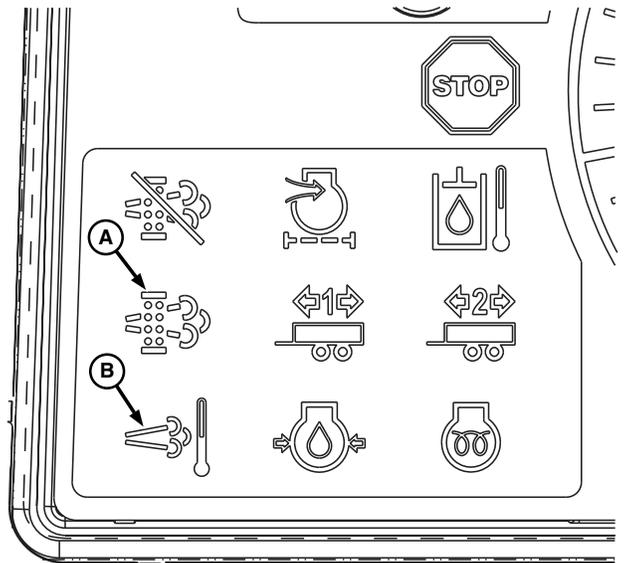
LV17609—UN—30APR13

- A—Hose
- B—Upper Clamp
- C—Lower Clamp

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

KN52281,10047F9-19-04SEP13

Automatic (AUTO) Exhaust Filter Cleaning



LV17596—UN—01MAY13

- A—Exhaust Filter Indicator
- B—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.

The exhaust filter indicator (A) will illuminate if the system determines that soot buildup in the exhaust filter requires cleaning. The light will remain on until an auto exhaust cleaning process is performed.

An exhaust filter cleaning will start automatically unless the disabled switch has been activated. The high exhaust temperature indicator (B) will illuminate and stay on during the cleaning process.

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.

UP00731,000034F-19-25JUN15

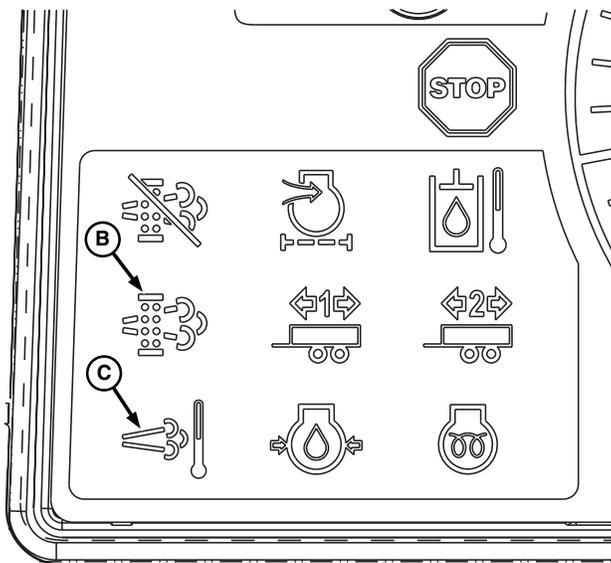
Disabled Exhaust Filter Cleaning

IMPORTANT: Operate vehicle with the exhaust filter cleaning mode switch in the AUTO position.

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. Be sure to deactivate the disabled exhaust filter cleaning mode as soon as possible to avoid soot buildup in the exhaust filter.



LV17597—UN—21MAY13
Exhaust Filter Cleaning Disable Switch



LV17598—UN—01MAY13

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

Activate exhaust filter cleaning disable switch (A) to disable exhaust filter cleaning mode. The LED will illuminate indicating it is disabled.

While in disabled mode, if the system determines that soot buildup in the exhaust filter requires cleaning, Exhaust Filter Indicator - Restriction (B) comes on.

Press exhaust filter cleaning disable switch (A) to return to Automatic (AUTO) mode. High Exhaust Temperature Indicator (C) remains illuminated during the exhaust filter cleaning.

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. Meaning that the engine performance is reduced and will not return to normal until a park exhaust filter cleaning is performed.

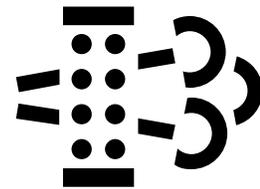
UP00731,0000351-19-26MAY17

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 deg°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.

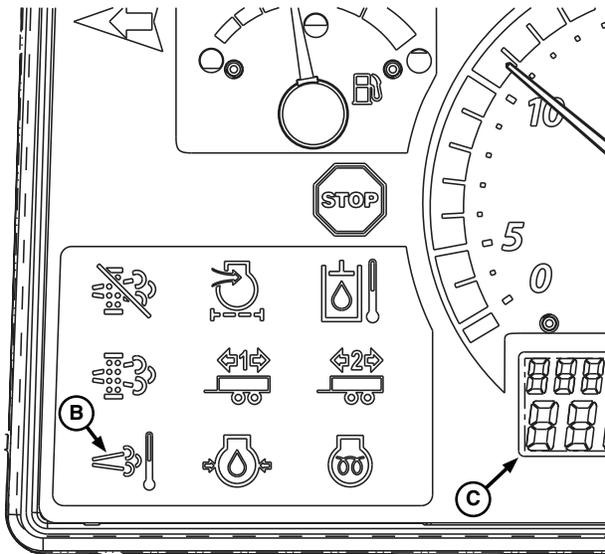
No other machine functions can be used while exhaust filter cleaning is taking place with the machine parked. Excluded from this are functions that are required for an emergency shutdown of the machine.

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—Parked Cleaning Position
- B—Exhaust Filter 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.

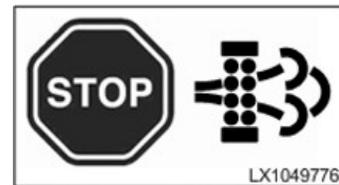
IMPORTANT: If operator disregards indicators and continues to operate machine without allowing a parked cleaning, engine performance is reduced. A service exhaust cleaning procedure, by a John Deere dealer, is required.

KN52281,10047F3-19-06NOV14

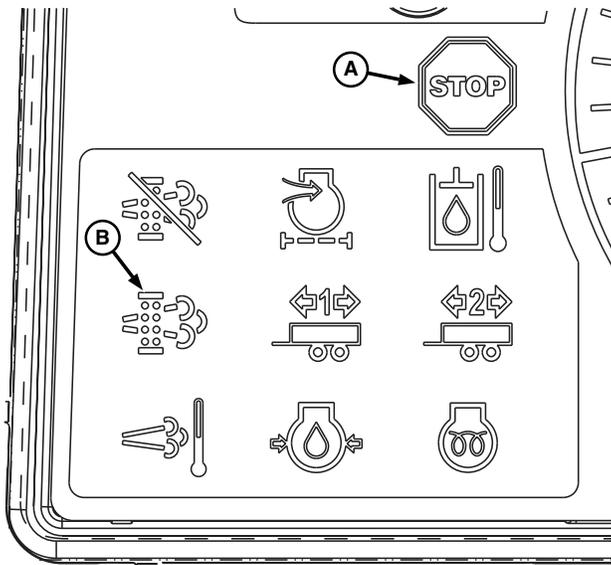
Service Exhaust Filter Cleaning

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 filter cleaning with machine parked 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 indicator light for exhaust filter cleaning is on.
- Take note of information displayed for the operator, and act accordingly.

KN52281,10047F4-19-05AUG13

Check and Clean Fuel Filter Sediment Bowl and Replace Filter

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

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

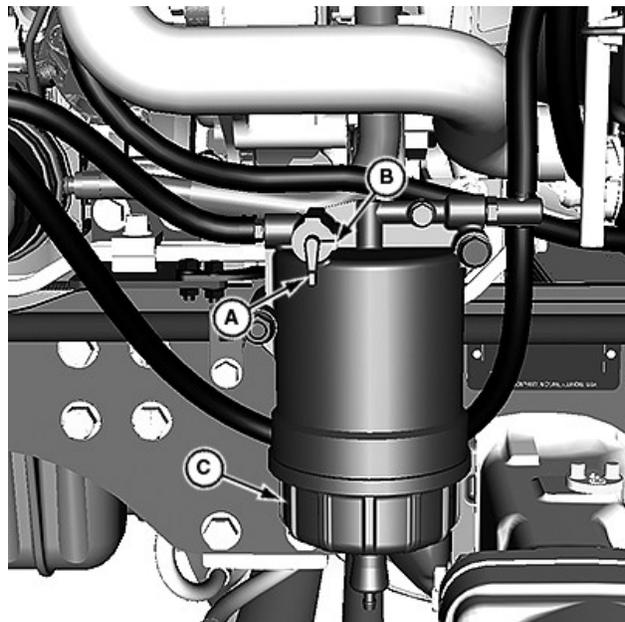
- Shut off engine before servicing.
- Cool engine before servicing.
- Work in a well-ventilated area.
- Clean up spilled fuel immediately.

NOTE: Change filter when fuel level is low.

Checking Sediment Bowl

1. Park machine safely. (See Parking Safely in Safety section.) 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



LV17623—UN—01MAY13

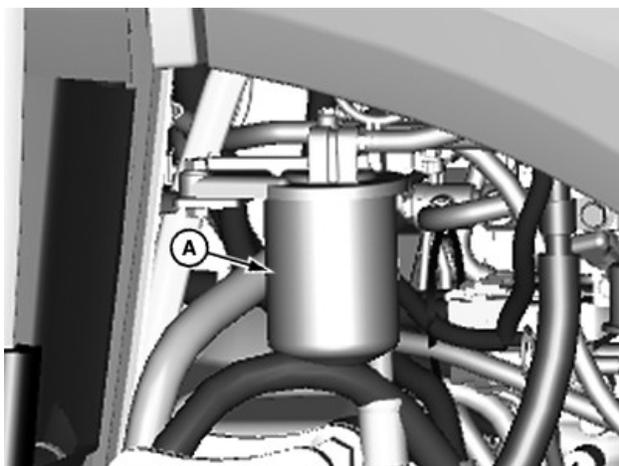
- A—Fuel Shutoff Valve
- B—Closed Position
- C—Sediment Bowl

1. Move the fuel shutoff valve (A) to 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.
8. Open fuel shutoff valve.

NOTE: Fuel system is self-bleeding.

9. Turn key to the ON position for 10—15 seconds before attempting to start; electric pump purges air from sediment bowl.

Replacing Inline Fuel Filter



LV17808—UN—16MAY13
Cab Shown, Others Similar

A—Fuel Filter

NOTE: Change filter when fuel level is low.

1. Position drain pan under fuel filter (A).
2. Wipe dirt from around filter.
3. Turn filter counterclockwise to remove.
4. Install replacement filter by turning filter clockwise until gasket contacts filter base. Tighten additional 1/2 turn.
5. Start and run engine at idle to check for leaks.

PS75950,00008FA-19-13SEP19

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:

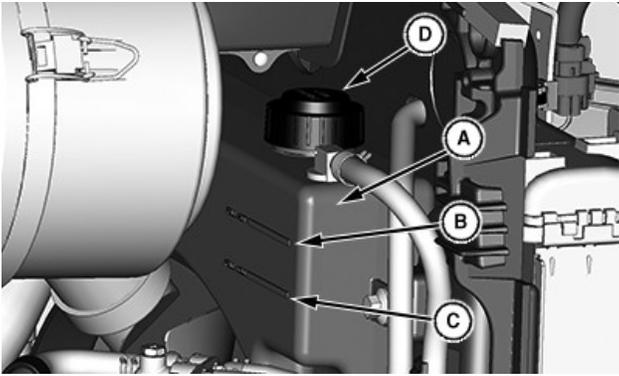
- Shut off the engine and allow to cool.
- Do not remove the cap unless the radiator and the engine are cool enough to touch with bare hands.
- Slowly loosen the cap to the first stop to release all pressure. Then remove the cap.

KN52281,10047FA-19-26APR13

Service Cooling System

Checking Cooling System

1. Park machine safely. (See Parking Safely in Safety section.)
2. Allow engine to cool.
3. Raise hood.



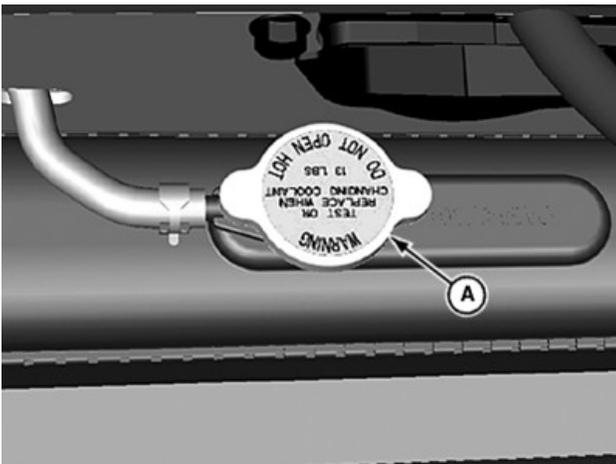
LV23789—UN—25MAR15

- A—Recovery Tank
- B—Full Hot
- C—Full Cold
- D—Tank Cap

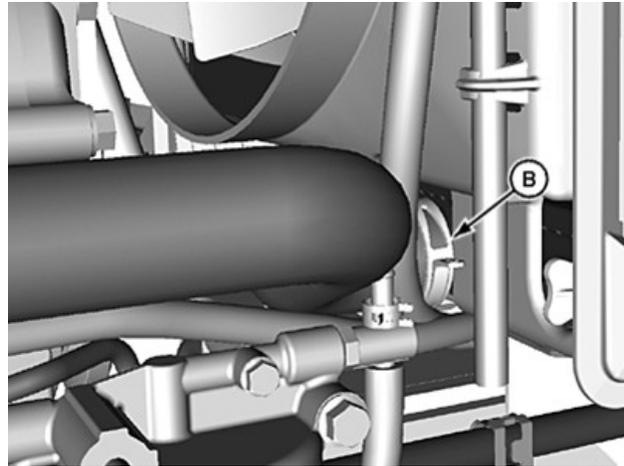
4. Check recovery tank (A) coolant level:
 - If engine is warm, coolant level should be between the FULL line (B) and the LOW line (C).
 - If engine is cold, coolant level should be at the LOW line (C) on the recovery tank.
5. Remove recovery tank cap (D) if needed to add coolant.
6. Add recommended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

Draining Cooling System

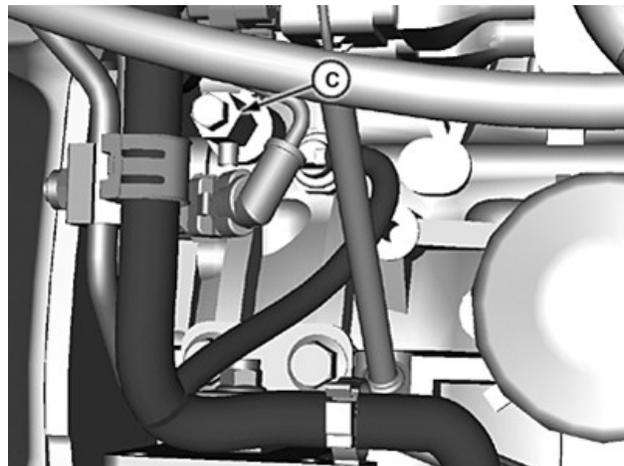
1. Park machine safely. (See Parking Safely in the Safety section.)
2. Allow engine to cool.
3. Raise hood.



LV17614—UN—16MAY13



LV17615—UN—16MAY13



LV17616—UN—16MAY13

- A—Radiator Cap
- B—Lower Radiator Hose
- C—Engine Block Drain Plug

4. Slowly open radiator cap (A) to the first stop to release all pressure.
5. Close radiator cap tightly.
6. Position drain pan under radiator. Remove lower radiator hose (B) at radiator.
7. Drain coolant from engine:
 - 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.
8. When coolant drains from the recovery tank, remove the radiator cap.
9. Install lower radiator hose and install engine block drain plug.
10. Flush cooling system.

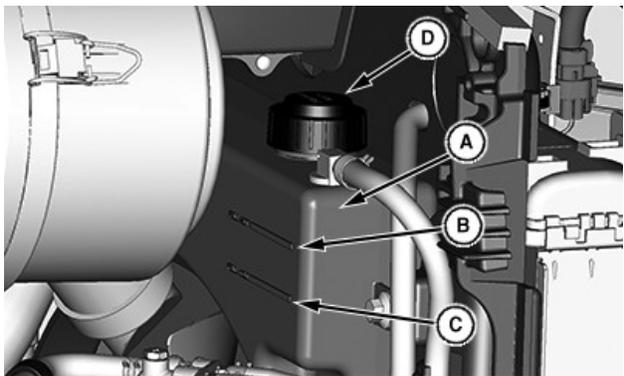
Flushing Cooling System

1. Fill cooling system with clean water and John Deere Cooling System Cleaner, or John Deere Cooling

1. 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. Remove lower radiator hose and engine block drain plug.
6. Drain cooling system immediately before rust and dirt settle.
7. Install radiator and engine block drain plug.

