6105E, 6120E, 6120EH and 6135E Final Tier IV Tractors, (North America Edition)

JOHN DEERE

OPERATOR'S MANUAL

6105E, 6120E, 6120EH and 6135E Final Tier IV Tractors

OMSU65872 ISSUE C2 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

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

If this product contains a gasoline engine:

⚠ WARNING

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Mexico
North America Edition
PRINTED IN U.S.A

Introduction

Foreword

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

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

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

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

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

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

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

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

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

DX,IFC1-19-03APR09

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

Contents

Continued on next page

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

General Information

Product View

CPA0004709—UN—13DEC17

Cab Tractor

APY44701—UN—28APR21

OOS (High Crop)

GS38198,0000F86-19-26MAY21

CPA0004710—UN—13DEC17

OOS Tractor

Trademarks

Trademarks	
AutoTrac™	Trademark of Deere & Company
Bio Hy-Gard™	Trademark of Deere & Company
Break-In Plus™	Trademark of Deere & Company
Break-In™	Trademark of Deere & Company
COOL-GARD™	Trademark of Deere & Company
CoolScan™	Trademark of Deere & Company
GREASE-GARD™	Trademark of Deere & Company
GreenStar™	Trademark of Deere & Company
Hy-Gard™	Trademark of Deere & Company
Oilscan™	Trademark of Deere & Company

Trademarks	
Plus-50™	Trademark of Deere & Company
PowerTech™	Trademark of Deere & Company
SyncReverser™	Trademark of Deere & Company
PowrReverser™	Trademark of Deere & Company
Roll-Gard™	Trademark of Deere & Company
SERVICEGARD™	Trademark of Deere & Company
TEFLON®	Trademark of Du Pont Co.
Torq-Gard™	Trademark of Deere & Company
Quik-Tatch™	Trademark of Deere & Company
StarFire™	Trademark of Deere & Company

CP00834,0003930-19-17JAN18

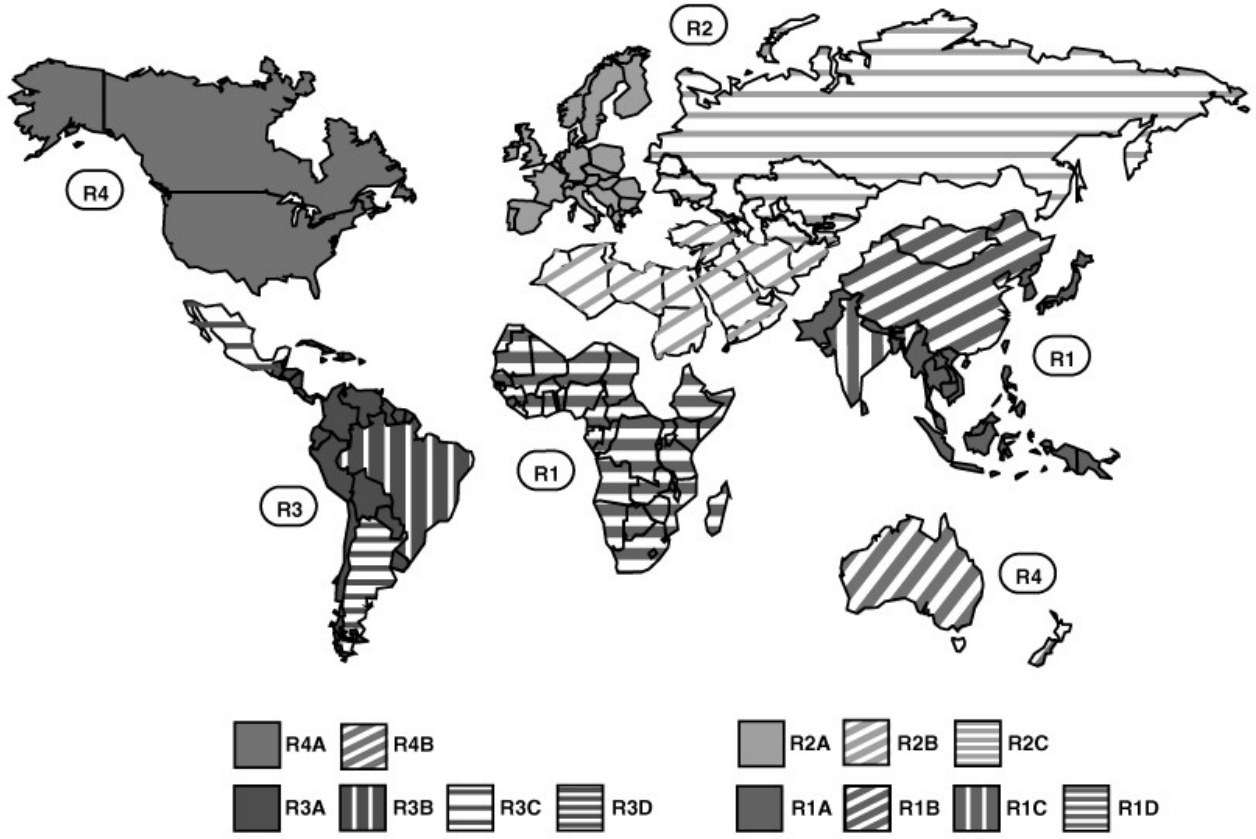
Glossary of Terms

ITEM	ABBREVIATION	DESCRIPTION
Accessory	ACC	Secondary electrical system
Air Conditioning	A/C	System used for cooling the air in the cab
Alternating Current	AC	Electrical current that reverses its direction at regularly recurring intervals
Agricultural Management System	AMS	Used with automatic guidance system
AutoTrac Universal	ATU	Automatic guidance system
Battery	Bat	A device used to furnish electrical current
Brakes	BR	Abbreviation
Charge Air Cooler	CAC	A device used for cooling compressed intake air
Controller Area Network	CAN	A communication system linking on-board electronics
Chassis Control Unit	CCU	Computerized system for tractor monitoring
Clockwise	CW	Direction in which the hands of a clock rotate
Cold Cranking Amperes	CCA	Battery's measured capability to perform during cold-weather operation
Counterclockwise	CCW	Direction opposite the rotation of the hands of a clock
Diesel Exhaust Fluid	DEF	Engine emission
Direct Current	DC	Electrical current flowing in one direction only
Fixed Open Operator Station	FOOS	Abbreviation
Forward	FWD	Direction of movement
Forward-Neutral-Reverse	FNR	Abbreviation
Gallons per Minute	gpm	Amount of fluid displaced over a period of one minute
Ground Drive Power Take-Off	GD PTO	Abbreviation
GreenStar™ Display	GSD	Abbreviation
Heating, Ventilating, and Air Conditioning	HVAC	Abbreviation
High-Intensity Discharge Light	HID	Abbreviation
High-Pressure Common Rail	HPCR	Abbreviation
Hitch Control Unit	HCU	Computerized system used to control hitch functions
Housing	Hsg	Abbreviation
Ignition	IGN	Control for starting and stopping the tractor
Inside Diameter	ID	Abbreviation
Instrument Cluster Control Unit	ICC	Computerized system used to control instrument cluster functions
International Standards Organization	ISO	Standards organization
Joint Industry Council Organization	JIC	Standards organization
Left-Hand	LH or L-H	Abbreviation
Liquid Crystal Display	LCD	A technology used for displaying information
Manifold Air Pressure	MAP	Air Pressure measured at engine air intake

ITEM	ABBREVIATION	DESCRIPTION
Mechanical	Mech or MECH	Abbreviation
Mechanical Front Wheel Drive	MFWD	A mechanically powered front axle
Negative	Neg (-)	Electrical Ground Circuit
Number	No.	Abbreviation
Nitrogen Oxide	NOx	Engine emission
O-ring Face Seal	ORFS or ORS	A type of seal used in hydraulic connections
Original Equipment Manufacturer	OEM	Abbreviation
Outside Diameter	OD	Abbreviation
Open Operator Station	OOS	Abbreviation
Performance Monitor	Perf Mon or PrF	Abbreviation
Positive	Pos (+)	Charged part of an electrical circuit
Potentiometer	POT	A device used to vary electrical voltage
PowrReverser™	PR	12 forward and 12 reverse mechanically shifted transmission; 3-speed gearbox, 4-speed range box, and 2 directional clutch pack option box with electrohydraulic shuttle shift = 24x12 PR
Power Take-Off	PTO	Abbreviation
PowerTech™ E	PTE	Electronically controlled fuel injection
Power Train Reverser	PTR	Computerized system used to control power reverse transmission functions
Pressure Control Valve	PCV	Valve used to control pressure within a system
Pressure Regulating Valve	PRV	A device used to regulate pressure in a system
Product Identification Number	PIN	Serial number relating to tractor identification
Pulse-Width-Modulation	PWM	Method of controlling electrical signals
Region 2	R2	European Region
Region 4	R4	North American Region
Reverse	Rev	Direction of movement
Revolutions per Minute	rpm	Abbreviation
Right-Hand	RH or R-H	Abbreviation
Rockshaft	RS	Abbreviation
Roll-Over Protective Structure	ROPS	Abbreviation
Selective Control Valve	SCV	Device used to control remote hydraulic functions
Slow Moving Vehicle	SMV	Warning sign on the rear of the tractor
Society of Automotive Engineers	SAE	Engineering Standards Organization
Specification	Spec	Abbreviation
Switch	SW	Abbreviation
SyncReverser™	SR	12 forward and 12 reverse mechanically shifted transmission; 3-speed gearbox, 4-speed range box, and 2 directional clutch pack option box with electrohydraulic shuttle shift = 24x12 PR
Tachometer	Tach	Abbreviation
Tail Light	TL	Abbreviation
Temperature	Temp	Abbreviation
Three-Point Hitch	3PT	Abbreviation
Transmission	Trans	Abbreviation
Transient Voltage Protection	TVP	An electrical device used to protect a circuit from voltage surge
User Interface Module	UIM	Abbreviation
Voltage (Volts)	V	Abbreviation
Voltage Detector	V Det	Abbreviation
Warning Lamp	WL	Abbreviation
Without	W/O	Abbreviation
Wide-Open Throttle	WOT	Full throttle
Two-Wheel Drive	2WD	Vehicle where only one pair of wheels is powered

CP00834,0003786-19-15JAN18

Regions and Country Versions



RXA0150915—UN—01FEB16

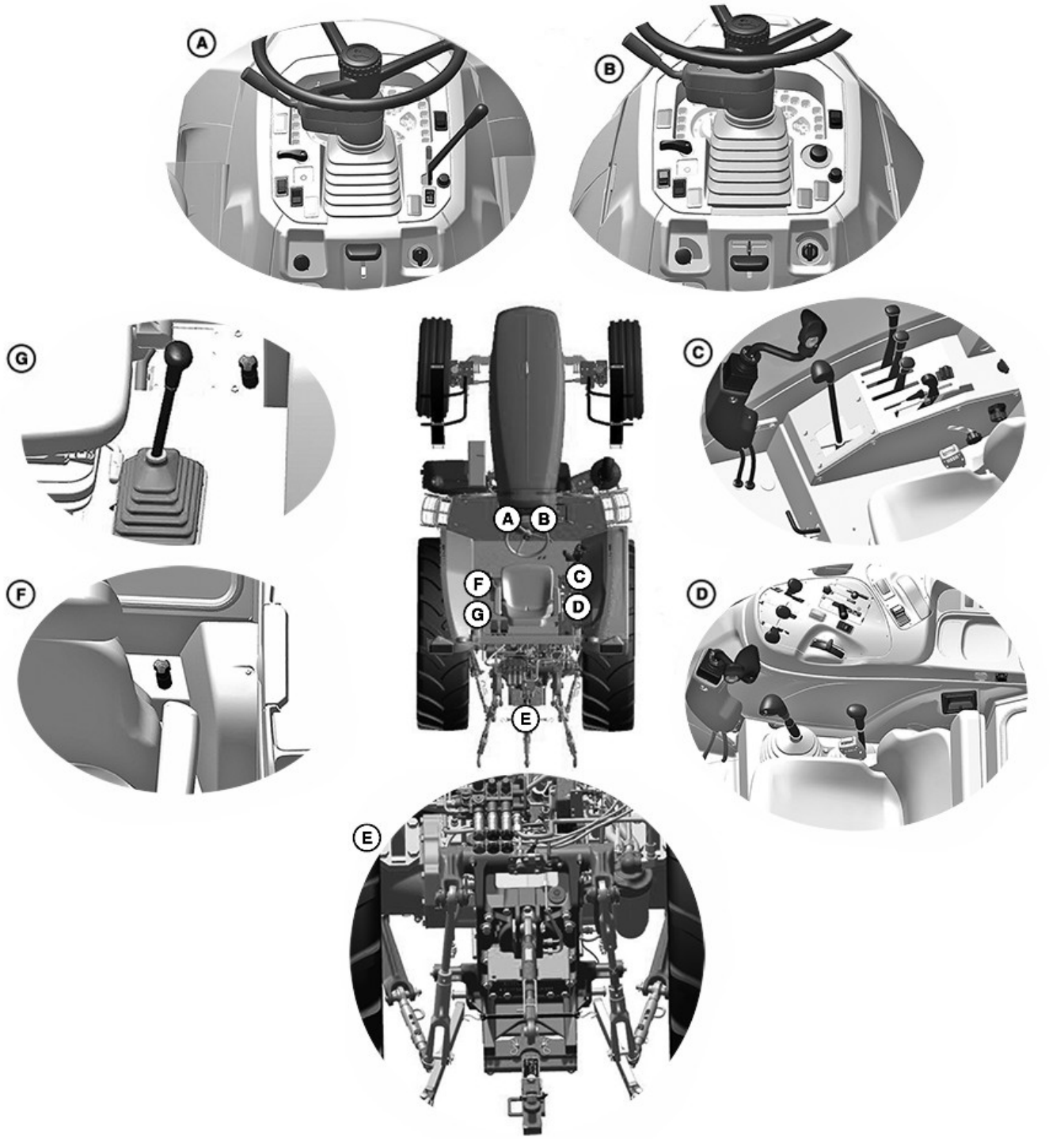
Region Map

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—Common Wealth 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. Use information above, if equipment information is identified by regions, countries, trade federations, industry standards, or governmental regulations. *NOTE: Australia and New Zealand (R4B) are available as either region 4 and/or region 2 configurations, only using text-free safety signs.*	

CP00834,0003787-19-15JAN18

Machine Overview



CPA0004563—UN—23NOV17

Machine Overview

A—Front Console Controls—OOS
B—Front Console Controls—Cab
C—Right-hand Side Controls—OOS
D—Right-hand Side Controls—Cab
E—Rear Implement Interface
F—Left-hand Side Controls—Cab
G—Left-hand Side Controls—OOS

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.

Operating the Machine Introduction:

- Sit in operator's 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.)

CAUTION: The tractor is not designed for use in flooded fields, as is the case with rice crops.

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 leak damage, failures, and flats.
- Prepare machine hardware, fuel, fluids, lubricants, air, and daily maintenance.
- Check and prepare implements or attachments according to implement or attachment Operator's Manuals.

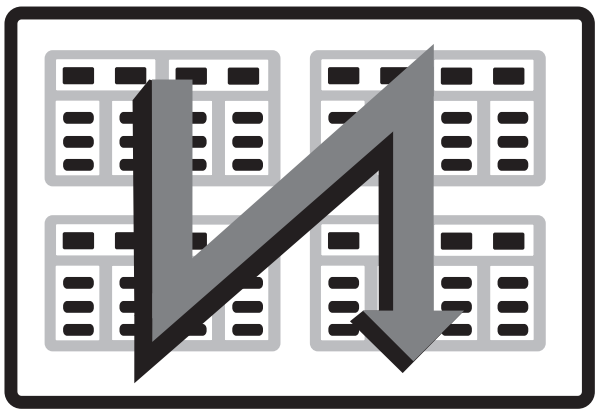
Using this Manual:

The information provided in this manual is divided into sections. The sections are organized by typical machine features or functional systems (Engine, Electrical, Hydraulic, Transmission, and so on.). 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 by 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 will learn which section to turn to for specific information. For example, the Safety information is covered at the beginning, and the Operation of all features and systems are covered in the first half of the manual. In addition, Maintenance Intervals are in the middle of the manual, the Maintenance of all the features and systems are covered in the second half of the manual, and 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

Sequential Reading

EKPQ1SQ,00035E9-19-13SEP21

Safety Precautions

Recognize Safety Information

T81389—UN—28JUN13

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

Follow recommended precautions and safe operating practices.

DX,ALERT-19-29SEP98

Understand Signal Words

⚠ DANGER

⚠ WARNING

⚠ CAUTION

TS187—19—30SEP88

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

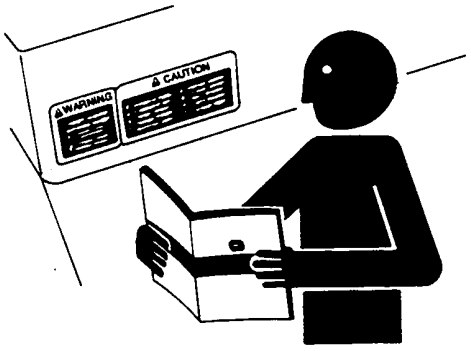
WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

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

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

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

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

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

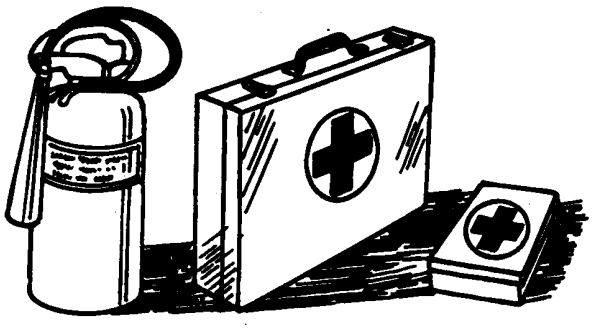
Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

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

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

DX,READ-19-16JUN09

Prepare for Emergencies



TS291—UN—15APR13

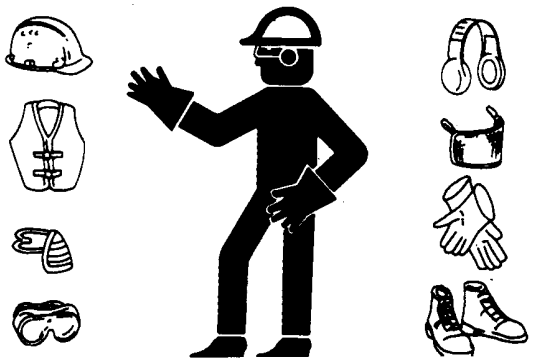
Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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

DX,FIRE2-19-03MAR93

Wear Protective Clothing



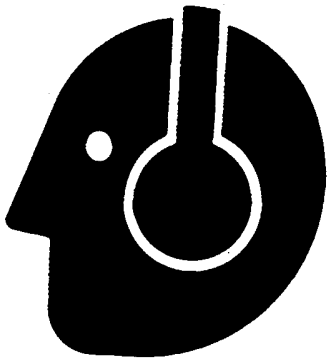
TS206—UN—15APR13

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

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

DX,WEAR2-19-03MAR93

Protect Against Noise



TS207—UN—23AUG88

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

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

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

DX,NOISE-19-03OCT17

Handle Fuel Safely—Avoid Fires

TS202—UN—23AUG88

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

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

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

Use only an approved fuel container for transporting flammable liquids.

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

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

DX,FIRE1-19-12OCT11

Handle Starting Fluid Safely

TS1356—UN—18MAR92

Starting fluid is highly flammable.

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

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

Do not incinerate or puncture a starting fluid container.

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

DX,FIRE3-19-14MAR14

Fire Prevention

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

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

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

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

In Case of Fire

TS227—UN—15APR13

CAUTION: Avoid personal injury.

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

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

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

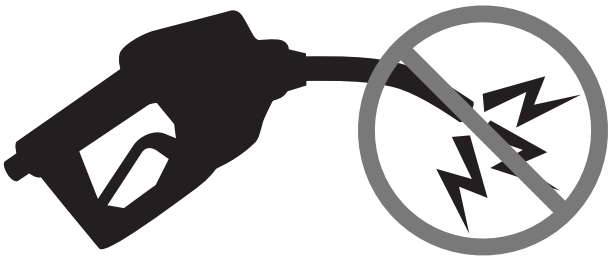
If your extinguisher does not have instructions, follow these general guidelines:

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

DX,FIRE4-19-22AUG13

Avoid Static Electricity Risk When Refueling

RG22142—UN—17MAR14



RG21992—UN—21AUG13

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

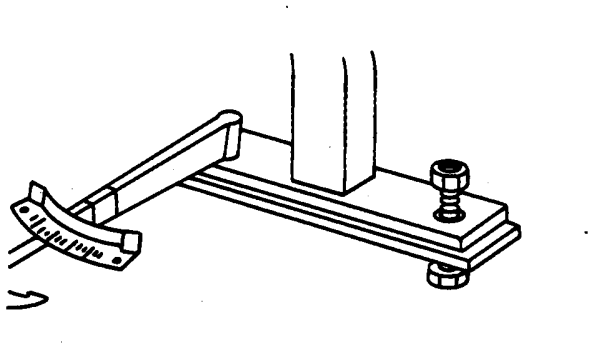
Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

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

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

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

Keep ROPS Installed Properly



TS212—UN—23AUG88

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

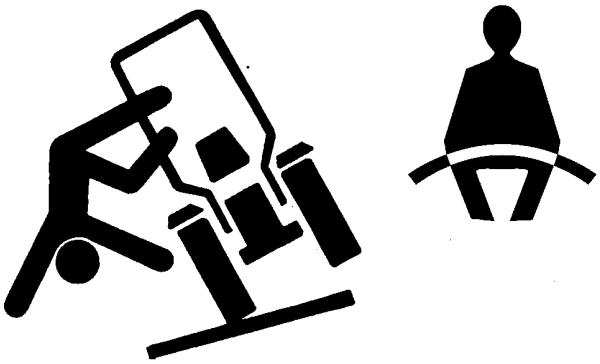
The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

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

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

DX,ROPS3-19-12OCT11

Use Foldable ROPS and Seat Belt Properly



TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

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

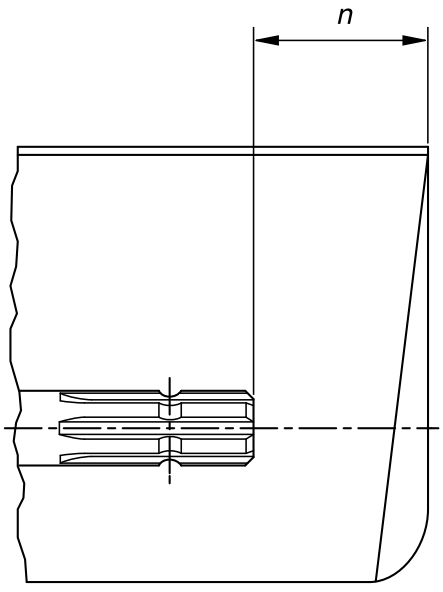
- Snug the seat belt across the hips.

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

DX,FOLDROPS-19-22AUG13

Stay Clear of Rotating Drivelines

TS1644—UN—22AUG95



H96219—UN—29APR10

Entanglement in rotating driveline can cause serious injury or death.

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

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

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

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

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

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

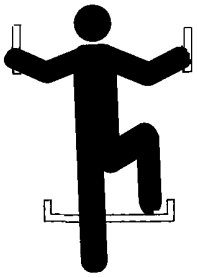
Do not raise implements high enough to damage the tractor master shield or guard of primary implement PTO driveshaft. Detach the PTO driveline shaft if it is necessary to increase implement height. (See Attching/ Detaching PTO Driveline)

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

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

DX,PTO-19-28FEB17

Use Steps and Handholds Correctly



T133468—UN—15APR13

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

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

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

DX,WW,MOUNT-19-12OCT11

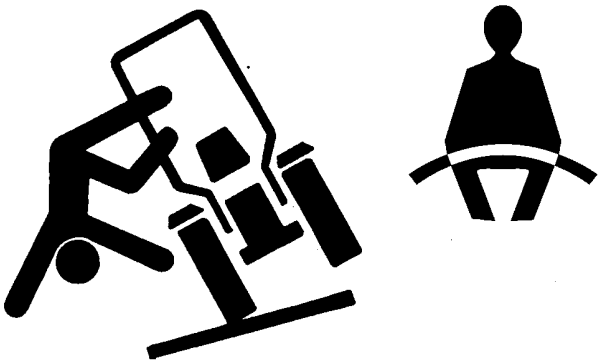
Read Operator's Manuals for ISOBUS Controllers

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

NOTE: ISOBUS refers to the ISO Standard 11783

DX,WW,ISOBUS-19-15JUL15

Use Seat Belt Properly



TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

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

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

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

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

DX,ROPS1-19-22AUG13

Operating the Tractor Safely

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

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

Driving Concerns

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

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

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

Heated and Ventilated Operator's Seat

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

Towing Loads

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

Parking and Leaving the Tractor

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

Common Accidents

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

The most common accidents involving tractors are:

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

DX,WW,TRACTOR-19-08MAY19

Avoid Backover Accidents

PC10857XW—UN—15APR13

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

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

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

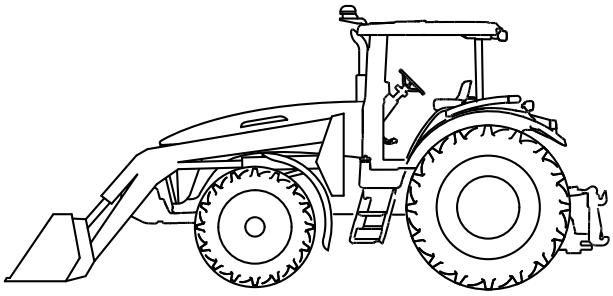
Limited Use in Forestry Operation

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

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

DX,WW,FORESTRY-19-12OCT11

Operating the Loader Tractor Safely



TS1692—UN—09NOV09

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

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

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

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

Do not use loader as a work platform.

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

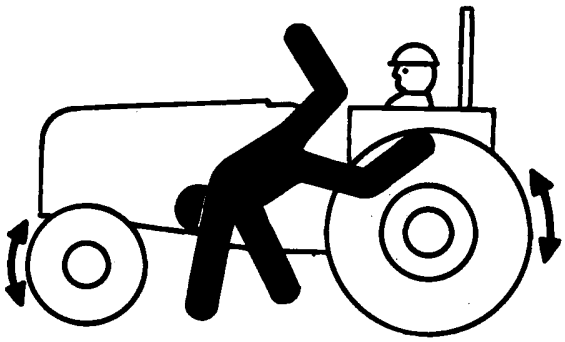
Lower loader to ground before leaving operators station.

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

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

DX,WW,LOADER-19-18SEP12

Keep Riders Off Machine



TS290—UN—23AUG88

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

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

DX,RIDER-19-03MAR93

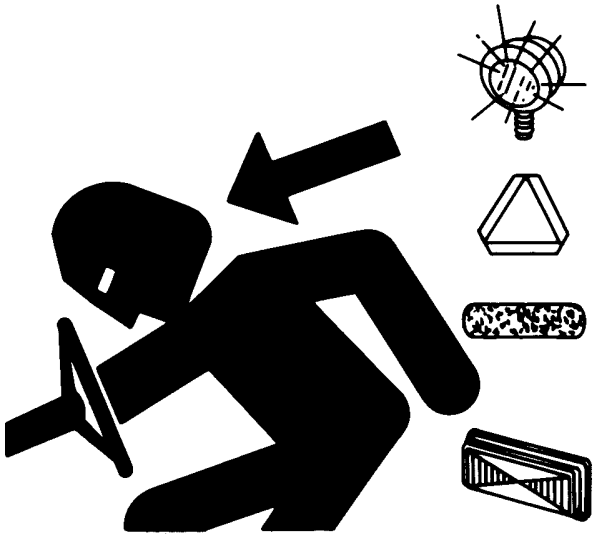
Instructional Seat

TS1730—UN—24MAY13

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

DX,SEAT,NA-19-22AUG13

Use Safety Lights and Devices



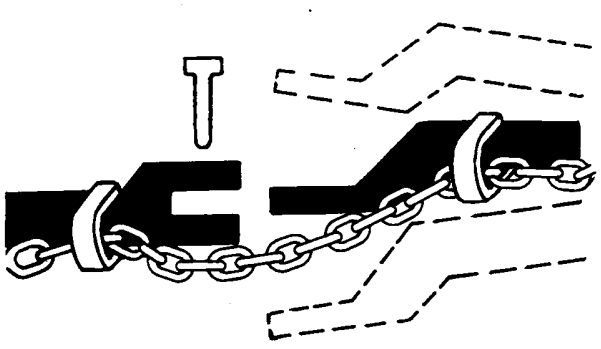
TS951—UN—12APR90

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

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

DX,FLASH-19-07JUL99

Use a Safety Chain



TS217—UN—23AUG88

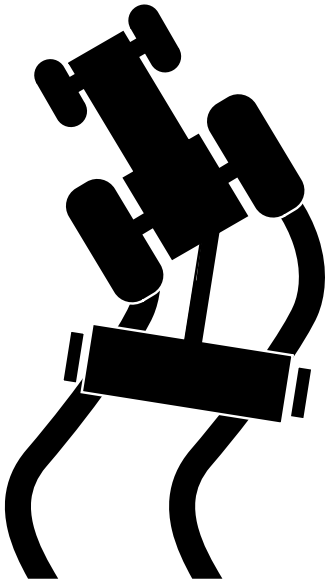
A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

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

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

DX,CHAIN-19-03MAR93

Transport Towed Equipment at Safe Speeds



TS1686—UN—27SEP06

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

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

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

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

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

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

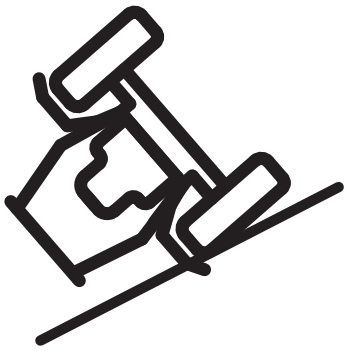
Implements with brakes:

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

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

DX,TOW1-19-28FEB17

Use Caution on Slopes, Uneven Terrain, and Rough Ground



RXA0103437—UN—01JUL09

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

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

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

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

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

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

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

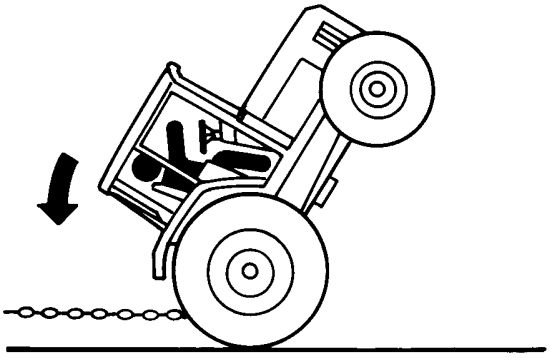
Choose a low ground speed so you will not have to stop or shift while on a slope.

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

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

DX,WW,SLOPE-19-28FEB17

Freeing a Mired Machine



TS1645—UN—15SEP95

TS263—UN—23AUG88

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

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

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

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

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

DX,MIRED-19-07JUL99

Avoid Contact with Agricultural Chemicals

TS220—UN—15APR13

TS272—UN—23AUG88

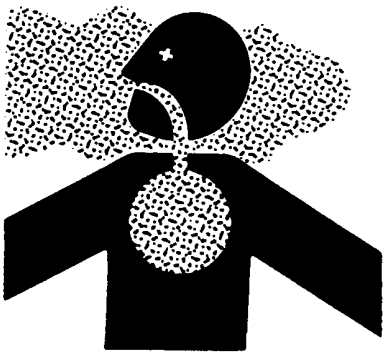
This enclosed cab does not protect against inhaling vapor, aerosol or dust. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.

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

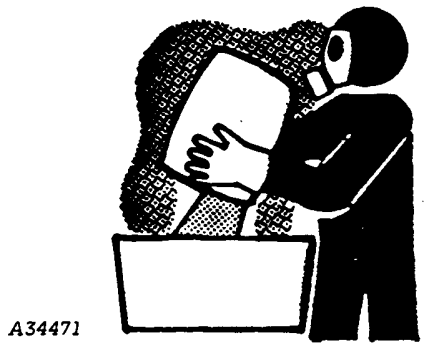
Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.

DX,CABS-19-25MAR09

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471—UN—11OCT88

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

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

Reduce risk of exposure and injury:

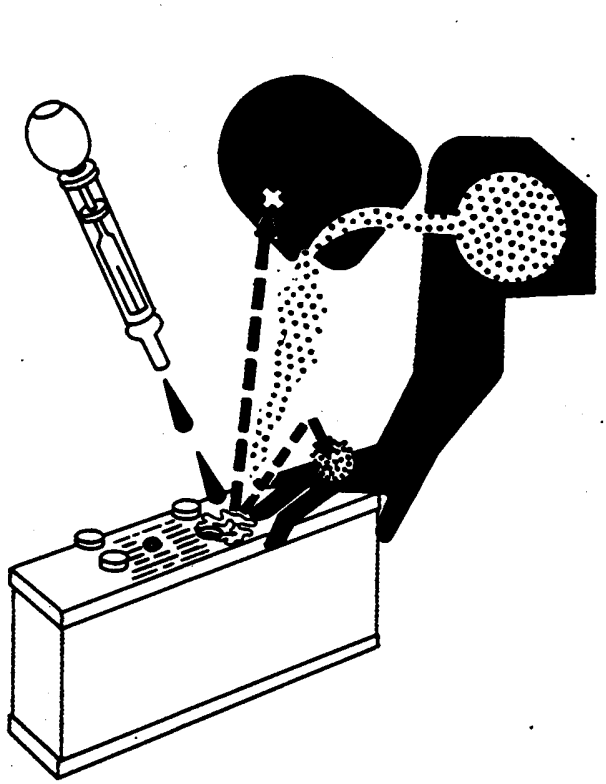
- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
  - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
  - Chemicals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

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

DX,WW,CHEM01-19-24AUG10

Handling Batteries Safely

TS204—UN—15APR13



TS203—UN—23AUG88

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

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

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

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

Avoid hazards by:

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

If acid is spilled on skin or in eyes:

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

If acid is swallowed:

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

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

DX,WW,BATTERIES-19-02DEC10

Avoid Heating Near Pressurized Fluid Lines

TS953—UN—15MAY90

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

DX,TORCH-19-10DEC04

Remove Paint Before Welding or Heating

TS220—UN—15APR13

Avoid potentially toxic fumes and dust.

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

Remove paint before heating:

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

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

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

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02

Handle Electronic Components and Brackets Safely

TS249—UN—23AUG88

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

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

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

DX,WW,RECEIVER-19-24AUG10

Practice Safe Maintenance

TS218—UN—23AUG88

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

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

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

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

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

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

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

DX,SERV-19-28FEB17

Avoid Hot Exhaust

RG17488—UN—21AUG09

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

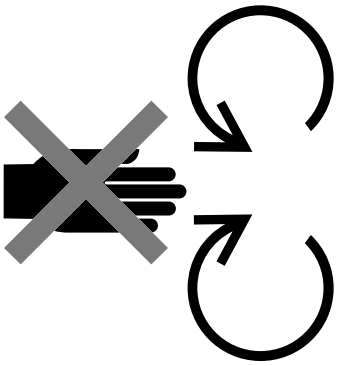
Exhaust parts and streams become very hot during operation. Exhaust gases and components reach temperatures hot enough to burn people, ignite, or melt common materials.

DX,EXHAUST-19-20AUG09

Clean Exhaust Filter Safely

TS227—UN—15APR13

TS271—UN—23AUG88



TS1693—UN—09DEC09

TS1695—UN—07DEC09

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

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

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

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

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

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

Avoid contact with these components until cooled to safe temperatures.

If service procedure requires engine to be running:

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

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

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

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

DX,EXHAUST,FILTER-19-12JAN11

Work In Ventilated Area

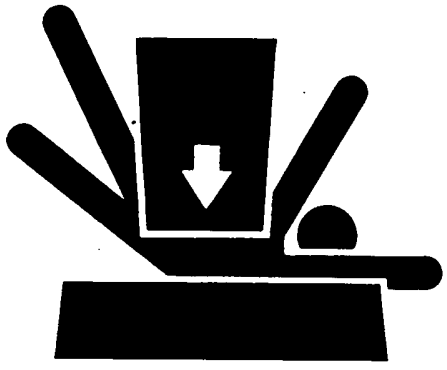
TS220—UN—15APR13

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

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

DX,AIR-19-17FEB99

Support Machine Properly



TS229—UN—23AUG88

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

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

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

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

DX,LOWER-19-24FEB00

Prevent Machine Runaway

TS177—UN—11JAN89

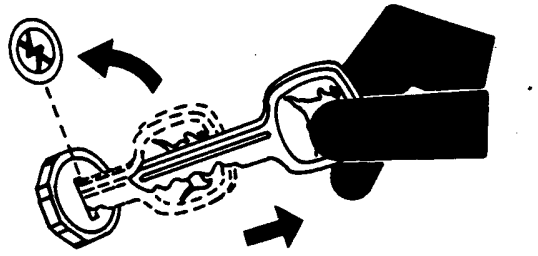
Avoid possible injury or death from machinery runaway.

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

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

DX,BYPAS1-19-29SEP98

Park Machine Safely



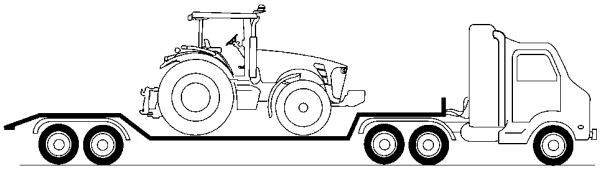
TS230—UN—24MAY89

Before working on the machine:

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

DX,PARK-19-04JUN90

Transport Tractor Safely



RXA0103709—UN—01JUL09

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

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

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

DX,WW,TRANSPORT-19-19AUG09

Service Cooling System Safely

TS281—UN—15APR13

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

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

DX,WW,COOLING-19-19AUG09

Service Accumulator Systems Safely

TS281—UN—15APR13

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

Relieve pressure from the pressurized system before removing accumulator.

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

Accumulators cannot be repaired.

DX,WW,ACCLA2-19-22AUG03

Service Tires Safely

RXA0103438—UN—11JUN09

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

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

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

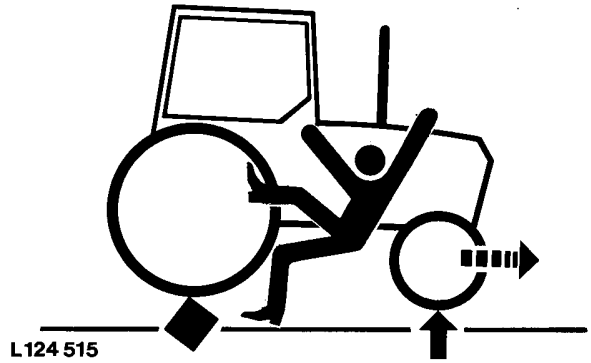
When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

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

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

DX,WW,RIMS-19-28FEB17

Service Front-Wheel Drive Tractor Safely

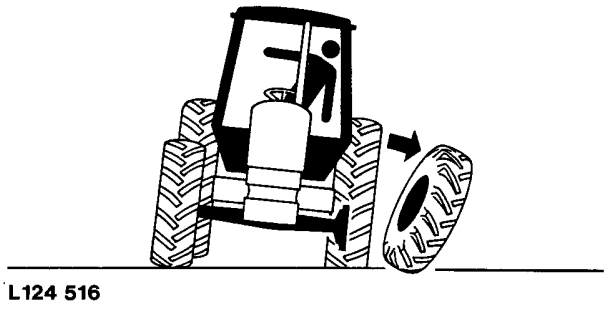


L124515—UN—06AUG94

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

DX,WW,MFWD-19-19AUG09

Tightening Wheel Retaining Bolts/Nuts

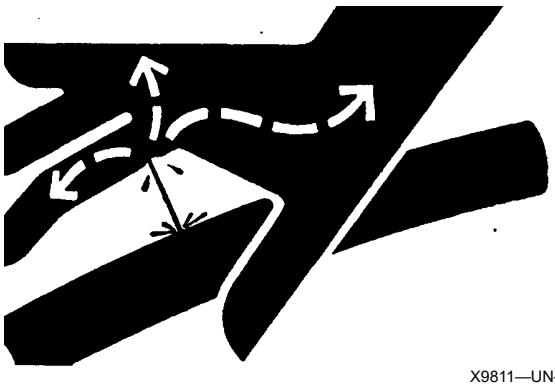


L124516—UN—03JAN95

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

DX,WW,WHEEL-19-12OCT11

Avoid High-Pressure Fluids



X9811—UN—23AUG88

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

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

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

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

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

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

DX,FLUID-19-12OCT11

Do Not Open High-Pressure Fuel System

TS1343—UN—18MAR92

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

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

DX,WW,HPCR1-19-07JAN03

Store Attachments Safely

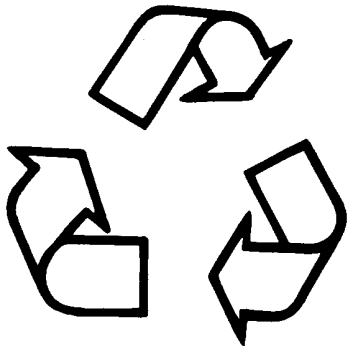
TS219—UN—23AUG88

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

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

DX,STORE-19-03MAR93

Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

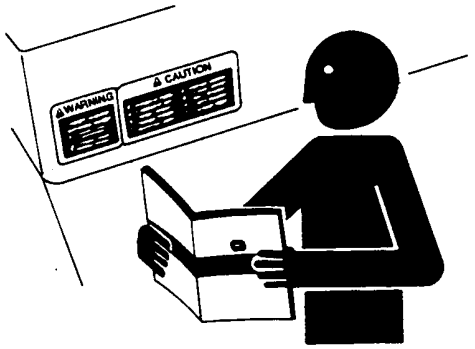
Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

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

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

DX,DRAIN-19-01JUN15

Replace Safety Signs



TS201—UN—15APR13

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

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

DX,SIGNS-19-18AUG09

Safety Instructions Safety Sign

CPA0004806—UN—13DEC17

Left-Hand Door Post - Cab

CPA0008069—UN—21FEB19

Right-Hand Side - OOS

LV4307—19—04NOV05

Caution Decal

A—Caution Decal

CAUTION:

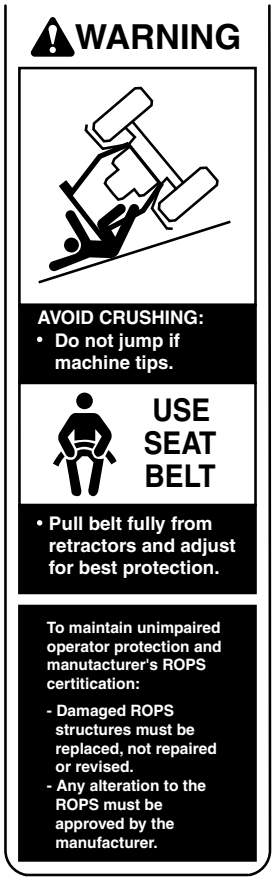
1. **Read Operator's Manual before operating this tractor.**
2. **Keep all shields in place.**
3. **Hitch towed loads only to drawbar to avoid rearward upset.**
4. **Make certain everyone is clear of machine before starting engine operation.**
5. **Keep all riders off tractor and equipment.**
6. **Keep 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 rod 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 brakes securely before dismounting.**
11. **Wait for all movement to stop before servicing machinery.**
12. **Remove key if leaving tractor unattended.**

CP00834,0006BDA-19-21FEB19

Use Seat Belt Safety Sign

LV15827—UN—22JUN12

Left-Hand Door Post



LV15901—19—25JUL12

Safety Sign

WARNING

AVOID CRUSHING:

- **Do not jump if machine tips.**

USE SEAT BELT:

- **Pull belt fully from retractors and adjust for best protection.**

To maintain unimpaired operator protection and manufacturer's ROPS certification:

-Damaged ROPS structures must be replaced, not repaired or revised.

-Any alteration to the ROPS must be approved by the manufacturer.

CP00834,00031A5-19-03JAN18

Passenger Seat Safety Sign

PY13331—UN—07MAY15

Left-Hand Front Post

RXA0148587—19—07JUL15

Safety Label

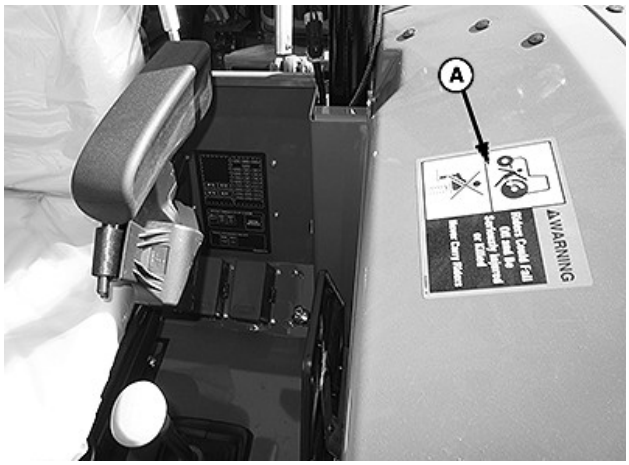
CAUTION: This instructional seat has been provided only for training operators or diagnosing machine problems.

Keep all other riders off the tractor and equipment.

Always wear your seat belt.

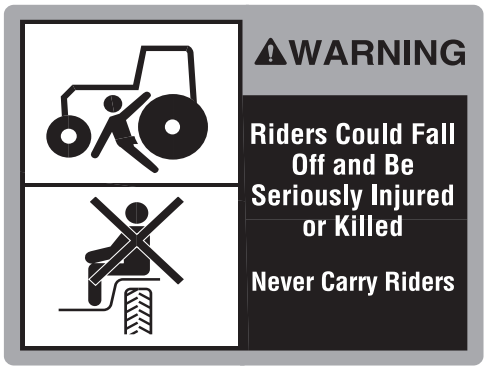
CP00834,00031A6-19-03JAN18

Riders Safety Sign



CPA0008070—UN—20FEB19

Left-Hand Side



P15366—19—03APR08

Warning Decal

A—Warning Decal

WARNING

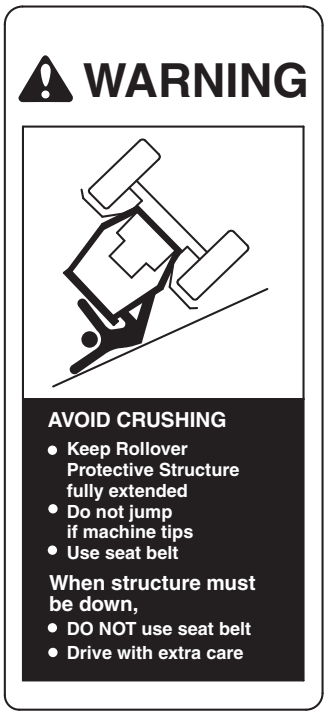
- **Riders could fall off and be seriously injured or killed.**
- **Never carry riders.**

CP00834,0006BDB-19-21FEB19

ROPS in Normal Position Safety Sign

CPA0008068—UN—20FEB19

Right-Hand Side



P10225—19—05OCT01

Warning Decal

A—Warning Decal

WARNING

AVOID CRUSHING:

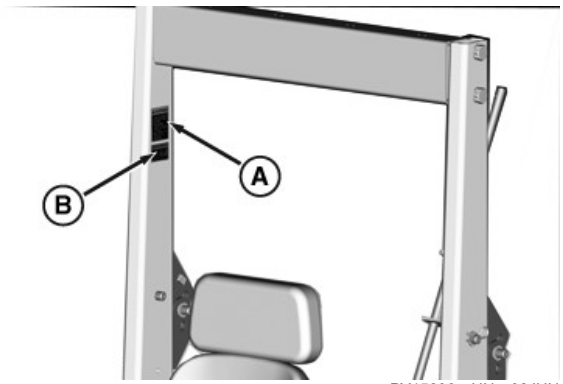
- **Keep Rollover Protective Structure fully extended.**
- **Do not jump if machine tips.**
- **Use seat belt.**

When structure must be down:

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

CP00834,0006BDC-19-21FEB19

ROPS Safety Sign

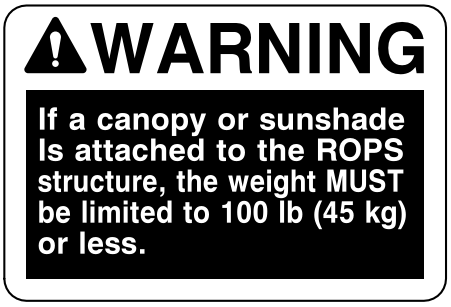


PY15206—UN—02JUN12

Right-Hand Side

P15419—19—18NOV08

Operator Protection Decal



P15205—19—25JAN08

ROPS Safety Decal

A—Operator Protection Decal
B—ROPS Safety Decal

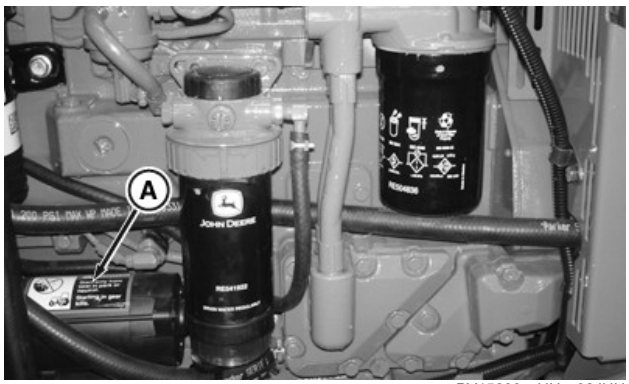
CAUTION: To maintain unimpaired operator protection and manufacturer's ROPS certification:

- **Damaged ROPS structures must be replaced, not repaired or revised.**
- **Any alteration to the ROPS must be approved by the manufacturer.**

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

CP00834,00031A9-19-03JAN18

Prevent Machine Runaway Safety Sign



PY15203—UN—02JUN12

Engine Right-Hand Side

P16028—19—24MAR10

Starting Engine Decal

A—Starting Engine Decal

DANGER

- **Start only from seat in park or neutral.**
- **Starting in gear kills.**

CP00834,00031AA-19-03JAN18

Park Brake Safety Sign

CPA0008067—UN—20FEB19

Park Brake Warning Label - OOS

PY19199—UN—06FEB14

Park Brake Warning Label - Cab

P15491—19—24JUN08

Warning Decal

A— Engage Park Brake Warning Decal

WARNING

Avoid crushing. Engage park brake.

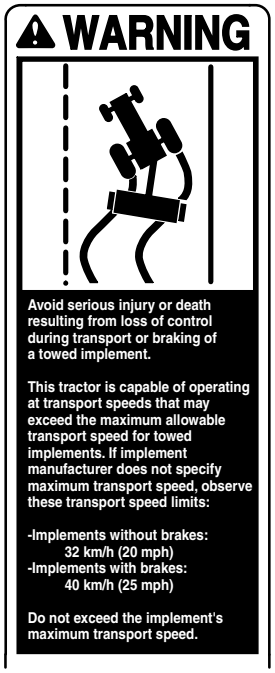
Tractor will move if left in gear with engine off.

CP00834,0006BDD-19-21FEB19

Towing Implement Safety Sign

LV15826—UN—22JUN12

Left-Hand Door Post



LV15900—19—25JUL12

Warning Label

WARNING

Avoid serious injury or death resulting from loss of control during transport or braking of a towed implement.

This tractor is capable of operating at transport speeds that may exceed the maximum allowable transport speed for towed implements. If implement manufacturer does not specify maximum transport speed, observe these transport speed limits:

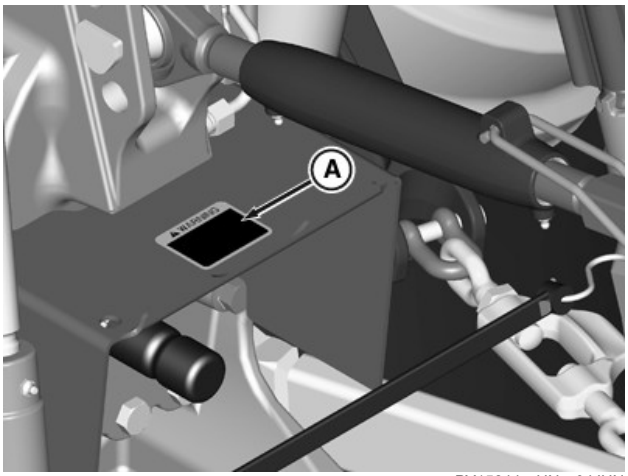
-Implements without brakes: 32 km/h (20 mph)

-Implements with brakes: 40 km/h (25 mph)

Do not exceed the implement's maximum transport speed.

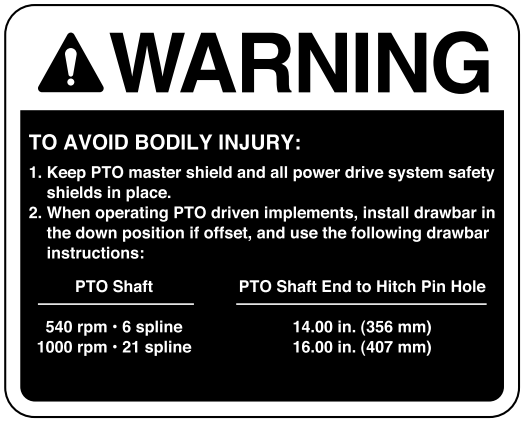
CP00834,00031AC-19-03JAN18

PTO Safety Sign



PY15244—UN—04JUN12

Rear of Tractor



P15206—19—29JAN08

Warning Decal

A—Warning Decal

WARNING

TO AVOID BODILY INJURY:

1. **Keep PTO master shield and all power drive system safety shields in place.**
2. **When operating PTO driven implements, install drawbar in the down position if offset, and use the following drawbar instructions:**

PTO Shaft	PTO Shaft End to Hitch Pin Hole
540 rpm - 6 spline	14.00 in (356 mm)
1000 rpm - 21 spline	16.00 in (407 mm)

CP00834,00031AD-19-03JAN18

Front End Loader Safety Sign

CPA0007999—UN—20FEB19

Cab

CPA0008066—UN—20FEB19

OOS

RXA0068062—19—29JUN05

Safety Sign

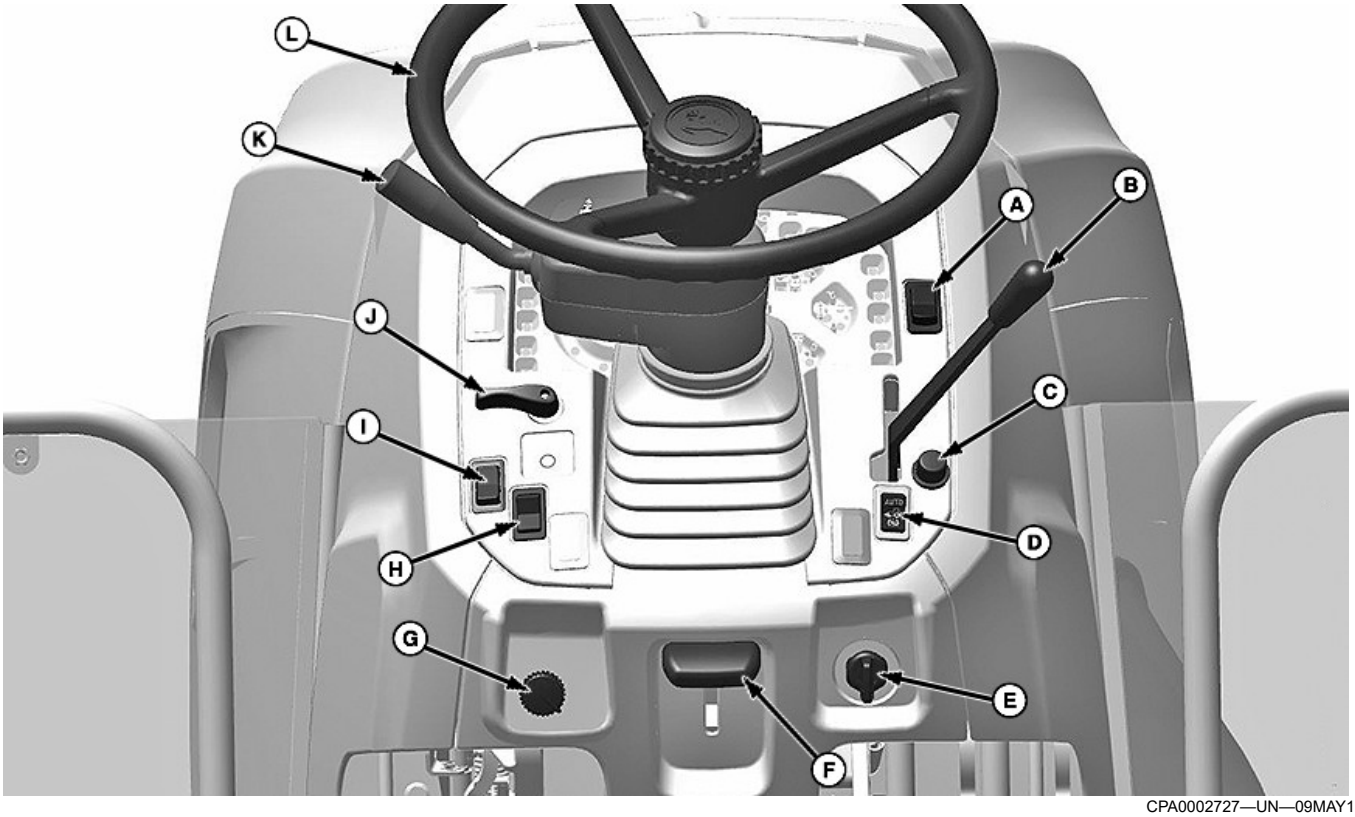
A—Warning Decal

WARNING

- **Avoid injury or death caused by falling loads.**
- **When using loader always put SCV selector knobs in loader position.**
- **If you do not, loader will continue to move after controls are released.**
- **See Operator's Manual for use of other knob positions.**

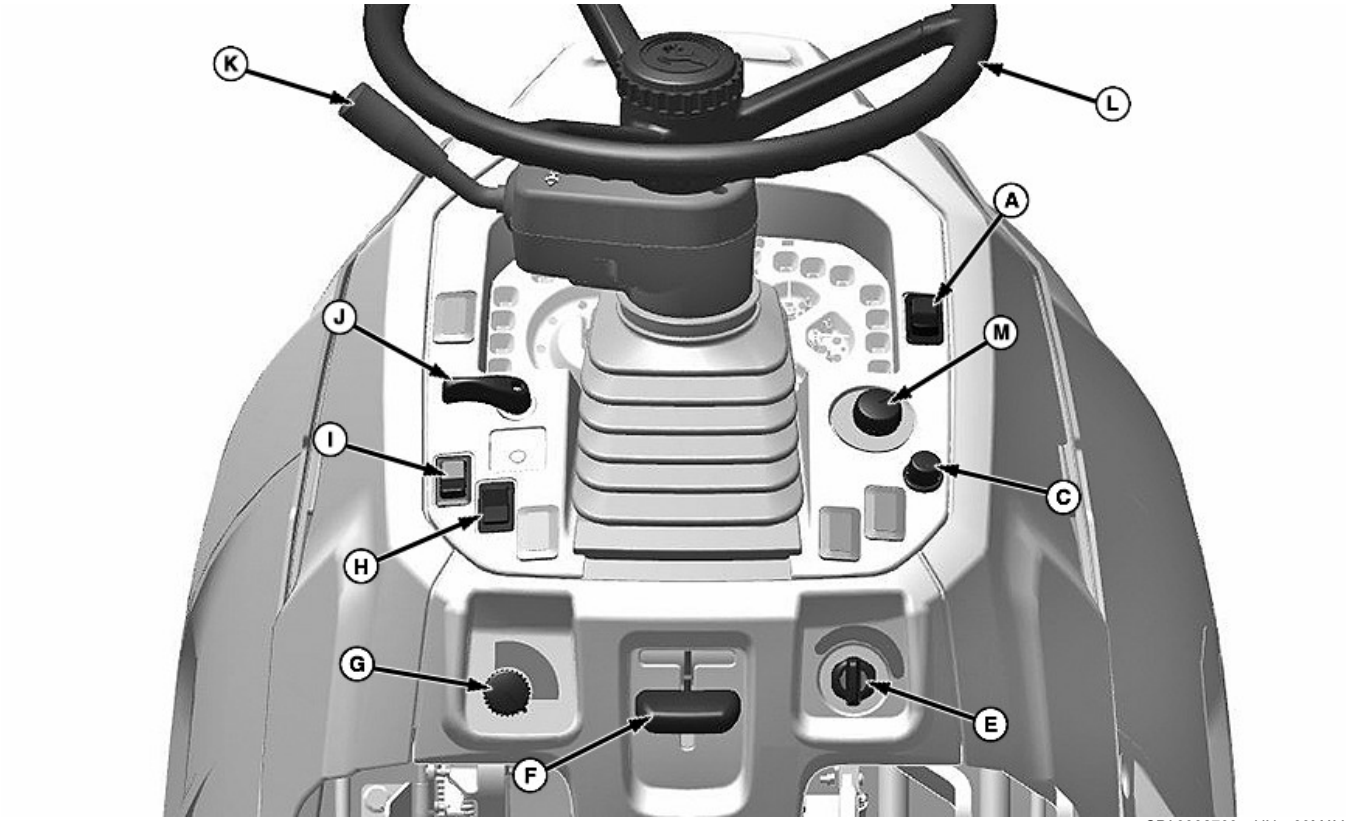
CP00834,0006BDE-19-21FEB19

Front Console Controls



CPA0002727—UN—09MAY16

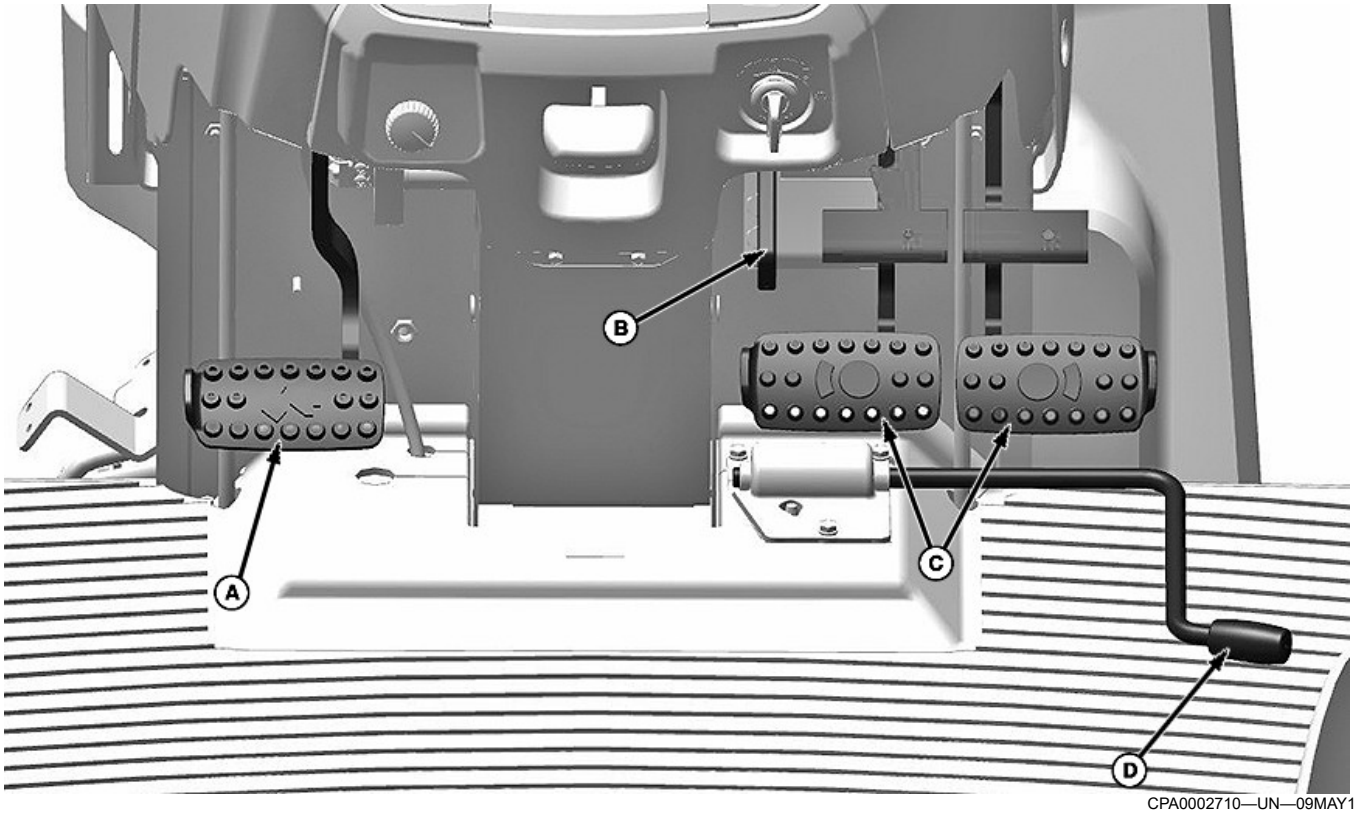
OOS



CPA0002709—UN—09MAY16

Cab

A—Exhaust Filter Cleaning Mode Switch
B—Hand Throttle
C—Horn
D—Mechanical Front-Wheel Drive Switch
E—Key Switch
F—Steering Wheel Tilt Lever
G—Light Switch
H—High/Low Beam Switch
I—Roll Mode Switch
J—Turn Signal Switch
K—FNR Lever
L—Steering Wheel
M—Wiper Switch (Cab only)



CPA0002710—UN—09MAY16

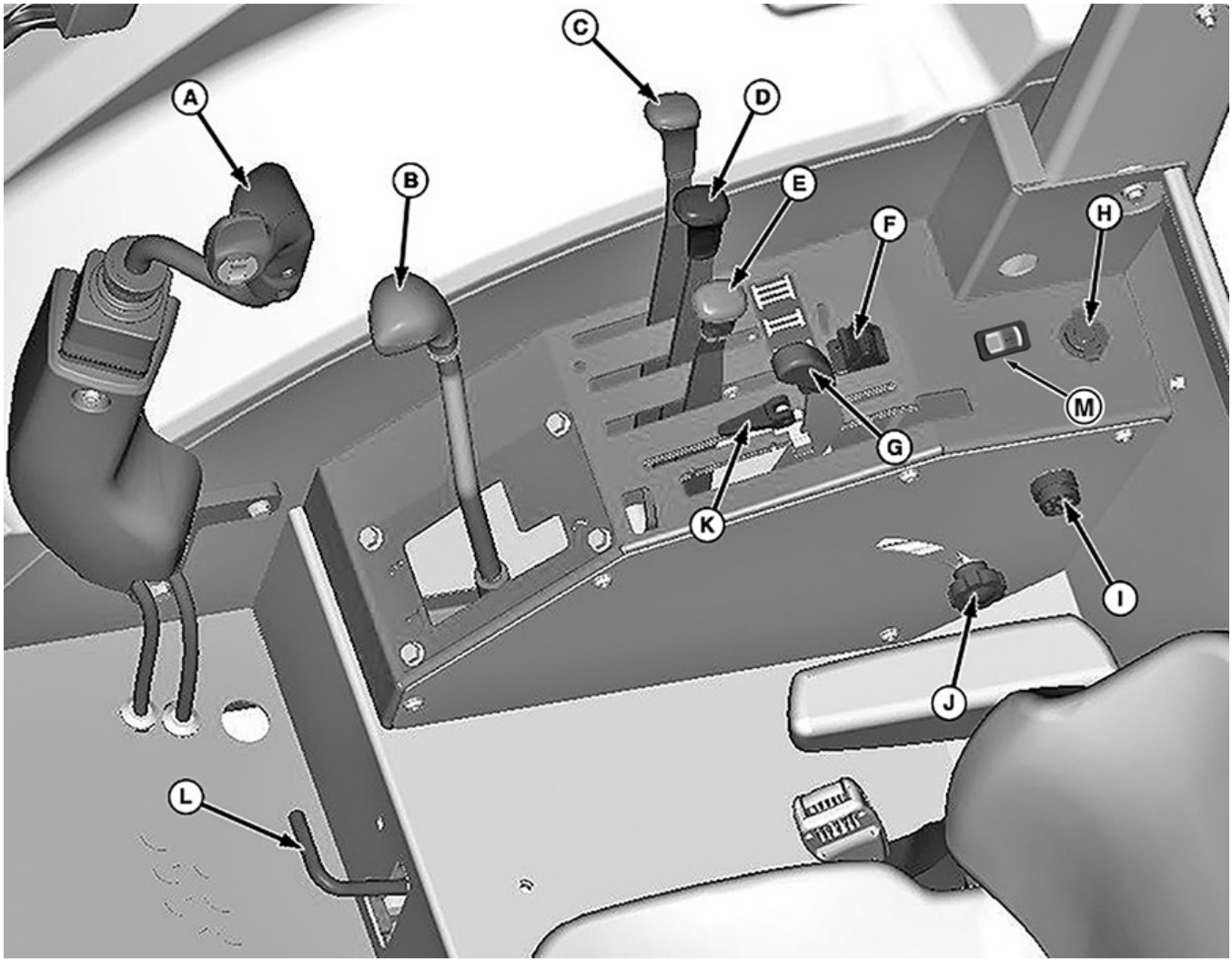
Cab

A—Clutch Pedal
B—Hand Brake
C—Brake Pedals
D—Foot Throttle

NOTE: Ensure hand brake (B) is released before driving away.

CP00834,0003789-19-15JAN18

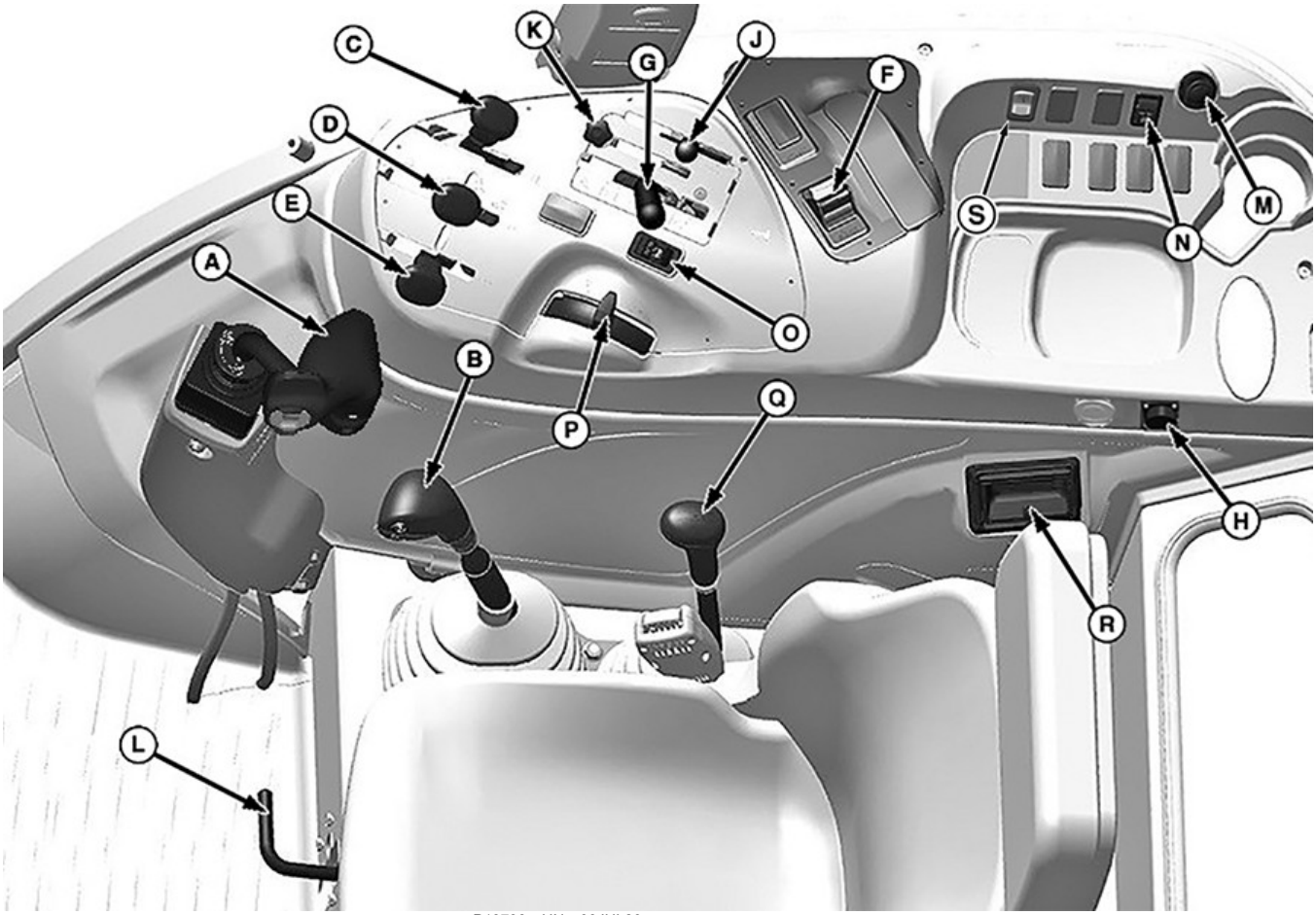
Right-Hand Console Controls



P18737—UN—03JUL20

OOS

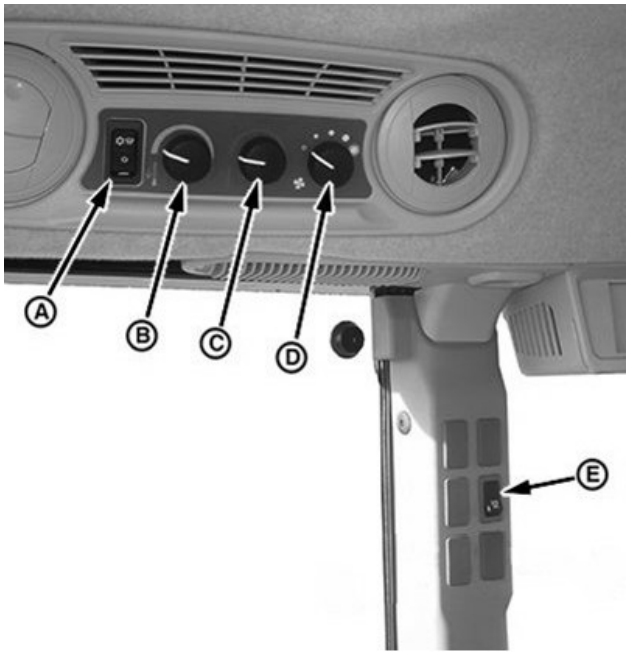
A—Multi-function lever
B—Gear Shift Lever
C—SCV III Control Lever
D—SCV II Control Lever
E—SCV I Control Lever
F—PTO Control Switch
G—Rockshaft Position Control Lever
H—12 V Accessory Electrical Outlet
I—Service Advisor Outlet
J—Rockshaft Draft Control Knob/Lever
K—Position Control Stop Knob
L—Differential Lock Pedal
M—Remote PTO switch



P18738—UN—03JUL20

Cab

A—Multi-function lever
B—Gear Shift Lever
C—SCV III Control Lever
D—SCV II Control Lever
E—SCV I Control Lever
F—PTO Control Switch
G—Rockshaft Position Control Lever
H—12 V Accessory Electrical Outlet
I—Service Advisor Outlet
J—Rockshaft Draft Control Knob/Lever
K—Position Control Stop Knob
L—Differential Lock Pedal
M—Cigarette Lighter (Cab only)
N—Rear Window Wiper/Washer Switch
O—Mechanical Front-Wheel Drive Switch
P—Hand Throttle
Q—Range Shift Lever
R—Ashtray (Cab only)
S—Remote PTO switch



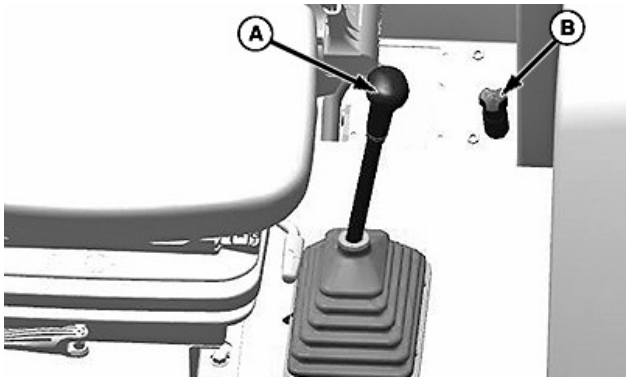
CPA0004630—UN—01DEC17

HVAC

A—Air Conditioning/Defrost Switch
B—Air Conditioning Temperature Control
C—Heater Temperature Control
D—Blower Speed Switch
E—Beacon Light Switch

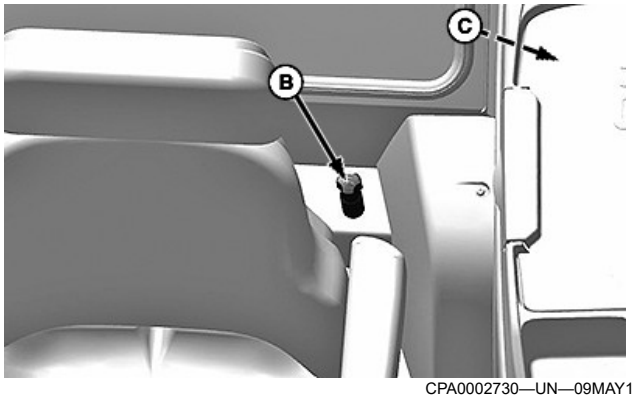
HL70592,0000BE2-19-03JUL20

Left-Hand Console Controls



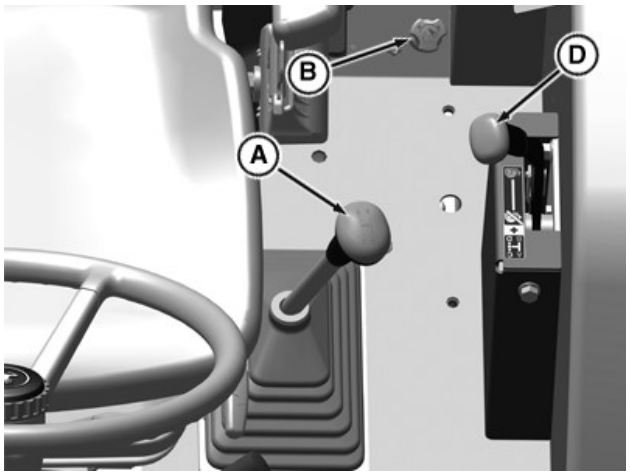
CPA0002729—UN—09MAY16

OOS



CPA0002730—UN—09MAY16

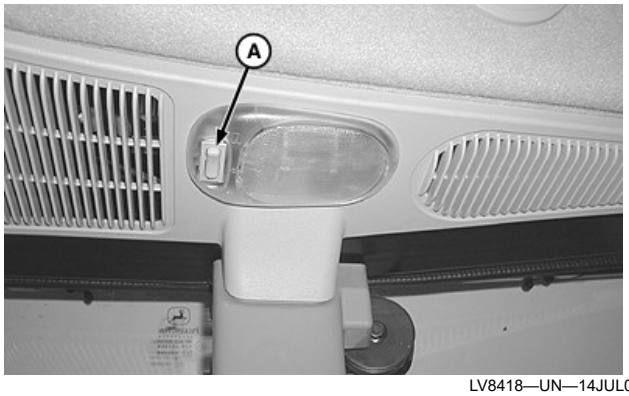
Cab



APY44702—UN—03MAY21

OOS with Creeper(if equipped) MY21

A—Range Shift Lever
B—Rockshaft Rate-of-Drop Knob
C—Service Advisor Outlet
D—Creeper Gear



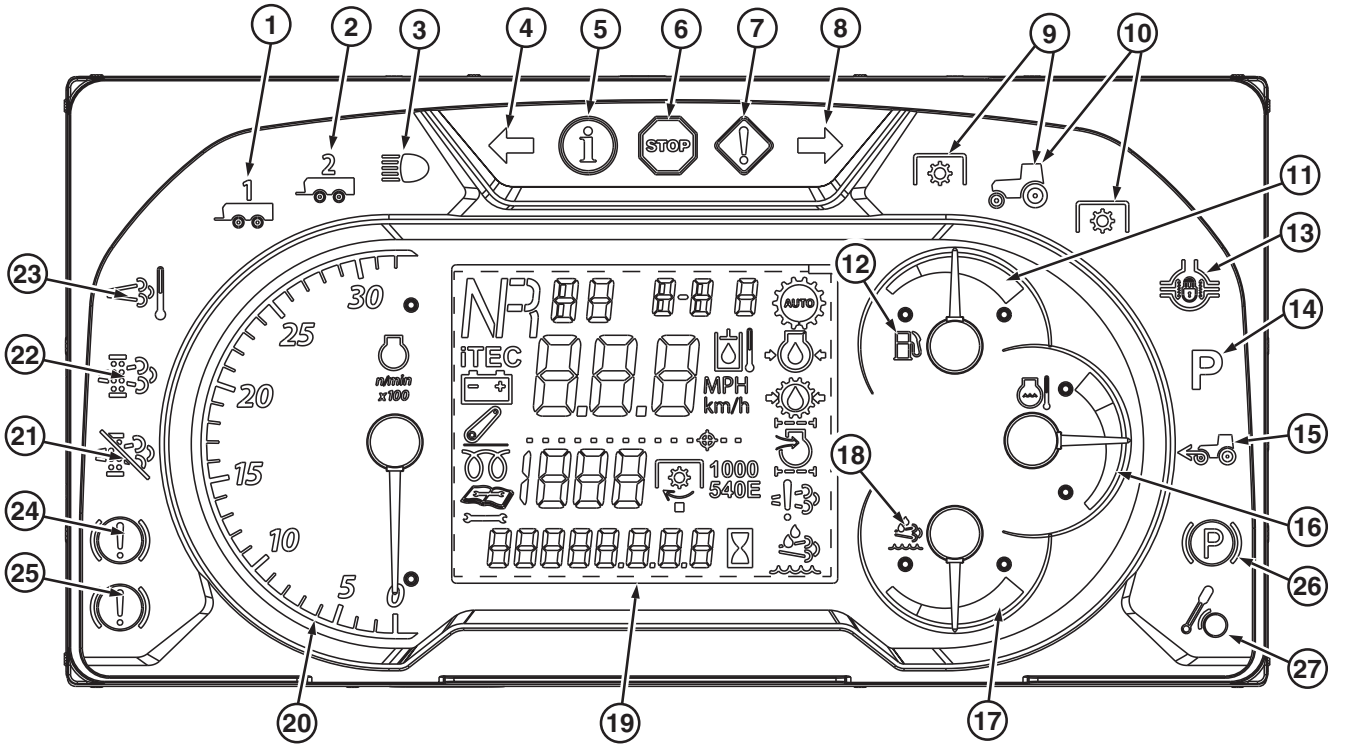
LV8418—UN—14JUL03

Cab

A—Dome Light Switch

GS38198,0000F88-19-03MAY21

Instrument Cluster and Information Display



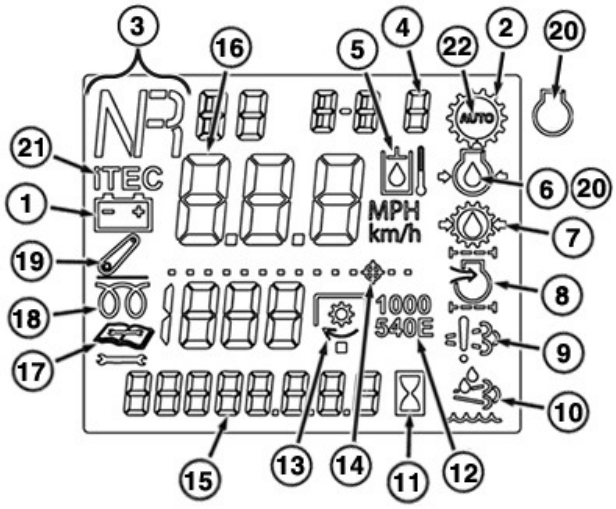
CPA0005272—UN—01MAR18

Instrument Cluster

Display Icon	Icon Name	Icon Description
1	**Trailer 1 Indicator**	Not used.
2	**Trailer 2 Indicator**	Not used.
3	**High Beam Indicator**	Illuminates when the headlights are switched to high beam.
4	**Left Turn Indicator**	Flashes when turn signal switch is switched to the left-hand side.
5	**Information Alert Indicator**	Illuminates when a Diagnostic Trouble Code (DTC) is present. If necessary, have your John Deere dealer diagnose vehicle.
6	**STOP Indicator**	Illuminates when a serious malfunction occurs. Shut off engine immediately and determine cause (review error message in Information Display). If necessary, have your John Deere dealer diagnose vehicle.
7	**Service Alert Indicator**	Illuminates when a malfunction occurs (review error message in Information Display). If necessary, have your John Deere dealer diagnose vehicle.
8	**Right Turn Indicator**	Flashes when turn signal switch is switched to the right-hand side.
9	**Front PTO Indicator**	Not used.
10	**Rear PTO Indicator**	Illuminates when rear PTO is activated (if equipped).
11	**Fuel Level Indicator Gauge**	Indicates amount of fuel remaining in tank.
12	**Low Fuel Indictor**	Illuminates when fuel level indicator moves into the red zone.
13	**Differential Lock Indicator**	Not used.
14	**Park Indicator**	Not used.
15	**MFWD Engaged Indicator**	Illuminates when mechanical front-wheel drive is engaged.
16	**Engine Coolant Temperature Gauge**	Indicates engine coolant temperature. Red area indicates overheat (coolant level too low, dirty radiator, or clogged screen). Shut off engine immediately to prevent damage. If necessary, have your John Deere dealer diagnose vehicle.
17	**Diesel Exhaust Fluid (DEF) Level Indicator Gauge**	Indicates amount of diesel exhaust fluid (DEF) remaining in tank.

Display Icon	Icon Name	Icon Description
18	**Low Diesel Exhaust Fluid (DEF) Indicator**	Illuminates when DEF level indicator moves into the red zone. Icon flashes if DEF level falls below “low” indicating level.
19	**Information Display**	Displays various vehicle information outputs.
20	**Tachometer**	Indicates engine speed, revolutions per minute (rpm).
21	**Auto Cleaning Disabled Indicator**	Illuminates when operator has engaged the disable auto exhaust filter cleaning function.
22	**Exhaust Filter Indicator**	Illuminates when exhaust filter cleaning is in progress, aftertreatment system has a fault, or exhaust filter is in need of cleaning.
23	**Engine Emissions Temperature Indicator**	Illuminates when exhaust gas temperature is high, elevated idle is active, or exhaust filter cleaning is in progress.
24	**Brake System Warning Indicator**	Not used.
25	**Brake System Stop Indicator**	Not used.
26	**Park Brake Indicator**	Illuminates when the park brake lever has been placed.
27	**Secondary Brake Indicator**	Not Used

Information Display



RXA0158298—UN—16MAR17

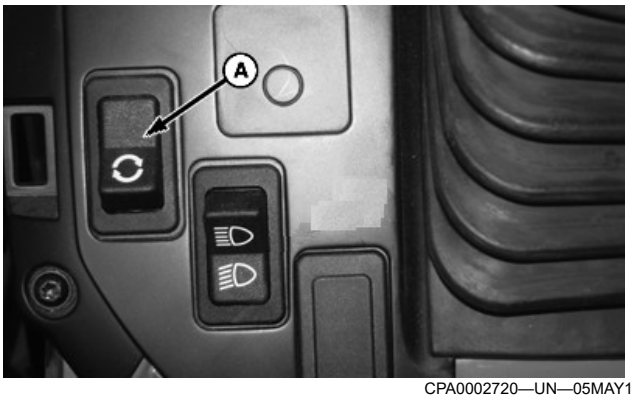
Information Display

Display Icon	Icon Name	Icon Description
1	**Charging System Indicator**	Illuminates when charging system malfunction occurs. If necessary, have your John Deere dealer diagnose vehicle.
2	**Transmission Indicator**	Illuminates when transmission DTC is active. If necessary, have your John Deere dealer diagnose vehicle.
3	**F—N—R Indicator**	Illuminates to indicate transmission position. **F = Forward** **N = Neutral** **R = Reverse**
4	**High-Low Indicator**	Indicates **H** (high) or **L** (low) (if equipped).
5	**Hydraulic Oil Temperature**	Illuminates when hydraulic oil overheats. If necessary, have your John Deere dealer diagnose vehicle.
6	**Engine Oil Filter Pressure**	Entire icon illuminates to indicate abnormal oil filter pressure. If necessary, have your John Deere dealer diagnose vehicle.
7	**Transmission Oil Pressure Indicator**	Illuminates to indicate abnormal transmission oil pressure. If necessary, have your John Deere dealer diagnose vehicle.
8	**Engine Intake-Combustion Air Filter Indicator**	Illuminates when air cleaner element is clogged (clean or replace element). If necessary, have your John Deere dealer diagnose vehicle.
9	**Engine Emission Systems Malfunction Indicator**	Illuminates when there is a malfunction or failure to the emissions system. If necessary, have your John Deere dealer diagnose vehicle.