Filling Cooling System

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



LV23789—UN—25MAR15

- A—Recovery Tank
- B—Full Hot
- C—Full Cold
- D—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 based antifreeze.

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

Follow the directions on the container for correct mixture ratio.

1. Allow radiator to cool.
2. Fill cooling system to specification.
3. Install and tighten radiator cap.
4. Remove tank cap (D).
5. Fill recovery tank (A) to the low line (C).

COOL-GARD is a trademark of Deere & Company

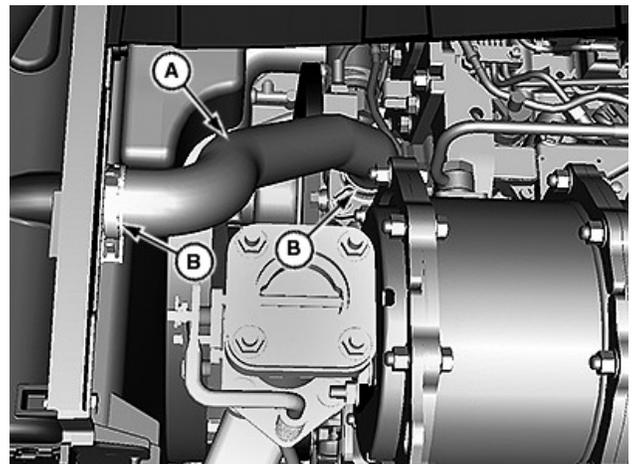
6. Run engine until it reaches operating temperature.
7. Stop engine.
8. Coolant level should be between the FULL line (B) and the LOW line (C).
9. Lower hood.

DB71512,0000257-19-24SEP19

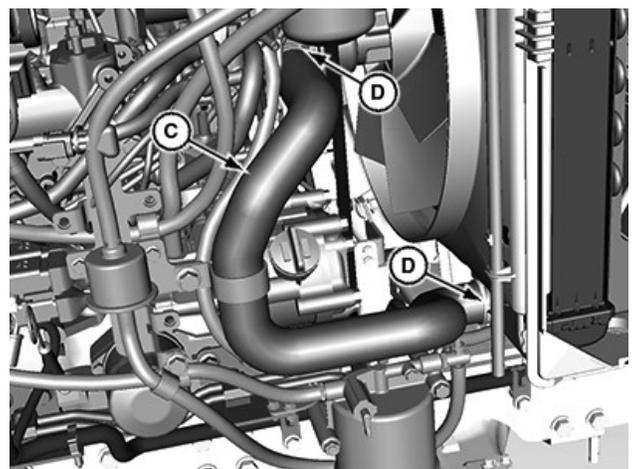
Check Radiator Hoses and Clamps

1. Park machine safely. (See Parking Safely in Safety section.)
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, nor soft or swollen.



LV17620—UN—01MAY13



LV17621—UN—03MAY13

- 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.

KN52281,10047FC-19-20MAY13

Clean Radiator Cooling Fins

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

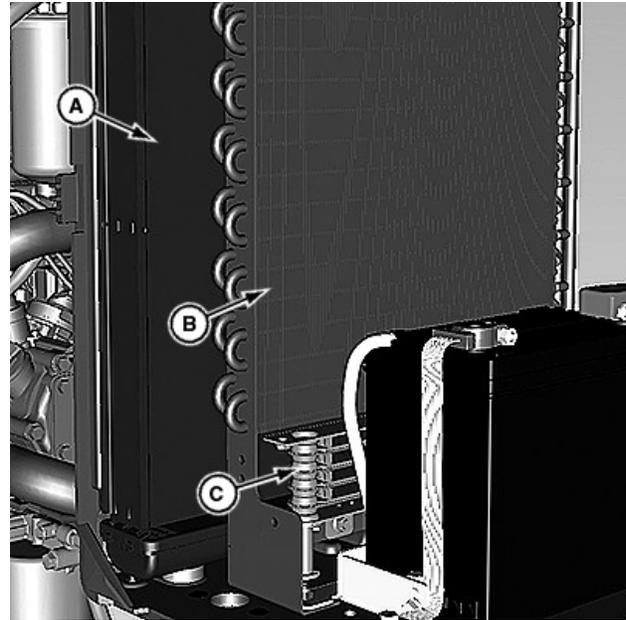
- Clear work area of bystanders.
- Wear eye protection when using compressed air for cleaning purposes.
- Reduce compressed air pressure to 210 kPa (2.1 bar) (30 psi).

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

Do not use pressure washers to clean radiator cooling fins. The force produced by pressure washers can damage the radiator and cooling fins.

Reduce compressed air pressure to 210 kPa (2.1 bar) (30 psi) when cleaning radiator and cooling fins. Spray compressed air straight into radiator. Do not spray radiator on an angle or cooling fins can be bent.

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



LV17622—UN—01MAY13

A—Radiator
B—Oil Cooler
C—Intercooler

3. Using compressed air or water, remove all dirt and debris from fins at front and rear of the following:
 - Radiator (A), including fan shroud.
 - Oil Cooler (B).
 - Intercooler (C).
4. Lower hood.

KN52281,10047FD-19-25SEP19

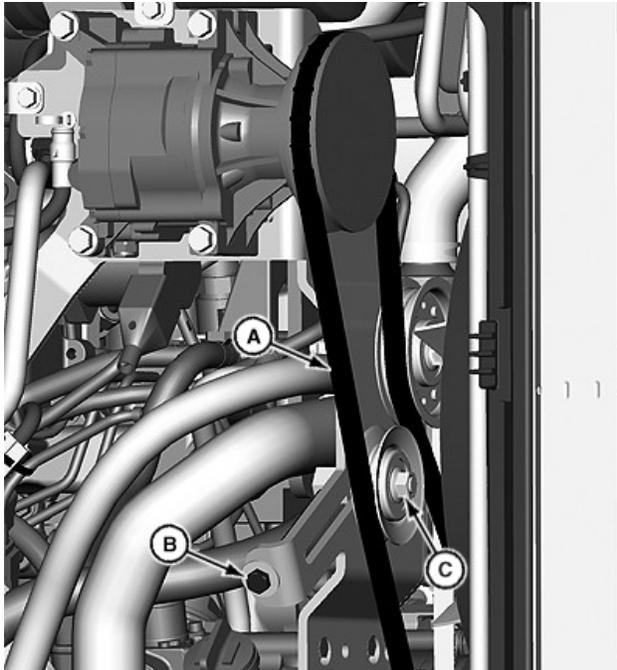
Service the Air Conditioner Belt—Cab

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.

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.)



LV19575—UN—30OCT13

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

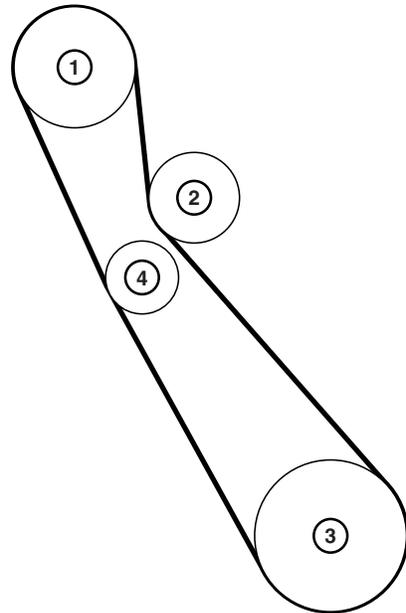
1. Loosen adjustment pulley nut (C).
2. Turn adjusting bolt (B) clockwise to tighten counterclockwise to loosen the air conditioner belt.
3. Adjust belt tension to specifications.
4. Tighten adjustment pulley nut (C).
5. Recheck belt tension.
6. Install right side panel.
7. Lower hood.

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

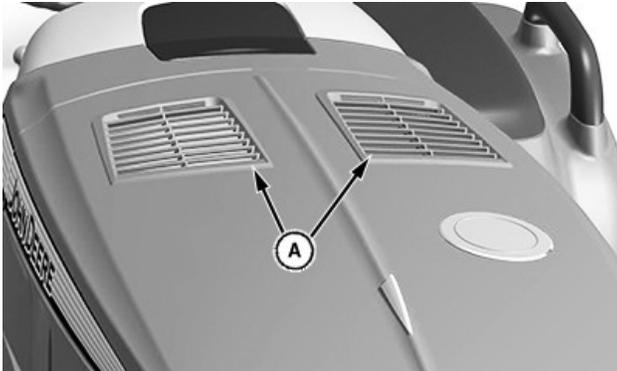
NOTE: If necessary the idler pulley bolt can be loosened and the idler pulley moved inboard in the slot. After belt is positioned around pulleys, the idler pulley should be moved outboard to take up the belt slack, and the idler pulley bolt tightened.

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

KN52281, 1004A2D-19-31OCT13

Clean Hood Vents

IMPORTANT: Avoid damage! Hood vents must be kept free of debris and obstruction to allow for adequate air flow.



LV29354—UN—01SEP17

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.

DB71512.0000256-19-01SEP17

Air Conditioner Checks

Check the following if air conditioner will not cool, or if cooling is intermittent:

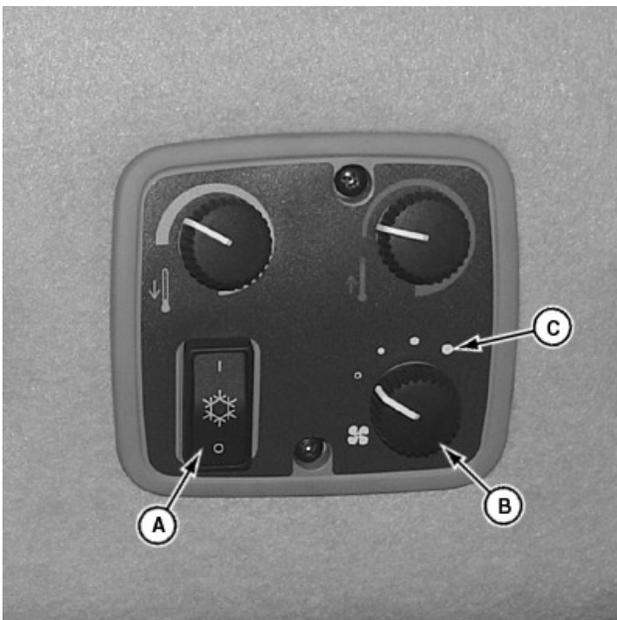
⚠ CAUTION: Avoid injury! Refrigerant under pressure. Improper servicing may cause refrigerant to penetrate eyes and skin or cause burns.

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 ignition 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 A/C and defrost 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.

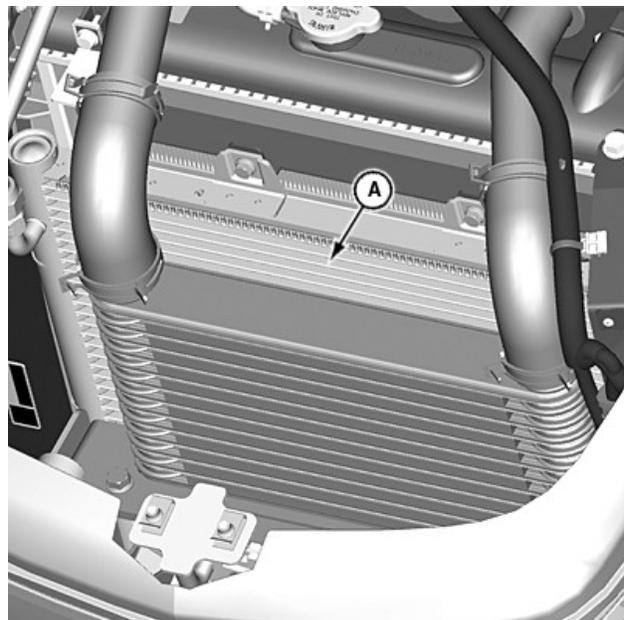
Service Air Conditioner



LV17758—UN—14MAY13

- A—Defrost Switch
 B—Blower Control Knob
 C—High Position

Cleaning Air Conditioner Condenser



LV17757—UN—14MAY13

- A—Air Conditioner Condenser

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

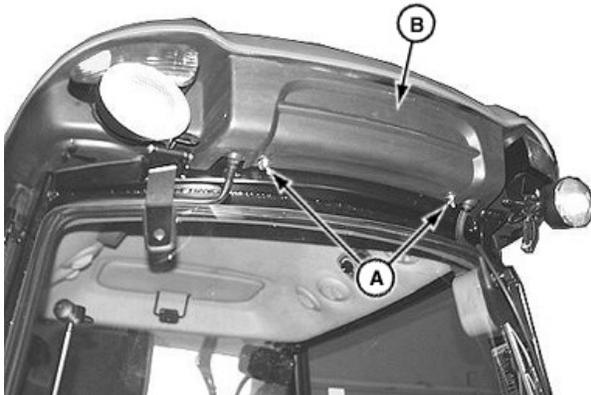
- Clear work area of bystanders.
- Wear eye protection when using compressed air for cleaning purposes.
- Reduce compressed air pressure to 210 kPa (30 psi).

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.

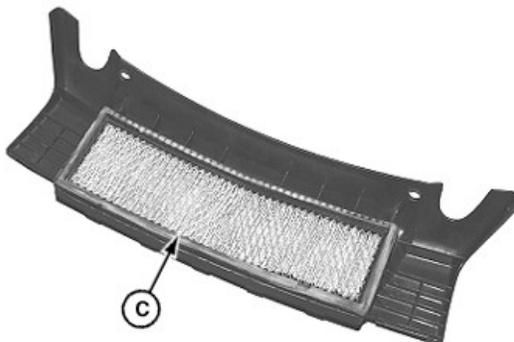
UP00731,000036A-19-25JUL17

Clean Cab Air Filter

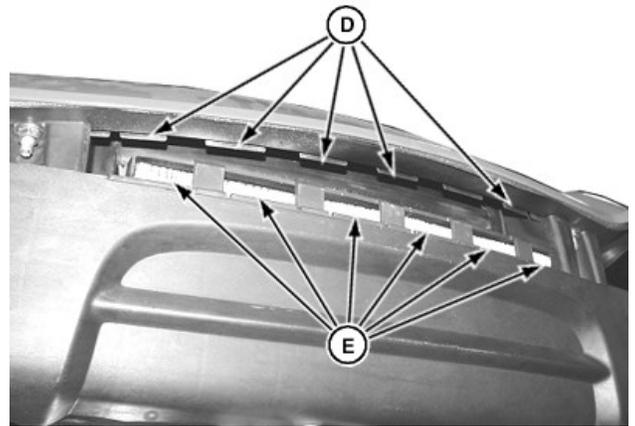
IMPORTANT: Avoid damage! Remove any rear implement before servicing cab air filter. Do not stand on 3-point hitch or PTO shield.



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.

KN52281,1004833-19-21MAY13

Electrical and Lighting Maintenance

Service Electrical

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

KN52281,1003F32-19-25MAY17

Service the Battery Safely



LVAL38348—UN—21AUG12

CAUTION: Avoid injury! Battery electrolyte contains sulfuric acid. It is poisonous and can cause serious burns:

- Wear eye protection and gloves.
- Keep skin protected.
- If electrolyte is swallowed, get medical attention immediately.
- If electrolyte is splashed into eyes, flush immediately with water for 15-30 minutes and get medical attention.
- If electrolyte is splashed onto skin, flush immediately with water and get medical attention if necessary.

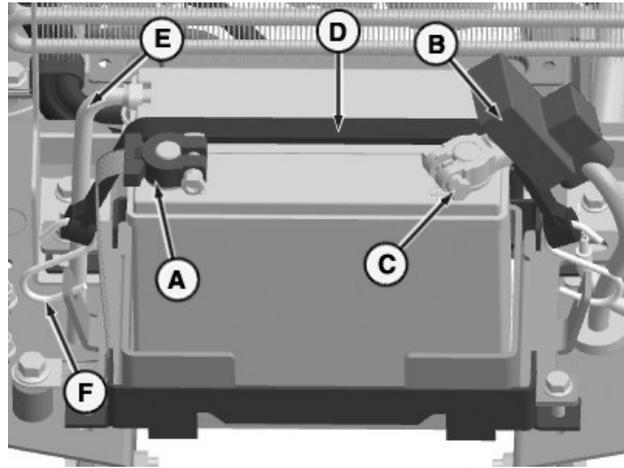
The battery produces a flammable and explosive gas. The battery may explode:

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

KN52281,1003F33-19-22AUG12

Remove and Install Battery

Removing



LVP12157—UN—01DEC21

A—Black Negative Cable
B—Red Positive Terminal Cover
C—Red Positive Cable
D—Tie-Down Strap
E—Vent Tube
F—Hook

1. Park machine safely.
2. Raise hood.

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

Avoid the hazard by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump-start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your 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 quarts).
3. Get medical attention immediately.