Display Icon	Icon Name	Icon Description
10	**Diesel Exhaust Fluid (DEF) Indicator**	Illuminates when DEF is low.
11	**Engine Hours Indicator**	Illuminates when display is indicating engine hours.
12	**PTO Speed Indicator**	Indicates what mode PTO is in (540, 1000 rpm).
13	**PTO Engaged Indicator**	Illuminates when rear PTO is engaged.
14	**PTO Target Speed Indicator**	Illuminates when set PTO target speed has been achieved.
15	**Vehicle Information Display**	Displays engine hours, diagnostic trouble codes, and regeneration status.
16	**Vehicle Speed Display**	Displays current vehicle speed.
17	**Diagnostic Code Display**	Illuminates when active diagnostic trouble codes are being displayed.
18	**Cold Start Status**	Illuminates when air intake heater is energized. When illuminated, remaining starting aid time shows at vehicle speed display.
19	**Rear Hitch Indicator**	Illuminates when rear hitch malfunction occurs. If necessary, have your John Deere dealer diagnose vehicle.
20	**Engine Malfunction Indicator**	Only engine portion of icon (6) illuminates to indicate engine malfunction. To prevent damage, shut off engine immediately. If necessary, have your John Deere dealer diagnose vehicle.
21	**ITEC Indicator**	Not Used
22	**AUTO Mode Indicator**	Not Used

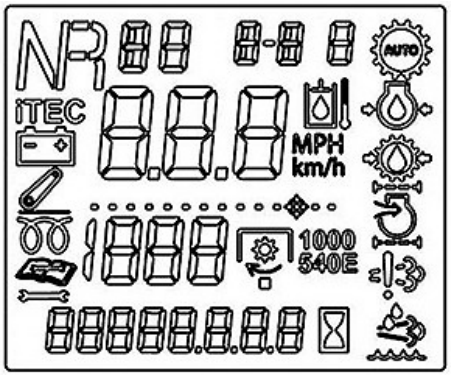
CP00834,0003932-19-01MAR18

Information Display (Roll Mode Switch)



CPA0002720—UN—05MAY16

Roll Mode Switch



CPA0004739—UN—06DEC17

(B)

A—Roll Mode Switch
B—Information Display

Roll mode switch (A) is used to gain access to diagnostic mode of information display (B).

The diagnostic mode has two levels of access: **Customer** and **Technician**.

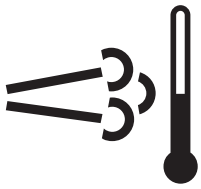
- **Customer access**— Press and hold roll mode switch for 5 seconds to begin diagnostic session. This action allows access to see the diagnostic trouble codes and a limited number of diagnostic addresses at the information display (B).

GS38198,0000F9A-19-26MAY21

Aftertreatment Indicators Overview

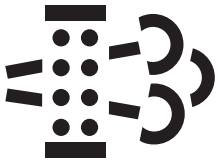
RG22487—UN—21AUG13

Diesel Exhaust Fluid Indicator



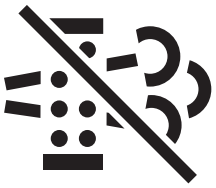
RG22488—UN—21AUG13

Engine Emissions Temperature Indicator



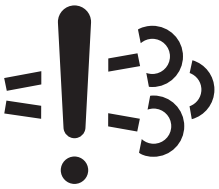
RG22489—UN—21AUG13

Exhaust Filter Indicator



RG22490—UN—21AUG13

Auto Cleaning Disabled Indicator



RG22491—UN—21AUG13

Engine Emissions System Malfunction Indicator

RG22492—UN—21AUG13

Warning Indicator

RG22493—UN—21AUG13

Engine Stop Indicator

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

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

The Diesel Exhaust Fluid (DEF) indicator illuminates when the DEF is low. Fill DEF tank.

When the DEF indicator is combined with the warning indicator or engine stop indicator engine performance is reduced by the Engine Control Unit (ECU) because the DEF is below a measurable level. Fill DEF tank.

When engine emissions temperature indicator illuminates exhaust gas temperature is high, elevated idle is active, or 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 engine emissions temperature indicator is combined with the warning indicator or engine stop indicator engine performance is reduced by the ECU because the exhaust gas temperature is higher than expected. Follow Diagnostic Trouble Code (DTC) procedure or see your authorized servicing dealer.

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.

When the exhaust filter indicator is combined with the warning indicator engine performance is reduced by the ECU because there is an aftertreatment system fault or the soot level of the exhaust filter is moderately high. If conditions are safe, the operator should enable the auto exhaust filter clean function. If conditions are not safe, the operator should move the machine to a safe location and engage the auto exhaust filter cleaning mode. Perform manual service regeneration or follow DTC procedure.

When the exhaust filter indicator is combined with the engine stop indicator engine performance is further reduced by the ECU because there is an aftertreatment system fault or the soot level of the exhaust filter is extremely high. If this combination is present, see your authorized servicing dealer.

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.

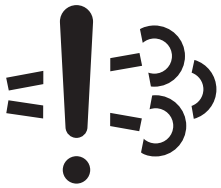
When the engine emissions system malfunction indicator is combined with the warning indicator engine performance is reduced by the ECU because the engine

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

DX,AFTRTREAT,INDCATRS-19-12FEB18

Required Machine Stop Warning

Machine Stop Mandate Occurs



RG22491—UN—21AUG13

IMPORTANT: In some situations, machine engine power may be reduced as described. On notification, immediately place the machine in a safe state and or move it to a safe location. A mandated machine stop can only be removed by a service technician.

Engine Emissions System Malfunction Indicator illuminates when an emission-related fault occurs.

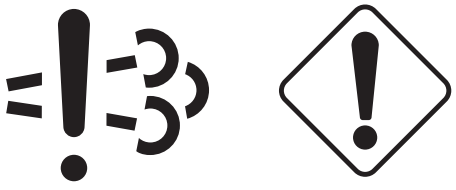
RG22492—UN—21AUG13

Warning Indicator illuminates when a condition exists which requires operator action.

RG22493—UN—21AUG13

Engine Stop Indicator illuminates when a condition exists which requires immediate operator action and service.

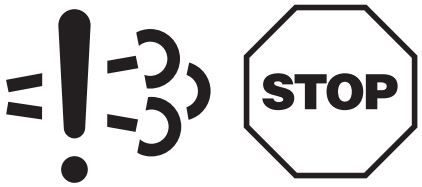
Emission System Fault Has Occurred



RG26361—UN—04SEP14

30 minutes remaining, Engine Emissions System Malfunction and Warning Indicators are illuminated and alarm sounds to warn operator of emissions-related fault. “Less than 30 minutes to Power Restriction” displayed on machines with display.

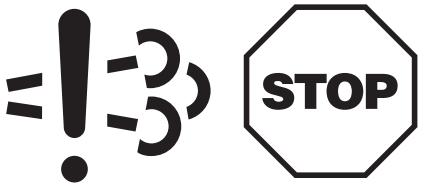
- Engine power is normal.
- Machine operation is normal.
- Place machine in a safe state.
- Contact service provider.



RG26972—UN—26MAR15

20 minutes remaining, Engine Emissions System Malfunction and Engine Stop Indicators are illuminated and alarm sounds to warn operator of emissions-related fault. “Less than 20 minutes to Power Restriction” displayed on machines with displays.

- Engine power and torque are reduced.
- Key Off - Key On will temporarily provide full power.
- Place machine in a safe state.
- Contact service provider.



RG26972—UN—26MAR15

2 minutes or less remaining, Engine Emissions System Malfunction and Engine Stop Indicators are illuminated and alarm sounds to warn operator of emissions-related fault which has not been corrected. “Power Restriction” displayed on machines with displays.

- Engine power is idle only.
- Place machine in a safe state.
- Contact service provider.

DX,MACHSTOPWARN,AG-19-02OCT15

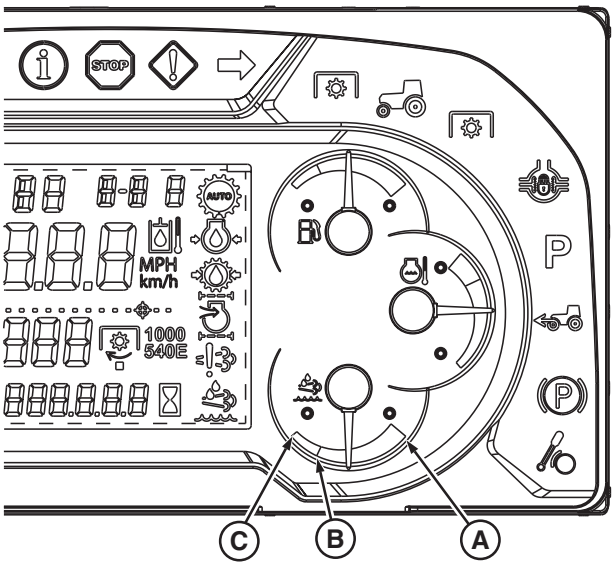
DEF (Diesel Exhaust Fluid) Level Gauge

IMPORTANT: It is unlawful to tamper with or remove any component of the aftertreatment system. It is also unlawful to use Diesel Exhaust Fluid (DEF) that does not meet the specifications provided.

IMPORTANT: Using incorrect or unapproved replacement parts increases risk of damage to vehicle aftertreatment system and impairs its proper functioning. When repairing the exhaust system, never interchange aftertreatment components between Interim Tier 4-Stage III B and Final Tier 4-Stage IV equipped vehicles.

NOTE: If SCR system detects a fluid other than DEF at correct urea concentration, system displays a diagnostic trouble code and 4 hour internal counter starts. After 4 hours, engine power and speed are derated.

Selective Catalytic Reduction (SCR) exhaust aftertreatment process is a system that uses DEF (Diesel Exhaust Fluid) and other components in the exhaust cleaning system to reduce exhaust emissions. Tractor electronic systems monitor DEF level to assure proper performance. Indicator lights and diagnostic trouble codes inform the operator when DEF level becomes critical. To maintain unrestricted tractor performance, fill up the DEF tank every time the tractor is refueled. See Fill Diesel Exhaust Fluid (DEF) Tank in Air Intake, Fuel, Coolant, and Exhaust Operation section.



CPA0005002—UN—28FEB18

DEF Level Gauge

A—Normal DEF Level
B—Red Zone DEF Level
C—Zero DEF Level
D—DEF Symbol

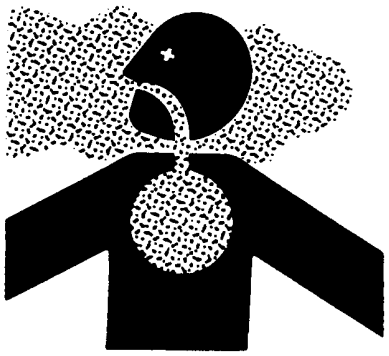
- ***Normal DEF Level:*** When DEF level is within this range (A), DEF symbol (D) illuminates, white, and tractor operates normally. Always keep level within this range for uninterrupted performance.
- ***Red Zone DEF Level:*** When DEF level drops into the “Red Zone” (B), DEF symbol illuminates, amber. Tractor operation is not affected, but DEF tank must be refilled.
- ***Low DEF Level:*** When DEF level approaches zero (C), DEF symbol flashes, engine power is reduced. The DEF tank must be refilled to return to normal tractor operation.
- ***DEF at Low Temperatures:*** DEF freezes at -11°C (12°F) and flow to the SCR system stops. Tractor system senses low temperature and allows engine to start, even with no DEF flow. Engine coolant is used to thaw fluid in DEF tank when engine is running. If system senses that DEF has thawed and SCR system is operating normally within 40 minutes, tractor is allowed to continue normal operation. If DEF flow is not sensed in 40 minutes, a diagnostic trouble code is displayed and a 4-hour internal counter starts. After 4 hours, engine power and speed are derated.

NOTE: The quality of the DEF is not degraded by freezing and thawing.

CP00834,0003790-19-16MAR18

Engine Operation

Before Starting the Engine

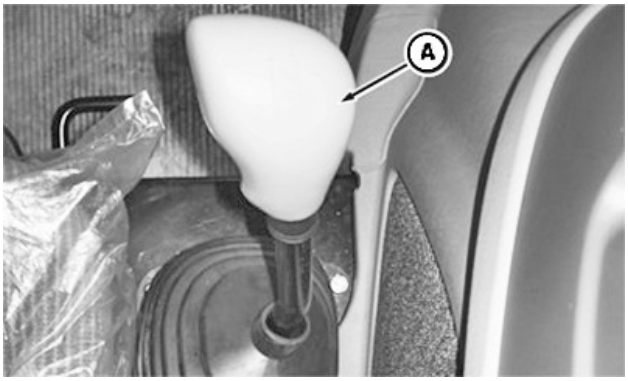


TS220—UN—15APR13

Engine Exhaust Fumes

CAUTION: Prevent asphyxiation by providing adequate ventilation. If operating indoors, use an exhaust pipe extension to remove the exhaust fumes, or open doors and windows to ventilate the area thoroughly.

1. Check fuel gauge.



CPA0004622—UN—03DEC17

Gear shift Lever, Cab

A—Gear shift Lever

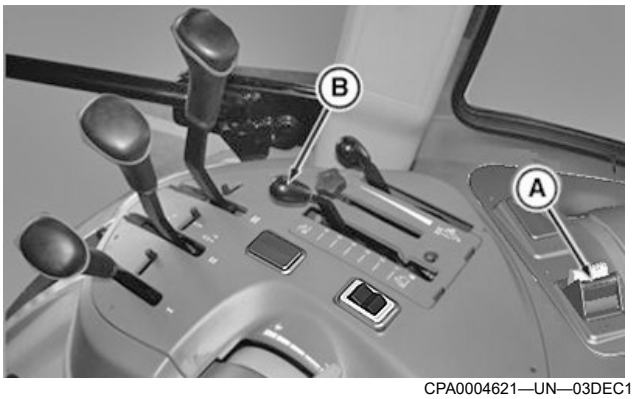
2. Transmission Controls: Put gear shift lever (A) in NEUTRAL.

CPA0004623—UN—03DEC17

PowrReverser™ Lever, Cab

A—PowrReverser™ Lever

3. PR: Put PowrReverser™ lever (A) in NEUTRAL.



CPA0004621—UN—03DEC17

PTO Switch and Hitch Control Lever, Cab

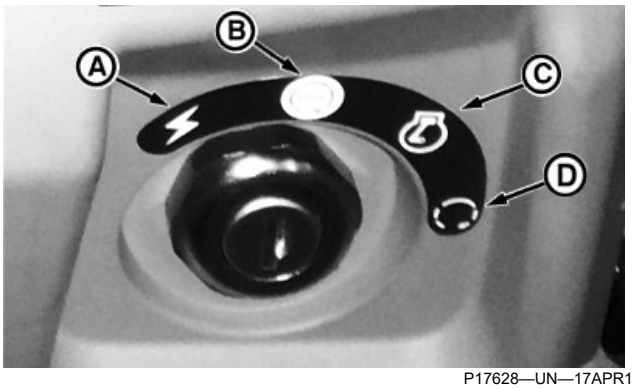
A—PTO Switch
B—Hitch Control Lever

4. PTO: Pull PTO switch (A) rearward to disengaged position.
5. Rockshaft: Push hitch control lever (B) forward.
6. Turn key to RUN position.
   - All indicator bulbs light momentarily.
   - Check fuel level gauge to be sure that tractor has plenty of fuel.
   - Charging system (battery) and Neutral (N) indicators stay on.
   - Numbers display in hour meter window.
   - An audible “beep” sounds briefly.

   If any indicator does not function properly, see your John Deere dealer.

HL70592,0000839-19-16MAR18

Operate Key Switch



P17628—UN—17APR15

Key Switch

A—Accessory Position
B—STOP Position
C—RUN Position
D—START Position

Accessory Position (A)—Push in and turn key to ACCESSORY position to power electrical functions.

STOP Position (B)—Turn key to STOP position to turn off electrical accessories and to shut down engine.

RUN Position (C)—Turn key to RUN position and check gauges and indicator light before advancing to START position. If temperature is below 5°C (41°F), refer to Cold Weather Start in this section.

START Position (D)—Turn key to START position to crank and start engine. Key returns to RUN position when released.

HL70592,000083A-19-16MAR18

Start the Engine

TS177—UN—11JAN89

Machine Runaway

⚠ CAUTION: Never start engine while standing on ground. Do not start engine by shorting across starter terminals. Machine will start in gear and move if normal circuitry is bypassed.

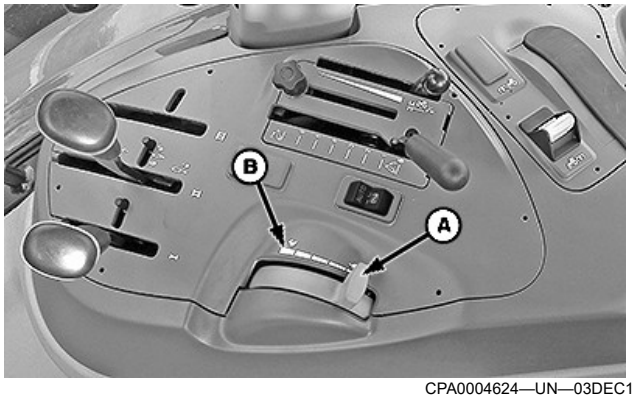
IMPORTANT: Do not run a cold engine at full throttle. Idle engine at 1200 rpm until it warms to operating temperature.

Do not use starting fluid.

NOTE: For temperature ranging 0°—30°C, run engine between 900 rpm and 1000 rpm.

Temperature Below 0°C (32°F)	Temperature Above 30°C (89.6°F)
1000 rpm	900 rpm

1. Start from operator's seat with gear shift lever or PowrReverser™ lever in NEUTRAL.
2. Make sure that PTO switch is in disengaged position.



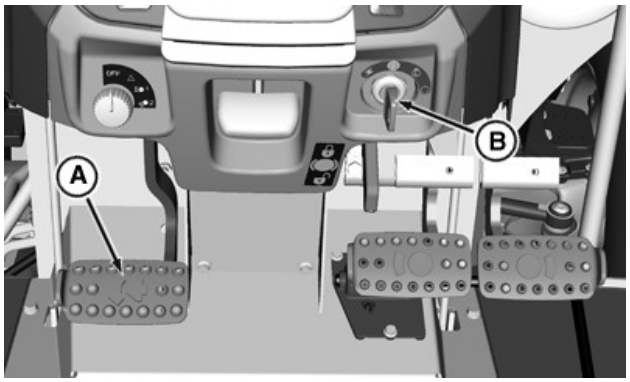
CPA0004624—UN—03DEC17

Cab

A—Hand Throttle
B—Fast/Slow Indicator

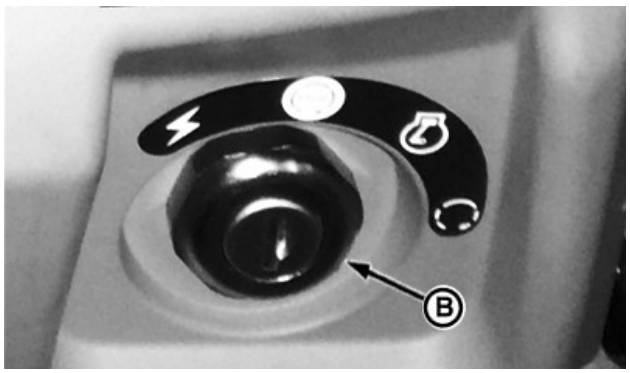
3. Push hand throttle (A) forward, approximately 1/3 of full throttle, as shown on the fast/slow indicator (B). Engine may not start with throttle pulled completely down.

IMPORTANT: Do not operate starter more than 20 seconds at a time. If engine does not start, wait at least 2 minutes for the starter motor to cool before trying again.



PY15540—UN—13AUG12

Cab



P17629—UN—17APR15

Key Switch

A—Clutch Pedal
B—Key Switch

4. Turn key switch (B) to START position. Release key when engine starts. If the key is released before engine starts, wait until starter and engine stop turning before trying again.
5. Warm up tractor carefully. Charging and oil pressure warning indicators should go off and stay off. Coolant temperature gauge should begin to move into normal range.
6. Avoid unnecessary engine idling.

IMPORTANT:

1. **After starting engine, operate engine at approximately 1200 rpm (no load) for 1—2 minutes. If temperature is below freezing point, operate engine for 2—4 minutes (no load).**
2. **Start engine immediately if stalled while working to provide turbocharger lubrication.**
3. **Before stopping warm engine, idle several minutes under 1000 rpm to cool turbocharger turbine.**
4. **For starting after prolonged storage periods, see Remove Tractor from Storage in the Transport and Storage section of this Operator's Manual.**

HL70592,000083B-19-16MAR18

Cold Weather Start

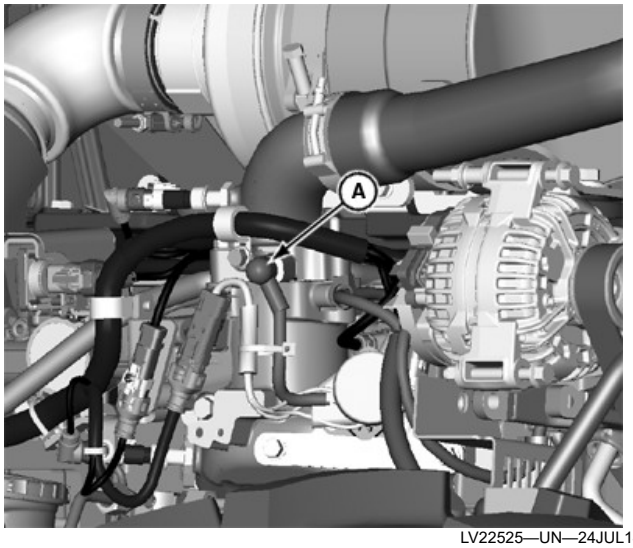
CAUTION: Do not use starting fluid on engines equipped with glow plugs or air intake heaters. Ether injector starting fluid is highly flammable and may explode, causing serious injury.

DO not use starting fluid near fire, sparks, or flames.

DO not incinerate or puncture a starting fluid container.

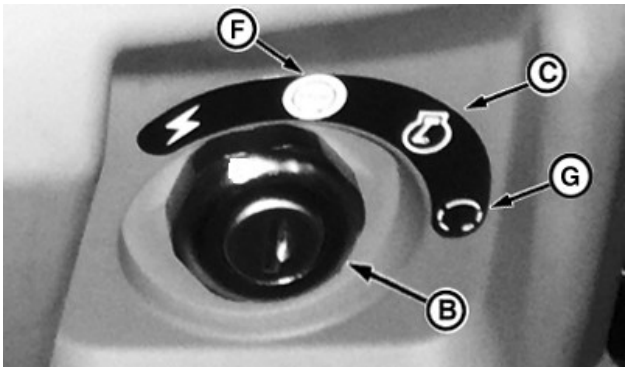
NOTE: Hydraulic and steering functions slow until hydraulic oil warms up to operating temperature. If hydraulic functions operate slowly, warm the transmission-hydraulic system oil. (Refer to Hydraulics Operation section.)

Air intake heater is standard equipment on 6105E and 6120E Tractors. Glow plugs are standard equipment on 6135E Tractor.



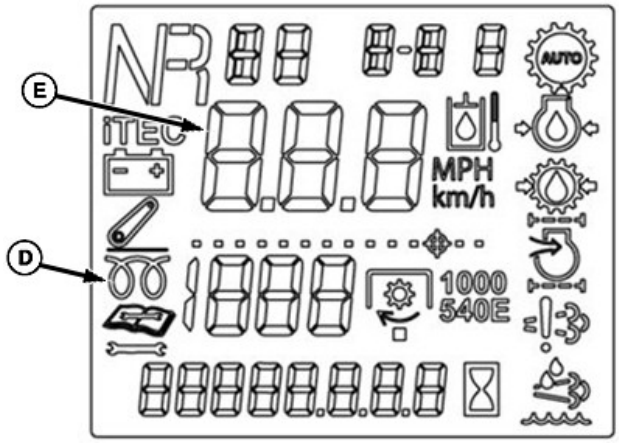
LV22525—UN—24JUL14

Air Intake Heater



P17630—UN—17APR15

Key Switch



CPA0004566—UN—23NOV17

Cold Start Indicator Icon

A—Air Intake Heater
B—Key Switch
C—RUN Position
D—Cold Start Indicator Icon
E—Vehicle Speed Icon
F—STOP Position
G—START Position

An air intake heater (A) is standard equipment to aid in cold weather starting conditions. Glow Plugs are offered

as optional equipment. To activate cold weather starting device:

1. Turn key switch (B) to RUN position (C).

   If system determines air intake heater/glow plug is required, the cold start indicator icon (D) on instrument display illuminates. A cold start countdown begins, in seconds, utilizing the vehicle speed icon (E) on instrument display. When cold start countdown reaches zero, cold start indicator icon turns off.

NOTE: If operator begins cranking engine before cold start indicator icon turns off, system de-energizes the air intake heater/glow plug. Key switch must be turned to the STOP position (F) then back to RUN position to cycle through and energize air intake heater/glow plug again.

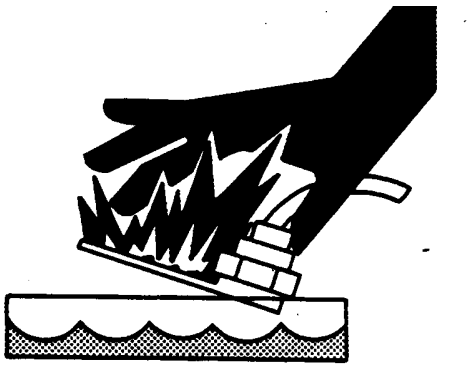
2. Depress clutch pedal and turn key to START position (G).
3. Idle engine until it warms to operating temperature.

NOTE: For temperature ranging 0°C (32°F)—30°C (86° F), run engine between 900 rpm and 1000 rpm.

NOTE: If hydraulic functions operate slowly, warm the transmission-hydraulic system oil. (Refer to Warm Transmission-Hydraulic System Oil in Hydraulics Operation section.)

HL70592,000083C-19-16MAR18

Engine Coolant Heater



TS210—UN—23AUG88

Safety—Coolant Heater

CAUTION: To avoid shock or hazardous operation, always use a three-wire heavy-duty electrical cord (minimum gauge 10 AWG and no longer than 7.6 m [25 ft]) equipped with three connectors. If a two-to-three contact adapter is used at the wall receptacle, connect green wire to a good ground.

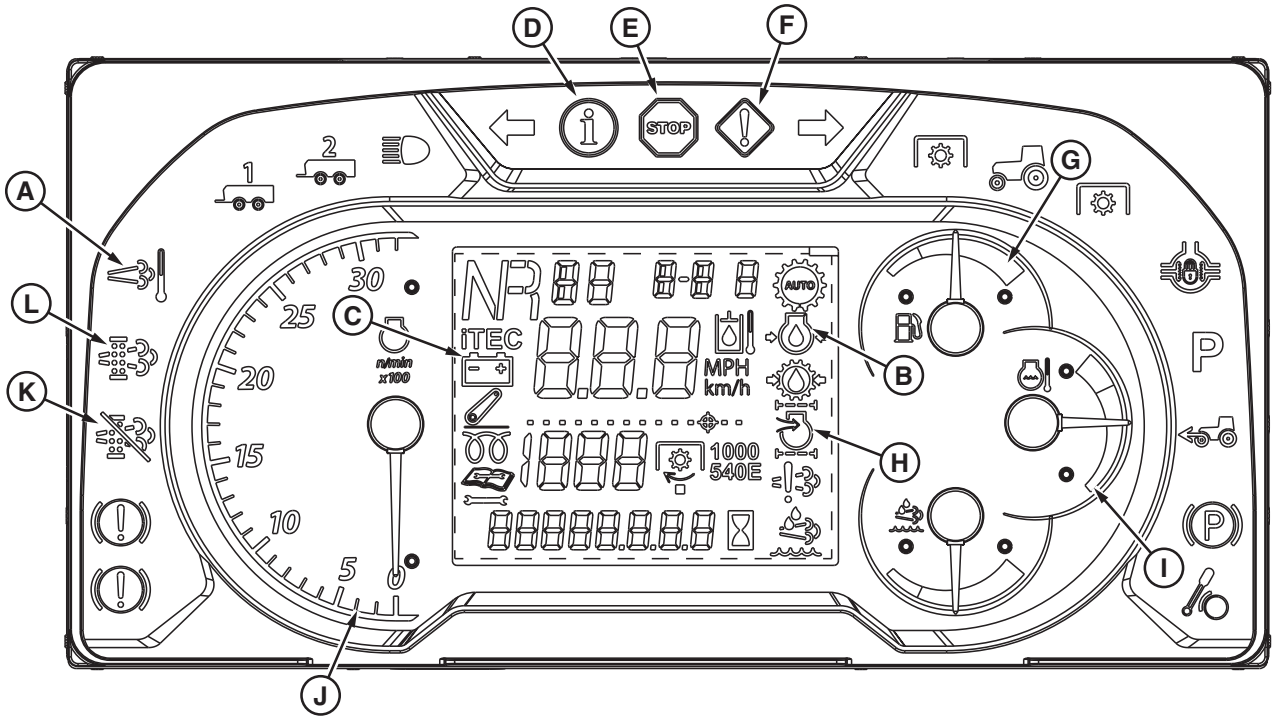
Immerse element in coolant before connecting heater to power source. Never energize heater in air.

Located on side of the engine, the 110 V coolant heater warms the engine coolant, reduces oil drag, eases starting, and shortens warm-up time.

Connect heater plug to a ground fault protected 110 V electrical outlet.

HL70592,000083D-19-16MAR18

Check Engine Indicators and Gauges



CPA0005317—UN—07MAR18

Cluster

A—Exhaust Emissions Temperature Indicator
B—Engine Oil Filter Pressure Indicator
C—Charging System Indicator
D—Information Alert Indicator
E—Stop Indicator
F—Service Alert Indicator
G—Fuel Level Indicator Gauge
H—Engine Air Filter Indicator
I—Engine Coolant Temperature Gauge
J—Tachometer
K—Auto Cleaning Disabled Indicator
L—Exhaust Filter Indicator

IMPORTANT: If engine coolant temperature gauge (I) indicates hot, stop engine and determine the cause.

If engine oil filter pressure indicator (B) or charging system indicator (C) fail to go out, stop engine and determine the cause.

Exhaust Emissions Temperature Indicator (A)

If exhaust emissions temperature indicator remains illuminated, the presence of high temperatures inside the exhaust filter exist, which allow active filter cleaning to occur.

Engine Oil Filter Pressure Indicator (B)

IMPORTANT: Never operate engine without sufficient oil pressure. If engine oil filter pressure indicator stays illuminated for longer than 5 seconds, under normal operating conditions, stop engine and check for cause.

Engine oil filter pressure indicator stays illuminated when abnormal oil pressure is present.

If engine oil filter pressure indicator remains illuminated after starting engine, stop engine immediately.

Check engine oil level. If low oil level is not the problem, see your John Deere dealer.

Charging System Indicator (C)

If charging system indicator remains illuminated for longer than 5 seconds after engine is started, stop engine immediately.

Check battery connections. Check fan belt tension.

Information Alert Indicator (D)

Information alert indicator illumination and alarm signals represent an informational warning. Attention or operational adjustment is required to solve issues and prevent SERVICE or STOP situations.

If necessary, have your John Deere dealer diagnose vehicle.

STOP Indicator (E)

NOTE: Correct problems before restarting.

STOP indicator illumination and alarm signals represent

urgent warning. Immediate attention or service is required in order to prevent serious malfunction or damage.

Immediately stop operations, reduce engine to idle, then shut off engine.

Service Alert Indicator (F)

NOTE: Correct problems before restarting.

Service alert indictor illumination and alarm signals represent a performance warning. Immediate attention or operation is required to prevent limited performance or damage and escalation to a STOP condition.

If necessary, have your John Deere dealer diagnose the vehicle.

Fuel Level Indicator Gauge (G)

Fuel fill icon illuminates, amber, when fuel level is low.

Refuel before fuel level indicator gauge needle reaches empty.

Check fuel lines and fuel filters. If tractor is allowed to run until tank is empty, bleed air out of fuel system.

Engine Air Filter Indicator (H)

If engine air filter indicator illuminates while engine is running, stop engine immediately.

Clean out plugged air cleaner.

Engine Coolant Temperature Gauge (I)

If engine coolant temperature gauge needle reaches red zone, stop engine immediately.

Check level of coolant in recovery tank and radiator when engine cools. Also check grille, radiator, and radiator screen for debris. Check fan belt tension.

Tachometer (J)

Engine revolutions per minute (rpm) are represented in hundreds.

Auto Cleaning Disabled Indicator (K)

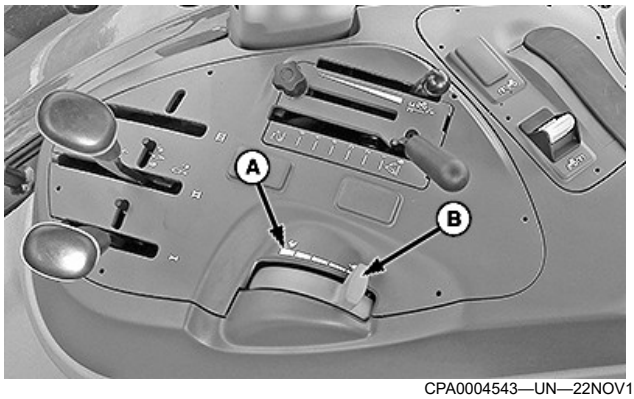
If auto cleaning disabled indicator remains illuminated, the exhaust filter cleaning switch has been disabled.

Exhaust Filter Indicator (L)

If exhaust filter indicator remains illuminated, the exhaust filter needs cleaning.

HL70592,000083E-19-16MAR18

Change Engine Speeds

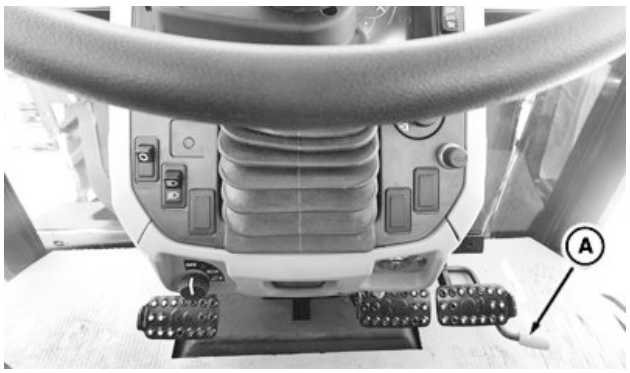


CPA0004543—UN—22NOV17

Cab

A—Fast/Slow Indicator
B—Hand Throttle

To increase or decrease engine speed, use hand throttle (B). Engine will maintain set speed until hand throttle is moved again. Maximum speed is attained with lever all the way up and minimum speed with lever all the way down, as indicated by the fast/slow indicator (A) on instrument panel.



CPA0004689—UN—05DEC17

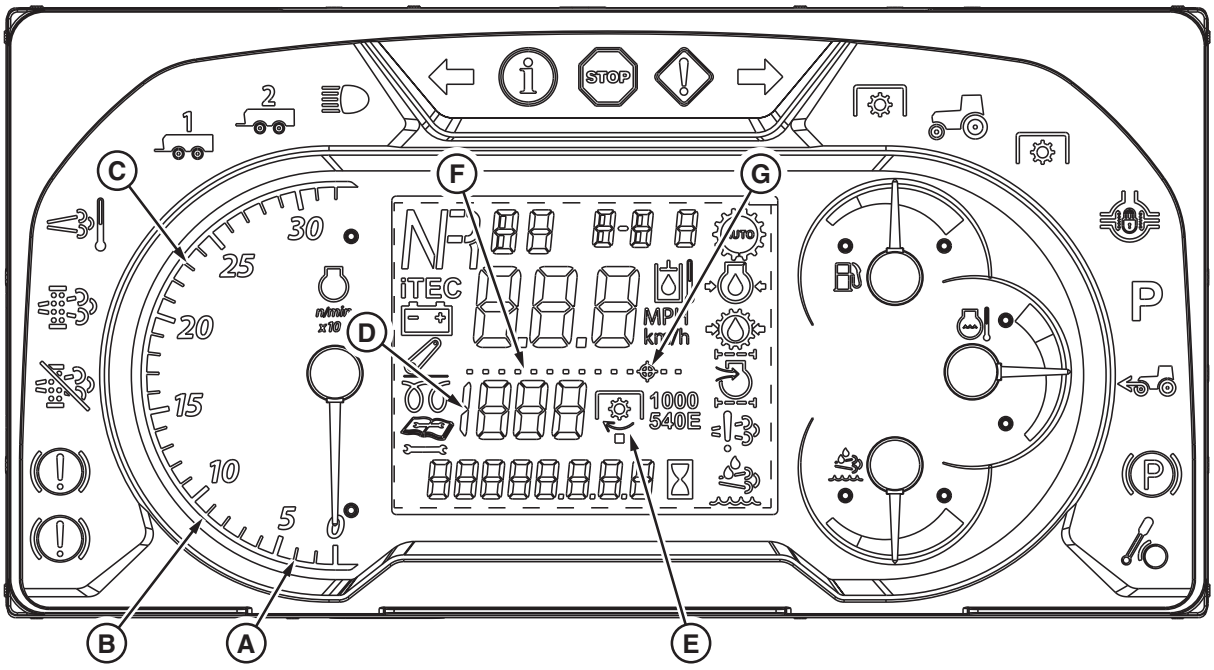
Cab

A—Foot Throttle

To temporarily increase engine speed, use foot throttle (A). Engine speed will return to prior speed as soon as foot throttle is released.

HL70592,000083F-19-16MAR18

Recommended Engine Speeds and Operational Procedures



CPA0005318—UN—07MAR18

Instrument Cluster

A—Tachometer
B—Low Idle Speed
C—High Idle Speed
D—PTO Speed
E—PTO Status
F—Bar Graph
G—Target Indicator

Warm Up Engine

Do not place tractor under full load until it is properly warmed up.

1. Run engine with tachometer (A) reading 1200—1500 rpm for several minutes.
2. Run engine at about 1900 rpm and under light load until engine reaches normal operating condition.

NOTE: If engine is hard to start during cold weather, operate cold weather start aid, if equipped. (Refer to Cold Weather Start in this section.)

NOTE: If hydraulic functions operate slowly, warm the transmission-hydraulic system oil. (Refer to Warm Transmission-Hydraulic System Oil in Hydraulics Operation section.)

Avoid Idling Engine

Allowing engine to idle at low rpm uses fuel inefficiently and can cause a buildup of carbon in the engine.

If tractor must be left with the engine running more than 3 or 4 minutes, minimum engine speed should be 1200 rpm.

Observe Engine Work and Idle Speeds

1. Low idle speed (B):
   - 900 ± 25 rpm
2. High idle speed (C), at light or no load:
   - 2300 ± 25 rpm
3. Engine nominal full load speed is 1600—2300 rpm.

PTO Speeds

PTO speed (D) and PTO status (E) will be indicated along with bar graph progress when PTO is engaged.

PTO mode value is displayed according to PTO speed selected (540 or 1000).

PTO speed progress is shown on bar graph (F). When target speed is reached, target indicator (G) illuminates.

Restart Stalled Engine

If engine stops running due to an overload, immediately restart engine. A running engine causes oil and coolant to circulate, which prevents abnormal heat buildup. If engine stalls but does not stop running due to overload, run at low idle for 1 or 2 minutes in order to dissipate heat buildup.

HL70592,0000838-19-16MAR18

Stop the Engine

IMPORTANT: Certain engine parts are cooled by engine oil. Stopping a hot engine could cause damage by overheating or lack of lubrication. Before stopping engine that has been operating at working load, idle engine at least 1 or 2 minutes at 1000—1200 rpm to cool hot engine parts. If an Exhaust Filter Cleaning has just been performed, increase engine idle time to 4 minutes.

If service work is going to be performed on the Exhaust Filter, increase engine idle time to 10 minutes.

CPA0004625—UN—03DEC17

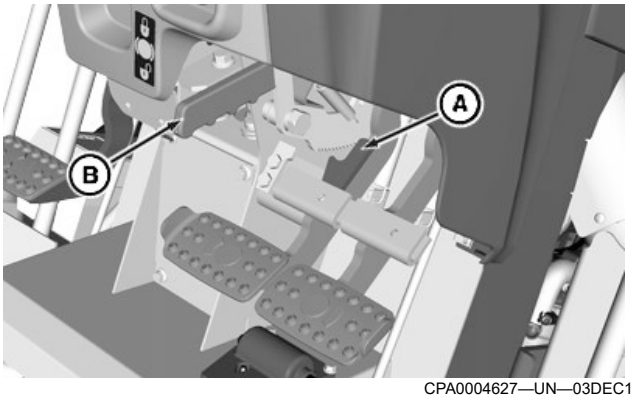
Cab

CPA0004626—UN—03DEC17

Cab

A—Hand Throttle
B—Gear shift Lever
C—PowrReverser™ Lever

1. Pull hand throttle (A) down to low idle position.
2. Put gear shift lever (B) or PowrReverser™ lever (C) in NEUTRAL.



CPA0004627—UN—03DEC17

Brakes

A—Brake Pedals Locking Bar
B—Handbrake Lever

3. Lock brake pedals together using brake pedals locking bar (A).
4. Push brake pedals down and pull up on handbrake lever (B) to set parking brake.
5. Lower all equipment to the ground, put all SCV levers in NEUTRAL, and disengage PTO.
6. Allow engine to idle for 1 to 2 minutes.

⚠ CAUTION: Remove key from ignition switch to prevent operation by untrained personnel.

7. Turn key to STOP and remove from switch.

HL70592,0000840-19-16MAR18

US EPA Qualified Emergency Use — SCR Derate Override Option

NOTE: This is a US EPA only option.

IMPORTANT: Operating the engine without emissions related derates could damage the aftertreatment system.

Description: US EPA Qualified Emergency Use – SCR Derate Override Option

Under the US EPA's regulations the Qualified Emergency SCR Derate Override Option (Emergency SCR Derate Override) is considered an Auxiliary Emission Control Device (AECD), which is only permitted during qualified emergency situations. To ensure compliance with US EPA regulations governing this type of AECD it is important that operators read the following information and comply with the requirements.

Emergency SCR Derate Override enables a Selective Catalyst Reduction (SCR) equipped application to operate without emissions-related derates for a specified period of time during qualified emergency situations. A qualified emergency situation is one in

which the condition of an engine's emission controls poses a significant direct or indirect risk to human life. An example of a direct risk is an emission control condition that inhibits the performance of an engine being used to rescue a person from a life-threatening situation. An example of an indirect risk is an emission control condition that inhibits the performance of an engine being used to provide electrical power to a data center that routes "911" emergency response telecommunications.

Emergency SCR Derate Override Activation / Reporting

The operator can activate the Emergency SCR Derate Override through the operator interface. Once activated, the engine can operate free of emissions-related derates for 120 hours. If the derate condition is corrected during the 120 hours, the Emergency SCR Derate Override can be paused in order to preserve the remainder of time for future use. The option expires along with any remaining time 240 hours after the Emergency SCR Derate Override is activated.

When the Emergency SCR Derate Override has expired, the engine informational Diagnostic Trouble Code (DTC) is displayed to the operator upon every engine start and every hour until acknowledged by the operator. To clear the DTC and reset the Emergency SCR Derate Override timer for future use, the operator (or other person responsible for the engine/equipment) must submit a report to the John Deere Dealer Technical Assistance Center, which must include the following:

- Contact name, mail and email addresses, and telephone number for responsible company or entity
- Description of the emergency situation, the location of the engine during the emergency, and the contact information for an official who can verify the emergency situation (such as a county sheriff, fire marshal, or hospital administrator)
- Reason for the Emergency SCR Derate Override activation during the emergency situation, such as the lack of diesel exhaust fluid, or the failure of an emission-related sensor when the engine was needed to respond to an emergency situation
- Engine's serial number
- Description of the extent and duration of the engine operation while the Emergency SCR Derate Override was active, including a statement describing whether or not the Override was manually deactivated after the emergency situation ended

In no event may this report be submitted to John Deere or other qualified service provide later than 60 calendar days after the Emergency SCR Derate Override is activated.

LEGAL Notification

The following actions by the operator are an improper use of the Emergency SCR Derate Override and are prohibited by the Clean Air Act and US EPA regulations:

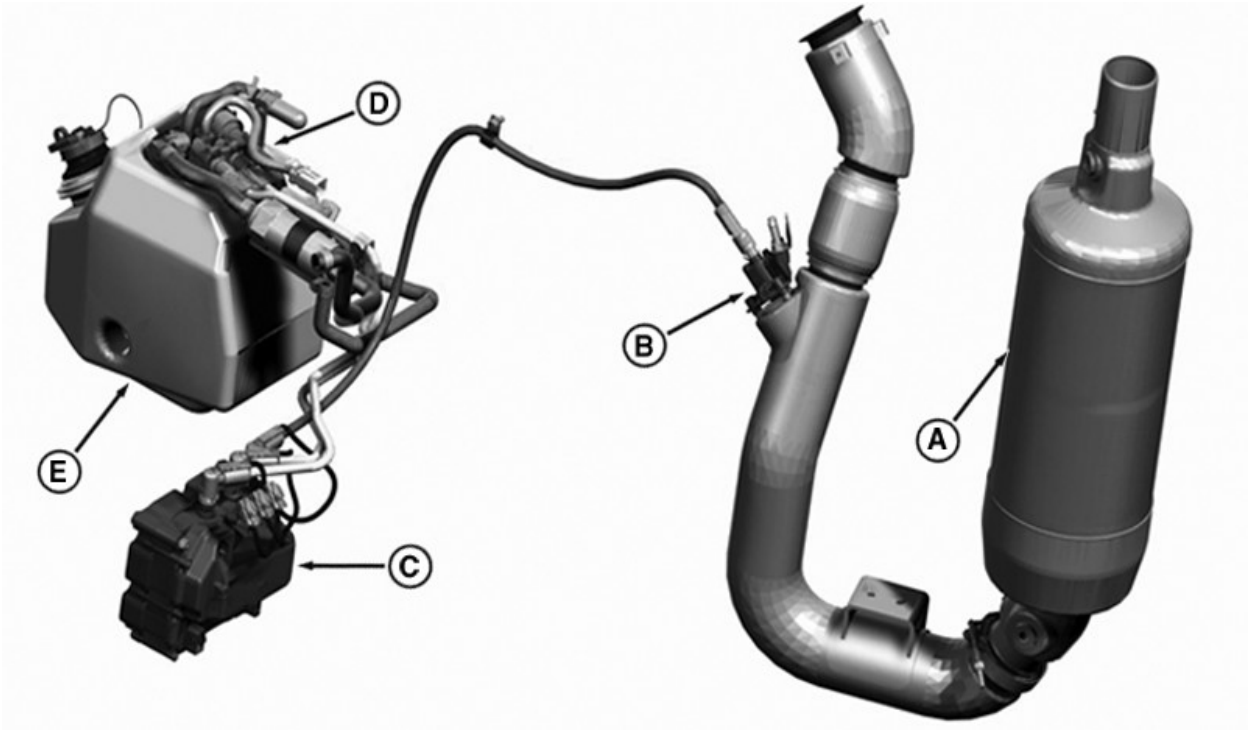
- Activating the Emergency SCR Derate Override for something other than a qualified emergency situation;
- Failing to disable the Emergency SCR Derate Override after a qualified emergency situation ends; and,
- Failing to notify John Deere and send it reports as required in this Operators Manual and federal regulations. Note: John Deere is required to report to the US EPA the operator's failure to report to it any Emergency SCR Derate Override event (to the extent it becomes aware of such event).

The maximum civil penalty the US EPA may assess under 40 CFR 1068.101 is $4,454 for each day an engine or piece of equipment is operated in violation of the requirements associated with the Emergency SCR Derate Override.

US EPA regulations governing the Emergency SCR Derate Override can be found at 40 CFR §1039.665, as may be amended.

DX,SCR,EMRGNCY,OVERIDE,US-19-24JAN18

Selective Catalytic Reduction (SCR) System Overview



P17718—UN—19JUN15

SCR System

A—SCR Catalyst
B—DEF Dosing Injector
C—DEF Dosing Unit
D—DEF Tank Header Assembly
E—DEF Tank

IMPORTANT: Do not remove battery leads for at least 4 minutes after engine stops. The SCR system automatically purges itself of Diesel Exhaust Fluid (DEF) immediately after the engine is stopped. If adequate time is not allowed for lines to be purged, residual DEF can freeze and possibly damage components of the SCR system during cold-weather exposure.

In order to comply with national and local emission requirements, this engine series contains a Selective Catalytic Reduction (SCR) system. The main components of the SCR system include the SCR catalyst (A), DEF dosing injector (B), DEF dosing unit (C), DEF tank header assembly (D), and DEF tank (E). The SCR system is effective at reducing the nitrogen oxides (NOx) emissions. NOx is a major component of smog and acid rain.

During combustion, NOx molecules are formed in the exhaust. DEF is injected into the exhaust stream before the SCR catalyst. Through a chemical reaction in the SCR, NOx is converted into nitrogen and water.

Water vapor is a normal by-product of combustion. During cold-weather operation at low exhaust temperatures, this water vapor can condense and resemble white smoke from the exhaust. This will dissipate as operating temperature increases and the water is further vaporized. This situation is considered normal.

A DEF solution begins to crystallize and freeze at -11°C (12°F). With climate temperatures that can range much colder than this, DEF is expected to freeze in the DEF tank. For this reason, the DEF tank contains a heating element that provides rapid thawing of DEF upon start-up. The heating element cycles to maintain fluidity during operation as needed. DEF is not dosed upon initial start-up, therefore it is not necessary to have liquid DEF at cold start-up.

If DEF quality deteriorates and is no longer within specifications, the engine can derate. DEF should be crystal clear with a light ammonia smell. If DEF appears cloudy, has a colored tint, or has a profound ammonia smell, it is likely not within specification.

CP00834,000379B-19-15JAN18

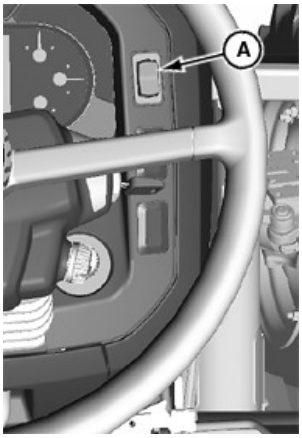
Exhaust Filter System Overview

Your machine is equipped with an emission-compliant engine, which cleans and filters the engine exhaust. Under normal machine operation and with system in

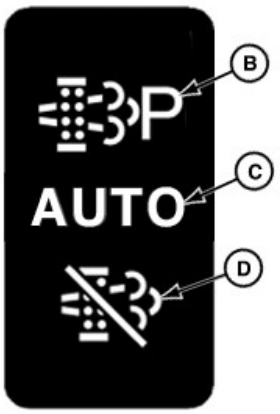
Automatic (AUTO) mode, the system requires minimal operator interaction. To understand when and where operator interaction is required, read the Exhaust Filter Cleaning sections.

To ensure that the exhaust filter system operates as intended:

- Utilize AUTO exhaust filter cleaning mode.
- Avoid unnecessary idling.
- Use proper engine oil. (See Fuels, Lubricants, and Coolants section for recommendations.)
- Use only ultra low sulfur fuel. (See Fuels, Lubricants, and Coolants section for recommendations.)



LV21995—UN—09JUN14
Exhaust Filter Cleaning Mode Switch—Location



LV23057—UN—12SEP14
Exhaust Filter Cleaning Mode Switch

A—Exhaust Filter Cleaning Mode Switch
B—Parked Cleaning Mode
C—Automatic (AUTO) Cleaning Mode
D—Auto Cleaning Disabled Mode

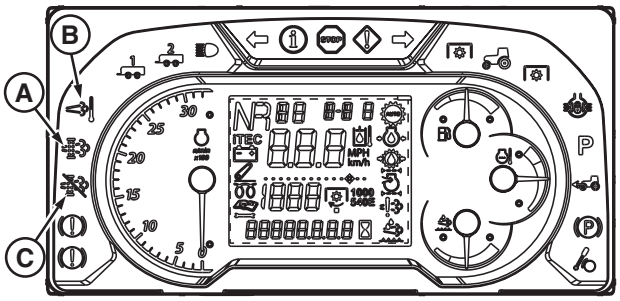
NOTE: Exhaust filter cleaning mode switch mode (A) is a momentary contact switch. Normal (default) position is AUTO.

Use the three-position exhaust filter cleaning mode switch (A) to select exhaust filter cleaning modes: Parked cleaning mode (B), AUTO cleaning mode (C), and auto cleaning disabled mode (D). To disable auto cleaning, exhaust filter cleaning mode switch needs to be depressed for 5 seconds.

IMPORTANT: Use auto cleaning disable mode (D) when temporarily connected to an indoor duct exhaust system for diagnostic and repair activities. Avoid disabled mode unless absolutely necessary. Repeated disabling or ignoring prompts to perform the manual parked cleaning procedure causes additional engine power limitation and eventually leads to required dealer service.

Exhaust filter cleaning will automatically reset back to AUTO mode when tractor is turned off and restarted.

Exhaust Filter Indicators



CPA0005003—UN—28FEB18
Exhaust Filter Indicators

A—Exhaust Filter Indicator
B—Engine Emissions Temperature Indicator
C—Auto Cleaning Disabled Indicator

Exhaust Filter Indicator (A)

Indicates that one of the following has occurred:

- Exhaust filter cleaning is in process.
- Aftertreatment system has a fault.
- Exhaust filter is in need of cleaning and operator has disabled auto exhaust filter cleaning.

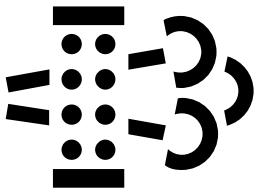
Engine Emissions Temperature Indicator (B)

Indicates that exhaust gas temperature is high, elevated idle is active, or exhaust filter cleaning is in process.

Auto Cleaning Disabled Indicator (C)

Indicates that operator has engaged the auto cleaning disabled function.

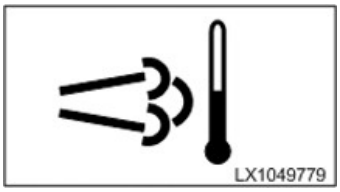
Operator Information



H94828—UN—13OCT09
Exhaust Filter Indicator

1. **Exhaust Filter Indicator**

Description	Recommended Procedure
Exhaust filter cleaning is in process. Aftertreatment system has a fault. Exhaust filter is in need of cleaning and the operator has disabled auto exhaust filter cleaning. *NOTE: If no cleaning is carried out, engine power is reduced*	Activate automatic filter cleaning; see **Automatic Exhaust Filter Cleaning**. Alternatively, perform exhaust filter cleaning with tractor parked; see **Parked Exhaust Filter Cleaning**.

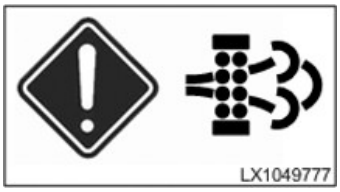


LX1049779—UN—22JUL10

Engine Emissions Temperature Indicator

2. **Engine Emissions Temperature Indicator**

Description	Recommended Procedure
Exhaust gas temperature is high, elevated idle is active, or exhaust filter cleaning is in process.	Do not interrupt automatic exhaust filter cleaning unless necessary; see **Automatic Exhaust Filter Cleaning**.



LX1049777—UN—22JUL10

Parked Exhaust Filter Cleaning Required

3. **Parked Exhaust Filter Cleaning Required**

Description	Recommended Procedure
System reduced engine performance because: —There is an aftertreatment system fault. —Sulfur deposits, or urea deposits on exhaust filter are moderately high.	Perform **Parked Exhaust Filter Cleaning**.

LX1049776—UN—22JUL10

Service Exhaust Filter Cleaning Required

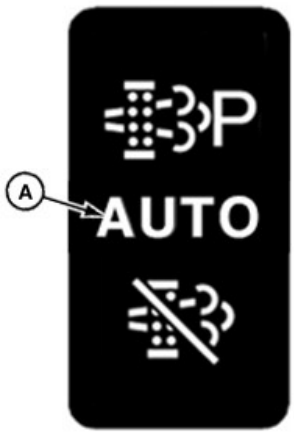
4. **Service Exhaust Filter Cleaning Required**

Description	Recommended Procedure
System reduced engine performance because there is an aftertreatment system fault or exhaust filter is in need of cleaning.	Contact your John Deere dealer. Have dealer perform service on the exhaust filter. See **Service Exhaust Filter Cleaning**.

CP00834,000379C-19-15JAN18

Automatic (AUTO) Exhaust Filter Cleaning

Automatic exhaust filter cleaning is started when sulfur or urea deposits in the exhaust filter reach a certain level. Automatic exhaust filter cleaning is initiated and performed without any intervention on the part of the operator.

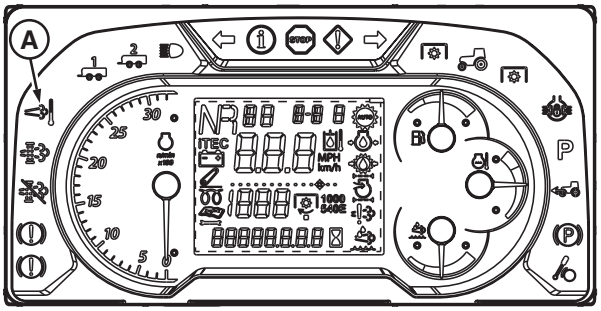


LV23058—UN—12SEP14

Exhaust Filter Cleaning Mode Switch

A—Exhaust Filter Cleaning Mode Switch

Exhaust filter cleaning mode switch (A) is a momentary contact switch. Default position is Automatic (AUTO) Exhaust Filter Cleaning mode.



CPA0005004—UN—28FEB18

Engine Emissions Temperature Indicator

A—Engine Emissions Temperature Indicator

If the system determines that sulfur or urea deposit buildup in the exhaust filter requires cleaning and engine speed is above 1200 rpm, an automatic cleaning is initiated and performed. Engine emissions temperature indicator (A) remains illuminated during the exhaust filter cleaning.

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

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

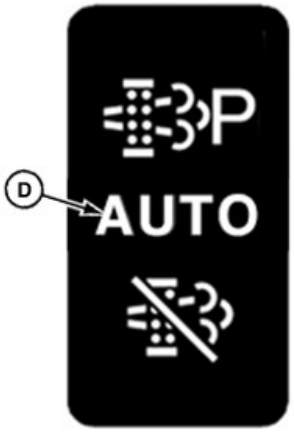
IMPORTANT: See *Clean Exhaust Filter Safely* in Safety Precautions section.

CP00834,000379D-19-12MAR18

Disabled Exhaust Filter Cleaning

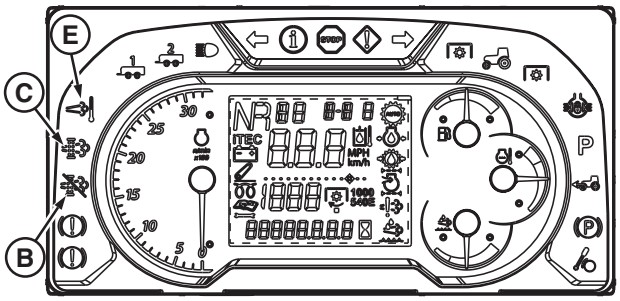
LV23059—UN—12SEP14

Exhaust Filter Cleaning Switch - Disable



LV23060—UN—12SEP14

Exhaust Filter Cleaning Switch - AUTO



CPA0005005—UN—28FEB18

Exhaust Indicators

A—Exhaust Filter Cleaning Switch - Disable
B—AUTO Cleaning Disabled Indicator
C—Exhaust Filter Indicator
D—Exhaust Filter Cleaning Switch - AUTO
E—Engine Emissions Temperature Indicator

IMPORTANT: Exhaust filter cleaning switch (A) is a momentary contact switch. The default mode of operation is automatic (AUTO) exhaust filter cleaning. Recommended operation of vehicle is in the automatic (AUTO) exhaust filter cleaning mode.

If your vehicle must be used in a situation not suited for the higher temperatures created during exhaust filter cleaning, temporarily disabling the system is possible. Be sure to reset to automatic (AUTO) mode as soon as possible.

To engage AUTO cleaning disabled mode, press and hold bottom of exhaust filter cleaning switch (A) until

AUTO cleaning disabled indicator (B) on display illuminates.

While in disabled mode, if the system determines that the exhaust filter requires cleaning, exhaust filter indicator (C) illuminates. Then exhaust filter cleaning must be reset to automatic (AUTO) exhaust filter cleaning mode. To reset exhaust filter cleaning to Automatic (AUTO) (D) press and hold bottom of exhaust filter cleaning switch (A). When AUTO cleaning disabled indicator (B) on display turns off, system is in automatic (AUTO) exhaust filter cleaning mode.

Anytime tractor is shutoff and restarted, the system is reset to automatic (AUTO) exhaust filter cleaning mode.

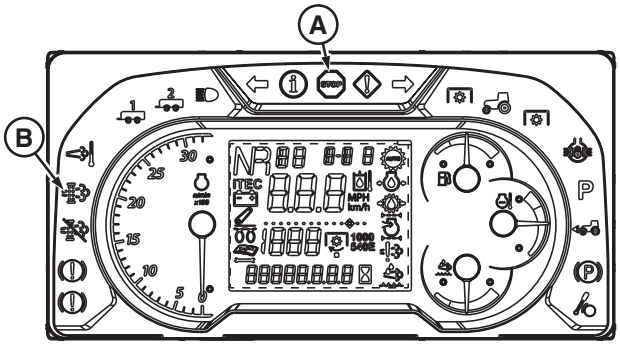
Engine emissions temperature indicator (E) remains illuminated during exhaust filter cleaning.

Do not disable automatic exhaust filter cleaning unless it is necessary. If disabled mode is used frequently, the system eventually reduces engine performance requiring a stationary parked exhaust filter cleaning.

CP00834,000379E-19-15JAN18

Parked Exhaust Filter Cleaning

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



CPA0005101—UN—28FEB18

Indicator

A—Warning Indicator
B—Exhaust Filter Indicator

Exhaust filter is restricted when:

- Warning indicator (A) is illuminated.
- Exhaust filter indicator (B) is illuminated.
- Engine power is reduced.

The system requires a parked cleaning. Five consecutive tones warn operator that a parked cleaning is required.

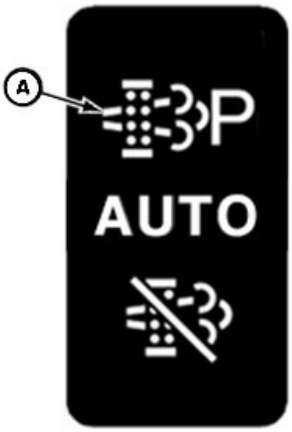
CAUTION: Comply with *Clean Exhaust Filter Safely* in Safety Precautions section.

IMPORTANT: Park the vehicle in a suitable space and lower any implements all the way to the ground.

Use NO other vehicle functions while exhaust filter cleaning is taking place with the vehicle parked. Excluded are functions that are required for an emergency shutdown of the vehicle.

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

1. Stop tractor, place transmission in park position, disengage PTO, and set engine idle to low 900 rpm.



CPA0004673—UN—03DEC17

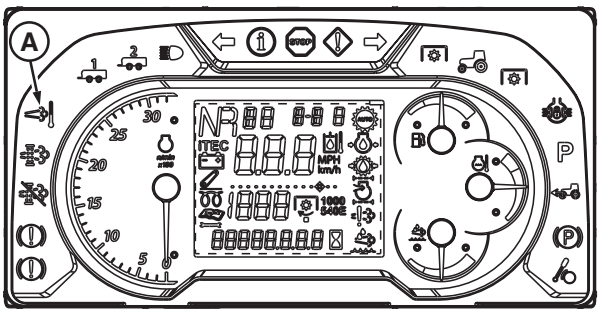
Exhaust Filter Cleaning Switch - Parked Cleaning Position

A—Parked Cleaning Position

2. Press and hold exhaust filter cleaning switch in parked cleaning position (A) for 3 seconds then release.

IMPORTANT: If necessary, it is possible to cancel a parked exhaust filter cleaning process by manually advancing throttle, engaging transmission, or stopping engine.

3. The engine speed increases to 1800 rpm.



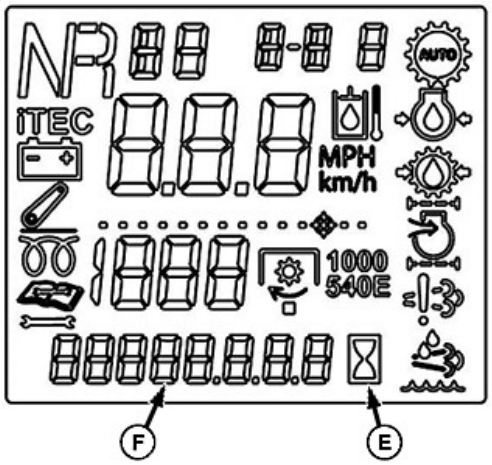
CPA0005004—UN—28FEB18

Engine Emissions Temperature Indicator

A—Engine Emissions Temperature Indicator

4. During the parked cleaning process, the engine emissions temperature indicator (A) illuminates.

NOTE: The parked exhaust filter cleaning process takes 30—45 minutes to complete.



CPA0004571—UN—23NOV17

Parked Cleaning In Process

E—Engine Hours Indicator
F—Vehicle Information Display

5. Engine hours indicator (E) turns off and a percent numeric value of parked cleaning process is shown in vehicle information display (F). First: a preparation stage value increases from 1 to 100. During preparation stage, the exhaust filter cleaning system increases engine speed to increase exhaust temperature. Second: an exhaust filter cleaning value increases from 1 to 100. During cleaning stage, sulfur or urea deposits are cleaned from exhaust filter.
6. When the parked cleaning process is complete, exhaust filter indicator and warning indicator turns off. Engine emissions temperature indicator remains on for 30 seconds and engine speed returns to 900 rpm.
7. After engine emissions temperature indicator turns off and engine hours indicator turns on, continue vehicle operations as normal.

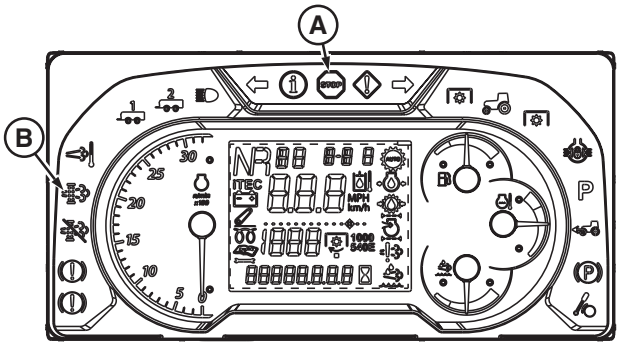
NOTE: The system defaults to Automatic (AUTO) exhaust filter cleaning mode.

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

IMPORTANT: If operator disregards indicators and continues to operate vehicle without allowing a parked cleaning, engine performance is reduced. Have a John Deere dealer perform a service exhaust cleaning procedure.

CP00834,000379F-19-15JAN18

Service Exhaust Filter Cleaning



CPA0005008—UN—28FEB18

Stop Engine Indicator

A—STOP Indicator
B—Exhaust Filter Indicator

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

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

If level of sulfur or urea at exhaust filter is extreme, STOP indicator (A) and exhaust filter indicator (B) illuminate together and engine power is reduced. Automatic exhaust filter cleaning and filter cleaning with tractor parked are no longer possible.

To service or clean the exhaust filter, contact your John Deere dealer.

Tips for avoiding service exhaust filter cleaning:

- Do not disable exhaust filter cleaning unless it is absolutely necessary.
- Avoid unnecessary idling.

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

CP00834,00037A0-19-15JAN18

Fill Fuel Tank

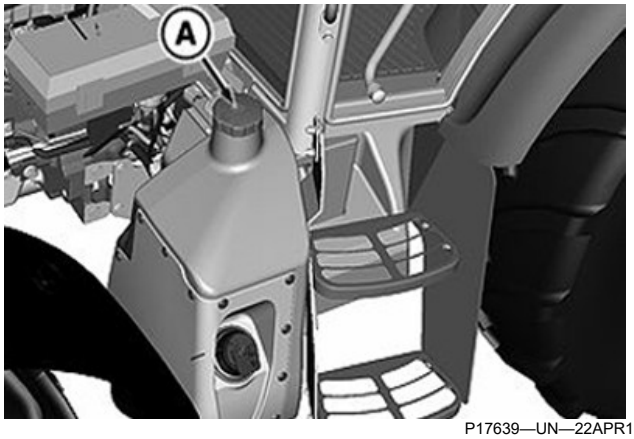
TS202—UN—23AUG88

Fill Fuel Tank Safely

CAUTION: 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.



P17639—UN—22APR15

Cab

A—Fuel Tank Filler Cap

Fuel tank is filled through fill cap (A). Fill fuel tank at end of each day of operation. This prevents condensation in tank as moist air cools.

Specification

Fuel Tank—Capacity. . . . . 168 L (44.4 gal)

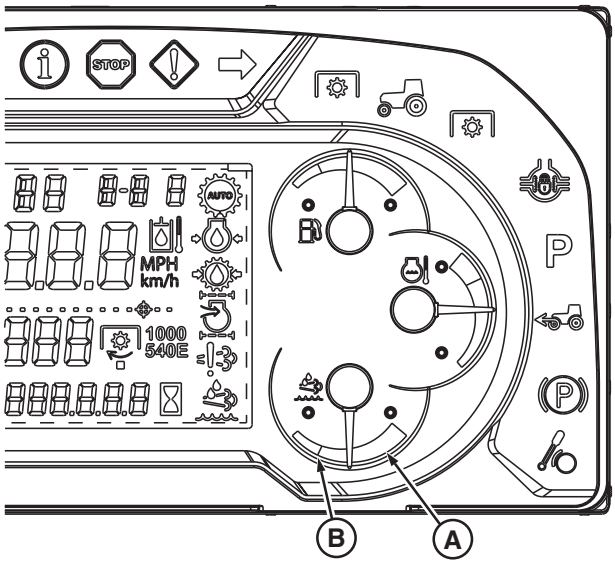
NOTE: To reduce fuel gelling and control wax separation during cold weather, John Deere Fuel Flow Improver, or equivalent, may be added to fuel or bulk storage tank.

CP00834,00037A1-19-15JAN18

Fill Diesel Exhaust Fluid (DEF) Tank

CAUTION: DEF contains urea. Do not get the substance in eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Do not take internally. In the event DEF is ingested, contact a physician immediately. Reference the Materials Safety Data Sheet (MSDS) for additional information

IMPORTANT: Never put DEF in diesel fuel tank, or diesel fuel in DEF tank.



CPA0005009—UN—28FEB18

DEF Indicator Gauge

A—DEF Indicator Gauge
B—Low Level Mark

Fill DEF tank every time tractor is refueled. If this cannot be done, monitor DEF indicator gauge (A) on instrument cluster and refill as necessary. To avoid drastic changes in tractor performance, always keep DEF level above low level mark (B) on the DEF indicator gauge.

Specification

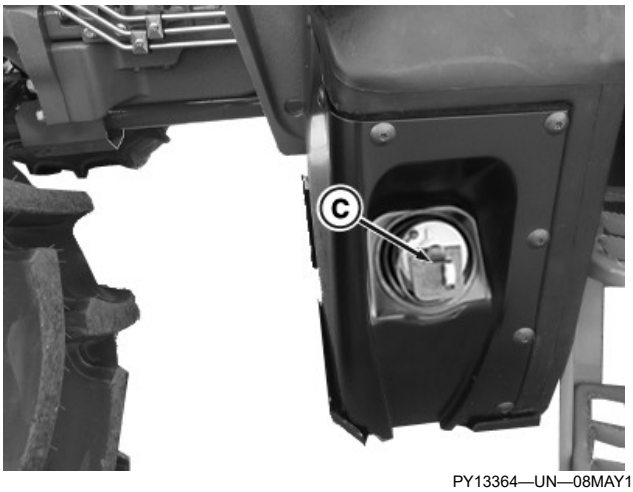
DEF Tank—Capacity. . . . . 10.9 L (2.9 gal)

NOTE: Spilled DEF, if left to dry or if only wiped away with a cloth, leaves white residues. Asideh from cosmetic issues, an improperly cleaned DEF spill may interfere with diagnosis of Selective Catalytic Reduction (SCR) system leakage problems.

NOTE: When filling DEF Tank, keep tractor on a flat surface. This will ensure that maximum DEF fill capacity is achieved.

To fill DEF tank:

1. Before using containers, funnels, and so on. to dispense DEF, wash and rinse items thoroughly with distilled water to remove contaminants.



PY13364—UN—08MAY15

DEF Tank Cap

C—DEF Tank Cap

2. Wipe DEF tank cap (C) and area around cap and filler neck to reduce chance of contaminating DEF.
3. Lift DEF tank cap latch lever and turn 90° counterclockwise. Lift cap from filler neck.

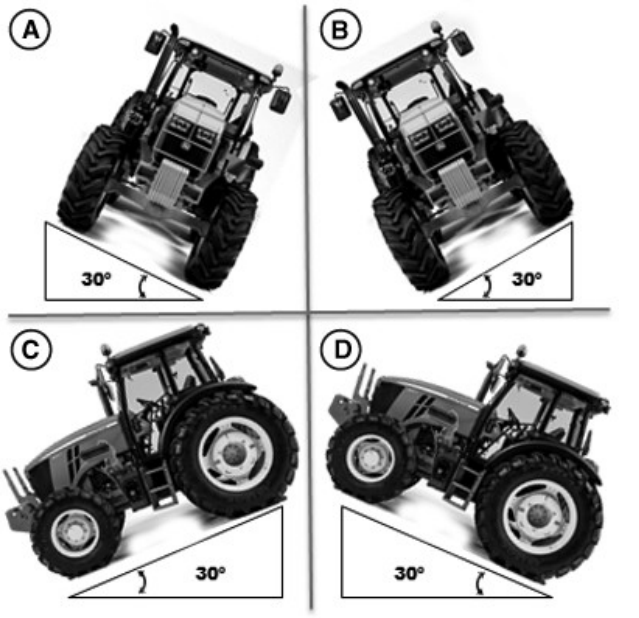
IMPORTANT: Avoid overfilling DEF tank. Completely filling DEF tank at lower temperatures can cause a blockage in the filler neck. If expected temperatures are expected to reach below -11°C (12°F), do not overfill DEF tank more than half way according to DEF level display on the corner post. Observe temperature guidelines to assure ability to refill tank.

4. Using a funnel, carefully fill DEF tank. Do not overfill DEF tank. Best final fill level is determined by ambient air temperature guide:
   • Ambient air temperature at or above -11°C (12°F): Completely fill tank.
   • Ambient air temperature below -11°C (12°F): Keep fill tank level below the filler neck. Although the main portion of DEF tank is heated to keep DEF from freezing, the filler neck is not heated. Fluid in the neck may freeze, preventing refills of the DEF tank until the fluid melts.
5. Replace and securely latch DEF tank cap. The DEF tank cap can be locked with a padlock. Carefully clean any spills, using distilled water only.

If an unapproved fluid, such as diesel fuel or engine coolant, is added to vehicle DEF tank, drain tank and rinse with distilled water, then refill tank.

NOTE: If a nozzle with auto stop function is not available when filling the DEF tank, the usage of a 9.46 L (2.5 gal) container is recommended when the DEF tank is empty. This avoids any fluid spilling.

Minimum Diesel Exhaust Fluid (DEF) Level for Optimal Performance



P17796—UN—14JAN16

Tractor positions

A—30º Clockwise
B—30º Counterclockwise
C—30º Nose Down
D—30º Nose Up

For optimal performance when tractor is being utilized on uneven soil, the level of Diesel Exhaust Fluid (DEF) should be observed. Maximum operation angle recommended is 30°.

Operation Mode	Minimum DEF Level	DEF Tank Capacity (%)	DEF Tank Capacity
A	2.35 liters (0.62 gal)	26%	1/4
B	1.20 Liters (0.32 gal)	13%	1/8
C	1.20 Liters (0.32 gal)	13%	1/8

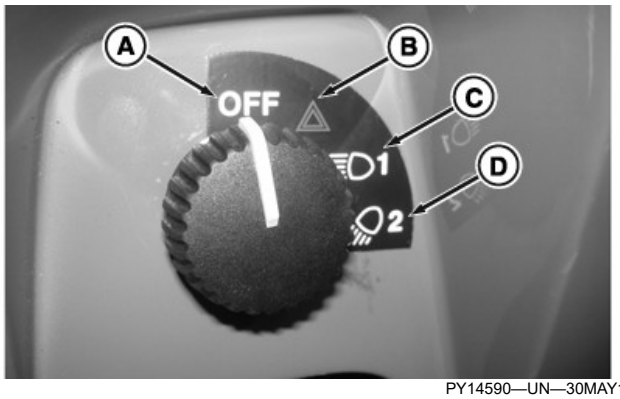
D	1.43 Liters (0.38 gal	16%	1/6

Minimum Diesel Exhaust Fluid (DEF) Level at 30°

NOTE: When operating in the field at 30°, it is recommended to keep DEF Tank at a minimum of 1/4 full. This is to ensure proper tractor performance.

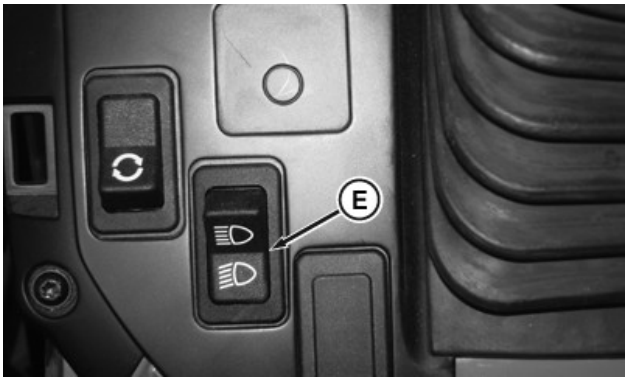
CP00834,0003937-19-16MAR18

Light Switch



PY14590—UN—30MAY12

Light Switch



PY14591—UN—07AUG12

High/Low Beam Switch

A—OFF
B—Warning Lights Position
C—Road Lights Position
D—Field Lights Position
E—High/Low Beam Switch

A—OFF: All lights off. Instrument panel will illuminate for approximately 6 seconds after switch is turned off.

B—Warning Lights: Warning lights flash, instrument panel illuminates, turn signal arrows on instrument panel flash, and courtesy light (cab) is on. This position is for driving on roads during daytime.

C—Road Lights (Position 1): Head lights and tail lights (red) on, warning lights flash, instrument panel illuminates, turn signal arrows on instrument panel flash, and courtesy light (cab) is on. This position is for driving on roads during daytime or nighttime.

D—Field Lights (Position 2): Head lights and tail lights (red) on, work lights on, instrument panel illuminates, and courtesy light (cab) is on. This position is for field use only.

CAUTION: Never use work lights when driving on roads. Dim headlights for oncoming traffic. Bright lights could blind or confuse other drivers.

E—High/Low Beam Switch: Active when light switch is in positions (C or D).

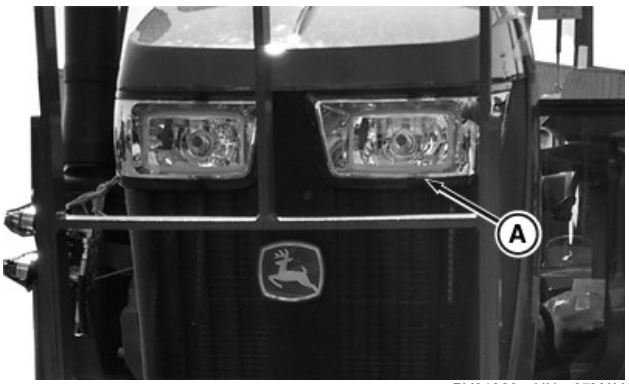
- Switch DOWN—Low/dim headlights on.
- Switch UP—High/bright headlights on. High beam indicator on instrument panel also illuminates.

Dim headlights when approaching other vehicles, bright lights may blind or confuse other drivers.

Light Switch Operation				
Position	**Tail Lights**	**Head Lights**	**Work Lights**	**Warning Lights**
OFF	OFF	OFF	OFF	OFF
Triangle (Warning)	OFF	OFF	OFF	FLASH
1 (Road)	ON	ON	OFF	FLASH
2 (Field)	ON	ON	ON	OFF

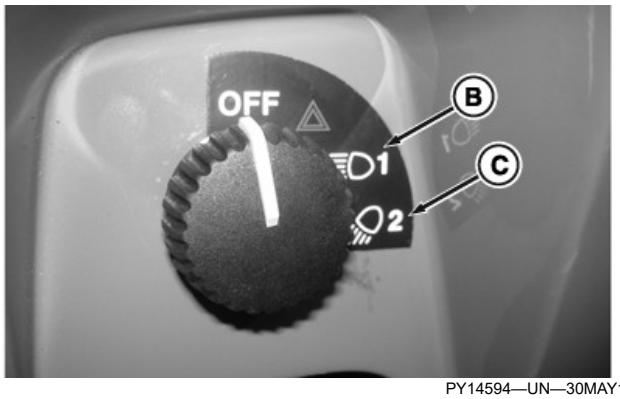
CP00834,00037A3-19-15JAN18

Use Headlights



PY21069—UN—07MAY15

Headlights



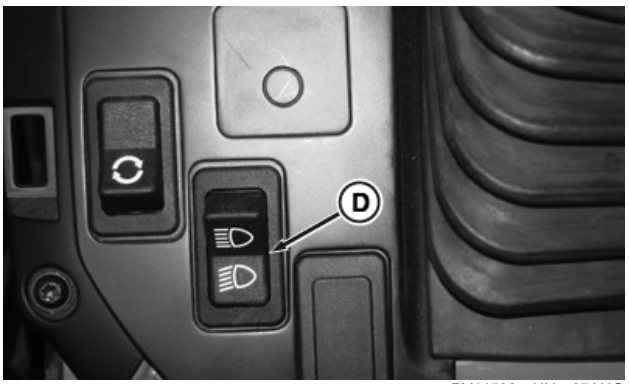
PY14594—UN—30MAY12

Light Switch

A—Headlights
B—Road Lights Position
C—Field Lights Position

⚠ CAUTION: Never use work lights when driving on roads. Dim headlights for oncoming traffic. Bright lights could blind or confuse other drivers.

Dual-beam headlights (A) are used for highway driving, day or night. They are turned on in road lights position (B) or field lights position (C) with the light switch.



PY14593—UN—07AUG12

High/Low Beam Switch

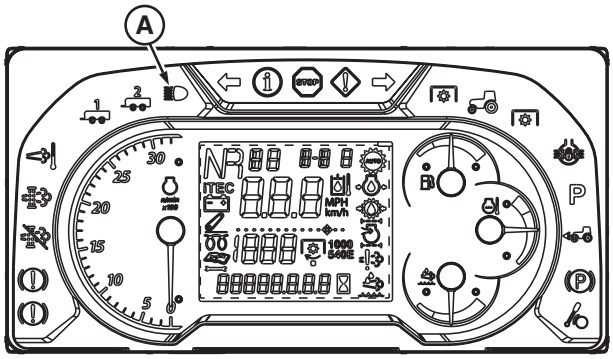
D—High/Low Beam Switch

Always dim headlights by moving high/low beam switch (D) to low beam position when meeting another vehicle.

Keep headlights adjusted properly. (See Adjust Headlights in Electrical and Lighting Maintenance section.)

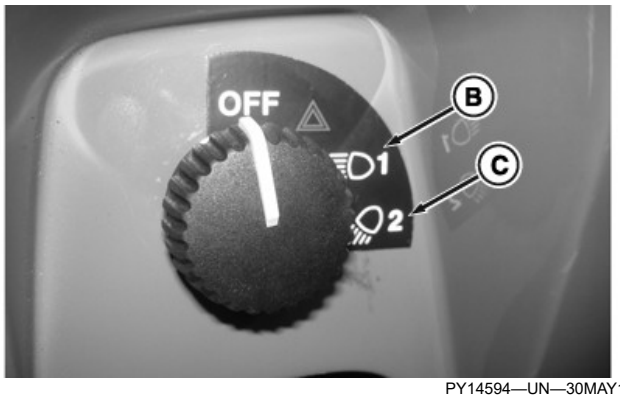
CP00834,00037A4-19-15JAN18

High Beam Indicator



CPA0005010—UN—28FEB18

High Beam Indicator



PY14594—UN—30MAY12

Position 1 and Position 2

PY14593—UN—07AUG12

High/Low Beam Switch

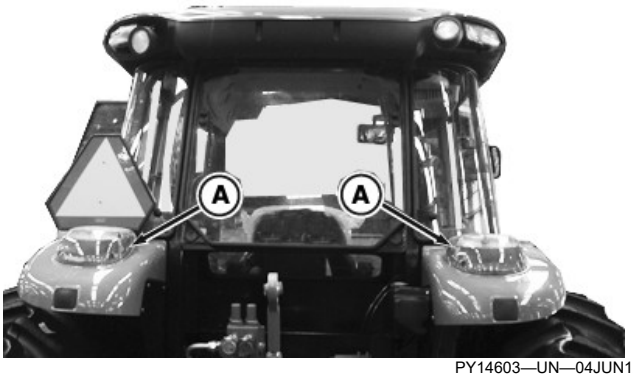
A—High Beam Indicator
B—Road Lights Position
C—Field Lights Position
D—High/Low Beam Switch

High beam indicator (A) should glow with key in ON or OFF position and light switch in following positions:

- Road lights position (B) and high/low beam switch (D) UP.
- Field lights position (C) and high/low beam switch (D) UP.

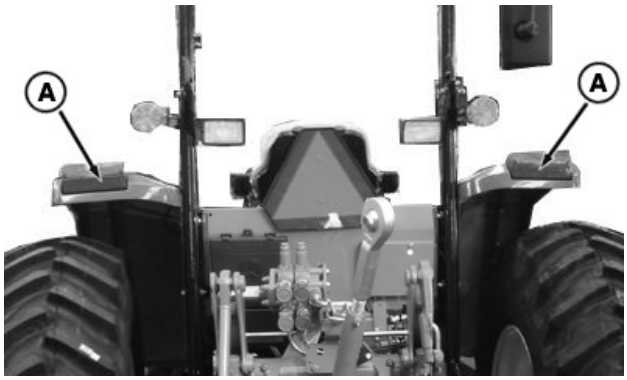
CP00834,00037A5-19-15JAN18

Use Tail Lights



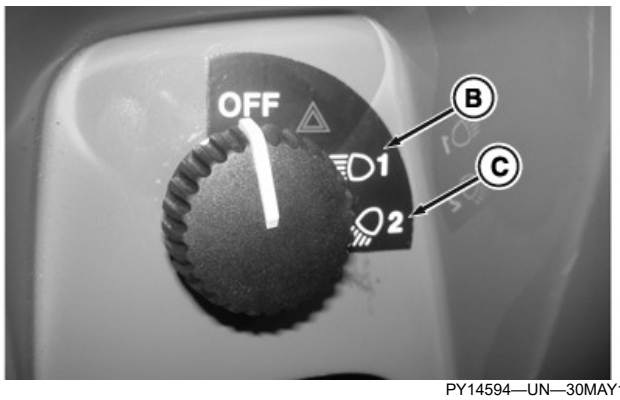
PY14603—UN—04JUN12

Tail Lights, Cab



PY13408—UN—20JUL15

Tail Lights, OOS



PY14594—UN—30MAY12

Light Switch

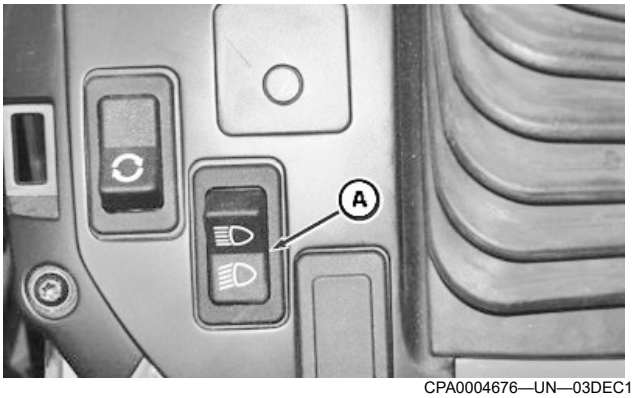
A—Tail Lights (Red)
B—Road Lights Position
C—Field Lights Position

Tail lights (A) are on when switch is turned to positions (B or C). Brake lights are on when key is in run position and service brake is applied.

Be sure that tail light lenses are clean before driving on a road, so other drivers can see them easily.

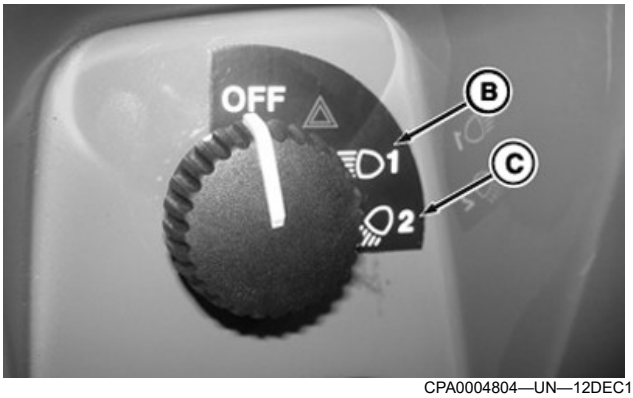
CP00834,0003938-19-17JAN18

Use Work Lights



CPA0004676—UN—03DEC17

High/Low Beam Switch



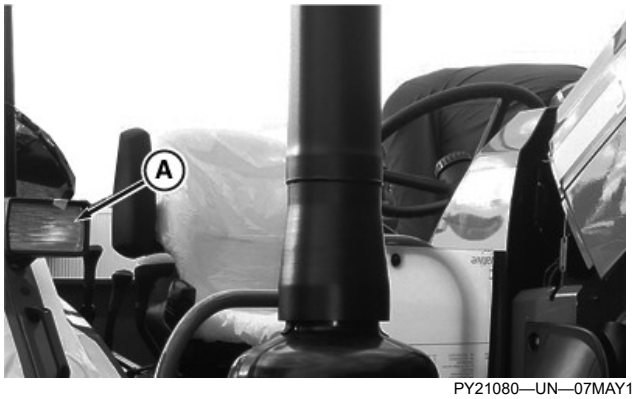
CPA0004804—UN—12DEC17

Light Switch

A—High/Low Beam Switch
B—Road Lights Position
C—Field Lights Position

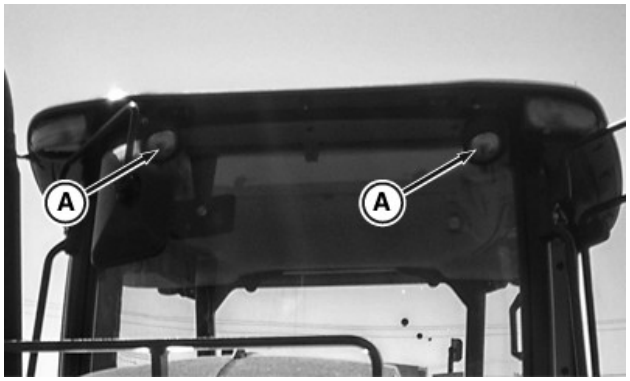
CAUTION: When operating on a road, move light switch to road lights position (B) and use switch (A) on either bright or dim headlight positions. Never use work lights when transporting on roads. Clear, bright lights at the rear of the tractor could confuse drivers of other vehicles as they approach from the rear.