3. Disconnect black negative (—) cable (A) from the battery terminal first.

4. Slide red positive terminal cover (B) back and disconnect red positive (+) cable (C) from the battery terminal.
5. Remove tie-down strap (D) and hook (F) from both sides of battery tray.
6. Pull battery vent tube (E) from the battery tray.
7. Remove battery.

Installing:

1. Position battery in machine.
2. Route battery vent tube (E) through the hole in the battery tray.
3. Install tie-down strap (D) and hook (F) to both sides of battery tray.
4. Connect positive (+) cable (C) to battery first, then attach negative (-) cable (A) to battery.
5. Apply the spray lubricant on battery terminals to help prevent corrosion.
6. Position red positive battery terminal cover (B) on red positive (+) cable.
7. Lower hood.

AL61114,000075D-19-03MAY23

Clean Battery and Terminals

1. Park machine safely.
2. Disconnect and remove battery.
3. Wash battery with solution of four tablespoons of baking soda to one gallon of water. Be careful not to get the soda solution into the cells.
4. Rinse the battery with plain water and dry.
5. Clean terminals and battery cable ends with wire brush until bright.
6. Install battery.
7. Attach cables to battery terminals, beginning with the positive cable.
8. Apply spray lubricant to terminal to prevent corrosion.

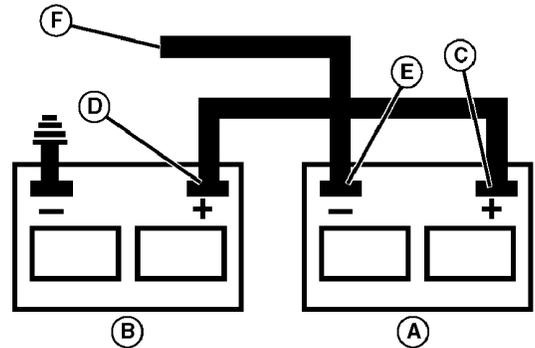
KN52281,1003F36-19-17FEB17

Use Booster Battery

⚠ CAUTION: Avoid injury! The battery produces a flammable and explosive gas. The battery may explode:

- Do not smoke or have open flame near the battery.
- Wear eye protection and gloves.

- Do not jump-start or charge a frozen battery. Warm battery to 16°C (60°F).
- Do not connect the negative (-) booster cable to the negative (-) terminal of the discharged battery. Connect at a good ground location away from the discharged battery.



LVAL38352—UN—21AUG12

- A—Booster Battery
- B—Disabled Vehicle Battery
- C—Booster Battery Positive (+) Post
- D—Disabled Vehicle Battery Positive (+) Post
- E—Booster Battery Negative (-) Post
- F—Disabled Vehicle Battery Negative (-) Post

1. Connect positive (+) booster cable to the booster battery (A) positive (+) post (C).
2. Connect the other end of positive (+) booster cable to the disabled vehicle battery (B) positive (+) post (D).
3. Connect negative (-) booster cable to the booster battery negative (-) post (E).

IMPORTANT: Avoid damage! Electric charge from the booster battery can damage machine components. Do not install negative booster cable to the machine frame. Install only to the engine block.

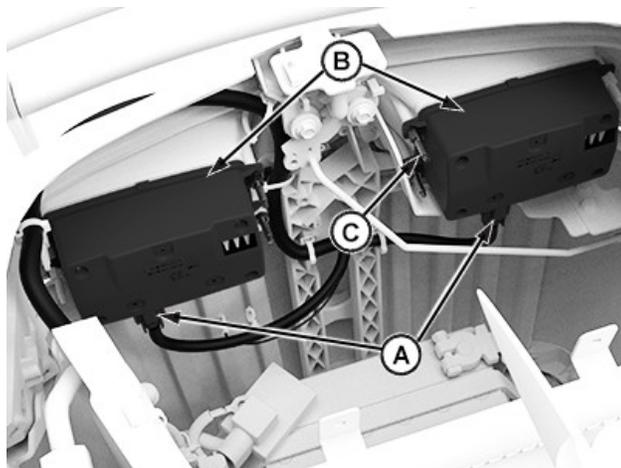
Install negative booster cable away from moving parts in the engine compartment, such as belts and fan blades.

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

KN52281,1003F37-19-16FEB17

Replace Headlight

1. Park machine safely. (See Parking Safely in Safety section.)
2. Raise hood.



APY563855—UN—24FEB23

A—Connector (2 used)
B—LED Headlight (2 used)
C—Screw (8 used)

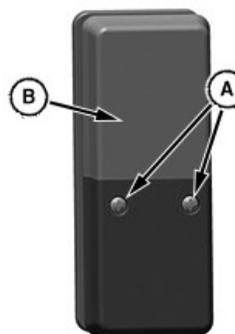
3. Remove connectors (A) from base of LED headlights (B).
4. Remove screws (C).
5. Remove LED headlights (B) and replace with new LED headlights.
6. Insert connectors (A) into base of LED headlights (B).
7. Lower hood.
8. Check operation of headlights.

i2649ku,1678774103005-19-03MAY23

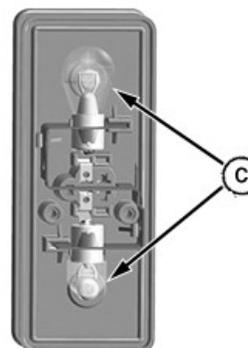
Replacing Tail/Turn and Warning Light Bulbs (OOS)

NOTE: Tail light can be serviced by removing the rear assembly lens only.

1. Park machine safely. (See Parking Safely in the Safety section.)



LV29146—UN—17AUG17



LV29147—UN—17AUG17

OOS Shown

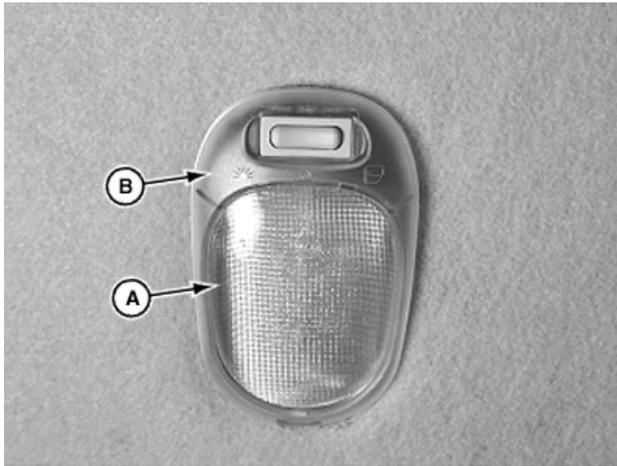
A—Screw (2 used)
B—Lens
C—Bulb (2 used)

2. Remove screws (A) and lens (B).
3. Pull bulbs (C) straight out to remove. Do not twist bulbs.
4. Push new bulbs into socket.
5. Check operation of tail lights and turn signals.
6. Install lens (B) and screws (A).

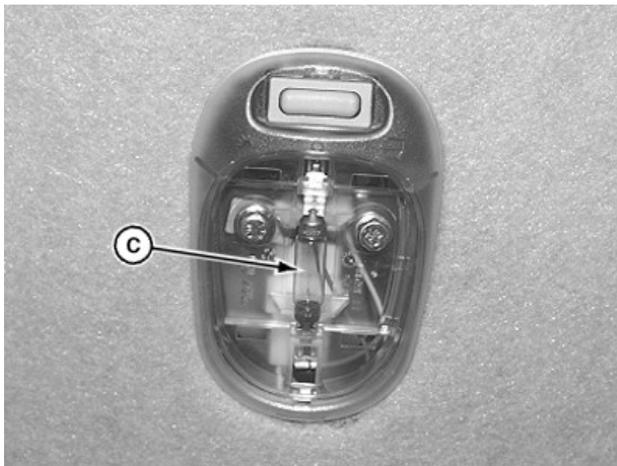
i2649ku,1677049099539-19-03MAY23

Replace Light Bulbs (Tractor with Cab)

Dome Light Bulb



LV17766—UN—14MAY13

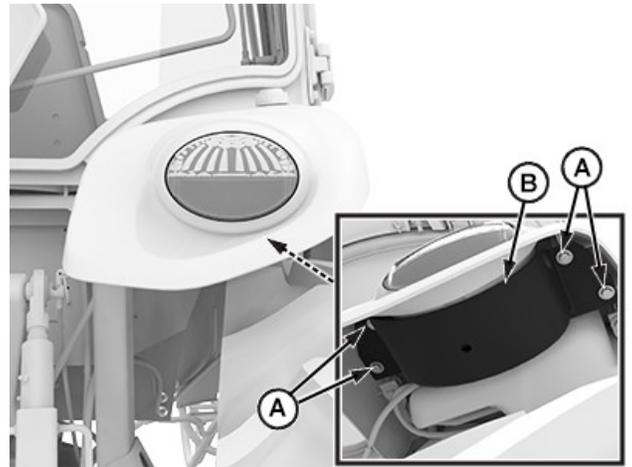


LV17767—UN—14MAY13

- A—Cover
- B—Bulb Housing
- C—Bulb

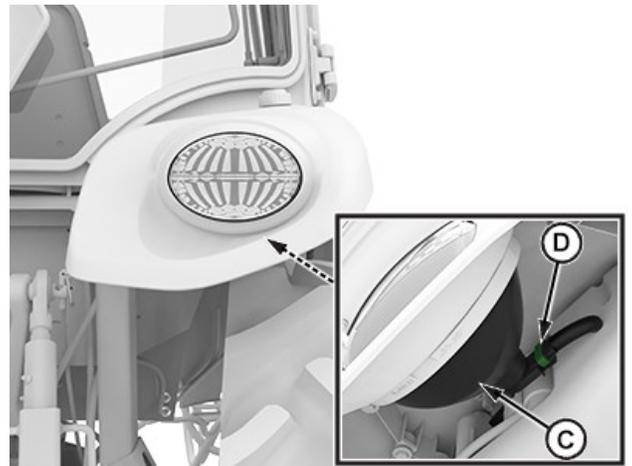
1. Remove cover (A) from housing (B) using a screwdriver.
2. Pull bulb (C) from socket.
3. Install new bulb and cover (A).

Tail light Bulb



APY563858—UN—03MAY23

Right Rear Shown

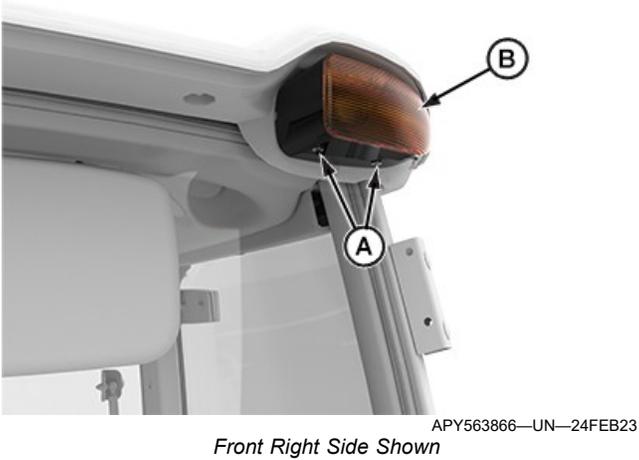


APY563861—UN—24FEB23

- A—Screw (4 used)
- B—Cover
- C—Bulb Housing
- D—Connector

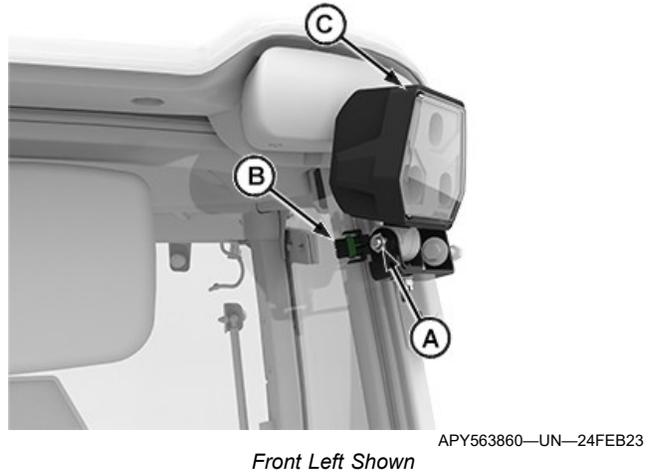
1. Remove screws (A) and cover (B) under fender.
2. Remove connector (D) and bulb from bulb housing (C).
3. Install new bulb in bulb housing (C).
4. Plug connector (D) to bulb housing (C).
5. Install cover (B) and screws (A) to fender.

Warning Light Bulb



Front Right Side Shown

Work Light



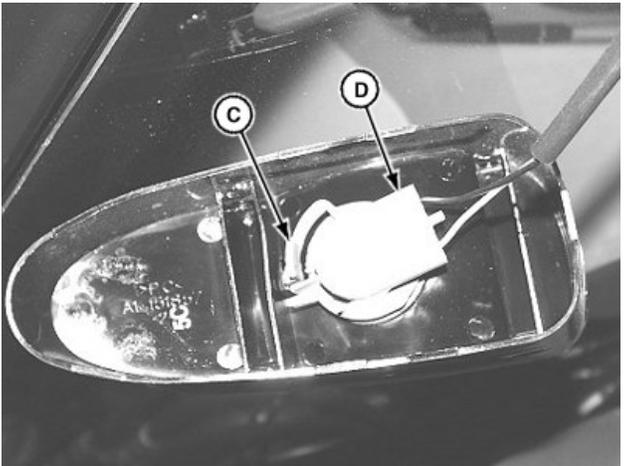
Front Left Shown

- A—Nut
- B—Harness Connector
- C—LED work Light

NOTE: Bulb replacement procedures for front and rear work lights and optional auxiliary work lights are the same. Connector removed for illustration purposes.

1. Disconnect wiring harness connector (B).
2. Remove nut (A).
3. Remove LED work light (C) and replace with new LED work light.
4. Tighten the nut (A).
5. Connect wiring harness connector (B).

i2649ku,1677050275850-19-29MAR23



- A—Screw (2 used)
- B—Lens
- 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.

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

Replace Fuses and Relays

IMPORTANT: Avoid damage! Incorrect change of fuse damages the system. Replace the defective fuse with a fuse of the same ampere rating.

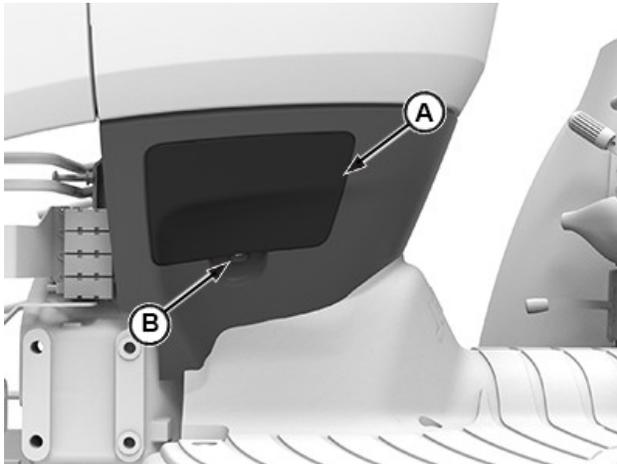
Locate Fuses and Relays

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

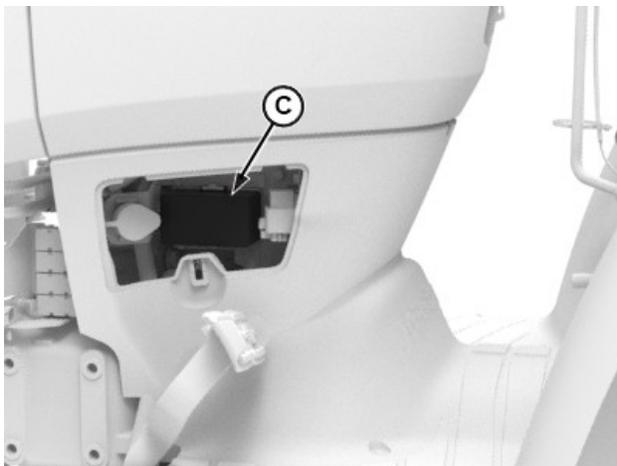
Fuses	
Fuse Rating	Color
10 A	Red
15 A	Blue
20 A	Yellow
30 A	Green

Load Center Location—OOS

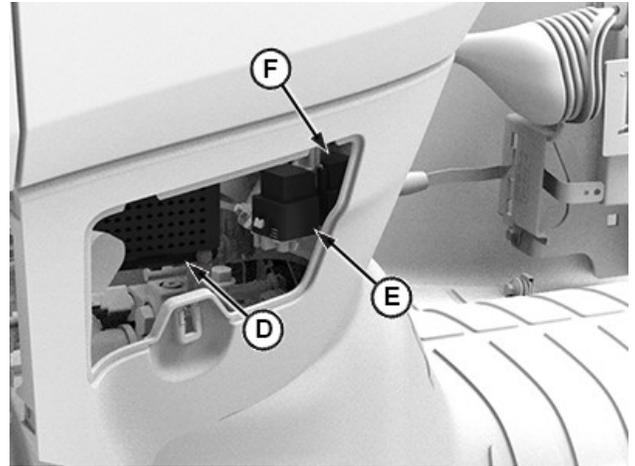
1. Park machine safely. (See Parking Safely in Safety section.)