NOTE: Front and rear work lights adjust freely by hand.



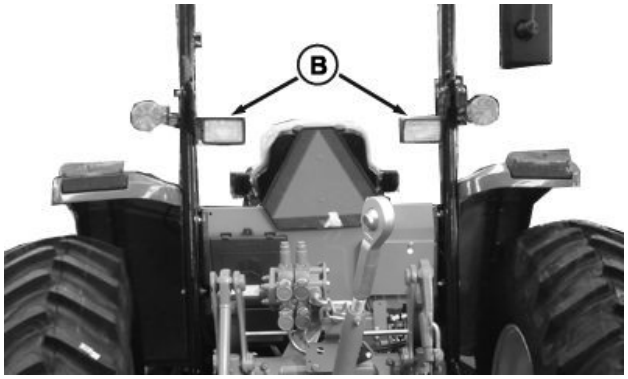
PY21080—UN—07MAY15

Front Worklights, OOS



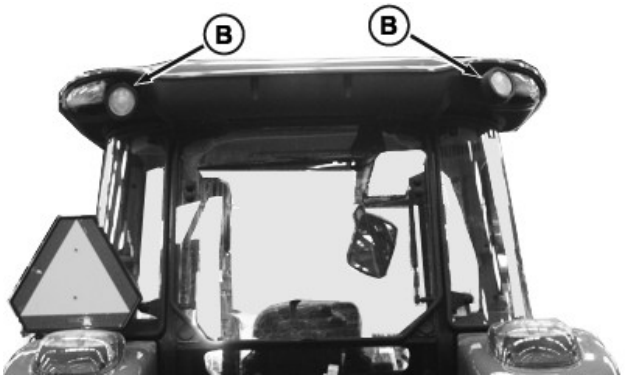
PY21072—UN—07MAY15

Front Worklights, Cab



CPA0002707—UN—03MAY16

Rear Worklights, OOS



PY14599—UN—04JUN12

Rear Worklights, Cab

A—Front Work Lights
B—Rear Work Lights

Work lights (A and B) are for field work only. Do not use when driving on public roads. Work lights are on when switch is turned to field light position.

CP00834,0003939-19-17JAN18

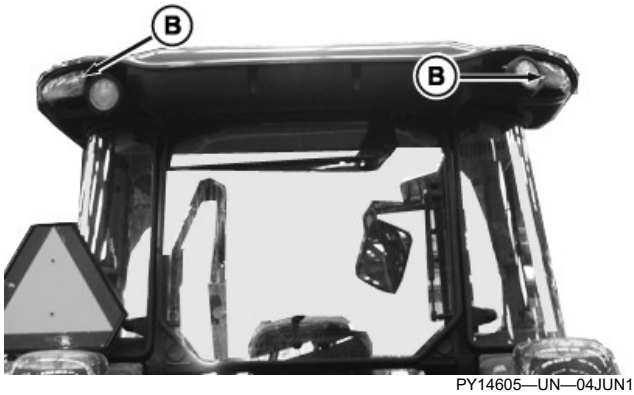
Use Warning Lights

CAUTION: 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 hand signals or turn signal lights.

Use headlights, warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible 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.

PY21070—UN—07MAY15

Front Lights, Cab

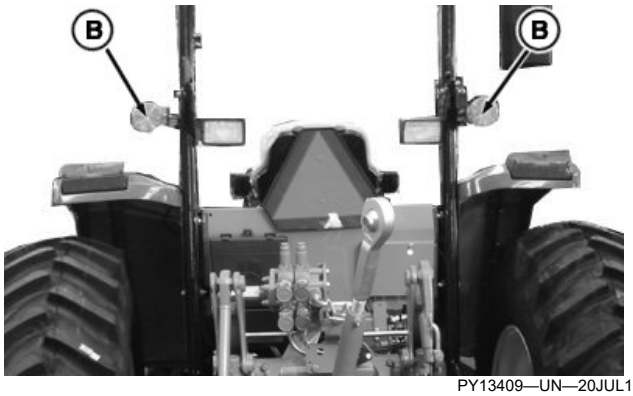


PY14605—UN—04JUN12

Rear Lights, Cab

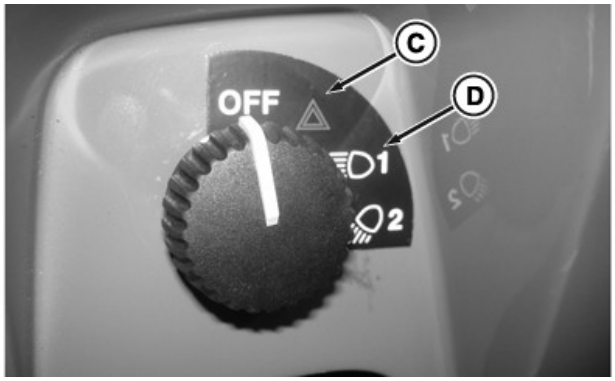
PY16308—UN—08AUG12

Front Lights, OOS



PY13409—UN—20JUL15

Rear Lights, OOS



PY14606—UN—04JUN12

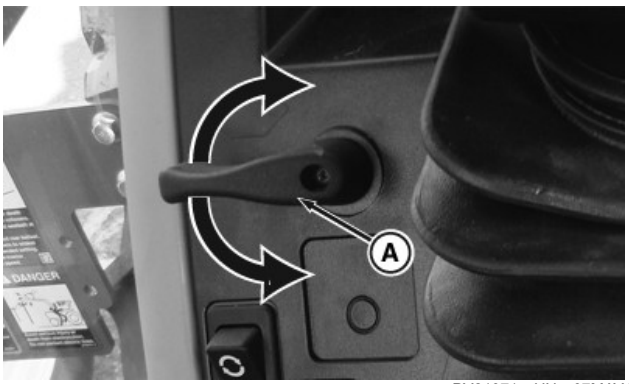
Light Switch

A—Front Warning Lights
B—Rear Warning Lights
C—Warning Lights Position
D—Road Lights Position

Warning lights (A and B) flash when switch is turned to warning light position (C). They also flash when switch is in road lights position (D).

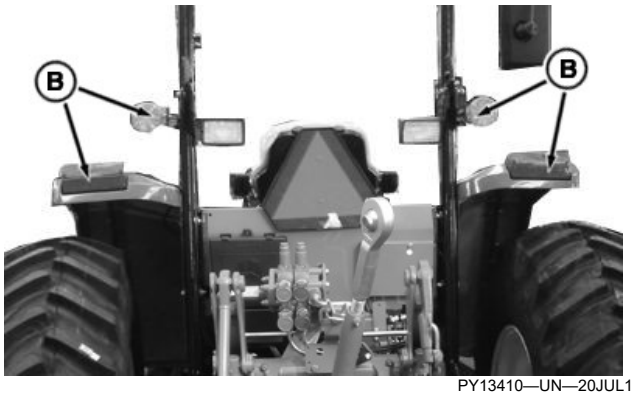
CP00834,00037A8-19-15JAN18

Use Turn Signals



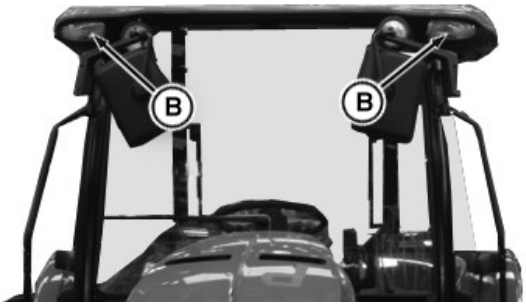
PY21071—UN—07MAY15

Cab



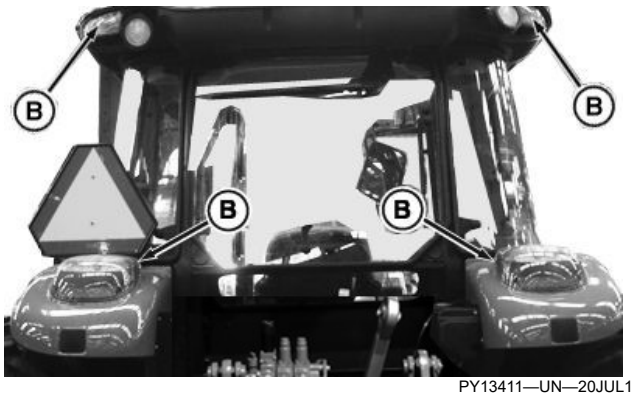
PY13410—UN—20JUL15

OOS



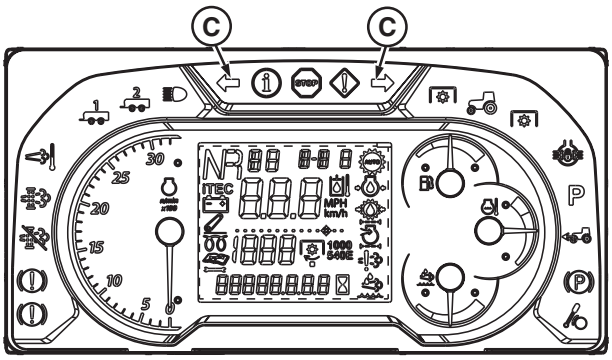
PY16309—UN—04SEP12

Front Turn Signal Lights, Cab



PY13411—UN—20JUL15

Rear Turn Signal Lights, Cab



CPA0005011—UN—28FEB18

Instrument Cluster

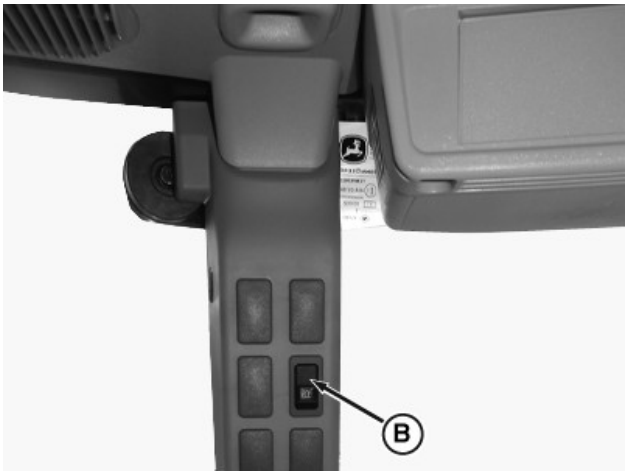
A—Turn Signal Lever
B—Turn Signal Lights (4 used for OOS, 6 used for Cab)
C—Directional Arrows (2 used)

With key in RUN position, move turn signal lever (A):

- DOWN—Left-hand turn
- UP—Right-hand turn

NOTE: Make sure to manually return lever to CENTER position after turning.

CP00834,00037A9-19-15JAN18



PY21083—UN—08MAY15

Right-Hand Post

A—Light
B—Switch

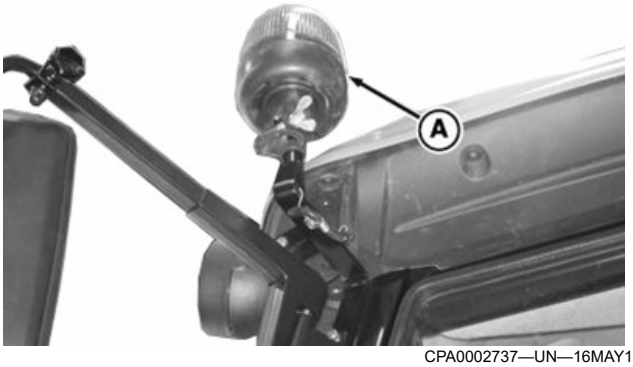
Depress switch (B) to activate light (A).

To remove light for storage or clearance:

1. Loosen wing nut and lift light from tube.
2. Install cap on tube end to protect light socket.

CP00834,00037AA-19-15JAN18

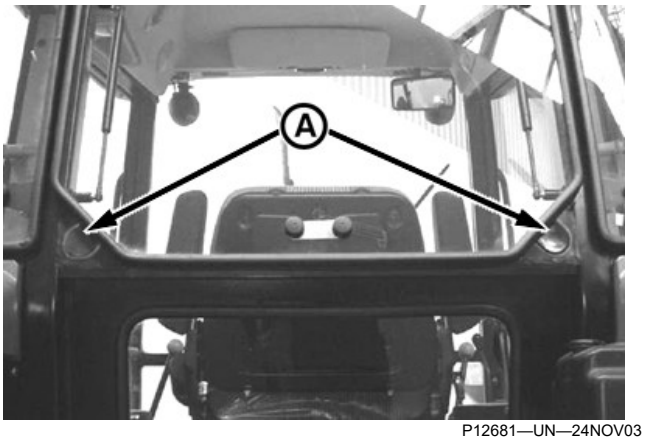
Operate Rotating Beacon Light



CPA0002737—UN—16MAY16

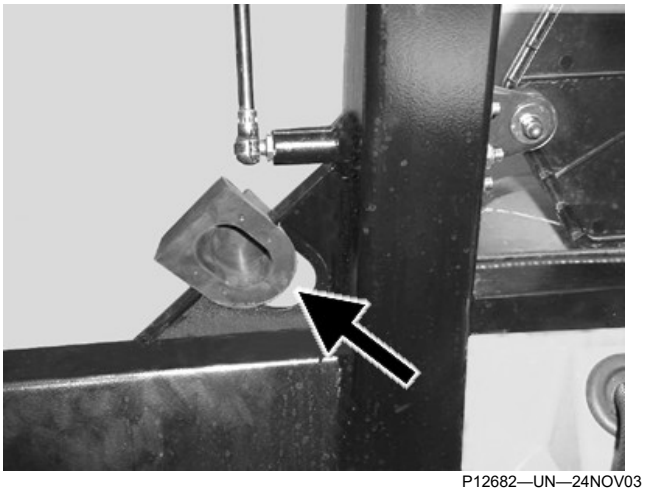
Rotating Beacon Light

Route Cables and Harnesses



P12681—UN—24NOV03

Outside of Cab



P12682—UN—24NOV03

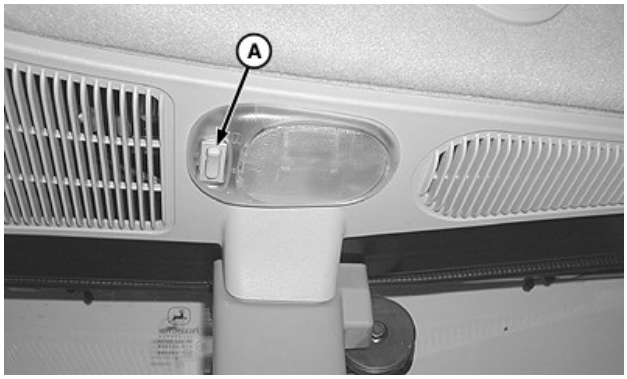
Inside of Cab

A—Rubber Plugs

Rear window frame of cab has two openings, allowing cables/harnesses to be routed. Open the window and remove rubber plugs (A). Cut rubber plugs at the incisions provided, to allow cables/harnesses to be routed through the plugs. Connect the cable/harness ends, insert rubber plugs, and close the window.

CP00834,00037AB-19-15JAN18

Use Dome Light



LV8418—UN—14JUL03

Dome Light

A—Dome Light Switch

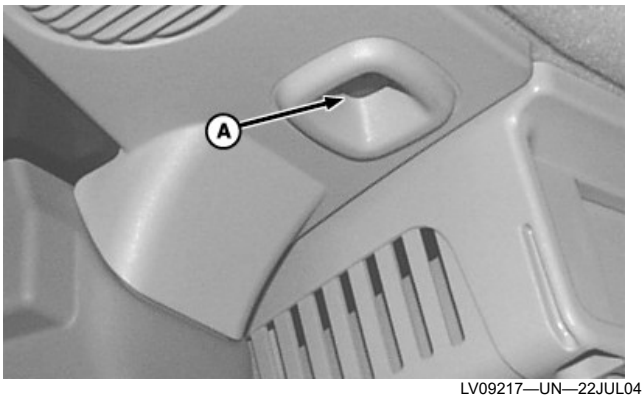
Dome light switch (A) has three positions:

- ON turns the dome light on.
- Dome light comes on when left-hand door is opened and off when left-hand door is closed.
- OFF turns the dome light off.

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

CP00834,00037AC-19-15JAN18

Use Courtesy Light



LV09217—UN—22JUL04

Light above Right-Hand Control Panel

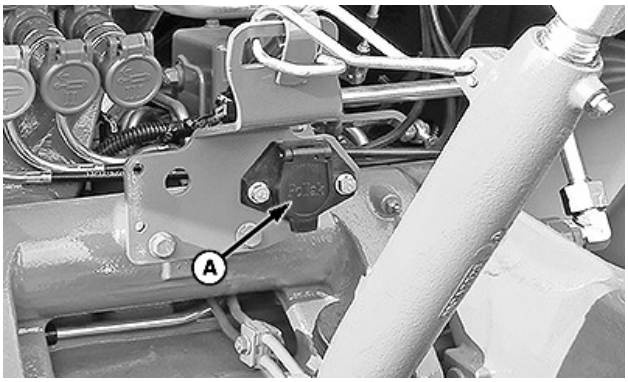
A—Courtesy Light

Courtesy light (A) is on when light switch is in the following positions:

- Warning Light Position
- Road Lights Position
- Field Lights Position

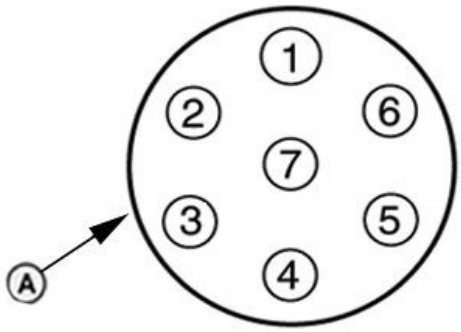
CP00834,00037AD-19-15JAN18

Use Seven-Terminal Outlet



CPA0005092—UN—11JAN18

Seven-Terminal Outlet



PY22172—UN—24MAR15

Seven-Terminal Outlet Terminals

A—Seven-Terminal Outlet

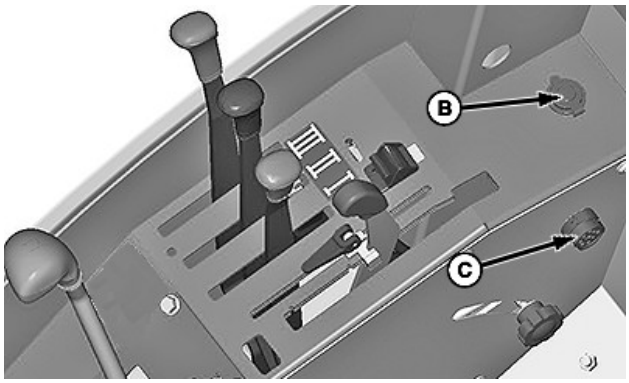
Outlet (A) is used to connect lights, turn signals, and remote electrical equipment on trailers or implements. Always use auxiliary lighting on towed implements when tractor rear signals and other lights are not clearly visible from behind.

NOTE: Matching plug is available through your John Deere dealer.

Terminal	Function
1	Ground
2	Work Light
3	Left Turn
4	Brake Light
5	Right Turn
6	Tail Light
7	Auxiliary

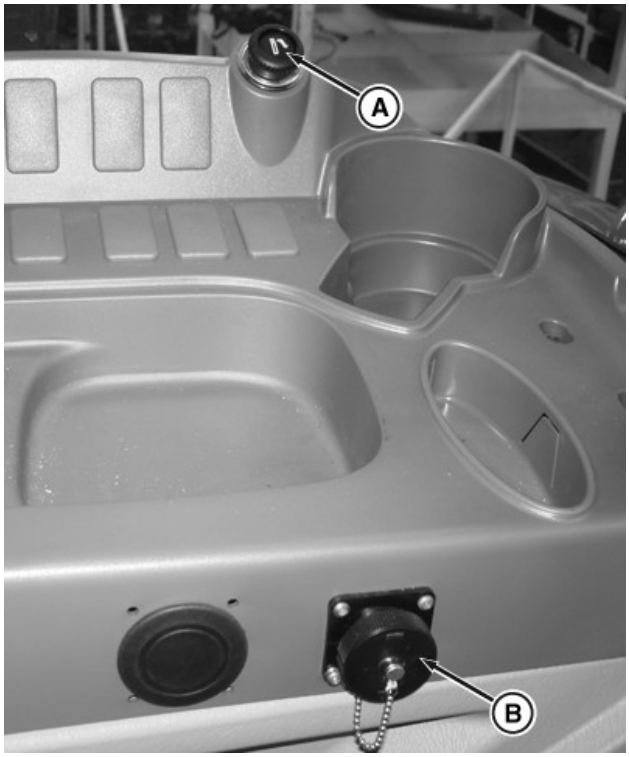
CP00834,00037AE-19-15JAN18

Accessory Electrical Outlets



CPA0004557—UN—23NOV17

Right-Hand Panel, OOS



PY15528—UN—22JUN12

Right-Hand Panel, Cab

PY15527—UN—22JUN12

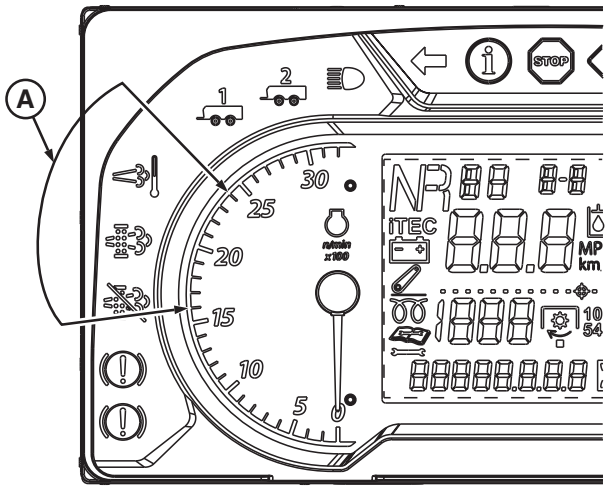
Left-Hand Panel, Cab

A—Cigarette Lighter (Cab only)
B—12 V Electric Outlet
C—Service ADVISOR Outlet (Tractors with electronic controllers)

NOTE: Outlets are protected by two 30 A fuses.

CP00834,000393A-19-17JAN18

Gear Selection



CPA0005012—UN—28FEB18

1600—2400 Rated Engine rpm

A—1600—2400 Rated Engine rpm

IMPORTANT: Operate one gear lower than normal to extend drivetrain life and avoid excessive soil compaction and rolling resistance when using ballast.

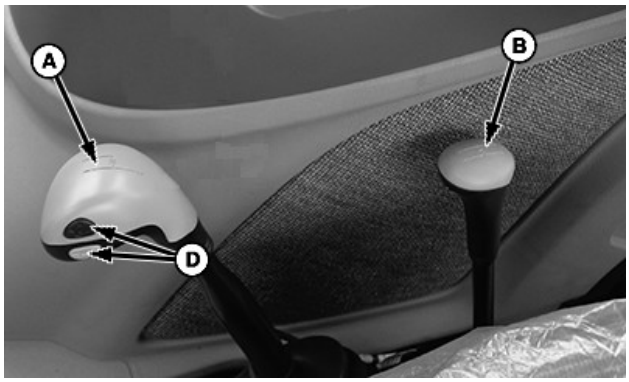
The tractor may be operated in any gear with engine speeds between 1600 and 2400 rpm. Within these limits, the engine can be put under full load. For light load operation, use a higher gear and lower engine speed. This saves fuel and reduces wear.

CP00834,00037B0-19-15JAN18

Operate Transmission—PR

CPA0004561—UN—23NOV17

without High/Low, Cab

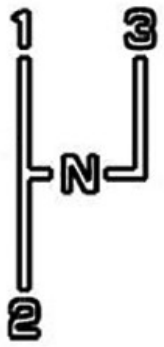


CPA0004560—UN—23NOV17

with High/Low, Cab

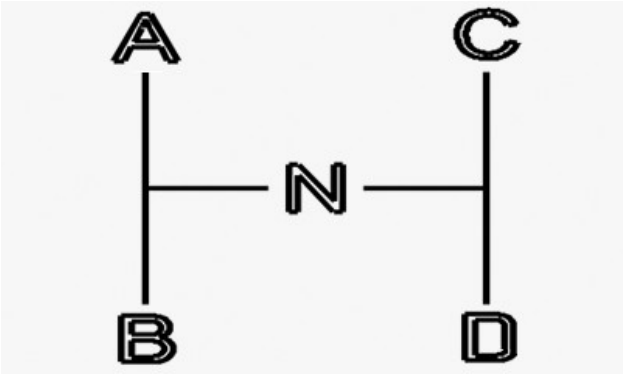
PY21082—UN—08MAY15

PowrReverser™ Lever, Cab



CPA0002724—UN—06MAY16

Gear Shift Pattern



CPA0002725—UN—06MAY16

Range Shift Pattern

A—Gear shift Lever
B—Range Shift Lever
C—PowrReverser™ Lever
D—High/Low Switch

12 X 12 Transmission

Range shift lever (B) provides four ranges: A, B, C, and D.

Gear shift lever (A) provides three speeds: 1st, 2nd, and 3rd.

Using range and speed shift levers in different combinations, 12 forward speeds and 12 reverse speeds can be obtained.

Gear shift lever (A) must be in neutral, “N”, for the engine to be started.

PowrReverser™ lever (C) provides travel direction (forward or reverse).

24 X 12 Transmission

Range shift lever (B) provides four ranges: A, B, C, and D.

Gear shift lever (A) provides three speeds: 1st, 2nd, and 3rd.

High/low switch (D) is used to obtain the higher or lower ground speeds.

Using range shift lever, speed shift lever, and high/low speed split-shift switch in different combinations, 24

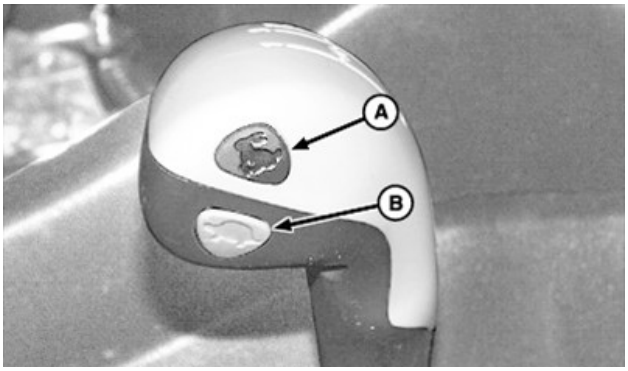
forward speeds and 12 reverse speeds can be obtained.

Gear shift lever (A) must be in neutral, “N”, for the engine to be started.

PowrReverser™ lever (C) provides travel direction (forward or reverse).

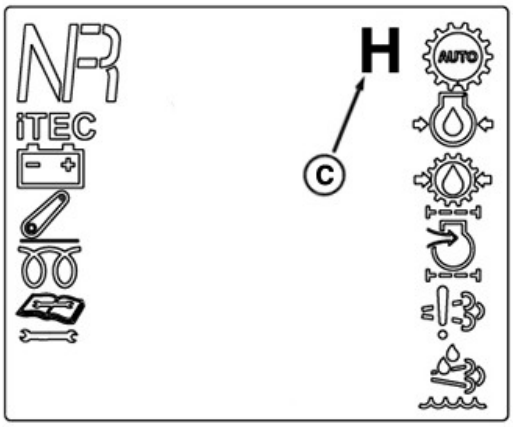
CP00834,00037B1-19-15JAN18

High / Low Split-Shift Feature



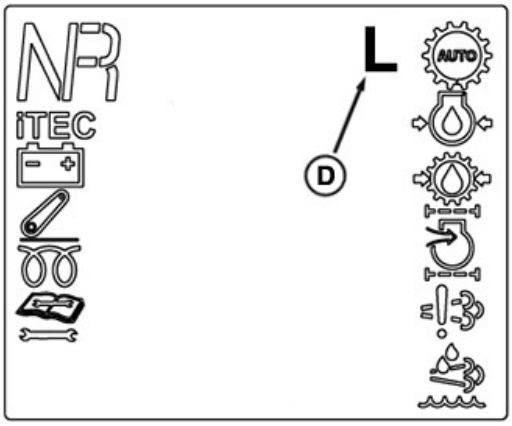
CPA0004683—UN—04DEC17

High/Low Switches



RXA0158296—UN—05APR17

High-Speed Indicator



RXA0158297—UN—05APR17

Low-Speed Indicator

A—High Speed
B—Low Speed
C—High-Speed Indicator (“ H”)
D—Low-Speed Indicator (“ L”)

The 24 X 12 PowrReverser™ transmission is available with push-button high speed (A) and low speed (B) split-shift feature. Each range and gear combination is split for more exact speed control.

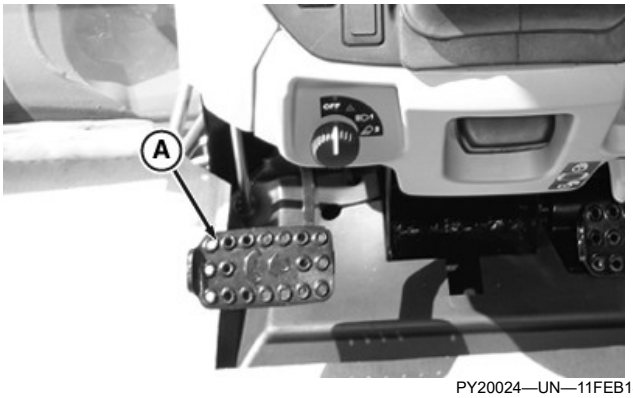
High speed and low speed split-shift feature doubles forward speeds to 24 forward and 12 reverse.

Use the high speed and low speed switches to up-shift and down-shift within the selected range and gear.

“H” (C) appears when high speed is selected and “L” (D) appears when low speed is selected.

CP00834,00037B2-19-15JAN18

Shift Transmission



PY20024—UN—11FEB14

Cab Shown

A—Clutch Pedal

NOTE: This is normally done when engaging a speed gear from neutral with clutch pedal (A) fully depressed. When the tractor is started with speed gear engaged (FNR is in neutral), the tractor will not move when the PowrReverser™ lever is set to F or R.

IMPORTANT: To prevent transmission damage, do not attempt to change range while in motion. To shift into a different range: stop tractor when shifting up from A to B, and when shifting down from C to B or B to A, depress clutch pedal fully and decrease engine speed.

The clutch pedal must be depressed in order to make a gear (speed) shift. If the clutch pedal is not fully depressed, the shift lever cannot be moved beyond neutral. Should this occur, depress the clutch pedal further.

To prevent unnecessary clutch wear, never "ride" the clutch by resting foot on the pedal.

PowrReverser™: With tractor stopped, select desired travel direction (forward or reverse). Travel direction change can be done without depressing the clutch pedal.

Range Shift: Tractor must come to a complete stop when shifting up from A to B, and when shifting down from C to B or B to A.

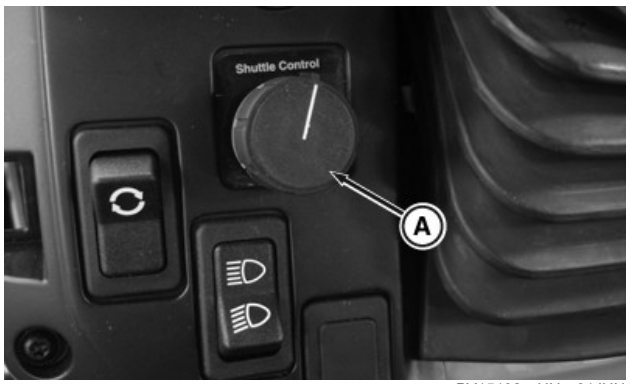
1. After the tractor has stopped, lower engine rpm to idle speed.
2. Fully depress clutch pedal.
3. Select desired speed range (A, B, C, D).
4. Slowly release clutch pedal to gradually take up load.
5. Increase engine speed once shift is completed.

Gear (speed) Shift: Changing gears can be made on-the-go, without stopping.

1. With tractor in motion, depress clutch pedal (A) fully.
2. Select desired speed (1, 2, 3).
3. Slowly release clutch pedal to gradually take up load.

CP00834,00037B3-19-15JAN18

Use Infinitely Variable Shuttle



PY15192—UN—01JUN12

Infinitely Variable Shuttle

A—Infinitely Variable Shuttle

Infinitely variable shuttle (A) adjusts load take-up and acceleration when making directional changes with PowrReverser™ lever during repetitive cycle work (loader operation).

In full left (counterclockwise) position (shown) load take-up and acceleration ramp-up are slow to respond.

When operating with high load and ballast, turn control knob clockwise to speed-up acceleration and load take-up response.

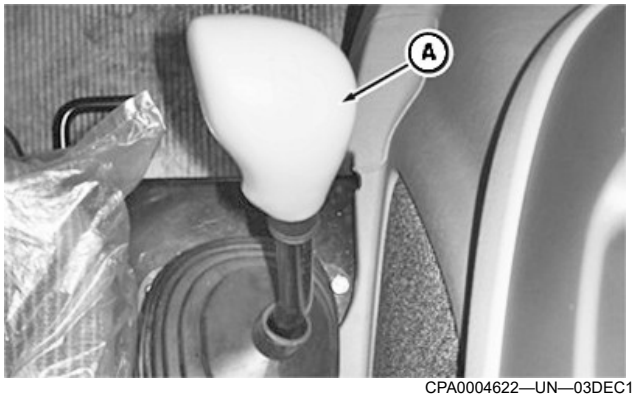
IMPORTANT: When operating in full right (clockwise) position on concrete or paved surfaces, premature tire wear can occur.

CP00834,00037B4-19-15JAN18

Stop Tractor

NOTE: Procedure shown is for Cab Tractors, follow same procedure for OOS Tractors.

1. Stop tractor travel by depressing on clutch pedal first or while using the brakes.



CPA0004622—UN—03DEC17

Gear shift Lever

PY21081—UN—08MAY15

PowrReverser™ Lever

A—Gear shift Lever
B—PowrReverser™ Lever

2. Put gear shift lever (A) or PowrReverser™ lever (B) (if equipped) in NEUTRAL before or while using the brakes.

IMPORTANT: Cooling of certain engine parts is provided by engine oil. Stopping a hot engine suddenly could cause damage to these parts by overheating or lack of lubrication.

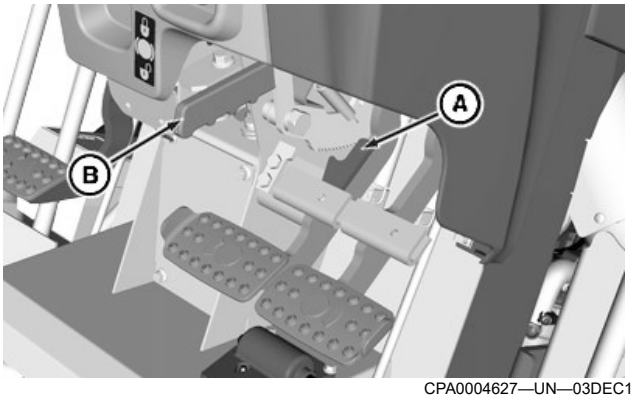
CPA0004727—UN—05DEC17

Hand Throttle

A—Hand Throttle

3. Pull hand throttle (A) down to low idle position. Allow engine to idle for 1—2 minutes.

CAUTION: Always set parking brake before dismounting. Leaving transmission in gear with engine off will not prevent tractor from moving.



CPA0004627—UN—03DEC17

Brakes

A—Brake Pedals Locking Bar
B—Handbrake lever

4. Lock brake pedals together with brake pedals locking bar (A). Push brake pedals down and pull up on handbrake lever (B) to set parking brake.
5. Move rockshaft lever forward and lower all equipment to the ground.
6. Put all SCV levers in NEUTRAL.
7. Disengage PTO.

CAUTION: Remove key from ignition switch to prevent operation by untrained personnel.

8. Turn key to STOP position and remove from switch.

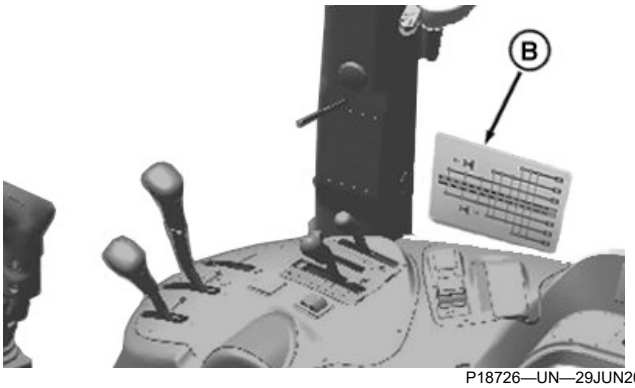
CP00834,000393B-19-17JAN18

Ground Speed Labels

Ground speed label shows machine speed in any given range and gear. For more information, see Ground Speeds in Specifications section.

P18725—UN—29JUN20

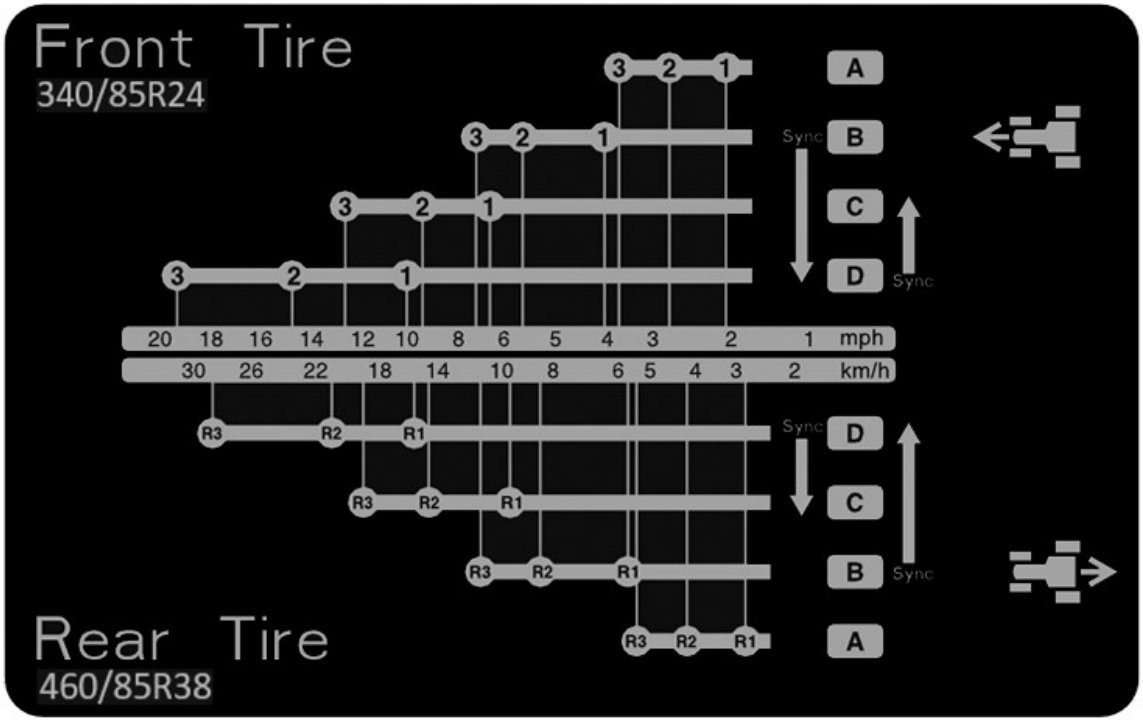
OOS



P18726—UN—29JUN20

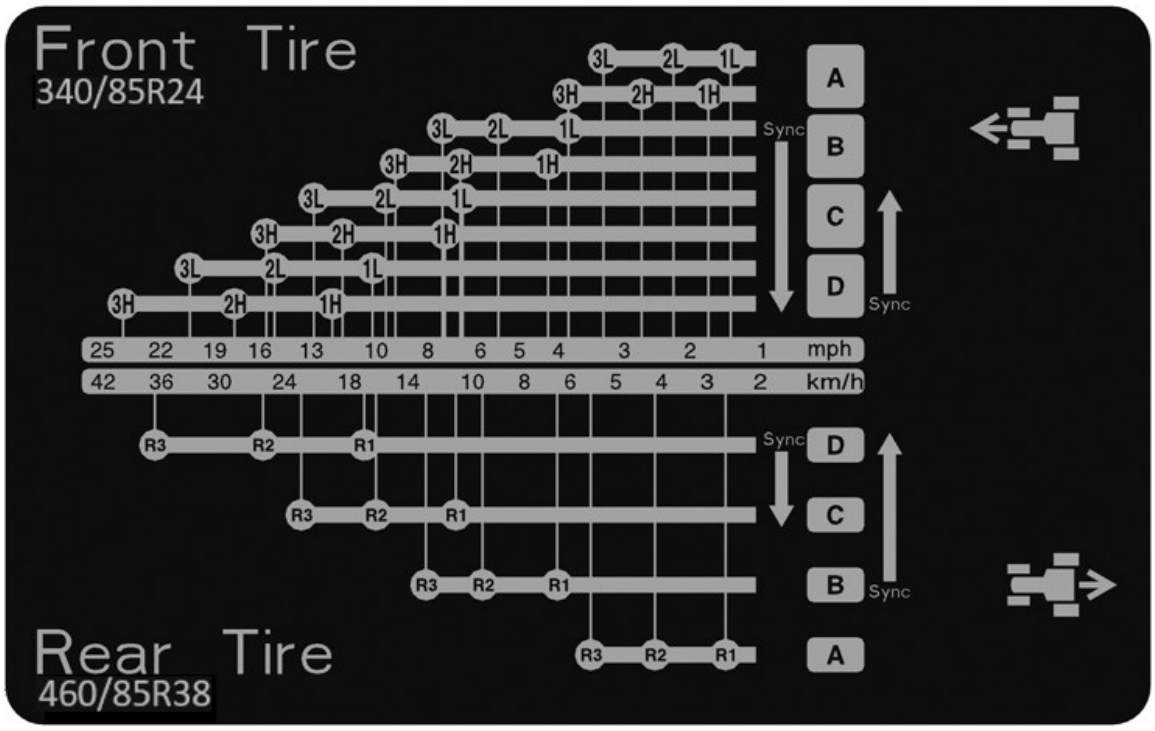
Cab

A—Ground speed label location (OOS)
B—Ground speed label location (Cab)



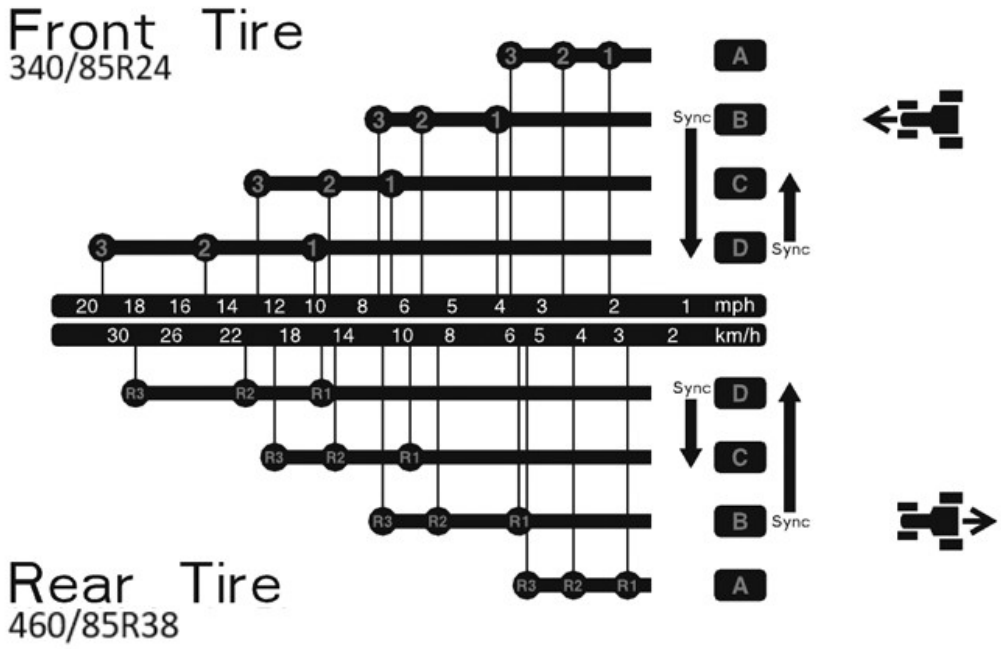
P18733—UN—02JUL20

12 X 12 Transmission, OOS



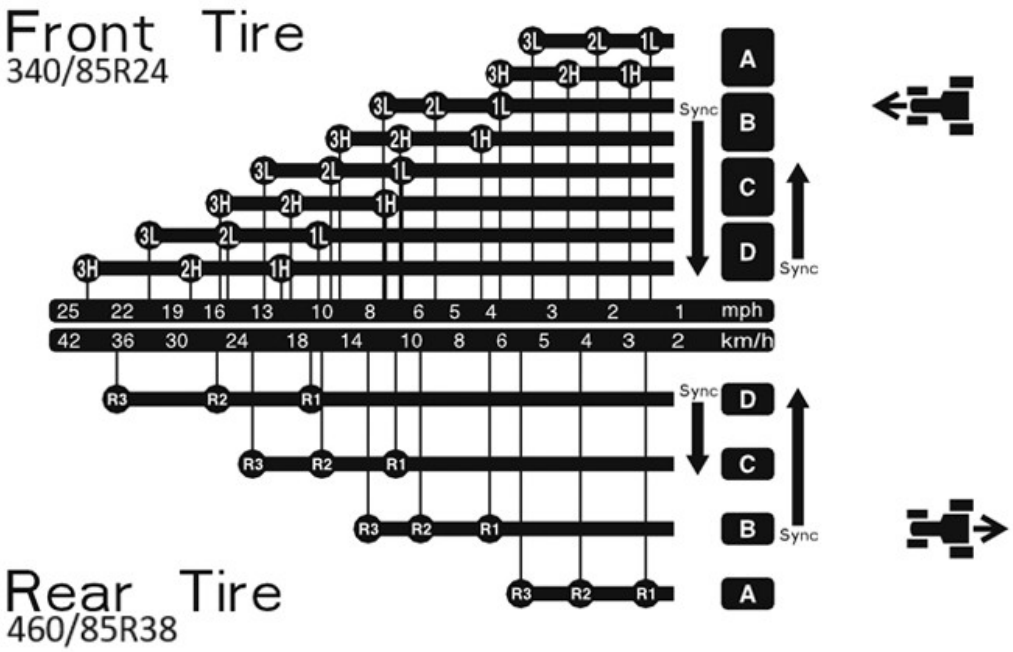
P18734—UN—03JUL20

24 X 12 Transmission, 40K, OOS



P18735—UN—02JUL20

12 X 12 Transmission, Cab



P18736—UN—02JUL20

24 X 12 Transmission, 40K, Cab

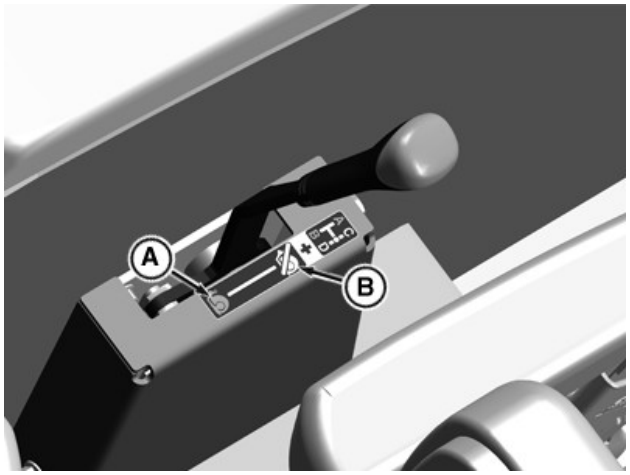
HL70592,0000BE0-19-03JUL20

Creeper Operation

Prior to activating or deactivating the creeper transmission, bring the tractor to a standstill and press clutch.

Select the creeper as follows:

1. Select range.
2. Engage the creeper.



APY44700—UN—27APR21

Engage Creeper

A—Creeper Speed
B—High Speed

Never engage creeper transmission with the engine speed higher than 1000 rpm.

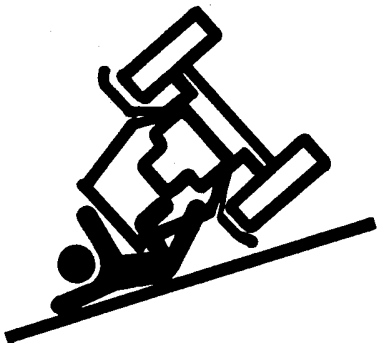
NOTE: Range shift lever must be in the neutral position to shift into creeper.

IMPORTANT: Always engage the creeper in either A range or B range. Do not engage creeper range C or D. Using the creeper transmission under any of these circumstances may lead to the mechanical failure.

GS38198,0000F71-19-26MAY21

Operate EH MFWD

Use mechanical front-wheel drive (MFWD) as required for better traction.



RW13093—UN—07DEC88

Safety—Roll Over

CAUTION: Mechanical front wheel drive greatly increases traction. It does not increase the stability of the tractor. With MFWD engaged, the tractor can climb steeper slopes but it does not become more stable. The possibility of a tip-over increases with MFWD. Use extra caution on slopes.

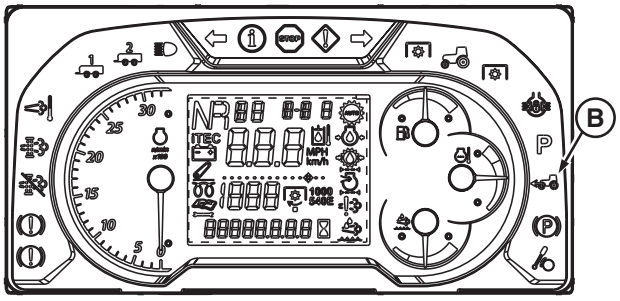
When driving on icy, wet, or graveled surfaces, reduce speed and properly ballast tractor to avoid skidding and loss of steering control. For best control under adverse conditions, engage mechanical front wheel drive (if equipped).

Do not operate the tractor if is exposed to flooded fields, this can results in serious damage.

IMPORTANT: Use AUTO or BRAKE ASSIST positions when transporting tractor, not full time ON mode.

PY13413—UN—21JUL15

OOS



CPA0005013—UN—28FEB18

MFWD Indicator

A—EH MFWD Switch
B—MFWD Indicator

NOTE: MFWD indicator (B) lights whenever front wheel drive is engaged.

MFWD can be engaged and disengaged in all gears (forward and reverse) during operation and under full load. EH MFWD switch (A) has three operating positions:

1. Center ON position engages MFWD full time.
2. Top AUTO position disengages MFWD automatically when either brake pedal is pressed or if speed exceeds 14 km/h (8.6 mph). MFWD automatically re-engages when brakes are released and speed is below 14 km/h (8.6 mph).
3. Bottom BRAKE ASSIST position engages MFWD when both brake pedals are depressed.

AG32641,0000475-19-13SEP21

Differential Lock

CAUTION: Do not operate tractor at high speed or attempt to turn with differential lock engaged.

IMPORTANT: To prevent damage to drive train, do not engage differential lock when one wheel is spinning and the other is completely stopped.

P15330—UN—27MAR08

Differential Lock

A—Differential Lock Pedal

When one wheel starts to lose traction, engage differential lock by depressing differential lock pedal (A) down. Tractor wheels must be turning before engaging differential lock. If possible, engage differential lock before entering conditions where tires may slip.

Unequal traction will keep the lock engaged. When traction equalizes, lock will disengage itself by spring action. If lock does not disengage, depress one brake pedal and then the other.

If tires repeatedly slip, get traction, and then slip again, hold pedal in the engaged position.

CP00834,00037B7-19-15JAN18

Change Reversible PTO Stub Shaft

TS1644—UN—22AUG95

Rotating Drivelines

CAUTION: 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.

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

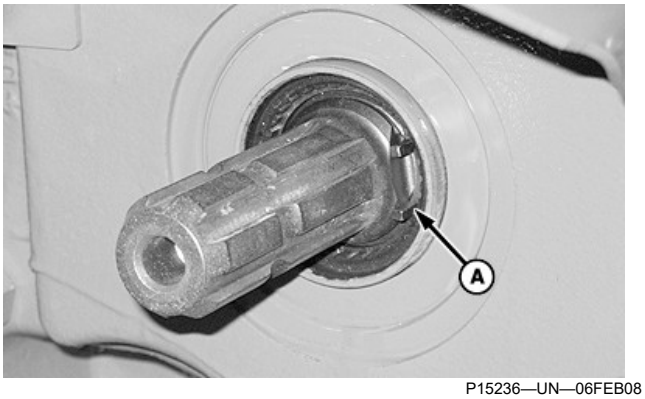
Avoid personal injury. PTO shaft may be hot from operation. Wear gloves and allow shaft to cool before changing.

IMPORTANT: Implements can be operated at 540 rpm only if the power input never exceeds 56 PTO kW (75 PTO hp). Operating PTO at lower speeds under heavy load could damage PTO.

For implement power requirements of 56 PTO kW (75 PTO hp) up to 86 PTO kW (115 PTO hp), PTO shaft must be switched to 1000 rpm end, as described below.

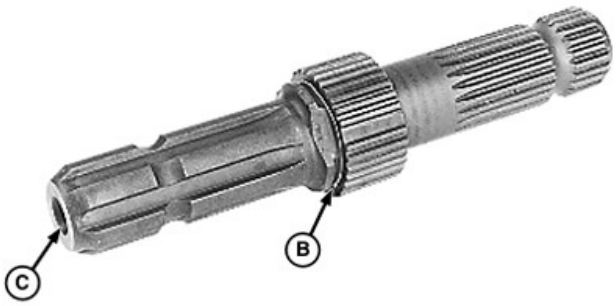
NOTE: The 1000 rpm stub shaft has 21 splines for heavy PTO loads. The 540 rpm stub shaft has 6 splines for loads requiring less than 56 PTO kW (75 PTO hp). Consult implement Operator's Manual to determine shaft suitability, depending on implement power requirement.

1. Raise PTO shield (If equipped).



P15236—UN—06FEB08

PTO Stub Shaft and Snap Ring



LV12604—UN—26APR05

PTO Stub Shaft Bore

A—Snap Ring
B—Snap Ring Groove
C—Bore

2. Rotate ends of snap ring (A) to align with flat surface of PTO stub shaft.
3. Remove snap ring and pull out shaft.
4. Clean stub shaft thoroughly. Coat splines with John Deere HD Non-Clay grease.

IMPORTANT: Avoid damage to PTO. Clean bore (C) thoroughly when installing PTO shaft for 1000 rpm use.

5. Install shaft into PTO housing.

   540 rpm shaft: Rotate shaft back and forth while installing to ensure shaft is properly seated in housing. Continue to push shaft in while installing snap ring.

   1000 rpm shaft: Rotate shaft back and forth while installing until engagement is felt.

NOTE: Shaft is properly engaged when shaft turns with high effort.

6. Install snap ring in groove (B) to retain shaft.
7. Lower PTO shield (if equipped).

HL70592,0000841-19-16MAR18

Attach PTO-Driven Implement

TS1644—UN—22AUG95

Rotating Drivelines

CAUTION: 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.

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

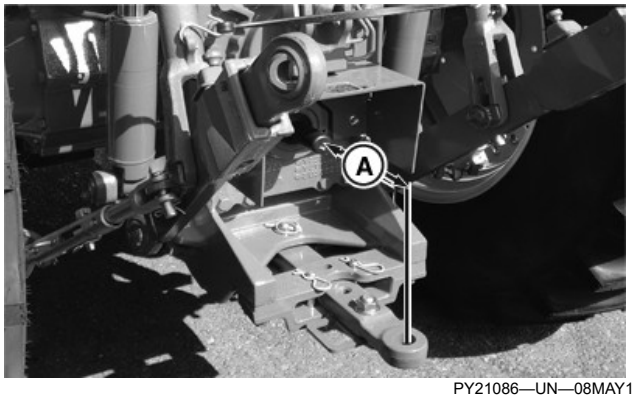
To avoid injury, stop engine before attaching implement or working in area of implement hitch.

IMPORTANT: If equipped, remove clevis assembly on drawbar when using PTO-driven equipment.

The drawbar must be in extended hole position to attach PTO-driven implement.

Short position hole should never be used for PTO-driven implement.

1. Stop engine and remove key. (See Stop the Engine in Engine Operation section.)
2. Lock drawbar in center, no-sway position. (See Adjust Drawbar Side-to-Side in Hitch and Drawbar Operation section.)
3. Put drawbar in extended position. (See Adjust Drawbar Length in Hitch and Drawbar Operation section.)



PY21086—UN—08MAY15

PTO Shaft-to-Pin Hole Distance

A—PTO Shaft-to-Pin Hole Distance

4. Remove clevis assembly, if equipped.

PTO Shaft	Distance from PTO Shaft End to Hitch Pin Hole (A)
540 rpm - 6 Splines[a]	356 mm (14.0 in)
1000 rpm - 21 Splines[a]	406 mm (16.0 in)

[a] *35 mm (1-3/8 in) Shaft Diameter*

5. Attach implement to drawbar before connecting PTO driveline. Raise hitch to full-up (transport) position if not used.

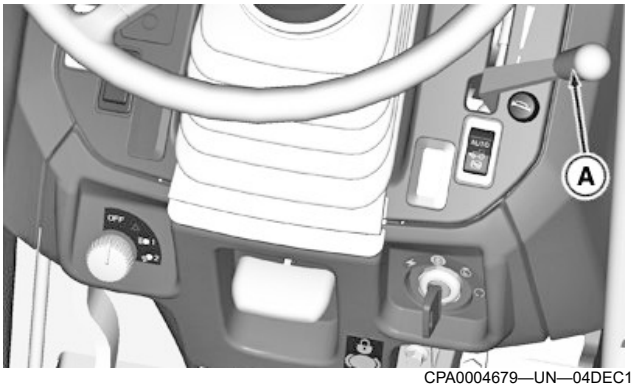
   If implement will be connected to 3-point hitch, be sure drawbar will not interfere. Remove if necessary.
6. Lift up PTO shield (if equipped).
7. Turn PTO shaft by hand to line up splines. Connect driveline to PTO shaft. Pull out on shaft to be sure driveline is locked to PTO shaft.
8. Lower PTO shield (if equipped) to centered position.
9. Check for interference.

HL70592,0000842-19-16MAR18

Operate Tractor PTO

CPA0004545—UN—22NOV17

Cab

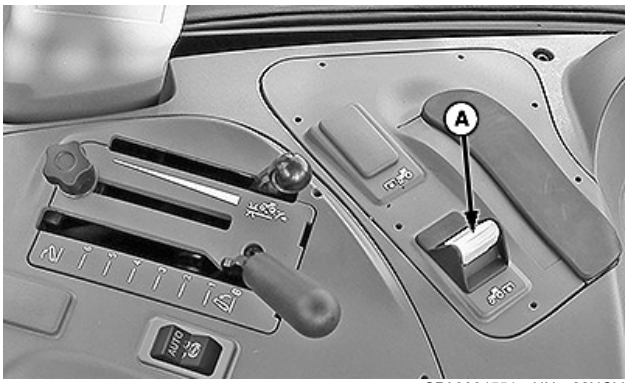


CPA0004679—UN—04DEC17

OOS

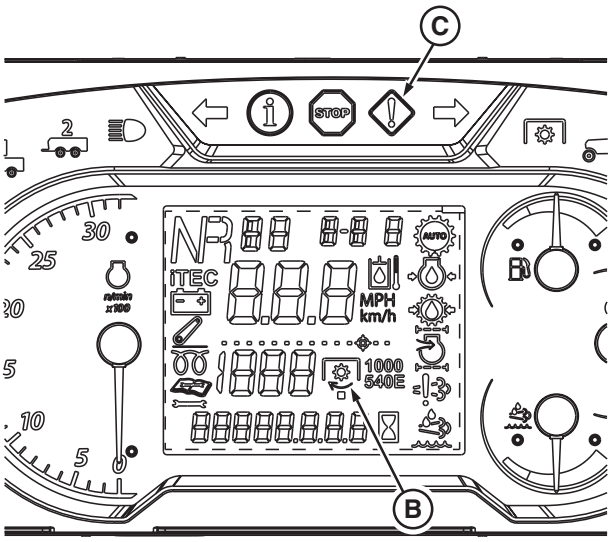
A—Hand Throttle Lever

1. Depress clutch pedal, start engine, engage PTO, and push hand throttle lever (A) forward to desired PTO speed.



CPA0004551—UN—22NOV17

Cab



CPA0005014—UN—28FEB18

PTO Indicator Light

A—PTO Switch
B—PTO Indicator Light
C—Service Alert Indicator

NOTE: If operator is not on seat when PTO switch is engaged:

- ***OOS:*** *Service alert indicator (C) turns ON*
- ***Cab:*** *Audible alarm sounds*

2. Push down and forward on PTO switch (A) to engage PTO. PTO indicator light (B) turns on when PTO is engaged.

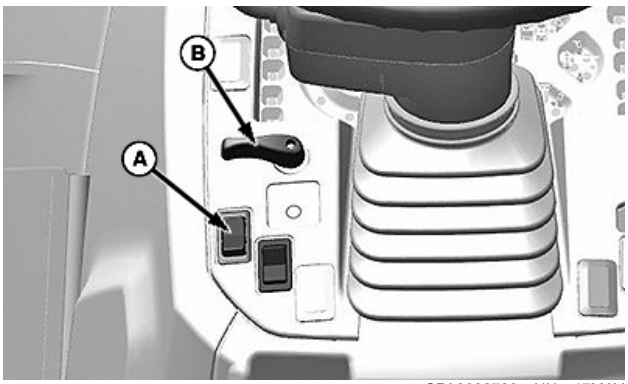
CAUTION: Avoid personal injury. Stop engine and allow PTO driveline to stop before adjusting, connecting, or cleaning PTO-driven implement.

To avoid entanglement with rotating shaft, always disengage PTO when not in use.

3. Pull PTO switch (A) rearward to disengage PTO.

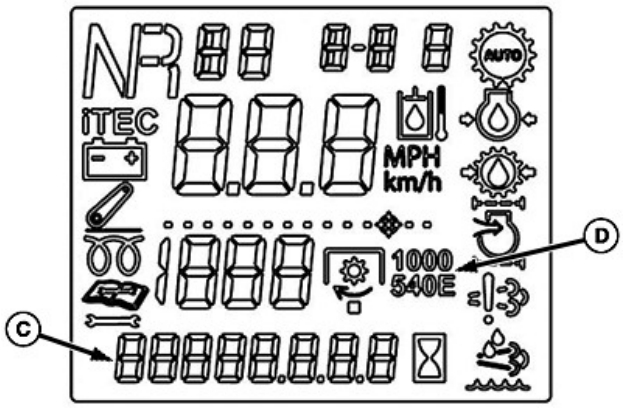
HL70592,0000843-19-16MAR18

PTO Speed Selection



CPA0002739—UN—17MAY16

Switches



CPA0004579—UN—23NOV17

Information Display

A—Roll Mode Switch
B—Turn Signal Lever
C—Information Display
D—PTO Speed Indicator

1. Start tractor.
2. Toggle roll mode switch (A)
3. Default PTO speed indication shall be blank.
4. “PTO SEL” is shown on the information display (C).
5. Toggle turn signal lever (B) to select desired PTO speed.
6. Observe the PTO symbols 540 & 1000 in PTO speed indicator (D).
7. Toggle roll mode switch (A) once more to set selected PTO speed.

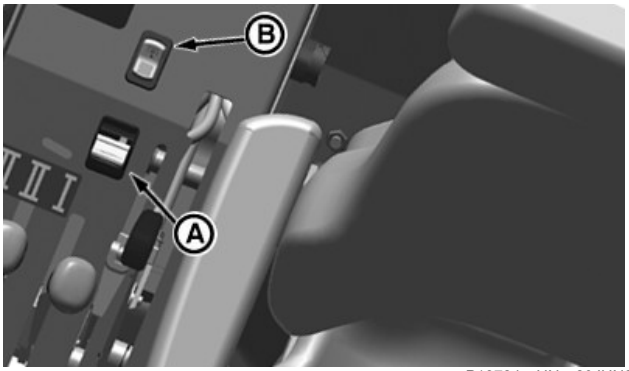
HL70592,0000844-19-16MAR18

PTO Alarm and Automatic Shut-Off Function

NOTE: This machine has a PTO alarm and automatic shut-off feature built into the software. Depending on the version of software loaded to your machine, the operation of this feature may vary.

For assistance with this feature or software versions available on your machine, see your John Deere dealer.

Shut-Off Switch Location



P18724—UN—29JUN20

PTO switches location, OOS

P18723—UN—29JUN20

PTO switches location, Cab

A—Rear PTO Switch
B—Remote PTO Switch

Alarm and Automatic Shut-Off Events

An alarm will sound to alert the operator that the PTO is running. See the following scenarios:

Scenario	1	2	3[a]	4
Machine Movement	Parked or Stationary	Parked or Stationary	Parked or Stationary	Moving Above 0.5 km/h (0.31 mph)
Remote PTO Enable Switch	Off	Off	Engaged before rear PTO switch	Off
Rear PTO Switch	Engaged	Engaged	Engaged	Engaged
Operator	Leaves seat	Leaves seat	Leaves seat	Leaves seat
Alarm	7 seconds	7 seconds	No alarm	No alarm
PTO	Shuts Off after 7 seconds	Shuts Off after 7 seconds	Off until remote PTO switch is depressed	Stays On
To Keep PTO Enabled	Return to seat within 7 seconds	Depress the remote PTO enable switch within 7 seconds	No action required	No action required

[a]*See "Operate Remote PTO" in this section for additional information.*

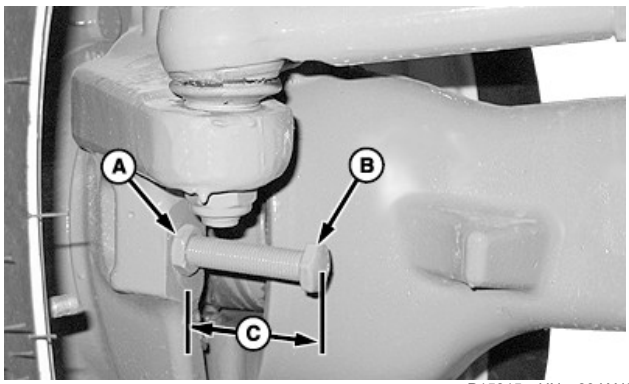
No Alarm or Automatic Shut-Off Events

There will not be an alarm and PTO will continue to operate in the following scenarios:

Scenario	1	2	3
Machine Movement	Parked or Moving	Parked or Stationary	Parked or Stationary
Remote PTO Enable Switch	Off	Off	Engaged after rear PTO switch
Rear PTO Switch	Engaged	Engaged	Engaged
Operator	Remains in seat	Not in seat when PTO switch was engaged	Leaves seat
Alarm	None	None	None
PTO	Stays On	Starts and Stays On	Stays On
To Keep PTO Enabled	No action required	No action required	No action required

HL70592,0000BF7-19-17SEP20

Steering Stop Adjustment (MFWD Axle)



P15215—UN—28JAN08

Left-Hand Side

A—Lock Nut
B—Adjusting Screw
C—Dimension

IMPORTANT: Check for interference with front weights, tie rods, side frames, and/or grille screen during full turn and full oscillation. A minimized turn radius may be obtained by utilizing a shorter stop position.

NOTE: Make sure dimension (C) is set to the same value on right-and left-hand wheels.

Front wheel steering angle must be kept within certain limits according to tire size and tread width. Refer to one of the following tables to set adjustment dimension (C) by loosening lock nut (A) and turning adjusting screw (B). Tighten lock nut to specification.

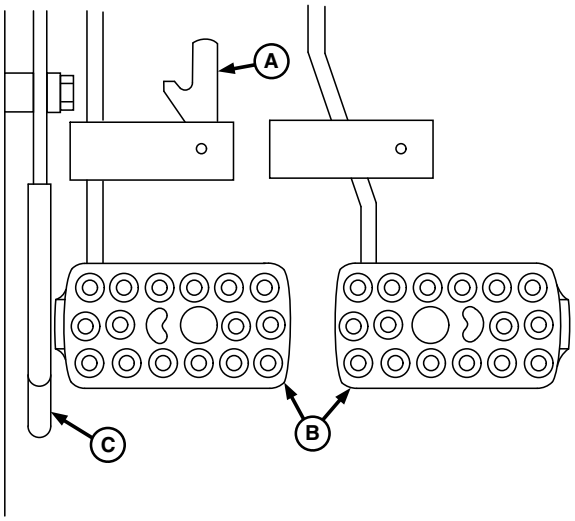
Specification	
Lock Nut—Torque	200 N·m (150 lb·ft)

Without Fenders							
	Rim and Wheel Disk Positions (See Tread Settings—MFWD Axle in Wheels and Tires Operation Section.)						
	A	B	C	D	E	F	G
Tire Size	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)
340/85 R24	N/A	55 mm (2.2 in)	31 mm (1.2 in)	22 mm (0.9 in)	22 mm (0.9 in)	23 mm (0.9 in)	23 mm (0.9 in)
380/85 R24	N/A	76 mm (3.0 in)	39 mm (1.5 in)	41 mm (1.6 in)	24 mm (0.9 in)	24 mm (0.9 in)	24 mm (0.9 in)

With Fenders							
	Rim and Wheel Disk Positions (See Tread Settings—MFWD Axle in Wheels and Tires Operation Section.)						
	A	B	C	D	E	F	G
Tire Size	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)	Dimension (C)
340/85 R24	N/A	81 mm (3.2 in)	64 mm (2.5 in)	57 mm (2.2 in)	56 mm (2.2 in)	56 mm (2.2 in)	54 mm (2.1 in)
380/85 R24	N/A	85 mm (3.3 in)	76 mm (3.0 in)	53 mm (2.1 in)	53 mm (2.1 in)	53 mm (2.1 in)	53 mm (2.1 in)

CP00834,00037BC-19-15JAN18

Use Brakes



P9598—UN—12SEP00

Handbrake Lever and Brake Pedal Locking Bar

A—Brake Pedal Locking Bar
B—Brake Pedals
C—Handbrake Lever

CAUTION: Before operating tractor on a road, lock pedals together with locking bar (A). Use brakes lightly and cautiously at transport speeds.

For field work, brake pedals (B) should not be locked together. Instead, apply right brake pedal lightly to assist in making sharp right-hand turns and left pedal for left-hand turns.

CAUTION: Always set park brake before dismounting. Leaving transmission in gear with engine off will NOT prevent tractor from moving.

To set park brake, lock brake pedals together with locking bar, depress brake pedals, and pull up on handbrake lever (C) after coming to a complete stop. Handbrake lever keeps brake pedals down. To release lever, push down briefly on brake pedals. Lever will drop down on its own.

IMPORTANT: To prevent unnecessary wear, never "ride" the brakes by resting a foot on the pedals.

Reduce speed if towed load is not equipped with brakes and weighs more than the tractor. Avoid hard braking applications. Consult implement Operator's Manual for recommended transport speeds.

Use additional caution when transporting towed loads under adverse conditions and when turning or stopping on inclines.

CP00834,000393D-19-17JAN18

Open Center Hydraulic System

IMPORTANT: The hydraulic system design used on this tractor is known as an open center system. In general, it is not recommended to use continuous flow hydraulic motors with this type of system. Some hydraulic motors designed for open centered systems (high flow at low pressure) can be used if a pressure-compensated flow control valve is used to control speed. The deluxe three-function (inlet section) SCV has a pressure-compensating flow control valve built into the 1st SCV. If the tractor is equipped with a dual inlet SCV, you will need to control motor speed with an independent pressure-compensated flow control valve. Using a non-compensated flow control valve, such as a needle valve, may cause overheating of the hydraulic system. Consult your nearest John Deere dealer or service facility for more information regarding this type of application.

Hydraulic motor applications, such as those used in vacuum blower motors, centrifugal sprayer pumps, hydraulically driven rakes, or other similar applications, may cause overheating of the hydraulic system if the hydraulic motors are not correctly sized for an open center system. In such cases, the use of a PTO-driven hydraulic pump is strongly recommended.

Open center systems cannot be used for implements requiring "active" down force, such as no-till, folding, air disk, and no-till air drills, as well as used to maintain optimum press wheel down-force on air hoe-drills.

Open center hydraulic systems with Deluxe Three-Inlet section SCV's can be used with hydraulic motors requiring high flow at low pressure but not on motors requiring low flow at high pressure, or overheating will occur and possible damage to hydraulic system.

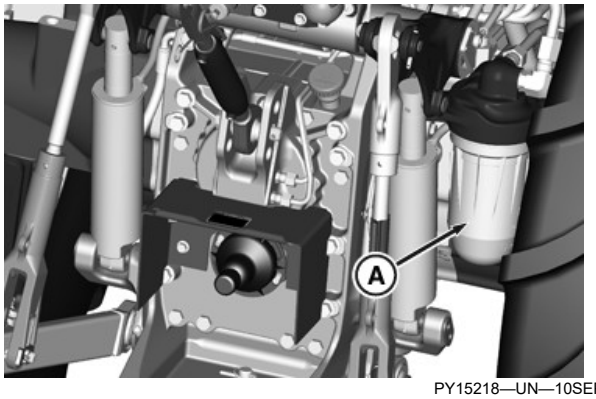
Anytime one of the above applications is considered, consult your nearest John Deere dealer or service facility for information on how to open center system in these applications.

Failure to observe this application information will likely cause serious damage to tractor hydraulic system.

CP00834,00037BE-19-15JAN18

Warm Transmission-Hydraulic System Oil

CAUTION: Overheated hydraulic oil can cause personal injury and component malfunctions. To prevent hydraulic oil from overheating, Do not hold SCV or multi-function lever (if equipped) in operating position for an extended period of time.



PY15218—UN—10SEP12

Hydraulic Oil Filter

A—Hydraulic Oil Filter

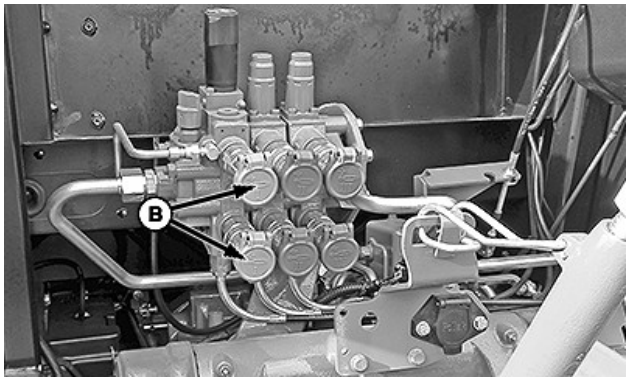
Hydraulic system is slow to function when tractor is started in cold weather. Cold oil cannot flow easily through the hydraulic oil filter (A).

Steering is slow until system warms up.

Hydraulic system functions normally when oil warms up.

IMPORTANT: To prevent damaging hydraulic pump or relief valve, do not exceed 2—3 minutes warm-up time with steering wheel held in full left or full right turn position or by using the SCV levers. Perform oil warm-up operation at rear or mid SCV.

NOTE: Operation at rear SCV is shown, Mid SCV operation is similar.

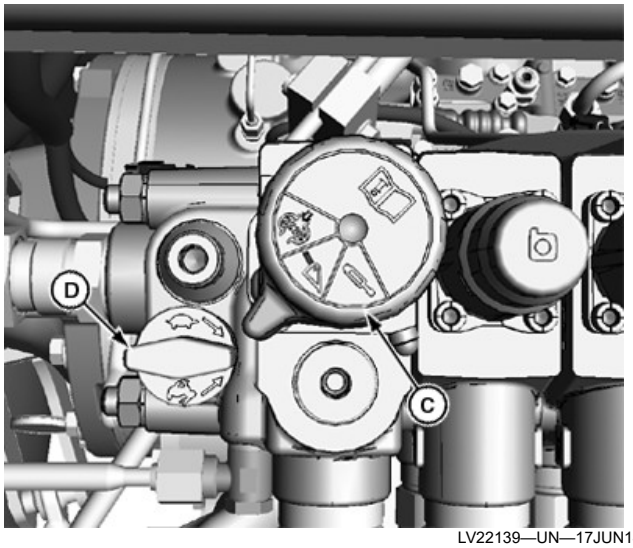


CPA0005094—UN—11JAN18

SCV I Couplers

B—SCV I Couplers (2 used)

1. Connect jumper hose to SCV I couplers (B).



LV22139—UN—17JUN14

Rear SCV View

C—Automatic Detent Position
D—Flow Control Knob

2. For triple rear SCV, turn SCV I selector knob to cylinder (automatic) detent position (C).
3. For triple rear SCV, turn flow control knob (D) fully counterclockwise (Open).
4. Depress clutch pedal, start engine, and idle at 1200 rpm.

NOTE: For dual rear SCV or mid SCV, control lever or multi-function lever must be held into extend or retract.

CPA0004550—UN—22NOV17

Cab

A—SCV I Control Lever

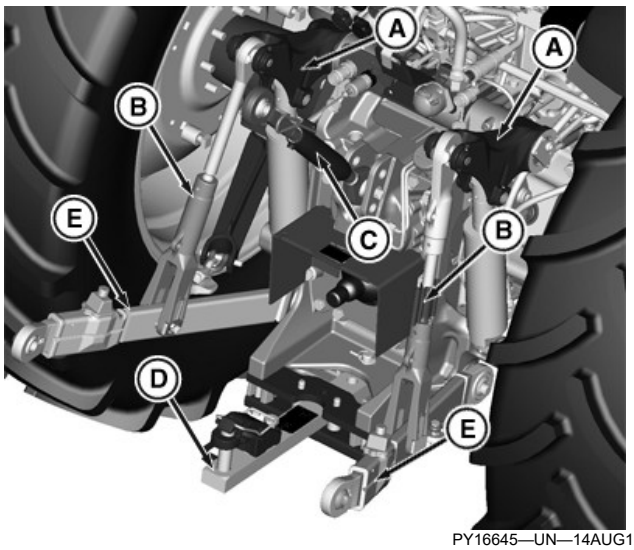
5. Move SCV I control lever (A) forward or rearward until hydraulic oil warms to operating temperature.
6. To check warm-up progress, turn steering wheel side-to-side. When wheel turns smoothly without hesitation, oil has warmed to operating temperature.

NOTE: After transmission-hydraulic oil has warmed to operating temperature, go to the following steps 7, 8, and 9.

7. Return SCV I control lever to neutral.
8. Return detent selector and flow control knobs to original positions and setting.
9. Remove jumper hose.

CP00834,000393E-19-17JAN18

3-Point Hitch Components



PY16645—UN—14AUG12

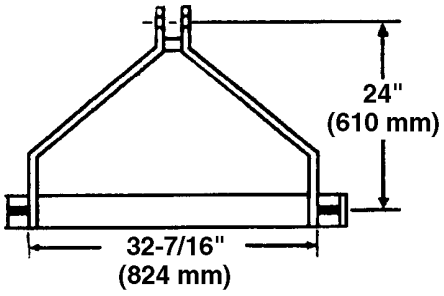
OOS

A—Lift Arms (2 used)
B—Lift Links (2 used)
C—Center Link
D—Drawbar
E—Draft Links (2 used)

IMPORTANT: Tractor power should be matched to the size of certain implements. Excessive power can damage an implement, and too large an implement can damage the tractor. (Refer to your implement Operator's Manual for minimum and maximum power requirements before attaching an implement.)

CP00834,00037C2-19-15JAN18

Prepare Implement



P10112—UN—27FEB01

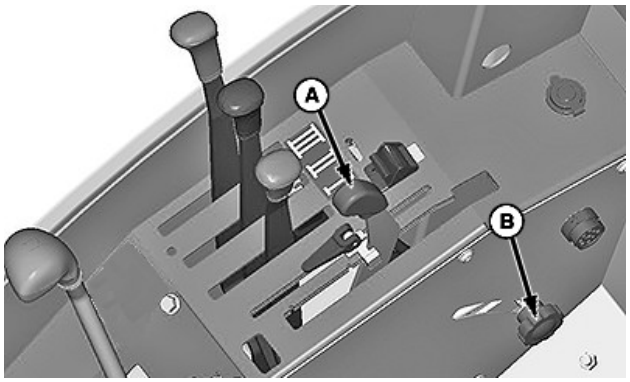
Implement Mast

Category II implements should have the top hole of the implement mast located 610 mm (24 in) above the lower pins. Drill another hole in top mast or extend top mast if necessary.

Mast Height	Width Between Lower Pins	Pin Size	
		Lower	Upper
610 mm (24 in)	824 mm (32-7/16 in)	28 mm (1-1/8 in)	25.4 mm (1 in)

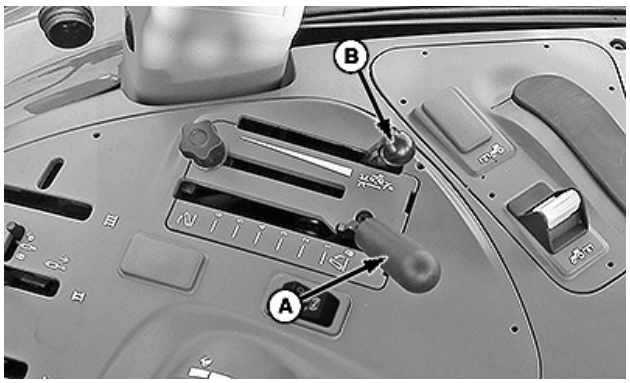
CP00834,00037C3-19-15JAN18

Rockshaft Control Levers



CPA0004552—UN—23NOV17

Control Levers for OOS



CPA0004547—UN—22NOV17

Control Levers for Cab

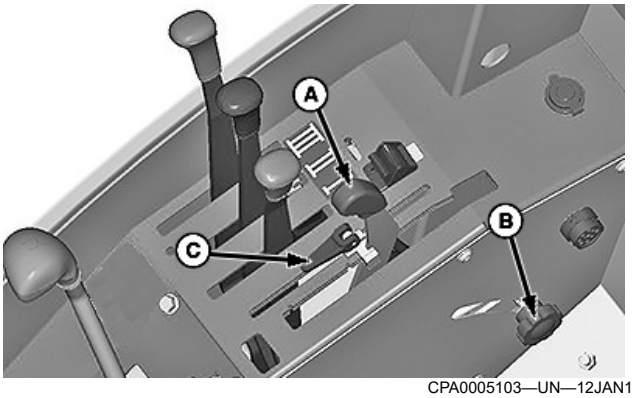
A—Position Control Lever
B—Draft Control Lever

The rockshaft is controlled by position control lever (A) and draft control lever (B). Position control lever raises the hitch when pulled rearward and lowers the hitch when moved forward.

Draft control lever controls hitch position relative to draft loads.

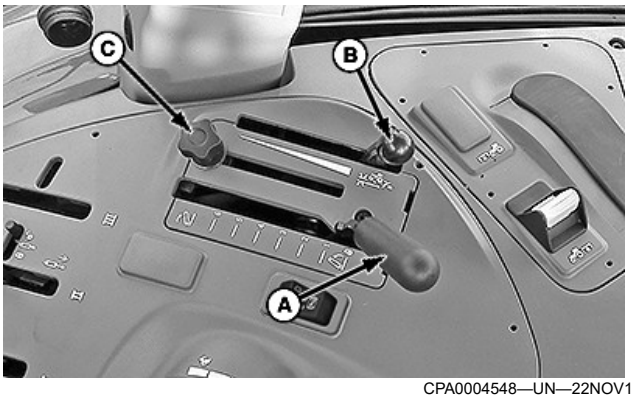
CP00834,00037C4-19-15JAN18

Use Rockshaft Position Control



CPA0005103—UN—12JAN18

Control Levers of OOS



CPA0004548—UN—22NOV17

Control Levers of Cab

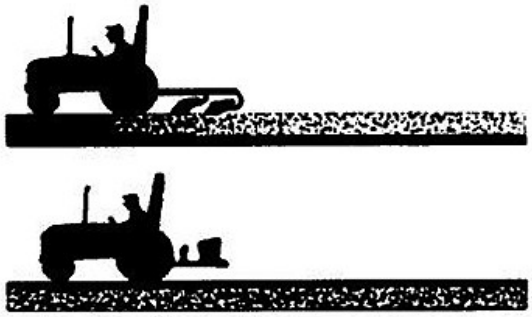
A—Position Control Lever
B—Draft Control Lever
C—Position Control Lever Stop

CAUTION: To prevent unexpected movement, put draft control lever (B) in full forward position before attaching implement.

Position control lever (A) controls 3-point hitch-mounted-implement raise-or-lower movement and ground depth penetration.

IMPORTANT: Draft control setting automatically influences actual hitch position. For independent position control, move draft control lever (B) in full forward position.

NOTE: A few minutes of implement operation may be required to determine the best depth. Set desired depth with stop. Hitch returns implement to previous above-or-below-ground depth.



CPA0005051—UN—11JAN18

Depth Control

Depth Control (level, in-ground, on-ground, and non-ground engaged situations): Position control lever at desired depth.

CPA0005050—UN—11JAN18

Float Control

Float Control (uneven, ride on-ground contour situations): Position control lever and draft control lever fully forward.

NOTE: Ensure that implement skids or height gauge wheels are set correctly to carry full implement weight. Ensure that hitch draft link arms are adjusted for any required lateral float.

Height at Turn (end of field turn around situations): Position control lever rearward until implement is out of ground.

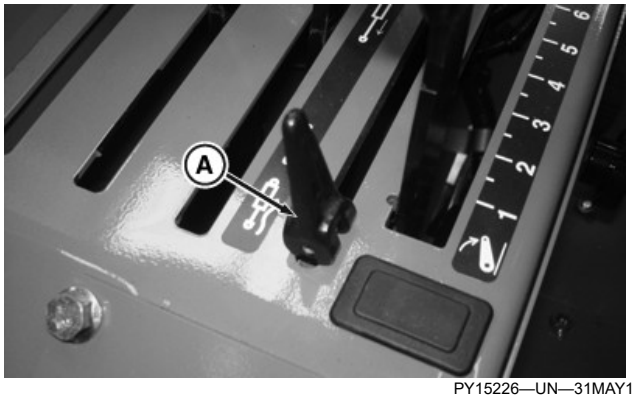
Implement Transport (load and non-load sense usage): Position control lever fully rearward.

CP00834,00037C5-19-15JAN18

Set Position Control Lever Stop

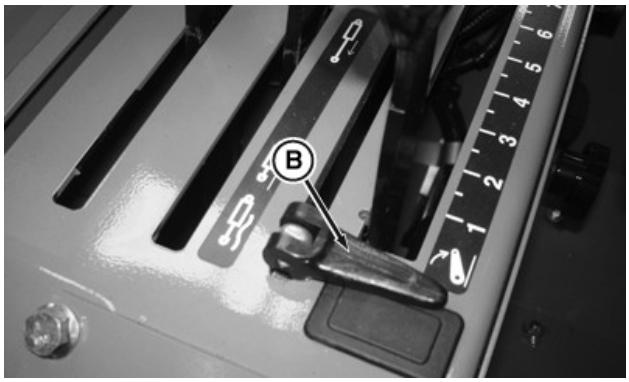
NOTE: Position control lever stop is used when operating depth or height needs to be repeated often.

1. Operate implement for a few minutes to determine proper depth or height.



PY15226—UN—31MAY12

Lever Stop



PY15225—UN—31MAY12

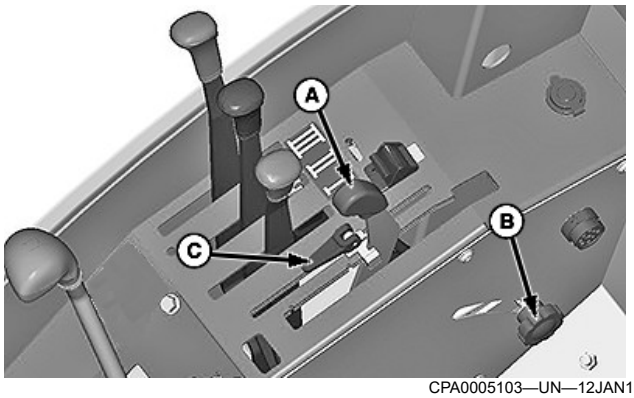
Lever Stop in Down position

A—Lever Stop
B—Lever Stop in Down Position

2. Raise lever stop (A) and slide against position control lever. Lock stop in position by pressing lever down (B). Rockshaft will now lower to same position each time control lever is pushed forward to the stop.

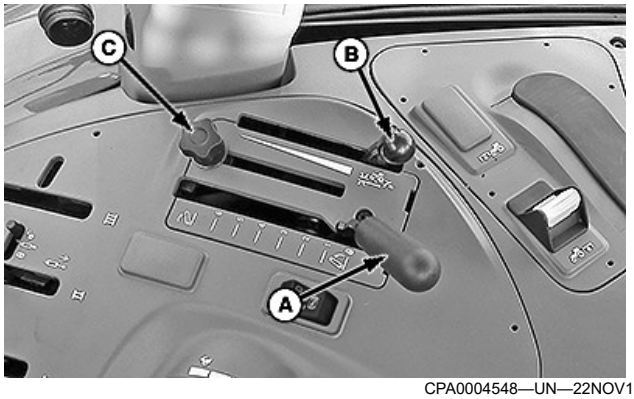
CP00834,00037C6-19-15JAN18

Use Draft Control



CPA0005103—UN—12JAN18

OOS



CPA0004548—UN—22NOV17

Cab

A—Position Control Lever
B—Draft Control Lever
C—Position Control Lever Stop

Draft control lever (B) controls the ground-penetration response of the 3-point hitch-mounted implement to varying soil conditions.

Mechanical Draft Control:

With draft control lever (B) fully forward—No draft sensing.

With draft control lever (B) fully rearward—Reduces the amount of draft load required to override the depth setting (position preset by position control lever [A]).

Draft Load Sensing Operation:

Place position control lever (A) to fully rearward position and the draft control lever (B) in the fully forward (least draft response) position.

With tractor moving, push position control lever (A) forward to set implement operating depth.

Set position control lever stop (C) so control lever can be brought back to the same position.

NOTE: Operating depth setup prevents the 3-point hitch from lowering all the way when the tractor begins to slip.

Pull draft control lever (B) rearward until desired draft sensing sensitivity is obtained.

NOTE: Position control lever (A) can also be raised slightly to override the draft control setting to help get through slippery spots without getting stuck. Position control lever (A) can be moved fully rearward to raise the hitch at the end of the field.

PULV000236—UN—08MAR08

Terrain Contour

Terrain Contour (irregular ground levels) Situations: Implement rises and lowers to follow the ground contours while maintaining a nearly constant depth.

PULV000237—UN—08MAR08

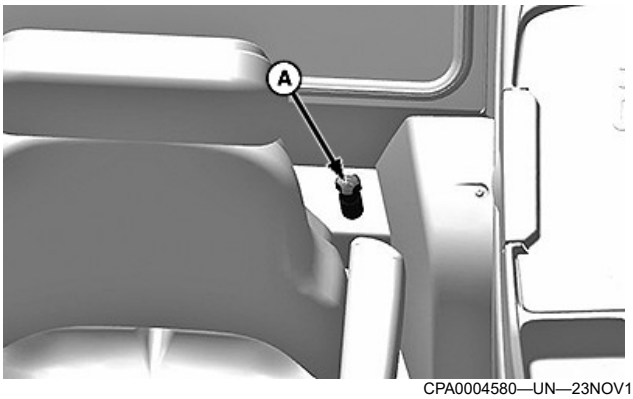
Variable Soil

Variable Soil (ground hardness) Situations: Implement rises slightly to get through tough spots and operator does not need to shift to lower gear.

CP00834,000393F-19-17JAN18

Adjust Rockshaft Speed-of-Drop

CAUTION: Excessive rate-of-drop may cause damage to equipment or injury to machine operator. Fully lowering implement should require at least 2 seconds.



CPA0004580—UN—23NOV17

Rockshaft Speed-of-Drop Knob

A—Rockshaft Speed-of-Drop Knob

Rockshaft drops faster when a heavy implement is attached. Adjust rockshaft speed-of-drop knob (A) so that it is slow enough to be safe and prevents implement damage.

Adjust rockshaft speed-of-drop. Turn knob:

- Clockwise—Slow speed-of-drop
- Counterclockwise—Fast speed-of-drop

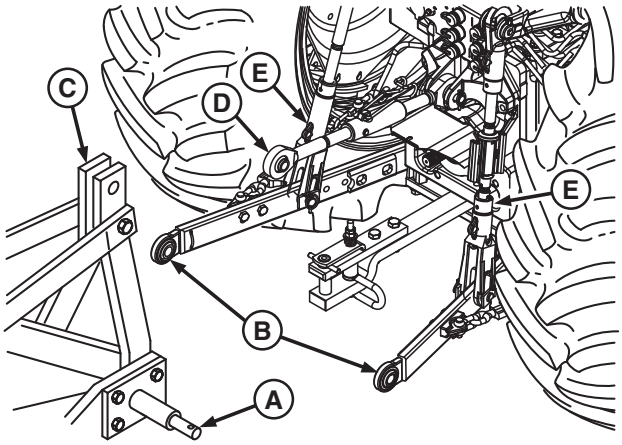
CP00834,0003940-19-17JAN18

Attach Implements to 3-Point Hitch

1. Be sure that drawbar will not interfere. If necessary, move drawbar forward or remove it. Check for any other potential interference.

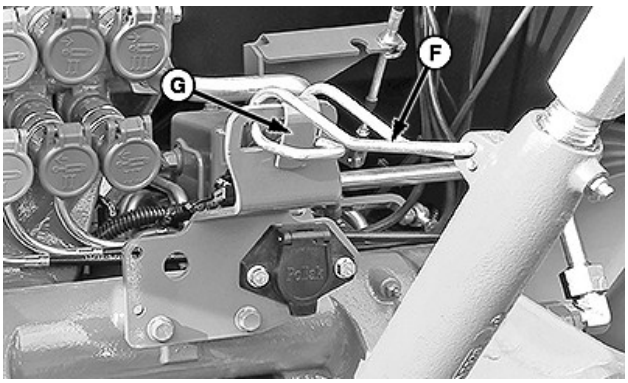
CAUTION: Prevent unexpected movement of rockshaft by placing draft sensing knob all the way down before attaching implement to hitch.

2. Back tractor up to implement so hitch points align. Place gear shift lever or PowrReverser™ lever (if equipped) in NEUTRAL and set parking brake.
3. Pull down hand throttle all the way and allow engine to idle for 1—2 minutes, then shut off engine.



CPA0004877—UN—27FEB18

Align Hitch Points



CPA0005096—UN—11JAN18

Latch

A—Implement Hitch Pin (2 used)
B—Draft Links (2 used)
C—Implement Top Mast
D—Center Link
E—Lift Links (2 used)
F—Center Link Locking Clip
G—Tab

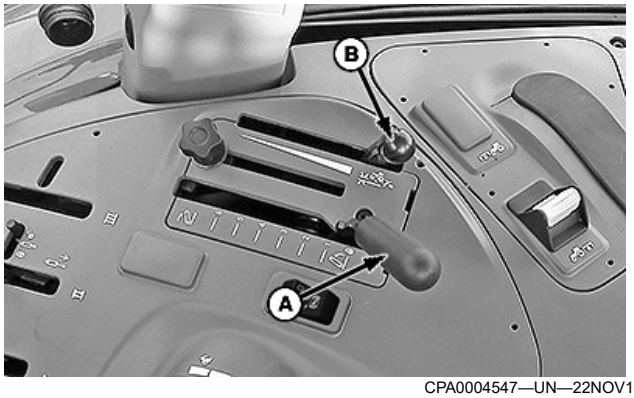
4. Slip draft links (B) over implement hitch pins (A) on both sides and retain with locking pins.

NOTE: Locking pins can be stored on draft links through holes in sway chain ears when not in use.

5. Lift center link locking clip (F) and rotate tab (G) to rear to release center link (D) from transport hook.
6. Attach center link to implement top mast (C). Retain with pin and locking pin.
7. Adjust center link and lift links (E) as necessary. (See Level Hitch in this section.)

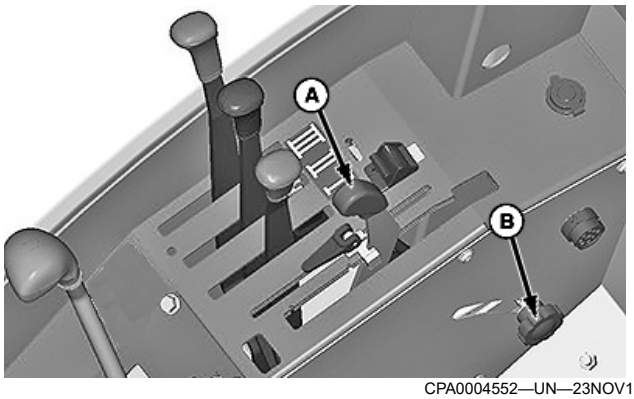
CAUTION: To avoid bodily injury or machine damage whenever an implement, implement quick coupler, or other attachment is connected to the 3-point hitch, check full range of operation for interference, binding, or PTO separation.

8. Start engine.



CPA0004547—UN—22NOV17

Cab



CPA0004552—UN—23NOV17

OOS

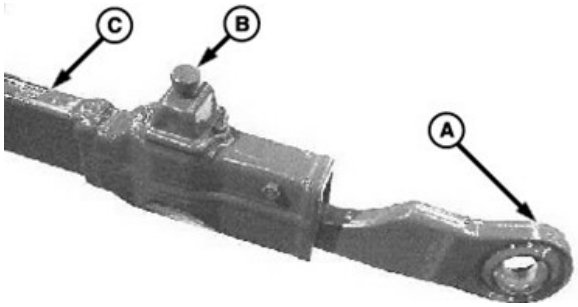
A—Position Control Lever
B—Draft Control Lever (if Equipped)

9. Before attaching or detaching implement, place draft control lever (B) into lowest setting.
10. Use position control lever (A) to raise or lower implement.

CP00834,0003941-19-17JAN18

Attach Implement with Telescoping Draft Links

1. Position tractor in line with implement hitch pins. Back tractor up close to implement. Place gear shift lever or PowrReverser™ lever (if equipped) in NEUTRAL and set parking brake.
2. Pull hand throttle all the way down and allow engine to idle for 1—2 minutes, then turn engine off.



CPA0004878—UN—21DEC17

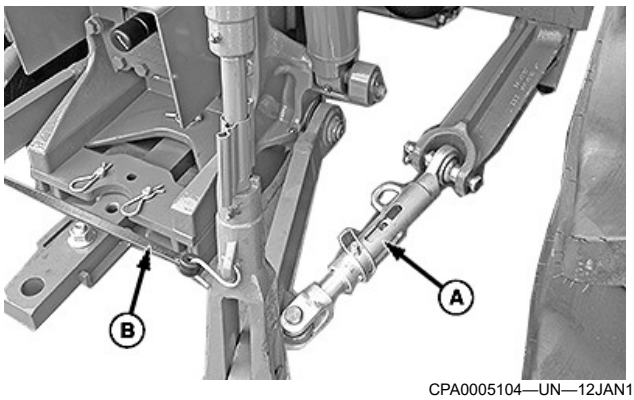
Telescoping Draft Link

A—Draft Link End
B—Release Knob
C—Draft Link Body

3. Pull up knob (B) and pull out draft link end (A). Slip draft link end over implement hitch pin and retain with quick-lock pin. Repeat procedure on opposite side.
4. Raise or lower each draft link body (C) to align it with link end.
5. Slowly back up tractor to lock link ends into place.

CP00834,00037CA-19-15JAN18

Adjust Hitch Side Sway



CPA0005104—UN—12JAN18

Sway Rod and Strap

A—Sway Rod

B—Strap

NOTE: Check implement Operator's Manual for instructions on whether to allow side sway.

Use sway rod (A) to take up chain slack as needed.

IMPORTANT: Do not shorten the rod so short it does not allow hitch to be raised completely. If rod prevents hitch from rising, hydraulic relief valve will open, causing excessive oil heating and pump or equipment damage.

NOTE: Use spring or rubber strap (B) to keep draft links clear of rear tires when draft links are not attached to implement.

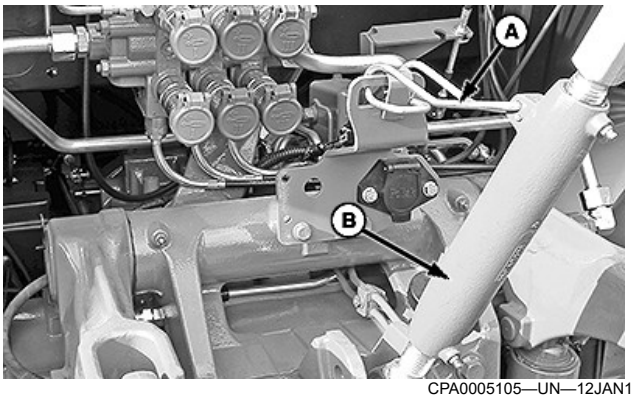
CP00834,00037CB-19-15JAN18

Level Hitch

1. Lower implement to take weight off hitch.

IMPORTANT: Do not attempt to extend center link beyond limits of locking clip or to raise lift links past the stops. Link body threads could be damaged.

NOTE: Maximum adjustment range of the center link can only be obtained if the ends are positioned equally within the body when attached to an implement.

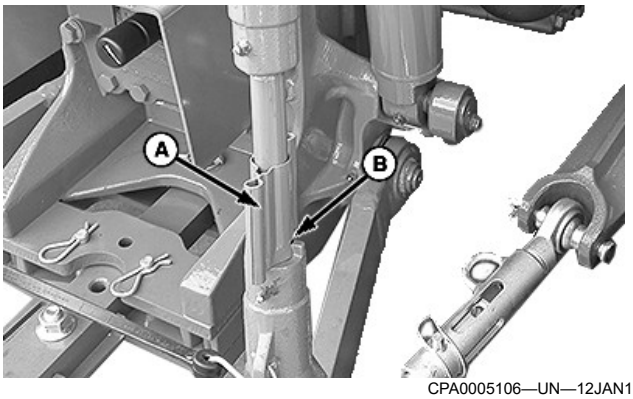


CPA0005105—UN—12JAN18

Center Link

A—Locking Clip
B—Center Link Body

2. Adjust center link to level implement front-to-rear.
   a. Unlatch locking clip (A). Rotate center link body (B):
      - Clockwise—Lengthen center link (Maximum length: 720 mm [28.3 in])
      - Counterclockwise—Shorten center link (Minimum length: 570 mm [22.4 in])
   b. Latch locking clip.

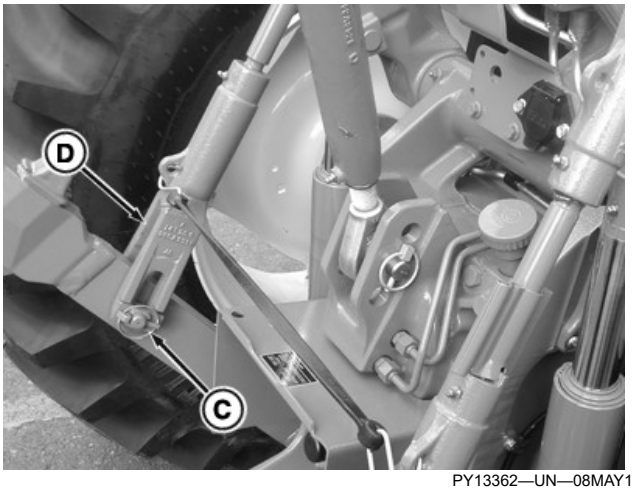


CPA0005106—UN—12JAN18

Right-Hand Lift Link

A—Locking Handle
B—Slot

3. Adjust right-hand lift link to level implement side-to-side.
   a. Lift locking handle (A) and turn:
      - Clockwise—Lower lift link
      - Counterclockwise—Raise lift link
   b. Lower handle and turn it to engage slot onto lower body to prevent change of adjustment during operation.



PY13362—UN—08MAY15

Left-Hand Lift Link

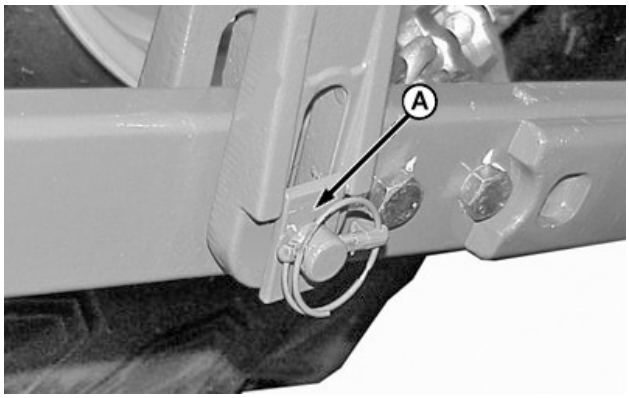
C—Lower Link Pin
D—Lower End Assembly

4. Adjust left-hand lift link to level implement side-to-side:
   a. Remove locking pin and lower link pin (C). Rotate lower end assembly (D):
      - Clockwise—Shorten (raise) lift link
      - Counterclockwise—Lengthen (lower) lift link
   b. Install lower link pin and locking pin.

Adjust left-hand and right-hand lift links to accommodate various tire sizes or implement heights. For greatest range of up-and-down hitch motion, set lift links so that when fully lowered, draft link balls are approximately 178 mm (7 in) off the ground.

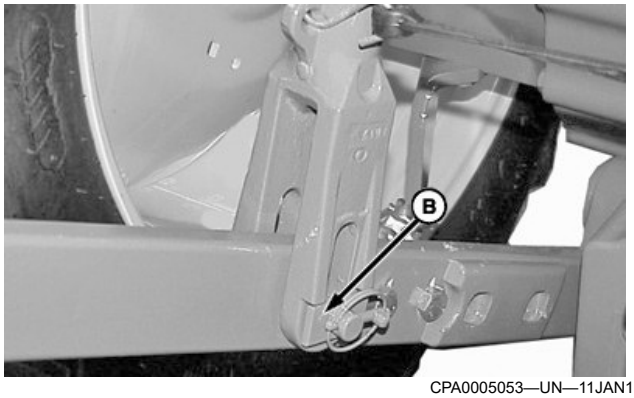
CP00834,0003942-19-17JAN18

Adjust Lateral Float



CPA0005043—UN—01JAN18

Vertical Position



CPA0005053—UN—11JAN18

Horizontal Position

A—Pin in Vertical (Float) Position
B—Pin in Horizontal (Rigid) Position

To allow the draft link to raise slightly as implement follows ground contour, place head of pin and rectangular washer (A) in vertical position.

To hold implement rigid, place head of pin and rectangular washer (B) in horizontal position.

Vertical (float) position: Hitch-mounted implements (cultivator or mower), equipped with ground gauging skids or wheels which may cause the implement to twist relative to the tractor.

Horizontal (rigid) position: Plows and ground engaging implements that should not twist relative to the tractor.

CP00834,00037CD-19-15JAN18

Observe Drawbar Load Limitations

IMPORTANT: Certain heavy equipment, such as a loaded single-axle trailer, can place excessive strain on drawbar. Strain is greatly increased by speed and rough ground.

For drawn PTO-driven implements, drawbar must be in the extended hole position.

Static vertical load on drawbar should not exceed specification.

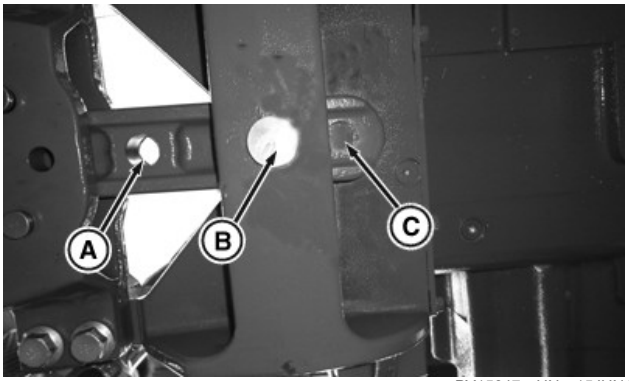
Drive slowly with heavy loads.

Specification	
Static vertical load short position - Standard Drawbar—Capacity	1250 kg (2756 lb)
Static vertical load extended position - Standard Drawbar—Capacity	1000 kg (2205 lb)
Static vertical load short position - Heavy Duty Drawbar—Capacity	1900 kg (4189 lb)
Static vertical load extended position - Heavy Duty Drawbar—Capacity	1200 kg (2645 lb)

CP00834,00037CE-19-15JAN18

Adjust Drawbar Length

IMPORTANT: When installing/adjusting Standard Duty Drawbar, always make sure the slots face downwards (as shown).



PY15247—UN—15JUN12

Length Positions (Standard Drawbar)

A—Hole, Retracted (short) Drawbar Position
B—Retaining Pin
C—Hole, Extended Drawbar Position

Hole (A): Short position

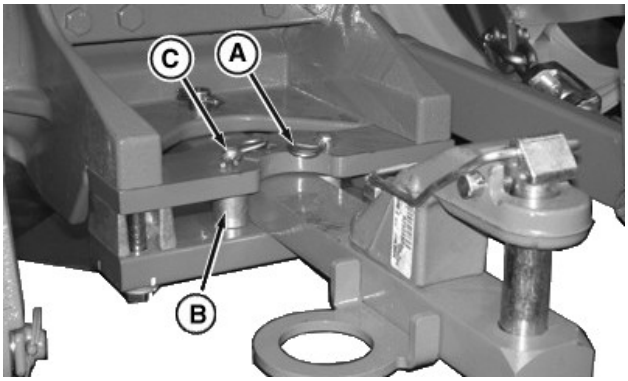
Hole (C): Extended position

1. Loosen and remove drawbar retaining pin (B).
2. Slide drawbar forward or rearward to desired position.

3. Align holes and install retaining pin.

CP00834,00037CF-19-15JAN18

Adjust Drawbar Side-to-Side



CPA0005054—UN—11JAN18

Drawbar Retaining Pins

A—Spring Clip
B—Spacer
C—Retaining Pin

CAUTION: To avoid personal injury, use retaining pins to hold drawbar stationary when operating PTO-driven implements.

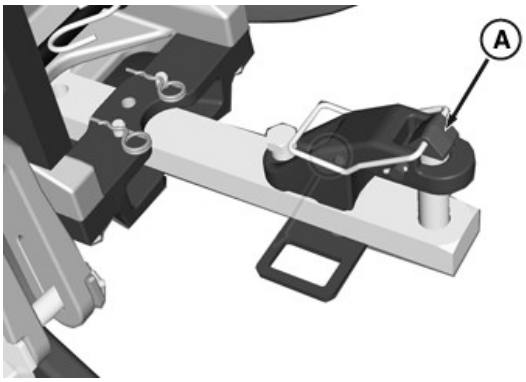
Right-hand Side Swing: Support bottom of pin (C) and remove spring clip (A), pin and spacer (B).

Left-hand Side Swing: Repeat procedure on left-hand side pin assembly.

Full Swing (side-to-side): Remove both pin assemblies.

CP00834,0003943-19-17JAN18

Use Clevis Assembly



PY15215—UN—30MAY12

Clevis Assembly

A—Clevis Assembly

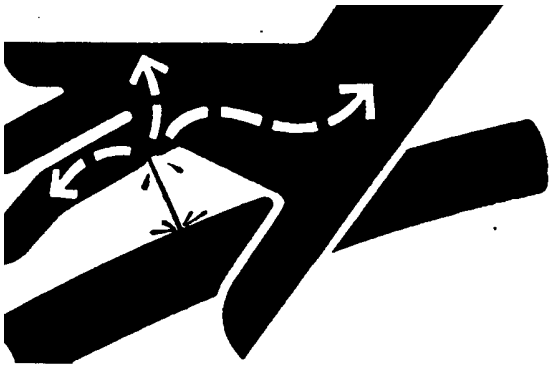
IMPORTANT: Remove clevis assembly before attaching PTO-driven equipment. Clevis may cause interference with PTO shaft.

Clevis assembly (A) must be attached only to top of drawbar. If drawbar is turned over, remove clevis assembly and attach to top of drawbar.

Connect implement to drawbar, using pin of clevis assembly.

CP00834,0003944-19-17JAN18

Connect or Disconnect High-Pressure Hoses



X9811—UN—23AUG88

Escaping Fluid

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

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

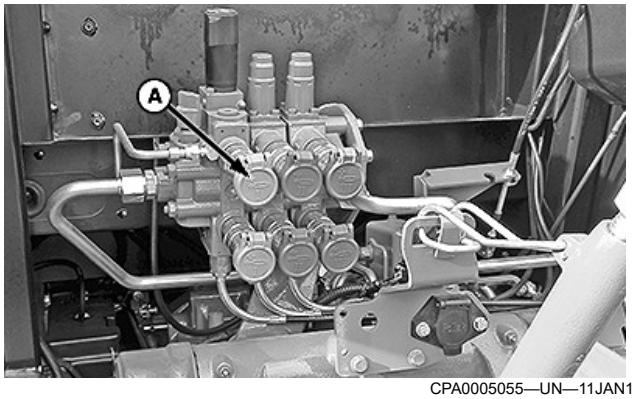
1. If possible, retract remote cylinder as much as possible to protect rod from damage.

   IMPORTANT: Implement must be raised slightly, by pulling back on lever to reset coupler check valves, before it can be lowered.

   a. If hose accidentally pulls from tractor during use, clean hose tip and coupler before reconnecting. Hoses can be reinstalled with minimal loss of oil.

   b. After reinstalling hose, extend and retract cylinder to properly seat connector and reset check valve.

2. With as much hydraulic pressure relieved as possible from hoses, pull hoses from couplers.



CPA0005055—UN—11JAN18

Triple Rear SCV

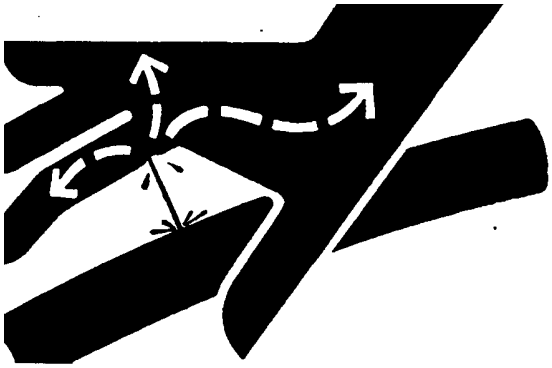
A—Coupler Cover (4 or 6 used)

3. **Rear SCV:** Wipe clean, then close coupler covers (A). Install dust caps on hose ends.

   Mid-Mount Valve (If Equipped): Make sure that coupler dust plugs and hose end dust caps are clean, then install.

CP00834,00037DF-19-15JAN18

Connect Cylinder Hoses—Rear SCV



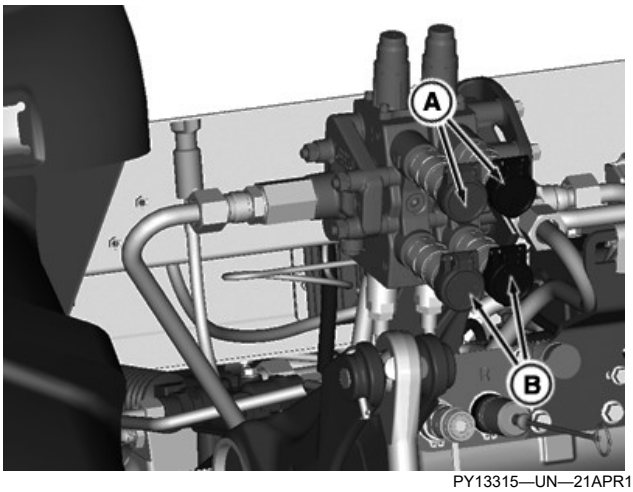
X9811—UN—23AUG88

Escaping Fluid

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by moving all rear SCV control levers and mid-mount joystick in all directions to relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

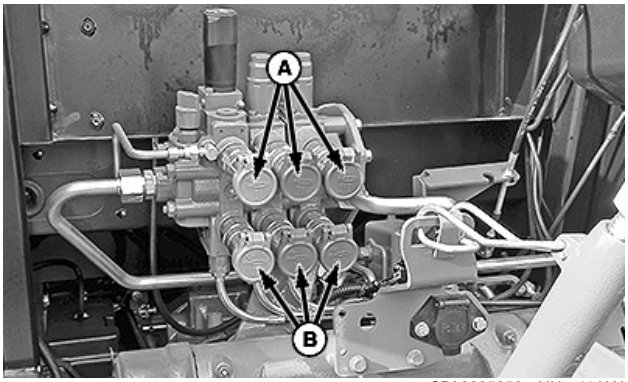
If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene can result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical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

1. Identify the extend and retract hoses.



PY13315—UN—21APR15

Dual Rear SCV



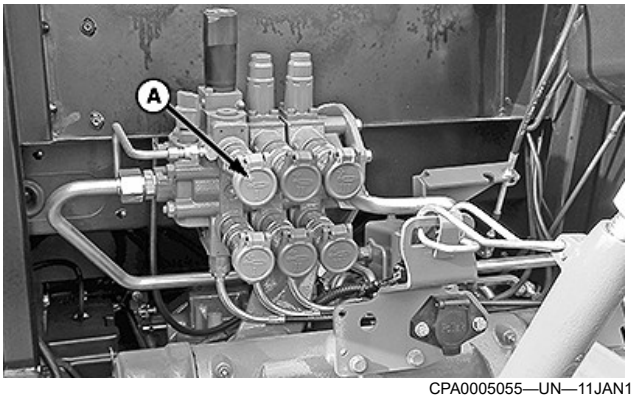
CPA0005056—UN—11JAN18

Triple Rear SCV

A—Top (retract) Couplers (2 or 3 used)
B—Bottom (extend) Couplers (2 or 3 used)

2. SCV couplers are identified by symbols on the covers:
   - Extend—Bottom couplers (B)
   - Retract—Top couplers (A)

3. Remove dust caps (if equipped) from hose ends. In case of dirt or dust in the coupler receptacles or hose end, they must be clean prior to connection.



CPA0005055—UN—11JAN18

Triple Rear SCV

A—Coupler Cover (4 or 6 used)

4. Open coupler covers (A).

CAUTION: Hydraulic hoses can fail due to physical damage, kinks, age, and exposure. Check hoses regularly. Replace damaged hoses.

5. Making sure that hose end and coupler are clean, push hose tip firmly into coupler. Pull on hose to make sure that positive connection was made.

CAUTION: Hoses that have been reversed when connecting pose a serious hazard. If the SCV lever is pushed all the way forward to float, implement would drop suddenly, potentially causing serious injury or death. Never attempt to use float before you have performed the following verification step.

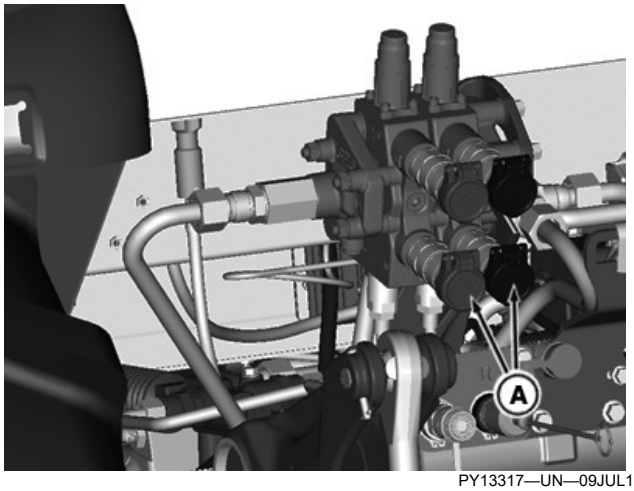
6. To make sure that hoses have been connected to the correct receptacle, pull SCV lever I slightly back of center. This could raise implement. If implement lowers instead of rising, hoses are reversed and need to be connected correctly.

Always use SCV extend ports for lift functions for best performance. Deluxe SCV sections (with flow control and selectable detents) perform better than standard SCV sections.

NOTE: By not assuring previous steps, premature damage could happen in the couplings, causing leaks.

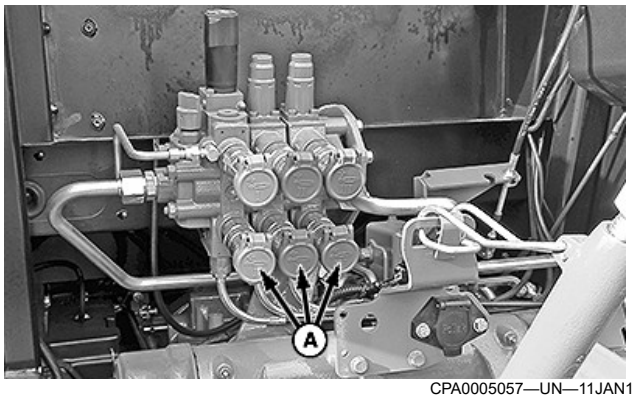
SHQW455,0000003-19-01MAR22

Connect and Operate Single-Acting Cylinder



PY13317—UN—09JUL15

Dual Rear SCV



CPA0005057—UN—11JAN18

Triple Rear SCV

A—Bottom (extend) Couplers (2 or 3 used)

Single-acting cylinder must only be connected to bottom (extend) couplers (A).

IMPORTANT: Volume of oil required to extend the cylinder lowers transmission-hydraulic oil level. With cylinder fully extended, check oil level and fill to proper level. (See Check Transmission-Hydraulic Oil Level in Transmission Maintenance section.)

Pull SCV control lever back to pressurize and extend a single-acting cylinder.

Push SCV control lever full forward to float position to retract a cylinder.

CP00834,00037E1-19-15JAN18

Use Correct Hose Tips

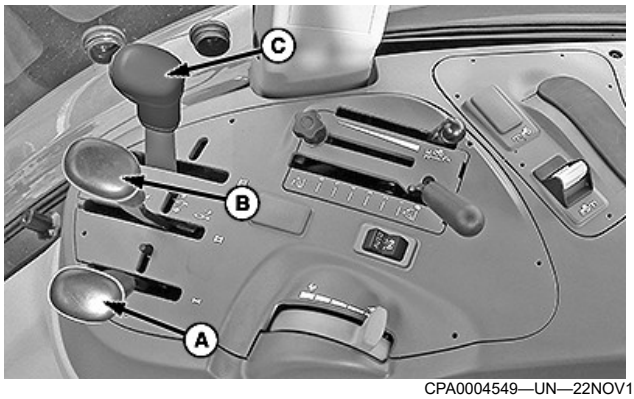
P14905—UN—10FEB08

Hoses

If your tractor is equipped with selective control valves (SCV), the coupler receptacles accept a standard hose tip as recommended by ISO and SAE. Adapters to allow connecting older John Deere hose tips to the ISO couplers in your tractor are available from your John Deere dealer.

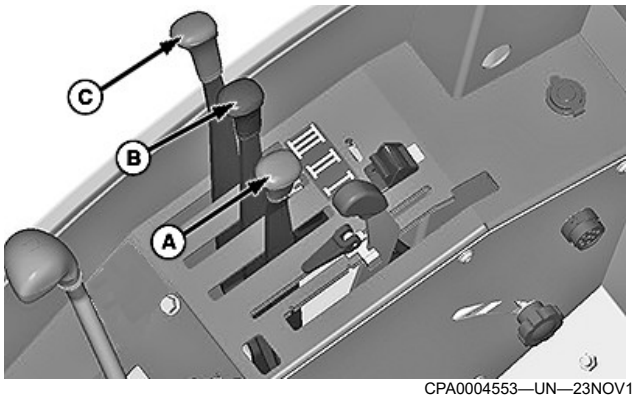
CP00834,00037E2-19-15JAN18

SCV Control Lever and Coupler Identification



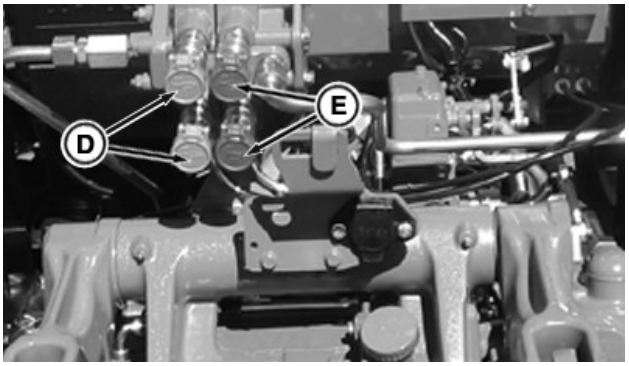
CPA0004549—UN—22NOV17

SCV Control Levers for Cab



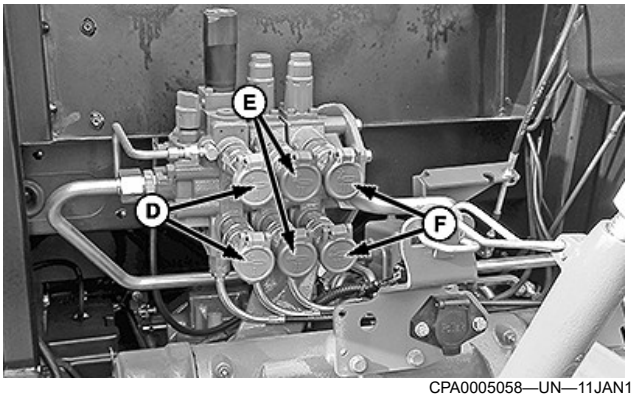
CPA0004553—UN—23NOV17

SCV Control Levers for OOS



PY13414—UN—21JUL15

Dual Rear SCV



CPA0005058—UN—11JAN18

Triple Rear SCV

A—SCV I Lever (Green)
B—SCV II Lever (Blue)
C—SCV III Lever (Brown) (if Equipped)
D—SCV I Couplers (Green Cover)
E—SCV II Couplers (Blue Cover)
F—SCV III Couplers (Brown Cover) (if Equipped)

SCV levers control oil flow to hydraulic hose couplers at the rear of the tractor.

SCV I Lever (A) operates couplers (D).

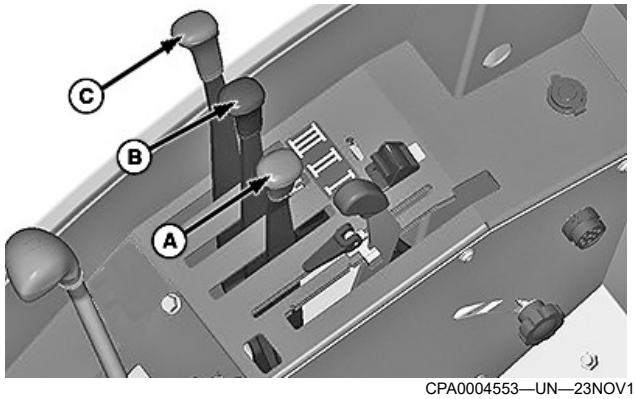
SCV II Lever (B) operates couplers (E).

SCV III Lever (C) operates couplers (F).

CP00834,00037E3-19-15JAN18

Operate SCV Control Levers

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



CPA0004553—UN—23NOV17

OOS

A—SCV I Lever
B—SCV II Lever
C—SCV III Lever (if Equipped)

Extend and Retract Cylinders

With hoses properly connected to couplers, pull lever back against spring pressure to extend remote cylinder. Spring pressure returns lever to neutral when released. With lever in neutral, remote cylinder is hydraulically locked in position. Push lever forward against spring pressure to retract cylinder.

Float Position

Push lever forward, through retract, into detent to operate float feature.

Float operation allows cylinder to extend and retract freely, such as when an implement follows ground contour.

Manually return lever to neutral when float is no longer required.

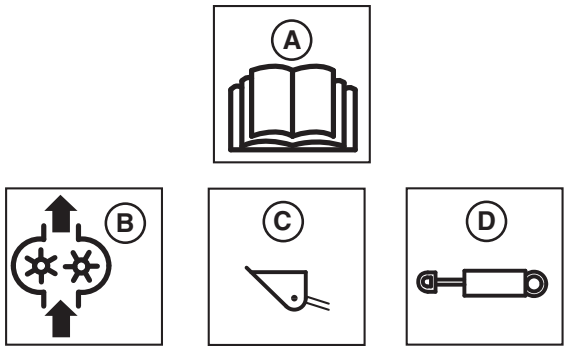
Hydraulic Motor Operation

See Use Rear SCV to Operate Hydraulic Motor in this section.

CP00834,00037E4-19-15JAN18

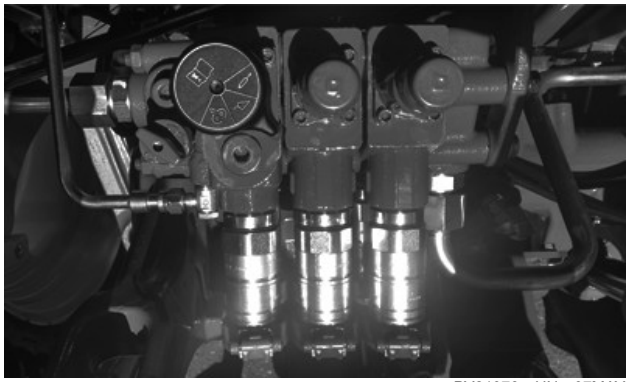
Set Detents and Operate SCV Control Levers—Three-Function Deluxe Inlet Section

Set Control Lever Detents



LV9660—UN—19AUG04

SCV Symbols



PY21078—UN—07MAY15

SCV Detent Knobs

A—Read Operator's Manual Symbol
B—Continuous Detent (Motor)
C—No Detent (Loader)
D—Automatic Detent (Cylinder)

Each section of the deluxe SCV has selectable detents, used to change control lever operations to meet operating requirements of different implements. Detent settings only affect extend and retract lever positions, not float.

NOTE: Read Operator's Manual Symbol (A) is for reference only and is not a selectable setting.

The three settings are:

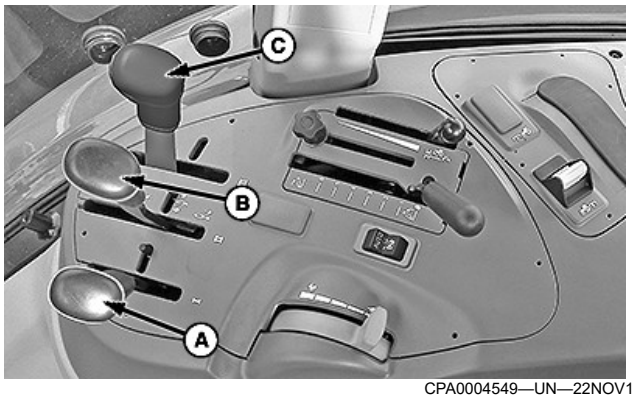
- (B)—Continuous Detent (Motor)
- (C)—No Detent (Loader)
- (D)—Automatic Detent (Cylinder)

NOTE: Knob setting stop is in the front, center position (white triangles).

SCV Knob Position—Operation	Control Lever Detent
Centered—Loader operation	No Detent—Lever returns to neutral when released
Turn counterclockwise—Motor operation	Continuous Detent—Holds lever in operating position until manually returned to neutral
Turn clockwise—Cylinder operation	Automatic Detent—Lever automatically returns to neutral when cylinder reaches end of stroke

IMPORTANT: To avoid overheating hydraulic oil and damage to tractor, use SCV I when a long duration, continuous (motor) operation is required. Section I of the deluxe SCV has a flow control valve which, when properly adjusted, provides flow to operate an implement at required speed. Only motors requiring high flow at low pressure can be used on open center hydraulic systems. Do not use with motors requiring low flow at high pressure, oil will overheat and cause damage to hydraulic system. See your nearest John Deere dealer for more information on hydraulic motor applications.

Operate Control Levers



CPA0004549—UN—22NOV17

Cab

A—SCV I Lever
B—SCV II Lever
C—SCV III Lever

Extend and Retract Cylinders: With hoses properly connected to couplers, pull lever back to extend remote cylinder or push forward to retract.

- When selector knob is set to **No Detent (Loader)** position, lever returns to neutral when released.
- When selector knob is set to **Automatic Detent (Cylinder)** position, lever automatically returns to neutral when cylinder reaches the end of stroke.
- When selector knob is set to **Continuous Detent (Motor)** position, lever must be manually returned to neutral.

With lever in neutral, remote cylinder is hydraulically locked in position.

Float Position: Push lever forward, through retract, into detent to operate float feature. Float operation allows cylinder to extend and retract freely, such as when an implement follows ground contour. Manually return lever to neutral when float is no longer required.

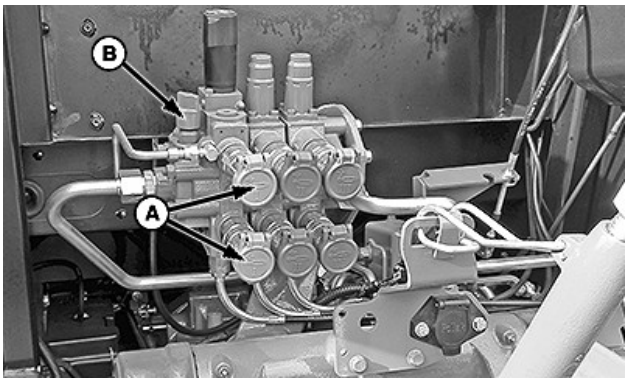
Hydraulic Motor Operation

See Use Rear SCV to Operate Hydraulic Motor in this section.

CP00834,00037E5-19-15JAN18

Use Rear SCV to Operate Hydraulic Motor

SCV I Only (Triple Rear SCV)



CPA0005059—UN—11JAN18

Triple Rear SCV

A—SCV I
B—Adjustable Flow Control Valve

IMPORTANT: Use SCV I (A), with adjustable (internal) flow control valve (B) for hydraulic motor operations. Only motors requiring high flow at low pressure can be used on open center hydraulic systems. Do not use with motors requiring low flow at high pressure. Oil overheats and causes damage to hydraulic system. See your nearest John Deere dealer for more information on hydraulic motor applications.

IMPORTANT: Never regulate SCV I oil flow with an external flow control valve. Having two flow control valves in the same hydraulic circuit can overheat oil, causing component malfunctions and damage.

SCV II or III (Triple Rear SCV)

Use external flow control valve to regulate oil flow when operating a hydraulic motor SCV II or III, without internal flow control.

Hydraulic Motor Hose Connections and Control Lever Operations

CPA0004550—UN—22NOV17

Cab

A—SCV I Control Lever

1. Shut off engine.
2. Move SCV control lever full forward, into float detent. With three-function deluxe valve, use SCV I control lever (A).

IMPORTANT: Motor must receive oil from retract port of SCV, so when stopping motor, lever does not have to move through neutral to get to float position. Neutral standby pressure causes backpressure damage to hydraulic motor or hoses.

3. Connect hydraulic motor hoses to SCV couplers **(pressure to retract, return to extend)** that correspond to selected control lever. With three-function deluxe valve, use SCV I couplers. Return oil may also be routed to a hydraulic motor return port (if equipped). See Use Hydraulic Motor Return Connection. (Section 70.)
4. Some hydraulic motors have a separate case drain line for internal leakage. The case drain line must be routed to the drain port to direct oil to sump (zero back pressure). See Use Hydraulic Motor Case Drain Connection. (Section 70.)
5. **Three-Function Deluxe Valve:** Set control lever detent for continuous motor operation. See Set Detents and Operate SCV Control Levers—Three-Function Deluxe Valve. (Section 70B.)
6. Start engine.
7. Activate SCV by moving lever forward to retract detent position and adjust hydraulic flow rate per hydraulic motor manufacturers guidelines.
8. Shut off hydraulic motor by moving SCV control lever to float position (full forward). Stopping hydraulic motor by moving SCV to neutral position causes high-pressure oil to be trapped between SCV and motor. This may damage the motor seals.

This also applies to other pumps and motors using the SCV pressure and return couplers.

IMPORTANT: Do not use neutral lever position to stop hydraulic motor; use float. Neutral standby pressure causes backpressure damage to hydraulic motor or hoses.

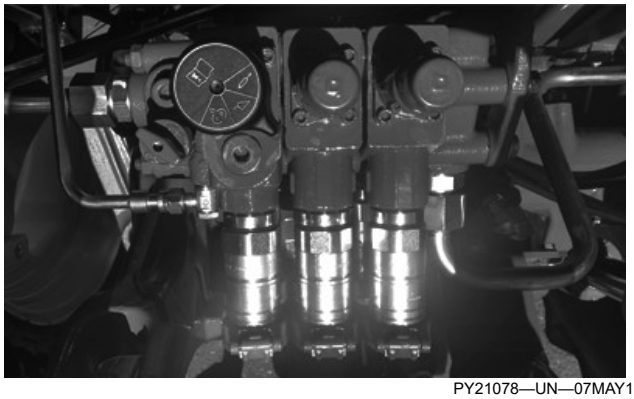
9. To stop hydraulic motor, move control lever full forward into float detent.
10. Shut off engine and disconnect hoses from couplers.

CP00834,00037E6-19-15JAN18

Use Three-Function Deluxe Inlet Section to Operate Loader

RXA0068062—19—29JUN05

Warning Decal



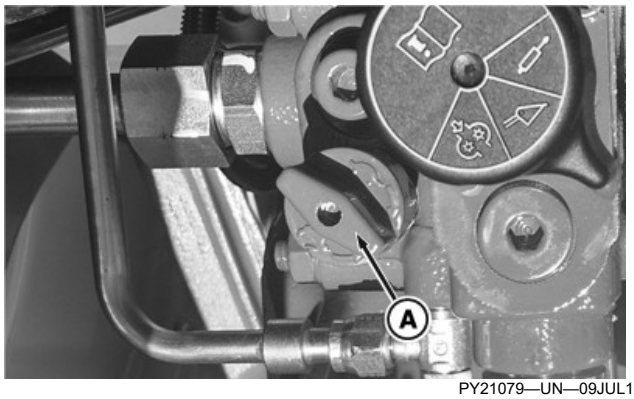
PY21078—UN—07MAY15

No Detent (Loader) Position

CAUTION: Avoid injury or death caused by falling loads. When using Three-Function Deluxe Inlet Section to Operate Loader, detents must be set in No Detent (Loader) positions, for loader movement to stop when control lever is released. Moving control lever to a detented position would cause the loader to unexpectedly rise to full height and the load to fall back on the operator or suddenly lower to the ground causing a crushing injury.

CP00834,00037DA-19-15JAN18

Adjust Flow Control—Triple Rear SCV



PY21079—UN—09JUL15

SCV (Rear)

A—Flow Control Knob

CAUTION: Excessive operating speed may cause injury or machine damage.

Decrease flow rate if hydraulic oil overheats, remote cylinder moves too quickly, or if hydraulic motor turns too fast.

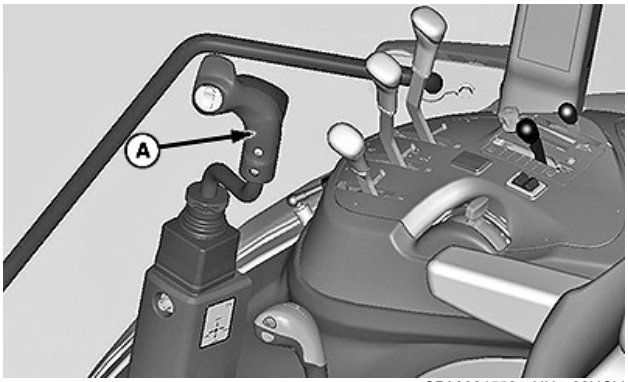
Flow control adjustment only affects the number I section of rear SCV and the electro-hydraulic (grapple) section of the mid-mount control valve. Other valve sections are not affected by this adjustment.

To adjust flow rate and operating speed, turn flow control knob (A):

- Counterclockwise (Rabbit)—Increase flow rate and speed
- Clockwise (Turtle)—Decrease flow rate and speed

CP00834,00037E7-19-15JAN18

Mid-Mount SCV Control Lever and Coupler Identification

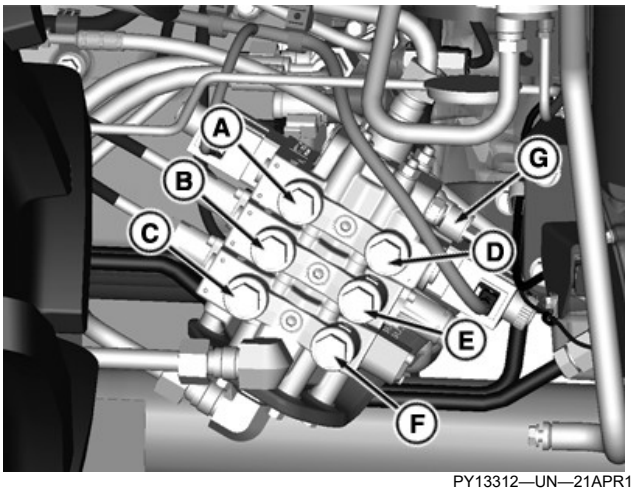


CPA0004558—UN—23NOV17

Mid-Mount SCV Control Lever

A—Multi-Function Lever

Multi-function lever (A) controls oil flow to corresponding selective control valve (SCV) couplers, located at the right side of tractor.



PY13312—UN—21APR15

Triple Mid-Mount SCV

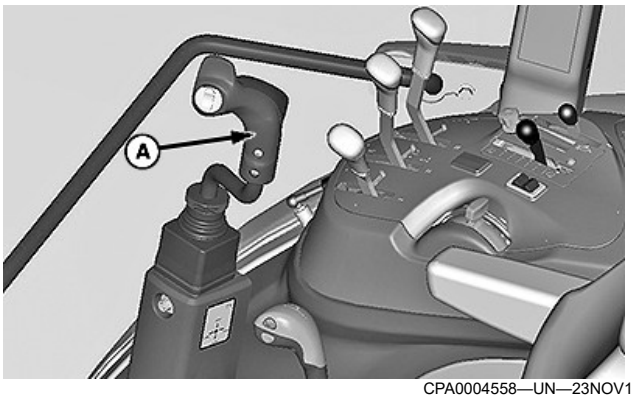
A—Third-Function Cylinders, Rod End (Grapple Open)—GREEN
B—Boom Cylinders, Head End (Raise)—BLUE
C—Bucket Cylinders, Rod End (Curl/Rollback)—BLACK
D—Third-Function Cylinders, Head End (Grapple Close)—ORANGE
E—Boom Cylinders, Rod End (Lower)—RED
F—Bucket Cylinders, Head End (Dump)—YELLOW
G—Adjustable Flow Control

Top couplers are for extension; Bottom couplers are for retraction.

CP00834,0003945-19-17JAN18

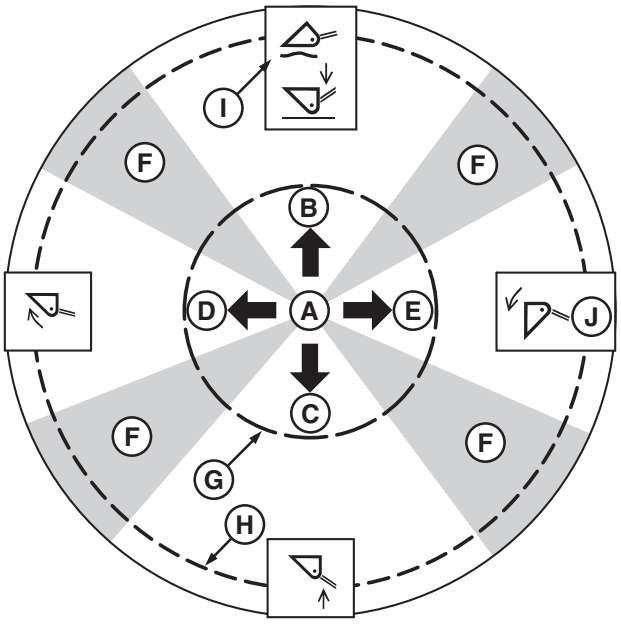
Operate Mid SCV Multi-Function Lever

CAUTION: Overheated hydraulic oil can cause personal injury and component malfunctions. To prevent hydraulic oil from overheating, do not hold multi-function control lever in operating position for an extended period of time.



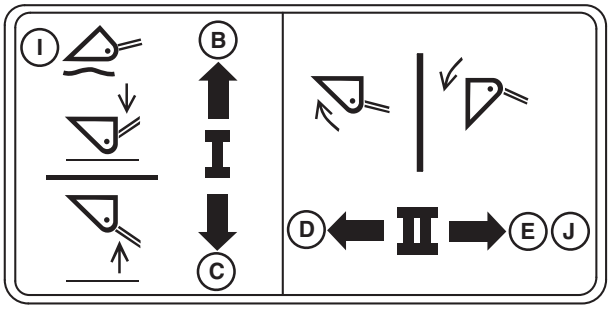
CPA0004558—UN—23NOV17

Multi-Function Lever



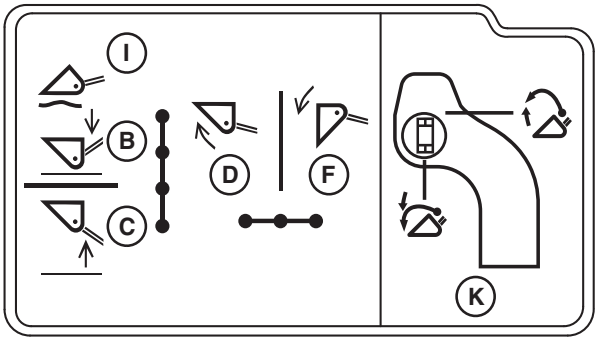
CPA0004887—UN—27FEB18

Functions



CPA0004888—UN—27FEB18

Functions



CPA0004889—UN—27FEB18

Functions

A—Multi-Function Lever
B—Front—Boom Lower
C—Back—Boom Raise
D—Left—Bucket Rollback (Curl)
E—Right—Bucket Tilt (Dump)
F—Two-Function Zone
G—Slow Speed
H—Fast Speed
I—Detented Float Position
J—Third-Function Operation Switch

Multi-function lever controls any hydraulically driven device connected to mid selective control valve (SCV), most commonly a loader.

NOTE: Multi-function lever and loader operation depend on hose to coupler connection.

1. A single function operates when multi-function lever (A) is moved straight away from center, in one of four primary directions (front, back, left, or right).
   - Front—Boom Lower (B)
     - Full-front (I) is a detented position used for float operations.
   - Back—Boom Raise (C)
   - Left—Bucket Rollback (Curl) (D)
   - Right—Bucket Tilt (Dump) (E)
2. Two functions operate simultaneously when lever is moved at 45° angles from primary directions, into a two-function zone (F). Two-function zones are: Boom Lower/Bucket Dump, Bucket Dump/Boom Raise, Boom Raise/Bucket Curl, and Bucket Curl/Boom Lower.
3. When lever is released to spring-centered neutral position, mid-mount valve holds boom and bucket in position.
4. Cylinder operating speed depends on how far from center the control lever is moved. When lever is first moved from center, to low speed (G) operating position, hydraulic functions operate slowly, then move progressively faster as lever is moved further away from center, out to fast speed (H) operating position.
5. Third functions controlled by third-function operation switch (J) can be operated simultaneously with any single and two function operations.

Float: Push lever full forward into detent when float is desired. Detented Float position (I) allows loader boom to move up and down freely while traveling over rough ground. Manually return lever to neutral when float is no longer needed.

Transport Lock

CAUTION: When the front loader is not in use, the multi-function lever must be locked. To do this, turn locking ring (A), and check that the multi-function lever cannot be moved. If not done, the front loader may be actuated while the tractor is in motion, which could lead to serious accidents.

CPA0005060—UN—11JAN18

Transport Lock

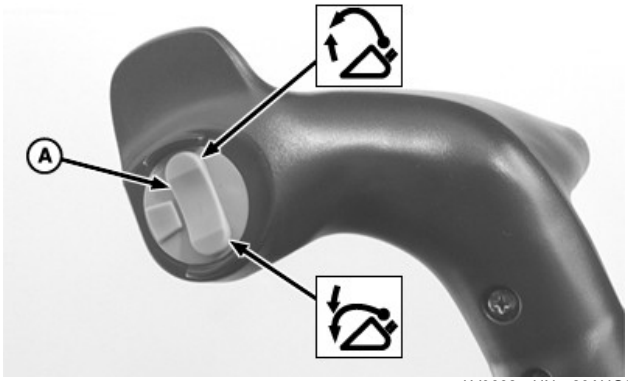
A—Transport Lock Ring

CAUTION: To prevent loader movement, engage multi-function lever transport lock (A) before dismounting tractor. Control lever must be in center (neutral) position for lock to engage.

Transport lock does not lock out switch operated third-function hydraulics, which are active anytime the key is ON.

- To lock the multi-function lever for transport, turn transport lock ring (A) clockwise.
- Turn counterclockwise to unlock.

Third-Function (Electrohydraulic)



LV9662—UN—20AUG04

Third-Function Button

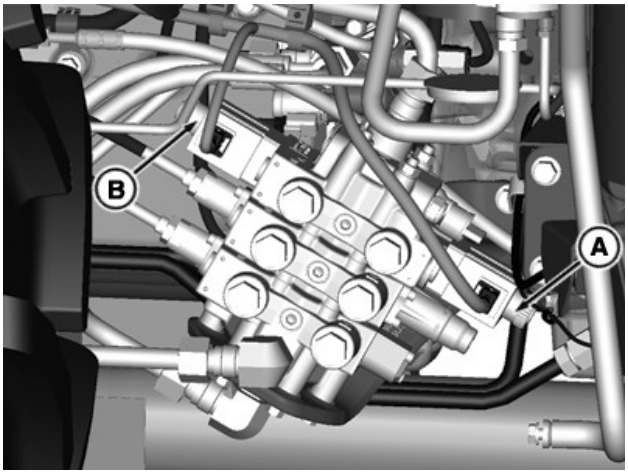
A—Mid SCV Third-Function Switch

Mid SCV third-function switch (A) controls third-function hydraulics connected to three-function mid-mount valve. Third-function hydraulics are active anytime the key is ON.

- Top half pressed: Attachment retract/raise (grapple open).
- Bottom half pressed: Attachment extend/lower (grapple close).

NOTE: Front switch is not operational in this application.

Manually Operating Third-Function (Electro-Hydraulic) Valve Section



PY13320—UN—21APR15

Triple Mid-Mount SCV

A—Access Hole (Retract)
B—Access Hole (Extend)

Third-function (grapple) valve section can be manually operated if an electrical malfunction occurs.

Insert a small diameter punch through access hole (A or B) and push spool to either extend or retract cylinders as needed to release load.

Always use SCV extend ports for lift functions for best performance. Deluxe SCV sections (with flow control and selectable detents) perform better than standard SCV sections.

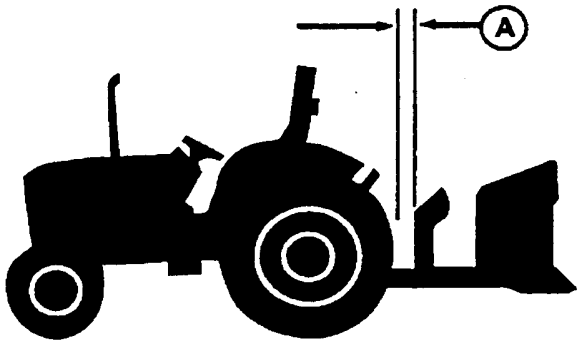
CP00834,0003946-19-17JAN18

Match Tractor Power to Implement

IMPORTANT: Tractor power should be matched to the size of certain implements. Excessive power can damage an implement, and too large an implement can damage the tractor. (Refer to your implement Operator's Manual for minimum and maximum power requirements before attaching an implement.)

CP00834,00037EA-19-15JAN18

Check Implement-to-Tire Clearance



M47177—UN—31JAN92

Implement-to-Tire Clearance

A—Clearance

IMPORTANT: Check for adequate clearance (A) between outside diameter of the tire and implement with hitch in raised position.

When large diameter rear tires are installed on a tractor with a 3-point hitch, a quick coupler or similar device may be required to provide adequate implement-to-tire clearance.

CP00834,00037EB-19-15JAN18

Check Tire Inflation Pressure

Check tires daily for damage or noticeably low pressure.

At least every 100 hours of operation, check inflation pressure with a gauge. Use an accurate gauge having 10 kPa (0.1 bar) (1 psi) graduations.

If tires contain liquid ballast, use a special air-water gauge and measure with valve stem at bottom.

NOTE: When furrow plowing or during hillside operation, tire pressure can be increased 28 kPa (0.28 bar) (4 psi) above maximum to prevent tire wrinkling or buckling.

NOTE: Following inflation information applies to both front and rear tires and Tire Inflation Pressure Chart.

1. All inflation pressures are calculated for 29 km/h (18 mph) travel speeds.
2. Check tire inflation pressure while tires are cool, using an accurate dial or stick-type gauge having 10 kPa (0.1 bar) (1 psi) graduations. Over-inflation reduces performance and increases strain on both tire and rim.
3. Operation of tires at the inflation pressures listed on the chart will result in optimum tractive performance of the tire/vehicle system.
4. Inflation pressures less than 80 kPa (12 psi) should be monitored regularly because of the increased risk of low pressure air leaks (especially due to leaking valve cores).
5. Tractors operating on steep side slopes should increase inflation pressures 28 kPa (4 psi) above the values listed to compensate for lateral weight transfer.
6. Tires run as singles in high-traction conditions sometimes experience bead slip if the bead was not fully seated or if too much lubricant was used to mount the tire. Increasing the inflation pressure will compensate for this condition but will not cause reduced traction. Consult your tire dealer if this problem occurs.
7. If higher load capacities are needed, contact your John Deere dealer for tire manufacturer's load and inflation table information.

CP00834,0003A18-19-18JAN18

Tire Inflation Pressure Chart

Front Tires			With Little or No Added Weight			With Maximum Ballast or Heavy Mounted Implement		
Tire Size	Ply Rating	Tread	kPa	(bar)	(psi)	kPa	(bar)	(psi)
10.0-16	8	F2	83	(0.83)	(12)	137	(1.37)	(20)
380/85 R24	NA	R1	83	(0.83)	(12)	137	(1.37)	(20)
320/85 R32	NA	R1	83	(0.83)	(12)	137	(1.37)	(20)

Rear Tires			With Little or No Added Weight			With Maximum Ballast or Heavy Mounted Implement		
Tire Size	Ply Rating	Tread	kPa	(bar)	(psi)	kPa	(bar)	(psi)
460/85 R34	NA	R1	83	(0.83)	(12)	137	(1.37)	(20)
460/85 R38	NA	R1	83	(0.83)	(12)	137	(1.37)	(20)
420/85 R38	NA	R1	83	(0.83)	(12)	137	(1.37)	(20)
320/90 R50	NA	R1	83	(0.83)	(12)	137	(1.37)	(20)

HL70592,0000BEF-19-24AUG20

Front and Rear Tire Combinations—2WD

Rear Tire Size	Front Tire Size	6105E	6120E	6135E
460/85 R34	10.0-16	Standard	Optional	NA
460/85 R38	10.0-16	Standard	Optional	NA

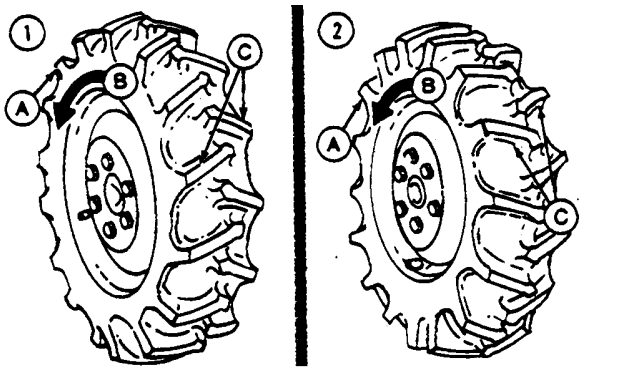
AG32641,00004D1-19-02MAR22

Front and Rear Tire Combinations—MFWD

Rear Tire Size	Front Tire Size	6105E	6120E	6135E	6120EH
460/85 R34	340/85 R24	Standard	Standard	Optional	N/A
460/85 R38	380/85 R24	Optional	Optional	Standard	N/A
420/85 R38	340/85 R24	Optional	Optional	Standard	N/A
320/90 R50	320/85 R32	Optional	Optional	Optional	N/A
320/90 R46	320/90 R46	N/A	N/A	N/A	X
230/95 R48	230/95 R48	N/A	N/A	N/A	X
320/90 R50	320/90 R50	N/A	N/A	N/A	X
340/85 R38	340/85 R38	N/A	N/A	N/A	X
340/85 R46	340/85 R46	N/A	N/A	N/A	X

AG32641,00004D2-19-02MAR22

Selecting Front Tire Rolling Direction



RW510—UN—06APR89

Left Tire (Viewed From Rear)

A—Front Tire (Viewed from Rear)
B—Rolling Direction of Tire
C—Tire Lug

(1)—Under most conditions, front tires (A) should be mounted with the direction of tire lugs (C) the same as the tire rolling direction (B).

(2)—If tractor is mainly used for loader operations, lug direction may be reversed on the MFWD axle for improved tire wear.

CP00834,00037F0-19-15JAN18

Tighten Wheel/Axle Hardware Correctly

CAUTION: Never operate tractor with a loose rim, wheel, hub, or axle.

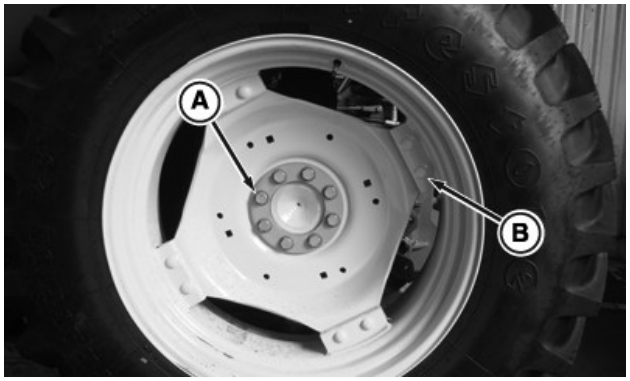
Any time hardware is loosened, tighten to specified torque.

NOTE: Follow checking procedure when a new tractor is first used or wheels have been off.

1. After driving tractor about 100 m (109 yd), and before placing it under load, tighten hardware to specified torque.
2. Check hardware after working 3 hours and again after 10 hours.
3. Check all hardware frequently and keep it tight.

CP00834,00037F1-19-17JAN18

Tighten Bolts—Rear Axle



PY14615—UN—01JUN12

Steel Disk

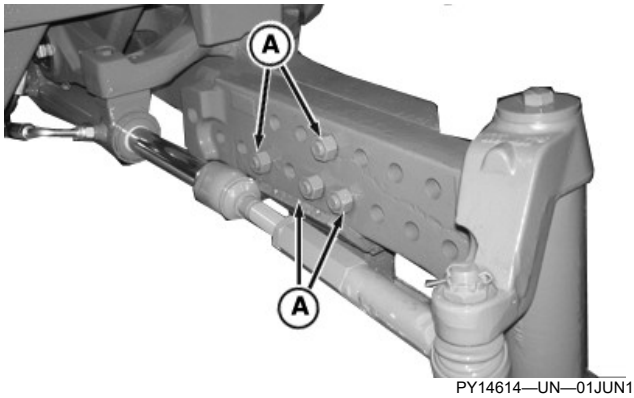
A—Wheel Disk-to-Axle Flange Bolts (8 used each side)
B—Wheel Rim-to-Disk Bolts (8 used each wheel)

Specification

Wheel Rim-to-Disk Bolts—Torque. . . . . 310 N·m (230 lb·ft)
Wheel Disk-to-Flange Bolts (Steel Disk)—Torque. . . . . 500 N·m (370 lb·ft)

CP00834,00037F2-19-15JAN18

Tighten Bolts—Adjustable Front Axle



PY14614—UN—01JUN12

Adjustable Front Axle

PY14613—UN—01JUN12

Disk-to-Flange Bolts

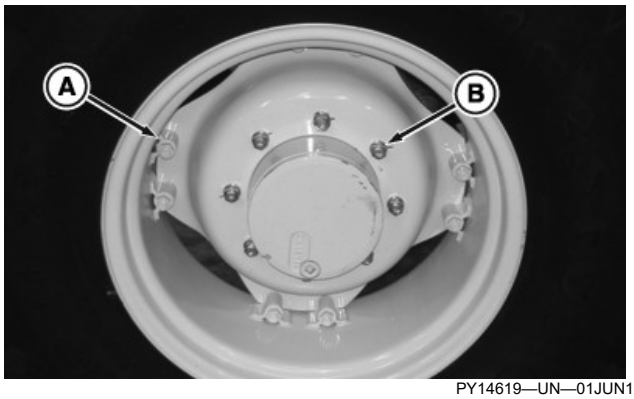
A—Axle-to-Knee Bolts (4 used each side)
B—Wheel Disk-to-Axle Flange Bolts (8 used each side)

Specification

Adjustable Front Axle—Axle-to-Knee Bolts—Torque. . . . . 480 N·m (350 lb·ft)
Adjustable Front Axle—Disk-to-Flange Bolts—Torque. . . . . 250 N·m (185 lb·ft)

CP00834,00037F3-19-15JAN18

Tighten Bolts—MFWD Axle



PY14619—UN—01JUN12

MFWD Axle Wheel Bolts

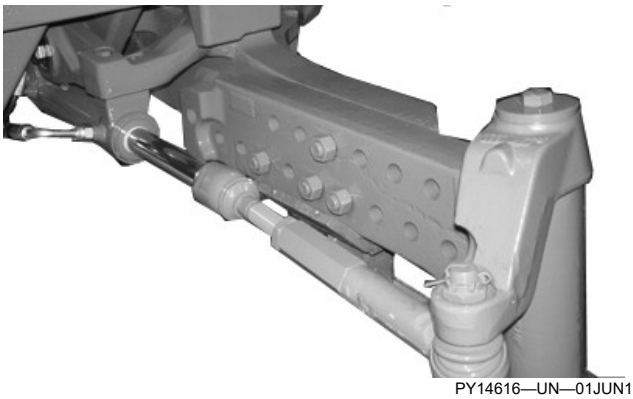
A—Wheel Rim-to-Disk Bolts (8 used each side)
B—Wheel Disk-to-Axle Flange Bolts (8 used each side)

Specification

Wheel Rim-to-Disk Bolts—Torque. . . . . 245 N·m (180 lb·ft)
Wheel Disk-to-Axle Flange Bolts—Torque. . . . . 300 N·m (220 lb·ft)

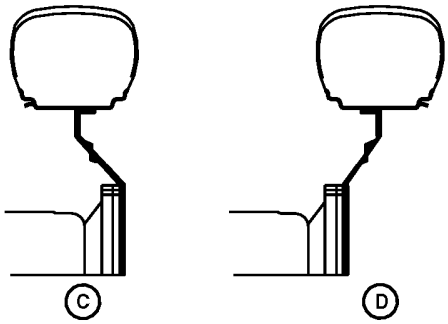
CP00834,00037F4-19-15JAN18

Tread Settings—Adjustable Front Axle, 2WD



PY14616—UN—01JUN12

Adjustable Front Axle with 102 mm (4 in) Extension



LV1515—UN—05MAR96

Wheel Positions

Each side of the front axle can be adjusted in increments of 51 mm (2 in). Make sure that adjustment is equal on both sides.

Wheel rim can be positioned as shown by (C) or (D) in the diagram. Positioning wheel rim as (D) provides an additional 44 mm (1.75 in) tread width.

NOTE: Number 1 wheel position corresponds to axle adjustment at most inward location, resulting in narrowest tread.

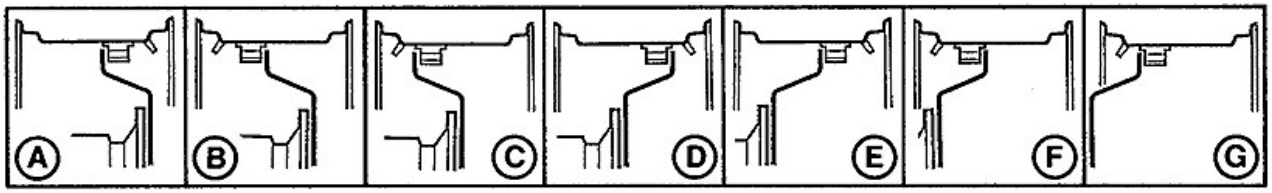
The extension provided with the tractor is 102 mm (4 in) long. Contact your John Deere dealer to order the optional 204 mm (8 in) extension.

NOTE: Replace 102 mm (4 in) extension with optional 204 mm (8 in) extension. Do not use together.

TREAD WIDTH Centerline-to-Centerline		
Tire Size	**10.00-16**	
Wheel Position	**C**	**D**
1 Without Extension	—	1533 mm (60.4 in)
2 Without Extension	1591 mm (62.7 in)	1635 mm (64.4 in)
3 With 102 mm (4 in) Extension	1693 mm (66.7 in)	1737 mm (68.4 in)
4 With 102 mm (4 in) Extension	1795 mm (70.7 in)	1839 mm (72.4 in)
5 With Optional 204 mm (8 in) Extension	1896 mm (74.7 in)	1941 mm (76.4 in)
6 With Optional 204 mm (8 in) Extension	1998 mm (78.7 in)	2043 mm (80.4 in)

CP00834,0003A19-19-18JAN18

Tread Settings—MFWD Axle



CPA0004807—UN—25DEC17

MFWD Axle Tread Settings

Front wheel tread can be adjusted by repositioning or by reversing wheel rims. In addition, the complete wheel can be reversed by installing it on the opposite side of the tractor. When using this option, make sure that the arrow on the tire sidewall is pointing in the direction of forward travel.

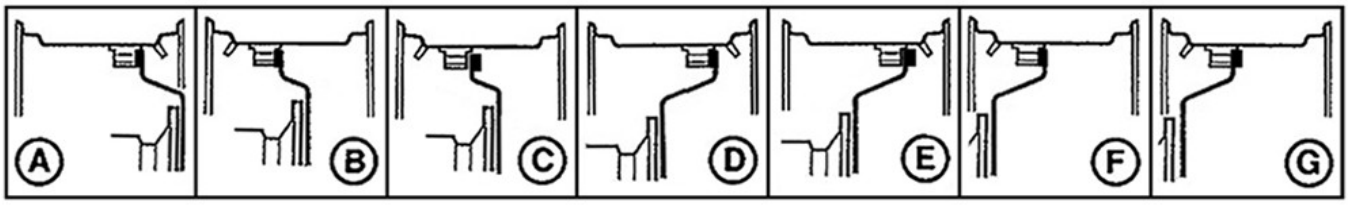
TREAD WIDTH							
Rims and Wheel Disk Positions — Without wheel spacers							
Tire Size	**A**	**B**	**C**	**D**	**E**	**F**	**G**
340/85 R24	INT[a]	1518 mm (59.7 in)	1626 mm (64.0 in)	1740 mm (68.5 in)	1849 mm (72.8 in)	1933 mm (76.1 in)	2033 mm (80.0 in)
380/85 R24	INT[a]	INT[a]	1626 mm (64.0 in)	1740 mm (68.5 in)	1849 mm (72.8 in)	1933 mm (76.1 in)	2033 mm (80.0 in)

[a]*Interference (do not use).*

IMPORTANT: When front wheel spacers are installed, add 120 mm (4.7 in) to the values on chart. See your John Deere dealer for more information.

MULTI-POSITION MFWD HIGH CROP WHEELS TREAD WIDTH (MY21)								
Diagram								
Tire Size	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
340/85 R38	INT[a]	1931 mm	2031 mm	2135 mm	2235 mm	2331 mm	2431 mm	2535 mm
320/90 R46	1833 mm	1935 mm	2037 mm	2139 mm	2233 mm	2335 mm	2437 mm	2539 mm
230/95 R48	1832 mm	1932 mm	2036 mm	2135 mm	2232 mm	2332 mm	2436 mm	2535 mm
320/90 R50	1828 mm	1900 mm	2031 mm	2104 mm	2235 mm	2307 mm	2438 mm	2510 mm

[a]*Interference (do not use).*



P18740—UN—19AUG20

MFWD Axle Tread Settings (320/85 R32 only)

TREAD WIDTH							
Rims and Wheel Disk Positions for 320/85 R32, with base equipped wheel spacers.							
Tire Size	**A**	**B**	**C**	**D**	**E**	**F**	**G**
320/85 R32	INT[a]	INT[a]	1694 mm (66.7 in)	1860 mm (73.2 in)	1890 mm (74.4 in)	2064 mm (81.3 in)	2094 mm (82.4 in)

[a]*Interference (do not use).*

AG32641,000047E-19-18OCT21

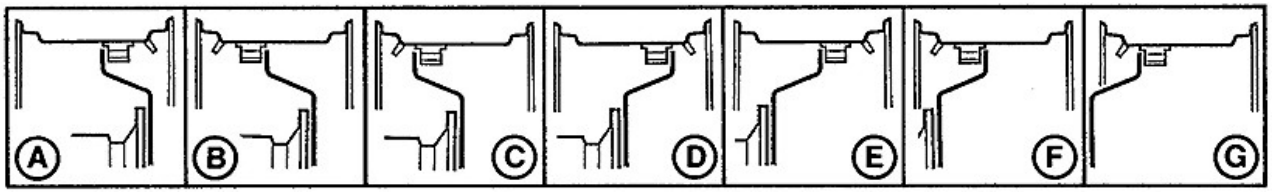
Tread Settings—Multi-Position Rear Wheels (Steel Disks)

Wheel tread on rear axle with multi-position wheels can be adjusted by repositioning or exchanging the rims or by reversing the wheel disks.

Wheel tread can also be adjusted by exchanging the complete wheel to the opposite side of the tractor. (This maneuver permits the change from disk dished-in to disk dished-out operations without disassembling the wheel.) When changing rear wheels from one side to the other, the arrow on side wall of tire should point in the direction of forward rotation.

The relationship of the wheel disk and rim in obtaining the different tread settings is shown in the following diagrams.

A study of these diagrams before attempting to change tread settings will save unnecessary labor.



CPA0004807—UN—25DEC17

Tread Settings—Multi-Position Rear Wheels

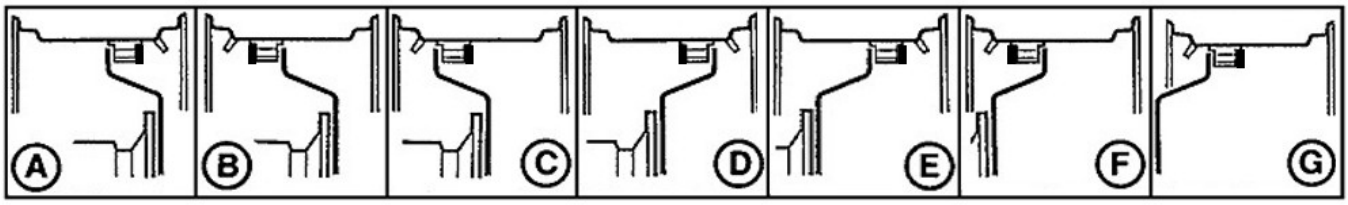
IMPORTANT: After setting wheel spacing, tighten rim-to-disk and disk-to-flange bolts. Drive tractor 100 m (109 yd) and tighten again.

Specification	
Multi-Position Rear Wheels Rim-to-Disk Bolts (Steel Disk)—Torque	245 N·m (180 lb·ft)
Multi-Position Rear Wheels Disk-to-Flange Bolts (Steel Disk)—Torque	175 N·m (130 lb·ft)

	TREAD WIDTH Centerline-to-Centerline — Without wheel spacers						
Tire Sizes	**A**	**B**	**C**	**D**	**E**	**F**	**G**
460/85 R34	INT[a]	1500 mm (59.0 in)	1592 mm (62.7 in)	1734 mm (68.3 in)	1834 mm (72.2 in)	1892 mm (74.5 in)	1992 mm (78.4 in)
460/85 R38	INT[a]	1513 mm (59.6 in)	1617 mm (63.7 in)	1713 mm (67.4 in)	1817 mm (71.5 in)	1913 mm (75.3 in)	2006 mm (78.9 in)
420/85 R38	INT[a]	1487 mm (58.5 in)	1591 mm (62.6 in)	1739 mm (68.4 in)	1843 mm (72.5 in)	1887 mm (74.3 in)	1991 mm (78.4 in)

[a] *Interference (do not use).*

IMPORTANT: When rear wheel spacers are installed, add 88 mm (3.5 in) to the values on chart. See your John Deere dealer for more information.



P18742—UN—20AUG20

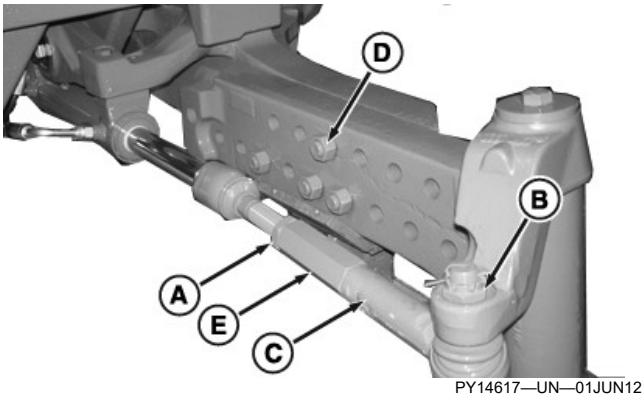
Tread Settings—Multi-Position Rear Wheels (320/90 R50 only)

	TREAD WIDTH Centerline-to-Centerline for 320/90 R50, with base equipped wheel spacers						
Tire Sizes	**A**	**B**	**C**	**D**	**E**	**F**	**G**
320/90 R50	INT[a]	INT[a]	1673 mm (65.9 in)	1833 mm (72.2 in)	1876 mm (73.9 in)	2036 mm (80.2 in)	2079 mm (81.9 in)

[a] *Interference (do not use).*

AG32641,000047F-19-18OCT21

Adjust Front Wheel Tread—2WD



PY14617—UN—01JUN12

Front Axle With Extension

A—Nut
B—Slotted Nut
C—Tie-Rod
D—Bolt and Nut (4 used each side)
E—Tie-Rod Extension

IMPORTANT: Do not place jack under engine oil pan.

1. Jack up front end of tractor.
2. Loosen nut (A). Remove cotter pin, slotted nut (B), and tie-rod (C).
3. Remove extensions (E), if equipped, to obtain a minimum of 1700 mm (66.9 in) tread width.
4. Remove axle bolts and nuts (D).
5. Reposition axle ends to the desired front wheel tread. Install axle bolts and nuts. Tighten to specification.

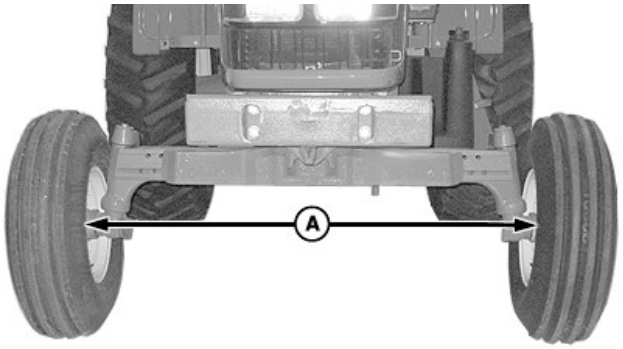
Specification

Front Axle Nuts—Torque. . . . . 400 N·m (295 lb·ft)

6. Adjust (C and E) as required. Tighten nut (A).
7. Install slotted nut and cotter pin.
8. When making large tread adjustments, it may be necessary to adjust toe-in. (See procedure in this section.)

CP00834,0003949-19-17JAN18

Check Toe-In—Adjustable Front Axle, 2WD



P15212—UN—28JAN08

Check Toe-In

A—Front Axle Toe-In Distance

1. Park machine on level surface.
2. Turn steering wheel so front wheels are in the straight-ahead position. Stop engine.
3. Measure distance (A) between rim flange-to-rim flange at hub level in front of axle. Record measurement and mark the tires.
4. Move tractor back about 1 m (3 ft), so mark is at hub level behind the axle. Again, measure distance between rim flanges at same point on tire. Record measurement.
5. Determine the difference between front and rear measurements. If the front measurement is smaller, toe is in. If the rear is smaller, toe is out.
6. Distance (A) at **front** of tires should be 3—9 mm (1/8—3/8 in) less than distance measured at **rear** of tires. Adjust toe-in if necessary. (See procedure in this section.)

CP00834,0003A1A-19-18JAN18

Check Toe-In—MFWD Axle

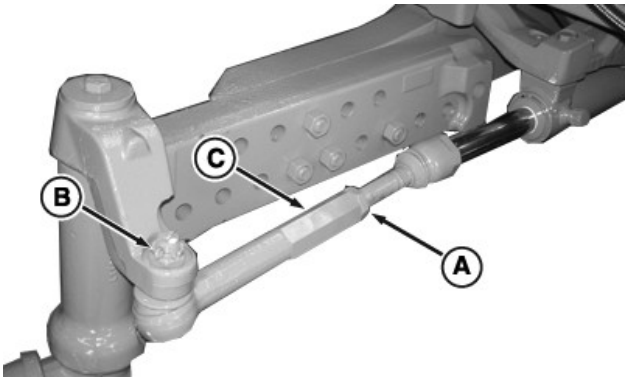
PY14620—UN—01JUN12

Check Toe-In

1. Park machine on level surface.
2. Turn steering wheel so front wheels are in the straight-ahead position. Stop engine.
3. Measure distance (A) between tire tread midpoint at hub level in front of axle. Record measurement and mark the tires.
4. Move tractor back about 1 m (3 ft), so mark is at hub level behind the axle. Again, measure distance between tire midpoints. Record measurement.
5. Determine the difference between front and rear measurements. If the front measurement is smaller, toe is in. If the rear is smaller, toe is out.
6. Distance between midpoints at **front** of tires should be 3—6 mm (1/8—1/4 in) less than distance measured at **rear** of tires. Adjust toe-in if necessary. (See procedure in this section.)

CP00834,00037FA-19-15JAN18

Adjust Toe-In—Adjustable Front Axle, 2WD



PY14618—UN—01JUN12

Front Axle with 102 mm (4 in) Extension

A—Lock Nut
B—Slotted Nut
C—Tie-rod (with extension)

NOTE: Adjust toe-in equally at both tie-rods.

1. Loosen lock nut (A).
2. Remove cotter pin and slotted nut (B).
3. Remove tie-rod (C) from spindle assembly.
4. Turn tie-rod end to lengthen or shorten, as needed, to desired toe-in.
5. Install tie-rod end and slotted nut. Tighten nut to specification. Install cotter pin.