APY563852—UN—14MAR23



APY563853—UN—22FEB23



APY563849—UN—22FEB23

- A—Load Center Panel
- B—Panel Tab
- C—Load Center Cover
- D—Fuse Block
- E—Starter Relay
- F—Glow Plug Relay

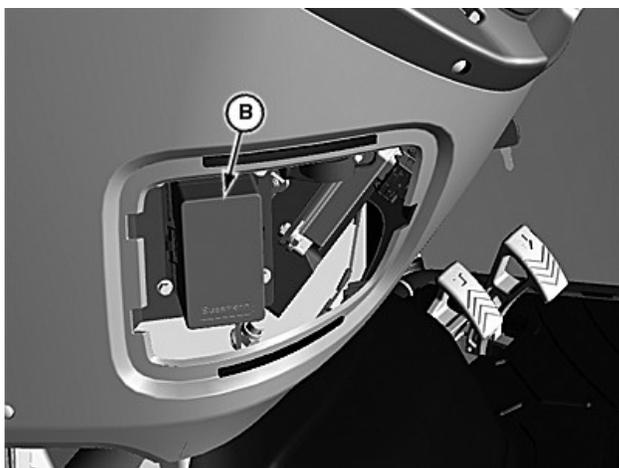
2. Locate load center panel (A) at lower cowl.
3. Lift panel tab (B).
4. Remove load center cover (C).
5. Identify fuse or relay in the fuse block (D), starter relay (E), and glow plug relay (F).
6. Pull defective relay or fuse and replace with new one.
7. Install load center cover (C).
8. Close panel tab (B)

Load Center Location—Cab

1. Park machine safely. (See Parking Safely in Safety section.)



LV18934—UN—29AUG13



LV18935—UN—29AUG13



LV18936—UN—29AUG13

- A—Load Center Panel
- B—Load Center Cover
- C—Fuse Block

2. Locate load center panel (A) at lower cowl and pull to remove.
3. Remove load center cover (B).
4. Identify defective fuse or relay in the fuse block (C) and replace with new one.
5. Install load center cover (B) and load center panel (A).

**Fuse and Relay Size and Function
Open Operator Station—HST**

	A	B	C	D	E	F	
1	F01-30A KEY SW		F02-15A PWR PORT		F03 SERVICE		1
2	F04-15A BRAKE LTS		F05-15A IGN PWR		F06-20A *WORK LIGHTS		2
3	F07-20A MARKER 1		F08-20A HEADLIGHTS		F09-15A ACC		3
4	F10-15A *SEAT		F11-10A EGR		F12-20A *TRAILER PWR		4
5	F13-30A JUNC BLK		F14-10A ELX		F15 NONE		5
6	F16-30A LIGHT SW		F17 NONE		F18-30A INST PANEL		6
7	F19-10A TCM				K1 NONE		7
8							8
9			K2 EGR RELAY	K3 BRAKE LIGHTS RELAY	K4 *TRAILER POWER RELAY		9
10							10

*OPTIONAL EQUIPMENT

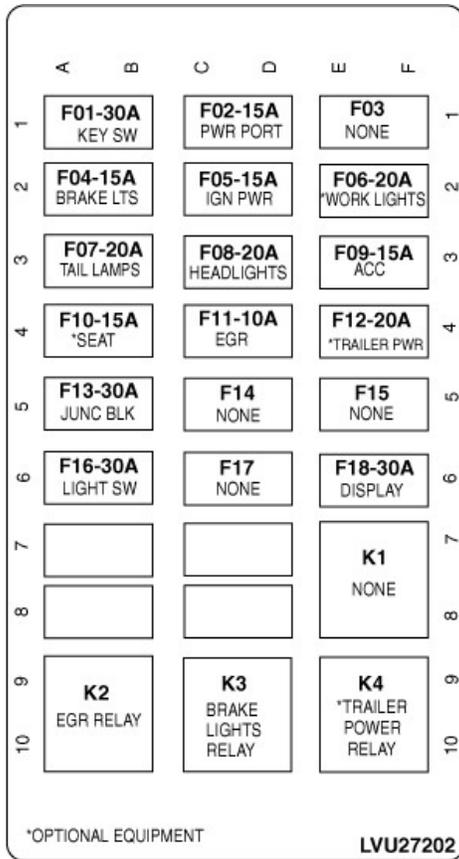
LVU27200

APY563868—UN—27FEB23

Open Operator Station—HST (LVU27200)

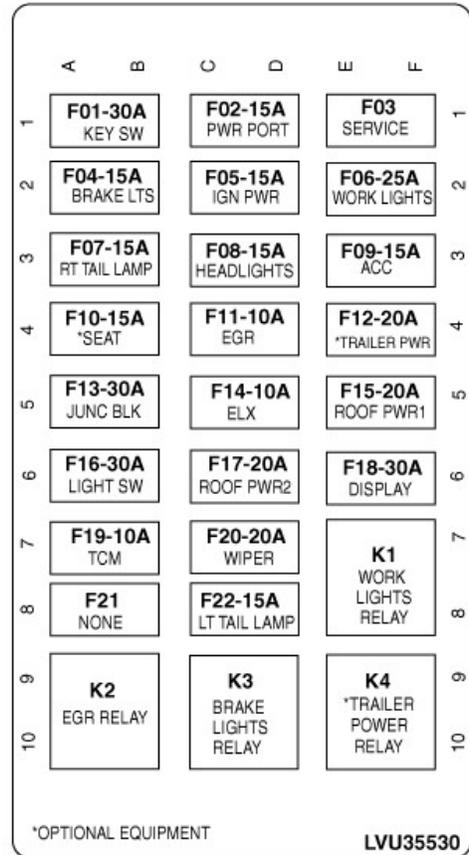
- F01—Key Switch Fuse (30 A)
- F02—Power Port Fuse (15 A)
- F03—Service Fuse
- F04—Brake Lights Fuse (15 A)
- F05—Ignition Power Fuse (15 A)
- F06—Work Lights Fuse (option) (20 A)
- F07—Tail Light Fuse (20 A)
- F08—Headlights Fuse(20 A)
- F09—Accessory Fuse(15 A)
- F10—Air Ride Seat Fuse (option) (15 A)
- F11—EGR Fuse (10 A)
- F12—7 Pin Trailer Fuse (option) (20 A)
- F13—Junction Block Fuse (30 A)
- F14—ELX Fuse (10 A)
- F15—Spare
- F16—Light Switch Fuse (30 A)
- F17—Spare
- F18—Display Panel Fuse (30 A)
- F19—TCM Fuse (10 A)
- K1—Spare
- K2—EGR Valve Relay
- K3—Brake Light Relay
- K4—Trailer Power Relay (option)

Open Operator Station—PRT



Open Operator Station—PRT (LVU27202)

APY563869—UN—27FEB23



Cab—LVU35530

APY563851—UN—27FEB23

- F01—Key Switch Fuse (30 A)
- F02—Power Port Fuse (15 A)
- F03—Spare
- F04—Brake Lights Fuse (15 A)
- F05—Ignition Power Fuse (15 A)
- F06—Work Lights Fuse (option) (20 A)
- F07—Tail Light Fuse (20 A)
- F08—Headlights Fuse(20 A)
- F09—Accessory Fuse(15 A)
- F10—Air Ride Seat Fuse (option) (15 A)
- F11—EGR Fuse (10A)
- F12—7 Pin Trailer Fuse (option) (20 A)
- F13—Junction Block Fuse (30 A)
- F14—Spare
- F15—Spare
- F16—Light Switch Fuse (30 A)
- F17—Spare
- F18—Display Panel Fuse (30 A)
- K1—Spare
- K2—EGR Valve Relay
- K3—Brake Light Relay
- K4—Trailer Power Relay (option)

Cab

- F01—Key Switch Fuse (30 A)
- F02—Power Port Fuse (15 A)
- F03—Service Fuse
- F04—Brake Lights Fuse (15 A)
- F05—Ignition Power Fuse (15 A)
- F06—Work Lights Fuse (25 A)
- F07—Right Tail Light Fuse (15 A)
- F08—Headlights Fuse(15 A)
- F09—Accessory Fuse(15 A)
- F10—Air Ride Seat Fuse (option) (15 A)
- F11—EGR Fuse (10 A)
- F12—7 Pin Trailer Fuse (option) (20 A)
- F13—Junction Block Fuse (30 A)
- F14—ELX Fuse (10 A)
- F15—Roof Power 1 Fuse (20 A)
- F16—Light Switch Fuse (30 A)
- F17—Roof Harness 2 Fuse (20 A)
- F18—Display Panel Fuse (30 A)
- F19—TCM Fuse (10 A)
- F20—Wiper Fuse (20 A)
- F21—Spare
- F22—Left Tail Light Fuse (15 A)
- K1—Work Light Relay
- K2—EGR Valve Relay
- K3—Brake Light Relay
- K4—Trailer Power Relay (option)

Drivetrain Maintenance

Drivetrain Maintenance

See specific drivetrain component for maintenance information.

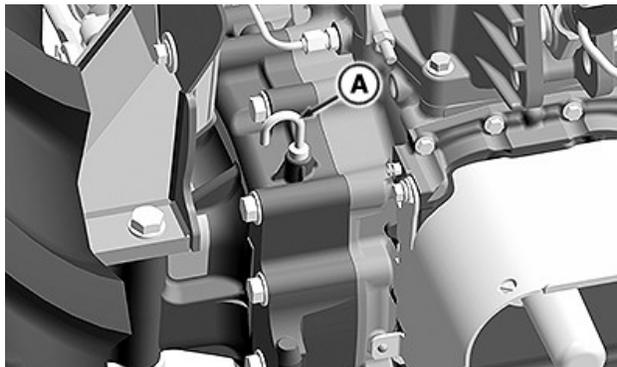
UP00731.0000208-19-22JUN16

Transmission Maintenance

Check Transmission Oil Level

1. Park machine safely. (See Parking Safely in Safety section.) Allow machine to cool down for at least 1 hour.

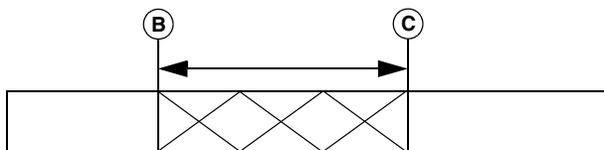
IMPORTANT: Avoid damage! Dirt and contamination can enter transmission when checking oil level. Clean area around dipstick before removing.



LV28540—UN—18MAY17

A—Dipstick

2. Pull to remove dipstick (A), located at left side of transaxle. Wipe with a clean cloth.
3. Install dipstick.
4. Remove dipstick.



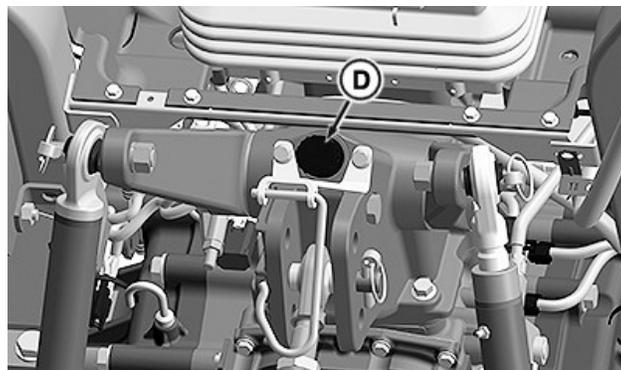
LVAL38336—UN—21AUG12

B—Oil Level Mark
C—Oil Level Mark

5. Check oil level on dipstick. Correct oil level is between levels (B and C) on dipstick.

IMPORTANT: Avoid damage! Help prevent dirt and other contaminants from entering the transmission. Clean area around fill cap before removing.

Do not overfill transmission. Oil expands during operation and could overflow.



LV28541—UN—18MAY17

D—Oil Filler Cap

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.

DB71512,0000258-19-23MAY17

Change Transmission Oil and Hydraulic Suction Oil Filter

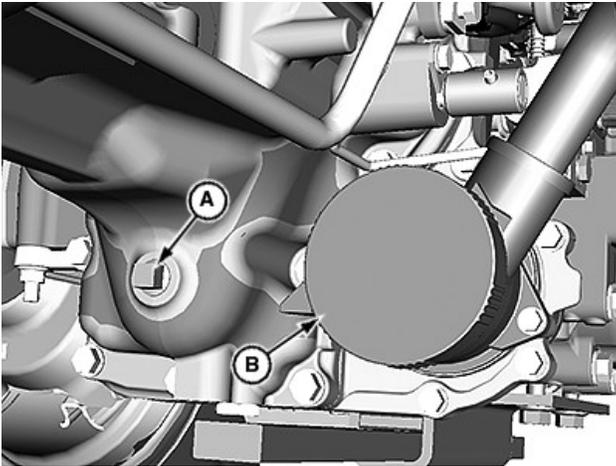
CAUTION: Avoid injury! Touching hot surfaces can burn skin. The engine, components, and fluids are hot when engine has been running. Allow the engine to cool before servicing or working near the engine and components.

IMPORTANT: Avoid damage! If there is evidence of severe oil contamination, it may be necessary to change the oil several times.

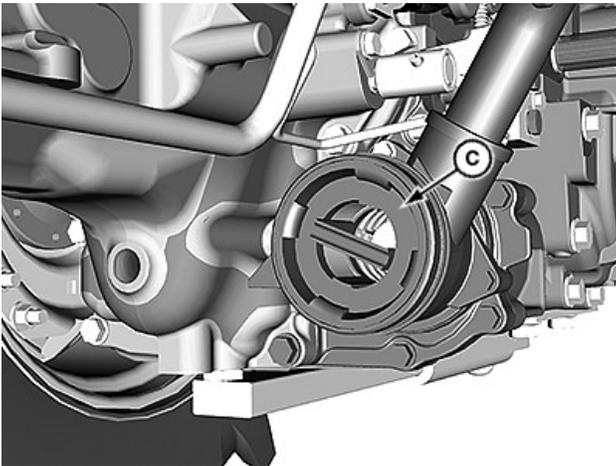
Contamination of hydraulic fluid could cause transmission damage or failure.

Severe or unusual conditions require a more frequent service interval.

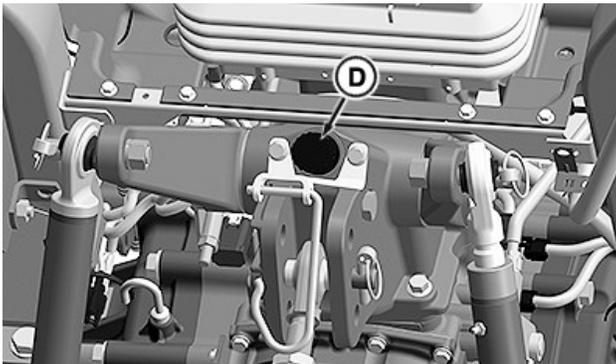
1. Drive tractor a few minutes to warm and mix transmission oil.
2. Park machine safely. (See Parking Safely in Safety section.)



LV17640—UN—01MAY13



LV17641—UN—01MAY13



LV28541—UN—18MAY17

- A—Transmission Drain Plug
- B—Hydraulic Suction Filter Cap
- C—Hydraulic Suction Filter
- D—Oil Fill Cover

3. Position drain pan under transmission drain plug (A) and suction filter cover (B) at the front of transmission. Remove plug and allow oil to drain.
4. Remove suction filter cover (B) and allow oil to drain.
5. Remove Hydraulic Suction Filter (C) and allow oil to drain.
6. Install transmission drain plug.

7. Replace filter.
8. Install cover.
9. Remove oil fill cap (D).
10. Add recommended oil into 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.

DB71512,0000259-19-23MAY17

Hy-Gard is a trademark of Deere & Company

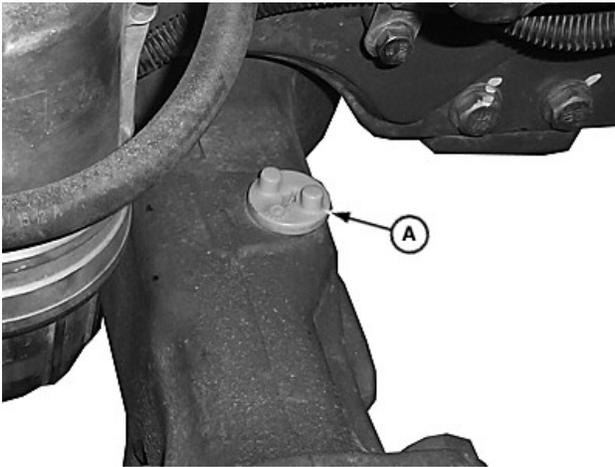
MFWD and Front Axle Maintenance

Check Front Axle Oil Level

IMPORTANT: Avoid damage! Allow oil one hour to settle before checking level to ensure accurate dipstick reading. Repeat oil level check after several hours of operation.

1. Park machine safely. (See Parking Safely in Safety Section.) 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.



LV19178—UN—26SEP13

A—Dipstick

2. Loosen and remove dipstick (A) located on right side of front axle.
3. Wipe dipstick clean with a rag. Install dipstick but do not tighten. Allow dipstick to rest on top of threads.



LVAL38331—UN—21AUG12

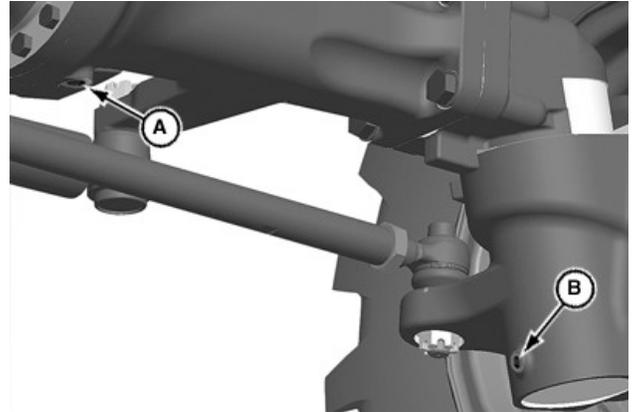
B—High Oil Level
C—Low Oil Level

4. Remove dipstick. Correct oil level is between high (B) and low (C) levels on dipstick. If oil level is low:
 - a. Add recommended oil through dipstick fill opening until oil level is correct.
 - b. Install and tighten dipstick.
5. Check front axle oil level again after the first several hours of operation.

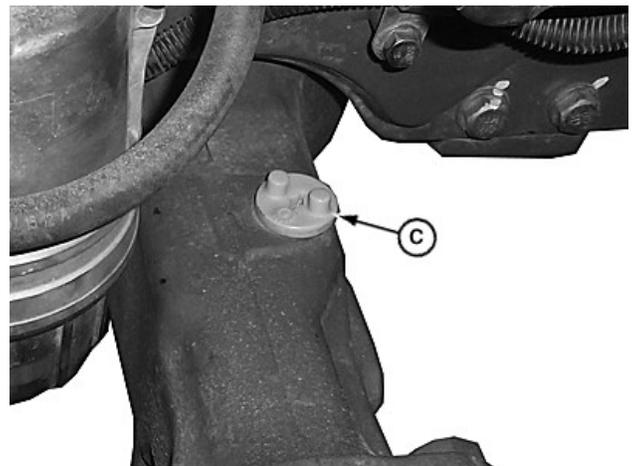
KN52281,10049DC-19-26SEP13

Change Front Axle Oil

1. Operate machine to warm front axle oil.
2. Park machine safely. (See Parking Safely in Safety section.)



LV19188—UN—26SEP13



LV19179—UN—26SEP13

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.

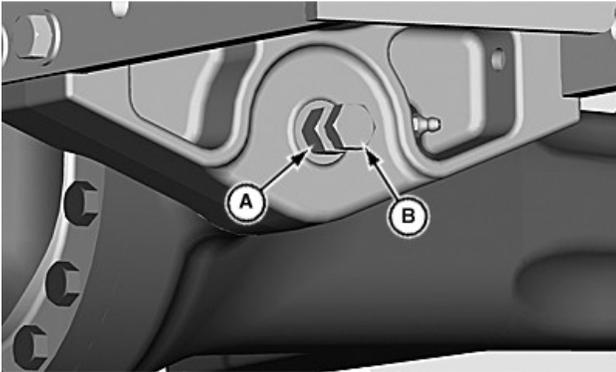
Allow oil 1 hour to settle before checking level to ensure accurate dipstick reading. Repeat oil level check after several hours of operation.

11. Check front axle oil level.

KN52281,1004806-19-26SEP13

Adjust 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. (See Parking Safely in the Safety section.)

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. Grease front and rear 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.

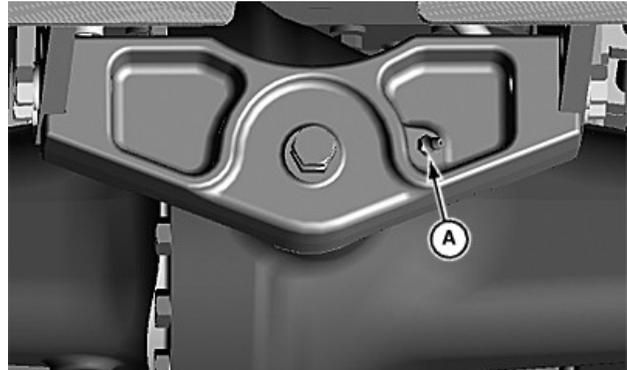
Specification

Jam Nut—Torque. 70 N·m
(51.63 lb.-ft.)

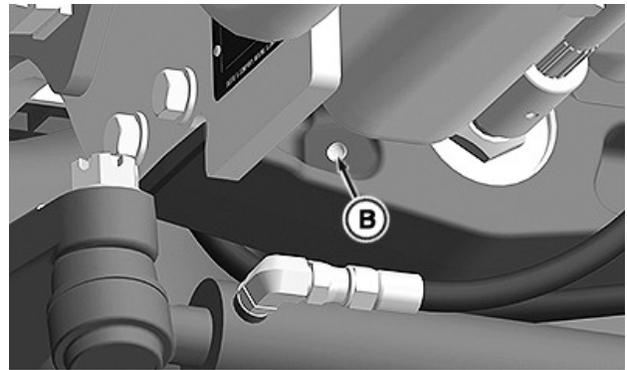
8. Lower front axle to ground.

KN52281,1004807-19-26SEP13

Lubricate Axle Trunnion



LV19181—UN—26SEP13



LV28542—UN—18MAY17

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.

DB71512,000025A-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

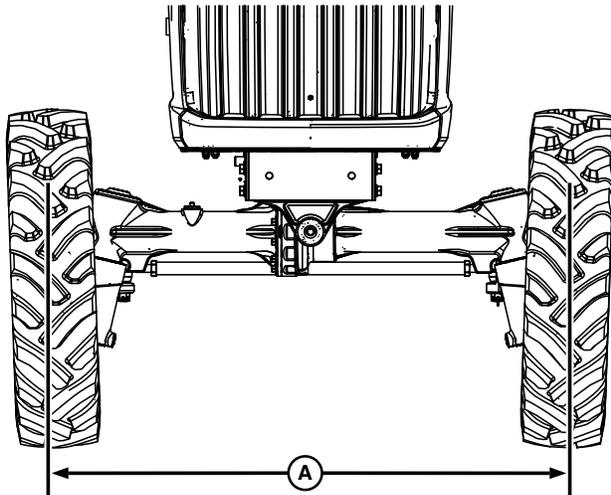
Steering and Brake Maintenance

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.



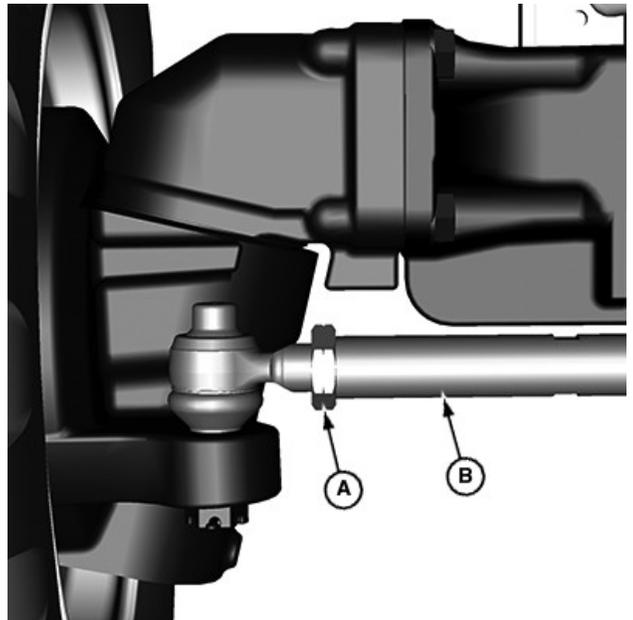
LV17448—UN—12APR13

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.

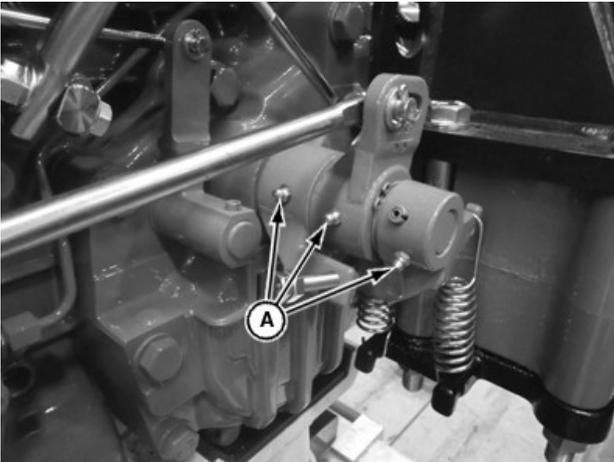
KN52281,10048A0-19-14AUG17

Steering Maintenance

See your John Deere dealer if steering problems exist on the machine.

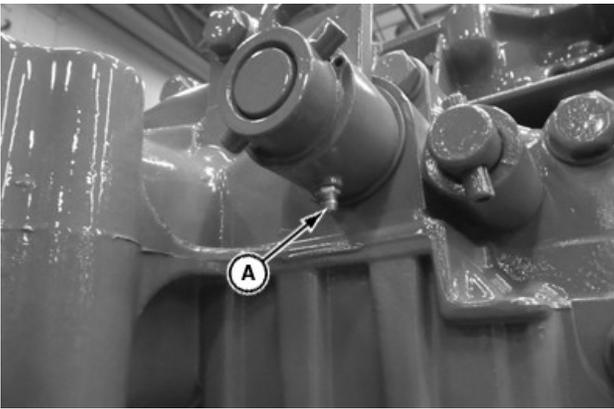
UP00731,0000520-19-09FEB18

Lubricate Brake Linkage



Left Side

LV23026—UN—11SEP14



Right Side

LV23027—UN—11SEP14

Lubricate brake assembly grease fittings (A) with recommended grease.

JC48530,0000469-19-01JUL20

Brake Maintenance

See your John Deere dealer if brake problems exist on the machine.

UP00731,0000521-19-09FEB18

Hydraulics Maintenance

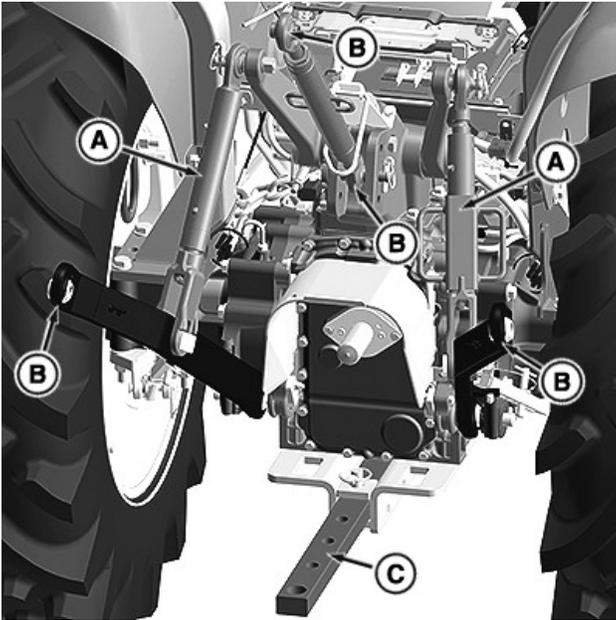
Hydraulic Maintenance

See the Transmission Maintenance section for servicing the hydraulic oil and filters.

UP00731,0000117-19-03JAN18

Hitch and Drawbar Maintenance

Lubricate 3-Point Hitch



LV28543—UN—23MAY17

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

DB71512,000025B-19-23MAY17

Lubricate Front Hitch

Lubricate grease fittings with recommended grease:

- Lower pivot bracket.
- Hydraulic cylinder.

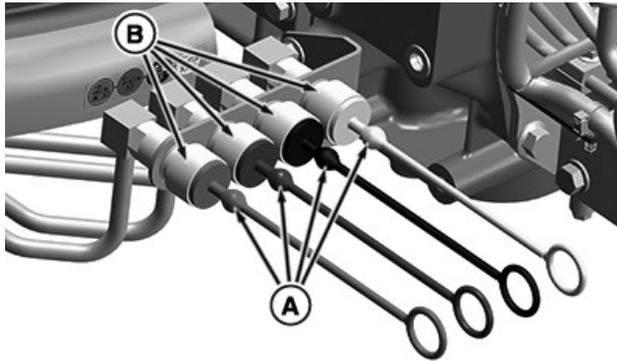
UP00731,00000F8-19-22OCT13

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

Selective Control Valve Maintenance

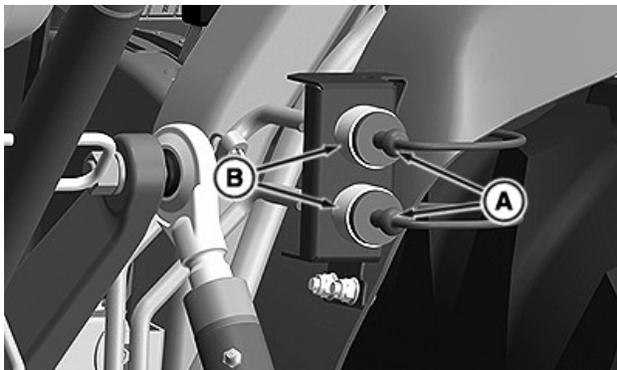
Check SCV

Open Operator Station



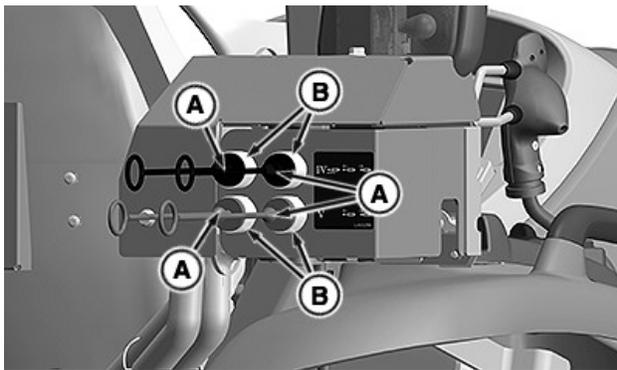
LV28564—UN—24MAY17

Mid-Mount SCV Couplers



LV28565—UN—24MAY17

Rear Third SCV Couplers (If Equipped)



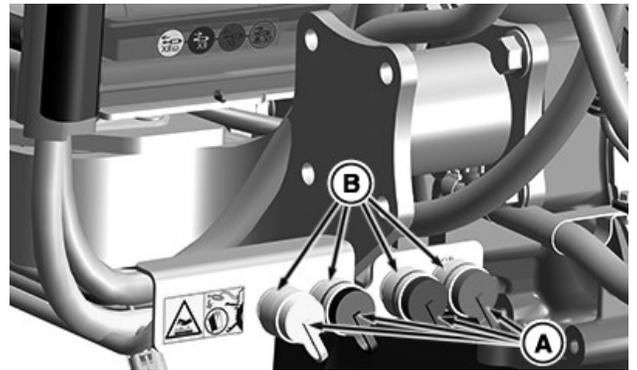
LV28568—UN—24MAY17

Fourth and Fifth SCV Couplers (If Equipped)

A—Dust Plugs
B—SCV Couplers

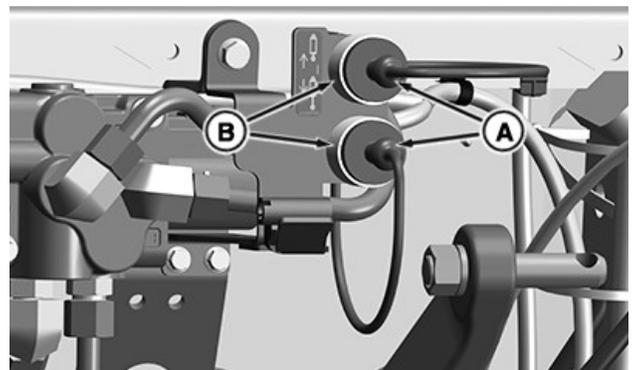
1. Check dust plugs (A) for damage, replace as needed.
2. Clean dirt and debris from selective control valve couplers (B)
3. Check selective control valve couplers (B) for oil leakage. Contact your John Deere dealer for service.