Specification

Slotted Nut (B)—Torque. . . . . 100 N·m (74 lb·ft)

6. Tighten lock nut (A) to specification.

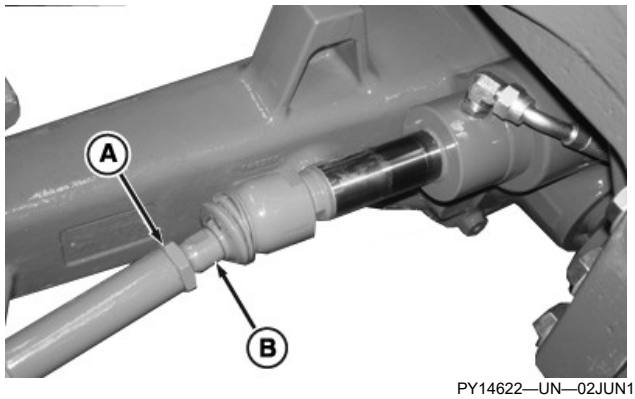
Specification

Lock Nut (A)—Torque. . . . . 250 N·m (185 lb·ft)

7. Repeat on opposite side.

CP00834,0003A1B-19-18JAN18

Adjust Toe-In—MFWD Axle



PY14622—UN—02JUN12

Left-Hand Side Shown

A—Lock Nut
B—Inner Rod

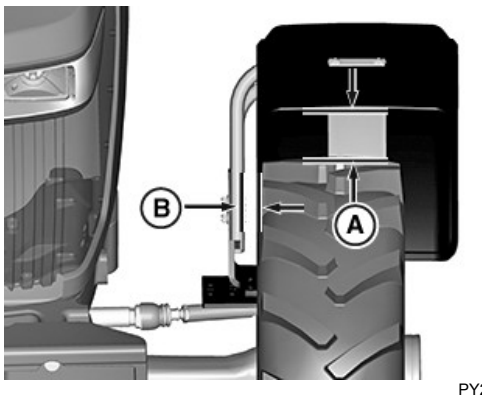
1. Loosen lock nut (A) on right-hand and left-hand side tie rod.
2. Adjust each side by rotating inner rod (B) to lengthen or shorten tie rod as needed, to obtain toe-in of no more than 3 mm (1/8 in).
3. Tighten lock nuts after adjustment.

Specification

Tie Rod Lock Nut—Torque. . . . . 328—363 N·m (242—267 lb·ft)

CP00834,00037FC-19-15JAN18

Front Fender Adjustment—MFWD Axle



PY22992—UN—13JUL15

Front Fender

A—Top of Tire Clearance
B—Side of Tire Clearance

Fenders must be installed in correct position depending on tire size and tread width.

Check for clearance between top of tire and fender (A) and side of tire and frame (B). Adjust as needed.

CP00834,000394C-19-17JAN18

Ballasting

Plan for Maximum Productivity

Proper ballasting is an important factor in tractor performance. Maximum productivity can be achieved only if tractor weight is appropriate for the job.

John Deere provides additional information on performance ballasting in two of the manuals in the series “Fundamentals of Machine Operations”.

See the following John Deere Service Literature available elsewhere in this manual:

- Tractor—provides information on determining correct tractor weight and ballast selection.
- Machinery Management—provides information on implement matching and increasing productivity.

Your John Deere dealer can assist you with information on these subjects.

CP00834,000394D-19-17JAN18

Select Ballast Carefully

Match amount of ballast needed for each job. What is right for one job may be wrong for another job. Ballast for traction and stability.

Factors determining amount of ballast:

- Soil surface—loose or firm
- Type of implement—integral/semi-integral or towed
- Travel speed—slow or fast
- Tractor power output—partial or full load
- Tire size

Ballasting MFWD-Equipped Tractors

Ideal tire slippage for MFWD-equipped tractors is 8—12%. To reduce wheel slip to this level, more weight is needed on the front than with two-wheel drive tractors. The ideal weight split is 40% front, 60% rear, of total tractor weight. In some cases, liquid ballast will be needed in front tires to obtain this weight split.

If equipped with a loader, provide adequate ballast to rear wheels.

NOTE: Implement codes are used to determine proper ballast for stability and steering control. Refer to the implement code in your implement Operator's Manual, along with Using Implement Codes in this section, to determine the minimum number of front weights that are required for your tractor model. In some cases, additional front ballast is required for optimum field performance. If more assistance is needed, see your John Deere dealer.

Matching Ballast to Work Load

Use no more ballast than necessary, and remove ballast when it is no longer needed.

Rather than weighing tractor down to pull heavy loads, try to reduce load. Pulling a lighter load at a higher speed is more economical and more efficient.

Too Little Ballast		Too Much Ballast	
1.	Excessive wheel slip	1.	Increased load
2.	Power loss due to churning soil	2.	Power loss due to carrying extra weight
3.	Tire wear	3.	Tire strain
4.	Fuel waste	4.	Soil compaction
5.	Lower productivity	5.	Fuel waste
		6.	Lower productivity

Ballast Limitations

Ballast should be limited by either tire capacity or tractor capacity. Each tire has a recommended carrying capacity, which should not be exceeded (see Wheels and Tires Operation section). If a greater amount of weight is needed for traction, a larger single tire should be considered.

Ballast can be added as either liquid or cast iron.

Checking for Correct Ballast

The best way to check for correct ballast is to measure amount of travel reduction (% slip) of the drive wheels. Under normal field conditions, travel reduction should be 10—15% (8—12% for MFWD tractors).

Add more weight to drive wheels if slip is excessive. If there is less than minimum recommended slip, weight should be removed.

CP00834,00037FF-19-15JAN18

Determine Maximum Front Ballast

Use appropriate front ballast for a particular operating condition. Two-wheel drive tractors should only have enough ballast to maintain safe steering control. Remove ballast when it is no longer needed.

Chart shows carrying capacity per tire.

IMPORTANT: Do not overload tires. If maximum weight shown in chart is not enough for safety, reduce load or install tires with a higher load rating.

MAXIMUM LOAD PER WHEEL		
Tire Size	Ply Rating	Capacity kg (lb)
10.0-16	8	965 (2128)
340/85 R24	NA	2475 (5457)
380/85 R24	NA	2925 (6450)

CP00834,0003806-19-15JAN18

Determine Maximum Rear Ballast

IMPORTANT: Do not overload tires. If maximum weight shown in chart is not enough for safety, reduce load or install heavier ply tires.

Too much ballast will cause excessive soil compaction and rolling resistance and shorten drive train life. Ballast should never exceed the weight required to provide traction for continuous full power loads in third gear. Remove ballast if tractor engine labors when pulling heavy loads in the first three gears.

Rear wheel ballast should never be such that the engine cannot support a full load at the rated engine speed, while the tractor is moving at 7 km/h (4.3 mph). If the engine labors or stalls below 7 km/h (4.3 mph), this indicates there is too much ballast on the rear wheels.

Chart shows carrying capacity per tire.

MAXIMUM LOAD PER WHEEL		
Tire Size	**Ply Rating**	**Capacity kg (lb)**
460/85 R34	NA	4615 (10176)
460/85 R38	NA	4875 (10749)

CP00834,0003800-19-15JAN18

Add Rear Ballast for Front Loader

CAUTION: To help prevent personal injury or death from tractor/loader rollover, add recommended amount of ballast to tractor. The amount of ballast listed is the minimum required for normal loader operation. For some operations, additional ballast may be required to maximize stability. Select one of the following ballasting options:

BALLAST RECOMMENDATIONS 6105E, 6120E, and 6135E TRACTORS with H310 LOADER				
H310 MSL				
MFWD TRACTORS		**Ballast**	**Heavy Duty Front Tire Load Index**	**Regular Duty Front Tire Load Index**
OPTION 1	3-Point Hitch	1250 kg (2755.8 lb)	123 kg (271.2 lb)	113 kg (249.1 lb)
	Rear Axle	500 kg (1102.3 lb)		
OPTION 2	Rear Axle	N/A		

BALLAST RECOMMENDATIONS 6105E, 6120E, and 6135E TRACTORS with H310 LOADER				
H310 NSL				
MFWD TRACTORS		**Ballast**	**Heavy Duty Front Tire Load Index**	**Regular Duty Front Tire Load Index**
OPTION 1	3-Point Hitch	1000 kg (2204.6 lb)	121 kg (266.8 lb)	111 kg (244.7 lb)
	Rear Axle	0 kg (0 lb)		
OPTION 2	Rear Axle	N/A		

BALLAST RECOMMENDATIONS 6105E, 6120E, and 6135E TRACTORS with H260 LOADER				
H260 MSL				
MFWD TRACTORS		**Ballast**	**Heavy Duty Front Tire Load Index**	**Regular Duty Front Tire Load Index**
OPTION 1	3-Point Hitch	1000 kg (2425.1 lb)	121 kg (266.7 lb)	113 kg (246.9 lb)
	Rear Axle	0 kg (0 lb)		
OPTION 2	Rear Axle	N/A		

BALLAST RECOMMENDATIONS 6105E, 6120E, and 6135E TRACTORS with H260 LOADER				
H260 NSL				
MFWD TRACTORS		**Ballast**	**Heavy Duty Front Tire Load Index**	**Regular Duty Front Tire Load Index**
OPTION 1	3-Point Hitch	550 kg (1212.5 lb)	118 kg (260.1 lb)	111 kg (244.7 lb)
	Rear Axle	0 kg (0 lb)		
OPTION 2	Rear Axle	N/A		

Ballast Notes:

1. Per ASABE EP562 a minimum rear tread setting of 1825 mm is recommended. Above ballast based on this tread setting.
2. Due to some tractor loader combinations resulting in high front axle loads, 3-point hitch ballast is required as noted.
3. Open operator station 4-cylinder tractors require additional 350 kg rear axle ballast when hitch ballast used (additional 100 kg for 6 cylinders).
4. Open operator station 4-cylinder tractors require additional 500 kg rear axle ballast when hitch ballast not used (additional 150 kg for 6 cylinders).
5. Rear axle ballast based on steel wheels. For cast wheels, reduce requirement by 220 kg per wheel.

CP00834,0003802-19-15JAN18

Use Cast Iron Weights

Cast iron weights are available for rear tires. They can be installed on the inside or outside of wheel. See your John Deere dealer for more information and recommendations on weight use and placement.

Specification

Cast Iron Weights—Weight. . . . . 55 kg (121 lb)

CP00834,0003803-19-15JAN18

Use Liquid Weight

CAUTION: Installing liquid ballast requires the special equipment and training. Have the job done by your John Deere dealer or a tire service store?

IMPORTANT: Never fill tire to more than 90% full. More solution would leave too little air space to absorb shocks. Damage to tire could occur.

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

Use calcium chloride to prevent water from freezing. A mixture of 0.6 kg per liter (5 lb of calcium chloride per gallon) will not freeze solid above -45°C (-53°F).

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

Fill tubeless tires slightly above valve 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%.

Charts on this page show how much each tire size holds if filled to 75% full.

LIQUID WEIGHT FOR FRONT TIRES With 0.6 kg/L (5 lb/gal) Calcium Chloride Solution	
Tire Size	**Liquid Weight per Tire kg (lb)—75% Full**
10.0-16	64 kg (142 lb)
340/85 R24	144 kg (317 lb)
380/85 R24	178 kg (392 lb)
340/85R38	168 kg (370 lb)
320/90R46	258 kg (568 lb)
230/95R48	130 kg (286 lb)
320/95R50	259 kg (570 lb)

LIQUID WEIGHT FOR REAR TIRES With 0.6 kg/L (5 lb/gal) Calcium Chloride Solution	
Tire Size	**Liquid weight per Tire kg (lb)—75% Full**
460/85 R34	378 kg (834 lb)
460/85 R38	503 kg (1110 lb)
340/85R38	168 kg (370 lb)
320/90R46	258 kg (568 lb)
230/95R48	130 kg (286 lb)
320/95R50	259 kg (570 lb)

GS38198,0000F83-19-27APR21

Use Implement Codes

CAUTION: Do not attempt to transport an implement without adequate front ballast. Lack of steering control may result.

With maximum front ballast, do not attempt to transport an implement whose code exceeds:

- **217 for 2WD**
- **225 for MFWD**

John Deere engineers have developed a code to determine how much front ballast is needed for stability and steering control.

1. Find implement code in implement Operator's Manual.
2. Use the following charts to determine how many front weights are required on your tractor model and configuration.

   Example: An implement with a code 194 to be used with a 2WD tractor requires 10 front weights.

Implement Code Charts

Following charts give Implement codes for the various combinations of tractors and tire sizes:

2WD Tractor with 10.0-16 front tires	
BALLAST	**CODE**
Front Support Only	128
1 Starter Weight	137
2 Weights	149
4 Weights	160
6 Weights	171
8 Weights	183
10 Weights	194
12 Weights	205
14 Weights	217

MFWD Tractor with 380/85 R24 or 340/85 R24 front tires	
BALLAST	**CODE**
Front Support Only	137
1 Starter Weight	146
2 Weights	157
4 Weights	168
6 Weights	180
8 Weights	191
10 Weights	202
12 Weights	214
14 Weights	225

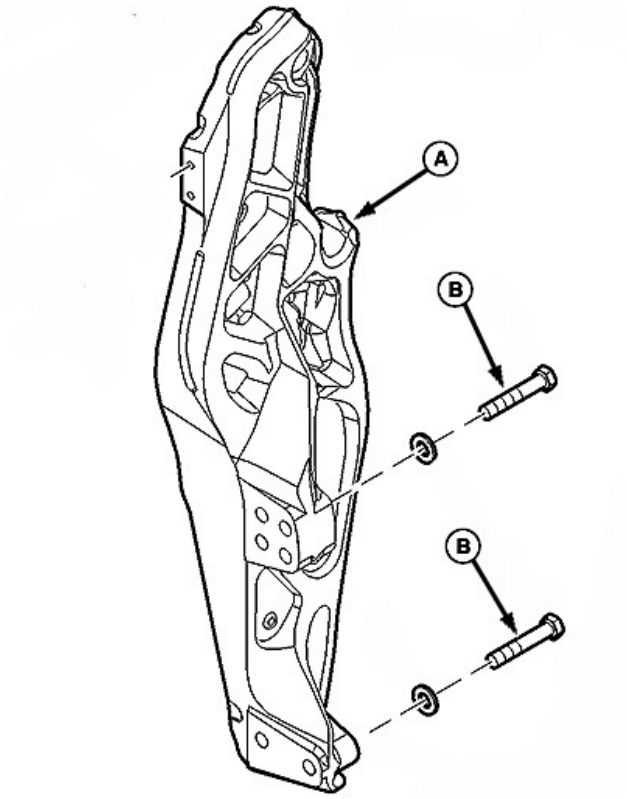
CP00834,0003805-19-15JAN18

Additional Equipment Operation

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

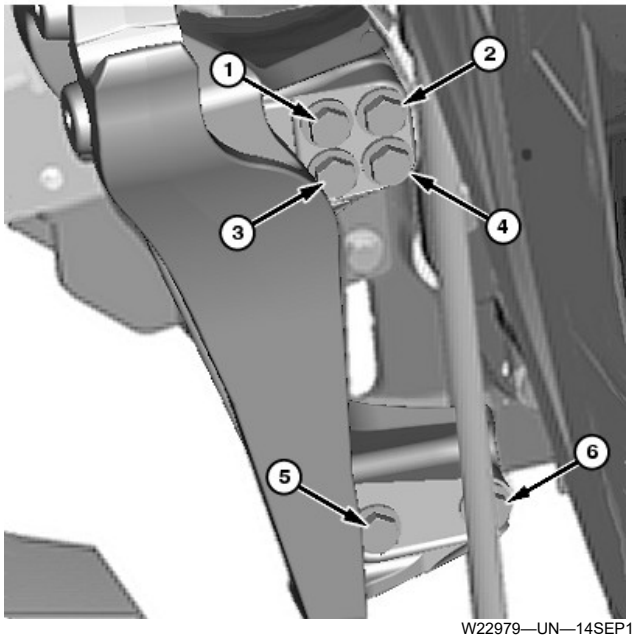
CP00834,0003807-19-15JAN18

Front Loader Mounting Bracket



CPA0002792—UN—25MAY16

Front Loader Bracket



W22979—UN—14SEP12

Torque Sequence (Right-Hand Side)

A—Front Loader Bracket
B—Cap Screws (6 used)

A front loader checked and approved by John Deere is available for purchase.

Using a suitable hoist, position the front loader brackets on the main frame of the tractor and tighten the screws to the specified torque.

Specification

M20 Cap Screws—Torque. . . . . 580 N·m (428 lb·ft)

Check the torque periodically according to tractor and loader maintenance information.

CP00834,0003808-19-15JAN18

Ag Precision Technology

APY44738—UN—26MAY21

reenStar™ Display

For any field prepare solution technology installed on tractor, please refer to the latest operator manual. See your dealer for more information.

NOTE: GreenStar™ 4240 Display shown.

GS38198,0000F9B-19-26MAY21

GreenStar is a trademark of Deere & Company

Vandal Protection

Vandal protection kit available for hood, fuel tank and DEF tank. See your John Deere dealer for more information.

P18731—UN—29JUN20

Hood lock available

P18732—UN—02JUL20

Lockable filler cap for DEF tank available

HL70592,0000BE1-19-14JUL20

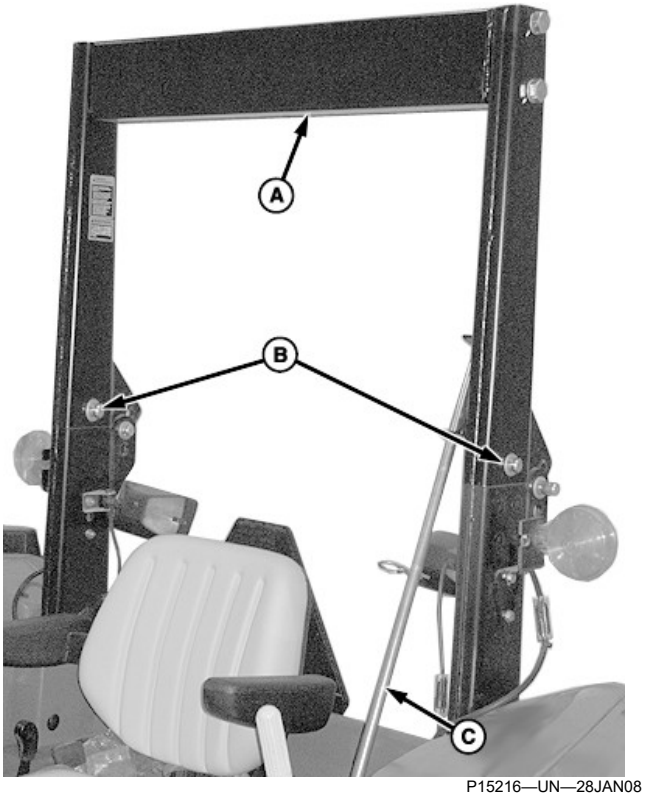
Operate Foldable Roll Over Protective Structure (ROPS)

CAUTION: Make certain all parts are installed correctly if roll over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque. (See Inspect ROPS for Loose Hardware in Operator Station Maintenance section.)

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS must be replaced, not reused. Any alteration to the ROPS must be approved by the manufacturer.

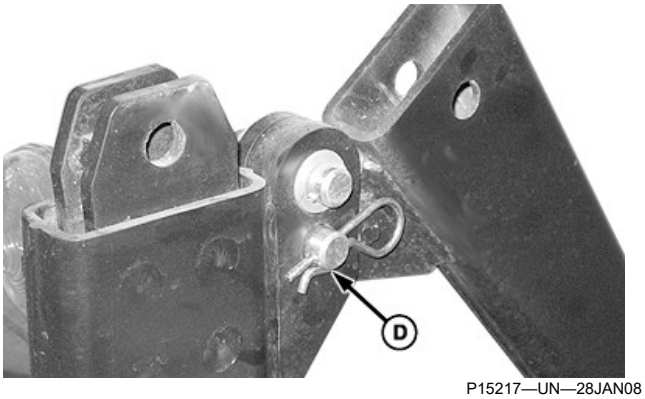
Always keep upper part of ROPS pinned in vertical position (as shown) when operating tractor. If tractor is operated with ROPS folded (e.g., to enter a low building), drive with extreme caution and do NOT use seat belt.

Raise ROPS up again and pin in vertical position as soon as the tractor is operated under normal conditions.



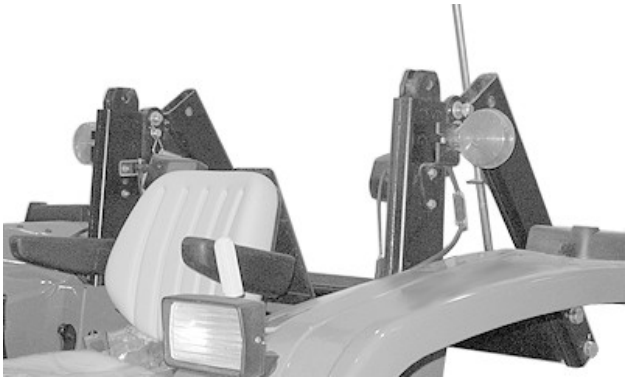
P15216—UN—28JAN08

Operating Position



P15217—UN—28JAN08

Pins



P15218—UN—28JAN08

ROPS Folded

A—ROPS Crossbar
B—Pin Clips and Retaining Pins (2 used)
C—Handlebar
D—Holes (2 used)

Lower ROPS Crossbar

1. Remove pin clips and retaining pins (B).
2. Using handlebar (C), lower ROPS crossbar (A).
3. Reinstall retaining pins and pin clips into holes (D) in ROPS to lock crossbar down.

Put ROPS in Operating Position

1. Remove pin clips and retaining pins (B).
2. Using handlebar (C), raise ROPS crossbar (A) to vertical position.
3. Reinstall retaining pins and pin clips into holes (D) in ROPS to lock crossbar.

CP00834,0003809-19-15JAN18

Operator's Manual Storage Compartment

P15224—UN—29JAN08

Operator's Manual Storage Compartment

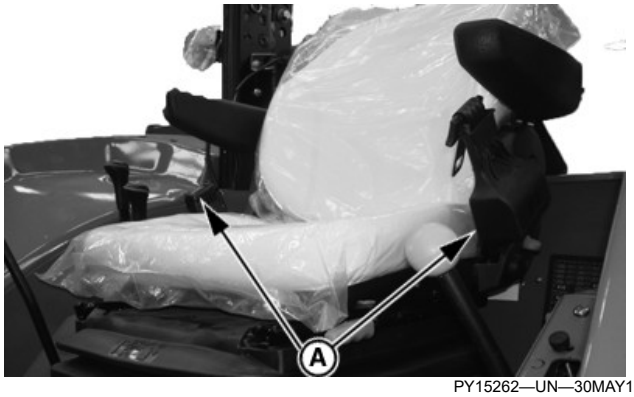
A— Tab

Lift tab (A) and open storage compartment cover located on rear of left fender.

CP00834,000380A-19-15JAN18

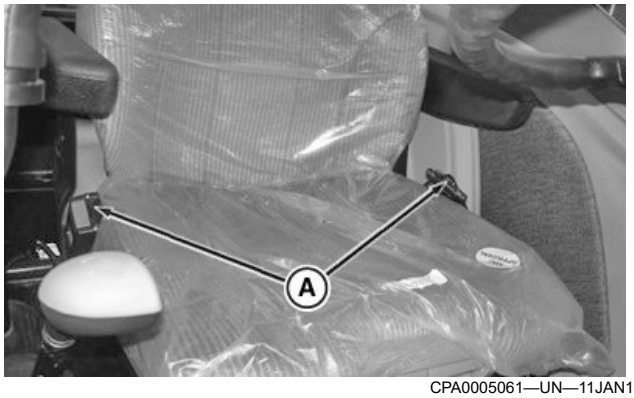
Use Seat Belt

CAUTION: Use a seat belt when you operate with a roll-over protective structure (ROPS) to minimize chance of injury from an accident, such as an overturn.



PY15262—UN—30MAY12

OOS



CPA0005061—UN—11JAN18

Cab

A—Seat Belt

To properly retain operator, seat belt (A) must fit snugly across abdomen. Seat belt extends as necessary to fit comfortably.

Inspect seat belt and mounting hardware annually. (See Inspect Seat Belt in Operator Station Maintenance section.)

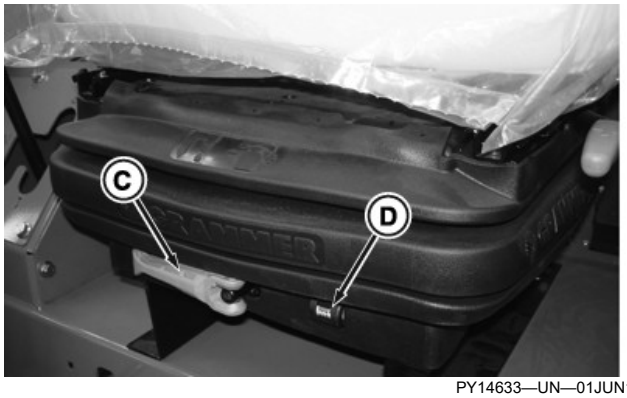
CP00834,000380B-19-15JAN18

Adjust Seat—Mechanical Suspension

CAUTION: To avoid accidents, adjust seat before driving.

PY14632—UN—23AUG12

OOS Seat



PY14633—UN—01JUN12

Display Window

A—Forward/Backward Adjustment Lever
B—Backrest Adjustment Lever
C—Weight Adjustment Lever
D—Display Window

Forward or Backward: Lift lever (A), move seat to desired position, and release lever to lock in position.

Backrest: Lift lever (B) and tilt backrest to desired position. Release lever to lock in place.

Weight: Rotate lever (C) away from seat and turn:

- Clockwise—Increase load

- Counterclockwise—Reduce load

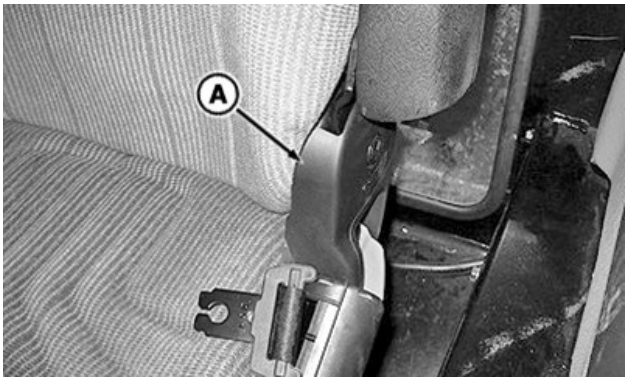
Desired weight setting appears in display window (D). Weight level range is 50-130 kg (110-285 lbs). Rotate lever toward seat when done.

IMPORTANT: Internal damage could occur to the seat mechanism. When turning weight adjustment lever to reduce load, stop turning handle when seat reaches minimum weight adjustment position and handle resistance increases.

NOTE: Suspension should not bottom out when properly adjusted.

Height: To adjust the seat upward, lift seat pan until it clicks into place (maximum of 3 detent positions). To adjust downward, lift the seat to the stop position and then lower it.

Armrest Height:



CPA0005062—UN—11JAN18

Plastic Cover

A—Plastic Cover

1. Pry plastic cover (A) away from seat.

CPA0005063—UN—11JAN18

Cover Off

B—Nut

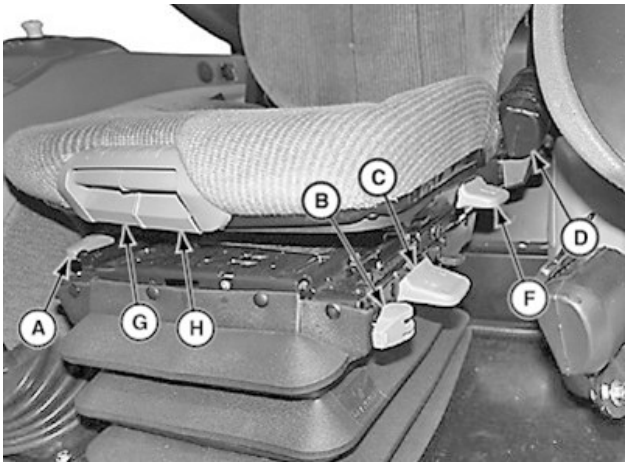
2. Loosen nut (B).
3. Slide armrest up or down in adjustment slots to desired height and tighten hardware.
4. Repeat procedure for opposite armrest.

CP00834,000380C-19-15JAN18

Adjust Seat—Air Suspension

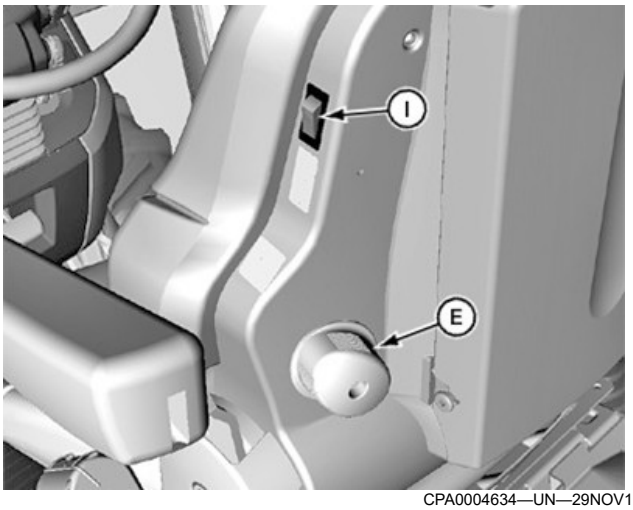
CAUTION: Avoid accidents. Adjust seat before driving.

IMPORTANT: After adjusting seat, make sure that all controls can be easily accessed.



CPA0004633—UN—29NOV17

Air Suspension Seat



CPA0004634—UN—29NOV17

Seat Warmer Switch and Lumbar Adjustment

A—Forward/Backward Adjustment Lever
B—Forward/Backward Suspension Adjustment Lever
C—Weight Adjustment Lever
D—Backrest Tilt Adjustment Lever
E—Lumbar Support Adjustment Knob
F—Swivel Adjustment Lever (if Equipped)
G—Cushion Position Adjustment Lever
H—Lower Cushion Tilt Adjustment Lever
I—Seat Warmer Switch (if Equipped)

Adjust to suit operator. Eight seat adjustments are available:

Forward/Backward Adjustment

1. Lift forward/backward adjustment lever (A) up.
2. Slide seat to desired position.
3. Release forward/backward adjustment lever (A) to lock seat in position.

Forward/Backward Suspension Adjustment

- Flip lever (B) forward for forward/backward suspension.
- Flip lever (B) rearward for NO forward/rearward suspension.

Weight Adjustment

1. Lift weight adjustment lever (C) up.
2. Reach desired suspension travel for operator weight.

NOTE: Suspension should not bottom out when properly adjusted.

3. Release lever (C) to lock seat in position.

Backrest Tilt Adjustment

1. Lift backrest tilt adjustment lever (D).
2. Tilt backrest forward or rearward as desired.
3. Release backrest tilt adjustment lever (D) to lock seat in position.

Lumbar Adjustment

Turn lumbar adjustment knob (E) to increase or decrease support to lower back.

Swivel Adjustment

1. Lift swivel adjustment lever (F) up.
2. Rotate seat to desired position. The seat turns 15° to the left and right. The seat locks at 7.5° intervals.
3. Release swivel adjustment lever (F) to lock seat in position.

Cushion Position

1. Lift lever (G) to tilt seat cushion up.
2. Lift lever (H) to lower tilt of the cushion.

Seat Warmer Switch (If Equipped)

To activate seat warmer, push top portion of seat warmer switch (I) to ON position.

CP00834,000380D-19-15JAN18

Instructional Seat

LV15643—UN—11APR12

Instructional Seat

A—Lock Lever

Release lock lever (A) and fold down seat bottom.

CP00834,000380E-19-15JAN18

Adjust Steering Wheel

PY21074—UN—07MAY15

Steering Column

A—Height Adjustment Ring
B—Angle Adjustment Lever

Tilt: Lift lever (B) and move steering column to desired angle. Release lever to lock into position.

Wheel Height (Telescoping): Loosen ring (A) and raise or lower steering wheel to desired height. Tighten ring to lock into position.

CP00834,000380F-19-15JAN18

Use Emergency Exit

CPA0005065—UN—11JAN18

Emergency Exit

Rear window opening provides a large exit path if the cab doors or sides of cab are blocked in an emergency situation.

CP00834,0003810-19-15JAN18

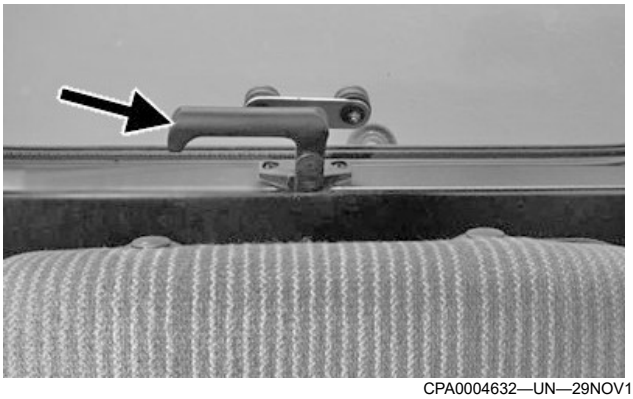
Open Windows

Side and rear windows can be opened for better ventilation.

CPA0004581—UN—23NOV17

Left-Hand Side Window

Side: Pull handle toward rear and push to lock open.



CPA0004632—UN—29NOV17

Rear Window

Rear: Rotate handle clockwise and push out.

NOTE: Rear window opening provides a large exit path if cab doors are blocked in case of an emergency.

CP00834,0003811-19-15JAN18

Open Door

CPA0005066—UN—11JAN18

Inside Door Latch

A—Handle

Pull handle (A) from inside of cab and push door.

CPA0005067—UN—11JAN18

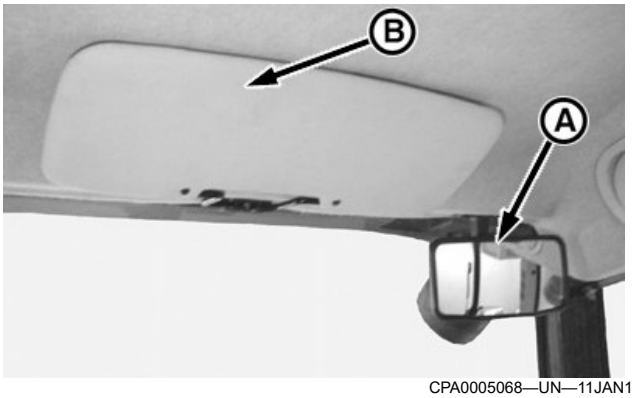
Outside Door Handle

A—Knob

Press knob (A) from outside of cab and pull door.

CP00834,0003812-19-15JAN18

Inside Rear View Mirror and Sun Visor



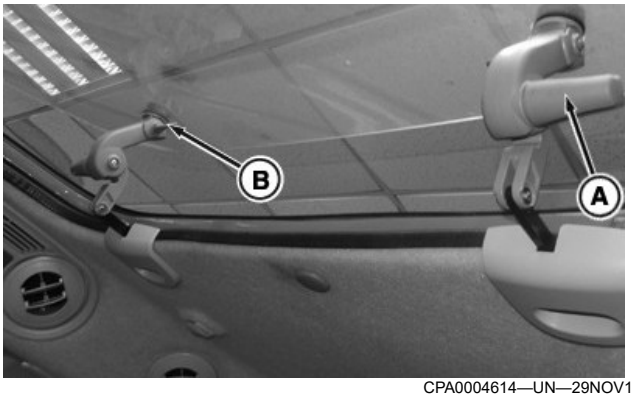
CPA0005068—UN—11JAN18

Mirror and Sun Visor

A—Inside Rear View Mirror
B—Sun Visor

CP00834,0003813-19-15JAN18

Sun Roof



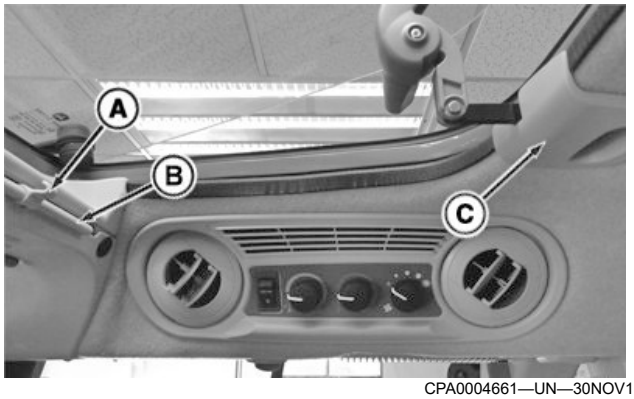
CPA0004614—UN—29NOV17

Sun Roof

A—Lever (2 used)
B—Pin (2 used)

Using levers (A), sun roof can be opened for better air circulation.

Sun roof can be used as an emergency exit by removing pins (B) and fully opening.



CPA0004661—UN—30NOV17

Sun Roof Shade

A—Handle
B—Sun Roof Shade
C—Retainer

NOTE: Sun roof is able to open with sun roof shade in place.

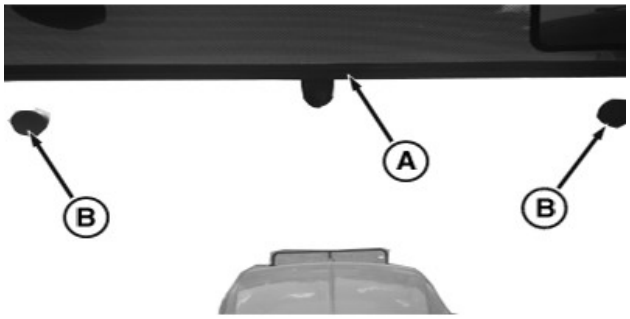
Sun roof is equipped with a sun roof shade (B). To use sun roof shade, pull shade out using handle (A). Secure handle to retainer (C).

NOTE: Sun roof shade is spring-loaded for ease in retracting. Hold handle securely when removing from retainer.

To retract sun roof shade, remove handle from retainer. Sun roof shade is spring-loaded and retracts into storage housing.

CP00834,0003814-19-15JAN18

Front Sun Shade



PY21077—UN—07MAY15

Retractable Sun Shade

A—Sun Shade
B—Knobs (2 used)

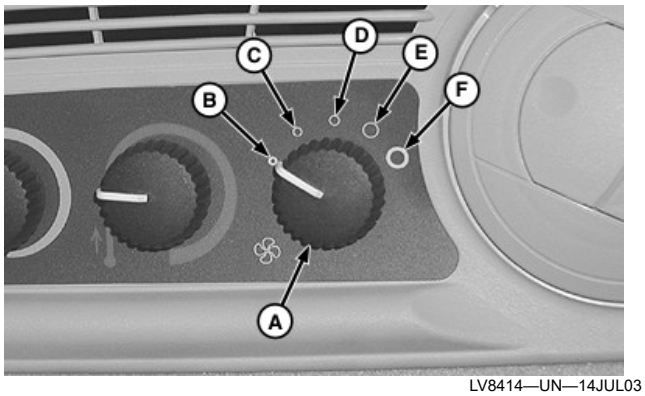
To shade sun from front windshield, pull front sun shade (A) straight down until level with the two knobs (B). Fit the slot on the sun shade (A) on the knobs (B).

To retract sun shade, remove the slot in sun shade (A)

by pulling it downwards and then push it back up. Sun shade retracts back into storage housing.

CP00834,0003815-19-15JAN18

Adjust Blower Speed



LV8414—UN—14JUL03

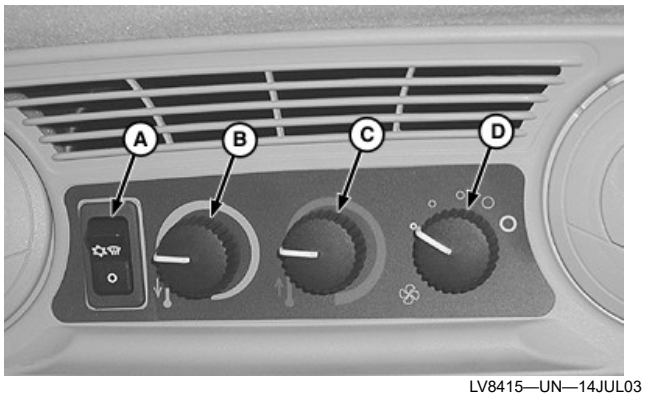
Blower Speed Control Knob

A—Blower Speed Control Knob
B—Off
C—Low
D—Medium
E—High
F—Purge

Turn control knob (A) to desired setting. For rapid cab cool down, use the purge setting (F).

CP00834,0003816-19-15JAN18

Control Temperature



LV8415—UN—14JUL03

Temperature Controls

A—Air Conditioning and Deicing Switch
B—Air Conditioning Temperature Control Knob
C—Heater Temperature Control Knob
D—Blower Speed Control Knob

Push top half of switch (A) to turn air conditioning and deicing ON and push bottom half to turn it OFF.

Turn control knob (B) to adjust air conditioning temperature.

Turn control knob (C) to adjust heater temperature.

CP00834,0003817-19-15JAN18

Deice, Demist, or Defrost Windshield

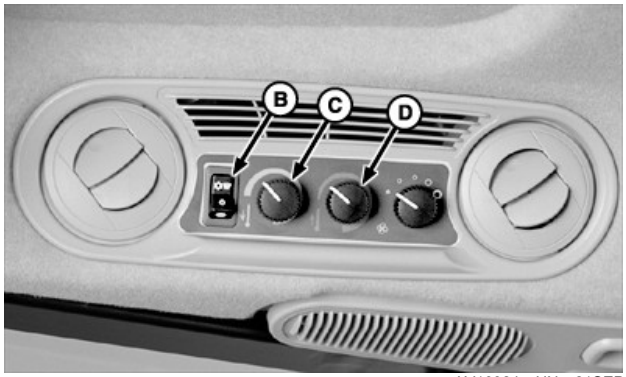
LV8596—UN—14AUG03

Vents

A—Front Vent

1. Aim two front vents (A) toward windshield.

NOTE: Closing middle and rear vents will help clear windshield faster.



LV10324—UN—21SEP04

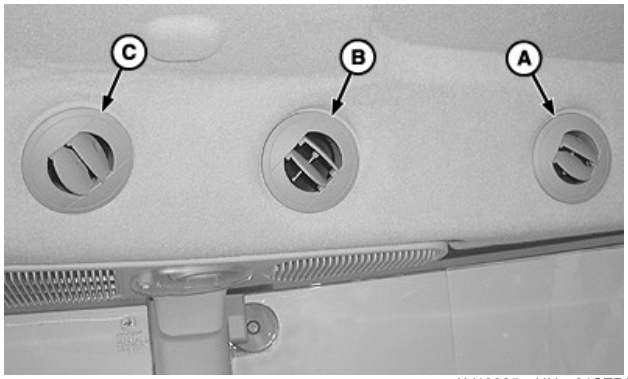
Controls

B—Deicing Switch
C—A/C Temperature Control Knob
D—Heater Temperature Control Knob

2. Press top half of deicing switch (B) and turn A/C temperature control knob (C) to full counterclockwise position.
3. Turn heater temperature control knob (D) clockwise to obtain desired temperature.

CP00834,0003818-19-15JAN18

Optimize Air Conditioner and Heater Performance



LV10325—UN—21SEP04

Vents

LV10326—UN—21SEP04

Controls

A—Front Vent
B—Middle Vent
C—Rear Vent
D—Heater Temperature Control Knob

Adjust individual vents to target heating or cooling:

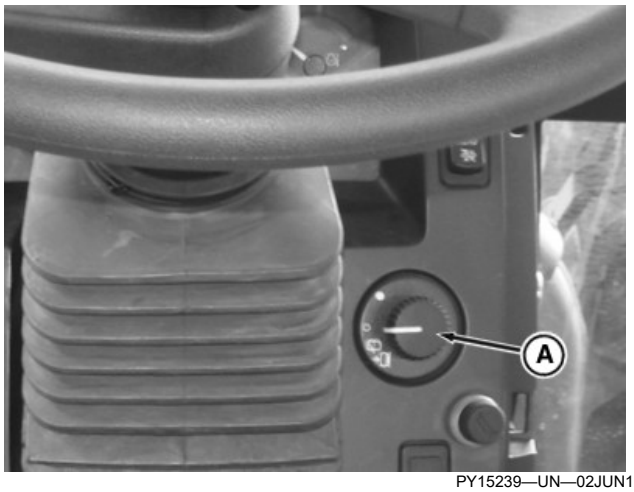
- Position front vents (A) toward legs and mid-body.
- Position middle vents (B) toward your head.
- Position rear vents (C) toward your back.

NOTE: For maximum cooling effect, turn heater temperature control knob (D) to full counterclockwise position.

Position all vents (A, B, and C) down to heat the floor and feet.

CP00834,0003819-19-15JAN18

Operate Windshield Wiper and Washer



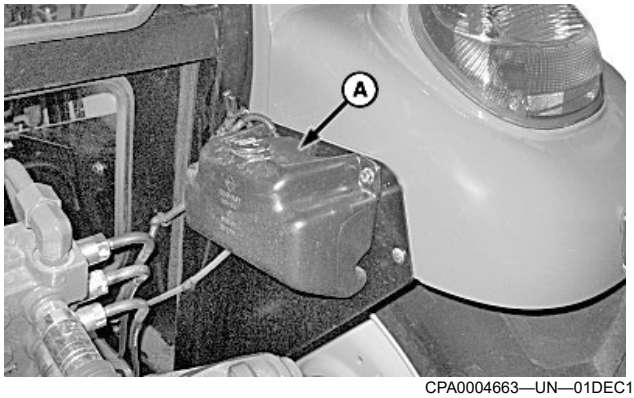
PY15239—UN—02JUN12

Windshield Wiper Switch

A—Windshield Wiper/Washer Switch

Rotate wiper switch (A) to move windshield wipers to OFF, SLOW, or FAST position.

Push switch to activate windshield washer.



CPA0004663—UN—01DEC17

Rear, Right-Hand Side

A—Washer Fluid Reservoir

Fill washer fluid reservoir (A) with non-freezing windshield washer fluid. Reservoir is located behind cab on inside of right-hand rear fender.

CP00834,000381A-19-15JAN18

Operate Rear Window Wiper and Washer

CPA0004582—UN—27NOV17

Window Wiper Switch

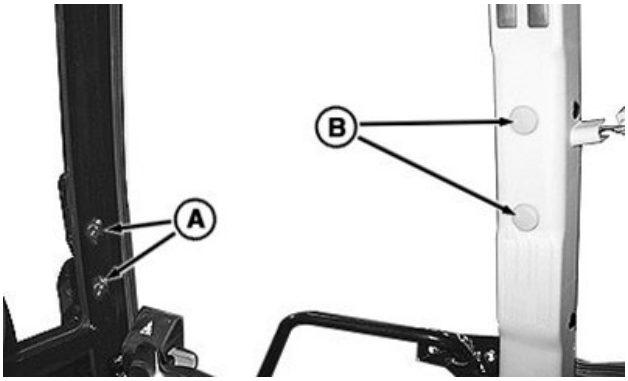
A—Rear Window Wiper/Washer Switch

Rear window wiper/washer switch (A) has three positions:

- Top WASH position—Hold down switch to activate washer.
- Center ON position—Rear window wiper is activated.
- Bottom OFF position.

CP00834,000381B-19-15JAN18

Use Monitor Mounts



CPA0004583—UN—11JAN18

Right-Hand Side of Cab

A—Mounting Locations
B—Plugs (Mounting Locations)

There are two locations to attach monitors and controls in the cab:

- Front right post.
- Right center post—remove plugs (B).

CP00834,000381C-19-15JAN18

Flexible Steps

P18739—UN—27JUL20

Flexible steps, OOS shown

A—Flexible steps available

Operators will benefit from choosing between rigid or flexible steps.

Flexible steps utilize rubber material to resist possible damage resulting from uneven ground and/or muddy conditions.

See your John Deere dealer for more information.

HL70592,0000BE4-19-27JUL20

Operator Training Required

- First, study Engine Operation section, then this section of the manual before operating tractor.
- Operate tractor in an open, unobstructed area under the direction of an experienced operator.
- Learn use of all controls.
- Operator experience is required to learn moving, stopping, turning, and other characteristics of tractor.

HL70592,0000845-19-16MAR18

Observe Maximum Travel Speeds

CAUTION: Do not exceed safe travel speeds under any circumstances. Always reduce speed when driving under adverse weather, slope, or surface conditions.

Maximum travel speed is 30 km/h (18.5 mph) for an unballasted, unloaded tractor, or when towing loads that weigh less than the tractor.

Reduce speed to 16 km/h (10 mph) when towing loads that weigh more than the tractor.

When tractor is equipped with a loader attachment, maximum permissible travel speed is 8 km/h (5 mph), but must be slower on slopes and/or rough surfaces.

HL70592,0000846-19-16MAR18

Driving on Public Roads

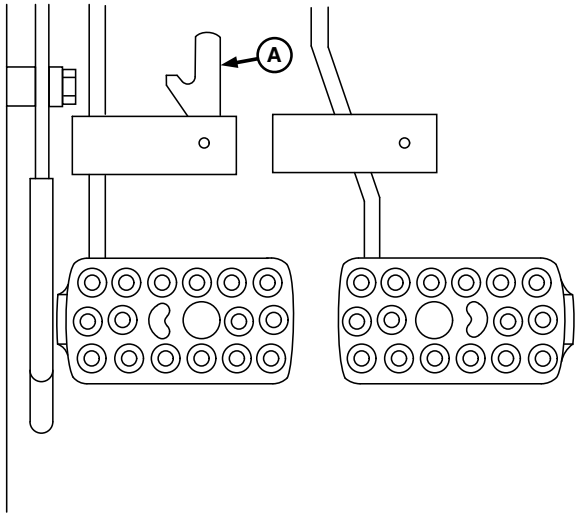
CAUTION: When transporting on a public road or highway, use accessory lights and devices for adequate warning to operators of other vehicles. Check local governmental regulations. Various safety devices are available from your John Deere dealer. Keep safety items in good condition. Replace missing or damaged items.

Observe the following precautions when driving tractor on roads:

1. Ballast tractor correctly.
2. **Cab:** Clean windows and adjust rear-view mirrors.
3. Use foot throttle instead of hand throttle.

CAUTION: Before operating tractor on a road, lock brake pedals together. Use brakes lightly and cautiously at transport speeds.

IMPORTANT: To prevent unnecessary wear, never "ride" the brakes by resting a foot on the pedals.



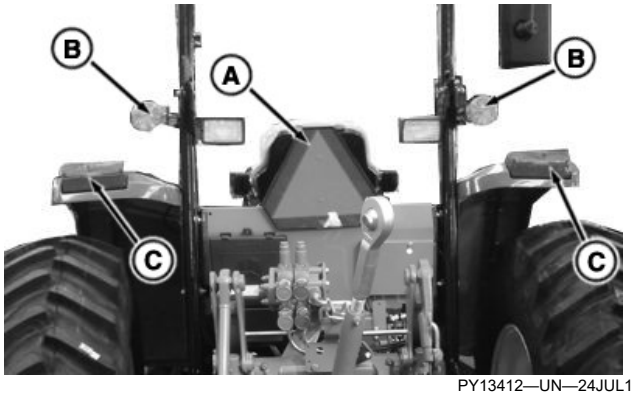
P9915—UN—13NOV00

Brake Pedals

A—Brake Pedal Locking Bar

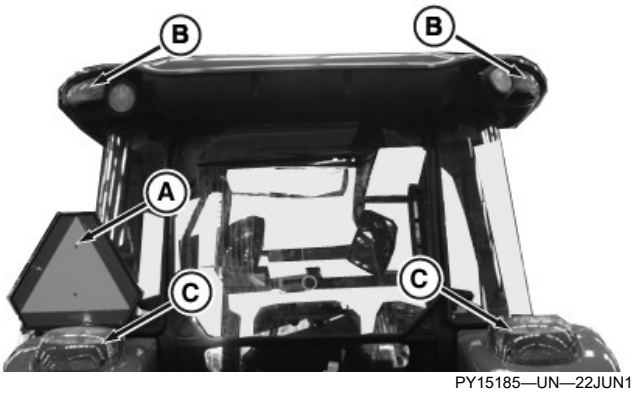
4. Couple brake pedals together using brake pedal locking bar (A). Avoid hard application of brakes. Reduce speed if towed load weighs more than the tractor and is not equipped with brakes. (Consult implement Operator's Manual for recommended transport speeds.)

   Use additional caution when transporting towed loads under adverse surface conditions and when turning or braking on inclines. Be sure that wheel tread is adjusted wide to provide maximum stability.



PY13412—UN—24JUL15

OOS



PY15185—UN—22JUN12

Cab

A—SMV Emblem
B—Warning Lights
C—Tail/Warning Lights

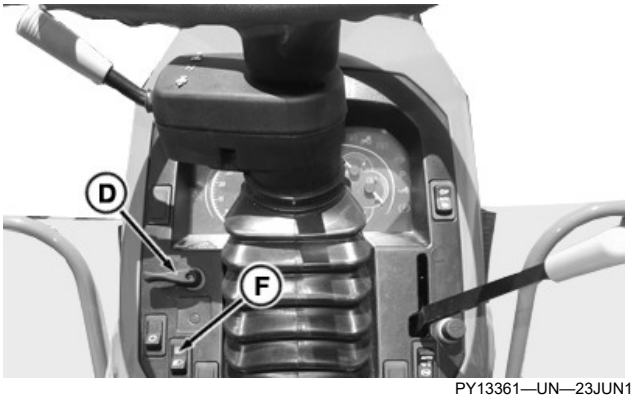
5. Check local laws and regulations for lighting requirements. Clean Slow Moving Vehicle (SMV) emblem (A), warning lights (B), and tail/warning lights (C). If towed or rear-mounted equipment obstructs view of safety devices, install SMV emblem and warning lights on equipment. (See your John Deere dealer.)

   A seven-terminal outlet at rear of tractor supplies power to warning lights on towed or rear-mounted equipment. (See description of outlet in Electrical and Lighting Operation section.)

6. **MFWD (if equipped):** To reduce tire wear, disengage front wheel drive.

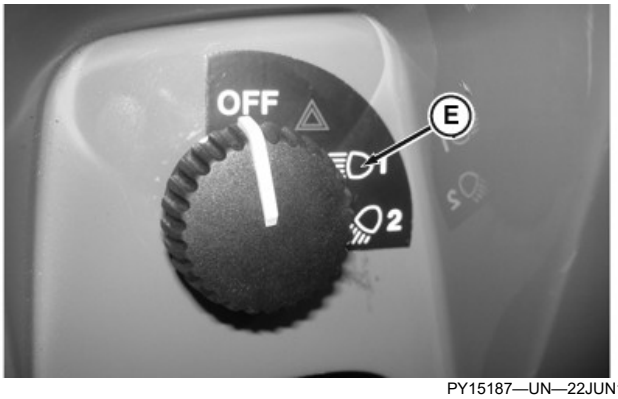
7. **Loader Cylinders (if equipped):** Engage transport lock to eliminate possibility of loader movement during transport by inadvertently bumping the multi-function lever.

8. Rear Hitch: Lock hitch in transport position to eliminate the possibility of lowering an implement during transport by inadvertently bumping the raise/lower lever.



PY13361—UN—23JUN15

OOS



PY15187—UN—22JUN12

Light Switch

D—Turn Signal Lever
E—Road Lights Position
F—High/Low Beam Switch

9. Use turn signal lever (D) when turning. Return lever to center position after turning.

10. Turn light switch to road lights position (E).

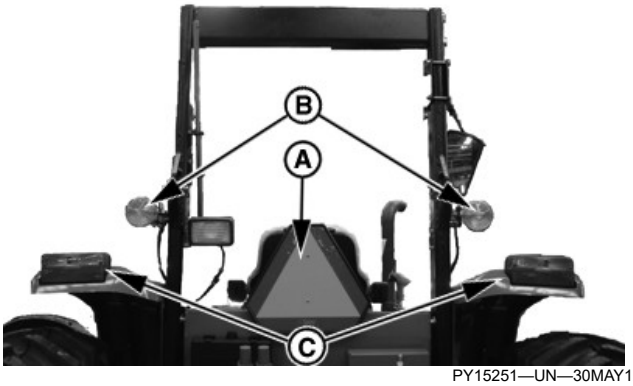
11. Move switch (F) to low beam position (down) when meeting another vehicle. Never use floodlights or any lights which could blind or confuse other drivers.

12. Drive slowly to maintain safe control. Before descending a hill, shift to a gear low enough to control speed without using brakes. Slow down for rough ground and sharp turns, especially when transporting heavy, rear-mounted equipment.

HL70592,0000847-19-16MAR18

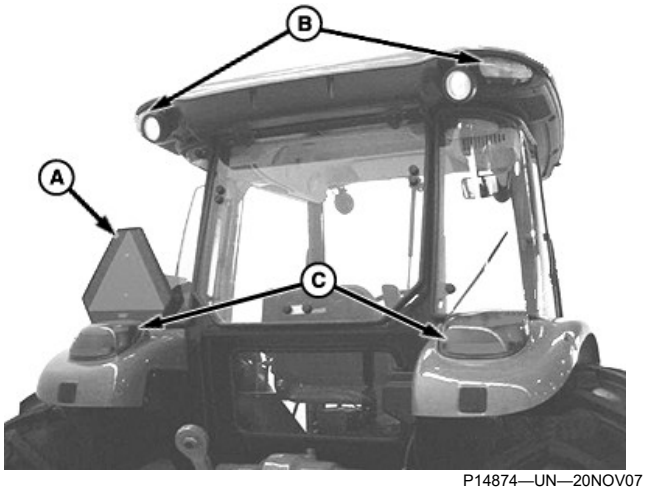
Driving Tractor on Roads

⚠ CAUTION: Observe the following precautions when operating on a road.



PY15251—UN—30MAY12

OOS



P14874—UN—20NOV07

Cab

A—SMV Emblem
B—Warning/Turn Signal Lights
C—Tail/Turn Signal Lights (2 used)

1. Before operating tractor on highway be sure tail/turn signal lights (C) and flashing warning/turn signal lights (B) work properly. Install Slow Moving Vehicle (SMV) emblem (A), reflectors, and auxiliary lighting equipment as required by local safety regulations. Clean SMV emblem for best visibility.

CAUTION: Never operate work lights (if equipped) when transporting tractor. Clear bright lights at the rear of the tractor could confuse drivers of other vehicles as they approach from behind. Use only road lights for transporting.

IMPORTANT: Refer to Electrical and Lighting Operation section for detailed description of lighting operations and functions.

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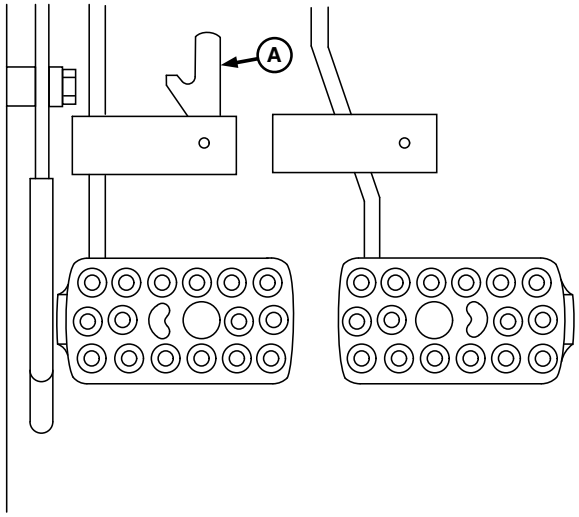
Cab

A—Turn Signal Lever

2. Use turn signals when turning. Be sure to return turn signal lever (A) to center position after turning.



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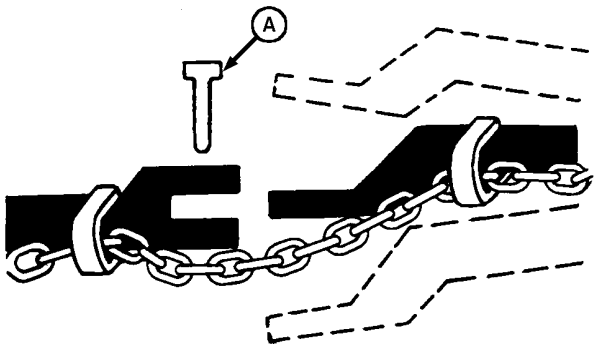
Locking Bar

A—Locking Bar

3. Before driving on a road, couple brake pedals together using locking bar (A). Avoid hard applications of brakes.
4. 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 equipment.
5. Before going down a hill, shift to a gear low enough to control speed without using brakes. Never coast down hill with clutch disengaged. This can overspeed clutch disc and cause severe clutch damage.
6. When transporting downhill on icy or graveled grades, be alert for skids which could result in loss of steering control. To decrease chance of skids, reduce speed and be sure that tractor has proper ballast.

CAUTION: A safety chain will help 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.

IMPORTANT: Safety chain is provided for transport only. It must not be used for pulling or towing implements or other items not attached to drawbar, or damage to your tractor may result.

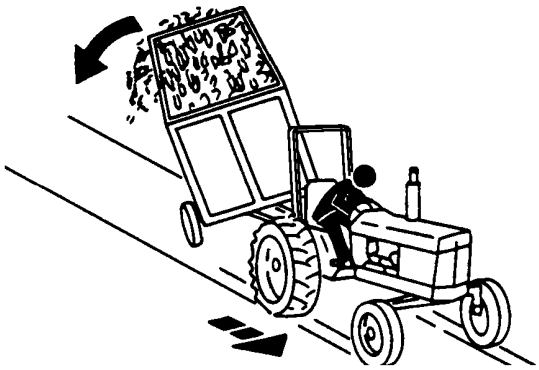


LV4421—UN—02NOV99

Drawbar Pin

A—Drawbar Pin

7. **Transporting towed loads**: Lock drawbar pin (A) in place and use safety chain to help control drawn equipment should it accidentally separate from drawbar while transporting.



LV4042—UN—09JUL99

Tractor

CAUTION: 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.

Observe these recommended maximum road speeds or local speed limits which may be lower:

If towed equipment does not have brakes, do not go faster than 32 km/h (20 mph) and do not tow loads more than 1.5 times the tractor weight.

If towed equipment has brakes, do not go faster than 40 km/h (25 mph) and do not tow loads more than 4.5 times the tractor weight.

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

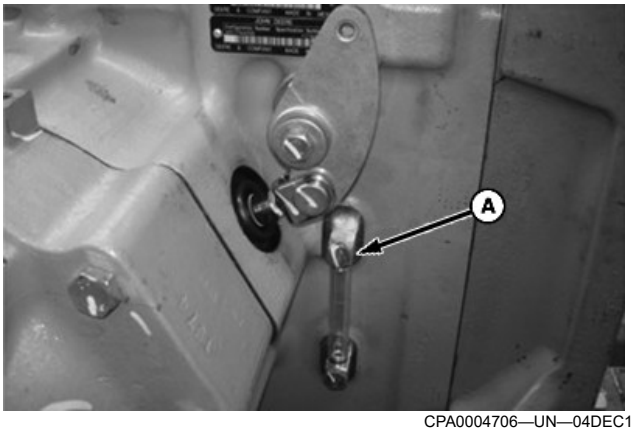
8. Use caution when operating tractor at transport speeds. Reduce speed if towed load weighs more than tractor and is not equipped with brakes. (See towed equipment Operator's Manual for recommended transport speeds.)
9. Use additional caution when transporting towed loads under adverse surface conditions, when turning, and on inclines.
10. Heavy towed or rear-mounted implements may start swaying in transport. Excessive swaying will result in loss of steering control. Drive slowly and avoid quick turns of steering wheel. Refer to your implement Operator's Manual regarding maximum travel speed limitations.

HL70592,0000848-19-16MAR18

Towing Tractor

CAUTION: Never tow tractor faster than 16 km/h (10 mph). Have an operator steer and brake tractor.

IMPORTANT: To avoid damaging transmission/ hydraulic system, observe the following precautions prior to towing tractor:



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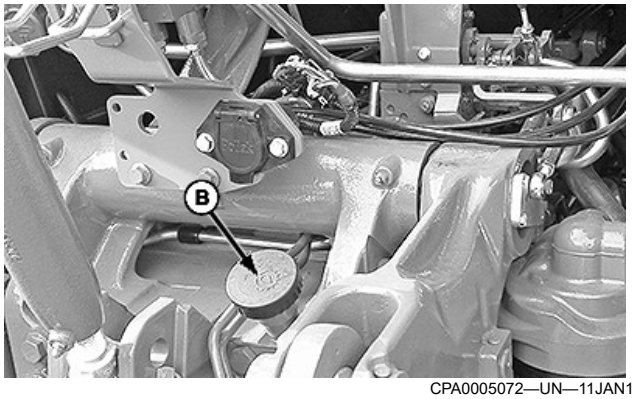
Hydraulic Oil Sight Glass



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Fill Port

A—Oil Level Sight Glass
B—Hydraulic Oil Fill Port

1. Be sure that transmission/hydraulic system oil is up to the full level line on oil level sight glass (A). If the tractor is to be towed with the front wheels raised, add 1 liter (1 qt) of oil to hydraulic oil fill port (B) for each 90 mm (3-1/2 in) the wheels are raised. Do not raise front wheels more than 305 mm (12 in) above ground.

NOTE: After transporting tractor, drain oil that was added for towing.

2. Make sure that differential lock is disengaged and gear shift lever is in neutral position, “N”.
3. Range selector lever must be placed in Neutral position.

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Use Caution on Hillsides

OOS: Operate only with the Roll-Over Protective Structure (ROPS) in the UP or extended position whenever possible. Always use your seat belt when the ROPS is in the UP or extended position to minimize chance of injury from an overturn accident.

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

Never drive near the edge of a gully or steep embankment—it might cave in.

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

MFWD (if equipped): While mechanical front wheel drive greatly increases traction, it does not increase the stability of the tractor. With MFWD engaged, the tractor can climb steeper slopes, but does not become more stable. When this option is used, extra caution is needed on slopes. Compared to two-wheel drive, a front-wheel drive tractor maintains traction on steeper slopes, increasing the possibility of a tip-over.

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

Hitch towed loads only to drawbar. When using a chain, take up the slack slowly.

HL70592,000084A-19-16MAR18

Place Tractor in Storage

Perform the following steps to place tractor into storage:

IMPORTANT: Anytime tractor will not be used for several months, use this procedure to minimize corrosion and deterioration. Use an AR41785 Engine Storage Kit and an extra 0.95 L (1 pt) of AR41870 Corrosion Inhibitor.

IMPORTANT: Long-term storage of Diesel Exhaust Fluid (DEF) in the DEF tank (over 12 months) is not recommended. If long-term storage is necessary, test DEF prior to operating engine. See Testing Diesel Exhaust Fluid (DEF) in Fuels, Lubricants, and Coolants section.

NOTE: Whenever possible, store tractor in a building or under a roof to avoid damage resulting from prolonged exposure to the elements.

1. Service air cleaner. See Air Intake, Fuel, Coolant, and Exhaust Maintenance section.
2. Change engine oil and filter. See Change Engine Oil and Filter in Engine Maintenance section.
3. If coolant has been in tractor for two years, flush cooling system. (See your John Deere dealer.) Add 50% antifreeze/water mixture. Test coolant for adequate cold weather protection.
4. Add 0.5 L (16 oz) inhibitor to engine crankcase at filler.
5. Add 0.25 L (9 oz) of corrosion inhibitor to transmission-hydraulic system fill port.
6. Drain fuel and add back 4 L (1 gal) of fuel. Then add 0.4 L (12 oz) of corrosion inhibitor.
7. Add 0.5 L (16 oz) more inhibitor to fuel tank at filler/cap.
8. Depress clutch and start engine. Run engine until it reaches operating temperature. Also raise and lower 3-point hitch several times. Shut off engine.
9. Remove air intake hose at manifold. Pour 0.1 L (3 oz) inhibitor into manifold and replace hose. Pull hand throttle back to low idle position. Crank engine only a few revolutions.
10. Disconnect fuel shutoff solenoid wiring lead/

connector. (This will prevent engine from starting while cranking.)

11. Release tension on auxiliary drive belts. Remove belt from air conditioner pulley and fan pulley.
12. Remove and clean battery. Store in a cool, dry place. Keep battery charged.[1]
13. Coat exposed metal surfaces, such as adjustable front axles, if extended, with grease or a corrosion inhibitor.
14. Seal air inlets, exhaust, crankcase fill cap, fuel tank cap, radiator overflow hose, and transmission and hydraulic system fill cap using plastic bags and tape.
15. Protect tires from heat and sunlight:
    - Raise tires off the ground (move tractor once a month if tires are not raised off the ground).
    - Cover wheels with waterproof tarpaulin.
    - Avoid storing at temperatures greater than 29°C (85°F).
    - Avoid direct sunlight.
16. Thoroughly clean tractor.
17. If tractor is stored outside, follow additional precaution: Cover instrument panel, control levers, and seat with sheets of material or cardboard, or cover entire tractor with waterproof material to protect against the sun's rays.
18. **Cab:** Rotate A/C compressor pulley several turns once a month to prevent seizure of compressor.

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Remove Tractor from Storage

IMPORTANT: If the tractor is in storage for more than 30 days, air conditioner must be turned on for 2-3 minutes at the engine idle (800-900 rpm). This avoids damage on the air conditioner compressor.

To remove tractor from storage, perform the following steps:

1. Remove covering placed in or on tractor while storing it.
2. Inspect tires and check tire inflation pressure. (See Wheels and Tires Operation section.
3. Unseal all openings sealed before storing.
4. Install battery and install cables.
5. Install auxiliary belt drive on air compressor pulley and fan pulley.
6. **Cab**: Check that air conditioning compressor pulley moves freely and is not seized.

IMPORTANT: Cab tractors: If air conditioning compressor is seized, engine operation with compressor clutch engaged will damage belt or compressor.

7. Check levels of engine oil, transmission-hydraulic oil, engine coolant, and diesel exhaust fluid (DEF). Add if necessary.

IMPORTANT: If tractor has been stored over 12 months, test DEF before operating engine. See Testing Diesel Exhaust Fluid (DEF) in Fuels, Lubricants, and Coolants section.

8. To purge any moisture condensation that has collected, drain a small amount of fuel from fuel tank.
9. Fill fuel tank.
10. Perform all appropriate 10 hour, weekly or 50 hour, 100 hour, 300 hour, 500 hour, and 600 hour services as instructed in Maintenance and Service Intervals of this manual.
11. Check all instruments and indicators by turning ignition switch to ON position.
12. Connect fuel shutoff solenoid wiring connector.
13. Crank engine for a few revolutions.

IMPORTANT: DO NOT operate starter more than 20 seconds at a time, and wait at least 2 minutes for starter to cool before trying again.

14. Start and operate engine at low idle for some time.

IMPORTANT: If air conditioning compressor is locked up, engine operation with compressor clutch engaged will damage belt or compressor.

15. Check air conditioning system and all other system functions.

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Paint Finish Care

Washing tractor regularly will preserve the finish. Wash tractor in indirect sunlight. All cleaning agents should be flushed promptly and not allowed to dry on the paint surface.

IMPORTANT: Do not use hot water, strong soaps, or chemical detergents. Use liquid hand, dish, or car washing (non detergent) soaps. Cleaning agents containing acid or abrasives should not be used.

[1] *Disconnect battery ground cable for short-term storage periods (30 to 90 days).*

Waxing tractor occasionally may be necessary to remove residue from paint finish. Do not use waxes containing abrasive compounds. Inspect paint surface during washing or waxing, for chips and scratches. Repaint any areas where paint has been removed. Contact your John Deere dealer.

HL70592,000084D-19-16MAR18

Maintenance Intervals

Important Considerations

The specified service intervals in this manual considered the use of the tractor in normal operation.

When operating in severe or adverse conditions, such as those mentioned, perform the services in the reduced intervals, or more often.

Examples of operation under severe or adverse conditions:

- Work in wet or muddy conditions require most frequent lubrication at the grease fittings.
- High concentration of dust: Engine air cleaner obstructs with more frequency, as well as dry matter accumulates in different parts of the tractor.

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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.

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Practice Safe Maintenance

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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.

Maintenance Interval Chart

Item	As Required	Daily or 10 hrs	Weekly or 50 hrs	First 100 hrs	250 hrs	500 hrs	1000 hrs / Annually	1200 hrs Annually	2000 hrs / Two Years	3000 hrs / Three Years
Inspect the engine air intake system.	•[a]									
Clean grille screens, radiator, oil cooler, radiator screen, and air conditioner condenser.	•									
Bleed the fuel system.	•[b]									
Clean Diesel Exhaust Fluid (DEF) Tank.	•									
Charge battery	•									
Lubricate operator's seat slide rails (OOS).	•[c]									
Lubricate the hood latch.	•[c]									
Replace the headlight element.	•									
Replace the roof hazard light bulb—Cab.	•									
Replace the hazard light bulb—OOS.	•									
Replace tail and turn bulbs.	•									
Replace the floodlight element —OOS.	•									
Replace the floodlight element —Cab.	•									
Adjust the headlights.	•									
Warming transmission-hydraulic system oil	•									
Check selective control valve.	•									
Check the engine oil level.		•								
Check coolant level.		•								
Drain water and sediment from fuel filters		•								
Clean air filter dust unloading valve.		•								
Check the transmission-hydraulic oil level.		•								
Clean battery			•							
Check the battery condition.			•							
Lubricate front axle pivot pins.			•[d]							
Lubricate the steering linkage.			•[d]							
Lubricate MFWD axle shaft.			•[d]							
Inspect the tractor for the loose hardware.			•							
Check front loader mounting bracket cap screws torque.				•	•					
Inspect the engine air intake filters.					•					
Check the MFWD axle wheel hub oil level.					•					
Check the MFWD axle housing oil level.					•					
Inspect alternator/fan belt tensioner.					•					
Drain water and sediment from the fuel tank					•					
Check neutral start system—PR.					•					

Item	As Required	Daily or 10 hrs	Weekly or 50 hrs	First 100 hrs	250 hrs	500 hrs	1000 hrs / Annually	1200 hrs Annually	2000 hrs / Two Years	3000 hrs / Three Years
Adjust the brake pedal free travel.					•					
Lubricate hitch components.					•					
Inspect ROPS for the loose hardware.					•					
Clean cab air filters					•[e]					
Keep the cab protection system installed properly.					•					
Replace the prefilter / water separator.						•				
Replace the primary fuel filter / water separator.						•				
Lubricate front wheel bearings (2WD axle).						•				
Tighten hose clamps.						•				
Check cooling system for leaks.						•				
Lubricate rear axle bearings.						•[f]				
Replace the transmission-hydraulic oil filter.				•		•				
Change engine oil and filter				•	•[g]	•[h]				
Change the high crop rear axle oil (MY21).								•		
Change the MFWD axle wheel hub oil.				•			•			
Change the MFWD axle housing oil.				•			•			
Change the transmission-hydraulic oil.							•			
Clean the open crankcase vent (OCV) tube.							•			
Replace the engine air intake filters.							•[e]			
Inspect seat belt.							•			
Flush cooling system and replace the thermostat.									•[i]	
Engine valve adjustment										•
Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter.	•[j]									
Replace Diesel Exhaust Fluid (DEF) Tank Header Suction Screen.	•[j]									

[a]Service more often if operated in dusty conditions.
[b]See your John Deere dealer for service.
[c]Only necessary after pressure washing.
[d]Daily / 10 Hours if operated in wet or muddy conditions.
[e]Interval can vary according to operating conditions.
[f]Weekly / 50 Hours if operated in wet or muddy conditions.
[g]Use this interval when using oils such as John Deere Torq-Gard™ oil, or engine oils from other manufacturers that met conditions specified in the Fuels, Lubricants and Coolant section.
[h]If Plus-50™ oil and a John Deere filter are not used, lower this service interval to 250 hours.
[i]5000 hours / 5 years If John Deere COOL-GUARD™ is used.
[j]Maximum 4500 Hrs or 36 months.

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Service Tractor Safely

Disengage power to attachments and stop engine before making any repairs or adjustments.

Do not overspeed engine.

Keep the vehicle and attachments in good operating condition.

Keep safety devices in place and in working condition.

Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.

Before you work on any part of the engine, stop the engine and let it cool. Hot engine parts can burn skin on contact.

Never start engine unless gear shift lever or PowrReverser™ lever (if equipped) is in NEUTRAL position.

Be careful to prevent clothing, jewelry or long hair from getting caught in the fan blades, drive belt, or any other moving engine parts.

Unauthorized modifications to the machine may impair performance and/or safety and affect machine life.

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.

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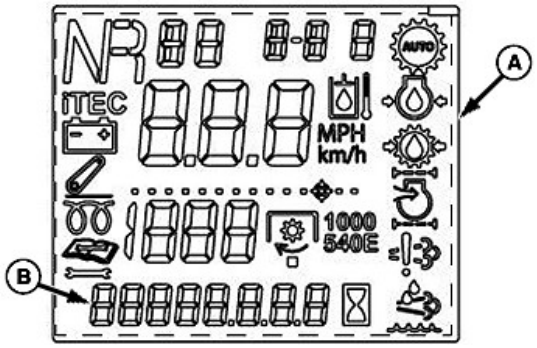
Observe Service Intervals



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Display

A—Information Display
B—Hour Meter

Check on the hour meter (B) on the information display (A) as a guide to perform all services at the hourly intervals indicated. Keep a service record on charts provided in Service Records section.

IMPORTANT: Recommended service intervals are for average conditions. Service more often if tractor is operated under adverse conditions.

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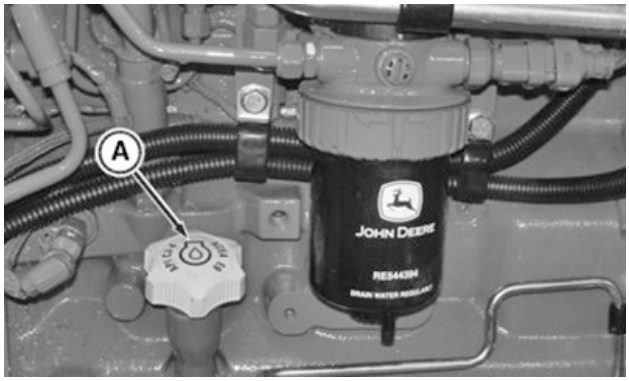
Service Daily Before Start-Up

IMPORTANT: Do not operate when oil level is below lower mark on dipstick.

If operating machine for an extended period in an off-level condition, engine oil must be maintained at the full mark to avoid damage.



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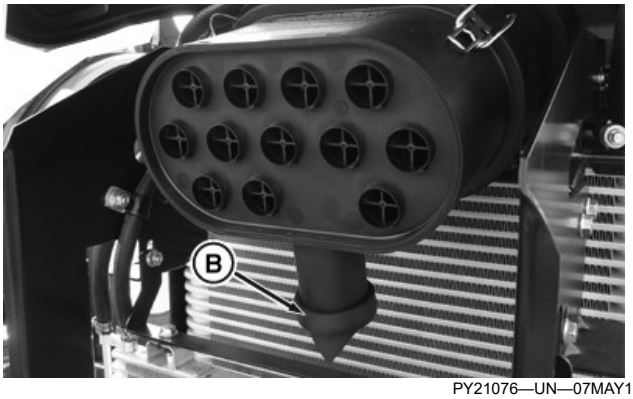
Left-Hand Side of Engine

A—Engine Oil Filler Cap/Dipstick

1. Check engine oil level. Wipe dipstick (A) off and reinsert it fully. Remove and check oil level. Do not operate when oil level is below lower mark on dipstick. Add seasonal viscosity grade oil through filler hole.
2. Check hydraulic oil level through sight glass. (See Check Transmission-Hydraulic Oil Level in Transmission Maintenance section.)
3. Drain water and sediment from fuel filters. (See procedure in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.)
4. Check level in coolant overflow reservoir. (See Check Coolant Level in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.)
5. Clean air filter dust unloading valve. (See procedure in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.)
6. **If operating in extremely wet or muddy conditions, lubricate the following with multipurpose grease on a daily basis**:
   - Front axle pivot pin
   - Steering spindles and cylinder ends (adjustable front axle)
   - Rear axle bearings
   - MFWD shaft
   - Front wheel bearings (2WD)
   - Hood latch



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Dust Unloading Valve

B—Dust Unloading Valve

7. Raise hood. Clean dust unloading valve (B) by squeezing flexible rubber lips together to release any dust buildup. If necessary, remove and clean out any heavy buildup. Replace if damaged. Lower hood.

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Additional Service Information

This is not a detailed service manual. It contains only information needed for operation and routine maintenance. If you want more detailed service information, order a Technical Manual through your John Deere dealer.

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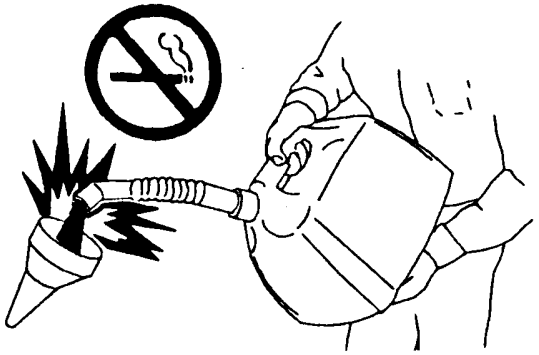
Handle Fuel Safely—Avoid Fires



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Use only diesel fuel.

Handle fuel with care, it is highly flammable.

Do not refuel machine:

- While you smoke.
- When machine is near open flame or sparks.
- When engine is running. Stop engine.

Fill fuel tank outdoors.

Help prevent fires:

- Clean oil, grease and dirt from machine.
- Clean up spilled fuel immediately.

Do not store machine with fuel in tank in a building where fumes may reach an open flame or spark.

MX,FIRE,5A1-19-22JUL94

Handle Fluids Safely—Avoid Fires

TS227—UN—15APR13

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

DX,FLAME-19-29SEP98

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

Diesel Engine Coolant (engine with wet sleeve cylinder liners)

Failure to follow applicable coolant standards and drain intervals can result in severe engine damage that may not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere coolants, parts, or service.

Preferred Coolants

The following pre-mix engine coolants are preferred:

- **John Deere COOL-GARD™II**
- **John Deere COOL-GARD II PG**

COOL-GARD II pre-mix coolant is available in several concentrations with different freeze protection limits as shown in the following table.

COOL-GARD II Pre-Mix	Freeze Protection Limit
COOL-GARD II 20/80	-9°C (16°F)
COOL-GARD II 30/70	-16°C (3°F)
COOL-GARD II 50/50	-37°C (-34°F)
COOL-GARD II 55/45	-45°C (-49°F)
COOL-GARD II PG 60/40	-49°C (-56°F)
COOL-GARD II 60/40	-52°C (-62°F)

Not all COOL-GARD II pre-mix products are available in all countries.

COOL-GARD is a trademark of Deere & Company

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: 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 the following specification:

- Pre-mix coolant meeting ASTM D6210 requirements
- Is formulated with a 2-ethylhexanoic acid (2-EHA) free additive package
- Coolant concentrate meeting ASTM D6210 requirements in a 40—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:

- Provides cylinder liner cavitation protection according to either the John Deere Cavitation Test Method or a fleet study run at or above 60% load capacity
- Is formulated with a nitrite-free additive package
- Is formulated with a 2-ethylhexanoic acid (2-EHA) 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. Deionized or demineralized water is recommended for mixing with ethylene glycol and propylene 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 hours of operation.

If a coolant other than COOL-GARD II or COOL-GARD II PG is used, reduce the drain interval to 2 years or 2000 hours of operation.[1]

IMPORTANT: 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.

DX,COOL3-19-25AUG20

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

John Deere COOL-GARD™ II Coolant Extender

Some coolant additives gradually deplete during engine operation. For COOL-GARD™ II pre-mix and COOL-GARD II Concentrate, replenish coolant additives between drain intervals by adding COOL-GARD II Coolant Extender.

COOL-GARD II Coolant Extender should not be added unless indicated by COOL-GARD II Test Strips. These test strips provide a simple, effective method to check the freeze point, additive levels, and pH of your engine coolant.

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

COOL-GARD is a trademark of Deere & Company

[1] Coolant analysis may extend the service interval of other "Coolants" to a maximum not to exceed the interval of Cool-Gard II coolants. Coolant analysis means taking a series of coolant samples at 1000 hour increments beyond the normal service interval until either the data indicate the end of useful coolant life or the maximum service interval of Cool-Gard II is reached.

IMPORTANT: Do not use COOL-GARD II Test Strips with COOL-GARD II PG.

COOL-GARD II Coolant Extender is a chemically matched additive system for use with all COOL-GARD II coolants. COOL-GARD II Coolant Extender is not intended for use with nitrite-containing coolants.

IMPORTANT: Do not add a supplemental coolant additive when the cooling system is drained and refilled with any of the following:

- **John Deere COOL-GARD II**
- **John Deere COOL-GARD II PG**

The use of non-recommended supplemental coolant additives can result in additive drop-out, gelation of the coolant, or corrosion of cooling system components.

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

DX,COOL16-19-15MAY13

Water Quality for Mixing with Coolant Concentrate

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

Water quality is important to the performance of the cooling system. 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 solids	<340 mg/L
Total dissolved I hardness	<170 mg/L
pH	5.5—9.0

IMPORTANT: Do not use bottled drinking water because it often contains higher concentrations of total dissolved solids.

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)

Ethylene Glycol Propylene Glycol	Freeze Protection Limit 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,COOL19-19-13JAN18

Diesel Exhaust Fluid (DEF) — Use in Selective Catalytic Reduction (SCR) Equipped Engines

In order to maintain the emissions performance of the engine, it is essential to use and refill DEF in accordance with the specification.

Diesel exhaust fluid (DEF) is a high purity liquid that is injected into the exhaust system of engines equipped with selective catalytic reduction (SCR) systems. Maintaining the purity of DEF is important to avoid malfunctions in the SCR system. Engines requiring DEF shall use a product that meets the requirements for aqueous urea solution 32 (AUS 32) according to ISO 22241-1.

The use of John Deere Diesel Exhaust Fluid is recommended. John Deere Diesel Exhaust Fluid is available at your John Deere dealer in a variety of package sizes to suit your operational needs.

If John Deere Diesel Exhaust Fluid is not available, use DEF that is certified by the American Petroleum Institute (API) Diesel Exhaust Fluid Certification Program or by the AdBlue™ Diesel Exhaust Fluid Certification Program. Look for the API certification symbol or the AdBlue™ name on the container.

RG30211—UN—08MAR18

In some cases, DEF is referred to by one or more of these names:

- Urea
- Aqueous Urea Solution 32
- AUS 32
- AdBlue™
- NOx Reduction Agent
- Catalyst Solution

DX,DEF-19-13JAN18

AdBlue is a trademark of VDA, the German Association of the Automotive Industry.

Disposal of Diesel Exhaust Fluid (DEF)

Although there is little issue with minor spillage of DEF on the ground, large amounts of DEF should be contained. If large spills occur, contact local environmental authorities for assistance with clean-up.

If a substantial quantity of DEF is not within specification, contact the DEF supplier for assistance with disposal. Do not dump substantial quantities of DEF onto the ground or send DEF to wastewater treatment facilities.

DX,DEF,DISPOSE-19-13JUN13

Refilling Diesel Exhaust Fluid (DEF) Tank

TS1731—UN—23AUG13

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

Do not ingest DEF. In the event DEF is ingested, contact a physician immediately. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: Use only distilled water to rinse components that are used to deliver DEF. Tap water can contaminate DEF. If distilled water is not available, rinse with clean tap water, then thoroughly rinse with ample amounts of DEF.

If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

If DEF is filled into engine fuel tank or other fluid compartment, do not operate engine until system is properly purged of DEF. Contact your John Deere dealer immediately to determine how to clean and purge the system.

Reasonable care should be taken when refilling the DEF tank. Ensure that the DEF tank cap area is free of debris before removing the cap. Seal containers of DEF between use to prevent contamination and evaporation.

Avoid splashing DEF and do not allow DEF to come into contact with skin, eyes, or mouth.

DEF is not harmful to handle, but DEF can be corrosive to materials such as steel, iron, zinc, nickel, copper, aluminum, and magnesium. Use suitable containers to transport and store DEF. Containers made of polyethylene, polypropylene, or stainless steel are recommended.

Avoid prolonged contact with skin. In case of accidental contact, wash skin immediately with soap and water.

Keep anything used to store or dispense DEF clean of dirt and dust. Wash and rinse containers or funnels thoroughly with distilled water to remove contaminants.

If an unapproved fluid, such as diesel fuel or coolant is added to the DEF tank, contact your John Deere dealer immediately to determine how to clean and purge the system.

If water has been added to the DEF tank, a tank cleaning is necessary. See Cleaning DEF Tank in this manual. After refilling the tank, check the DEF concentration. See Testing Diesel Exhaust Fluid (DEF).

The operator must maintain appropriate DEF levels at all times. Check the DEF level daily and refill the tank as needed. The filling port is identified by a blue colored cap embossed with the following DEF symbol.

DX,DEF,REFILL-19-15JUL20

Storing Diesel Exhaust Fluid (DEF)

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

Do not ingest DEF. In the event DEF is ingested, contact a physician immediately. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: It is unlawful to tamper with or remove any component of the aftertreatment system. Do not use DEF that does not meet the required specifications or operate the engine with no DEF.

Never attempt to create DEF by mixing agricultural grade urea with water. Agricultural grade urea does not meet the necessary specifications and can damage the aftertreatment system.

Do not add any chemicals or additives to DEF in an effort to prevent freezing. Any chemicals or additives added to DEF can damage the aftertreatment system.

Never add water or any other fluid in place of, or in addition to DEF. Operating with a modified DEF or using an unapproved DEF can damage the aftertreatment system.

Storage information provided below is for reference and is to be used as a guideline only.

It is preferred to store DEF out of extreme ambient temperatures. DEF freezes at –11°C (12°F). Exposure to temperatures greater than 30°C (86°F) can degrade DEF over time. Do not store DEF in direct sunlight.

Dedicated DEF storage containers must be sealed between uses to prevent evaporation and contamination. Containers made of polyethylene, polypropylene, or stainless steel are recommended to transport and store DEF.