Cab Operator Station



LV28566—UN—24MAY17

Mid-Mount SCV Couplers



LV28567—UN—24MAY17

Rear Third SCV Couplers (If Equipped)

A—Dust Plugs
B—SCV Couplers

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.

DB71512,000025D-19-25MAY17

Wheels and Tires Maintenance

Check Wheel Bolts and Hardware

⚠ CAUTION: Avoid injury! Check rim, hub, and axle hardware periodically to prevent possible machine roll-over.

When machine is new or anytime wheel hardware is loosened, tighten all bolts after one hour of operation and every four hours thereafter until proper torque values are maintained.

Tightness of wheel hardware must be maintained according to service interval recommendations. Check wheel bolt tightness and torque 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).

JZ81662,0000FF8-19-11APR13

Remove and Install Wheels

⚠ CAUTION: Avoid injury! Remove wheels safely.

- Use a safe lifting device and support machine securely on jack stands.
- Block front and rear of wheel not raised to prevent machine movement.
- Wheel can be heavy or difficult to handle when removing.

Front Wheel Removal

1. Loosen lug bolts slightly before raising front axle.
2. Raise front of machine and lower onto support stands so that front axle supports machine.

NOTE: If the front wheels are being removed to perform work on the front axles, lower machine onto suitable stands that support the machine by the frame.

3. Remove lug bolts and wheel.

Front Wheel Installation

1. Install wheels onto axle, insert lug bolts, and lightly tighten bolts.
2. Raise front of machine, remove support stands and lower machine to floor.
3. Tighten wheel bolts 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 lightly tighten bolts.
2. Raise rear of machine, remove support stands and lower machine to floor.
3. Tighten wheel bolts to 140 N·m (103 lb.-ft.).

JZ81662,0000FF9-19-11APR13

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 Pressures (Maximum)

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 Index	Tread	kPa	psi
180/95-14 6PR	97	A6	R1	250	36.3
27X8.50-15 6PR	96	B	R4	310	45.0
25X8.50-14 6PR	106	A2	R4	340	49.3
27X8.5-15 6PR	96	B	R3	310	45.0
25/10.50LLX15 6PR	97	A6	Golf	69	10.0

Rear Tires—Standard Factory Inflation					
Tire Size	Load Index	Speed Index	Tread	kPa	psi
11.2-24 6PR	110	A6	R1	180	26.1
43X16-20 4PR	120	A6	R4	140	20.3
15-19.5 6PR	143	A2	R4	210	30.5
41X14-20 4PR	120	B	R3	170	24.7
41LLX18-16.1 6PR	135	A6	Golf	42	6.1

i2649ku,1675663293275-19-06FEB23

Select Front Tire Rolling Direction

The machines are equipped with directional type tires (such as bar tires) and have directional arrows on the tire sidewall. Install the tires with the directional arrow pointing in the direction of travel.

To increase tire life when the tractor is used mainly for loader operations and improve traction while backing out of dirt piles, reverse the lug direction.

If the tractor is mainly used for loader operations, lug direction may be reversed on the MFWD axle for improved tire wear and increased traction.

Change the tire rolling direction by moving the wheel from one side of the machine to the other.

Install the wheel with the valve stem facing outwards.

KN52281,1003F4F-19-01MAY23

Change 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.

CAUTION: Avoid injury! Remove wheels safely.

- Use a safe lifting device and support machine securely on jack stands.

- Block front and rear of wheel not raised to prevent machine movement
- Wheel can be heavy or difficult to handle when removing.

Mounting Guidelines

- To keep tire rotation in right direction, move each rim to opposite side of machine, rather than turning rim around.
- Dished wheels can be reversed.
- Tighten all bolts to specifications.

Rear Tire Tread Dimensions

Rear Tire Size	Tread Width
15.00-19.5 R4 GA	1.08 m (42.8 in.)
41x14.00-20 R3 GA	1.10 m (43.5 in.)
11.2-24 R1 GA	1.15 m (45.2 in.)

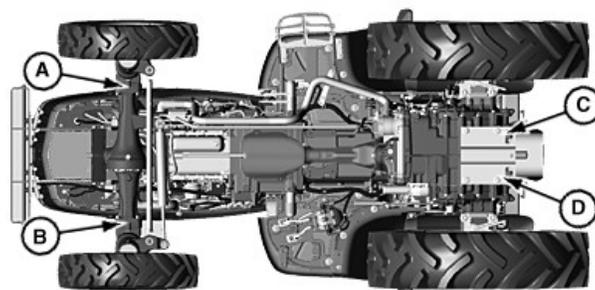
Front Tire Tread Width Dimensions

Front Tire Size	Position	Tread Width
25x8.5-14 4PR R4 GA	(Narrow)	1.08 m (42.8 in.)
27x8.50—15 4PR R3 GA	(Narrow)	1.06 m (41.7 in.)
7.00-14 4PR R1 GA	(Narrow)	1.06 m (41.7 in.)
25x8.50-15 4PR R4 GA	(Wide)	1.25 m (49.4 in.)
27x8.50-15 4PR R3 GA	(Wide)	1.28 m (50.5 in.)
7.00-14 4PR R1 GA	(Wide)	1.28 m (50.3 in.)

JZ81662,0000FFA-19-11APR13

Lifting Points for Jacking up the Tractor

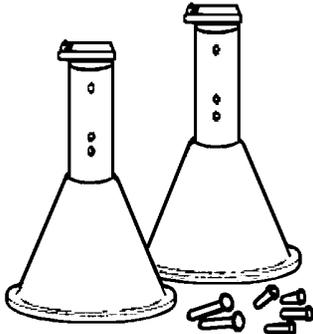
The illustrations show the recommended lifting points for jacking up the tractor. Use a stable lifting jack with sufficient lifting force.



LV19006—UN—04SEP13

- 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.

KN52281,10049AB-19-04SEP13

Ballasting Maintenance

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

Additional Equipment Maintenance

To service additional equipment, refer to the additional equipment operator's manual.

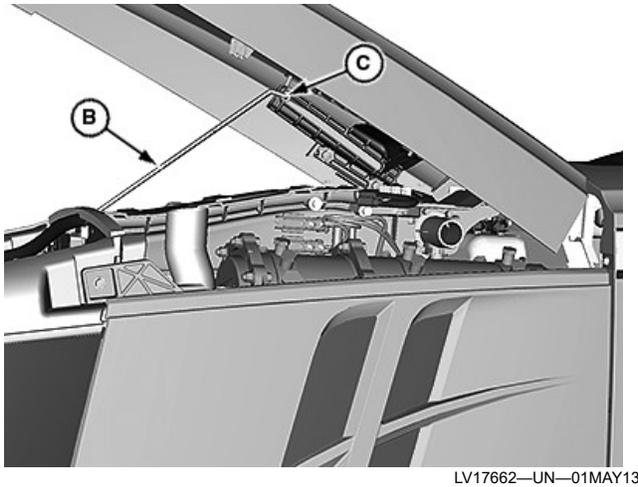
UP00731,0000207-19-26MAY17

Operator Station Maintenance

Raise and Lower Hood

Raising

1. Park machine safely.



- A—Release Lever
- B—Hood Support Rod
- C—Hood Support Bracket

2. Insert a screw driver, or similar object, into hood lock (A) to release latch.
3. Raise hood until hood support rod (B) engages hood support bracket (C).

Lowering

1. Lift hood slightly to remove weight on hood support bracket.
2. Lift up on hood and push support rod (B) to lower hood.
3. Gently push down on both sides of front of hood to lock latch.

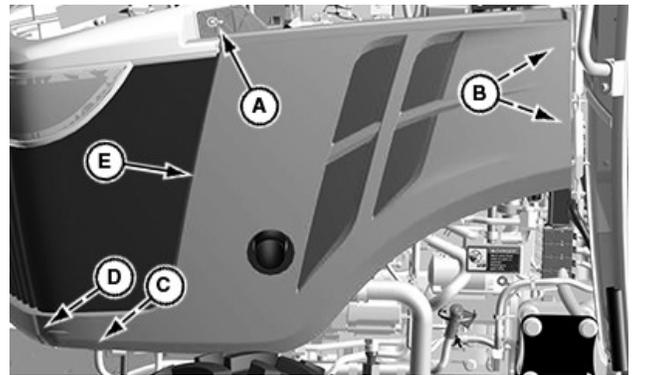
DB71512,000025C-19-29AUG17

Remove and Install Side Panels

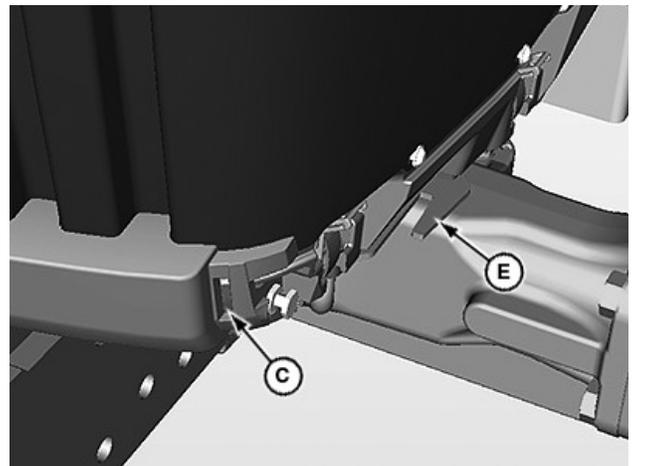
Removing

1. Park machine safely.

2. Raise hood.



Left Side Shown. Right Side is Similar.



- A—Twist Tab
- B—Side Panel
- C—Mounting Slot
- D—Front Mounting Tab
- E—Mounting Pin
- F—Mounting Hook
- G—Alignment Pin

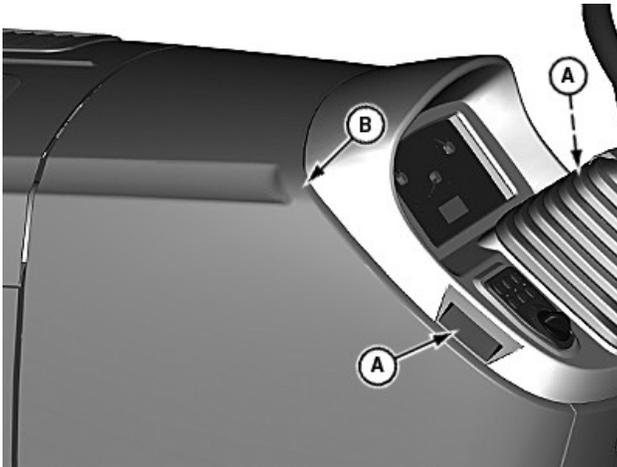
3. Pull tab (A) out and twist to line up the slots.
4. Tilt side panel (B) away from machine and slide forward.

Installing

1. Align the side panel (B) front mounting tab (D) with front mounting slot (C), align mounting hook with mounting pin (E), and align mounting tab with mounting hook (F) on machine.
2. Slide side panel back while aligning holes on rear of panel with alignment pins (G).
3. Line twist tab (A) with slot in the panel, tip panel in pull twist tab out and twist to lock position.
4. Lower the hood.

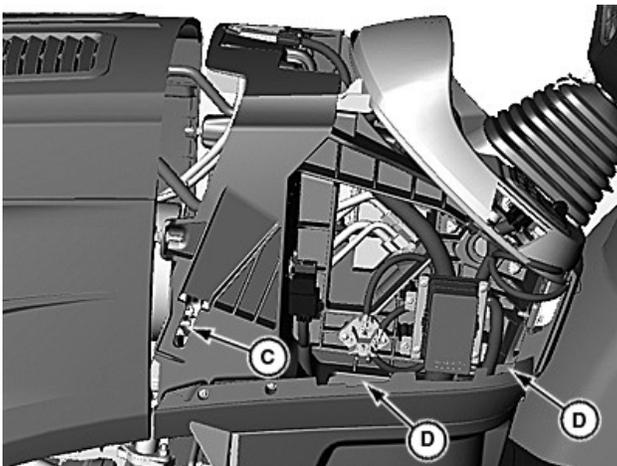
JC48530,00000A2-19-25SEP19

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

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.



LV29356—UN—11SEP17



A—Floor Mat

LV17764—UN—14MAY13

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.)

UP00731,0000434-19-29AUG17

Troubleshooting

Use Troubleshooting Chart

If you are experiencing a problem that is not listed in this chart, see your John Deere distributor for service.

and you are still experiencing the problem, see your John Deere distributor.

KN52281,1003F58-19-22AUG12

When you have checked all the possible causes listed

Engine

If	Check
Engine Will Not Start or Is Hard to Start	<ul style="list-style-type: none"> Engine throttle lever not pushed forward. Fuel shutoff valve CLOSED (OFF). Stale fuel / improper fuel / 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 Runs Rough or Stalls	<ul style="list-style-type: none"> Fuel shutoff valve partially closed. Plugged fuel filter. Plugged air intake system. Kinked Fuel Line. Fuel cap vent dirty. Faulty seat switch. Stale or improper fuel / 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Engine oil level low. Plugged oil filter. Improper type of oil. Oil leaks.
Engine Uses Too Much Oil	<ul style="list-style-type: none"> Find and correct oil leaks. Incorrect engine oil. Plugged air intake filter.
Engine Emits White Smoke	<ul style="list-style-type: none"> Improper type of fuel. Low engine temperature.

Troubleshooting

If	Check
	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. 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.

JC48530,00000A6-19-25SEP19

Electrical System

If	Check
Battery Will Not Charge	Check to ensure 2-pin connector on alternator is plugged in properly. Check for blown fuses. Loose or corroded connections. 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 blown fuses. Loose or defective alternator belt. Defective battery. Defective alternator.
Starter Will Not Work	Check for active fault codes. Loose or corroded battery connections. Blown fuse. Low battery output — check electrolyte level (if applicable). Neutral start switch faulty or not adjusted properly - See your John Deere Dealer. Key switch or starter faulty. See your John Deere dealer.
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.
Cab Window wiper(s) and washer will not run	Blown fuse. Faulty wiring or loose connections. Defective switch(es). See your John Deere dealer. Defective motor(s). See your John Deere dealer.
Cab Work lights do not work	Blown fuse. Faulty wiring or loose connections. Defective bulb or switch. Replace bulb or see your John Deere dealer.
Cab Dome light does not work	Blown fuse. Faulty wiring or loose connections. Defective bulb or switch. Replace bulb or see your John Deere dealer.
Cab Radio does not work	Blown fuse.

JC48530,00000A7-19-25SEP19

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. 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 positions.
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.

Troubleshooting

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. 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.

KN52281,1004843-19-26MAY17

Brakes

If	Check
Rear Wheel Brakes Not Working	Brakes out of adjustment. Worn or damaged brake linkage. See your John Deere dealer.

KN52281,1004844-19-26MAY17

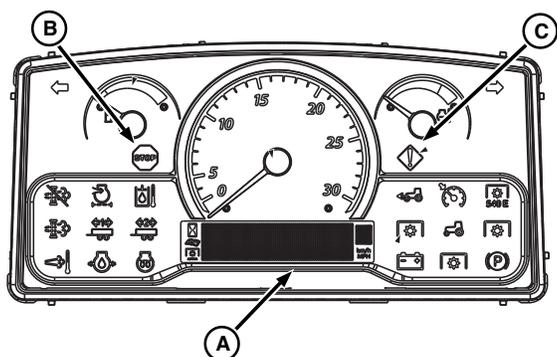
Steering

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.

KN52281,1004845-19-26MAY17

On Board Diagnostics

Service Alert and Information Display



- A—Information Display
- B—Stop Indicator
- C—Service Alert Indicator

LV30635—UN—25SEP19

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.



A—Display Mode Switch

LV25014—UN—22APR16

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.

PowerReverser 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.

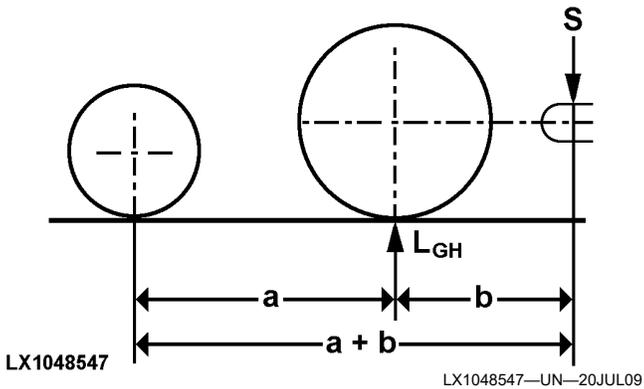
Vehicle Response in Come Home Mode:

- 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

How to Calculate Maximum Permissible Download on Trailer Hitch



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)

$$S = \frac{(3500 \text{ kg} - 1800 \text{ kg}) * 2100 \text{ mm}}{2100 \text{ mm} + 600 \text{ mm}} = 1322 \text{ kg}$$

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/s²
- A = Tractor mass

Specifications

B = Trailer mass

To calculate trailer mass for a given D value and a given tractor mass, and to calculate tractor mass for a given D value and a given trailer mass, use the following formulas:

$$\text{Tractor mass } A = \frac{D * B}{G * B - D}$$

$$\text{Trailer mass } B = \frac{D * A}{G * A - D}$$

*NOTE: If when calculating A the product of G*B is less than the D value, or if when calculating B the product of G*A is less than the D value, then the result of this calculation is negative. Even so, the D value is sufficient for every combination of tractor mass and trailer mass.*

Example of how to calculate permissible trailer mass:

Given that: D value, D = 55 kN = 55000 N
Tractor mass A = 7000 kg

$$B = \frac{55000 \text{ N} * 7000 \text{ kg}}{9.81 \text{ m/s}^2 * 7000 \text{ kg} - 55000 \text{ N}} = 28163 \text{ kg}$$

Pay close attention to permissible towed mass and tractor mass!

UP00731,0000193-19-13SEP18

Engine

Engine			
Model	3033R	3039R	3046R
Engine Manufacturer	Yanmar	Yanmar	Yanmar
Engine Model Number	3TNV88C-MJTV	3TNV86CT-MJTV	3TNV86CHT-MJTV
Engine Type	Diesel	Diesel	Diesel
Gross Horsepower	23.7 kW (31.8 hp)	28.5 kW (38.2 hp)	33.3 kW (44.7 hp)
Manufacturer's Estimated PTO Horsepower	19.5 kW (26.1 hp)	22.2 kW (29.8 hp)	25.2 kW (33.9 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	87 N·m (64 lb·ft)	104.7 N·m (77.2 lb·ft)	122.3 N·m (90.2 lb·ft)
Maximum Torque @1690 rpm	105 N·m (77 lb·ft)	127 N·m (94 lb·ft)	142 N·m (105 lb·ft)
Displacement	1.6 L (100.2 in ³)	1.6 L (95.7 in ³)	1.6 L (95.7 in ³)
Cylinders	Three	Three	Three
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 Ration	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

i2649ku,1675665030287-19-28FEB23

Specifications

Drivetrain

Drivetrain		
Item	Measurement	Specification
Transmission (HST)	Type	3 Range Hydrostatic
	Number of Speeds	Infinite / 3 Range
Transmission (PRT)	Type	PowrReverser
	Number of Speeds	12 Forward/12 Reverse
Mechanical Front Wheel Drive (MFWD)		Standard
MFWD	Capability	All Ranges
MFWD	Engagement	On-the-Go
Final Drive	Type	Spur Gear
Rear Axle	Capacity	(Continuous) 1850 kg (4078.5 lb)
Front Axle	Capacity	(Continuous) 1450 kg (3196 lb)

i2649ku,1675665056422-19-06FEB23

Hydraulic System

Hydraulic System		
Item	Measurement	Specification
Pump	Type	Open Center
Hydrostatic Pump	Type	PV Axial Piston
Implement and Steering Pump	Type	Single Gear
Working Pressure		17238 kPa (2500 psi)
Charge Pressure		800 kPa (116 psi)
Loop Pressure		38.5 MPa (5580 psi)
Implement Pump Flow @ Rated Speed	Capacity	34.28 L/min (9.1 gal/min)
Power Steering Pump Flow @ Rated Speed	Capacity	23.48 L/min (6.2 gal/min)
Total Pump Flow @ Rated Speed	Capacity	57.76 L/min (15.3 gal/min)

i2649ku,1675665071329-19-06FEB23

Electrical System

Electrical System		
Item	Measurement	Specification
Electrical System	Type	12 Volt
	Battery Size	500 Cold Cranking Amps @ -18°C (0°F)
	Alternator	75 amp

GS25068,0003AD4-19-06SEP17

Fluid Capacities

Fluid Capacities		
Item	Measurement	Specification
Fuel Tank OOS	Capacity	37.4 L (9.9 gal)
Fuel Tank Cab	Capacity	47.6 L (12.6 gal)
Cooling System OOS	Capacity	3.3 L (0.9 gal)

Specifications

Fluid Capacities		
Item	Measurement	Specification
Cooling System Cab	Capacity	3.5 L (0.9 gal)
Crankcase with Filter (3033R, 3039R)	Capacity	4.3 L (1.1 gal)
Crankcase with Filter (3046R)	Capacity	5.7 L (1.5 gal)
Transmission and Hydraulic System (PRT Series)	Capacity	24.5 L (6.5 gal)
Transmission and Hydraulic System (HST Series)	Capacity	26.4L (7.0 gal)
Front Axle (3033R PRT)	Capacity	2.75 L (0.7 gal)
Front Axle (Except 3033R PRT)	Capacity	2.6L (0.7 gal)

i2649ku,1675665089041-19-06FEB23

Ground Speeds

NOTE: All ground speed calculations shown are with machine equipped with standard 11.2 x 24 6PR R1 rear tires and operated at 2600 engine rpm.

Ground Speeds		
Item	Measurement	Specification
Forward and Reverse	Range Low	0—7.57 km/h (0—4.70 mph)
Forward and Reverse	Range Medium	0—14.93 km/h (0—9.3 mph)
Forward and Reverse	Range High	0—34.14 km/h (0—21.2 mph)

i2649ku,1675665108108-19-06FEB23

Dimensions

NOTE: Machine equipped with standard 11.2 x 24 6PR R1 rear tires and 180 x 95-14 6PR R1 front tires.

Dimensions		
Item	Measurement	Specification
Machine Dimensions	Wheelbase	1727 mm (68.0 in)
	Overall Length with 3-Point Hitch	3145 mm (123.8 in)
	Overall Width	1756 mm (69.1 in)

i2649ku,1675665123739-19-06FEB23

Track Width

NOTE: Machine equipped with standard 11.2 x 24 6PR R1 rear tires and 180 x 95-14 6PR R1 front tires.

Track Width		
Item	Measurement	Specification
Front (Minimum)	Width	1116 mm (43.9 in)
Front (Maximum)	Width	1335 mm (52.6 in)
Rear (Minimum)	Width	1032 mm (40.6 in)

Specifications

Tack Width		
Item	Measurement	Specification
Rear (Maximum)	Width	1440 mm (56.7 in)

i2649ku,1675665136208-19-06FEB23

Height From Ground

*NOTE: Machine equipped with standard 11.2 x 24 4PR
R1 rear tires and 180 x 95-14 6PR R1 front tires.*

Height From Ground		
Item	Measurement	Specification
To Top of ROPS Extended	Height	2438 mm (96 in)
To Top of ROPS Folded	Height	1956 mm (77.0 in)
To Top of Cab	Height	2250 mm (88.6 in)

i2649ku,1675665151048-19-06FEB23

Ground Clearance

*NOTE: Machine equipped with standard 11.2 x 24 4PR
R1 rear tires and 180 x 95-14 6PR R1 front tires.*

Ground Clearance		
Item	Measurement	Specification
Front Axle (Minimum)	Clearance	171 mm (6.7 in)
Front Axle (Maximum)	Clearance	299 mm (11.8 in)
Rear Axle (Minimum)	Clearance	125 mm (4.9 in)
Rear Axle (Maximum)	Clearance	220 mm (8.7 in)

i2649ku,1675665173314-19-06FEB23

Turning Radius

*NOTE: Machine equipped with standard 11.2 x 24 4PR
R1 rear tires and 180 x 95-14 6PR R1 front tires.*

Turning Radius		
Item	Measurement	Specification
MFWD Off	Radius	2.68 m (8.8 ft)

GS25068,0003ADB-19-06SEP17

Weight

*NOTE: Machine equipped with a ROPS, 3-point hitch,
standard tires and all fluids.*

Specifications

Weight		
Item	Measurement	Specification
Machine	Weight	1350 kg (2976.2 lb)
Machine with Cab	Weight	1676 kg (3695 lb)

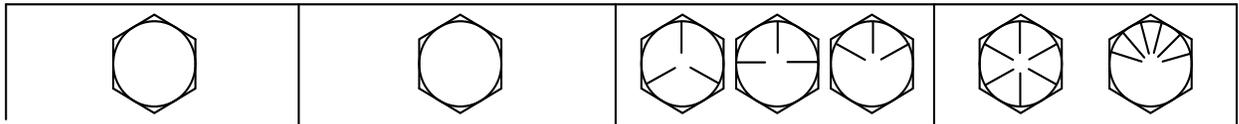
i2649ku,1675670049203-19-06FEB23

3-Point Hitch

3-Point Hitch		
Item	Measurement	Specification
3-Point Hitch	Type	Limited Category 1
Lift Capacity	Lift Capacity at Hitch Ball	1061 kg (2339 lb)
Front 3-Point Hitch	Type	Category 1N
Lift Capacity	Lift Capacity at Hitch Ball	600 kg (1300 lb)
Lift Capacity	Measured at 61 mm (24 in) in Front of Hitch Ball	211 kg (465 lb)

i2649ku,1675665216813-19-06FEB23

Unified Inch Bolt and Screw Torque Values



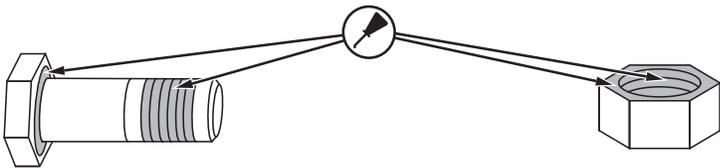
TS1671—UN—01MAY03

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

Replace fasteners with the same or higher property class. If

Specifications

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
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.					higher property class fasteners are used, tighten these to the strength of the original.			
<ul style="list-style-type: none"> • 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

^aGrade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.

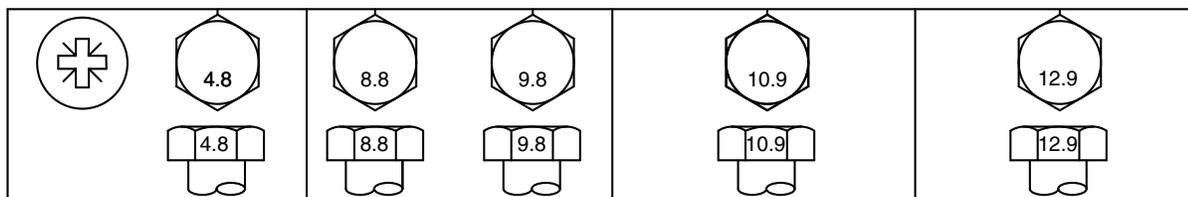
^bGrade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.

^cHex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

^dHex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ1-19-09MAY22

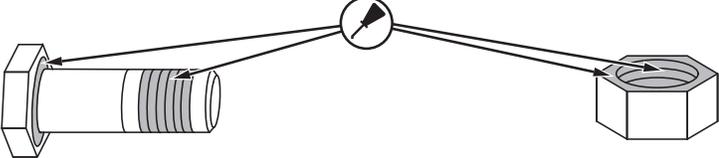
Metric Bolt and Screw Torque Values



TS1742—UN—31MAY18

Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b	
	N·m	lb·in	N·m	lb·in												
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

Specifications

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	
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
<p>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.</p>									<p>Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.</p>							
<ul style="list-style-type: none"> • 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

^aHex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

^bHex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX, TORQ2-19-09MAY22

Identification Numbers

Product Identification Information

Each machine has its own unique Product Identification

Number (PIN). The PIN number is broken down as follows:

1	L	V	3	0	4	6	R	#	#	A	1	0	0	0	0	1
WMC	Build Factory	Machine Series	Engine Hp			Machine Family	Check Letter	Calendar Year	Model Year	Operator Station Identifier	Build Sequence					
		Model Number			Serial Number											

WMC: World Manufacturing Code.

Build Factory: represents manufacturing location.

Machine Series: represents tractor series.

Engine Hp: represents approximate engine horsepower.

Machine Family: represents overall machine configuration.

Check Letter: calculated based on values and positions of the other characters in the PIN.

Calendar Year = represents calendar year of manufacture (2010 = A, 2031 = 1, 2041 = A again).

Model Year = represents number of years manufactured.

Operator Station = represents style of cab or open operation station.

Build Sequence = represents consecutive number of machines built with same machine series through operator station.

Model Number: made up of series, Hp, and family; example shown 3046R.

Serial Number: made up of model year, operator station, and build sequence.

UP00731.0000203-19-29JAN16

Record Identification Numbers

Compact Utility Tractor

Open Operator Station Tractors—PIN (KL100001—)

Cab Tractors—PIN (KL400001—)

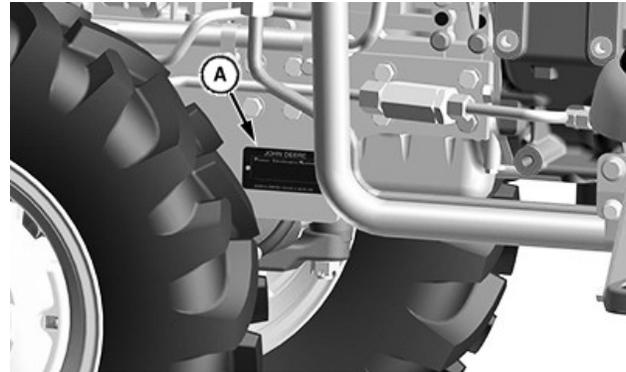
If you need to contact an Authorized Service Center for information on servicing, always provide the product model and identification numbers.

You will need to locate the identification numbers for the product. Record the information in the spaces provided below.

Date of Purchase:

Dealer Name:

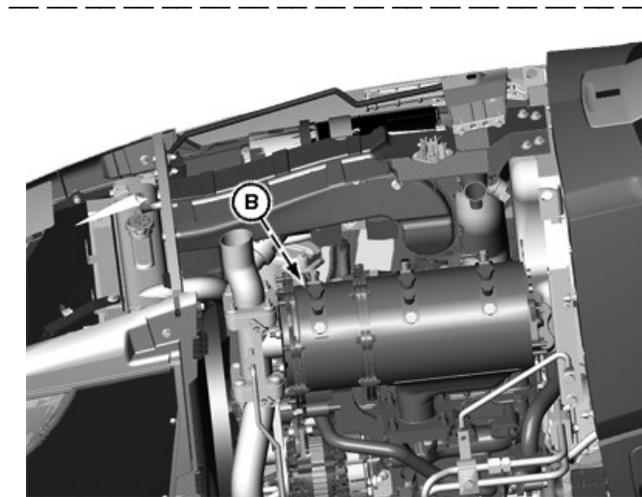
Dealer Phone:



LV29055—UN—27JUL17

Product Identification Number Plate

Product Identification Number (A):



LV18565—UN—05AUG13

Engine Serial Number (B):

UP00731.0000938-19-10SEP19

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.

Emission System Warranty

YANMAR POWER TECHNOLOGY CO., LTD. LIMITED EMISSION CONTROL SYSTEM WARRANTY - USA ONLY

Your Warranty Rights and Obligations:

The California Air Resources Board (CARB), the United State Environmental Protection Agency (EPA) and YANMAR POWER TECHNOLOGY CO., LTD. hereafter referred to as YANMAR, are pleased to explain the **emission control system warranty** on your 2023, 2024, or 2025 model year compression-ignition engine. In California, new heavy-duty off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In the remaining forty nine (49) states, new non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions standards. YANMAR must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system, the air induction system, the electronic control system, EGR (Exhaust Gas Recirculation) system and the exhaust gas after treatment (diesel particulate filter system, urea SCR system). Also included may be hoses, belts, connectors, and other emission-related assemblies.

Where a warrantable condition exists, YANMAR will repair your heavy-duty off-road compression-ignition engine at no charge to you including diagnosis, parts and labor.

Manufacturer's Warranty Period:

2023, 2024, or 2025 model year heavy-duty off-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is defective, the part will be repaired or replaced by YANMAR.

MP47322,00F4690-19-01JUN22

If your engine is certified as	And its maximum power is	And its rated speed is	Then its warranty period is
Variable speed or constant speed	kW <8	Any speed	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Variable speed or constant speed	8<=kW<19	Any speed	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 <=kW <37	3000 rpm or higher	2,000 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.
Constant speed	19 <=kW <37	Less than 3,000 rpm	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed	19 <=kW <37	Any speed	3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
Variable speed or constant speed	kW ≥ 37	Any speed	3,000 hours or five (5) years whichever comes first.