Ideal conditions for storage of DEF are:

- Store at temperatures between –5°C and 30°C (23°F and 86°F)
- Store in dedicated containers sealed to avoid contamination and evaporation

Under these conditions, DEF is expected to remain useable for a minimum of 18 months. Storing DEF at higher temperatures can reduce its useful life by approximately 6 months for every 5°C (9°F) temperature above 30°C (86°F).

If unsure how long or under what conditions DEF has been stored, test DEF. See Testing Diesel Exhaust Fluid (DEF).

Long-term storage in the DEF tank (over 12 months) is not recommended. If long-term storage is necessary, test DEF prior to operating engine. See Testing Diesel Exhaust Fluid (DEF).

It is recommended to purchase DEF in quantities that will be consumed within 12 months.

DX,DEF,STORE-19-15JUL20

Testing Diesel Exhaust Fluid (DEF)

IMPORTANT: Using DEF with the correct concentration is critical to engine and aftertreatment system performance. Extended storage and other conditions can adversely alter the DEF concentration.

If DEF quality is questionable, draw a sample out of the DEF tank or storage tank into a clear container. DEF must be crystal clear with a light ammonia smell. If DEF appears cloudy, has a colored tint, or has a profound ammonia smell, it is likely not within specification. DEF in this condition should not be used. Drain tank, flush with distilled water and refill with new or good DEF. After refilling the tank, check the DEF concentration.

If the DEF passes the visual and smell test, check the DEF concentration with a handheld refractometer calibrated to measure DEF.

DEF concentration should be checked when the engine has been stored for extended periods, or if there is suspicion the engine or packaged DEF fluid has been contaminated with water.

Two approved tools are available through your John Deere dealer:

- JDG11594 Digital DEF Refractometer—A digital tool providing an easy to read concentration measurement
- JDG11684 DEF Refractometer—Low-cost alternative tool providing an analog reading

Follow instructions included with either tool to obtain the measurement.

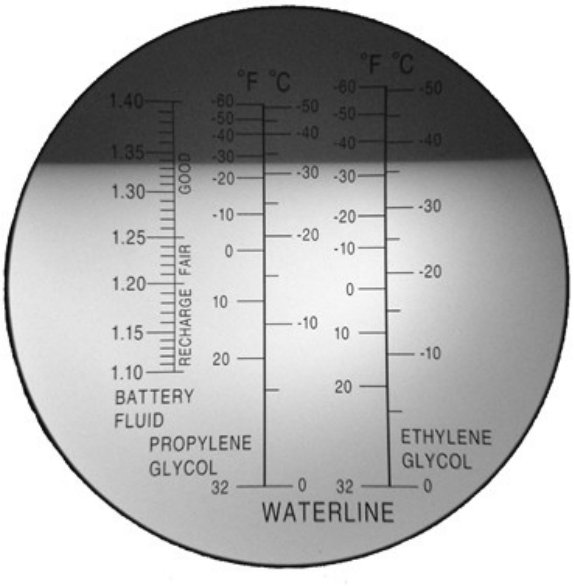
The correct DEF concentration is 31.8—33.2% urea. If the DEF concentration is not within specification, drain the DEF tank, flush with distilled water and fill with new or good DEF. If packaged DEF is not within specification, dispose of DEF packages and replace with new or good DEF.

DX,DEF,TEST-19-13JUN13

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.

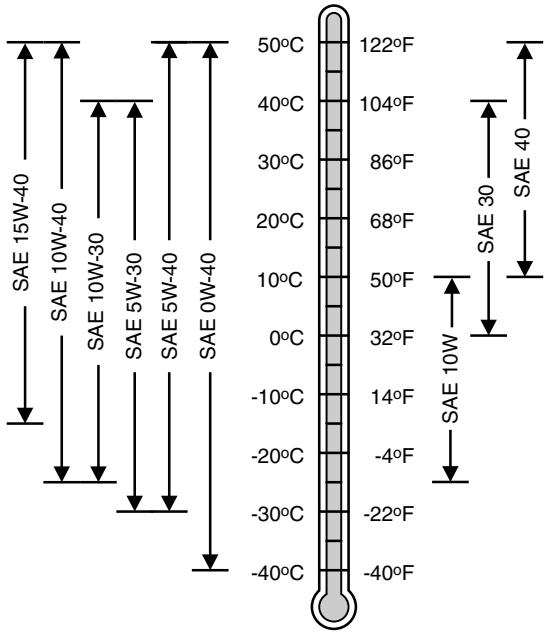
To use this tool:

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

SERVICEGARD is a trademark of Deere & Company

Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V



TS1743—UN—25APR19

Oil Viscosities for Air Temperature Ranges

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.

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

John Deere Plus-50™ II is the recommended engine oil.

Extended service intervals may apply when John Deere Plus-50™ II engine oil is used. Refer to the engine oil drain interval table and consult your John Deere dealer for more information.

If John Deere Plus-50™ II engine oil is not available, engine oil meeting one or more of the following may be used:

- API Service Category CK-4
- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

DO NOT use engine oil containing more than 1.0% sulfated ash, 0.12% phosphorus, or 0.4% sulfur.

Multi-viscosity diesel engine oils are preferred.

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

Plus-50 is a trademark of Deere & Company

IMPORTANT: Use only ultra low sulfur diesel (ULSD) fuel with a maximum sulfur content of 15 mg/kg (15 ppm).

DX,ENOIL14-19-23APR19

Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V Engines

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel. Actual service intervals also depend on operation and maintenance practices.

Approved Oil Types:

- John Deere Plus-50™ II
- "Other Oils" include API CK-4, API CJ-4, ACEA E9, and ACEA E6

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer or other qualified service provider for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

Diesel fuel sulfur content affects engine oil and filter service intervals. Higher fuel sulfur levels reduce oil and filter service intervals.

Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm) is REQUIRED.

Engine operation at high altitude decreases oil change intervals. See Diesel Engine Oil Service Interval for Operation at High Altitude for additional information.

NOTE: The 500 hour extended oil and filter change interval is only allowed if all of the following conditions are met:

- *Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm)*
- *Use of John Deere Plus-50™ II oil*
- *Use of an approved John Deere oil filter*

Engine Oil and Filter Service Intervals	
John Deere Plus-50™ II	500 hours
Other Oils	250 hours
Oil analysis may extend the service interval of "Other Oils" to a maximum not to exceed the interval of Plus-50™ II oils. Oil analysis means taking a series of oil samples at 50-hour increments beyond the normal service interval until either the data indicates the end of useful oil life or the maximum service interval of John Deere Plus-50 II oils is reached.	

IMPORTANT: To avoid engine damage:

- **Reduce oil and filter service intervals by 50% when using biodiesel blends greater than B20. Oil analysis may allow longer service intervals.**
- **Use only approved oil types.**

DX,ENOIL15,IT4,120toMAX-19-13JAN18

John Deere Break-In Plus™ Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V

New engines are filled at the factory with John Deere Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In Plus™ Engine Oil, as needed to maintain the specified oil level.

Operate the engine under various conditions, particularly heavy loads with minimal idling, to help seat engine components properly.

During the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and maximum equal to the interval specified for John Deere Plus-50™ II oil.

After engine overhaul, fill the engine with John Deere Break-In Plus™ Engine Oil.

If John Deere Break-In Plus™ Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following:

- API Service Category CK-4
- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

If one of these oils is used during the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and a maximum of 250 hours.

IMPORTANT: Do not use any other engine oils during the initial break-in of a new or rebuilt engine.

John Deere Break-In Plus™ Engine Oil can be used for

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Break-In Plus is a trademark of Deere & Company

all John Deere diesel engines at all emission certification levels.

After the break-in period, use John Deere Plus-50™ II or other diesel engine oil as recommended in this manual.

DX,ENOIL16-19-13JAN18

Oil Filters

Filtration of oils is critically important for proper operation and lubrication. John Deere brand oil filters have been designed and produced specifically for John Deere applications.

John Deere filters adhere to engineering specifications for quality of the filter media, filter efficiency rating, strength of the bond between the filter media and the element end cap, fatigue life of the canister (if applicable), and pressure capability of the filter seal. Non-John Deere branded oil filters might not meet these key John Deere specifications.

Always change oil filters regularly as specified in this manual.

DX,FILT1-19-11APR11

Fuel Filters

The importance of fuel filtration cannot be overemphasized with modern fuel systems. The combination of increasingly restrictive emission regulations and more efficient engines requires fuel system to operate at much higher pressures. Higher pressures can only be achieved using fuel injection components with very close tolerances. These close manufacturing tolerances have significantly reduced capacities for debris and water.

John Deere brand fuel filters have been designed and produced specifically for John Deere engines.

To protect the engine from debris and water, always change engine fuel filters as specified in this manual.

DX,FILT2-19-14APR11

Diesel Fuel

Consult your local fuel distributor for properties of the diesel fuel available 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 EN 590 or ASTM D975 are recommended. Renewable diesel fuel produced by hydrotreating animal fats and vegetable oils is basically identical to petroleum diesel fuel. Renewable diesel that meets EN 590, ASTM D975, or EN 15940 is acceptable for use at all percentage mixture levels.

Plus-50 is a trademark of Deere & Company.

Required Fuel Properties

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

Cetane number of 40 minimum. Cetane number greater than 47 is preferred, especially for temperatures below –20 °C (–4 °F) or elevations above 1675 m (5500 ft.).

Cloud Point should be below the expected lowest ambient temperature or **Cold Filter Plugging Point** (CFPP) should be a maximum 10°C (18°F) below the fuel cloud point.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

Diesel fuel quality and sulfur content must comply with all existing emissions regulations for the area in which the engine operates. DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

Materials such as copper, lead, zinc, tin, brass and bronze should be avoided in fuel handling, distribution and storage equipment as these metals can catalyze fuel oxidation reactions which can lead to fuel system deposits and plugged fuel filters.

E-Diesel fuel

DO NOT use E-Diesel (Diesel fuel and ethanol blend). Use of E-Diesel fuel in any John Deere machine may void the machine warranty.

CAUTION: Avoid severe injury or death due to the fire and explosion risk from using E-Diesel fuel.

Sulfur Content for Interim Tier 4, Final Tier 4, Stage III A and B, Stage IV, and Stage V Engines Above 560 kW

- Use ONLY diesel fuel with a maximum of 500 mg/kg (500 ppm) sulfur content.

Sulfur Content for Interim Tier 4, Final Tier 4, Stage III B, Stage IV Engines, and Stage V Engines

- Use ONLY ultra low sulfur diesel (ULSD) fuel with a maximum of 15 mg/kg (15 ppm) sulfur content.

Sulfur Content for Tier 3 and Stage III A Engines

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 1000—2000 mg/kg (1000—2000 ppm) REDUCES the oil and filter change interval.
- BEFORE using diesel fuel with sulfur content greater than 2000 mg/kg (2000 ppm), contact your John Deere dealer.

Sulfur Content for Tier 2 and Stage II Engines

- Use of diesel fuel with sulfur content less than 2000 mg/kg (2000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 2000—5000 mg/kg (2000—5000 ppm) REDUCES the oil and filter change interval.[2]
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.

Sulfur Content for Other Engines

- Use of diesel fuel with sulfur content less than 5000 mg/kg (5000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm) REDUCES the oil and filter change interval.

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

Improper fuel additive usage may cause damage on fuel injection equipment of diesel engines.

DX,FUEL1-19-13JUL20

Fuel Cleanliness

NOTE: Use clean fuel to fill the tank in order to prevent damage in the overall fuel system performance and protect the lifetime of the components from the reservoir to the engine. The use of contaminated fuel may lead to cloged up filters, valves and starting engine problems.

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Handling and Storing Diesel Fuel

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

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

Lubricity of Diesel Fuel

Most diesel fuels manufactured in the United States, Canada, and the European Union have adequate lubricity to ensure proper operation and durability of fuel injection system components. However, diesel fuels manufactured in some areas of the world may lack the necessary lubricity.

IMPORTANT: Make sure the diesel fuel used in your machine demonstrates good lubricity characteristics.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

If fuel of low or unknown lubricity is used, add John Deere Fuel-Protect Diesel Fuel Conditioner (or equivalent) at the specified concentration.

Lubricity of BioDiesel Fuel

Fuel lubricity can improve significantly with BioDiesel blends up to B20 (20% BioDiesel). Further increase in lubricity is limited for BioDiesel blends greater than B20.

DX,FUEL5-19-07FEB14

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.

[2] *See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2, EXT for more information on Engine Oil and Filter Service Intervals.*

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

DX,FUEL6-19-13JAN18

Biodiesel Fuel

Biodiesel fuel is comprised of monoalkyl esters of long chain fatty acids derived from vegetable oils or animal fats. Biodiesel blends are biodiesel mixed with petroleum diesel fuel on a volume basis.

Before using fuel containing biodiesel, review the Biodiesel Use Requirements and Recommendations in this Operator's Manual.

Environmental laws and regulations can encourage or prohibit the use of biofuels. Operators should consult with appropriate governmental authorities prior to using biofuels.

John Deere Stage V Engines Operating in the European Union

Where the engine is to be operated within the Union on diesel or non-road gas-oil, a fuel with a FAME content not greater than 8% volume/volume (B8) shall be used.

John Deere Engines with Exhaust Filter Except Stage V Engines Operating in the European Union

Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

Biodiesel concentrations above B20 can harm the engine's emission control systems and should not be used. Risks include, but are not limited to, more frequent stationary regeneration, soot accumulation, and increased intervals for ash removal.

John Deere Fuel conditioners or equivalent, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B20, and are recommended when using lower biodiesel blends.

John Deere Engines Without Exhaust Filter

Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

These John Deere engines can operate on biodiesel blends above B20 (up to 100% biodiesel). Operate at levels above B20 ONLY if the biodiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on biodiesel blends above B20 might not fully comply with or be permitted by all applicable emissions regulations. Expect up to a 12% reduction in power and an 18% reduction in fuel economy when using 100% biodiesel.

John Deere fuel conditioners or equivalent, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B100, and are recommended when using lower biodiesel blends.

Biodiesel Use Requirements and Recommendations

The petroleum diesel portion of all biodiesel blends must meet the requirements of ASTM D975 (US) or EN 590 (EU) commercial standard.

Biodiesel users in the U.S. are strongly encouraged to purchase biodiesel blends from a BQ-9000 Certified Marketer and sourced from a BQ-9000 Accredited Producer (as certified by the National biodiesel Board). Certified Marketers and Accredited Producers can be found at the following website: http://www.bq9000.org.

Biodiesel contains residual ash. Ash levels exceeding the maximums allowed in either ASTM D6751 or EN14214 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present).

The fuel filter can require more frequent replacement when using biodiesel fuel, particularly if switching from diesel. Check engine oil level daily prior to starting engine. A rising oil level can indicate fuel dilution of the engine oil. Biodiesel blends up to B20 must be used within 90 days of the date of biodiesel manufacture. Biodiesel blends above B20 must be used within 45 days from the date of biodiesel manufacture.

When using biodiesel blends up to B20, the following must be considered:

- Cold-weather flow degradation
- Stability and storage issues (moisture absorption, microbial growth)
- Possible filter restriction and plugging (usually a problem when first switching to biodiesel on used engines)
- Possible fuel leakage through seals and hoses (primarily an issue with older engines)
- Possible reduction of service life of engine components

Request a certificate of analysis from your fuel distributor to ensure that the fuel is compliant with the specifications provided in this Operator's Manual.

Consult your John Deere dealer for John Deere fuel products to improve storage and performance with biodiesel fuels.

The following must also be considered if using biodiesel blends above B20:

- Possible coking or blocked injector nozzles, resulting in power loss and engine misfire if John Deere fuel additives and conditioners or equivalent containing detergent/dispersants are not used

- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures
- Possible compatibility issues with other materials (including copper, lead, zinc, tin, brass, and bronze) used in fuel handling, distribution, and storage equipment
- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to biodiesel
- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system
- Because biodiesel blends above B20 contain more ash, using blends above B20 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present)

IMPORTANT: Raw pressed vegetable oils are NOT acceptable for use as fuel in any concentration in John Deere engines. Their use could cause engine failure.

DX,FUEL7-19-13JAN18

Minimizing the Effect of Cold Weather on Diesel Engines

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

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

Use Winter Grade Fuel

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

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

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

Air Intake Heater

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

Ether

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

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

Coolant Heater

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

Seasonal Viscosity Oil and Proper Coolant Concentration

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

Diesel Fuel Cold Flow Additive

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

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

Biodiesel

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

Winterfronts

Use of fabric, cardboard, or solid winterfronts is not

recommended with any John Deere engine. Their use can result in excessive engine coolant, oil, and charge air temperatures. This can lead to reduced engine life, loss of power and poor fuel economy. Winterfronts may also put abnormal stress on fan and fan drive components potentially causing premature failures.

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

Radiator Shutters

If equipped with a thermostatically controlled radiator shutter system, this system should be regulated in such a way that the shutters are completely open by the time the coolant reaches 93°C (200°F) to prevent excessive intake manifold temperatures. Manually controlled systems are not recommended.

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

For more information, see your John Deere dealer.

DX,FUEL10-19-13JAN18

Supplemental Diesel Fuel Additives

Diesel fuel can be the source of performance or other operational problems for many reasons. Some causes include poor lubricity, contaminants, low cetane number, and a variety of properties that cause fuel system deposits. These and others are referenced in other sections of this Operator's Manual.

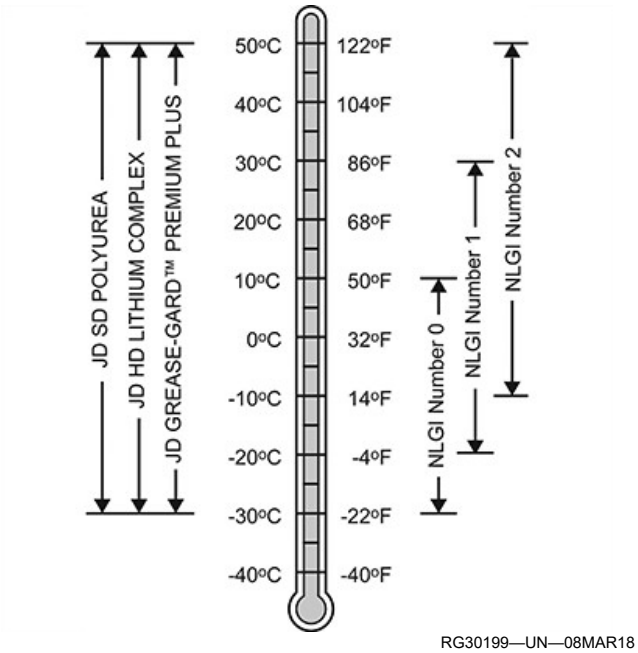
To optimize engine performance and reliability, closely follow recommendations on fuel quality, storage, and handling, which are found elsewhere in this Operator's Manual.

To further aid in maintaining performance and reliability of the engine's fuel system, John Deere has developed a family of fuel additive products for most global markets. The primary products include Fuel-Protect Diesel Fuel Conditioner (full feature conditioner in winter and summer formulas) and Fuel-Protect Keep Clean (fuel injector deposit removal and prevention). Availability of these and other products varies by market. See your local John Deere dealer for availability and additional information about fuel additives that might be right for your needs.

DX,FUEL13-19-07FEB14

Multipurpose Extreme Pressure (EP) Grease

IMPORTANT: For automated lubrication systems different ambient air temperatures need to be considered.



RG30199—UN—08MAR18

Greases for Air Temperature Ranges

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere SD Polyurea Grease is preferred.

The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere Grease-Gard™ Premium Plus

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB
- ISO-L-X-BDHB 2 or DIN KP 2 N-10 Lithium Complex, Non-Synthetic Base Oil (100 to 220 mm2/s @ 40°C)

IMPORTANT: Some types of thickeners, base oils, and additives used in greases are not compatible with others. Mixing greases should be avoided. Consult your grease supplier before mixing different types of grease.

DX,GREA1-19-13JAN18

Mixing of Lubricants

In general, avoid mixing different brands or types of oil.

Grease-Gard is a trademark of Deere & Company

Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

Consult your John Deere dealer to obtain specific information and recommendations.

DX,LUBMIX-19-18MAR96

Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

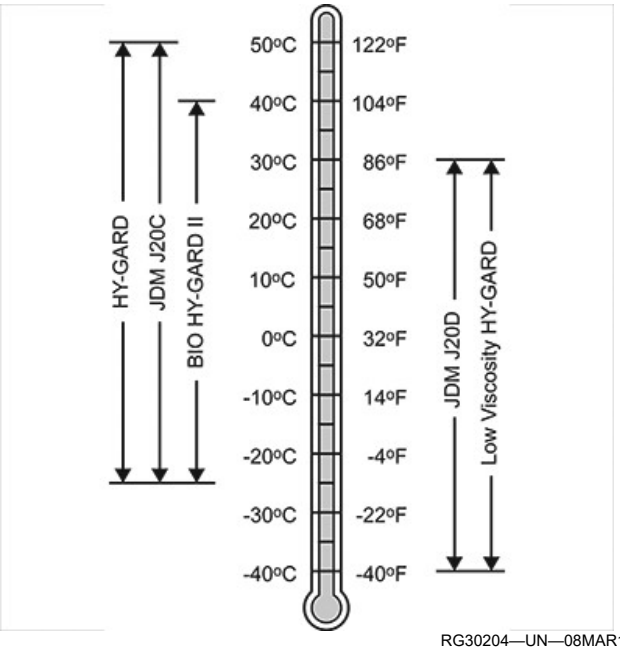
Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

DX,LUBST-19-11APR11

Transmission, Steering, Brake, Hydraulic, and Gear Case Oil



RG30204—UN—08MAR18

Oils for Air Temperature Ranges

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™

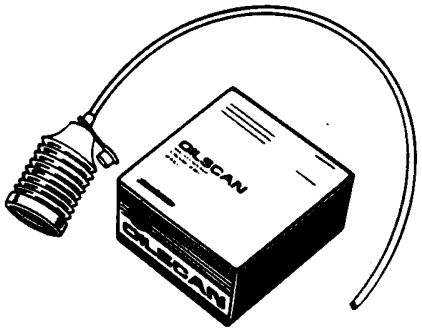
Other oils may be used if they meet one of the following:

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

Use John Deere Bio Hy-Gard™ II oil when a biodegradable fluid is required.[3]

DX,OIL1-19-13JAN18

Oilscan™ and CoolScan™



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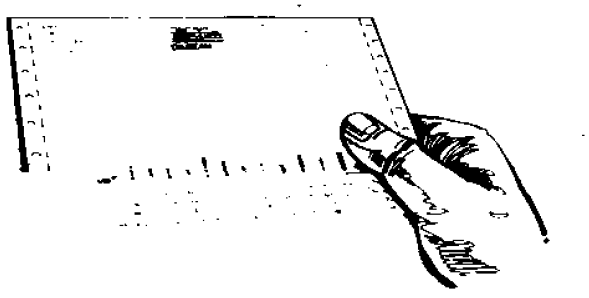

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Oilscan™ and CoolScan™ are John Deere sampling programs to help you monitor machine performance and identify potential problems before they cause serious damage.

Oil and coolant samples should be taken from each system before its recommended change interval.

Check with your John Deere dealer for the availability of

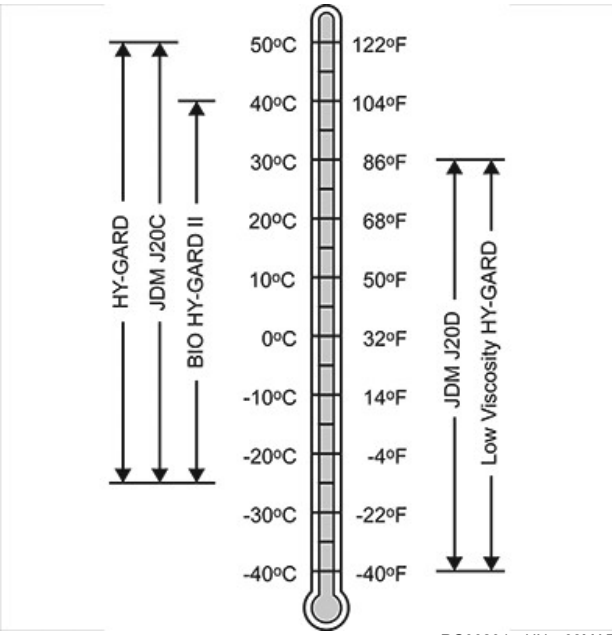
Hy-Gard is a trademark of Deere & Company
Bio Hy-Gard is a trademark of Deere & Company
Oilscan is a trademark of Deere & Company
CoolScan is a trademark of Deere & Company

[3] Bio Hy-Gard II meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. Bio Hy-Gard II should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.

Oilscan™ and CoolScan™ kits.

DX,OILSCAN-19-13SEP11

Transmission and Hydraulic Oil



RG30204—UN—08MAR18

Oils for Air Temperature Ranges

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

Use John Deere Bio Hy-Gard™ II oil when a biodegradable fluid is required.[4]

DX,ANTI-19-01JAN18

Hy-Gard is a trademark of Deere & Company
Bio Hy-Gard is a trademark of Deere & Company

[4] *Bio Hy-Gard II meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. Bio Hy-Gard II should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.*

MFWD Axle and Wheel Hub Oil

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

The following oils are preferred:

- API Service Classification GL-5
- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

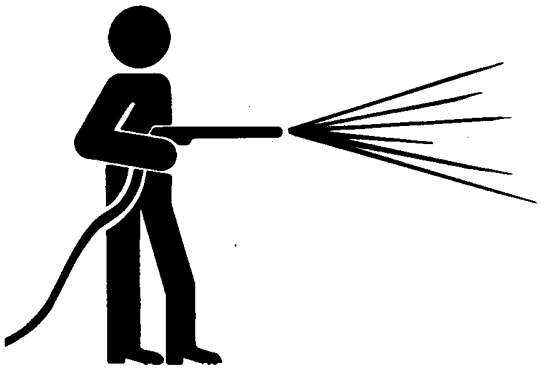
HL70592,0000837-19-12MAR18

As Required Maintenance

When servicing machine for the as-required maintenance items, refer to the appropriate maintenance sections.	• Inspect Engine air intake system in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.
	• Clean grille screens, radiator, oil cooler, radiator screen and A/C condenser in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.
	• Bleed fuel system in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.
	• Clean Diesel Exhaust Fluid (DEF) Tank in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.
	• Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.
	• Replace Diesel Exhaust Fluid (DEF) Tank Header Suction Screen in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.
	• Charge battery in Electrical and Lighting Maintenance section.
	• Lubricate operator's seat slide rails (OOS) in Operator Station Maintenance section.
	• Lubricate hood latch in Engine Maintenance section.
	• Replace headlight element in Electrical and Lighting Maintenance section.
	• Replace roof hazard light bulb—cab in Electrical and Lighting Maintenance section.
	• Replace hazard light bulb—OOS in Electrical and Lighting Maintenance section.
	• Replace tail and turn bulbs in Electrical and Lighting Maintenance section.
	• Replace floodlight element—OOS in Electrical and Lighting Maintenance section.
	• Replace floodlight element—cab in Electrical and Lighting Maintenance section.
	• Adjust headlights in Electrical and Lighting Maintenance section.
	• Warming transmission-hydraulic system oil in Hydraulics Maintenance section.
	• Check selective control valve in Selective Control Valve Maintenance section.

CP00834,000321D-19-03JAN18

Wash Machine After Unloading



T6642EJ—UN—18OCT88

IMPORTANT: Reduce corrosion from road salt and sea salt. Promptly wash equipment delivered by truck during winter months or delivered by cargo ship.

Avoid malfunction or damage to machine components. Do not direct high-pressure spray at electronic or electrical components and connectors, bearings, hydraulic seals, fuel injection pumps, or other sensitive components. Reduce water pressure to wash sensitive components.

Avoid water penetration behind seals and similar components. Do not direct spray on these components at an angle less than 45°.

Avoid discoloration of machine paint. Do not use strong soaps, chemical detergents, or cleaning agents that contain acids, caustics, or abrasives. Do not allow cleaning agents to dry on machine. Promptly rinse machine after washing with a cleaning agent.

Use a top-to-bottom wash sequence. Wash behind panels and in hidden areas where salt can accumulate during transport.

If a cleaning agent is used, the agent must be the correct concentration. Do not allow cleaning agent to dry on machine, promptly rinse from top to bottom. Your John Deere dealer has cleaners which are compatible with your equipment and which are recommended to remove protective shipping coatings.

Incorrect detergent, excessive concentration, a delay in rinsing, or incomplete rinsing can discolor paint after delivery.

DX,WASH-19-14MAR14

Controls and Instruments Maintenance

Service controls and instruments—refer to Controls and Instruments section.

CP00834,000321E-19-03JAN18

Clutch Pedal Considerations

IMPORTANT: We can extend the clutch lifecycle by the following actions:

a)—Do no ride the clutch: Avoid leaving your foot on the pedal when not in use.

b)—Push the clutch pedal all the way down: When you need to apply the clutch, push your foot all the way down, to ensure complete activation.

c)—Keep the calibration within spec: Refer to the operator manual for proper measurement and procedure.

d)—Do not over modulate with the clutch: Use your brakes to slow down.

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Engine Maintenance

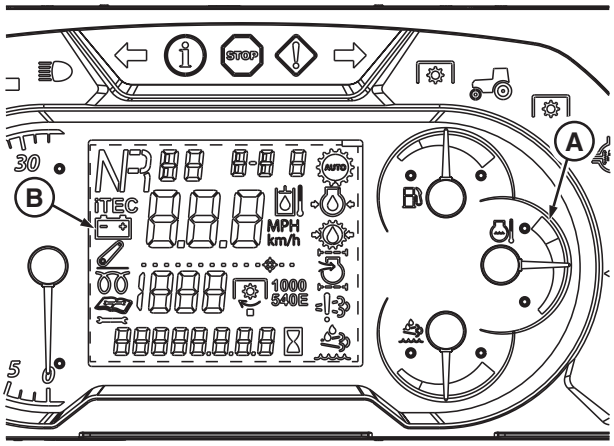
Required Emission-Related Information

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

Engine Operation—*Break-In Check*



CPA0005016—UN—28FEB18

Cluster

A—Engine Coolant Temperature Gauge
B—Charging System Indicator

IMPORTANT: To become thoroughly familiar with the sound and feel of your new tractor, use extra caution during the first 100 hours.

Warm up tractor. Check engine coolant temperature gauge (A), charging system indicator (B), and warning indicators.

Avoid unnecessary engine idling.

Check engine oil, coolant, transmission-hydraulic, and mechanical front-wheel drive (if equipped) fluid levels frequently. Watch for fluid leaks.

NOTE: If engine oil is added, use seasonal viscosity grade oil.

CP00834,000382C-19-15JAN18

Break-In Service—*During First 10 Hours of Operation*

IMPORTANT: Keep wheel hardware tight to avoid tractor damage. Check torque on wheel bolts before operating, twice during first ten hours of operation, after fifty hours of operation, and periodically thereafter.

- **Use only John Deere Break-In Plus™ engine oil if needed. (See Fuels, Lubricants, and Coolants section.)**
- **Perform service listed for 10 hours in Maintenance Interval Chart in Maintenance Intervals section.)**
- **Tighten wheel bolts. (See Wheels and Tires Operation section.)**

CP00834,000382D-19-15JAN18

Break-In Check—*After First 50 Hours of Operation*

- **Tighten wheel bolts. (See Wheels and Tires Operation section.)**
- **Check alternator/fan belt tension.**
- **Tighten air intake hose clamps. (See Air Intake, Fuel, Coolant, and Exhaust Maintenance section.)**
- **Check cooling system hose clamps. (See Check Cooling System for Leaks in Air Intake, Fuel, Coolant, and Exhaust Maintenance section.)**
- **Check brake linkage and brake pedal adjustment. (See Adjust Brake Pedal Free Travel in Steering and Brake Maintenance section.)**
- **Perform service listed for 50 hours in Maintenance Interval Chart in Maintenance Intervals section.**

CP00834,000382E-19-15JAN18

Break-In Check—*After First 100 Hours of Operation*

IMPORTANT: If tractor has too much operating time at idle, constant speeds, and/or light load usage, or make-up oil is required during the first 100-hour period, a longer break-in period may be needed without changing Break-In Plus™ engine oil until 500 hours. (See Fuels, Lubricants, and Coolants section.)

- **Change engine oil and filter. (See procedure in Engine Maintenance section.)**
- **Replace transmission/hydraulic oil filter. (See procedure in Transmission Maintenance section.)**
- **Change MFWD axle housing oil and MFWD axle wheel hub oil. (See procedures in MFWD and Front Axle Maintenance section.)**

CP00834,000382F-19-15JAN18

Open Hood

P17643—UN—07MAY15

Open Hood

A—Handle

Pull latch handle (A) and lift hood up.

CP00834,0003830-19-15JAN18

Engine Valve Adjustment

Service Interval—3000 Hours / Three Years

Have your John Deere dealer check and adjust engine valve clearance.

CP00834,0003831-19-15JAN18

Use Correct Lubricant

IMPORTANT: Use only lubricants meeting specifications outlined in Fuels, Lubricants, and Coolants section when performing tractor service.

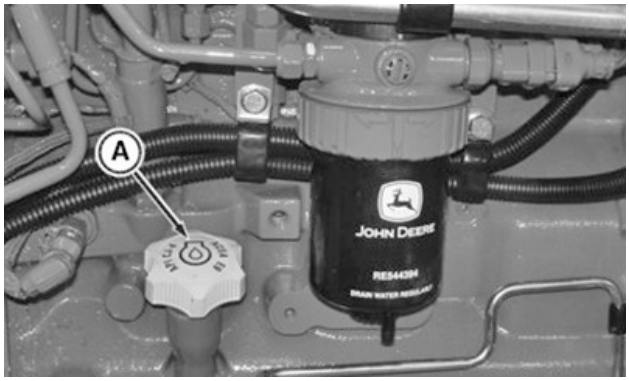
CP00834,0003832-19-15JAN18

Check Engine Oil Level

Service Interval—Daily / 10 Hours

IMPORTANT: Tractor engine comes from the factory, filled with John Deere Diesel Engine Break-In Plus™ Oil. (See Fuels, Lubricants, and Coolants section for oil specifications.)

NOTE: Make sure to insert dipstick all the way in to check oil level.



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Engine Oil Filler Cap/Dipstick

A—Engine Oil Filler Cap/Dipstick

1. Park tractor on level ground and shut off engine. Remove key.
2. Remove engine oil filler cap/dipstick (A). Oil level should be between two marks on dipstick.
3. If level is low, add oil through oil filler hole until even with upper mark. Do not overfill. Use seasonal viscosity grade oil. (See Diesel Engine Oil in Fuels, Lubricants, and Coolants section.)

IMPORTANT: Do not operate engine with oil level below low mark on dipstick.

CP00834,0003950-19-17JAN18

Change Engine Oil and Filter

Service Interval

Initial — 100 Hours

Regular — 250 Hours*

Regular — 500 Hours

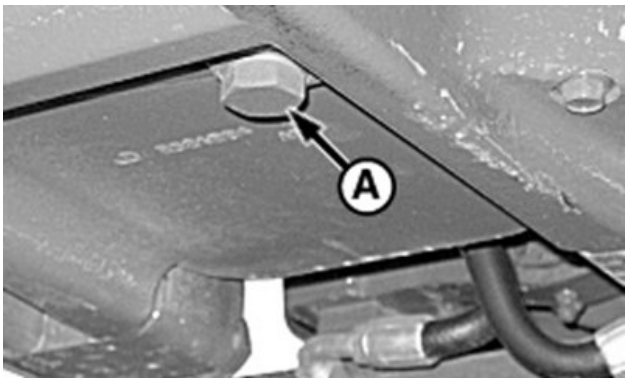
**** 250 hours** If Plus-50™ oil and a John Deere filter are not used, lower this service interval to 250 hours.*

IMPORTANT: New engines are filled, at the factory, with John Deere Break-In Plus™ Engine Oil. (See Fuels, Lubricants, and Coolants section for oil specifications.)

If the engine has too much operating time at idle, constant speeds, and/or light load usage, or make-up oil is required during the first 100-hour period, a longer break-in period may be needed without changing Break-In Plus™ oil until 500 hours.

If diesel fuel has a high sulfur content, refer to Diesel Engine Oil in Fuels, Lubricants, and Coolants section.

1. Operate engine to warm oil.
2. Park tractor on level ground and shut OFF engine. Remove key.

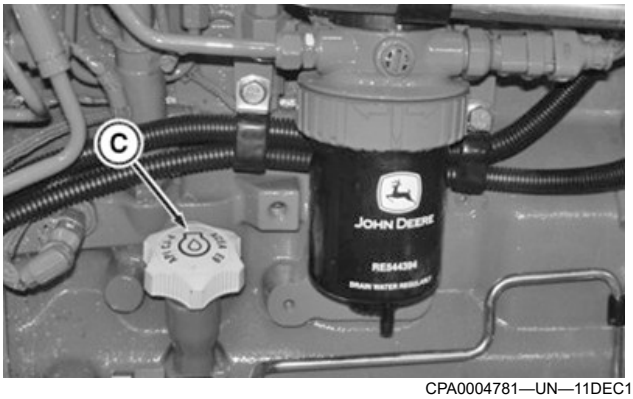


CPA0004780—UN—11DEC17

Drain Plug

PY15545—UN—04JUL12

Oil Filter



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Dipstick/Filler Cap

A—Drain Plug
B—Engine Oil Filter
C—Engine Oil Filler Cap/Dipstick

3. Remove oil drain plug (A) and drain oil.
4. Open hood.
5. Remove engine oil filter (B).

NOTE: Make sure old filter gasket is completely removed from housing before installing new filter.

6. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
7. Install drain plug (A).
8. Add oil through oil filter hole. (See Diesel Engine Oil in Fuels, Lubricants, and Coolants section.)

Specification	
Engine Crankcase Oil—Capacity	15 L (3.9 U.S.gal)

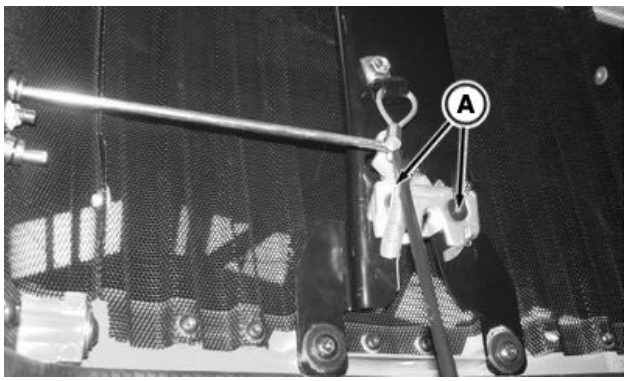
9. Start engine and inspect drain plug (A) and engine oil filter (B) for leaks.
10. Stop engine and remove key.

NOTE: If oil leaks in excess, see your John Deere dealer.

12. Recheck oil level, add if necessary.
13. Lower hood.

CP00834,0003951-19-12MAR18

Lubricate Hood Latch



PY13406—UN—10JUL15

Hood Latch

A—Lubrication Fittings (2 used)

Service Interval—As Required

NOTE: This procedure is only necessary after pressure washing.

Lubricate hood latch at the lubrication fittings (A).

CP00834,0003835-19-15JAN18

Inspect Engine Air Intake Filters

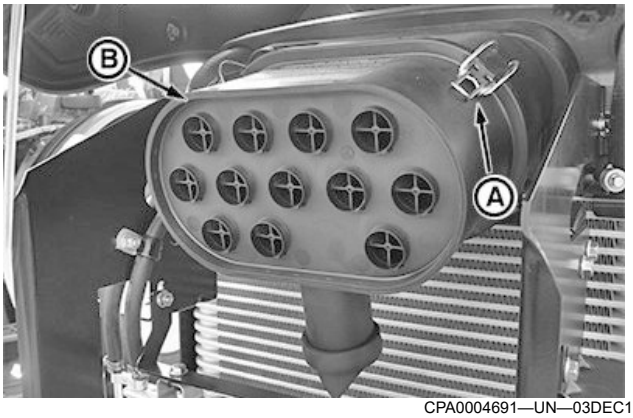
Service Interval—250 Hours

A dual element air cleaner is standard. A dirty primary element is indicated when air restriction indicator on instrument panel illuminates. A dirty element can result in loss of power or excessive smoke.

Clean primary element when indicator on instrument panel illuminates or every 250 hours.

Both elements should be replaced at the same time annually, regardless of condition.

1. Raise hood.



CPA0004691—UN—03DEC17

Open Air Intake Cover

A—Latch
B—Cover

2. Loosen latch (A) and remove cover (B).

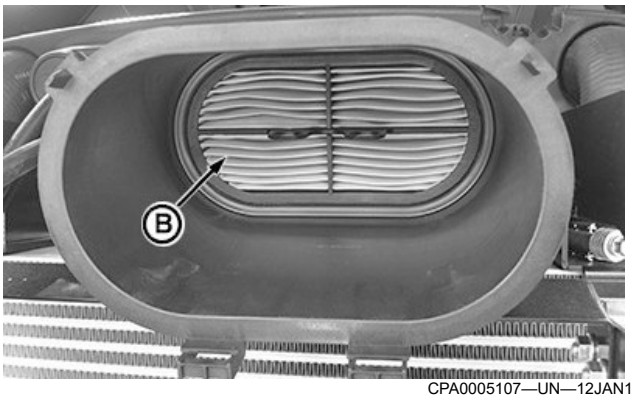
IMPORTANT: Do not use compressed air to clean filter, resulting in filter damage.

CPA0004785—UN—11DEC17

Primary Element

A—Primary Filter Element

3. Pull out primary filter element (A). Do not use excessive force. If filter does not pull out with ease, move side-to-side to remove safely.
4. Clean primary element by tapping on palm of your hand.
5. Check rubber seal around filter element for cracks and holes. Replace if element shows any imperfections.



CPA0005107—UN—12JAN18

Secondary Element

B—Secondary Filter Element

6. Secondary filter element (B) should only be removed when being replaced. If it looks dirty or damaged, replace it. Do not attempt to clean it.

CPA0004786—UN—11DEC17

Install Filter Element

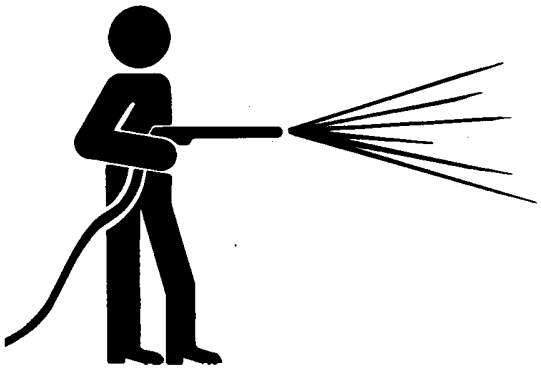
7. Reinstall primary element with rubber seal first (arrows on label pointing into filter housing). Push in all the way.

IMPORTANT: If primary filter is not damaged and indicator on instrument panel remains illuminated, replace both filters.

8. Close cover and raise catch.
9. Lower hood.

CP00834,0003952-19-17JAN18

Use High-Pressure Washer



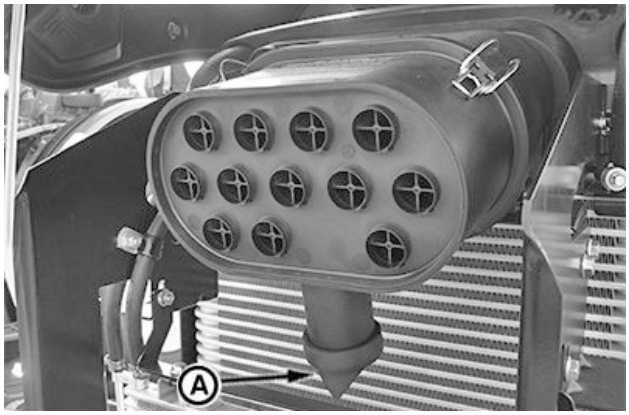
T6642EJ—UN—18OCT88

High-Pressure Washer Use

IMPORTANT: Directing pressurized water at electronic and electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90 degree angle.

NG67726,0000BCE-19-16JAN20

Clean Air Filter Dust Unloading Valve



CPA0004696—UN—03DEC17

Dust Unloading Valve

A—Dust Unloading Valve

Service Interval—Daily/10 Hours

IMPORTANT: Avoid damage! Prevent damage to the engine. Never operate engine without air cleaner elements and rubber dust unloading valve installed.

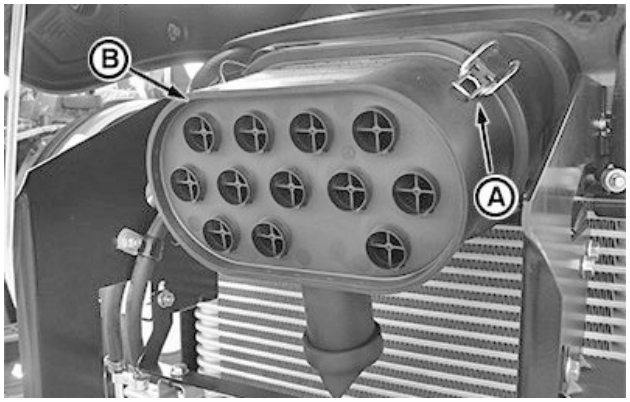
1. Park machine safely. (See Park Machine Safely in Safety Precautions section.)
2. Raise hood.
3. Clean out dust unloading valve (A) by squeezing the end to open and remove any excessive buildup of dust and dirt. Replace if damaged.
4. Lower hood.

CP00834,0003837-19-15JAN18

Replace Engine Air Intake Filters

Service Interval—Annually* * Interval can vary according to operating conditions

1. Raise hood.



CPA0004691—UN—03DEC17

Open Air Intake Cover

A—Latch
B—Cover

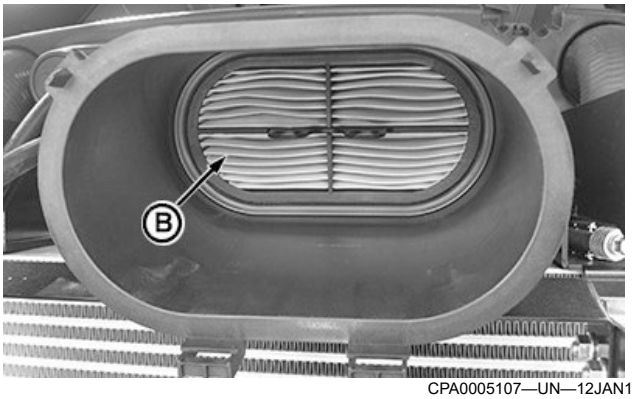
2. Loosen latch (A) and remove cover (B).

CPA0004785—UN—11DEC17

Primary Element

A—Primary Filter Element

3. Pull out primary filter element (A). Do not use excessive force. If filter does not pull out with ease, move side-to-side to remove safely.



CPA0005107—UN—12JAN18

Secondary Element

B—Secondary Filter Element

4. Pull out secondary element (B) using handle on filter's frame.
5. Install new secondary element. Push in all the way.

CPA0004786—UN—11DEC17

Install Filter Element

6. Install new primary element with rubber seal first (arrows on label pointing into filter housing). Push in all the way.
7. Close cover and raise catch.
8. Lower hood.

CP00834,0003838-19-15JAN18

Inspect Engine Air Intake System

Service Interval—As Required[a]

[a] *Service more often if operated in extremely dusty conditions.*

IMPORTANT: Do not overtighten clamps.

Make sure that all air intake clamps are tight.

Check all pipes for dents and other imperfections. Replace as necessary.

Check all hoses for cracks that may cause leaks or possible failure. Replace as necessary.

CP00834,0003839-19-15JAN18

Tighten Hose Clamps

Service Interval—500 Hours

IMPORTANT: Do not overtighten clamps causing washers to be over compressed.

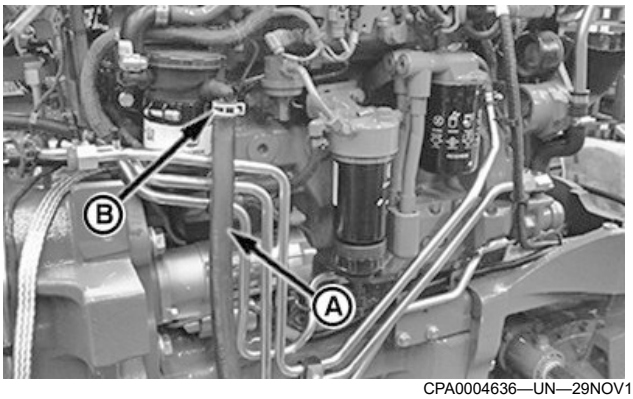
Check the following system hose clamps. Tighten as necessary.

Specification	
Fuel Hose Clamp—Torque	5.6 N·m (4.1 lb·ft)
Oil Cooler Hose Clamp—Torque	14.1 N·m (10.4 lb·ft)
Radiator Hose Clamp—Torque	10 N·m (7.4 lb·ft)
Air Hose Clamp—Torque	10 N·m (7.4 lb·ft)

- Engine Air Induction System
- Engine Cooling System
- Hydraulic System
- Fuel System

CP00834,000383A-19-15JAN18

Clean Open Crankcase Vent (OCV) Tube



CPA0004636—UN—29NOV17

Right-Hand Side

A—Open Crankcase Vent (OCV) Tube
B—OCV Filter Housing

Service Interval—1000 Hours

CAUTION: Reduce compressed air to less than 210 kPa (2 bar) (30 psi) when using for cleaning purposes. Clear area of bystanders, guard against flying chips, and wear personal protection equipment, including eye protection.

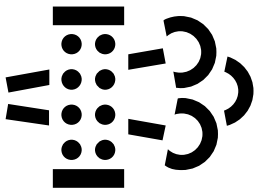
1. Remove open crankcase vent tube (A) from OCV filter housing (B).

2. Wash in solvent or blow clean with compressed air.
3. Install OCV tube to OCV filter housing.
4. Make sure that vent tube is not kinked or pinched.

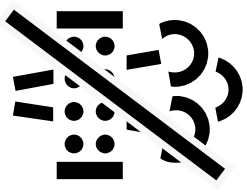
CP00834,000383B-19-15JAN18

Exhaust Filter Cleaning

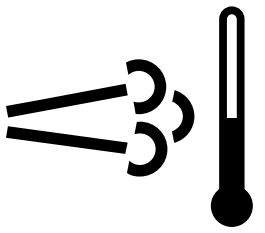
IMPORTANT: Refer to Air Intake, Fuel, Coolant, and Exhaust Operation section of the OM for exhaust filter cleaning directions.



H94828—UN—13OCT09
Exhaust Filter Cleaning is Needed



LV14784—UN—16SEP11
Exhaust Filter Cleaning is Disabled



H94829—UN—13OCT09
Emission System Temperature is High or Exhaust Filter Cleaning is Underway

The exhaust filter will require maintenance periodically. Some of the maintenance will be transparent to the operator. During continuous heavy loads and other conditions, the engine may create enough heat to naturally remove accumulated soot in the exhaust filter. When the exhaust filter has accumulated higher levels of soot, the display panel may request (depending on predefined user settings) an exhaust filter cleaning. During this request, the equipment is required to be located or moved to a suitable location with adequate ventilation.

To the right are symbols which may be seen on the operator interface.

IMPORTANT: The area above and surrounding the engine during a manual exhaust filter cleaning should be free of any flammable objects as temperatures can reach as high as 550°C (1022° F).

CP00834,000383C-19-15JAN18

Cleaning Diesel Exhaust Fluid (DEF) Tank

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

Spilled DEF, if left to dry or if only wiped away with a cloth, leaves a white residue. Improperly cleaned DEF spill can interfere with diagnosis of Selective Catalytic Reduction (SCR) system leakage problems.

If foreign material or fluid has been added to the DEF tank, drain the DEF tank, flush, and fill with new DEF.

If DEF quality is in question, pull a sample out of the DEF tank and place into a clear container. DEF should be crystal clear with a light ammonia smell. If DEF appears cloudy, has a colored tint, or has a profound ammonia smell, it is likely not within specification. DEF in this condition should not be used.

1. Remove drain plug (if equipped), and drain or siphon bad DEF from DEF tank.

NOTE: Cleaning can take place with DEF tank installed or removed.

2. Clean DEF tank with new DEF.

   DEF must pass visual, smell, and concentration checks before running the engine. See Diesel Exhaust Fluid (DEF) – For Use In Selective Catalytic Reduction (SCR) Equipped Engines in the Fuels, Lubricants, and Coolants Section for more information.

3. Drain or siphon DEF tank.

NOTE: Repeat steps 2—3 until DEF tank has been cleaned.

4. **Early version:** Change DEF dosing unit filter and DEF tank header suction screen.

   Later version: Change DEF dosing unit filter and DEF inline filter.

5. If removed, install DEF tank drain plug.
6. If removed, install DEF tank.
7. Fill DEF tank with new DEF.
8. Check DEF concentration with DEF refractometer, such as JDG11594 or JDG11684. The correct DEF

concentration is 31.8% — 33.2%. See your authorized dealer for more information.

9. If DEF is not within specification, does not appear clear, or does not have a slight ammonia smell, contact your authorized dealer.

DX,DEF,CLEANTANK-19-18SEP19

Exhaust Filter / Diesel Particulate Filter Ash Handling and Disposal

CAUTION: Under federal, state, and/or local laws or regulations, Diesel Particulate Filter ash may be classified as a hazardous waste. Hazardous wastes must be disposed of in accordance with all applicable federal, state, and local laws or regulations governing hazardous waste disposal. Only a qualified service provider should remove ash from the DPF. Personal protective equipment and clothing, maintained in a sanitary and reliable condition, should be used when handling and cleaning a DPF. See your John Deere dealer or qualified service provider for assistance.

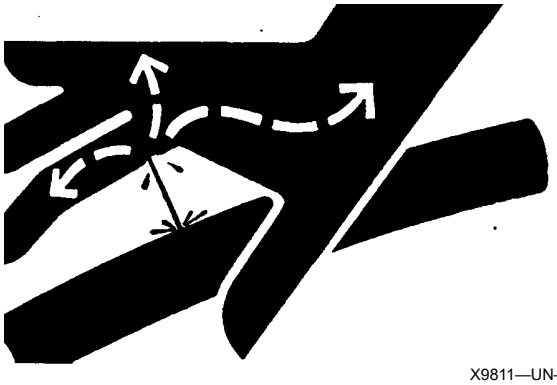
CP00834,000383E-19-15JAN18

Exhaust Filter Disposal

CAUTION: Proper management of an Exhaust Filter that has reached the end of its useful life is required, since the ash or catalyst material in the device may be classified as hazardous waste under federal, state, and/or local laws or regulations. Used Exhaust Filters, which include the Diesel Particulate Filter, may be exchanged at any John Deere dealer or qualified service provider.

CP00834,000383F-19-15JAN18

Do Not Modify Fuel System



X9811—UN—23AUG88

High-Pressure Fluids

CAUTION: Escaping fluid under pressure can penetrate the skin, causing serious injury. Avoid the hazard by relieving system pressure before disconnecting pressurized lines. Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

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

IMPORTANT: Use only Fuel outlined in Fuels, Lubricants, and Coolants section.

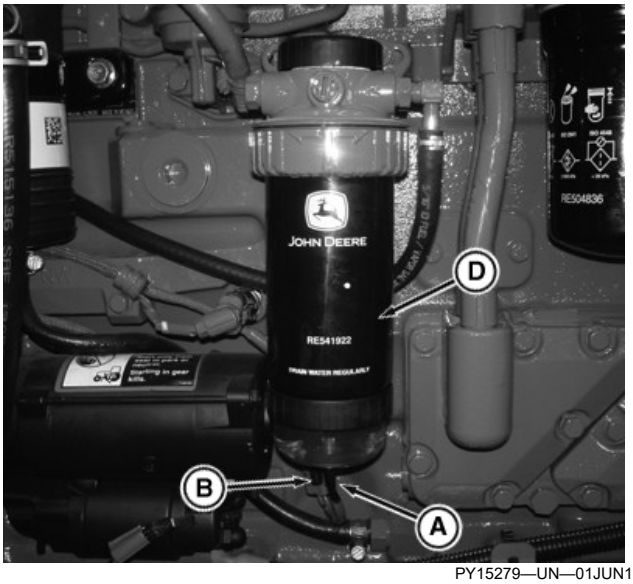
Modification or alteration of the injection pump, the injection pump timing, or the fuel injectors in ways not recommended by the manufacturer will terminate the warranty obligation to the purchaser. (See warranty information inside front cover.)

Do not attempt to service injection pump or fuel injectors yourself. Special training and special tools are required. (See your John Deere dealer.)

CP00834,0003840-19-15JAN18

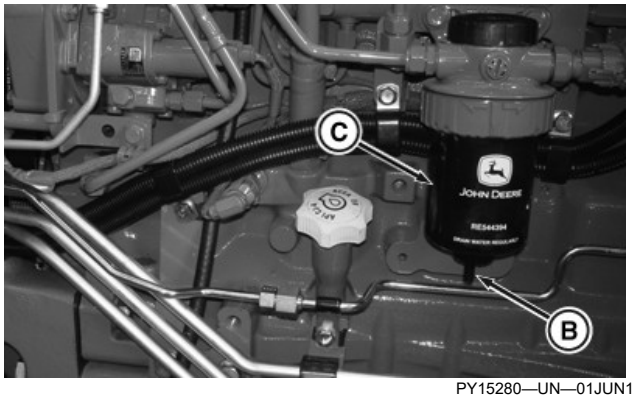
Drain Water and Sediment from Fuel Filters

Service Interval—Daily / 10 Hours



PY15279—UN—01JUN12

Right-Hand Side Of Engine



PY15280—UN—01JUN12

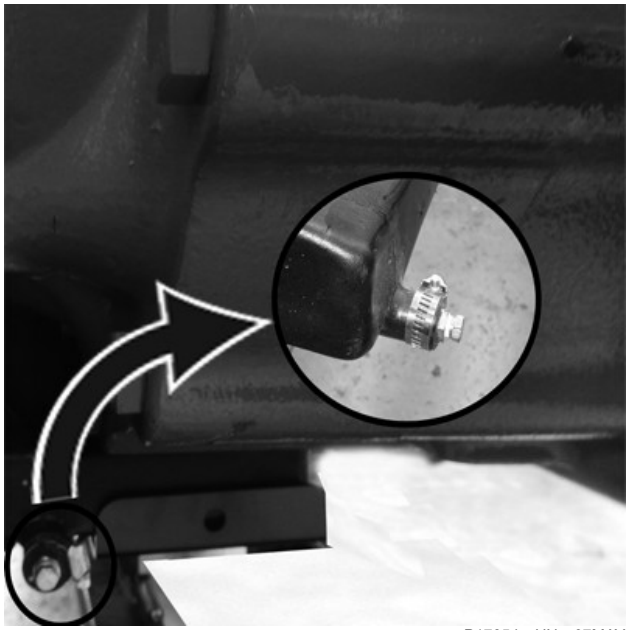
Left- Hand Side of Engine

A—Wiring Harness
B—Drain Port
C—Final Fuel Filter
D—Primary Fuel Filter

1. Disconnect wiring harness (A).
2. Connect a small hose to end of drain ports (B).
3. Place a suitable container under drains.
4. Open fuel filter drain ports (B) to drain moisture and sediment from filters (C and D).
5. Tighten drains when fuel runs clear.
6. Remove drain hoses and connect wiring harness.

CP00834,0003841-19-15JAN18

Drain Water and Sediment from Fuel Tank



P17654—UN—07MAY15

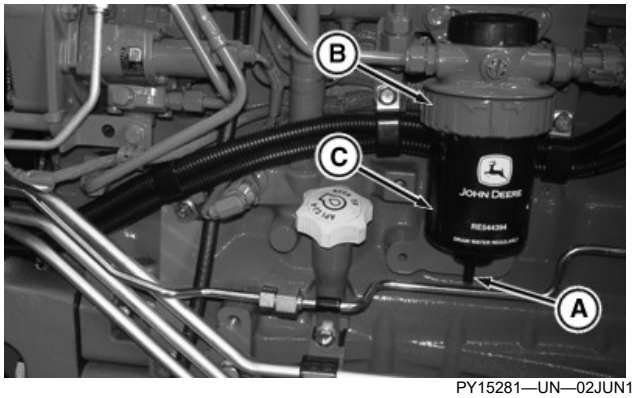
Fuel Tank Drain Plug

Service Interval—250 Hours

1. Remove filler cap.
2. Place suitable container under drain plug.
3. Loosen drain plug to drain moisture and sediment from fuel tank.
4. Tighten drain plug when fuel runs clear.
5. Inspect and thoroughly clean all filler cap vents.
6. Inspect rubber seal for cracks or other imperfections. Replace if necessary.
7. Install filler cap.

CP00834,0003842-19-15JAN18

Replace Prefilter / Water Separator



PY15281—UN—02JUN12

Prefilter

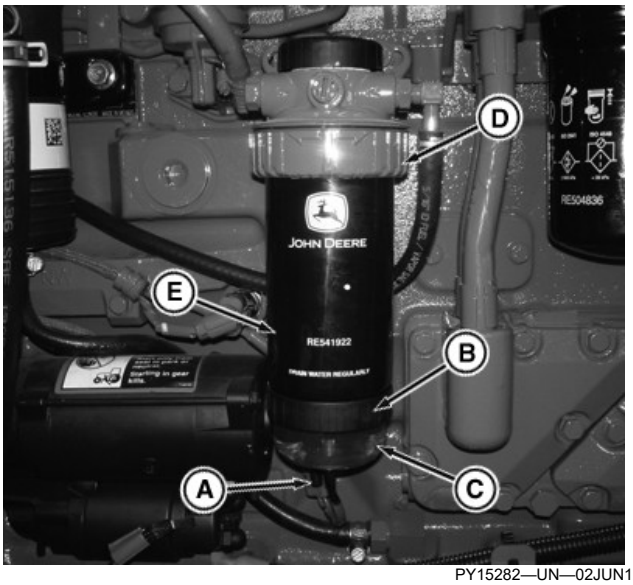
A—Drain Port
B—Retaining Ring
C—Fuel Filter

Service Interval—500 Hours

1. Connect a drain line to drain port (A) and place a suitable container under drain.
2. Loosen drain and drain fuel from filter.
3. Loosen retaining ring (B) and fuel filter (C) and filter seal.
4. Discard old filter. Inspect filter seal for cracks, breaks, or other signs of leaking. Replace as necessary.
5. Install new filter and seal. Tighten retaining ring until it snaps into place. Do not overtighten.
6. Bleed fuel system. (See procedure in this section.)

CP00834,0003843-19-15JAN18

Replace Primary Fuel Filter / Water Separator



PY15282—UN—02JUN12

Primary Fuel Filter

A—Drain Port
B—Bottom Retaining Ring
C—Water Separator Bowl
D—Top Retaining Ring
E—Primary Fuel Filter

Service Interval—500 Hours

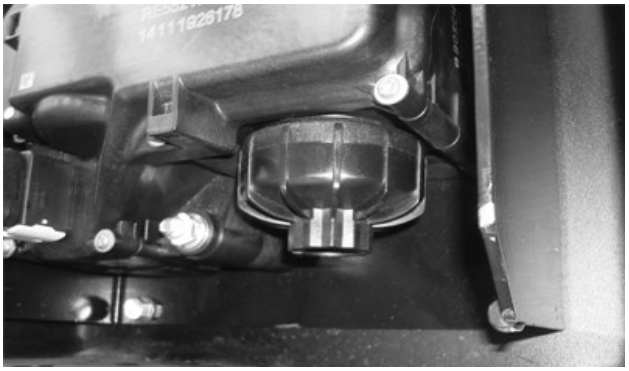
1. Connect a drain line to drain port (A) and place a suitable container under drain.
2. Loosen drain and drain fuel from filter.
3. Loosen bottom retaining ring (B). Remove water separator bowl (C). Disconnect wiring harness.
4. Loosen top retaining ring (D) and remove primary fuel filter (E) and filter seal.
5. Discard old filter. Inspect filter seal for cracks, breaks, or other signs of leaking. Replace as necessary.
6. Clean and dry water separator bowl (C).
7. Install water separator bowl on new primary fuel filter. Tighten retaining ring (B) until it snaps into place. Do not overtighten.
8. Install new primary fuel filter and filter seal to machine. Tighten retaining ring (D) until it snaps into place. Do not overtighten.
9. Connect wiring harness.
10. Bleed fuel system. (See procedure in this section.)

CP00834,0003844-19-15JAN18

Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter

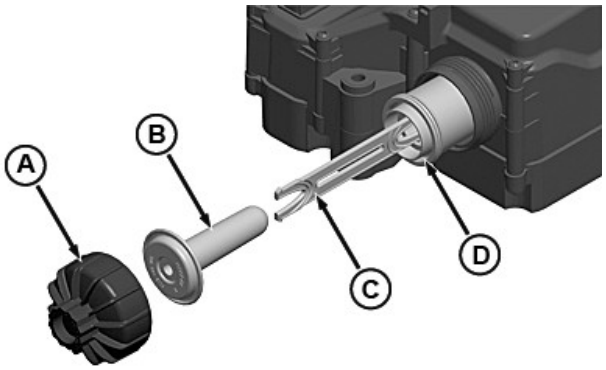
Service Interval—As Required[a]

[a] *Maximum 4500 Hours or 36 months.*



P17656—UN—07MAY15

DEF Dosing Unit Filter Location



RG22534—UN—21MAR13

DEF Dosing Unit Filter

A—DEF Dosing Unit Filter Cover
B—DEF Dosing Unit Filter Equalizing Element
C—DEF Dosing Unit Filter Tool
D—DEF Dosing Unit Filter

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

Spilled DEF, if left to dry or if only wiped away with a cloth, leaves a white residue. Improperly cleaned DEF spill can interfere with diagnosis of Selective Catalytic Reduction (SCR) system leakage problems.

NOTE: Servicing DEF dosing unit filter may require removing additional covers or components. See Access DEF Dosing Unit for location information.

1. Remove DEF dosing unit filter cover (A).
2. Remove and discard DEF dosing unit filter equalizing element (B).
3. Insert “Black” end of DEF dosing unit filter tool (C) into DEF dosing unit filter (D) until CLICK is felt or heard indicating DEF dosing unit filter tool is fully engaged.

NOTE: A tool such as a screwdriver can be inserted into DEF dosing unit filter tool slot to assist removal.

4. Pull DEF dosing unit filter tool and DEF dosing unit filter from DEF dosing unit. Discard DEF dosing unit filter and DEF dosing unit filter tool.
5. Clean DEF dosing unit threads and mating surfaces with distilled water.
6. Lubricate new DEF filter O-rings with clean engine oil. Carefully insert DEF dosing unit filter into DEF dosing unit.
7. Install new DEF dosing unit filter equalizing element into DEF dosing unit filter.
8. Install DEF dosing unit filter cover and tighten to specifications.

Specification	
DEF Dosing Unit Filter Cover—Torque	23 N·m (204 lb·in)

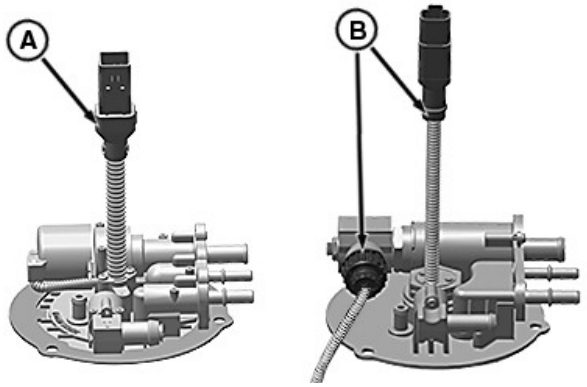
CP00834,0003845-19-15JAN18

Replace Diesel Exhaust Fluid (DEF) Tank Header Suction Screen

Service Interval—As Required[a]

[a] *Maximum 4500 Hours or 36 months.*

DEF Tank Header Identification



RG29623—UN—18JUL17

DEF Tank Header Identification

A—Type A DEF Tank Header (one electrical connection)
B—Type B DEF Tank Header (two electrical connections)

NOTE: Accessing DEF tank header may require removing additional covers or components. See Access DEF Tank Header for location information.

Type A DEF tank header has one wiring harness connection (A). Type B DEF tank header has two wiring harness connections (B). Refer to the procedure that is applicable to your DEF tank header.

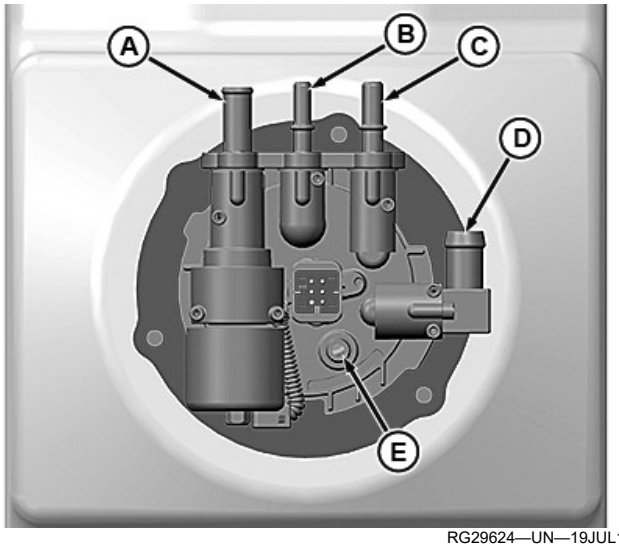
Replace Type A DEF Tank Header Suction Screen

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

Spilled DEF, if left to dry or if only wiped away with a cloth, leaves a white residue. Improperly cleaned DEF spill can interfere with diagnosis of Selective Catalytic Reduction (SCR) system leakage problems.

NOTE: DEF tank header suction screen must be replaced AS REQUIRED (not exceeding 4500 hours or 36 months, whichever occurs first) The DEF dosing unit filter must be replaced at the same time.



RG29624—UN—19JUL17

DEF Tank Header Fittings

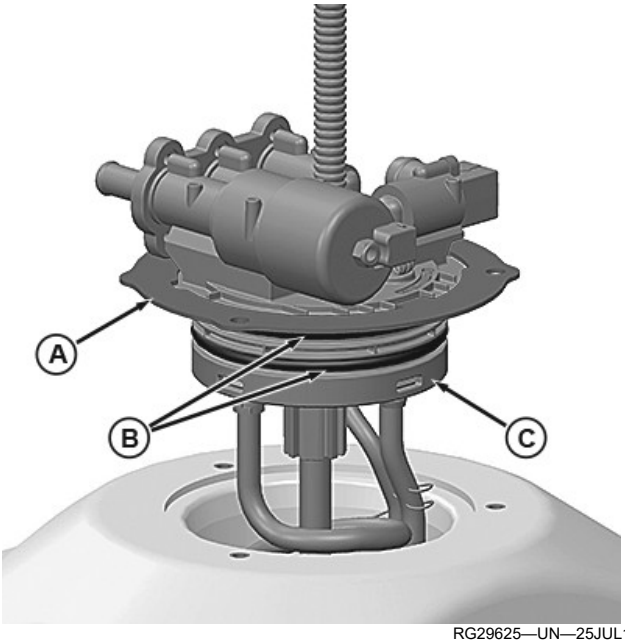
A—Coolant Outlet Fitting
B—DEF Return Line Fitting
C—DEF Supply Line Fitting
D—Coolant Inlet Fitting
E—Vent Line Fitting

1. Clear all debris from area around DEF tank header.

CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. Wait until engine coolant is cool enough to touch with bare hands before disconnecting coolant hoses. Slowly loosen radiator cap to first stop to relieve pressure.

IMPORTANT: Cap and plug all lines and fittings to prevent contamination. Coolant in DEF causes Selective Catalytic Reduction (SCR) system performance issues.

2. Disconnect coolant hoses from fittings (A and D).
3. Disconnect DEF return and supply lines from fittings (B and C).
4. Disconnect DEF tank header electrical connector.
5. Remove vent hose from vent line fitting (E).

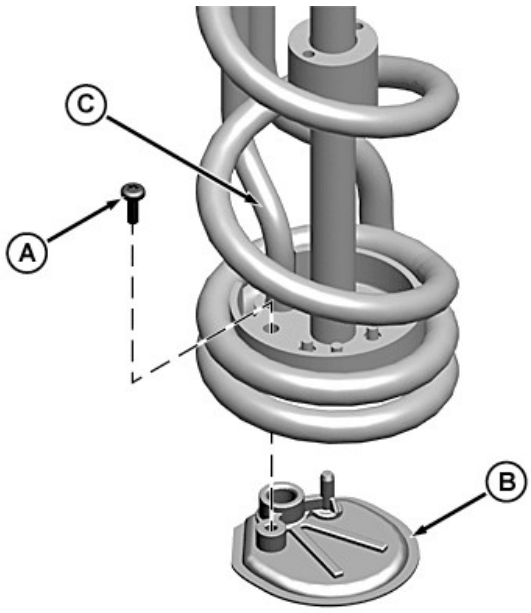


RG29625—UN—25JUL17

DEF Tank Header

A—DEF Tank Header Locking Ring
B—O-Ring (2 used)
C—DEF Tank Header

6. Remove cap screws from DEF tank header locking ring (A).
7. Remove DEF tank header (C) from tank.
8. Remove O-rings (B) and inspect for damage.
9. Replace O-rings (B) if necessary.



RG23672—UN—01JUL13

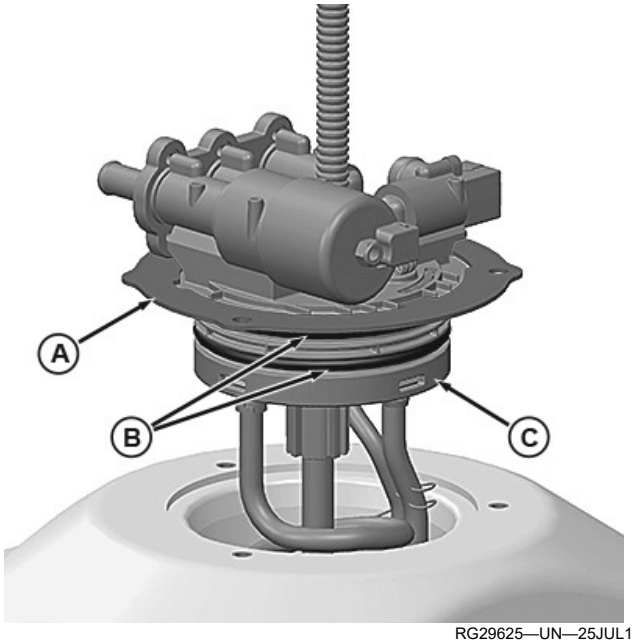
DEF Suction Screen

A—Screw
B—Suction Screen
C—Suction Tube

10. Remove screw (A) that secures suction screen (B) to suction tube (C).
11. Remove suction screen (B).
12. Install suction screen (B) to suction tube (C).
13. Install screw (A) and tighten to specification.

Specification

DEF Suction Screen
Screw—Torque. . . . . 1 N·m (11 lb·in)

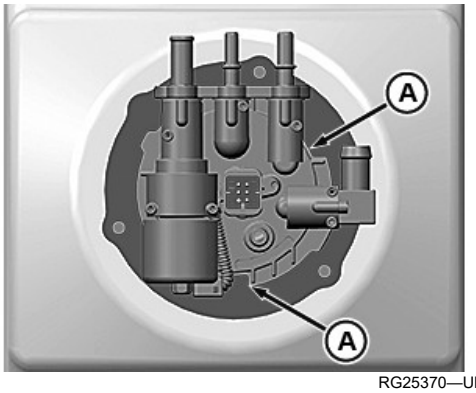


RG29625—UN—25JUL17

DEF Tank Header

A—DEF Tank Header Locking Ring
B—O-Ring (2 used)
C—DEF Tank Header

14. Lubricate O-rings (B) with clean DEF.
15. Insert DEF header into tank and align holes on locking ring (A) with holes in tank.



RG25370—UN—03APR14

Alignment Notches

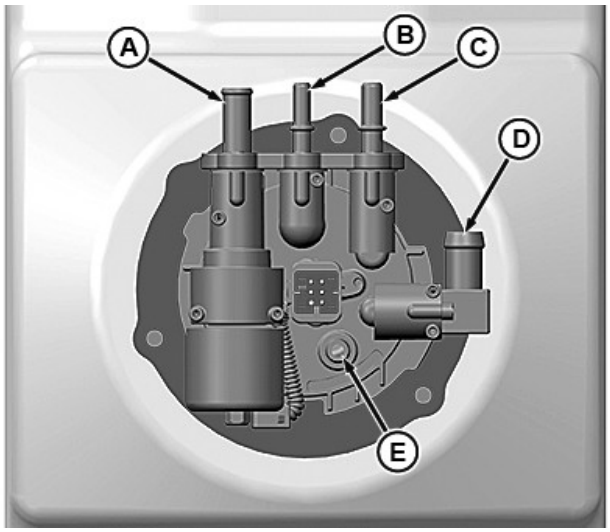
A—Alignment Notch (2 used)

IMPORTANT: Prevent DEF leak, header, and lock ring damage. Ensure that alignment notches on the locking ring are properly aligned with plastic tabs on the header.

16. Install stainless steel cap screws into mounting holes and tighten to specification.

Specification

DEF Tank Header M6 Cap
Screw—Torque. . . . . 9 N·m (80 lb·in)



RG29624—UN—19JUL17

DEF Tank Header Fittings

A—Coolant Outlet Fitting
B—DEF Return Line Fitting
C—DEF Supply Line Fitting
D—Coolant Inlet Fitting
E—Vent Line Fitting

17. Connect 9.5 mm (3/8 in) vent hose to fitting (E).
18. Connect 16 mm (5/8 in) coolant hose to coolant inlet fitting (D).
19. Connect 13 mm (1/2 in) coolant hose to coolant outlet fitting (A).

IMPORTANT: Push DEF line onto fitting until you hear a “click”, then lightly pull back to ensure that it is connected and locked in place.

NOTE: DEF supply and return lines have unique sized fittings.

20. Connect DEF return and supply lines to fittings (B and C).
21. Connect DEF tank header electrical connector.

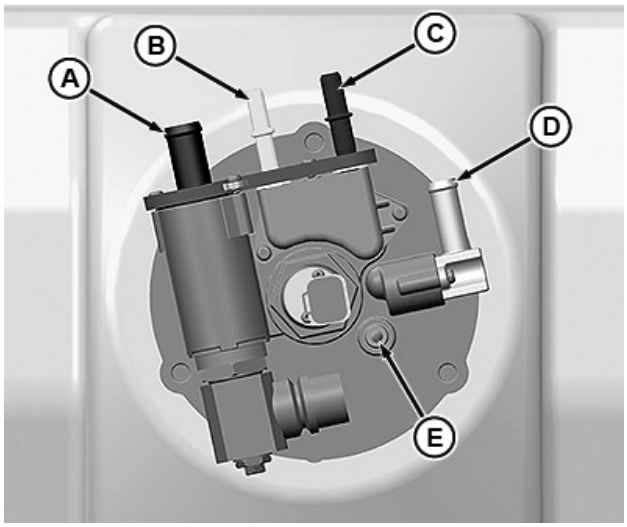
Replace Type B DEF Tank Header Suction Screen

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

Spilled DEF, if left to dry or if only wiped away with a cloth, leaves a white residue. Improperly cleaned DEF spill can interfere with diagnosis of Selective Catalytic Reduction (SCR) system leakage problems.

NOTE: DEF tank header suction screen must be replaced as required (not exceeding 4500 hours or 36 months, whichever occurs first) The DEF dosing unit filter must be replaced at the same time.



RG29626—UN—19JUL17

DEF Tank Header Fittings

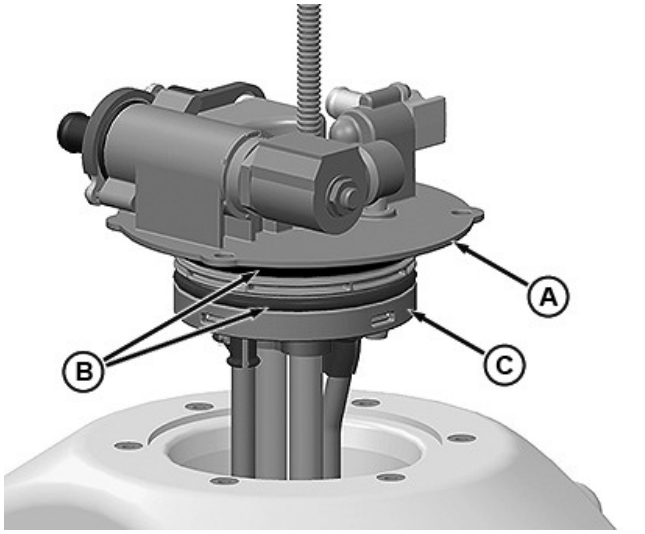
A—Coolant Inlet Fitting
B—DEF Return Line Fitting
C—DEF Supply Line Fitting
D—Coolant Outlet Fitting
E—Vent Line Fitting

1. Clear all debris from area around DEF tank header.

CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. Wait until engine coolant is cool enough to touch with bare hands before disconnecting coolant hoses. Slowly loosen radiator cap to first stop to relieve pressure.

IMPORTANT: Cap and plug all lines and fittings to prevent contamination. Coolant in DEF causes Selective Catalytic Reduction (SCR) system performance issues.

2. Disconnect coolant hoses from fittings (A and D).
3. Disconnect DEF return and supply lines from fittings (B and C).
4. Disconnect DEF tank header electrical connectors.
5. Remove vent hose from vent line fitting (E).

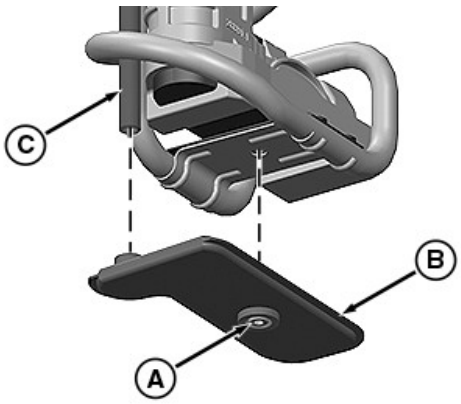


RG29627—UN—19JUL17

DEF Tank Header

A—DEF Tank Header Mounting Flange
B—O-Ring (2 used)
C—DEF Tank Header

6. Remove cap screws from DEF tank header mounting flange (A).
7. Remove DEF tank header (C) from tank.
8. Remove O-rings (B) and inspect for damage.
9. Replace O-rings (B) if necessary.



RG28054—UN—29MAR16

DEF Suction Screen

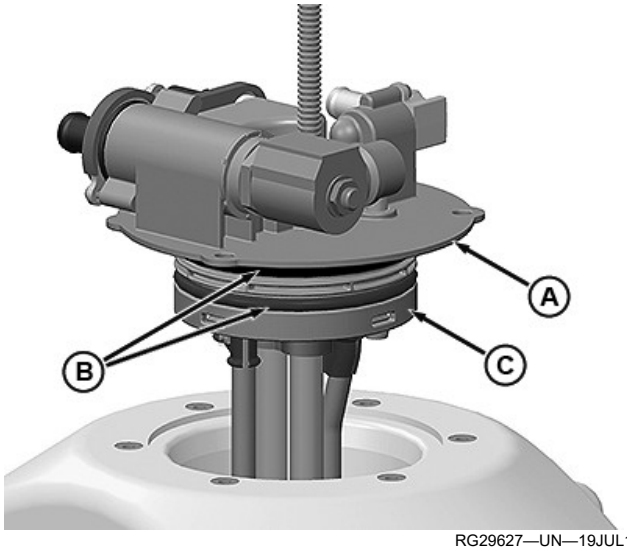
A—Screw

B—Suction Screen
C—Suction Tube

10. Remove screw (A) that secures suction screen (B) to suction tube (C).
11. Remove suction screen (B).
12. Install suction screen (B) to suction tube (C).
13. Install screw (A) and tighten to specification.

Specification

DEF Suction Screen
Screw—Torque. . . . . 1 N·m (11 lb·in)



RG29627—UN—19JUL17

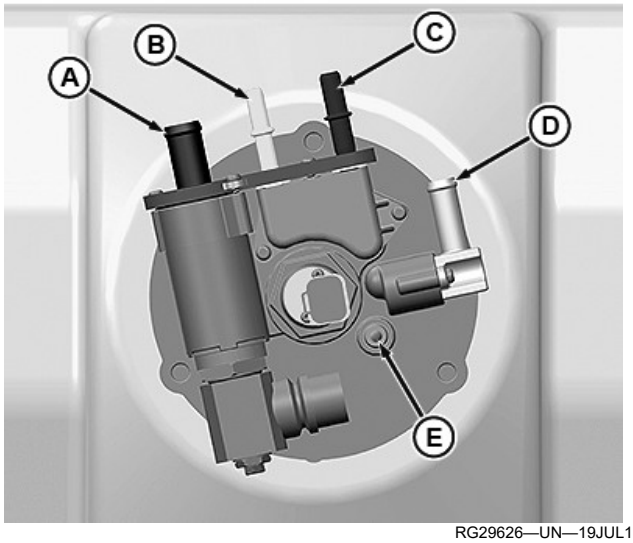
DEF Tank Header

A—DEF Tank Header Mounting Flange
B—O-Ring (2 used)
C—DEF Tank Header

14. Lubricate O-rings (B) with clean DEF.
15. Insert DEF header (C) into tank and align mounting holes on mounting flange (A) with holes in tank.
16. Install stainless steel M6 cap screws into mounting holes and tighten to specification.

Specification

DEF Tank Header Cap
Screw—Torque. . . . . 9 N·m (80 lb·in)



RG29626—UN—19JUL17

DEF Tank Header Fittings

A—Coolant Inlet Fitting
B—DEF Return Line Fitting
C—DEF Supply Line Fitting
D—Coolant Outlet Fitting
E—Vent Line Fitting

17. Connect 9.5 mm (3/8 in) vent hose to fitting (E).
18. Connect 16 mm (5/8 in) coolant hose to coolant inlet fitting (A).
19. Connect 13 mm (1/2 in) coolant hose to coolant outlet fitting (D).

IMPORTANT: Push DEF line onto fitting until you hear a “click”, then lightly pull back to ensure that it is connected and locked in place.

NOTE: DEF supply and return lines have unique sized fittings.

20. Connect DEF return and supply lines to fittings (B and C).
21. Connect DEF tank header electrical connectors.

CP00834,0003953-19-17JAN18

Check Coolant Level

TS281—UN—15APR13

Safety—Explosive Release of Fluids

Service Interval—Daily / 10 Hours

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

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

Never pour cold water into the cooling system of a hot engine, as it might crack cylinder block or head. Do not operate engine without coolant for even a few minutes.

PY15274—UN—01JUN12

Coolant Overflow Reservoir

1. Raise hood.

NOTE: Coolant level should be checked when engine is cool.

2. Check level in coolant reservoir BEFORE starting tractor.
3. If engine is cool and level is below **MIN COLD** mark, remove cap and add coolant to reservoir to bring level between **MIN** and **MAX COLD** mark.
4. Install cap and lower hood.

CP00834,0003847-19-15JAN18

Check Cooling System for Leaks

Service Interval—500 Hours

CPA0004618—UN—29NOV17

Radiator

A—Radiator

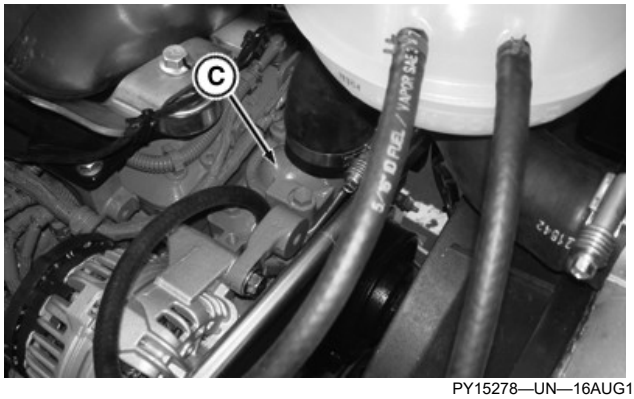
1. Check around base of radiator (A) for pinholes, cracks, or any sign of coolant leakage.

PY15277—UN—01JUN12

Cooling Reservoir

B—Coolant Reservoir

2. Inspect coolant reservoir (B) for holes, cracks, or any sign of coolant leakage.



PY15278—UN—16AUG12

Left-Hand Side of Engine

C—Thermostat Housing

3. Inspect area around thermostat housing (C) for cracks or any sign of coolant leakage.

CP00834,0003848-19-15JAN18

Flush Cooling System and Replace Thermostat

Service Interval —2000 Hours / 2 Years*
**** 5000 hours / 5 Years*** *if John Deere COOL-GARD™ is used.*

Have your John Deere dealer drain old coolant, flush the entire system, install a new thermostat, and fill with clean antifreeze solution.

CP00834,0003849-19-15JAN18

Bleed Fuel System

Service Interval—As Required[a]

[a] *See your John Deere Dealer for service.*

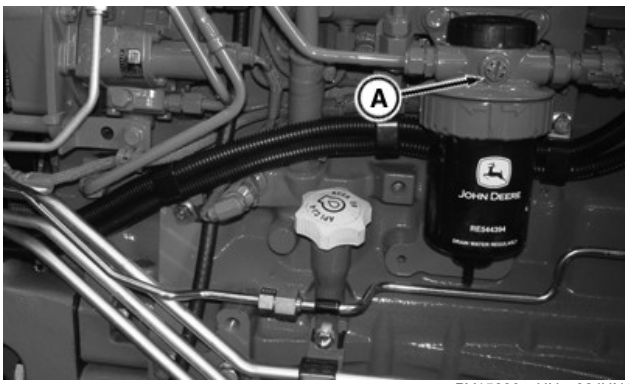
IMPORTANT: Any time the fuel system has been opened up for service (lines disconnected or filters removed), it will be necessary to bleed air from the system.

NOTE: A second person will be needed for the following procedure.