			In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years.
--	--	--	---

Warranty Coverage:

This warranty is transferable to each subsequent purchaser for the duration of the warranty period. YANMAR recommends that repair or replacement of any warranted part will be performed at an authorized YANMAR dealer.

Warranted parts not scheduled for replacement as required maintenance in the owner’s manual shall be warranted for the warranty period. Warranted parts scheduled for replacement as required maintenance in the owner’s manual are warranted for the period of time prior to the first scheduled replacement. Any warranted parts scheduled for replacement as required maintenance that are repaired or replaced under warranty shall be warranted for the remaining period of time prior to the first scheduled replacement. Any part not scheduled for replacement that is repaired or replaced under warranty shall be warranted for the remaining warranty period.

During the warranty period, YANMAR is liable for damages to other engine components caused by the failure of any warranted part during the warranty period.

Any replacement part which is functionally identical to the original equipment part in all respects may be used in the maintenance or repair of your engine, and shall not reduce YANMAR’s warranty obligations. Add-on or modified parts that are not exempted may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty.

Warranted Parts:

This warranty covers engine components that are a part of the emission control system of the engine as delivered by YANMAR to the original retail purchaser. Such components may include the following:

- Fuel injection system (including Altitude compensation system)
- Cold start enrichment system
- Intake manifold and Air intake throttle valve
- Turbocharger systems
- Exhaust manifold and exhaust throttle valve
- Positive crankcase ventilation system
- Charge Air Cooling systems
- Exhaust Gas Recirculation (EGR) systems
- Exhaust gas after treatment (Diesel Particulate Filter (DPF) system, urea SCR system)

- Electronic Control units, sensors, solenoids and wiring harnesses used in above systems
- Hoses, belts, connectors and assemblies used in above systems
- Emission Control Information Labels

Since emissions related parts may vary slightly between models, certain models may not contain all of these parts and other models may contain the functional equivalents.

Exclusions:

Failures other than those arising from defects in material or workmanship are not covered by this warranty. The warranty does not extend to the following: malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, or use of non-recommended fuels and lubricating oils; accident-caused damage and replacement of expendable items made in connection with scheduled maintenance. YANMAR disclaims any responsibility for incidental or consequential such as loss of time, inconvenience, loss of use of equipment/engine or commercial loss.

Owner’s Warranty Responsibilities:

As the off-road compression-ignition engine owner, you are responsible for the performance of the required maintenance listed in your owner’s manual. YANMAR recommends that you retain all documentation, including receipts, covering maintenance on your off-road compression-ignition engine, but YANMAR cannot deny warranty solely for the lack of receipts, or for your failure to ensure the performance of all scheduled maintenance.

As the off-road engine owner, you should however be aware that YANMAR may deny your warranty coverage if your off-road compression-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with CARB and EPA emissions requirements.

You are responsible for initiating the warranty process. The ARB and EPA suggest that you present your off-road engine to a YANMAR dealer as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible. If you have any questions regarding your warranty rights and responsibilities, you should contact YANMAR America Corporation. If you would like to find the nearest

YANMAR dealer or authorized service center, you should contact YANMAR America Corporation.

Website: <https://www.yanmar.com>

E-mail: CS_support@yanmar.com

Toll free telephone number: 1-800-872-2867, 1-855-416-7091

What the Emergency Stationary Type Engine Owner must Do:

The engines for emergency stationary type generators certified by Federal Law (40 CFR Part 60) are limited to emergency use only, and the operation for maintenance checks and verification test for functions is required. The total operating hours for maintenance and verification test for functions should not exceed 100 hours per year. However, there is no limitation on the operating hours for emergency use. Keep a log of the number of hours the engine is operated for both emergency use and non-emergency use. Also, note the reason for the operation.

mk71445,1679915954842-19-30MAR23

Tire Warranty

John Deere warranty applies for tires available through the John Deere parts system. For tires not available through the John Deere parts system, the tire manufacturer's warranty applicable to your machine may not apply outside the U.S. (See your John Deere dealer for specific information.)

KN52281,1003F90-19-22AUG12

Limited Battery Warranty

NOTE: Applicable in North America only. For complete machine warranty, reference a copy of the John Deere warranty statement. Contact your John Deere dealer to obtain a copy.

To Secure Warranty Service

The purchaser must request warranty service from a John Deere dealer authorized to sell John Deere batteries, and present the battery to the dealer with the top cover plate codes intact.

Replacement

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship will be eligible for warranty consideration.

This Warranty Does Not Cover

Breakage of the container, cover, or terminals.

Depreciation or damage caused by lack of reasonable and necessary maintenance or by improper maintenance.

Transportation, mailing, or service call charges for warranty service.

Limitation of Implied Warranties and Purchaser's Remedies

To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations or promises as to the quality, performance or freedom from defect of the products covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE ADJUSTMENT PERIOD SET FORTH HERE. THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON JOHN DEERE BATTERIES ARE THOSE SET FORTH HERE. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages. So these limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have some rights which vary from state to state.

No Dealer Warranty

The selling dealer makes no warranty of its own and the dealer has no authority to make any representation or promise on behalf of John Deere, or to modify the terms or limitations of this warranty in any way.

DX,BATWAR,NA-19-06AUG21

Service Records

After first 10 Hours

SERVICE PROCEDURE	
<input type="checkbox"/> Check wheel bolt torque.	<input type="checkbox"/> Check windshield wiper arm mounting hardware torque.
<input type="checkbox"/> Check cab rollover protection system mounting hardware torque.	

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,00003A2-19-26JUL17

Every 10 Hours or Daily

SERVICE PROCEDURE	
<input type="checkbox"/> Check safety interlock system.	<input type="checkbox"/> Radiator coolant level.
<input type="checkbox"/> Check engine oil level.	<input type="checkbox"/> Grease trunnions when used in wet land applications.
<input type="checkbox"/> Check transmission oil level.	
<input type="checkbox"/> Clean air filter rubber dust valve.	

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,00003A4-19-26JUL17

Every 50 Hour Service

SERVICE PROCEDURE	
<input type="checkbox"/> Check front axle oil level.	<input type="checkbox"/> Clean or replace cab air filter.
<input type="checkbox"/> Lubricate machine.	<input type="checkbox"/> Check hardware torque on front hitch (If equipped).
<input type="checkbox"/> Check cab rollover protection system mounting hardware torque.	

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,0000004-19-26MAY17

Every 100 Hour Service

SERVICE PROCEDURE	
<input type="checkbox"/> Check front hitch hydraulic connections for leaks.	

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,000000F-19-26MAY17

Every 200 Hour Service or Annually

SERVICE PROCEDURE	
<input type="checkbox"/> Check and adjust alternator/fan belt.	Check and adjust air conditioner compressor belt (If equipped).
<input type="checkbox"/> Check wheel bolt torque.	Check air restriction indicator light.

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,00009AC-19-03OCT19

Every 400 Hour Service

SERVICE PROCEDURE	
<input type="checkbox"/> Change Transmission Oil and Filter ^a .	<input type="checkbox"/> Replace primary fuel filter/water separator.
<input type="checkbox"/> Replace front PTO gearbox oil (JD20D) and filter, if equipped.	<input type="checkbox"/> Replace final fuel filter.
<input type="checkbox"/> Change engine oil and filters.	

^aTransmission oil can be changed every 1200 hours or 3 years if specific requirements are met., see transmission maintenance for additional information.

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,00009A9-19-03OCT19

Service Records

Every 600 Hour Service

SERVICE PROCEDURE	
<input type="checkbox"/> Service air filter element , intake, and hoses, and clamps. Replace as required.	<input type="checkbox"/> Check brake adjustment.
<input type="checkbox"/> Check front axle oil.	<input type="checkbox"/> Check front axle breather valve.
<input type="checkbox"/> Check axle thrust bolt torque	

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,00003A6-19-26JUL17

Annually

SERVICE PROCEDURE	
<input type="checkbox"/> Change engine oil and filter if less than 400 hours of operation.	<input type="checkbox"/> Check all hoses and clamps
<input type="checkbox"/> Drain water from fuel tank and replace fuel filters.	<input type="checkbox"/> Inspect air intake system hoses and connections each time the air filter is clogged.
Check wheel bolt torque.	

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,00009AA-19-03OCT19

Every 1000 Hour Service

SERVICE PROCEDURE	
<input type="checkbox"/> Check Engine Valve Clearance. See your John Deere Dealer	

Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

UP00731,00002E4-19-26MAY17

Every 2000 Hour Service or Every Two Years

SERVICE PROCEDURE	
<input type="checkbox"/> Drain, Flush and Refill Engine Cooling System ^a	

^aWhen 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	
<input type="checkbox"/> Drain, Flush and Refill Engine Cooling System ^a	

^aWhen 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)

Service Records

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)

Service Records

UP00731.0000235-19-22FEB18

Index

A

Additional Equipment, Maintenance	280B-1
Additional Equipment, Operation	80B-1
Adjustment, Altitude	220-1
Aftertreatment indicators overview	30-2
Air Conditioner Belt-Cab, Service	230-9
Air Conditioner, Service	230-11
Air Filter Elements, Service	230-1
Air Filter Intake Hoses and Clamps, Check	230-2
Alternator Belt, Service	220-4
Attachments, Use	70A-1
Avoid Fumes	220-2
Avoid static electricity risk when fueling	00A-4
Axle Trunnion, Lubricate	250B-2

B

Ballast Machine	80A-1
Ballast to Work Load, Match	280A-1
Battery	
Warranty	400B-3
Battery and Terminals, Clean	240-2
Battery Booster, Use	240-2
Battery Handling, Safety	
Safety, Battery Handling	00A-12
Battery, Remove	
Battery, Install	240-1
Battery, Service Safely	240-1
Bolt and screw torque values	
Metric	400-7
Unified inch	400-6
Brake Linkage, Lubricate	260-2
Brake Pedal, Use	60-1
Brake, Use Park	60-1

C

Cab Air Filter, Clean	230-12
Cab Rollover Protection System, Checking	290-2
Carbon Dioxide Emissions	200A-1
Checklist, Daily Operation	220-1
Codes, Implement	80A-1
Come Home Mode	300A-2
Controls, Floor Panel Operation Cab	10-3
Controls, HVAC	10-3
Controls, Operator Station Cab	10-2
Controls, Operator Station OOS	10-1
Controls, Floor Panel, OOS	10-3
Coolant	
Additional information	200A-5
Diesel Engine	
Light Duty	200A-4
Testing	200A-5
Testing freeze point	200A-6
Warm temperature climates	200A-4
Cooling System, Service	230-6
Cooling System, Service Safely	230-6

Cruise Control, Use	50A-2
---------------------------	-------

D

Defrosting, windshield	90-4
Diagnostic Trouble Code (DTC) Mode	300A-1
Diesel engines, cold weather effect	200A-2
Diesel fuel, testing	200A-2
Diesel Fuel, Use	200A-1
Display Mode Switch, Use	40-1
Display, Information	10-7
Display, On Board Diagnostic	300A-1
Diverter Rear Outlets, Use	70B-4
Dome Light, Use	40-1
Drawbar, Use	70A-3
Dual SCV Lever, Use	70B-1
Dual SCV Lock Lever, Use	70B-2
Dust Unloading Valve, Clean	220-3

E

Effect of cold weather on diesel engines	200A-2
Emissions	
Required language	
EPA	220-1
Emissions Performance	
Tampering	200A-1
Engine	
PowrReverser Transmission, Start	20-4
Engine (Hydrostatic Transmission), Start	20-2
Engine Oil and Filter, Change	220-3
Engine, Idling	20-4, 20-5
Engine, Starting	
Engine, Cold Weather Starting	20-3
Engine, Cold Weather Starting	20-5
eThrottle, Use	20-2
Exhaust Filter	
Maintenance and Service	220-1
Exhaust Filter Cleaning, Automatic	230-2
Exhaust Filter Cleaning, Disabled	230-2
Exhaust Filter Cleaning, Parked	230-3
Exhaust Filter Cleaning, Service	230-4
Exhaust Filter Maintenance and Service	220-1
Exhaust Filter, Safety	
Safety, Exhaust Filter	00A-14
Exiting Machine, and Entering	90-1

F

Filter, Exhaust	
Exhaust Filter System	30-1
Fourth and Fifth SCV, Use	70B-3
Front Axle Oil	200A-7
Front Axle Oil Level, Check	250B-1
Front Axle Oil, Change	250B-1
Front Axle Thrust Bolt, Adjust	250B-2
Front Grille Screens, Clean	220-4
Fuel	
Handling and storing	200A-2

Fuel Filter, Replace			
Fuel Filter Sediment Bowl, Check			
Fuel Filter Sediment Bowl, Clean	230-5		
Fuel Shut- Off Valve, Use	20-2		
Fuel Shut- Off Valve, Using	30-1		
Fuel Storage	100-2		
Fuel Tank, Fill	30-1		
Fuse and Relays, Size			
Fuse and Relays, Function	240-7		
Fuses and Relays, Locating	240-6		
Load Center-CAB	240-6		
Load Center-OOS	240-6		
Fuses, Replace	240-6		
		G	
Grease	200A-7		
		H	
Hardware torque values			
Metric	400-7		
Unified inch	400-6		
Headlight, Replace			
LED Headlight	240-3		
Hitch, Front, Lubricate	270A-1		
Hood Cowl, Removal and Installation	290-2		
Hood Vent, Clean	230-11		
Hood, Raise			
Hood, Lower	290-1		
Hydraulic Maintenance	270-1		
Hydraulic Oil	200A-6		
Hydraulics Information	70-1		
Hydrostatic Transmission, Drive	50-1		
Hydrostatic Transmission, Operate	50A-1		
		I	
Identification Numbers, Record	400A-1		
iMatch Quick-Attach Hitch System, Use	70A-5		
Implement Hydraulic Hoses, Connect	70B-1		
Indicators overview	30-2		
Instrument Cluster	10-4		
		K	
Key Switch, Use	20-1		
		L	
Lifting Points for Jacking up Tractor	280-2		
Light Bulbs (Tractor With Cab), Replace	240-4		
Light Bulbs, Replacing	240-3		
Light Switch, Use	40-1		
Liquid Weight in Tires, Use	80A-2		
LoadMatch, Use	50A-2		
Lubricants, safety	200A-3		
		M	
Machine, Stop	20-6		
Maintenance Interval Chart - Every 600 Hours - Every 6000 Hours	200-2		
Maintenance Interval Chart, Daily - Every 400 Hours	200-1		
Maintenance, Brake	260-2		
Maintenance, Controls and Instruments	210-1		
Maintenance, Drivetrain	250-1		
Maintenance, PTO	250D-1		
Maintenance, Steering	260-1		
Mechanical Front Wheel Drive(MFWD), Use	50B-1		
Metal Surfaces, Repair and Clean	200-3		
Metric bolt and screw torque values	400-7		
MFWD Oil	200A-7		
MotionMatch, Use	50A-3		
		N	
Neutral Start Switch (PowrReverser Only), Test	200-3		
Nozzles, Fuel Injection	230-6		
		O	
Oil Level, Check Engine	220-2		
Oil, Engine	200A-3		
Oil, Warming Hydraulic System	70-1		
Optional Front Weights, Use	80A-2		
Optional Rear Ballast Box, Use	80A-2		
		P	
Plastic And Painted Surfaces, Avoid Damage To	200-3		
Plastic Surfaces, Clean	200-3		
PowrReverser Transmission, Drive	50-1		
PowrReverser Transmission, Operate	50A-1		
Prepare Machine for Storage	100-2		
PTO, Rear and Mid, Use			
RIO, Use	50D-2		
PTO, Use Safely	50D-1		
Pump, Fuel Injection	230-6		
		R	
Radiator Cooling Screen and Fins, Clean	230-9		
Radiator Hoses and Clamps, Check	230-8		
Radio, Using	90-4		
Rear Axle	250C-1		
Rear PTO, Use	50D-3		
Rear Window, using	90-5		
Refueling, avoid static electricity risk	00A-4		
ROPS, Using	90-2		
		S	
Safety			
Protect against noise	00A-2		
Rotating drivelines, stay clear	00A-5, 50D-1		
Safe maintenance, practice	00A-14		

U

Unified inch bolt and screw torque values..... 400-6

W

Warning Lights, Use..... 40-1
Warranty, product..... 400B-1
Wheel Bolts and Hardware, Check..... 280-1
Wheel Spacing and Tread Width, Change 280-2
Wheels, Remove
 Wheels, Install 280-1
Windshield Wiper and Washer, Using..... 90-3
Work Lights, Use 40-1

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