The fuel system can be bled at two locations:

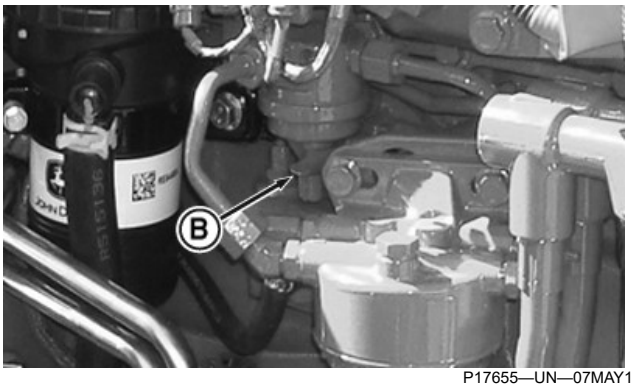
- Final Fuel Filter
- Fuel Injection Pump

Final Fuel Filter



PY15283—UN—02JUN12

Left-Hand Side



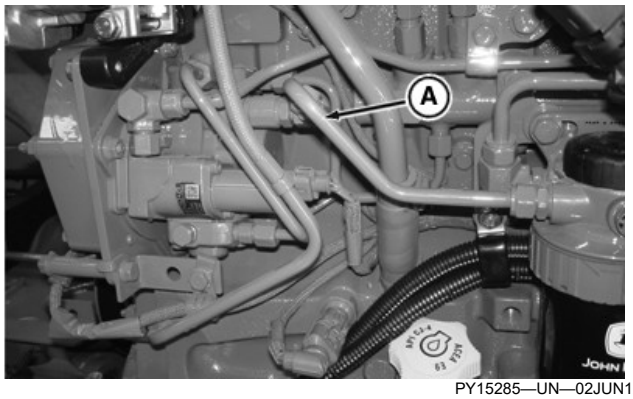
P17655—UN—07MAY15

Right-Hand Side

A—Bleed Vent Screw
B—Hand Primer

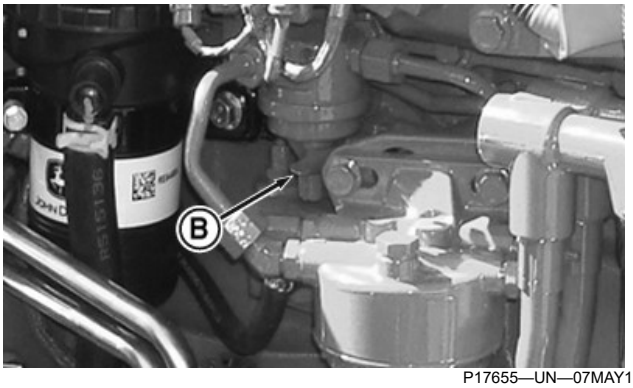
1. Open bleed vent screw (A).
2. Have a second person pump hand primer (B) on fuel transfer pump.
3. When no air bubbles are seen, close vent screw.
4. Pump the hand primer until resistance is felt.
5. Repeat until no air bubbles flow from vent screw. Then tighten bleed vent screw (A).

Fuel Injection Pump



PY15285—UN—02JUN12

Left-Hand Side



P17655—UN—07MAY15

Right-Hand Side

A—Fuel Return Line
B—Hand Primer

1. Loosen fuel return line (A) at fuel injection pump.
2. Have a second person pump hand primer (B) on fuel transfer pump.
3. When no air bubbles are seen, tighten fuel return line.
4. Pump the hand primer until resistance is felt.
5. Repeat until no air bubbles flow from fuel return line. Then tighten fuel return line (A).

Specification

Fuel Return Line—Torque	27 N·m (20 lb·ft)

CP00834,000384A-19-15JAN18

Clean Grille Screens, Radiator, Oil Cooler, Radiator Screen, and Air Conditioner Condenser

Service Interval—As Required

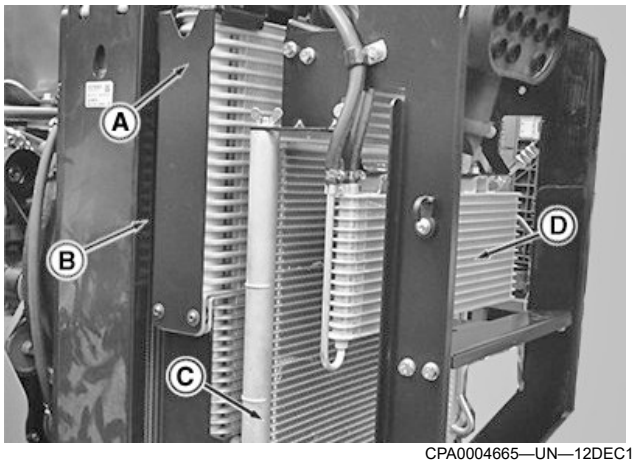
CPA0004789—UN—12DEC17

Grille

A—Grille

1. Whenever trash builds up on front grille (A), stop engine and brush clean.

CAUTION: Reduce compressed air to less than 210 kPa (2 bar) (30 psi) when using for cleaning purposes. Clear area of bystanders, guard against flying chips, and wear personal protection equipment, including eye protection.



CPA0004665—UN—12DEC17

Cooling Package

B—Charge Air Cooler
C—Air Conditioner Condenser (Cab)
D—Radiator
E—Oil Cooler

2. Raise hood and see if trash has built up on charge air cooler (B), oil cooler (E) (if equipped), radiator (D), or air conditioner condenser (C) (cab). If so, remove it using a brush or compressed air.
3. If a more thorough cleaning is required, the air charge cooler can be tilted away from the radiator for easier access.

CPA0004788—UN—12DEC17

Release Latches

A—Release Latch

4. Release latches (A) located at each side of the radiator and tilt air charge cooler away from radiator to gain access.
5. Straighten any bent fins.
6. Secure latches.

CP00834,000384B-19-12MAR18

Electrical Service Precautions

TS204—UN—15APR13

Battery Explosions

PY15286—UN—02JUN12

Battery Without Cover

A—Positive (+) Battery Cable
B—Negative (-) Battery Cable

CAUTION: Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive. When using a booster battery, follow instructions in Engine Operation section.

To avoid shocks and burns, disconnect negative (-) battery cable (B) before servicing any part of the electrical system.

Keep battery cover (not shown) and all electrical shields in place.

CP00834,000384C-19-15JAN18

Use a Booster Battery or Charger

TS204—UN—15APR13

Avoid Exploding Batteries

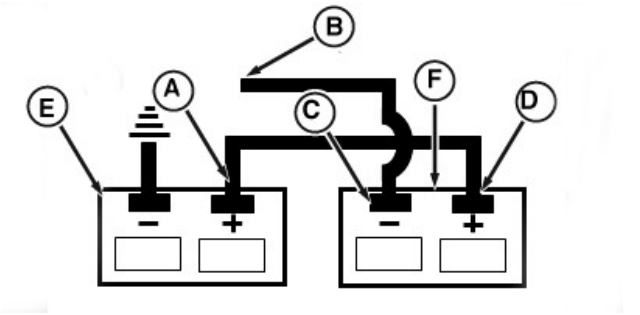
CAUTION: Battery gas is explosive. Keep sparks and flames away from battery. Make the last connection and first disconnection at a point away from booster batteries.

IMPORTANT: Be sure that polarity is correct before making connections. Reversed polarity may damage electrical system or possibly cause battery to explode.

When using two or more booster batteries, batteries must be connected in parallel. Do not connect batteries in series.

Booster Battery

1. Access battery. (See procedure in Electrical and Lighting Maintenance section.)



P18814—UN—01OCT21

Booster Battery

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

2. Connect red positive (+) booster cable to booster battery positive (+) post (D).
3. Connect other end of positive (+) booster cable to tractor battery positive (+) post (A).

4. Connect black negative (-) booster cable to booster battery negative (-) post (C).
5. Connect other end of negative (-) booster cable to engine ground (B), away from battery and starter.
6. Turn key to START position.
7. When engine starts, remove negative (-) cable first, then positive (+) cable.

Battery Charger

1. With charger OFF, attach red positive lead to positive (+) battery terminal and negative charger lead to a good ground on the engine block, away from battery.

IMPORTANT: Do not set battery charger to higher than 12 V.

2. Switch charger ON and charge battery according to charger manufacturer's instructions.
3. Switch charger OFF. Disconnect negative charger lead first, then positive lead.

AG32641,000047B-19-01OCT21

Clean Battery

Service Interval—50 Hours / Weekly

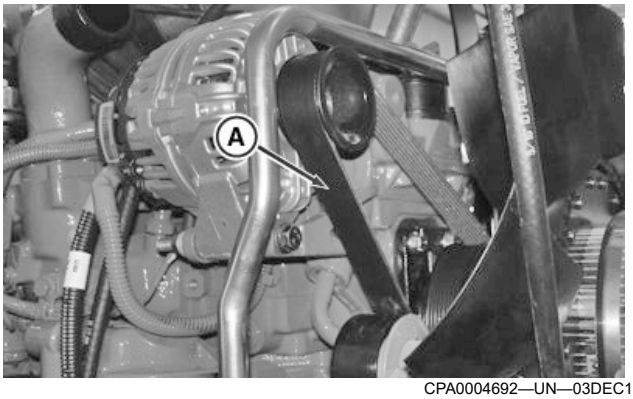
1. Stop engine. (See procedure in Engine Operation section.)
2. Remove battery cover.
3. Wipe battery with a damp cloth. Clean and tighten connections, if needed.
4. Install cover and lower hood.

CP00834,000384E-19-15JAN18

Inspect Alternator/Fan Belt Tensioner

Service Interval—250 Hours

NOTE: Pulley and spring tensioner are not serviceable.



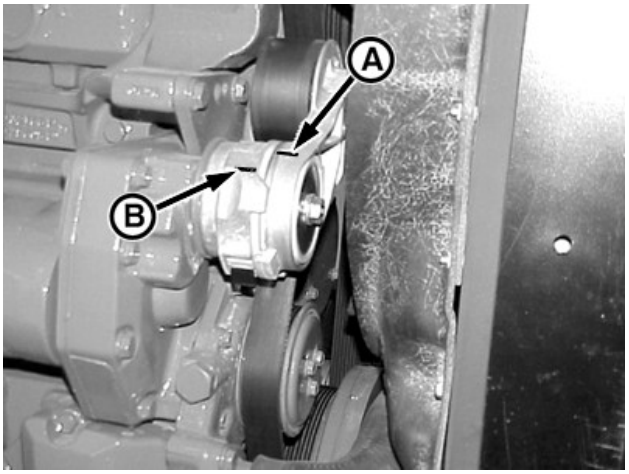
CPA0004692—UN—03DEC17

Alternator/Fan Belt

A—Belt

1. Remove belt (A). (See procedure in this section.)

NOTE: A belt tension gauge will not give an accurate measurement of the belt tension when automatic belt tensioner is used. Measure tensioner spring tension using a torque wrench and procedure outlined below.

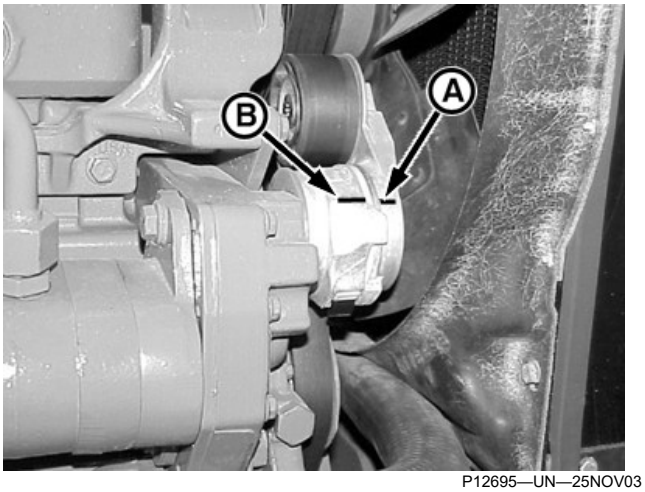


P12694—UN—25NOV03

Mark

A—Mark
B—Mark

2. Put a mark (A) on swing arm of tensioner as shown.
3. Measure 21 mm (0.83 in) from mark (A) and put a mark (B) on tensioner mounting base.



P12695—UN—25NOV03

Torque Swing Arm

A—Swing Arm Mark
B—Tensioner Mounting Base Mark

4. Rotate the swing arm using a torque wrench until marks (A and B) are aligned.
5. Record torque wrench measurement and compare with specification. Replace belt tensioner assembly if recorded measurement is below specification.

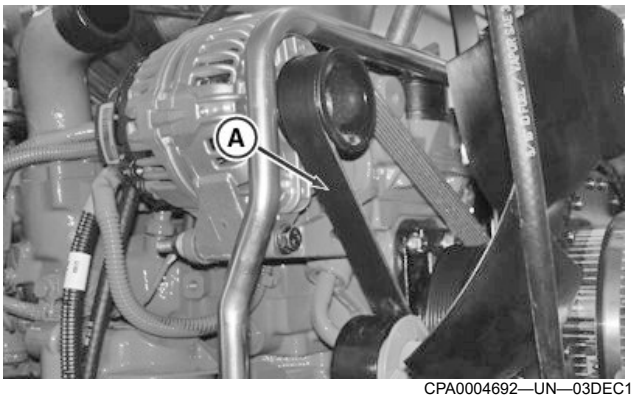
Specification

Swing Arm Spring
Tension—Torque. . . . . 18—22 N·m (159—195 lb·in)

6. Install belt. (See procedure in this section.)

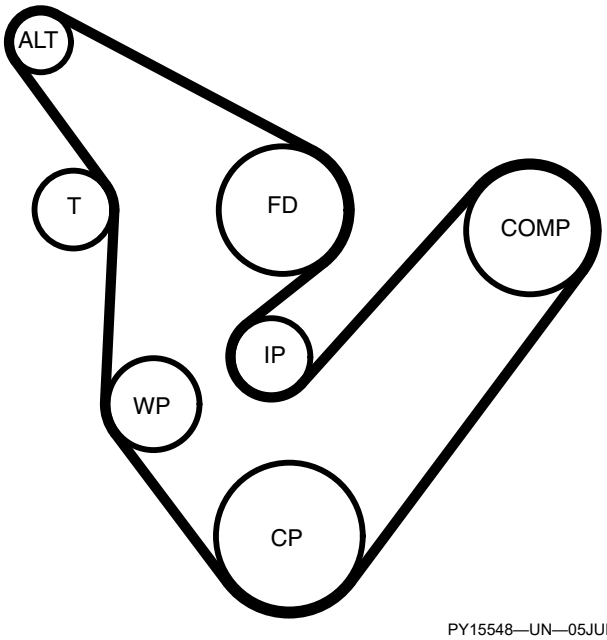
CP00834,000384F-19-15JAN18

Replace Alternator/Fan Belt



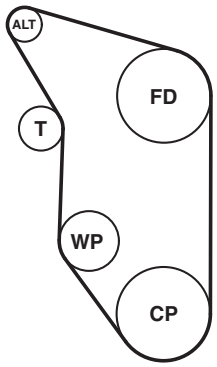
CPA0004692—UN—03DEC17

Alternator/Fan Belt



PY15548—UN—05JUL12

Cab Belt Diagram



P9719—UN—27SEP00

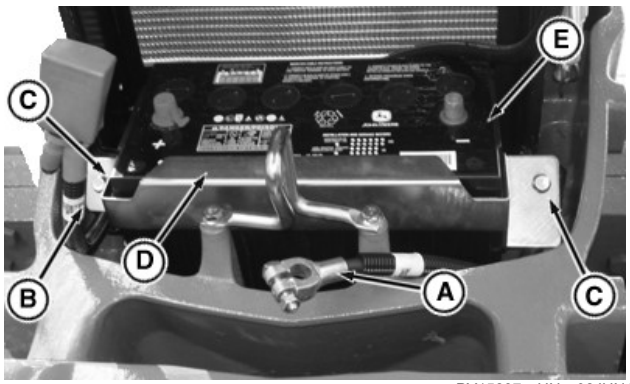
OOS Belt Diagram

A—Belt
ALT—Alternator
COMP—Compressor (Air Conditioning System)
CP—Crankshaft Pulley
FD—Fan Drive Pulley
IP—Idler Pulley
T—Tensioner Idler
WP—Water Pump

1. Raise hood.
2. Release tension on belt using a 1/2 in drive long-handle breaker bar. Remove belt (A) from alternator pulley over fan.
3. Install new belt in reverse order of removal.

CP00834,0003850-19-15JAN18

Remove Battery



PY15287—UN—02JUN12

Battery

A—Negative (-) Battery Cable
B—Positive (+) Battery Cable
C—Nuts (2 used)
D—Bracket
E—Battery

CAUTION: To avoid sparks, disconnect negative (-) battery cable (A) first and connect it last.

1. Raise hood.
2. Disconnect negative (-) battery cable (A).
3. Disconnect positive (+) battery cable (B).
4. Remove nuts (C) and bracket (D).
5. Remove battery (E) from machine.

CP00834,0003851-19-15JAN18

Service Battery

PY15286—UN—02JUN12

Battery

A—Positive (+) Battery Terminal
B—Negative (-) Battery Terminal

1. Keep battery clean by wiping with a damp cloth. Keep terminals (A and B) clean and tight. To remove any corrosion, wash terminals with a solution of four parts water to one part baking soda.

CAUTION: To avoid sparks, disconnect negative (ground) cable first and connect it last.

2. Keep battery fully charged, especially during cold weather. If a battery charger is connected, attach positive cable to the positive (+) battery terminal (A). Connect the negative (-) battery charger cable to a good ground on tractor frame.
3. Coat terminals with a small amount of grease.

CP00834,0003852-19-15JAN18

Battery Replacement Specifications

When replacing a battery, use a John Deere battery or equivalent. See your John Deere dealer.

Specification	
995 CCA Battery—Volts	12 V
BCI Group	31 H
Cold Cranking Amps at -17.8°C (0°F)	925

CP00834,0003853-19-15JAN18

Charge Battery

TS204—UN—15APR13

Battery Explosions

Service Interval—As Required

CAUTION: Gas given off by battery is explosive. Keep sparks and flames away from battery. Before connecting or disconnecting a battery charger, turn off charger. Make last connection and disconnection at a point away from battery.

PY15286—UN—02JUN12

Battery Terminals

A—Positive (+) Battery Terminal
B—Negative (-) Battery Terminal

1. With charger off, attach positive battery charger lead to positive (+) battery terminal (A). Attach negative charger lead to tractor frame, away from the battery.
2. Follow the instructions provided by the charger.
3. To disconnect battery charger, turn off charger. Remove negative charger lead first, then positive lead.

CP00834,0003854-19-15JAN18

Check Battery Condition

TS204—UN—15APR13

Battery Explosions

Service Interval—50 Hours / Weekly

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

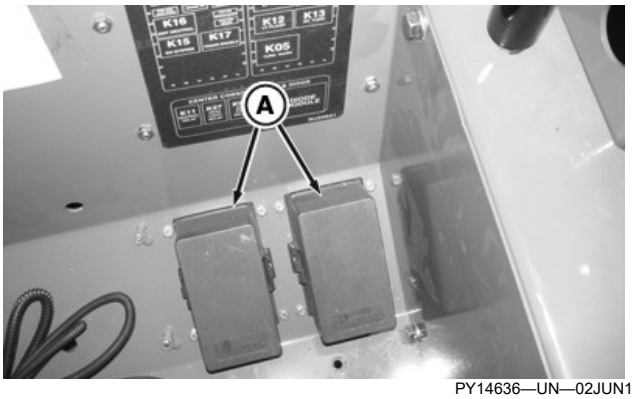
Never check the battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

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

1. Use a battery hydrometer to check specific gravity of electrolyte in each cell. Charge battery if reading is below 1.215. Replace battery if difference between cells is more than 0.050 or if battery will not charge above 1.225.
2. Always correct specific gravity reading for electrolyte temperature variation. Add 0.004 to the reading obtained in step one for every 10°F above 80°F (add 0.007 to the reading for every 10° above 27°C). Subtract at same rate if electrolyte temperature is below 80°F (27°C). Correct specific gravity of a fully charged battery is 1.265 to 1.280.
3. A battery is considered fully charged when three consecutive hydrometer readings, taken at hourly intervals, show no rise in specific gravity.

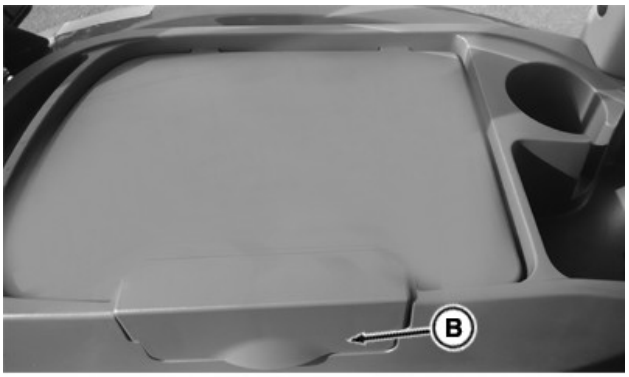
CP00834,0003855-19-15JAN18

Access Fuses and Relays



PY14636—UN—02JUN12

OOS Fuse Box Location



PY13337—UN—07MAY15

Cab Fuse Box Location

A—Fuse Box Cover (OOS)
B—Fuse Box Cover (Cab)

To remove fuse box cover:

- **OOS**—Pinch tabs and pull off cover (A).
- **Cab**—Pry off cover (B).

Fuse Rating	Color
5 Amp	Orange
10 Amp	Red
15 Amp	Blue
20 Amp	Yellow
30 Amp	Green

IMPORTANT: Do not replace original fuse with higher rated fuse or machine damage may occur.

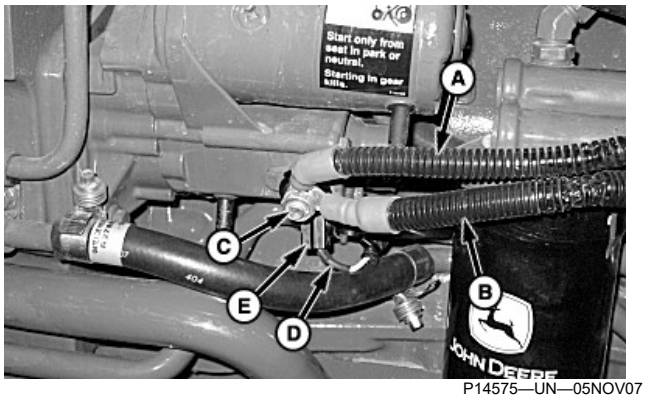
If original size fuse will not carry electrical load and continues to blow, contact your John Deere dealer.

CP00834,0003856-19-15JAN18

Starter Wiring Connections

CAUTION: To avoid shocks and burns, disconnect negative (-) cable before servicing any part of the electrical system.

Make all connections before reconnecting ground cable.



P14575—UN—05NOV07

Right-Hand Side

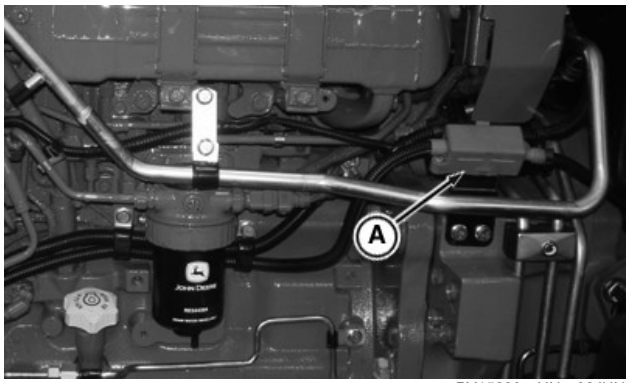
A—Cable
B—Positive Battery Cable
C—Large Terminal
D—Small Wire
E—Small Terminal

Cable (A) from fusible link and positive battery cable (B) are connected to large terminal (C).

To remove small wire (D), open tab and loosen screw on small terminal (E). To reinstall small wire, reinsert wire, tighten screw, and close tab.

CP00834,0003857-19-15JAN18

Fusible Link Location



PY15289—UN—02JUN12

Fusible link location

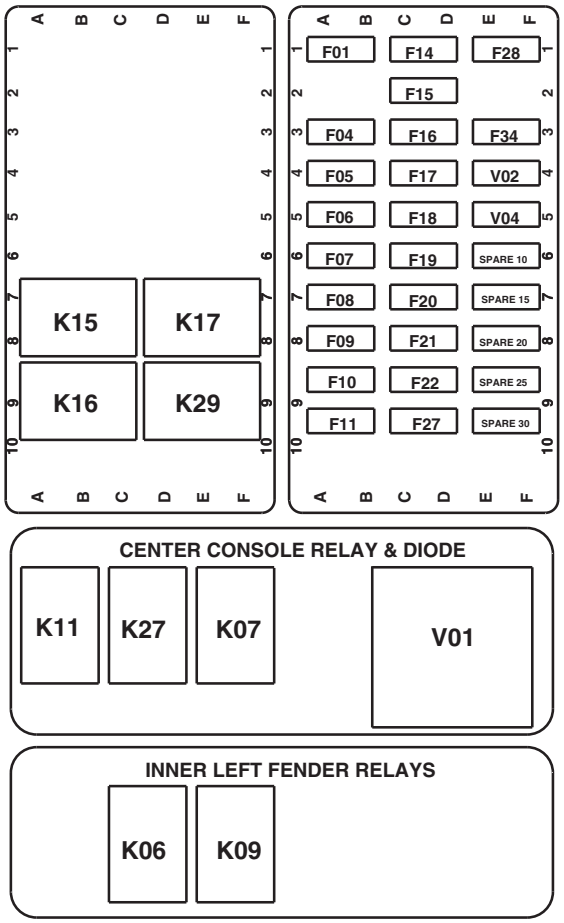
A—Fusible Link Junction Block (F26)

Electrical circuits are protected by a fusible link.

Raise hood. Fusible link junction block (A) is located on right-hand side of engine.

CP00834,0003858-19-15JAN18

Load Center Fuses and Relays—OOS



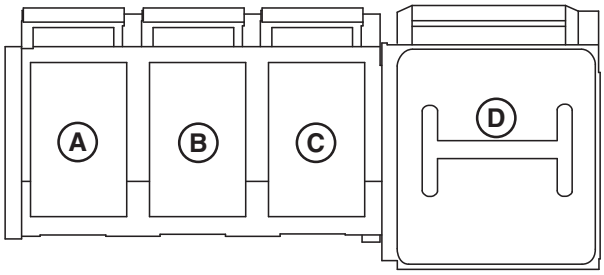
CPA0008071—UN—22FEB19

Load Center Fuses and Relays—OOS

F01—Key Switch Fuse (30 A)
F04—Light Switch Fuse (20 A)
F05—High/Low Beam Headlights Fuse (15 A)
F06—Junction Block Fuse (30 A)
F07—Turn Signal Fuse (10 A)
F08—Instrument Cluster Fuse (20 A)
F09—Brake Pedal Switch Fuse (15 A)
F10—Trailer Power Relay Fuse (30 A)
F11—Junction Block Fuse (30 A)
F14—Work Light (OOS) Relay Fuse (30 A)
F15—Tail Light Fuse (10 A)
F16—Engine Control Unit (ECU) Fuse (25 A)
F17—Engine Control Unit (ECU) Fuse (25 A)
F18—Engine Control Unit (ECU) Fuse (25 A)
F19—Electrohydraulic Control Unit (EHC) Fuse (10 A)
F20—Electrohydraulic System/Sensor Excitation Fuse (10 A)
F21—Electrohydraulic System Fuse (10 A)
F22—Seat Switch Fuse (10 A)
F27—Back-Up Alarm Fuse (5 A)
F28—Tail Light Fuse (10 A)
F34—Instrument Cluster Fuse (20 A)
K06—Trailer Power Relay
K07—Accessory Relay
K09—Front Work light Relay
K11—Neutral Relay
K15—Electrohydraulic System Relay
K16—Not Neutral Relay
K17—Transmission Enable Relay
K27—Headlight Relay
K29—Tail Light Relay
V01—Diode Block
V02—Warning Signal Diode
V04—Electrohydraulic System Relay Diode
SPARE 10—Spare Fuse (10 A)
SPARE 15—Spare Fuse (15 A)
SPARE 20—Spare Fuse (20 A)
SPARE 25—Spare Fuse (25 A)
SPARE 30—Spare Fuse (30 A)

CP00834,0006BDF-19-22FEB19

Load Center Fuses and Relays—OOS (Behind Instrument Panel)



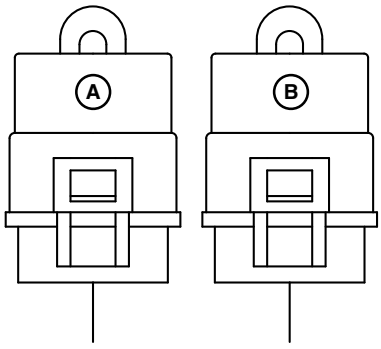
CPA0004697—UN—27FEB18

Under Instrument Panel

A—Neutral Relay (K11)
B—Headlights Relay (K27)
C—Accessory Controller Relay (K07)
D—Diode Module

CP00834,0003956-19-17JAN18

Load Center Fuses and Relays—OOS (Behind Panel at Left Rear Corner of Operators Station)



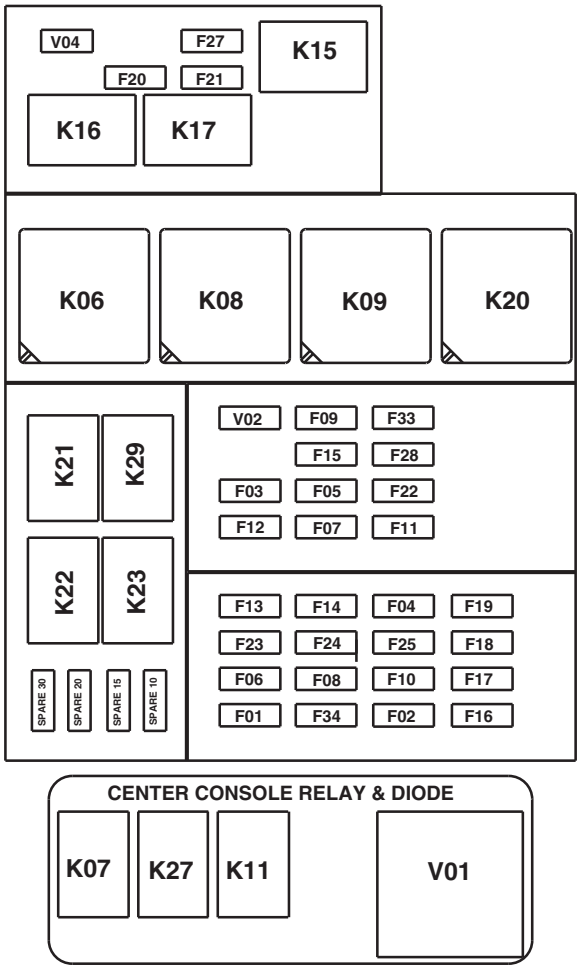
P15390—UN—04APR08

Behind Panel at Left Rear Corner of Operators Station

A—7-Pin Outlet Relay (K06)
B—Front Work Light Relay (K09)

CP00834,0003957-19-17JAN18

Load Center Fuses and Relays—Cab



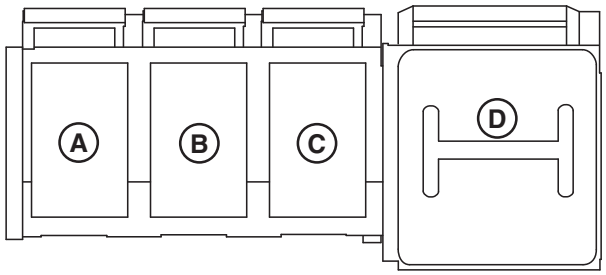
CPA0008072—UN—22FEB19

Load Center Fuses and Relays—Cab

F01—Key Switch Fuse (30 A)
F02—Turn Signal Relay / Warning Relay Fuse (20 A)
F03—Dome Light / Radio Fuse (10 A)
F04—Light Switch Fuse (20 A)
F05—High/Low Beam Headlights Fuse (15 A)
F06—Junction Block Fuse (30 A)
F07—Turn Signal Fuse (10 A)
F08—Instrument Cluster Fuse (20 A)
F09—Brake Pedal Switch Fuse (15 A)
F10—Trailer Power Relay Fuse (30 A)
F11—Junction Block Fuse (30 A)
F12—Radio / Clock Fuse (10 A)
F13—Rear Work Light Relay Fuse (30 A)
F14—Front Work Light (Cab) Relay Fuse (30 A)
F15—Tail Light Fuse (10 A)
F16—Engine Control Unit (ECU) Fuse (25 A)
F17—Engine Control Unit (ECU) Fuse (25 A)
F18—Engine Control Unit (ECU) Fuse (25 A)
F19—Electrohydraulic Control Unit (EHC) Fuse (10 A)
F20—Electrohydraulic System/Sensor Excitation Fuse (10 A)
F21—Electrohydraulic System Fuse (10 A)
F22—Seat Switch Fuse (10 A)
F23—Right Blower Relay Fuse (30 A)
F24—Wiper Relay Fuse (20 A)
F25—Left Blower Relay Fuse (20 A)
F27—Back-Up Alarm Fuse (5 A)
F28—Tail Light Fuse (10 A)
F33—Flood Light Fuse (10 A)
F34—Instrument Cluster Fuse (20 A)
K06—Trailer Power Relay
K08—Rear Work light Relay
K09—Front Work light Relay
K07—Accessory Relay
K11—Neutral Relay
K15—Electrohydraulic System Relay
K16—Not Neutral Relay
K17—Transmission Enable Relay
K20—HVAC Relay
K21—Wiper Relay
K22—Left Blower Relay
K23—Right Blower Relay
K27—Headlight Relay
K29—Tail Relay
V01—Diode Block
V02—Warning Signal Diode
V04—Electrohydraulic System Relay Diode
SPARE 10—Spare Fuse (10 A)
SPARE 15—Spare Fuse (15 A)
SPARE 20—Spare Fuse (20 A)
SPARE 30—Spare Fuse (30 A)

CP00834,0006BE0-19-22FEB19

Load Center Fuses and Relays—Cab (Behind Instrument Panel)



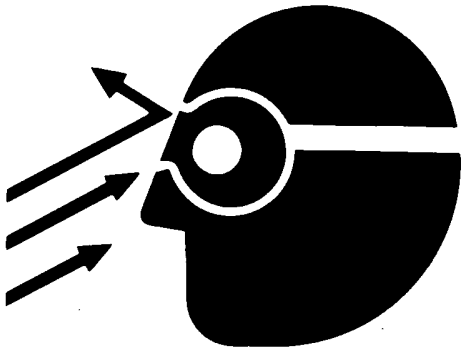
CPA0004697—UN—27FEB18

Under Instrument Panel

A—Accessory Controller Relay (K07)
B—Headlights Relay (K27)
C—Neutral Relay (K11)
D—Diode Module

CP00834,0003959-19-17JAN18

Handle Halogen Light Bulbs Safely



TS266—UN—23AUG88

Safety—Wear Eye Protection

H39474—UN—30JUN00

Bulb Replacement

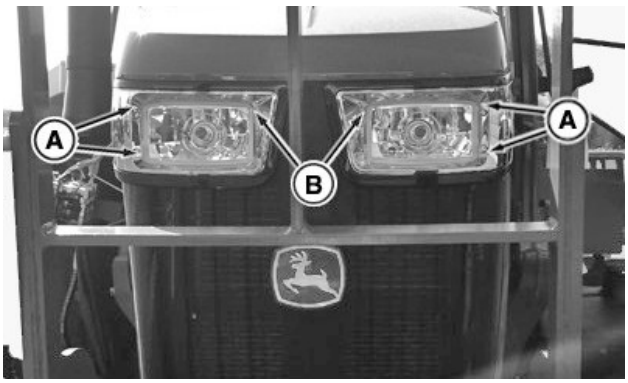
A—Halogen Bulb

CAUTION: Halogen bulbs (A) contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. To avoid possible injury:

- **Handle bulb by its base. Keep bulb oil free; wear gloves to avoid touching glass.**
- **Turn light switch off and allow bulbs to cool before changing. Leave switch off until bulb change is done.**
- **Wear eye protection.**
- **Do not drop or scratch bulb. Keep away moisture.**
- **Place used bulb in the new bulb's carton and dispose of properly. Keep out of the reach of children.**

CP00834,000385E-19-15JAN18

Adjust Headlights



CPA0005108—UN—12JAN18

Headlights

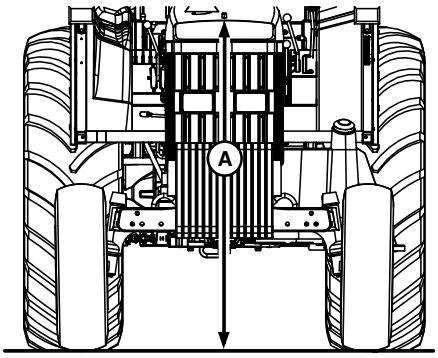
A—Top Adjusting Screws (4 used)
B—Bottom Adjusting Screws (2 used)

Service Interval—As Required

IMPORTANT: Apply penetrating spray lubricant to the threads of top and bottom adjusting screws before starting procedure. If this is not done, it will be quite hard to turn adjusting screws in either direction.

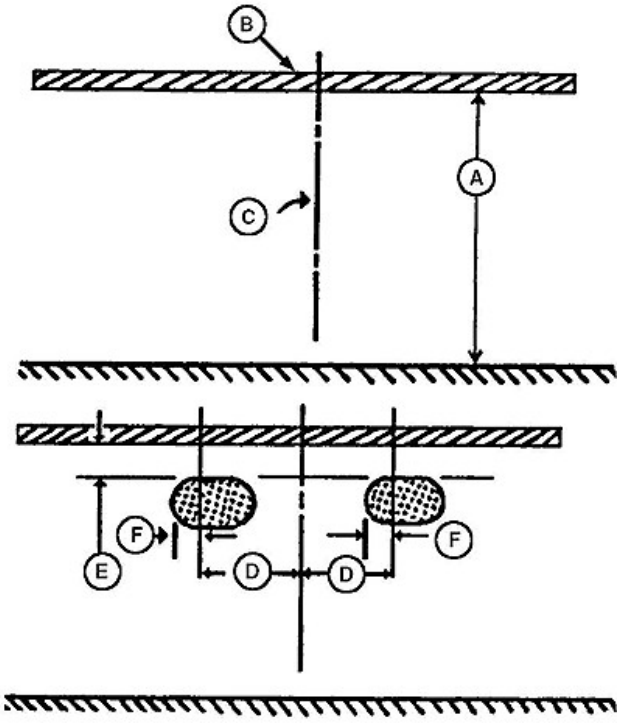
- To raise light beam, turn top adjusting screws (A) counterclockwise.
- To lower light beam, turn top adjusting screws (A) clockwise.
- To turn light beam inward, turn bottom adjusting screw (B) counterclockwise.
- To turn light beam outward, turn bottom adjusting screw (B) clockwise.

Aim Headlights



P9136—UN—22SEP00

Aiming Headlights



CPA0004833—UN—27DEC17

Arrange on Wall

A—Hood-to-Ground Distance

B—Masking Tape
C—Tractor Centerline
D—Center of Headlight
E—Top of Zone
F—Left Edge of Zone

1. Park tractor on level ground, with lights 8 m (25 ft) from a wall.
2. Measure from top of hood to the ground (A). Place a strip of masking tape (B) on the wall at the same height.
3. Place a piece of tape, folded in the middle to make a point, on the top front center of the hood.
4. Using the hood tape as a guide, sight across steering wheel and hood to locate tractor centerline. Mark tractor centerline (C) on wall.
5. From tractor centerline (C), mark a point 130 mm (5 in) out in each direction (D). This mark locates a point directly in front of each headlight center.
6. Turn light switch to road lights position, then set headlight dimmer switch to low beam.
7. Locate small zone of bright light projected by each lamp. Cover other lamps if necessary. Top of zone (E) should be 130 mm (5 in) below the tape. Left edge of zone (F) should be 130 mm (5 in) left of lamp location marked (D).
8. Adjust as necessary.

CP00834,000385F-19-15JAN18

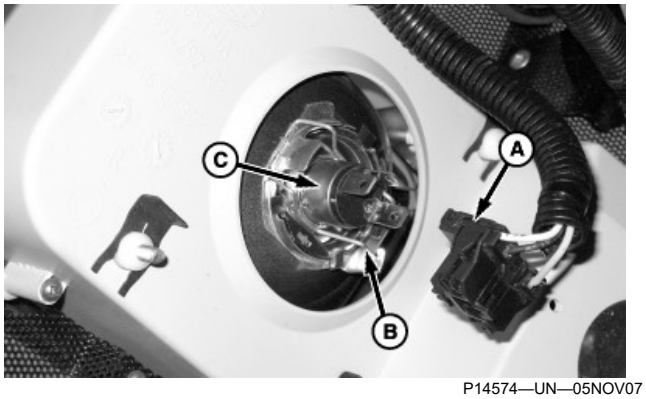
Replace Headlight Element

Service Interval—As Required

CAUTION: To guard against personal injury, wear protective eyeglasses and clothing when handling bulb. Turn power off when installing and before removing bulb. Dispose of bulb with care.

Allow bulb to cool before removing.

Read and follow all bulb manufacturer's installation instructions.



P14574—UN—05NOV07

Replace Headlight Bulb

A—Connector
B—Retaining Clip
C—Bulb

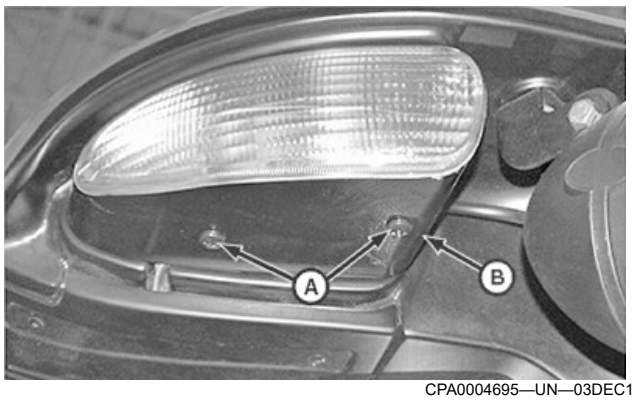
1. Raise hood.
2. Remove connector (A).
3. Remove retaining clip (B).
4. Remove and discard old bulb (C).
5. Insert new bulb and close retaining clip.
6. Reattach connector (A) to new bulb and close hood.

CP00834,0003860-19-15JAN18

Replace Roof Hazard Light Bulb—Cab

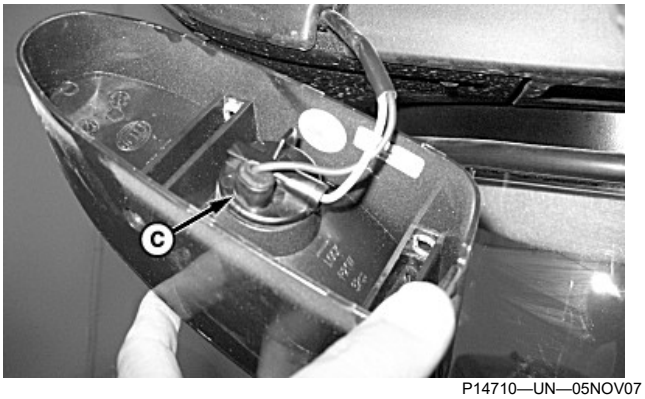
Service Interval—As Required

NOTE: Procedure is the same for all warning lights on machine.



CPA0004695—UN—03DEC17

Left Rear



P14710—UN—05NOV07

Remove Bulb

P14711—UN—05NOV07

Bulb

A—Socket Head Screws (2 used)
B—Lens
C—Bulb Socket
D—Bulb

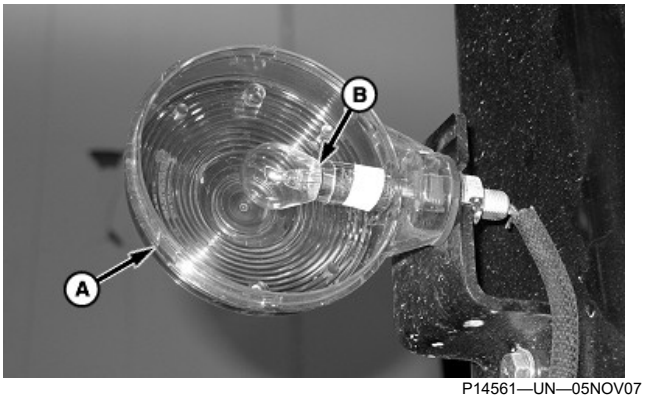
1. Remove socket head screws (A) and lens (B).
2. Twist and pull to remove bulb socket (C) from lens.
3. Gently push and turn bulb (D) to remove.
4. Install new bulb.
5. Reinstall bulb sockets to lens.
6. Inspect rubber seal for cracks that may cause leaks. Replace if necessary.
7. Reinstall lens (B) with previously removed socket head screws (A).

CP00834,0003861-19-15JAN18

Replace Hazard Light Bulb—OOS

Service Interval—As Required

NOTE: Procedure is the same for both sides of machine.



P14561—UN—05NOV07

Left Side

A—Lens
B—Bulb

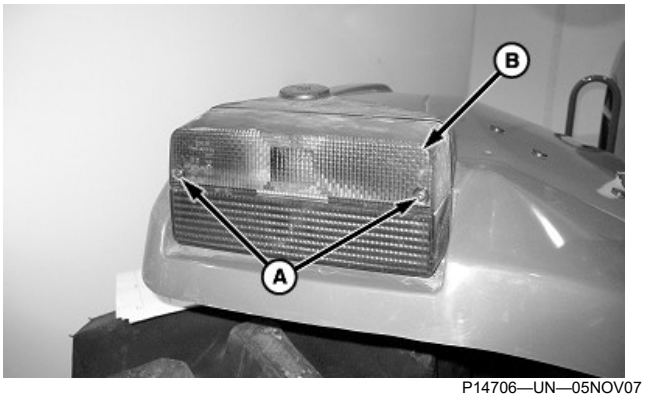
1. Pry off half of lens (A) to reveal bulb (B).
2. Gently turn bulb counterclockwise to remove.
3. Insert new bulb and turn clockwise until it sets in.
4. Snap on previously removed lens.
5. Repeat procedure of right-hand side if necessary.

CP00834,0003862-19-15JAN18

Replace Tail and Turn Light Bulbs—OOS

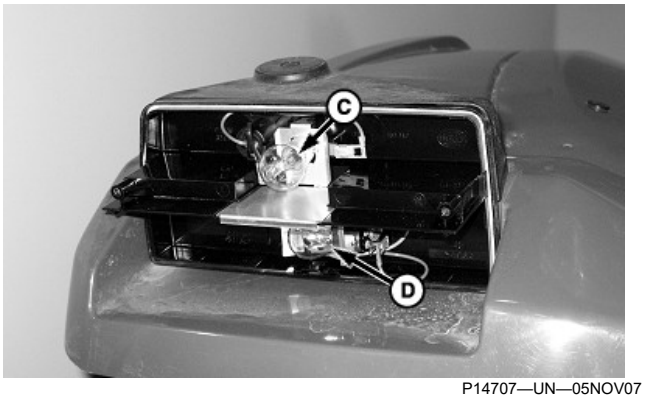
Service Interval—As Required

NOTE: Procedure is the same for both sides of machine.



P14706—UN—05NOV07

Left Rear



P14707—UN—05NOV07

Remove Bulb

A—Screws (2 used)
B—Lens
C—Turn Signal Bulb
D—Tail Light Bulb

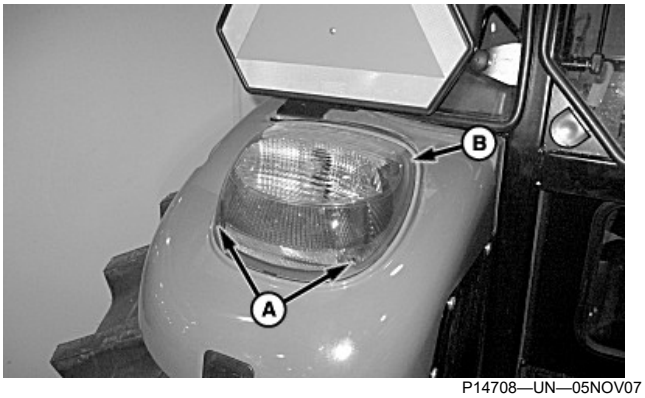
1. Remove screws (A) and lens (B).
2. Gently push and turn bulbs (C and D) to remove.
3. Gently push and turn new bulbs to install.
4. Reinstall lens (B) with previously removed screws (A).

CP00834,0003863-19-15JAN18

Replace Tail and Turn Light Bulbs—Cab

Service Interval—As Required

NOTE: Procedure is the same for both sides of machine.



P14708—UN—05NOV07

Left Rear

P14709—UN—05NOV07

Bulb

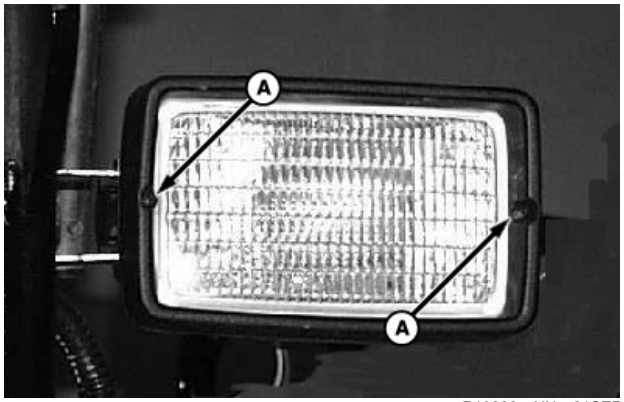
A—Screws (2 used)
B—Lens
C—Turn Signal Socket
D—Tail Light Socket
E—Bulb

1. Remove screws (A) and lens (B).
2. Twist and pull to remove sockets (C and D) from lens.
3. Gently push and turn bulb (E) to remove.
4. Install new bulbs.
5. Reinstall sockets to lens.
6. Inspect rubber seal for cracks that may cause leaks. Replace if necessary.
7. Reinstall lens (B) with previously removed screws (A).

CP00834,0003864-19-15JAN18

Replace Worklight Element—OOS

Service Interval—As Required

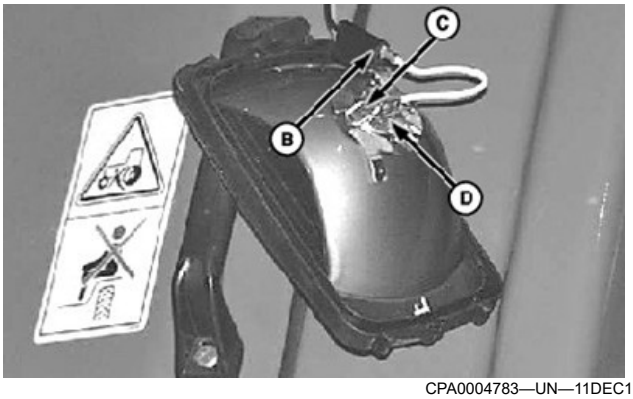


P10222—UN—21SEP01

Worklight Assembly

A—Screws (2 used)

1. Remove screws (A) and bezel.



CPA0004783—UN—11DEC17

Worklight Bulb Replacement

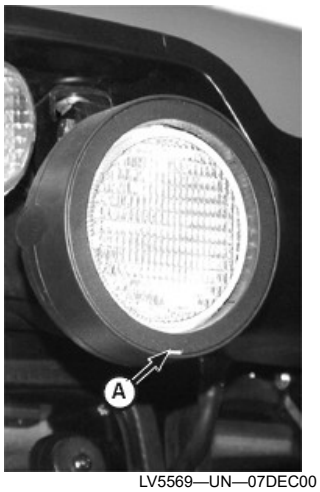
B—Connector
C—Clip
D—Bulb

2. Disconnect connector (B).
3. Release clip (C) across bottom of light fixture.
4. Grasp bulb base (D) and pull it straight out. Properly dispose of old bulb.
5. Slide new bulb assembly into fixture housing and reapply clip (C).
6. Inspect rubber seal for cracks that may cause leaks. Replace if necessary.
7. Connect bezel to connector (B).
8. Reinstall bezel and screws.

CP00834,0003865-19-15JAN18

Replace Worklight Element—Cab

Service Interval—As Required



LV5569—UN—07DEC00

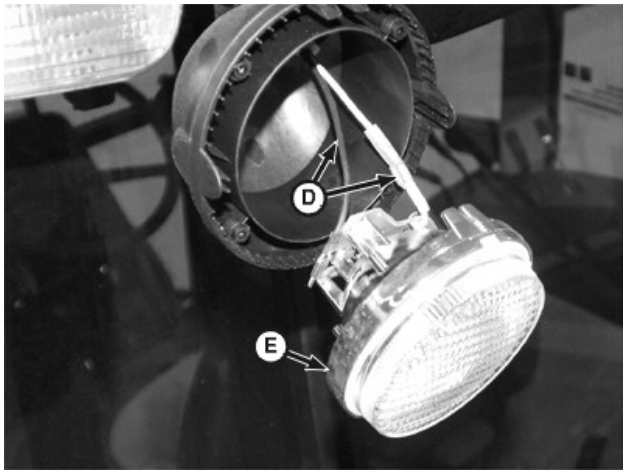
Remove Cover

LV5570—UN—07DEC00

Remove Cover and Screws

A—Cover
B—Screw (4 used)
C—Retaining Ring

1. Pry off cover (A).
2. Remove screws (B), retaining ring (C), and worklight bezel (E) from housing.



LV5571—UN—07DEC00

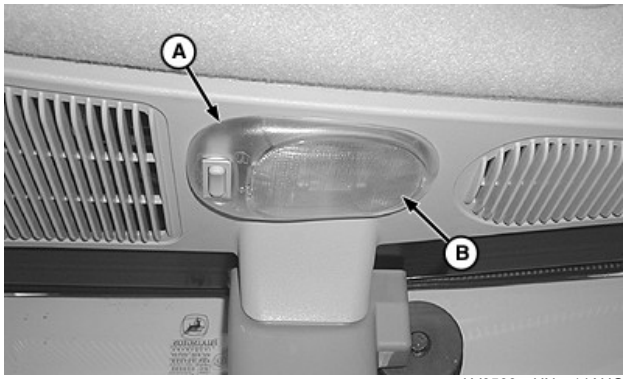
Remove WorkLight

D—Connectors (2 used)
E—Worklight Bezel

3. Disconnect connectors (D).
4. Release clip. Remove and discard old bulb.
5. Inspect rubber seal for cracks that may cause leaks. Replace if necessary.
6. Slide new bulb into worklight bezel (E) and reapply clip.
7. Connect bezel to connector.
8. Reinstall bezel, screws, and cover.

CP00834,0003866-19-15JAN18

Replace Dome Light Bulb—Cab



LV8588—UN—14AUG03

Dome Light

A—Dome Light Housing
B—Dome Light Cover

1. Remove dome light cover (B) from dome light housing (A) using a screwdriver.

LV8587—UN—14AUG03

Replace Bulb

C—Dome Light Bulb

2. Pull dome light bulb (C) from socket. Replace dome light bulb.
3. Install dome light cover to dome light housing.

CP00834,0003867-19-15JAN18

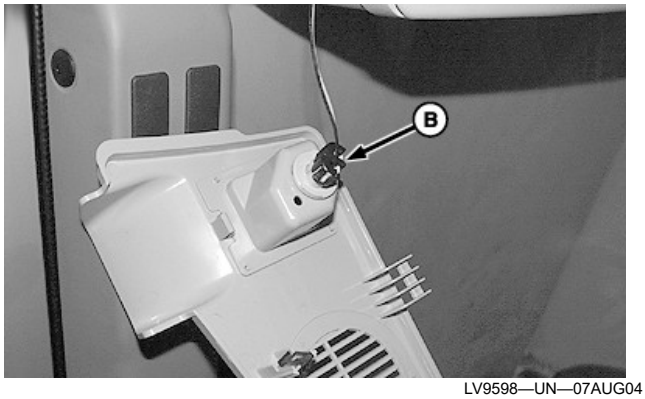
Replace Controls Illumination Light Bulb—Cab

LV9515—UN—07AUG04

Remove Panel

A—Panel

1. Pry off panel (A).



LV9598—UN—07AUG04

Remove Bulb

B—Light Bulb Retainer

2. Rotate light bulb retainer (B) counterclockwise approximately 1/4 turn and remove.
3. Pull out light bulb.
4. Install new bulb in reverse order of removal.

CP00834,000395A-19-17JAN18

Replace Rotary Beacon Light Bulb

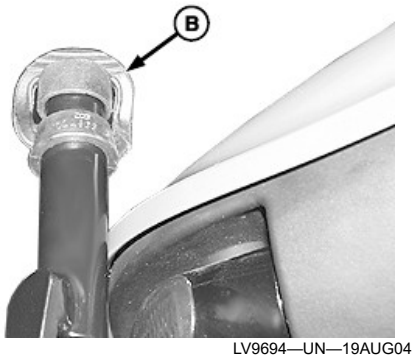
CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handle Halogen Light Bulbs Safely in this section.)

LV9693—UN—19AUG04

Loosen Wing Nut

A—Wing Nut

1. Loosen wing nut (A) and remove rotary beacon light assembly.

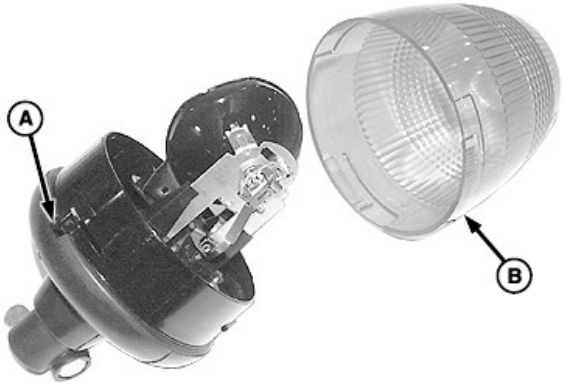


LV9694—UN—19AUG04

Install Cap

B—Rubber Cap

2. Install rubber cap (B).

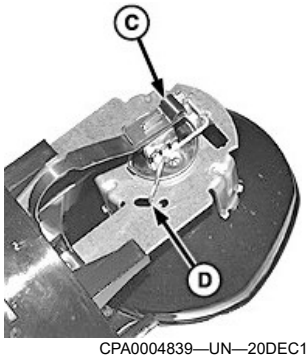


LV9695—UN—19AUG04

Remove Lens

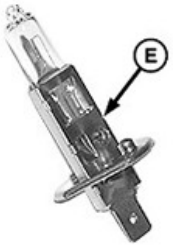
A—Tab
B—Lens

3. Depress tab (A) and rotate lens (B) counterclockwise to remove.



CPA0004839—UN—20DEC17

Remove Bulb



CPA0004840—UN—20DEC17

Bulb

C—Tab
D—Retaining Spring
E—Bulb

4. Pull tab (C) away from bulb.
5. Unlatch retaining spring (D) and remove light bulb (E).
6. Install new bulb in reverse order of removal.

CP00834,0003869-19-15JAN18

Use Correct Transmission/Hydraulic Filter Element

To protect systems, replace transmission/hydraulic oil filter with a John Deere service filter element.

See Transmission Maintenance section for recommended filter change intervals.

CP00834,000386A-19-15JAN18

Check Neutral Start System—PR

Service Interval—250 Hours

Transmission Control

1. Make sure that everyone is clear of tractor.
2. Fully depress clutch and brake pedals.

PY21085—UN—08MAY15

PowrReverser™ Lever

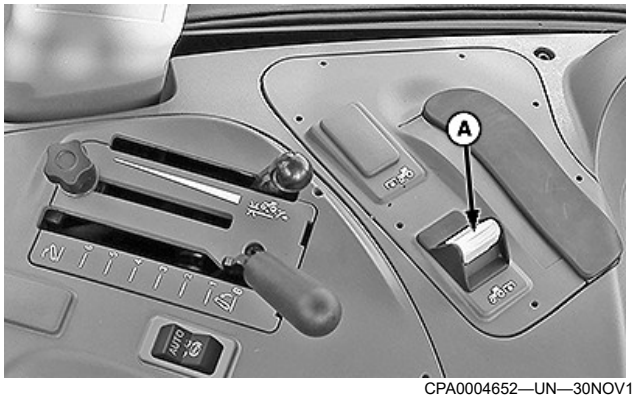
A—PowrReverser™ Lever

3. Move PowrReverser™ lever (A) to FORWARD or REVERSE position.
4. Start engine. If engine starts in either of these positions, neutral start system should be repaired. See your John Deere dealer **immediately**.

Engine should start with lever in NEUTRAL position only.

PTO Switch

1. Fully depress clutch and brake pedals.



CPA0004652—UN—30NOV17

PTO Control Switch, Cab

A—PTO Switch

2. Push down and forward on PTO switch (A) to engaged position.
3. Start engine. PTO cannot engage until the PTO switch (A) is pulled rearward and then back forward. If PTO engages when engine is started and switch engaged, this should be inspected. See your John Deere dealer **immediately**.

NOTE: Engine should start regardless of PTO switch position.

CP00834,000395B-19-17JAN18

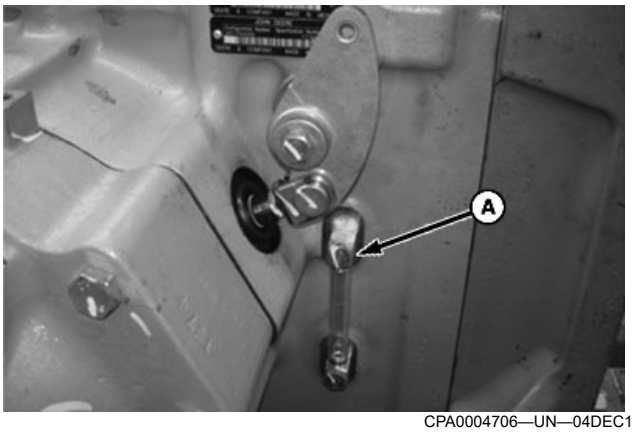
Check Transmission-Hydraulic Oil Level

Service Interval—Daily / 10 Hours

IMPORTANT: Routine checks will help prevent downtime. The operator can aid in preventive maintenance by documenting all leak and malfunction problems. Since the transmission operates in oil, it is very important to keep oil clean and at correct level at all times.

NOTE: Oil temperature should be approximately 45°C (113°F). Sight glass observations will be significantly higher with hotter oil temperatures and lower with colder oil.

1. Operate engine at approximately 1000 rpm for at least 1 minute.
2. Move rockshaft lever full forward to lower hitch all the way down.
3. Stop engine and wait an additional 3 minutes before checking oil level.



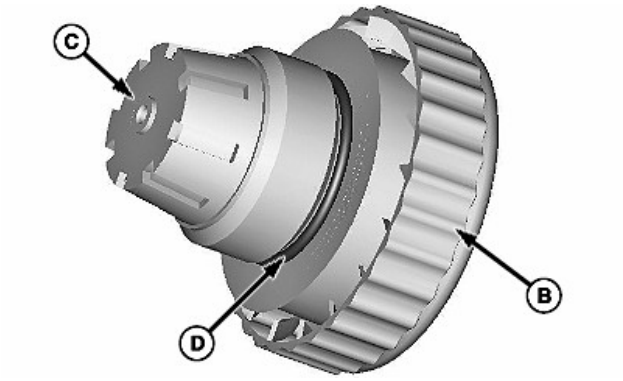
CPA0004706—UN—04DEC17

Sight Glass

A—Sight Glass

4. Check level at sight glass (A). Oil level should be between upper and lower lines on sight glass.

IMPORTANT: Oil level above the top mark on sight glass can result in power loss and heat generation during transport.



CPA0005097—UN—09FEB18

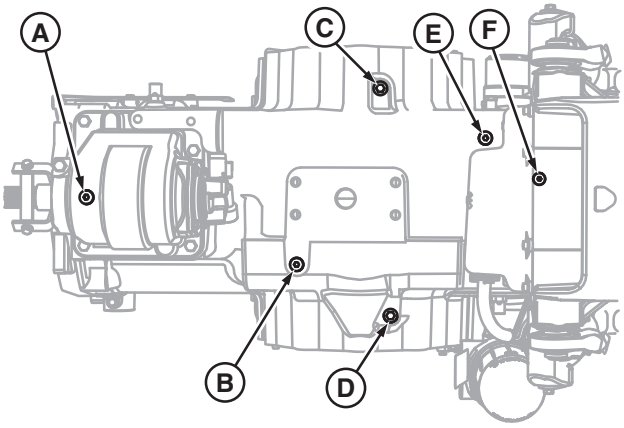
Filler Cap

B—Filler Cap
C—Vents
D—Rubber Seal

5. If oil level is below the lower mark, remove filler cap (B) and add oil.
6. Inspect and thoroughly clean all filler cap vents (C).
7. Inspect rubber seal (D) for cracks or other imperfections. Replace if necessary.
8. Install filler cap.

CP00834,000386C-19-15JAN18

Change Transmission-Hydraulic Oil



CPA0004831—UN—27FEB18

View From Below

A—MFWD Axle Drop Gear Box Drain Plug (if Equipped)
B—Transmission Main Case Drain Plug
C—Left-Hand Side Final Drive Drain Plug
D—Right-Hand Side Final Drive Drain Plug
E—PTO Case Drain Plug
F—Draft Sense Drain Plug

Service Interval—1000 Hours

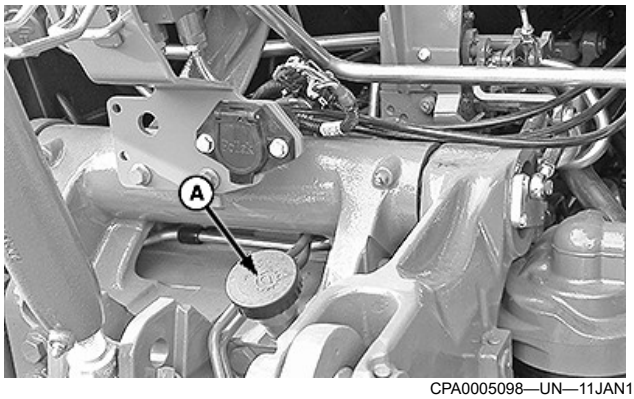
1. Move rockshaft lever full forward to lower hitch all the way down.
2. Remove drain plugs (A—F).

3. Replace transmission-hydraulic oil filter. (See procedure in this section.)

NOTE: Always dispose of used oil in accordance with applicable laws and regulations.

4. Install all plugs.

IMPORTANT: Do not overfill transmission. This will cause overheating and result in transmission damage.



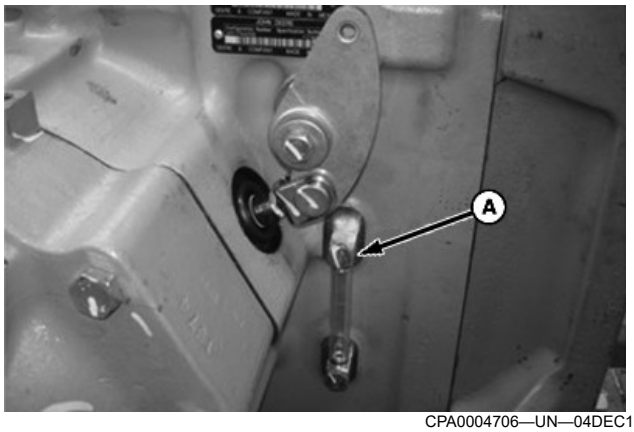
CPA0005098—UN—11JAN18

Filler Cap

A—Filler Cap

5. Remove filler cap (A) and fill system with oil as specified in Fuels, Lubricants, and Coolants section.

Specification	
Transmission-Hydraulic Oil—Capacity	58 L (15.3 gal)



CPA0004706—UN—04DEC17

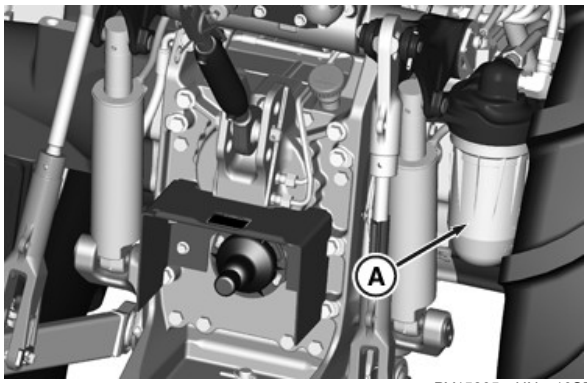
Sight Glass

A—Sight Glass

6. Check oil level at sight glass (A) after filling.
7. Install filler cap.
8. Start engine and operate for 5 minutes.
9. Shut off engine and check oil level. Add oil if necessary.

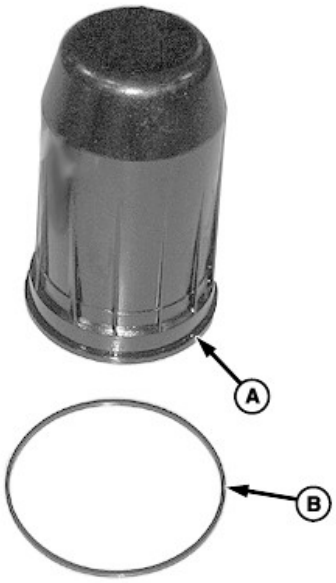
CP00834,000386D-19-06MAR18

Replace Transmission-Hydraulic Oil Filter



PY15265—UN—10SEP12

Hydraulic Filter Housing



P15271—UN—07APR08

Seals

A—Filter Housing Assembly
B—Filter O-Ring Seal

Service Interval
Initial—100 Hours
Regular—500 Hours

NOTE: Replace hydraulic filter housing and filter as a complete assembly.

1. Remove filter housing assembly (A) and filter O-ring seal (B).
2. Discard filter housing assembly (A) and filter O-ring seal (B).

3. Inspect new filter assembly and seal for any possible damage.
4. Apply hydraulic oil to new filter O-ring seal (B) and install on filter assembly.
5. Install new filter assembly and tighten to specification.

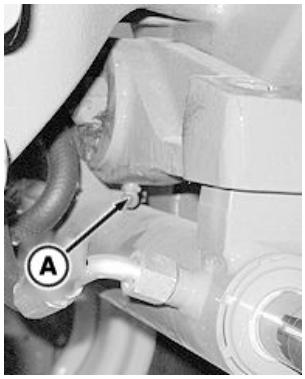
Specification

Hydraulic Oil Filter—Torque. . . . . 24 N·m (212 lb·in)

6. Run engine for 5 minutes.
7. Shut off engine and check oil level. Add hydraulic oil as required. (See Check Transmission-Hydraulic Oil Level in this section.)

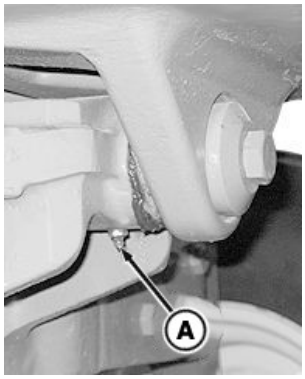
CP00834,000386E-19-15JAN18

Lubricate Front Axle Pivot Pins



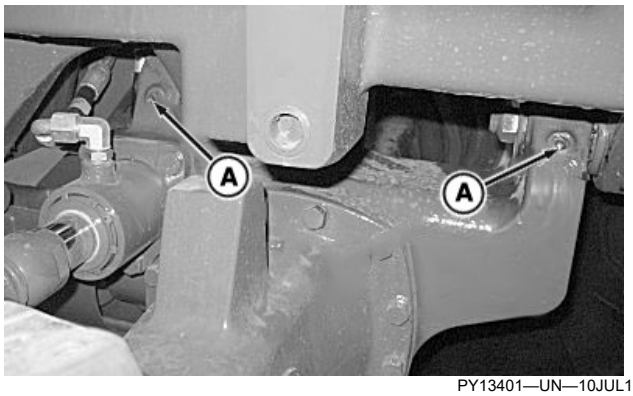
PY13399—UN—10JUL15

2WD Axle—Rear



PY13400—UN—10JUL15

2WD Axle—Front



PY13401—UN—10JUL15

MFWD Axle (Right-Hand Side)

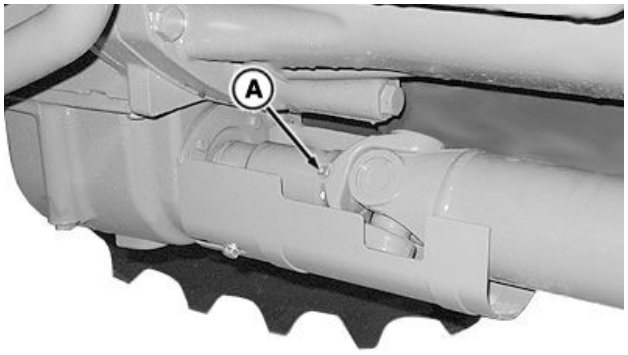
A—Lube Fittings

Service Interval—Weekly / 50 Hours*
** Daily / 10 Hours if operated in extremely wet or muddy conditions*

Lubricate front axle pivot pins at the lube Fittings (A) as shown.

CP00834,000386F-19-15JAN18

Lubricate MFWD Axle Shaft



PY13402—UN—10JUL15

MFWD Shaft

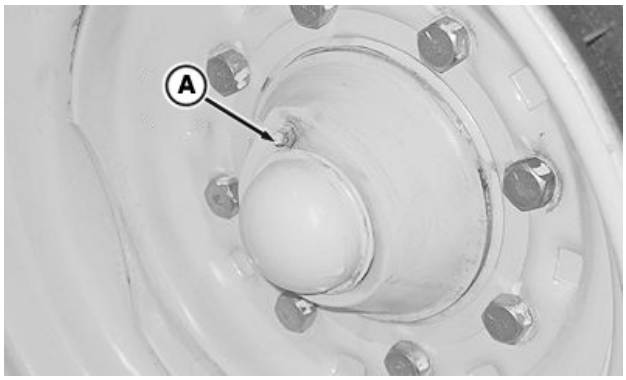
A—Lube Fitting

Service Interval—Weekly / 50 Hours*
** Daily / 10 Hours if operated in extremely wet or muddy conditions*

Lubricate MFWD Axle shaft at the lube fitting (A) as shown.

CP00834,0003870-19-15JAN18

Lubricate Front Wheel Bearings (2WD Axle)



PY13403—UN—10JUL15

Front Wheel Bearings

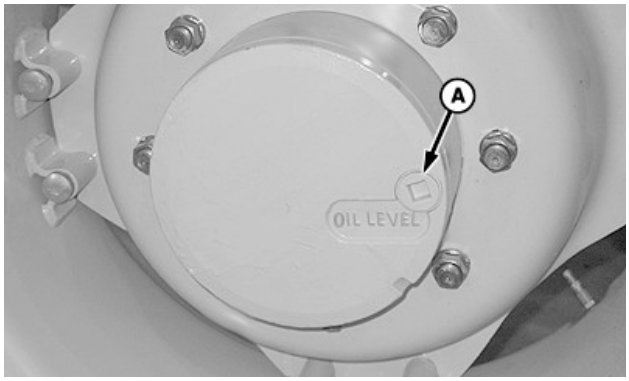
A—Lube Fitting

Service Interval—500 Hours

Lubricate front wheel bearings at the lube fitting (A) as shown.

CP00834,0003871-19-15JAN18

Check MFWD Axle Wheel Hub Oil Level



P14513—UN—16FEB08

Wheel Hub Oil Level

A—Plug

Service Interval—250 Hours

1. Park tractor on level surface.

2. Turn wheel hubs until the words OIL LEVEL are horizontal.
3. Remove plug (A). Oil level should be just below plug hole.
4. If low, add oil through same hole. John Deere Standard JDM J20C oil is recommended. (See MFWD Axle and Wheel Hub Oil in Fuels, Lubricants, and Coolants section.)
5. Apply pipe sealant with TEFLON®, or equivalent, to threads of plug.
6. Install plug and tighten to specifications.

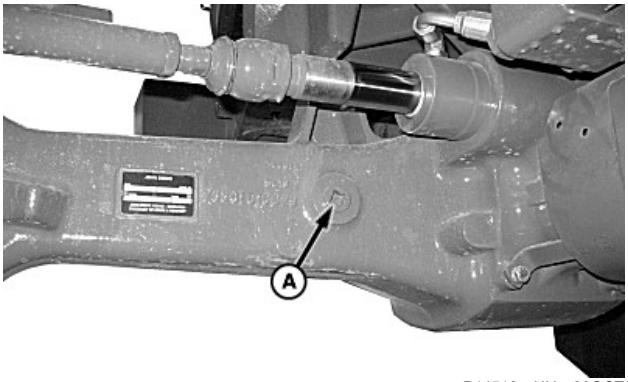
Specification

Plug-to-Hub—Torque. . . . . 150 N·m (110 lb·ft)

7. Repeat procedure on opposite wheel hub.

CP00834,0003872-19-15JAN18

Check MFWD Axle Housing Oil Level



P14512—UN—30OCT07

MFWD Axle Level

A—Plug

Service Interval—250 Hours

1. Park tractor on level surface.
2. Remove plug (A). Oil level should be approximately 12 mm (1/2 in) below edge of plug hole.
3. If low, add oil through same hole. John Deere Standard JDM J20C oil is recommended. (See MFWD Axle and Wheel Hub Oil in Fuels, Lubricants, and Coolants section.)
4. Apply pipe sealant with TEFLON®, or equivalent, to threads of plug.
5. Install plug and tighten to specifications.

Specification

Plug-to-Axle Housing—Torque. . . . . 150 N·m (110 lb·ft)

CP00834,0003873-19-15JAN18

Change MFWD Axle Wheel Hub Oil

P14517—UN—30OCT07

Plug Position to Drain Oil

A—Drain/Fill Port Plug

Service Interval
Initial—100 Hours
Regular—1000 Hours

NOTE: Approximate wheel hub oil level is 0.8 L (0.85 qts).

1. Park tractor on level surface.
2. Rotate wheel until drain/fill port plug (A) is at bottom of hub.
3. Remove plug and drain oil.
4. After oil has drained, rotate wheel until drain/fill port is positioned horizontally.
5. Add oil until level is just below edge of hole. John Deere Standard JDM J20C oil is recommended. (See MFWD Axle and Wheel Hub Oil in Fuels, Lubricants, and Coolants section.)
6. Apply pipe sealant with TEFLON®, or equivalent, to threads of plug.
7. Install plug and tighten to specifications.

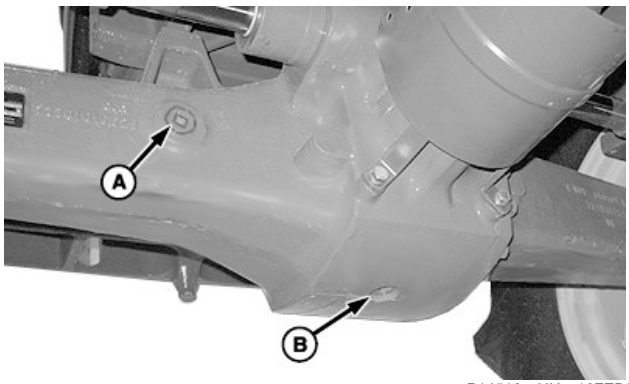
Specification

Plug-to-Hub—Torque. . . . . 150 N·m (110 lb·ft)

8. Repeat procedure on opposite wheel hub.

CP00834,0003874-19-15JAN18

Change MFWD Axle Housing Oil



P14516—UN—16FEB08

MFWS Drain/Fill Port

A—Inspection/Fill Plug
B—Drain Plug

Service Interval
Initial—100 Hours
Regular—1000 Hours

NOTE: Approximate wheel hub oil level is 5.0 L (5.3 qts).

1. Park tractor on level surface.
2. Remove plugs (A and B).
3. After oil has drained, apply pipe sealant with TEFLON®, or equivalent, to threads of drain plug (B).
4. Install plug and tighten to specifications.
5. Add oil until approximately 12 mm (1/2 in) below edge of fill plug port. John Deere Standard JDM J20C oil is recommended. (See MFWD Axle and Wheel Hub Oil in Fuels, Lubricants, and Coolants section.)
6. Install plug and tighten to specifications.

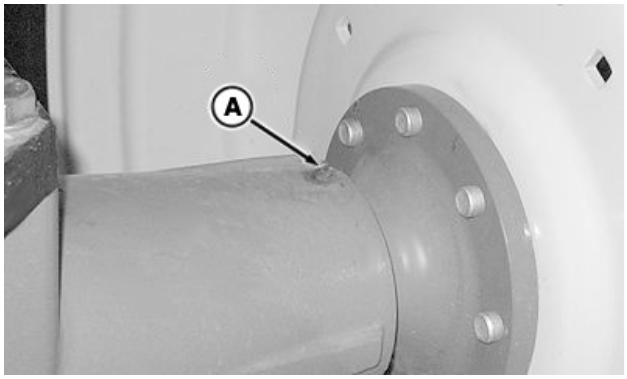
Specification	
Plugs-to-Axle Housing—Torque	150 N·m (110 lb·ft)

IMPORTANT: To avoid damage to internal axle components, check oil level after 30 minutes.

7. After approximately 30 minutes of operation, recheck oil level. (See procedure in this section.)

CP00834,0003875-19-15JAN18

Lubricate Rear Axle Bearings



PY13404—UN—10JUL15

Right-Hand Side

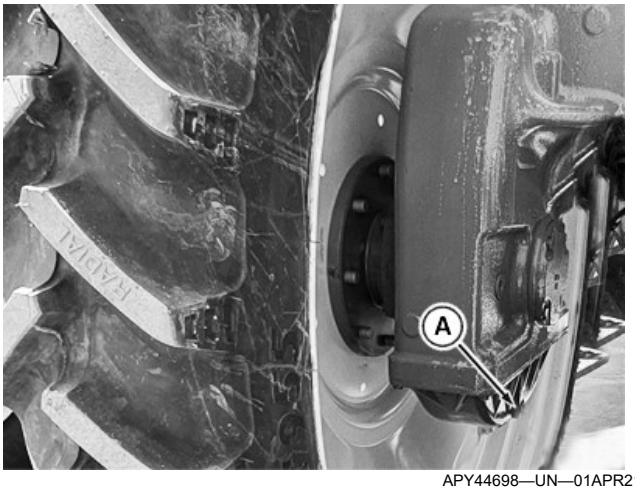
A—Lube Fitting (2 used)

Service Interval—500 Hours*
** Weekly / 50 Hours if operated in extremely wet or muddy conditions*

Lubricate rear axle bearings at the lube fittings (A) as shown.

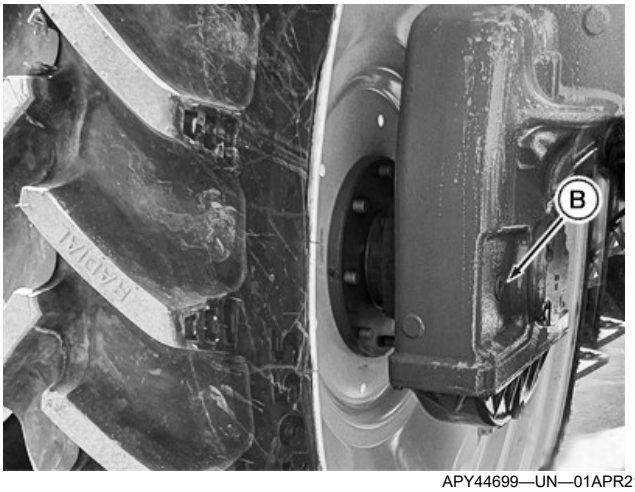
CP00834,000395C-19-17JAN18

Change High Crop Rear Axle Oil



APY44698—UN—01APR21

Rear Axle Fitting



APY44699—UN—01APR21

Rear Axle Fitting

A—Drain Plug
B—Filling Port

Service Interval—1200 Hours*

1. Park tractor on the level ground and shutoff engine. Remove key.
2. Remove drain plug (A) and fill the port (B). Drain oil into pan and dispose of the waste oil properly.
3. Apply Teflon™ or equivalent on the thread of the drain plug (A).
4. Install drain plug (A).
5. Fill the system with the transmission-hydraulic oil. (See Transmission, Steering, Brake, Hydraulic, and Gear Case Oil in Fuels, Lubricants, and Coolants section).

Specification	
High Crop Axle - Capacity per Axle—Capacity	6.4 L

6. Apply Teflon™ or equivalent on the thread of the fill port (B).
7. Install the fill port (B).

GS38198,0000F72-19-26MAY21

Lubricate PTO Stub Shaft

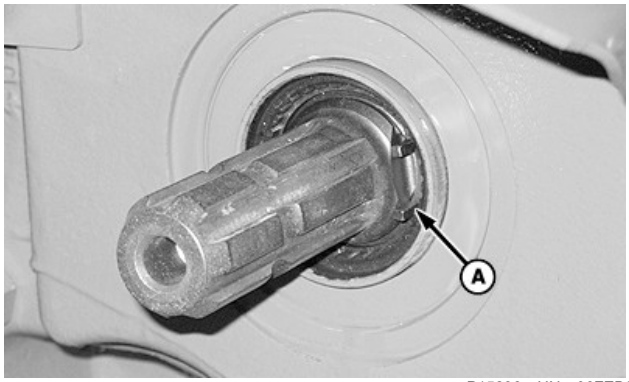
TS1644—UN—22AUG95

Stay Clear of Rotating PTO

1. Place tractor in PARK position and shut off engine. Remove key.

IMPORTANT: If the 21-splined end (1000 rpm) needs to face out, the snap ring can be assembled after the PTO shaft is inserted into the PTO housing.

If the 21-splined end (1000 rpm) needs to face out, the snap ring can be assembled after the PTO shaft is inserted into the PTO housing.



P15236—UN—06FEB08

Snap Ring

LV12604—UN—26APR05

Stub Shaft

A—Snap Ring
B—Stub Shaft
C—Bore

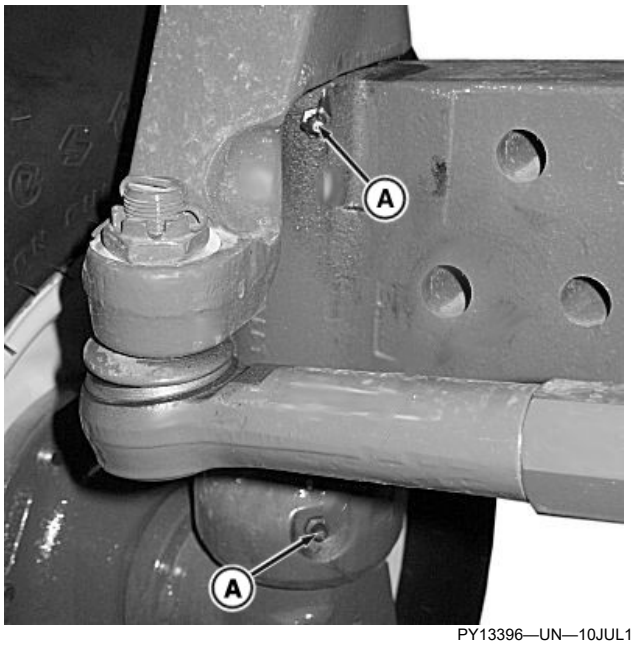
2. Remove the snap ring (A) with the PTO stub shaft (B). If the 6-splined end is facing out, align the snap ring ends with the access flat first.
3. Clean PTO shaft thoroughly and coat with grease. Make sure the end bore (C) is clean.
4. Insert PTO shaft back into the PTO housing:
   - If the 6-splined end (540 rpm) needs to face out, put the snap ring in the groove of the shaft. Align the ends to the access flat before the shaft is in the PTO housing. Move the shaft with the snap ring in the PTO housing until the snap ring snaps into the groove.
   - If the 21-splined end (1000 rpm) needs to face out, the snap ring can be assembled after the PTO shaft is inserted PTO housing.

CP00834,000395D-19-17JAN18

Lubricate Steering Linkage

2WD Axle

Service Interval—Weekly / 50 Hours*
** Daily / 10 Hours if operated in extremely wet or muddy conditions*



PY13396—UN—10JUL15

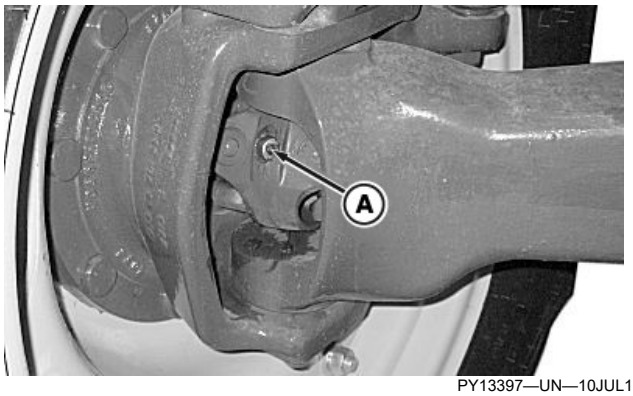
Left-Hand Side

A—Steering Spindle Fittings (4 used)

Apply several shots of grease to steering spindle fittings (A), on both left-hand and right-hand sides.

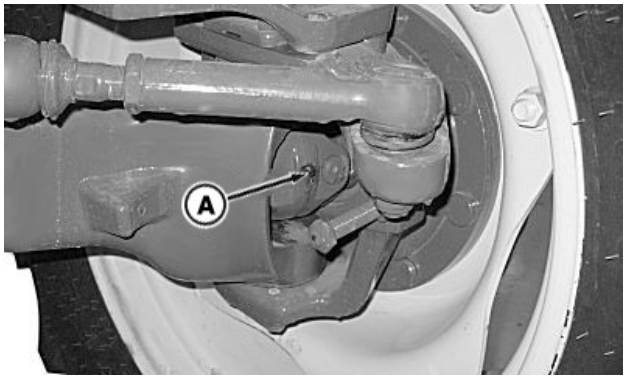
MFWD Axle

Service Interval—Weekly / 50 Hours*
** Daily / 10 Hours if operated in extremely wet or muddy conditions*



PY13397—UN—10JUL15

Right-Hand Side—Front



PY13398—UN—10JUL15

Right-Hand Side—Rear

A—Lube Fittings (4 used)

Turn steering wheel full left or right to access lube fittings (A).

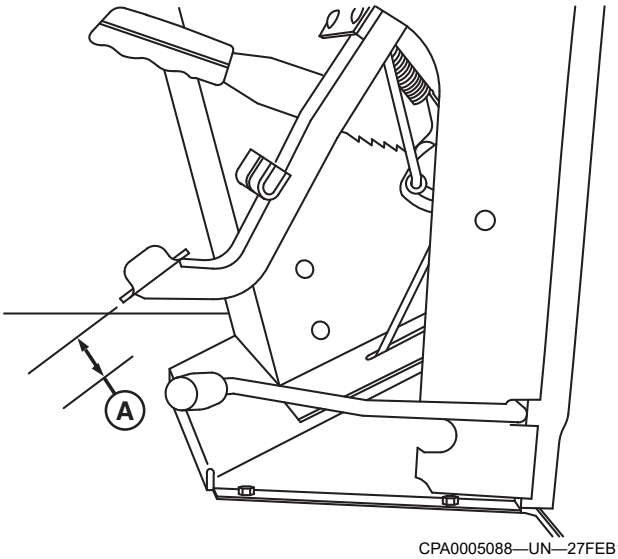
- Left-hand turn
  - Front fitting on left-hand side
  - Rear fitting on right-hand side
- Right-hand turn
  - Rear fitting on left-hand side
  - Front fitting on right-hand side

CP00834,0003878-19-15JAN18

Adjust Brake Pedal Free Travel

Service Interval—250 Hours

1. Park on the level surface. Chock wheels to prevent machine movement.
2. Unlock brake pedals.



CPA0005088—UN—27FEB18

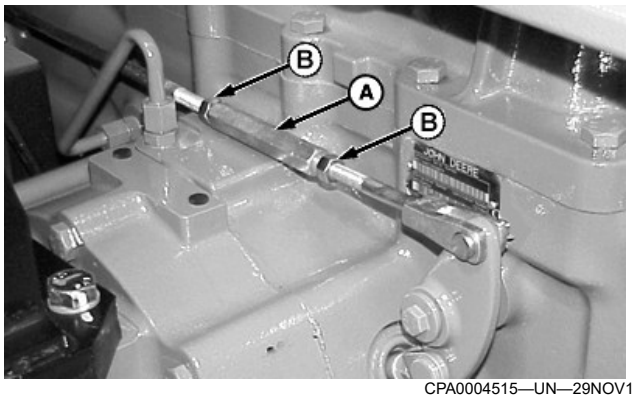
Brake Pedal Adjustment

A—Distance

3. Apply approximately 10 kg (20 lb) force on one brake pedal and measure distance (A) between engaged pedal and disengaged pedal. If free travel is not within specification, adjust linkage.

Specification

Brake Pedal—Free Travel. . . . . 70 ±3 mm (2.75 ±0.12 in)



CPA0004515—UN—29NOV17

Left-Hand Side

A—Turnbuckle
B—Nuts (2 used)

4. Adjust each brake pedal separately. Each side of tractor has an adjustment rod with turnbuckle and lock nuts. To adjust linkage, on each side of turnbuckle (A):
   a. Loosen nuts (B).
   b. Rotate turnbuckle (A) as needed to increase or decrease tension on adjustment rod in order to obtain free travel specification.
   c. Tighten nuts.
5. Repeat on the opposite side.

CP00834,0003879-19-15JAN18

Hydraulic Maintenance

Use Transmission Maintenance section for servicing hydraulic oil and filters.

CP00834,000387A-19-15JAN18

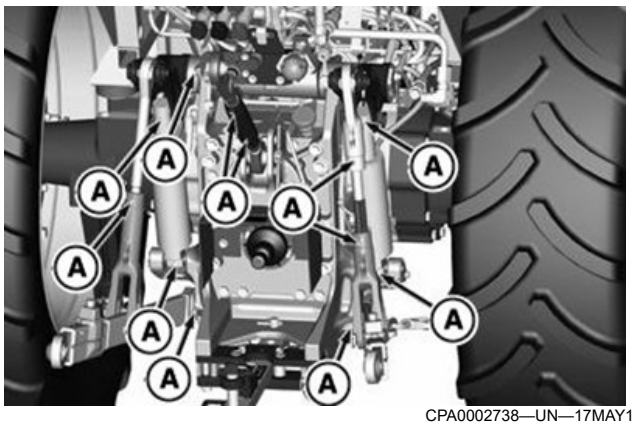
Warming Transmission-Hydraulic System Oil

Service Interval — As Required

Warming hydraulic system oil. (See Warm Transmission-Hydraulic System Oil in Hydraulics Operation section.)

CP00834,000387B-19-15JAN18

Lubricate Hitch Components



CPA0002738—UN—17MAY16

Rear Hitch Lubrication

A—Lube Fitting

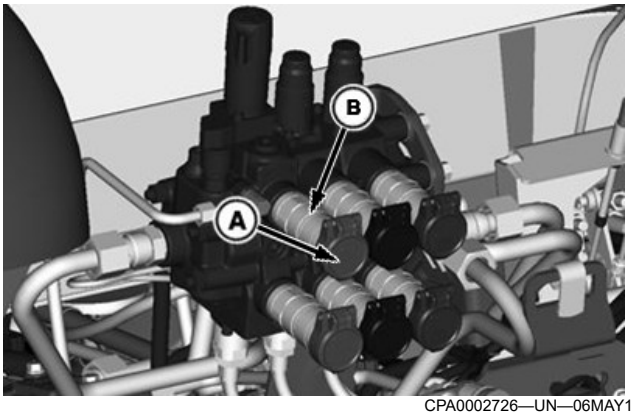
Service Interval—250 Hours

Lubricate hitch components at the lube fittings (A) as shown.

CP00834,000387C-19-15JAN18

Selective Control Valve Maintenance

Check Selective Control Valve



CPA0002726—UN—06MAY16

Selective Control Valve

A—Dust Cover
B—Quick-Connect Coupler

Service Interval — **As required**

1. Check dust cover (A) for damage, replace as needed.
2. Clean quick-connect coupler (B).
3. Check coupler receptacles for oil leakage. Consult your dealer if this problem occurs.

CP00834,000387D-19-15JAN18

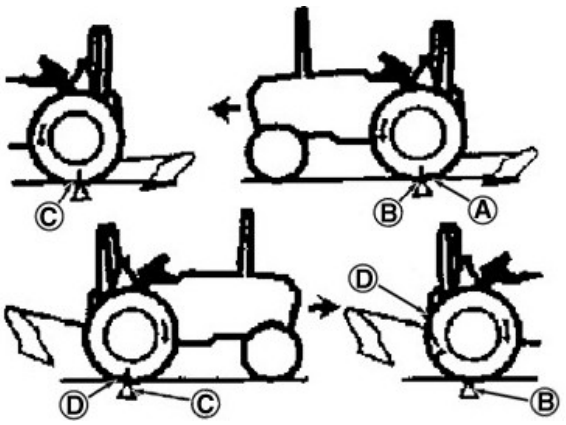
Inspect Tractor for Loose Hardware

Service Interval—Weekly / 50 Hours

Specification	
Front Ballast Weight Retaining Bolts—Torque	230 N·m (170 lb·ft)
Adjustable Front Axle-to-Knee Bolts—Torque	480 N·m (350 lb·ft)
Adjustable Front Axle Disk-to-Flange Bolts—Torque	175 N·m (130 lb·ft)
Rear Axle Rim-to-Disk Bolts (Steel Disk) —Torque	245 N·m (180 lb·ft)
Rear Axle Disk-to-Flange Bolts (Steel Disk) —Torque	175 N·m (130 lb·ft)
Multi-Position Rear Wheels Rim-to-Disk Bolts (Steel Disk)—Torque	245 N·m (180 lb·ft)
Multi-Position Rear Wheels Disk-to-Flange Bolts (Steel Disk)—Torque	175 N·m (130 lb·ft)
Front Axle Bolts—Torque	480 N·m (350 lb·ft)

CP00834,000387E-19-15JAN18

Measure Wheel Slip—Manually



CPA0005045—UN—18JAN18

Measuring Wheel Slip

A—Initial Tire Mark
B—Ground Starting Point
C—10 Revolutions Ground Mark
D—Second Tire Mark

1. Place a mark (A) on a rear tire which is easily observed (a chalk mark is recommended).
2. With tractor working and implement lowered, mark a starting point (B) on the ground at the place where tire mark (A) meets the ground.
3. Mark the ground again where tire mark (A) completes ten full revolutions (C).
4. With implement raised, return in the opposite direction. At the second mark on the ground (C), mark tire a second time (D).
5. While driving the tractor along the same path (implement raised), count the tire revolutions required to reach starting point (B).
6. Use the non-loaded wheel revolutions count in Wheel Slippage Chart to determine slippage.

NOTE: Ideal wheel slippage is 10—15% for 2WD tractors, 8—12% for tractors with MFWD.

7. Adjust ballast or load to give correct slippage.

NOTE: Available horsepower is greatly reduced when wheel slip drops below minimum percentage.

WHEEL SLIPPAGE CHART		
Non-Loaded Wheel Revolutions (Step 5)	**Estimated % Slip**	**Recommended Action**
10	0	Remove Ballast
9-1/2	5	Remove Ballast
9	10	Correct Ballast
8-1/2	15	Correct Ballast
8	20	Add Ballast
7-1/2	25	Add Ballast

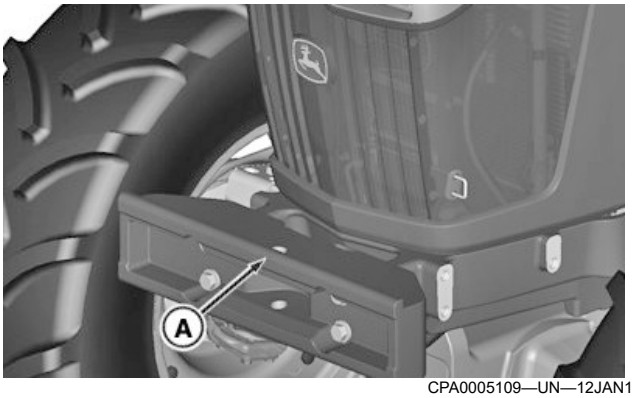
WHEEL SLIPPAGE CHART		
Non-Loaded Wheel Revolutions (Step 5)	**Estimated % Slip**	**Recommended Action**
7	30	Add Ballast

CP00834,000395E-19-17JAN18

Ballasting Front End for Transport

CAUTION: Additional front ballast may be needed for transporting rear-mounted implements. When implement is raised, drive slowly over rough ground, regardless of how much ballast is used.

CAUTION: Weights are heavy. Use proper lifting equipment.



CPA0005109—UN—12JAN18

Front Weight Support

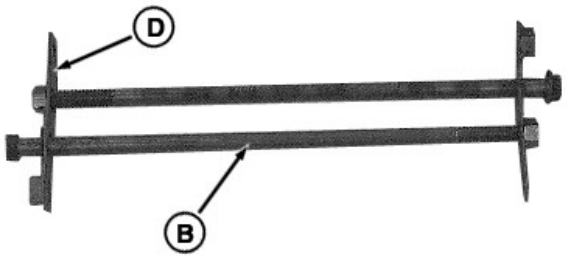
A—Front Weight Support

Front weight support (A) and additional weights can be installed.

Specification

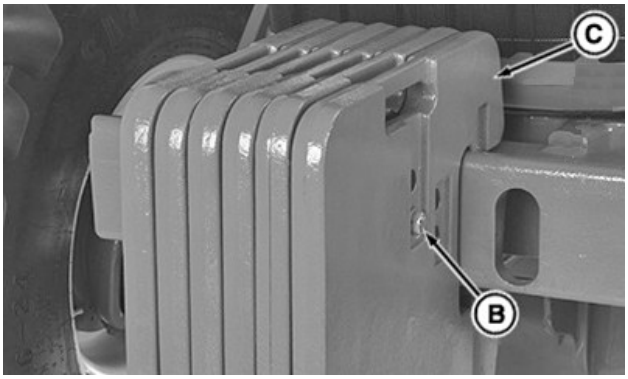
Front Weight Support—Weight. . . . . 84 kg (185 lb)

Additional Weight—Weight (each). . . . . 43 kg (95 lb)



P15328—UN—27MAR08

Front Weight Retaining Bolts



CPA0004883—UN—24DEC17

Front Weights

B—Retaining Bolt (2 used)
C—Additional Weight
D—Retainer and Nut (2 used)

1. Install desired number of weights (C) on front weight support, up to:
   - Maximum of 18 total additional weights allowed.
2. To hold weights in place, insert two retaining bolts (B) in opposite direction, one right-to-left, the other left-to-right. Place retainers (D) as shown. Tighten retaining bolts to specification.

Specification

Weight Retaining Bolt—Torque. . . . . 230 N·m (170 lb·ft)

NG67726,0000BC5-19-09JAN20

Install Rear Cast Iron Weights

CAUTION: Rear weights weigh 55 kg (121 lb) each. Handle with care! Use appropriate equipment or have the job done by your John Deere dealer.

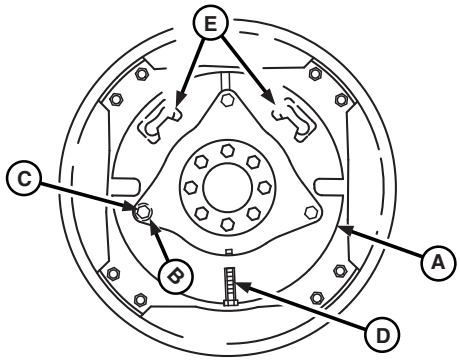
CAUTION: When installing or removing Quik-Tatch™ weights, always position wheels so that weight retainer jaws are at the top. This prevents weights from falling when retaining bolt is removed.

IMPORTANT: Maximum number of weights that can be installed on rear tires is four (4) on each tire.

CPA0004791—UN—11DEC17

Four Maximum Weights Installed

NOTE: Spacers are required when weights will not fit into rim's dish. If weights do fit, spacers are optional.



P10192—UN—04APR08

Additional Rear Weights

A—First Weight
B—Spacer (3 used)
C—First Weight Retaining Bolt, Washer, and Nut (3 used)
D—Additional Weight Retaining Bolt, Washer, and Nut
E—Retainer Jaws (2 used)

1. Attach first weight (A) to wheel disk, using three spacers (B) if necessary, with bolts, washers, and nuts (C). Note that bolts go through first weight and into the rim so that washers and nuts tighten onto rim, not onto weights. This makes it easy to check regularly for tightness.
2. To install additional weights, position wheel so that one of retainer jaws (E) is at top. Hang next weight in retainer jaw and secure with bolt, washer, and nut (D) as shown. Proceed in similar fashion with other additional weights, up to maximum allowable.
3. Tighten all bolt retaining nuts to specification. Tighten again after a few hours of service. Check tightness regularly.

Specification

Retaining Bolts—Torque. . . . . 230 N·m (170 lb·ft)

CP00834,000395F-19-17JAN18

Additional Equipment Maintenance

To service additional equipment, refer to the additional equipment Operator's Manual.

CP00834,0003882-19-15JAN18

Check Front Loader Mounting Bracket Cap Screws Torque

Service Interval	-First 100 hours
	-Every 250 hours

Check front loader mounting bracket cap screws torque. (See Front Loader Mounting Bracket in Additional Equipment section.)

Specification

M20 Cap Screws—Torque. . . . . 580 N·m (428 lb·ft)

CP00834,0003883-19-15JAN18

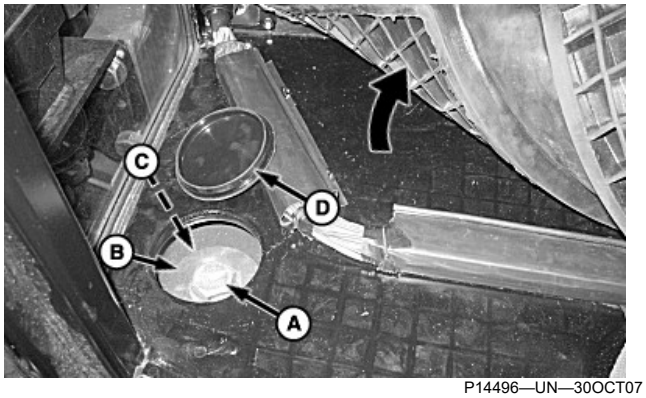
Keep Cab Protection System Installed Properly

Service Interval—250 Hours

CAUTION: Make certain all parts are installed correctly if cab protection system is loosened or removed for any reason. Tighten mounting cap screws to specification.

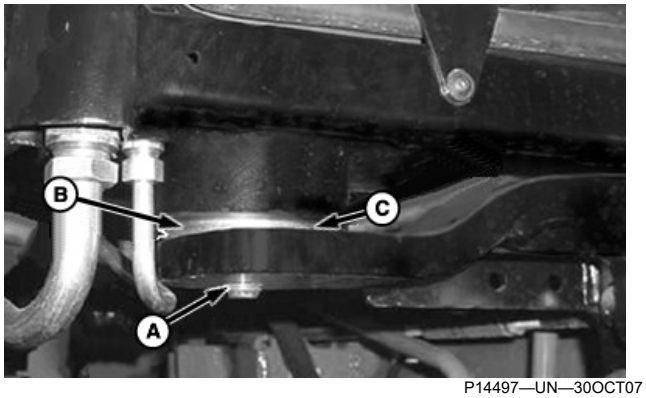
The protection offered by cab protection system will be impaired if cab protection system is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged cab protection system should be replaced, not reused. Any alteration to the cab protection system must be approved by the manufacturer.

When installation of equipment on a machine necessitates loosening or removing cab protection system, mounting cap screws should be tightened to specification.



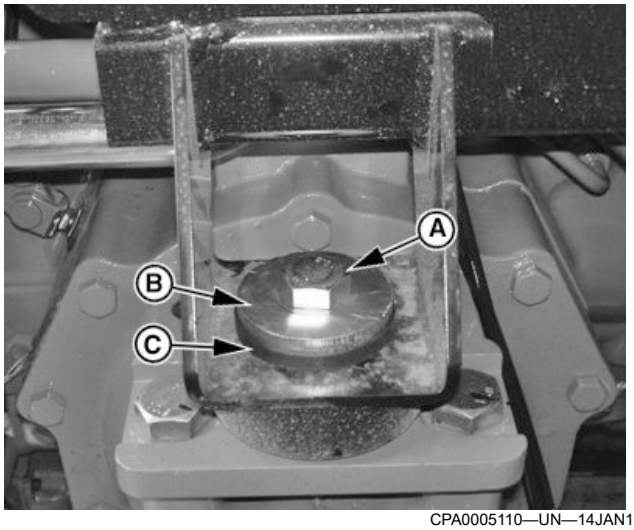
P14496—UN—30OCT07

Front Cab Mount (Left-Hand Side)



P14497—UN—30OCT07

Front Cab Mount (Right-Hand Side)



CPA0005110—UN—14JAN18

Rear Cab Mount (Left-Hand Side)

A—Cap Screw
B—Washer
C—Isolator
D—Plug

Lift up rubber floor mat and pry out plugs (D) to access front mounting hardware.

Check front and rear mounting hardware (A—C) for proper torque.

Specification	
Cab Protection System	
Mounting Cap Screws—Torque	220 N·m (162 lb·ft)

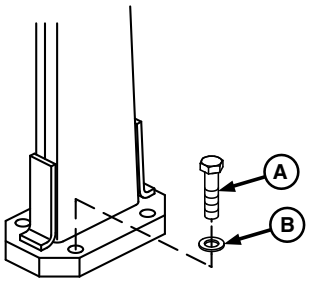
CP00834,0003884-19-15JAN18

Inspect Roll Over Protective Structure (ROPS) for Loose Hardware

Service Interval—250 Hours

CAUTION: Make certain all parts are installed correctly if ROPS is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS is impaired if ROPS is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused. Any alteration to the ROPS must be approved by the manufacturer.



P10072—UN—05FEB01

Tighten Bolts

A—Mounting Bolt (8 used)
B—Flat Washer (8 used)

Check torque values on all ROPS mounting hardware.

Specification

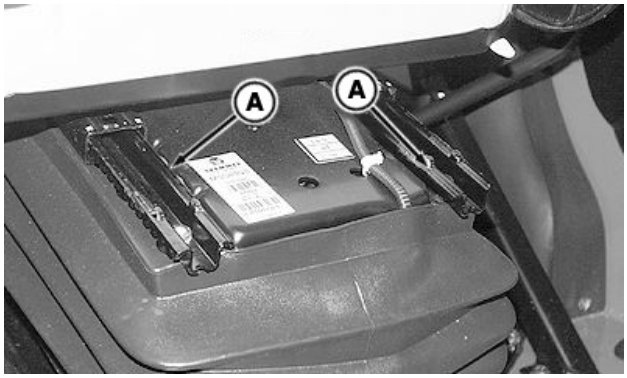
ROPS Mounting Bolts—Torque. . . . . 610 N·m (450 lb·ft)

NOTE: When installation of equipment on a machine requires loosening or removing ROPS, new mounting bolts and washers must be used and tightened to specification upon re-installation.

CP00834,0003885-19-15JAN18

Lubricate Operator's Seat Slide Rails—OOS

Service Interval—As Required



PY13405—UN—10JUL15

Seat Slide Rails

A—Slide Rails

NOTE: This procedure is only necessary after pressure washing.

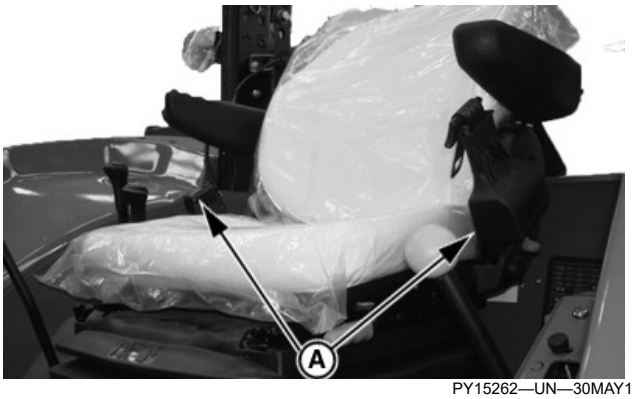
Move seat full forward and apply multipurpose grease to slide rails (A).

CP00834,0003960-19-17JAN18

Inspect Seat Belt

Service Interval—Annually

CAUTION: If the seat belt system, including the mounting hardware, buckle, belt, or retractor show any sign of damage such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion, the entire seat belt system should be replaced immediately. Replace the belt system only with replacement parts approved for your machine.



PY15262—UN—30MAY12

Seat Belt Inspection

A—Seat Belt

Inspect seat belts (A) and mounting hardware. If seat belts need to be replaced, see your John Deere dealer.

CP00834,0003887-19-15JAN18

Clean Cab Air Filters

Service Interval—250 Hours*
** Interval can vary according to operating conditions*

CAUTION: The air quality system air filters are not designed to filter out harmful chemicals. Follow the instructions in the implement Operator's Manual and those given by the chemical manufacturer when using agricultural chemicals.

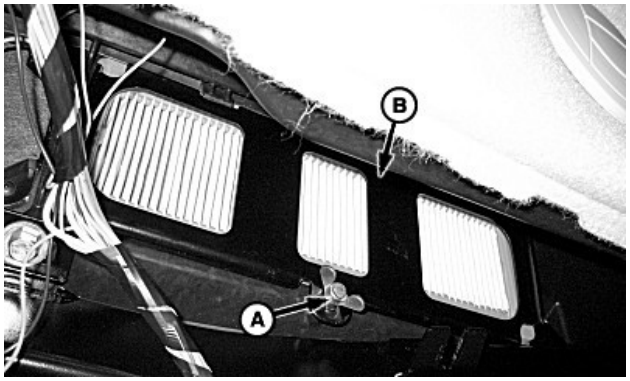
NOTE: There are filters on both sides of cab. Left-hand side is shown.

P14487—UN—30OCT07

Air Filter Cover (interior)

A—Cover

1. Pry off cover (A). (Pull down along window.)



CPA0004715—UN—05DEC17

Air Filter Installed (interior)

CPA0004716—UN—05DEC17

Filter and Retainer (interior)

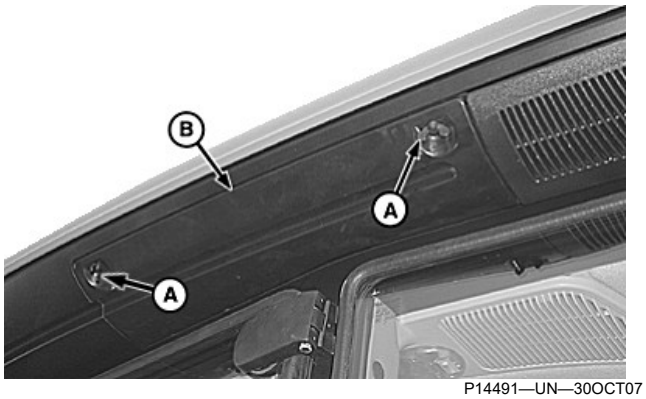
A—Wing Screw
B—Filter Retainer
C—Filter

2. Remove wing screw (A), retainer (C), and filter (B).
3. Inspect filter for holes or damage. Inspect rubber seal for cracks or wear. Replace as necessary.

NOTE: Do not clean filter with water or compressed air. Cleaning the filter is not recommended. It should be replaced as needed.

4. Replace filter when it becomes dirty. It may require replacing filter more often in dusty conditions.
5. Install filter with rubber seal toward retainer (B).
6. Install retainer, wing screw, and cover.
7. Repeat procedure on opposite side.

Fresh Air Filters (Outside Cab)

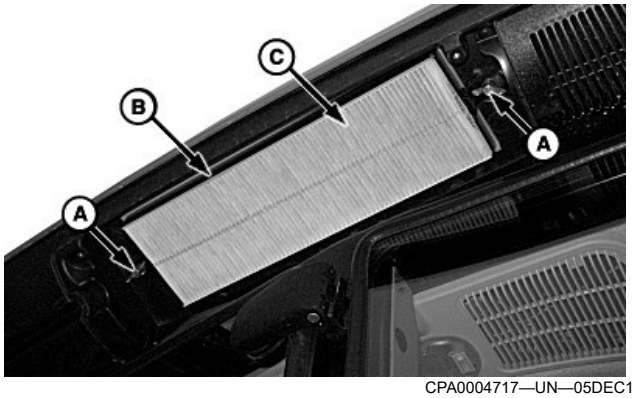


P14491—UN—30OCT07

Under Roof, Above Cab Door

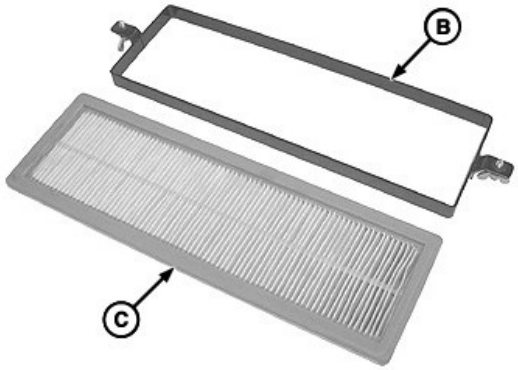
A—Wing Screws (2 used)
B—Filter Cover

1. Remove two wing screws (A) and cover (B).



CPA0004717—UN—05DEC17

Air Filter Installed (exterior)



CPA0004718—UN—05DEC17

Filter and Retainer (exterior)

A—Wing Screws (2 used)
B—Filter Retainer

C—Filters (2 used)

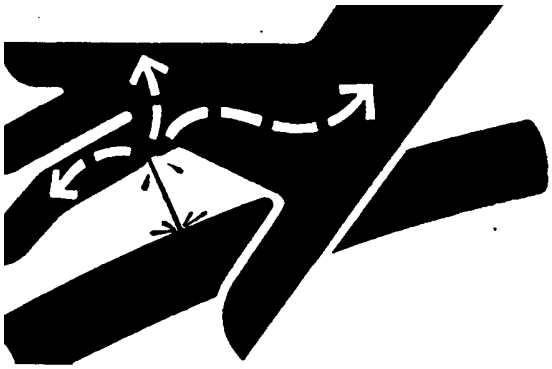
2. Remove wing screws (A), retainer (B), and filter (C).
3. Inspect filter for holes or damage. Inspect rubber seal for cracks or wear. Replace as necessary.

NOTE: Do not clean filter with water or compressed air. Cleaning the filter is not recommended. It should be replaced as needed.

4. Replace filter when it becomes dirty. It may require replacing filter more often in dusty conditions.
5. Install filter with rubber seal toward cab.
6. Install retainer and wing screws.
7. Install cover and wing screws.
8. Repeat procedure on opposite side.

CP00834,0003961-19-17JAN18

Service Air Conditioner—Cab



X9811—UN—23AUG88

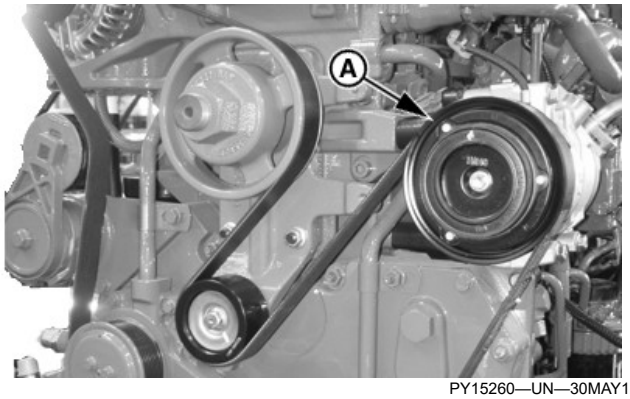
Avoid High-Pressure Fluids

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

IMPORTANT: R-134a refrigerant must be used. This requires special equipment and procedures. See your John Deere dealer.

NOTE: Some oil seepage from compressor shaft seal is normal.

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

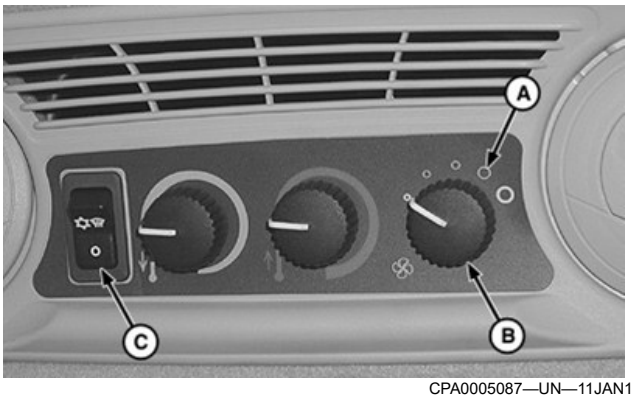


PY15260—UN—30MAY12

AC Clutch

A—Clutch Cover

- If air conditioner clutch slips after tractor has been in storage, compressor may be stuck. Stop engine and turn key switch to OFF position. Remove cap screws and clutch cover (A). Rotate clutch hub back and forth to free compressor.



CPA0005087—UN—11JAN18

Controls—Overhead Panel

A—High Position
B—Blower Control Knob
C—Air Conditioner and Defrost Switch

- Run engine at 2000 rpm. Push top half of air conditioner and defrost switch (C) and set blower control knob (B) to HIGH position (A). If air flow is not cool, system may be low on refrigerant. See your John Deere dealer.
- If cooling is intermittent, clean front grille, side vents, radiator, and condenser . If problem is not solved, see your John Deere dealer.
- Inspect operator enclosure (cab) filters for restriction. (See Clean Cab Air Filters in this section). If problem persists, see your John Deere dealer.

CP00834,0003962-19-17JAN18

Troubleshooting

Engine Troubleshooting

Symptom	Problem	Solution
Engine cranks but will not start	Incorrect starting procedure.	Review starting procedure.
	No fuel.	Check fuel tank.
	Exhaust restricted.	Check and correct exhaust restriction.
	Fuel filter plugged or full of water.	Replace fuel filter or drain water from filter.
	Injection pump not getting fuel or air in fuel system.	Check fuel flow at supply pump or bleed fuel system.
	Faulty injection pump or nozzles.	Consult authorized diesel repair station for repair or replacement.
Engine hard to start or will not start	Air in fuel tank.	Bleed fuel tank.
	Cold weather.	Use cold weather starting procedure.
	Slow starter speed.	See Starter Cranks Slowly in Electrical System Troubleshooting.
	Crankcase oil too heavy.	Use oil of proper viscosity.
	Improper type of fuel.	Consult fuel supplier; use proper type of fuel for operating conditions.
	Water, dirt, or air in fuel system.	Drain, flush, fill, and bleed system.
	Clogged fuel filter.	Replace filter element.
	Dirty or faulty injectors.	Have John Deere dealer check injectors.
	Injection pump shutoff not reset.	Turn ignition switch to STOP, then to ON.
Engine knocks	Low engine oil level.	Add oil to engine crankcase.
	Injection pump out of time.	See your John Deere dealer.
	Low coolant temperature.	See your John Deere dealer.
Engine runs irregularly or stalls frequently	Low coolant temperature.	See your John Deere dealer.
	Clogged fuel filter.	Replace fuel filter element.
	Water, dirt, or air in fuel system.	Drain, flush, fill, and bleed system.
	Dirty or faulty injectors.	Have John Deere dealer check injectors.

Symptom	Problem	Solution
Below normal engine temperature	Defective thermostat.	Remove and check thermostat.
	Defective temperature gauge or sender.	Check gauge, sender, and conditions.
Lack of power	Exhaust filter restriction	See your John Deere Dealer.
	Engine overloaded.	Reduce load.
	Low fast-idle speed.	See your John Deere dealer.
	Intake air restriction.	Service air cleaner.
	Clogged fuel filter.	Replace filter element.
	Improper type of fuel.	Use proper fuel.
	Overheated engine.	Check coolant level, inspect fan belt, and check radiator fins for debris.
	Below normal engine temperature.	See your John Deere dealer.
	Improper valve clearance.	See your John Deere dealer.
	Dirty or faulty injectors.	Have John Deere dealer check injectors.
	Injection pump out of time.	See your John Deere dealer.
	Turbocharger not functioning.	See your John Deere dealer.
	Leaking exhaust manifold gasket.	See your John Deere dealer.
	Implement improperly adjusted.	See implement Operator's Manual.
	Restricted fuel line.	See your John Deere dealer.
	Restricted return line.	See your John Deere dealer.
	Improper ballast.	Adjust ballast to load.
	Poor fuel performance.	See your John Deere dealer.
	Poor bio-fuel performance.	See your John Deere dealer.
Low oil pressure	Low oil level.	Add oil.
	Improper type of oil.	Drain; fill crankcase with oil of proper viscosity and quality.
	Bad pump.	See your John Deere dealer.
	Bad sender.	See your John Deere dealer.

Symptom	Problem	Solution
	Sender disconnected.	Connect sender.
High oil consumption	Crankcase oil too light.	Use proper viscosity oil.
	Oil leaks.	Check for leaks in lines, around gaskets, and drain plugs.
	Restricted crankcase vent tube.	Clean vent tube.
	Defective turbocharger.	See your John Deere dealer.
Engine emits white smoke	Improper type fuel.	Use proper fuel.
	Low engine temperature.	Warm up engine to normal operating temperature.
	Defective injection nozzles.	See your John Deere dealer.
	Engine out of time.	See your John Deere dealer.
	Cold start advance or light load advance not functioning.	See your John Deere dealer.
Engine emits black or gray exhaust smoke	Improper type of fuel.	Use proper fuel.
	Clogged or dirty air cleaner.	Service air cleaner.
	Engine overloaded.	Reduce load or shift to a lower gear.
	Injection nozzles dirty.	See your John Deere dealer.
	Engine out of time.	See your John Deere dealer.
	Turbocharger not functioning.	See your John Deere dealer.
Engine overheats	Engine overloaded.	Reduce load.
	Dirty radiator core or grille screen.	Remove all debris.
	Low coolant level.	Fill radiator to proper level. Check radiator, coolant recovery tank, and hoses for loose connection or leaks.
	Stretched poly-vee belt or defective belt tensioner.	Check automatic belt tensioner and check belts for stretching. Replace as required.
	Faulty radiator cap.	Replace cap.
	Low engine oil level.	Check oil level. Add oil as required.
	Cooling system needs flushing.	See your John Deere dealer.

Symptom	Problem	Solution
	Defective thermostat.	See your John Deere dealer.
	Defective temperature gauge or sender.	See your John Deere dealer.
	Incorrect grade of fuel.	Use proper fuel.
	Viscous fan drive not engaged (if equipped).	See your John Deere dealer.
	Dirty charge air cooler.	Clean charge air cooler fins.
High fuel consumption	Improper type of fuel.	Use proper fuel.
	Clogged or dirty air cleaner.	Service air cleaner.
	Engine overloaded.	Reduce load or shift to a lower gear.
	Fuel leakage.	Check fuel supply and return line for leaks. Check fuel tank for leaks and tighten clamps.
	Improper valve clearance.	See your John Deere dealer.
	Injection nozzles dirty.	See your John Deere dealer.
	Engine out of time.	See your John Deere dealer.
	Implement improperly adjusted.	See implement Operator's Manual.
	Low engine temperature.	See your John Deere dealer.
	Excessive ballast.	Adjust ballast to load.
	Defective turbocharger.	See your John Deere dealer.
	Restricted air intake system.	Check system.
	Plugged crankcase vent tube.	Clean vent tube.
	Transmission oil over filled.	Drain excess oil.
Undercharged electrical system	Excessive electrical load from added accessories.	Remove accessories or install higher output alternator.
	Excessive engine idling.	Increase engine rpm when heavy electrical load is used.
	Poor electrical connections on battery, ground strap, starter, or alternator.	Inspect and clean as necessary.
	Defective battery.	Test battery.

Symptom	Problem	Solution
	Defective alternator.	Test charging system.
Battery uses too much water	Cracked battery case.	Check for moisture and replace as necessary.
	Defective battery.	Test battery.
	Battery charging rate too high.	Test charging system.
Batteries will not charge	Loose or corroded connections.	Clean and tighten connections.
	Sulfated or worn-out batteries.	See your John Deere dealer or engine distributor.
	Stretched poly-vee belt or defective belt tensioner.	Adjust belt tension or replace belt.
Starter will not crank	Engine driveline engaged.	Disengage engine driveline.
	Loose or corroded connections.	Clean and tighten loose connections.
	Low battery output voltage.	See your John Deere dealer or engine distributor.
	Faulty start circuit relay.	See your John Deere dealer or engine distributor.
Starter cranks slowly	Low battery output.	See your John Deere dealer or engine distributor.
	Crankcase oil too heavy.	Use proper viscosity oil.
	Loose or corroded connections.	Clean and tighten loose connections.
Starter and hour meter functions; rest of electrical system does not function	Blown fuse on magnetic switch.	Replace fuse.
Entire electrical system does not function	Faulty battery connection.	Clean and tighten connections.
	Sulfated or worn-out batteries.	See your John Deere dealer or engine distributor.

CP00834,000388A-19-15JAN18

Transmission Troubleshooting

Symptom	Problem	Solution
Transmission oil overheats	Low oil supply.	Fill system with correct oil.
	Clogged transmission-hydraulic oil filter.	Replace filter.

Symptom	Problem	Solution
	Internal hydraulic leak.	See your John Deere dealer.
	Hitch feedback linkage improperly adjusted.	Reset linkage. See your John Deere dealer.
	Implement mounted hydraulic motor not plumbed correctly or matched to circuit.	See your John Deere dealer.
	SCV lever held in extend or retract position.	Return SCV lever to neutral position.
	Transmission oil over full.	Drain to full mark.
	Oil cooler dirty.	Clean oil cooler.
	Viscous fan drive not engaged.	See your John Deere dealer.
Low transmission pressure	Low oil supply.	Fill system with correct oil.
	Clogged transmission-hydraulic oil filter.	Replace filter.

CP00834,000388B-19-15JAN18

Hydraulic System Troubleshooting

Symptom	Problem	Solution
Entire hydraulic system fails to function	Low oil supply.	Fill system with correct oil.
	Clogged transmission-hydraulic oil filter.	Replace filter.
	High-pressure internal leak.	See your John Deere dealer.
Hydraulic oil overheats	Low oil supply.	Fill system with correct oil.
	Clogged transmission-hydraulic oil filter.	Replace filter.
	Internal hydraulic leak.	See your John Deere dealer.
	Hitch feedback linkage improperly adjusted.	Reset linkage. See your John Deere dealer.
	Implement mounted hydraulic motor not plumbed correctly or matched to circuit.	See your John Deere dealer.
	Standard Valve: SCV lever held in extend or retract position.	Return SCV lever to neutral position.

Symptom	Problem	Solution
	Deluxe Valve: Flow control or detent setting incorrect.	Adjust flow control and/or detent setting.

CP00834,000388C-19-15JAN18

Brakes Troubleshooting

Symptom	Problem	Solution
No solid pedal feel	Air in system.	See your John Deere dealer.
Pedal settles	Rear brake piston seal leaking.	See your John Deere dealer.
Excessive pedal travel	Air in system.	See your John Deere dealer.
Brakes drag during transport	Brakes out of adjustment.	See your John Deere dealer.

CP00834,000388D-19-15JAN18

3-Point Hitch Troubleshooting

Symptom	Problem	Solution
Insufficient transport clearance	Center link too short.	Adjust center link.
	Lift links too short.	Adjust lift links.
	Implement not level.	Level implement.
	Hitch feedback linkage not properly adjusted.	See your John Deere dealer.
	Implement not properly adjusted.	See implement Operator's Manual.
	Front of center link in upper holes.	Move center link to lower holes.
	Sway bars too short.	Adjust sway bars.
Hitch drops slowly	3-point hitch rate of drop control not properly set.	Adjust rate-of-drop.
Hitch fails to lift or lifts slowly	Excessive load on hitch.	Reduce load.
	Center link in wrong position.	Adjust center link.
	Low oil level.	Fill system with proper oil.
	Hydraulic oil too cold.	Allow oil to warm.
	Transmission-hydraulic oil filter clogged.	Replace filter.
Implement will not operate at desired depth	Lift links too short.	Adjust lift links.

Symptom	Problem	Solution
	Lack of penetration.	See implement Operator's Manual.
	Electro-hydraulic controls: draft sensor failed.	See your John Deere dealer.
	Improper setting of hitch control stop.	Readjust position.
	Improper setting of draft control.	(See section 70A Hitch and Drawbar Operation.)
Insufficient or no hitch response to draft load	Draft control lever in OFF (forward) position.	Move lever to desired position.
	Need to adjust draft feedback cable.	See your John Deere dealer.
	Lift links too short.	Adjust lift links.
	Lack of penetration.	See implement Operator's Manual.
	Rate-of-drop too slow.	Adjust rate-of-drop.
Hitch too responsive	Improper draft control setting.	Adjust.
Hitch drops too fast	Rate-of-drop set too fast.	Adjust rate-of-drop.
Position and draft levers drift, levers too loose.	Friction disks are loose at mechanical hitch control box.	See your John Deere dealer.
Hitch settles too fast after tractor is parked and engine shut off	Internal system leakage.	See your John Deere dealer.

CP00834,000388E-19-15JAN18

Remote Hydraulic Cylinder Troubleshooting

Symptom	Problem	Solution
Direction of remote cylinder travel is reversed	Improper hose connections.	Reverse hose connections.
Hoses will not couple	Improper hose male tips.	Replace tip with ISO standard tips.
Remote cylinder will not lift load	Excessive load.	Reduce load.
	Hoses not completely installed.	Attach hoses correctly.
	Incorrect remote cylinder size.	Use correct size cylinder.

CP00834,000388F-19-15JAN18

Selective Control Valves (SCV) Troubleshooting

Symptom	Problem	Solution

Symptom	Problem	Solution
Flow control knob or detent does not turn	Dirt buildup.	Clean dirt from flow control knob shaft.
Remote cylinders rate-of-travel too fast or too slow	Incorrect flow control adjustment.	Adjust flow control.
Detent does not hold SCV lever (Deluxe inlet section)	Detent selector in wrong position.	Turn selector to correct position.
	Mid SCV activated.	Avoid use of mid SCV.
	3-Point Hitch activated.	Avoid use of 3-point hitch.
	Low Engine rpm.	Increase engine rpm.
	Pressure restriction with some implements.	Reduce oil flow by changing flow control setting.
	Flow control or detent setting incorrect.	Adjust flow control and detent setting.
SVC lever released too soon (Deluxe inlet section)	Detent selector in wrong position.	Turn selector to correct position.
	Implement is not connected to SCV I.	Connect implement to SCV I.
SCV lever does not release	Detent selector not in automatic detent position (Deluxe inlet section).	Turn selector to correct position.
		See your John Deere Dealer.
	Built in pressure leakage with some implements.	Increase oil flow by changing flow control setting.
	Incorrect flow control (Deluxe inlet section).	Adjust flow control.
	Over-torqued cable to valve connection	Adjust torque at the connector.
Inlet section fails to function	Inlet section does not generate pressure.	Check M18 plug inside tank port in mid SCV.

CP00834,0003890-19-15JAN18

Electrical System Troubleshooting

Symptom	Problem	Solution
Battery will not charge	Loose or corroded connections.	Clean and tighten connections.
	Sulfated or worn-out battery.	Check electrolyte level and specific gravity.
	Loose or defective fan belt.	Check belt tension. Replace belt if necessary.

Symptom	Problem	Solution
Charging system indicator glows with engine running	Low engine speed.	Increase speed.
	Defective battery.	Check electrolyte level and specific gravity.
	Defective alternator.	See your John Deere dealer.
	Slipping fan belt.	Check belt tension. Replace belt if necessary.
Starter inoperative	PowrReverser™ Transmission: EH directional reverser lever in forward or reverse.	Move lever to NEUTRAL.
	Low battery output.	See your John Deere dealer.
	Blown fuse.	Replace fuse.
	Bypass starter circuit.	See your John Deere dealer.
Starter cranks slowly	Low battery output.	Check electrolyte level and specific gravity.
	Crankcase oil too heavy.	Use proper viscosity oil.
	Loose or corroded connections.	Clean and tighten loose connections.
Light system does not function; rest of electrical system functions	Blown fuse.	Replace fuse.
Entire electrical system does not function	Faulty battery connections.	Clean and tighten connections.
	Sulfated or worn-out battery.	Check electrolyte level and specific gravity.
	Blown fuse.	Replace fuse.
Relay(s) sticking or nonfunctional; repeated failures	Diode to protect circuit from arcing has failed.	See your John Deere dealer.

CP00834,0003891-19-15JAN18

Heater and A/C System (Cab) Troubleshooting

Symptom	Problem	Solution
All cab electrical switches do not work	Loose, defective, or blown fusible link.	See your John Deere dealer.
Blower malfunctioning	Blower does not work.	Check both blower fuses.
Blower operates only in purge position	One of two fuses blown.	Replace fuse.

Symptom	Problem	Solution
	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	Fan belt loose or slipping.	Check belt tension. Replace belt if necessary.
	Blown fuse.	Replace fuse.
	Defective switch.	See your John Deere dealer.
	Faulty wiring or loose connections.	See your John Deere dealer.
	Defective compressor clutch.	See your John Deere dealer.
	Condenser dirty.	Clean condenser.
	Heater valve leaking.	See your John Deere dealer.
	No Freon charge.	See your John Deere dealer.
Drafts	Poor air distribution.	Adjust directional air louvers. Set blower switch to medium or low position.
Inadequate air flow	Clogged air filters.	Clean filters.
	Evaporator core air flow restricted.	Clean evaporator and housing with compressed air.
	Faulty blower fan motors.	See your John Deere dealer.
	Defective blower switch.	See your John Deere dealer.
	Faulty wiring or loose connections.	See your John Deere dealer.
Water leaking or dripping from evaporator core compartment	Loose hose clamp.	Tighten clamp.
	A/C drip pan dirty.	Clean evaporator pan and outlet with compressed air.
	A/C drain tubes plugged.	Clean drain tubes.

Symptom	Problem	Solution
Strange odors inside operator's cab	Dirty air filters.	Clean filters.
	Evaporator condenser pan dirty.	Clean pan and outlet with compressed air.
	Drain tubes plugged.	Clean drain tubes.
	Foreign substance on evaporator exterior.	Clean filters.
Partial frosting and sweating of lines combined with poor cooling	Fan belt slipping.	Check belt tension. Replace belt if necessary.
	Loss of refrigerant.	Check system for leaks. 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 the temperature control to a warmer position.
Failure to cool	Insufficient blower speed.	Increase blower speed.
	Dirty air filters.	Clean filters.
	Debris on front grille.	Clean front grille.
	Lint or dirt on condenser fins.	Blow out condenser fins with compressed air.
	Refrigerant is lost or extremely low.	See your John Deere dealer.
	Loose fan belt.	Check belt tension. Replace belt if necessary.
	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.	See your John Deere dealer.
	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.

Symptom	Problem	Solution
	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.
	Fan viscous drive not engaged.	See your John Deere dealer.
Hissing noise at expansion valve	Loss of refrigerant.	Check system for leaks. See your John Deere dealer.
	Restriction in refrigerant system.	Check for kinks in hoses. Check receiver-dryer for uniformity of temperature. See your John Deere dealer.

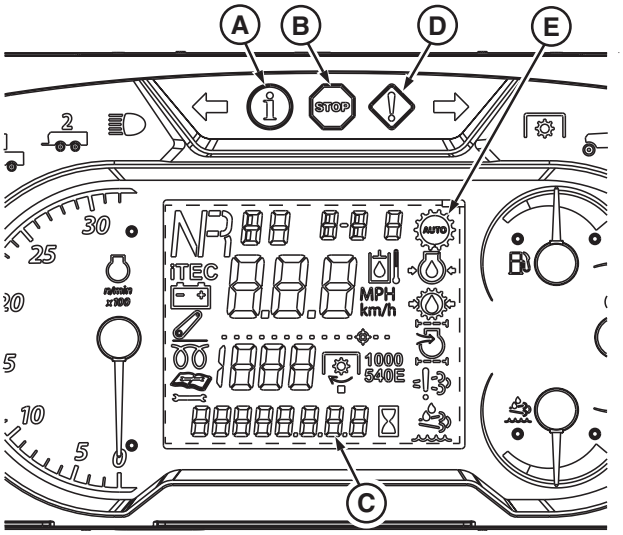
CP00834,0003892-19-15JAN18

Wipers, Work Lights, Dome Light, and Radio (Cab)

Symptom	Problem	Solution
All cab electrical switches do not work	Loose, defective, or blown fusible link.	See your John Deere dealer.
Window wiper(s) and washer will not run	Blown fuse.	Replace fuse.
	Defective switches.	See your John Deere dealer.
	Defective motors.	See your John Deere dealer.
	Faulty wiring or loose connections.	See your John Deere dealer.
Work lights do not work	Blown fuse.	Replace fuse.
	Defective bulb or switch.	Replace bulb or see your John Deere dealer.
	Faulty wiring or loose connections.	See your John Deere dealer.
Dome light does not work	Blown fuse.	Replace fuse.
	Defective bulb or switch.	Replace bulb or see your John Deere dealer.
	Defective door switches.	See your John Deere dealer.
	Faulty wiring or loose connections.	See your John Deere dealer.
Radio does not work	Blown fuse.	Replace fuse.

CP00834,0003893-19-15JAN18

STOP, Service Alert, Information, and Electrohydraulic Transmission System Indicators



CPA0005015—UN—28FEB18

Indicators and Information Display

A—Information Alert Indicator
B—STOP Indicator
C—Information Display
D—Service Alert Indicator
E—Electrohydraulic Transmission System Indicator

On-Board Diagnostic (OBD) communication is depicted with indicators (A, B, D, and E) and messages in information display (C).

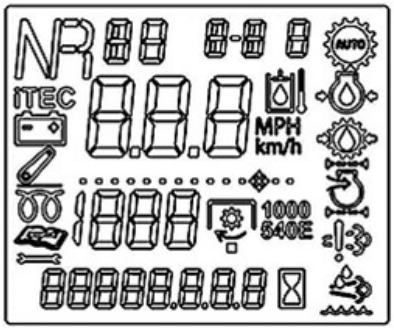
IMPORTANT: Whenever a STOP indicator (B), a service alert indicator (D), an electrohydraulic transmission system indicator (E), or an information alert indicator (A) is active; make note of operational conditions and messages or diagnostic trouble codes (DTC) shown at information display (C).

Indicator	Description	Action
Information Alert Indicator (A)	Indicator illumination and alarm signals represent an informational warning. Attention or operational adjustment is required to solve issues and prevent SERVICE or STOP situations.	**IMPORTANT: Verify operating conditions (maintenance, adjustment/repair, operator error) or contact John Deere dealer for service assistance before continuing work.**
STOP Indicator (B)	Indicator illumination and alarm signals represent urgent warning. Immediate attention or service is required in order to prevent serious malfunction or damage.	**IMPORTANT: STOP alarms shut down the engine in certain conditions. STOP alarms can be reset with key power cycle on/off. Contact John Deere dealer for service assistance before starting the engine.**
Service Alert Indicator (D)	Indicator illumination and alarm signals represent a performance warning. Immediate attention or operation is required to a prevent limited performance or damage and escalation to a STOP condition.	**IMPORTANT: Investigate and correct operating conditions (maintenance, adjustment/repair, operator error) or contact John Deere dealer for service assistance before continuing work.**
Electrohydraulic Transmission System Indicator (E)	Indicator warms of a malfunction in the electrohydraulic transmission control system. A diagnostic trouble code is displayed at display.	*NOTE:* *1. Under certain circumstances, the tractor can still be driven even if there is an electrical fault in the transmission.* *2. Under certain circumstances, transmission control is regained by cycling reverser lever to neutral and back into a direction.*

Indicator Description

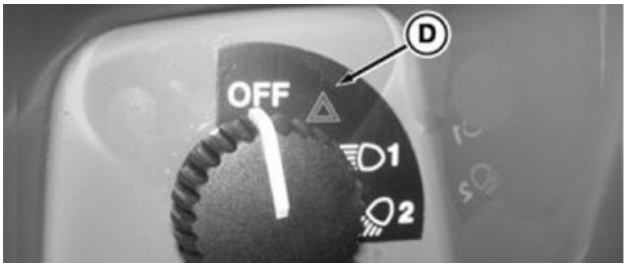
CP00834,0003894-19-15JAN18

On-Board Diagnostic (OBD) Tool



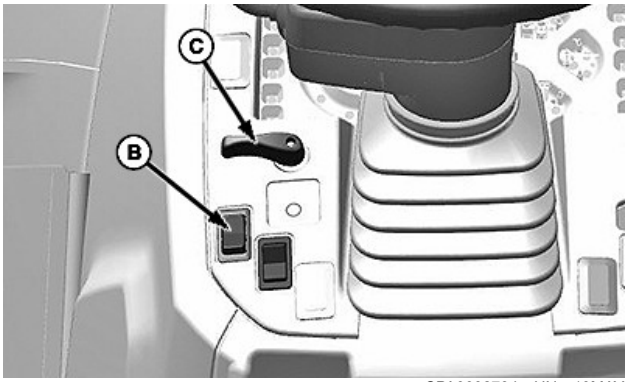
CPA0004587—UN—24NOV17

(A) Information Display



CPA0002826—UN—01JUN16

Warning Position



CPA0002734—UN—10MAY16

Roll Mode Switch and Turn Signal Lever

A—Information Display
B—Roll Mode Switch
C—Turn Signal Lever
D—Warming Switch

NOTE: Information display (A) accesses diagnostic mode when machine warning switch (D) and lights are not active.

CONTROL	COMMAND
A - Information Display	Communicates error, fault, or information messages.
B - Roll Mode Switch	Enter or select in information display menus.
C - Turn Signal Lever	Scroll through information display menus (left goes back in menu and right goes next in menu).

1. Hold roll mode switch (B) for 5 seconds to enter OBD Tool.

CPA0002816—UN—31MAY16

Diagnostic Trouble Code Mode

CPA0002817—UN—31MAY16

Diagnostic Address Mode

2. Two OBD Tool modes can be displayed on information display:
   - Diagnostic Trouble Codes Mode (DTC)
   - Diagnostic Address Mode (DA)

CPA0002818—UN—31MAY16

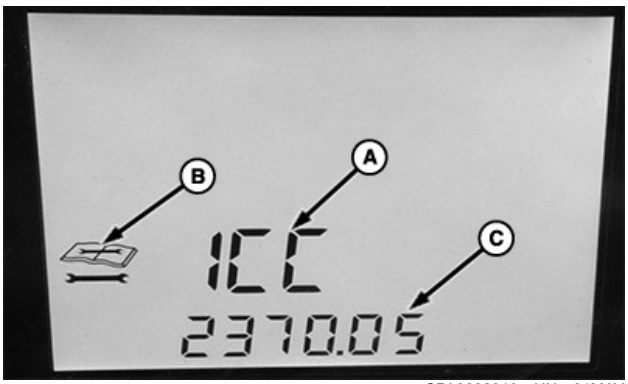
Controllers Navigation

NOTE: Control unit acronyms are shown in alphabetical order (CCU, ECU, EIC, ICC, and PTR).

3. Use turn signal lever to navigate through the controllers.
4. Use roll mode switch to change to Diagnostic Address Mode.
5. To exit from OBD Tool, use one of the following methods:
   - Hold roll mode switch for 5 seconds.
   - Cycle the instrument cluster power.
   - Enable warning lights.

CP00834,0003895-19-15JAN18

Diagnostic Trouble Code (DTC) Mode



CPA0002819—UN—31MAY16

Active Diagnostic Trouble Code

CPA0002820—UN—31MAY16

Previously Active Diagnostic Trouble Code

CPA0002821—UN—31MAY16

Undocumented Diagnostic Trouble Code

A—Control Unit
B—DTC Status
C—DTC

NOTE: See On-Board Diagnostic Tool page for directions to enter DTC mode.

IMPORTANT: When a DTC occurs, make note of operating conditions and STOP, Warning, or Information alert indicators. Contact your John Deere dealer for service assistance.

DISPLAY	DESCRIPTION
A - Control Unit	CCU, ECU, EIC, ICC, and PTR
B - DTC Status	Wrench Icon on: Active Wrench Icon off: Previously Active.
C - DTC	Diagnostic Trouble Code number XXXXXX.XX

Diagnostic Trouble Code (DTC) Mode displays active, previously active (stored), and undocumented fault or trouble codes (know as DTC).

If a control unit software detects a malfunction or a status fault, a DTC is registered. A DTC number consists 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.

For example:

Software	SPN	FMI
ICC	002370	0.05
ICC	"none"	Means no codes

NOTE: Undocumented DTC is randomly generated. Contact your John Deere dealer for service assistance.

CP00834,0003896-19-15JAN18

Diagnostic Address (DA) Mode

NOTE: See On-Board Diagnostic Tool page for directions to enter DA mode.

CPA0002822—UN—31MAY16

Address Menu

1. Press roll mode switch to select and enter Diagnostic Address (DA) for a specific control unit software application.
2. Use turn signal lever to scroll through the DA list.

CPA0002823—UN—31MAY16

Address 001 - Codes

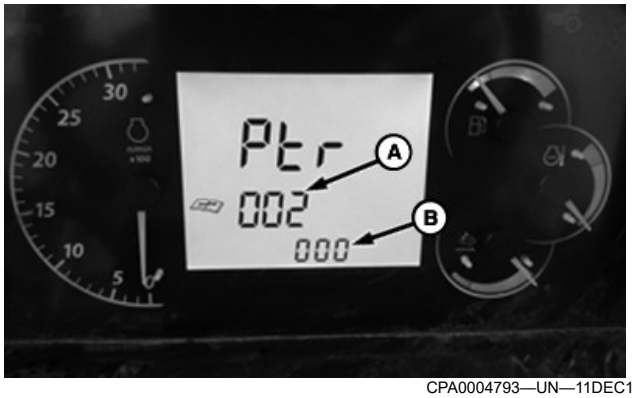
CPA0002824—UN—31MAY16

Diagnostic Trouble Codes

A—Control Unit
B—DTC

3. Address 001 is a list of stored Diagnostic Trouble Codes (DTC) (B) for a specific control unit software (A).

DISPLAY	DESCRIPTION
A - Control Unit	CCU, ECU, EIC, ICC, and PTR
B - DTC	Record code XXXXXX.XX and contact your John Deere dealer.
CLR?	CLEAR command. To clear DTC, press roll mode switch.
DONE	Deletion of DTC is done.



CPA0004793—UN—11DEC17

Diagnostic Addresses

A—Diagnostic Address
B—Diagnostic Address Value

4. Addresses 002 displays control unit software states, configurations, and operational information relating to various machine systems. John Deere dealers can use DA to assist in DTC service work.

DISPLAY	DESCRIPTION
A - Diagnostic Address	Record address number.
B - Diagnostic Address Value	Record address value XXXXXX and contact your John Deere dealer.

CP00834,0003897-19-15JAN18

Specifications

General Specifications

NOTE: Specifications and design subject to change without notice.

Tractor Model	6105E	6120E	6135E	6120EH
ENGINE				
Engine Model	**4045H**	**4045H**	**4045H**	**4045H**
EPA Tier Level (FT4)	John Deere PowerTech™ PWL[a] (B20 Diesel Compatible)	John Deere PowerTech™ PWL[a] (B20 Diesel Compatible)	John DeerePowerTech ™™ PWS[b](B20 Diesel Compatible)	John Deere PowerTech™ PWL[a] (B20 Diesel Compatible)
Type	Diesel, in-line, 4-cylinder, wet-sleeve cylinder liners with 4 valves-in-head			
Rated Engine power hp (hp ISO) at 2200 engine rpm (97/68EC)[c]	77 kW (105 hp)	88 kW (120 hp)	99 kW (135 hp)	88 kW (120 hp)
Max Engine power hp (hp ISO) at 1900 engine rpm (97/68EC)[c]	Not applicable	Not applicable	Not applicable	Not applicable
Engine Peak Torque (at 1600 rpm)	432 N·m (318 lb·ft)	494 N·m (364 lb·ft)	539 N·m (397 lb·ft)	494 N·m (364 lb·ft)
Aspiration	Wastegate turbocharger with air-to-air aftercooling and cooled exhaust gas recirculation			
Rated PTO power (hp SAE) at the engine speed (2100 rpm)	66 kW (89 hp)	76 kW (102 hp)	86 kW (115 hp)	76 kW (102 hp)
Constant Power Range (rpm)	1800—2200 rpm		1900—2200 rpm	1800—2200 rpm
Engine Torque Rise	29%		25%	29%
Engine Power Bulge	3%			
Rated Engine Speed	2200 rpm			
Cylinders	4			
Bore	106 mm (4.17 in)			
Stroke	127 mm (5.0 in)			
Displacement	4.5 L (275 in³)			
Compression	16.8:1			
Firing Order	1-3-4-2			
Intake Valve Clearance	0.46 mm (0.018 in)			
Exhaust Valve Clearance	0.53 mm (0.021 in)			
Slow Idle (rpm)	900			
Fast Idle (rpm)	2300			
Lubrication	Full-pressure, full-flow filtration with bypass			

PowerTech™ is a trademark of Deere & Company
[a] Final Tier 4 (FT4) Emission certified (PowerTech™) engines can be identified by letter "U" within the engine serial number. Example is PE4045UXXXXXX.
[b] Final Tier 4 (FT4) Emission certified (PowerTech) engines can be identified by letter "U" within the engine serial number. Example is PE4045UXXXXXX.
[c] 97/68/EC power refers to average (50% MOE) net brake power measured and corrected for ambient conditions according to the EC emissions directive. It is equivalent to internal Deere Standard RES10080, and SAE Standards J1349, J1995.

Tractor Model	6105E	6120E	6135E	6120EH
FUEL and AIR SYSTEM				
Fuel Injection Type	Electronically controlled, high-pressure common rail with mechanical fuel transfer pump (manual priming)			
Filter system	Two stage with the water separator and service indicator light			
Filter, primary	10 micron replaceable cartridge with the water indication sensor and drain			
Filter, secondary	4 micron spin-on element			
Injection Pump	Denso			
Governor	Electronic			
Air Cleaner	Dry Type with the safety element			
Filter, oil	Replaceable cartridge style oil filter			
Filter, engine air	Dual stage with aspiration			

Tractor Model	6105E	6120E	6135E	6120EH
ELECTRICAL SYSTEM—12 V, NEGATIVE GROUND				
Battery Model	925 CCA			
Cold Cranking Amps	925			
Reserve Capacity (minutes)	180			
Battery BCI Group Size	31			
Alternator/Battery	90 A /12 V			
7-Pin Connector	In Base			

Tractor Model	6105E	6120E	6135E	6120EH
TRANSMISSION				
TSS with PR Clutch 12 X 12	**In Base**			
Gears Forward	12			
Gears Reverse	with PowrReverser™: 12			
Speed Ranges	4			
Hydraulic Actuated Multi-Disk Wet Master Clutch	Not applicable			
Hydraulic Actuated Multi-Disk Wet Master Clutch—PowrReverser™ Option	In Base			

Tractor Model	6105E	6120E	6135E	6120EH
TRANSMISSION				
TSS with Hi/Lo PR Clutch 24 X 12	**Optional**			
Gears Forward	24			
Gears Reverse	with PowrReverser™: 12			
Speed Ranges	4			
Hydraulic Actuated Multi-Disk Wet Master Clutch	Not applicable			
Hydraulic Actuated Multi-Disk Wet Master Clutch—PowrReverser™ Option	In Base			

Tractor Model	6105E	6120E	6135E	6120EH
FRONT AXLE				
2WD—tread range 60.4 to 80.4 in (1533 to 2043 mm)	Optional	Optional	Not applicable	Optional
MFWD—tread range 59.7 to 79.4 in (1516 to 2016 mm)	Standard			
Differential Lock (2WD)	Not applicable			
Differential Lock (MFWD)	Limited Slip			

Tractor Model	6105E	6120E	6135E	6120EH
REAR AXLE				
Final Drives	Inboard planetary			
Flange	Standard			
Differential Lock	Full-Locking Mechanical			

Tractor Model	6105E	6120E	6135E	6120EH
BRAKES	Mechanically Actuated, Wet Disk			

Tractor Model	6105E	6120E	6135E	6120EH
Power take-off (PTO)				
Control	Independent			
Activation	Electro Hydraulic			
Size	35 mm (13/8 in)			
540/1000 rpm Switchable, Rear	In Base			
1-3/8 in, 540/1000 reversible shaft	In Base			
PTO Speed at Engine rpm	540 PTO at 2085 Engine rpm /1000 PTO at 2067 Engine rpm			
PTO Torque Rise	30%			

Tractor Model	6105E	6120E	6135E	6120EH
Power take-off (PTO)				
PTO Power Bulge	5%			

Tractor Model	6105E	6120E	6135E	6120EH
HYDRAULIC SYSTEM				
Type	Open Center, Gear Driven			
Pump General Specification	External Gear Pump			
Implement Pump Capacity (2200 rpm) at 90% Efficiency.	75.7 L/min (20 gal/min) with 36.5 cc displacement			
Implement Pump Flow at Idle Speed (900 rpm)	31 L/min (8.2 gal/min)			
Maximum Pressure	19 500 kPa (2828 psi)			
Power Steering	Hydrostatic			
Pump Capacity (2200 rpm)	29.9 L/min (7.9 gal/min)			
Standard duty lift capacity 610 mm behind the hitch point for cylinder diameter 70 mm (in base)	2490 kg (5489.5 lb)			
Heavy-duty lift capacity 610 mm behind the hitch point for cylinder diameter 80 mm (optional)	3250 kg (7165 lb)			
Take Out Oil Capacity.	22 L (5.8 gal)			

Tractor Model	6105E	6120E	6135E	6120EH
SELECTIVE CONTROL VALVE (SCV)				
Two Mechanical SCV	In Base			
Three Mechanical SCV	Optional			

Tractor Model	6105E	6120E	6135E	6120EH
THREE-POINT HITCH				
Telescopic Draft Links	In Base			
Category 2 (5500 lb [2500 kg] Standard Lift @ 610 mm behind the hitch point)	Standard			
Category 2 (7300 lb [3311 kg] Standard Lift @ 610 mm behind the hitch point)	Optional			
Draft Sensing	Optional			

Tractor Model	6105E	6120E	6135E	6120EH
Drawbar				
Category 2 1000 kg (2205 lb)—1250 kg (2756 lb) Maximum Vertical Load dependent on the drawbar position (Transport)	Standard			
Cat 2 1200 kg (2645 lb)—1900 kg (4189 lb) Maximum Vertical Load dependent on the drawbar position (Transport)	Optional			

Tractor Model	6105E	6120E	6135E	6120EH
DRAIN and REFILL CAPACITIES				
Fuel Tank	168 L (44.4 gal)			
DEF Tank	10.9 L (2.9 gal)			
Cooling System	18.6 L (4.7 gal)—OOS / 19.1 L (5.0 gal)—Cab			
Crankcase, Including Filter	15 L (4 gal)			
Transmission Case	58 L (15.3 gal)			
MFWD Axle Housing	5 L (1.3 gal)			
Wheel Hub without Brakes	0.8 L (0.2 gal)			
High Crop Axle MY21	6.4 L			

Tractor Model	6105E	6120E	6135E	6120EH
OPERATOR SEAT				
OOS				
Vinyl Seat, Mechanical Suspension with Operator Presence Switch	In Base			

Tractor Model	6105E	6120E	6135E	6120EH
OPERATOR SEAT				
Cab				
Fabric Seat, Mechanical Suspension, Adjustable with Operator Presence Switch	In Base			
Fabric Seat, Air Suspension, Adjustable, Swivel with Operator Presence Switch	Optional			
Instructional Seat (for Cab Tractors)	Optional			

Tractor Model	6105E	6120E	6135E	6120EH
ADDITIONAL EQUIPMENT OPTIONS				
Electronic Hand Throttle	In Base			
Foot Throttle	In Base			
Engine Block Heater	Optional			
Front Fenders (MFWD only)	Optional			

Tractor Model	6105E	6120E	6135E	6120EH
STEERING COLUMN				
Hydrostatic Power	Hydrostatic, Flow Metering System			
Tilt / Telescoping.	In Base			

Filling DEF Tank at Different Angle without Leaking								
Operation Angle	Clockwise		Counterclockwise		Nose Up		Nose Down	
	Filling with Jug (liters)	Filling with Pistol (liters)	Filling with Jug (liters)	Filling with Pistol (liters)	Filling with Jug (liters)	Filling with Pistol (liters)	Filling with Jug (liters)	Filling with Pistol (liters)
0º	9.16	8.29	9.16	8.29	9.16	8.29	9.16	8.29
5º	9.16	8.29	9.16	8.29	9.16	8.29	9.16	8.29
10º	9.16	7.84	9.16	8.29	9.16	8.29	9.16	8.29
15º	8.28	6.77	9.16	8.29	9.16	8.29	9.16	8.29
20º	6.78	5.79	9.16	8.29	9.16	8.29	9.16	8.29
25º	5.90	5.08	9.16	8.29	9.16	8.29	9.16	8.29
30º	4.92	4.26	9.16	8.29	9.16	8.29	9.16	8.29

GS38198,0000F87-19-13MAY21

Overall Dimensions and Weights

NOTE: Specifications and design subject to change without notice.

All dimensions are of a machine equipped with in base tires.

Tractor Model	6105E		6120E		6135E	6120EH
	2WD	MFWD	2WD	MFWD	MFWD	MFWD
DIMENSIONS						
Wheelbase—2WD	2456 mm (96.7 in)	NA	2456 mm (96.7 in)	NA	NA	NA
Wheelbase—MFWD	NA	2450 mm (96.5 in)	NA	2450 mm (96.5 in)	2450 mm (96.5 in)	2654.5 mm (104.5 in)
Overall Length—2WD (Including front weight support and hitch with draft links horizontal)	4341	4341	4341	4341	4341	NA
Overall Length—MFWD (Including front weight support, weights, and hitch with draft links horizontal)	4704	4704	4704	4704	4704	4456.5
Overall Width Flange-to-Flange	2451 mm (96.5 in)	2451 mm (96.5 in)	2451 mm (96.5 in)	2451 mm (96.5 in)	2451 mm (96.5 in)	2172 mm (85.5 in)

Tractor Model	6105E		6120E		6135E	6120EH
	2WD	MFWD	2WD	MFWD	MFWD	MFWD
DIMENSIONS						
Overall Height (From ground to top of 2-post ROPS)	2858	2794	2858	2794	NA	3181
Overall Height (From center of rear axle to top of 2-post ROPS)	2022	1905	2022	1905	NA	2308
Overall Height (From ground to top of cab)	2756	2756	2756	2756	2756	3095
Overall Height (From center of rear axle to top of cab)	2022	1976	2022	1976	1976	2222
Ground-to-Cab Top	2756 mm (108 in)	2756 mm (108 in)	2756 mm (108 in)	2756 mm (108 in)	2756 mm (108 in)	3095 mm (121.8 in)

Tractor Model	6105E		6120E		6135E	6120EH
	2WD	MFWD	2WD	MFWD	MFWD	MFWD
GROUND CLEARANCE						
Front Axle Center (mm)	597	442	597	442	597	442
Front Axle Crop Area (mm)		526		526		526
Fuel Tank (mm)	503					
Rear Axle Housing (mm)	696					
Drawbar Clearance (offset down) (mm)	516					

Tractor Model	6105E		6120E		6135E	6120EH
	2WD	MFWD	2WD	MFWD	MFWD	MFWD
SHIPPING WEIGHT						
OOS (2WD)	4064 kg (8960 lb)					
OOS (MFWD)	4268 kg (9410 lb)					
Cab (2WD)	4268 kg (9410 lb)					
Cab (MFWD)	4645 kg (10 240 lb)					

Tractor Model	6105E		6120E		6135E	6120EH
	2WD	MFWD	2WD	MFWD	MFWD	MFWD
BALLAST						
Max Ballast Level	6464 kg (14 250 lb)					
Max Payload Capacity	8000 kg (17 636 lb)					

Tractor Model	6105E		6120E		6135E	6120EH
	2WD	MFWD	2WD	MFWD	MFWD	MFWD
Roll-Over Protective Structure (ROPS) (OOS)						
Foldable	Standard					

Tractor Model	6105E		6120E		6135E	6120EH
	2WD	MFWD	2WD	MFWD	MFWD	MFWD
TIRE SIZES						
Front In Base	10.00-16	340/85 R24		340/85 R24	340/85 R24 380/85 R24	340/85 R24
Front Optional		380/85 R24	10.00-16	380/85 R24	340/85 R24	380/85 R24
		320/85 R32		320/85 R32	320/85 R32	320/85 R32
Rear In Base	460/85 R34 460/85 R38	460/85 R34		460/85 R34	460/85 R38 420/85 R38	460/85 R34
Rear Optional		460/85 R38 420/85 R38	460/85 R34 460/85 R38	460/85 R38 420/85 R38	460/85 R34	460/85 R38 420/85 R38
		320/90 R50		320/90 R50	320/90 R50	320/90 R50

UG42841,0000019-19-05AUG21

Turning Radius—MFWD Axle

NOTE: All measurements are with 8-position wheels and without using brakes.

		Tread						
Tire Size		**A**	**B**	**C**	**D**	**E**	**F**	**G**
Without Front Fenders								
340/85 R24	Steering Stop	N/A	57 mm (2.25 in)	N/A	N/A	N/A	N/A	N/A
	MFWD OFF	N/A	5181.6 mm (204 in)	4267.2 mm (168 in)	4358.64 mm (171.6 in)	4389.12 mm (172.8 in)	4419.6 mm (174 in)	4419.6 mm (174 in)
	MFWD ON	N/A	5547.36 mm (218.4 in)	4785.36 mm (188.4 in)	4754.88 mm (187.2 in)	4815.84 mm (189.6 in)	4876.8 mm (192 in)	4907.28 mm (193.2 in)
380/85 R24	Steering Stop	N/A	75 mm (3 in)	54 mm (2.12 in)	N/A	N/A	N/A	N/A
	MFWD OFF	N/A	6126.48 mm (241.2 in)	4907.28 mm (193.2 in)	4358.64 mm (171.6 in)	4389.12 mm (172.8 in)	4419.6 mm (174 in)	4419.6 mm (174 in)
	MFWD ON	N/A	6522.72 mm (256.8 in)	5334.2 mm (210 in)	4754.88 mm (187.2 in)	4815.84 mm (189.6 in)	4876.8 mm (192 in)	4907.28 mm (193.2 in)

		Tread						
Tire Size		**A**	**B**	**C**	**D**	**E**	**F**	**G**
With Fenders								
340/85 R24	Steering Stop	N/A	102 mm (1224 in)	70 mm (540 in)	57 mm (684 in)	54 mm (648 in)	54 mm (648 in)	54 mm (648 in)
	MFWD OFF	N/A	6461.76 mm (254.4 in)	5669.28 mm (223.2 in)	5181.6 mm (204 in)	5151.12 mm (202.8 in)	5242.56 mm (206.4 in)	5334 mm (210 in)
	MFWD ON	N/A	6858 mm (270 in)	5943.6 mm (234 in)	5547.36 mm (218.4 in)	5516.88 mm (217.2 in)	5608.12 mm (220.8 in)	5699.76 mm (224.4 in)
380/85 R24	Steering Stop	N/A	102 mm (1224 in)	70 mm (540 in)	54 mm (648 in)	54 mm (648 in)	54 mm (648 in)	54 mm (648 in)
	MFWD OFF	N/A	6461.76 mm (254.4 in)	5608.32 mm (220.8 in)	5181.6 mm (204 in)	5151.12 mm (202.8 in)	5242.56 mm (206.4 in)	5334 mm (210 in)
	MFWD ON	N/A	6858 mm (270 in)	5913.12 mm (232.8 in)	5547.36 mm (218.4 in)	5516.88 mm (217.2 in)	5608.12 mm (220.8 in)	5699.76 mm (224.4 in)

CP00834,000389A-19-16MAR18

Turning Radius—2WD Axle

Tread: 1635 mm (64.4 in)	
Front Tire Size: 10.00-16, 8PR F2	
Brakes Applied: 3718.56 mm (146.4 in)	No Brakes: 4145.28 mm (163.2 in)

CP00834,000389B-19-15JAN18

Estimated Vehicle Speed, PR with Creeper

	Rear Wheel			
	340/85R38	320/90R46	230/95R48	320/90R50
Gear	Speed km/h			
A1	0.22	0.25	0.26	0.26
A2	0.32	0.36	0.37	0.38
A3	0.42	0.47	0.49	0.50
B1	0.45	0.51	0.52	0.54
B2	0.65	0.73	0.75	0.77
B3	0.86	0.97	0.99	1.02

NOTE: The suffix for the transmission serial number is a transmission identifier made up of the first digits that precede the transmission serial number. (See Transmission Serial Number Location in the Identification Numbers section.)

NOTE: Specification and design subject to change without notice.

GS38198,0000F7E-19-26MAY21

Ground Speeds—PR

12 X 12 Transmission

460/85 R38 Rear Tires				
PowrReverser™ Lever	Range	Gear	Km/Hr	MPH
F1	A	1	3.2	1.99
F2	A	2	4.5	2.79
F3	A	3	6	3.73
F4	B	1	6.5	4.04
F5	B	2	9.2	5.72
F6	B	3	12.2	7.58
F7	C	1	10.9	6.77
F8	C	2	15.5	9.63
F9	C	3	20.6	12.80
F10	D	1	16.7	10.37
F11	D	2	23.8	14.79
F12	D	3	31.6	19.64
R1	A	1	2.9	1.80
R2	A	2	4.1	2.54
R3	A	3	5.5	3.42
R4	B	1	5.9	3.67
R5	B	2	8.4	5.22
R6	B	3	11.2	6.96
R7	C	1	9.9	6.15
R8	C	2	14.2	8.82
R9	C	3	18.8	11.68
R10	D	1	15.2	9.44
R11	D	2	21.7	13.48
R12	D	3	28.8	17.89

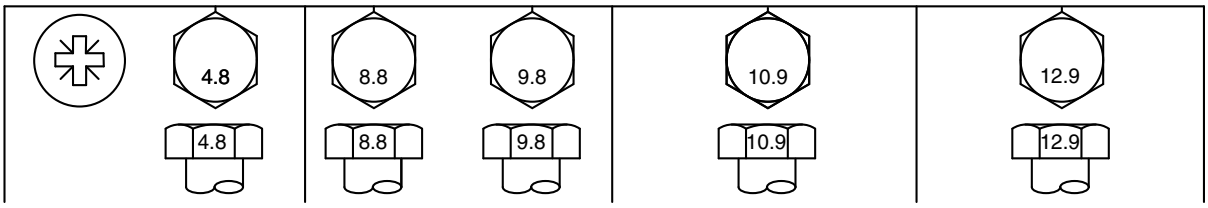
24 X 12 Transmission High / Low

460/85 R38 Rear Tires					
PowrReverser™ Lever	Range	Gear	High/Low	Km/Hr	MPH
F1	A	1	Low	2.5	1.55
F2	A	1	High	3	1.86
F3	A	2	Low	3.8	2.36
F4	A	2	High	4.5	2.79
F5	A	3	Low	5.2	3.23
F6	A	3	High	6.1	3.79
F7	B	1	Low	6.1	3.79
F8	B	1	High	7.3	4.53
F9	B	2	Low	9.2	5.72
F10	B	2	High	10.9	6.77
F11	B	3	Low	12.5	7.77
F12	B	3	High	14.8	9.19
F13	C	1	Low	10.4	6.46
F14	C	1	High	12.4	7.7
F15	C	2	Low	15.7	9.75
F16	C	2	High	18.6	11.55
F17	C	3	Low	21.3	13.23
F18	C	3	High	25.3	15.72
F19	D	1	Low	16.3	10.13

460/85 R38 Rear Tires					
PowrReverser™ Lever	Range	Gear	High/Low	Km/Hr	MPH
F20	D	1	High	19.4	12.05
F21	D	2	Low	24.5	15.22
F22	D	2	High	29	18.02
F23	D	3	Low	33.4	20.75
F24	D	3	High	39.5	24.54
R1	A	1	N/A	2.7	1.68
R2	A	2	N/A	4.1	2.54
R3	A	3	N/A	5.6	3.48
R4	B	1	N/A	6.6	4.10
R5	B	2	N/A	9.9	6.15
R6	B	3	N/A	13.5	8.39
R7	C	1	N/A	11.3	7.02
R8	C	2	N/A	16.9	10.50
R9	C	3	N/A	23	14.29
R10	D	1	N/A	17.7	10.99
R11	D	2	N/A	26.5	16.47
R12	D	3	N/A	36.1	22.43

CP00834,000389C-19-16MAR18

Metric Bolt and Screw Torque Values



TS1742—UN—31MAY18

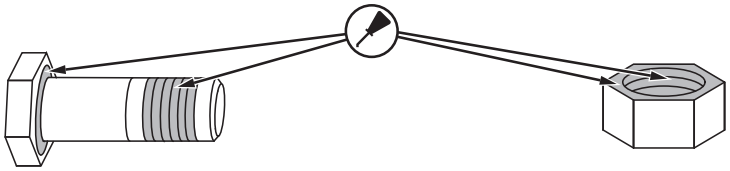
Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497
M24	—	—	—	—	468	345	518	382	666	491	738	544	780	575	864	637
M27	—	—	—	—	683	504	758	559	973	718	1080	797	1139	840	1263	932
M30	—	—	—	—	932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265

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

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench.
DO NOT use these values if a different torque value or tightening procedure is given for a specific application.
For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.

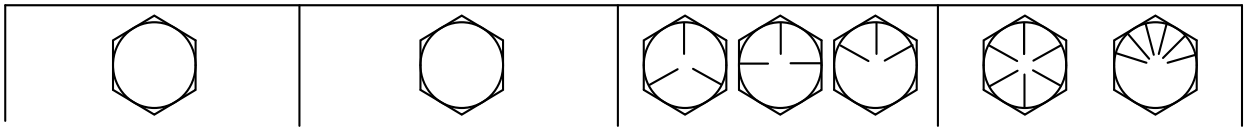


TS1741—UN—22MAY18

[a]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[b]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2-19-30MAY18

Unified Inch Bolt and Screw Torque Values



TS1671—UN—01MAY03

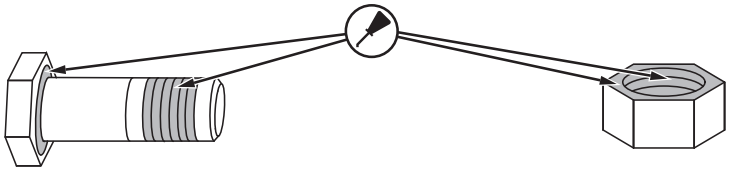
Bolt or Screw Size	SAE Grade 1[a]				SAE Grade 2[b]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
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

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]	
1-3/8	564	416	618	456	564	416	618	456	1264	932	1386	1022	2050	1512	2248	1658
1-1/2	743	548	815	601	743	548	815	601	1665	1228	1826	1347	2699	1991	2962	2185

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench.
DO NOT use these values if a different torque value or tightening procedure is given for a specific application.
For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.



TS1741—UN—22MAY18

[a]Grade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.
[b]Grade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.
[c]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[d]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ1-19-30MAY18

Identifications Numbers

Identification Numbers

When working on machines or components that are covered by warranty, it is important that you include the Product Identification Number of machine and component serial number on the warranty claim form.

Product Identification Numbers (PIN) 1P0XXXXXXXXXXXXX are made of various alphabetical and numeric characters. Characters represent multiple machine attributes such as model number, model year, manufacture location, manufacture date, configurations, and serial number.

The location of component serial number plates are shown following.

CP00834,000389F-19-15JAN18

Product Identification Number

1	P	0	6	1	5	5	J	J	C	8	1	2	3	4	5	6
WMC	Build Factory		Machine Series	Engine hp			Machine Family	Check Letter	Calendar Year	Transmission Type	Serial Number					
			Model 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: assigned by Deere system.

Calendar Year = represents calendar year of manufacture (2012 = A, 2031 = 1, 2040 = A again).

Transmission Type: represents transmission type.

Serial Number: Consecutive Number Assigned by IJD; example shown 123456.

P17084—UN—20AUG13

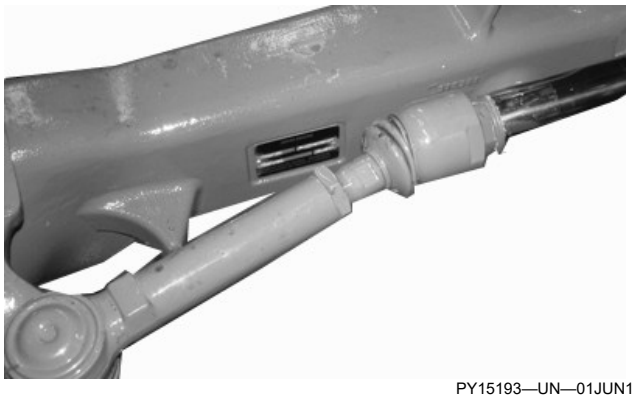
Product Identification Number Plate Location

Refer below chart to see Transmission Type

Position 11	Transmission Type
1	Available
2	TSS 24X8
3	TSS 12X4
4	9X3 SYNC
5	PR 12X12
6	PR 24X12
7	12X4 SYNC PLUS
8	16X16 POWQUAD
9	Available
A	Available
B	Available
C	Available
D	Available
E	Available
F	Available
G	Available
H	Available
J	Available
K	Available
L	Available
M	Available
N	Available
P	Available
R	Available
S	Available
T	Available
V	Available
W	Available
X	Available
Y	Available

AG32641,00004CF-19-01MAR22

MFWD Axle Serial Number



PY15193—UN—01JUN12

MFWD Serial Number

Serial number plate is located on rear side of left-hand axle housing.

Record serial number below.

MFWD Axle Serial Number _____

CP00834,00038A1-19-15JAN18

Engine Serial Number

PY15194—UN—01JUN12

Engine Serial Number

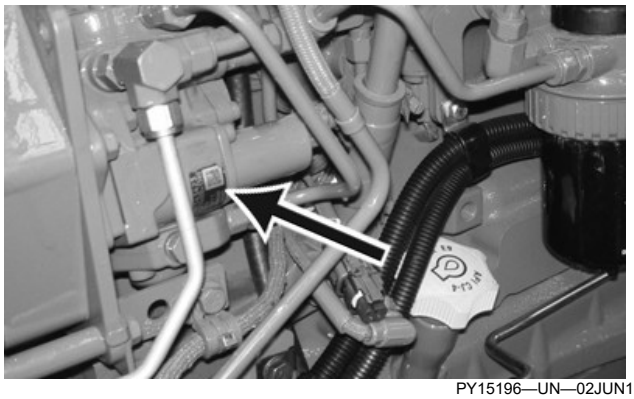
Serial number plate is located on the right-hand side of the engine block.

Record serial number below.

Engine Serial Number _____

CP00834,00038A2-19-15JAN18

Fuel Injection Pump Serial Number



PY15196—UN—02JUN12

Fuel Injection Pump Serial Number

Serial number plate is located on the side of pump.

Record serial number below.

Fuel Injection Pump Serial Number _____

CP00834,0003963-19-17JAN18

Transaxle Serial Number

P14827—UN—09NOV07

Transaxle Serial Number

Transaxle (drive train) serial number plate is located at the rear of the machine, behind left-hand brake linkage.

Record serial number below.

Transaxle Serial Number _____

CP00834,00038A4-19-15JAN18

Cab Serial Number

CPA0004874—UN—11JAN18

Cab Serial Number

Serial number is located on rear left-hand post.

Record serial number below.

Cab Serial Number _____

CP00834,00038A5-19-15JAN18

Keep Proof of Ownership

1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:

   - Mark your machine with your own numbering system.
   - Take color photographs from several angles of each machine.

CP00834,00038A6-19-15JAN18

Limited Battery Warranty

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

To Secure Warranty Service

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

Replacement

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

This Warranty Does Not Cover

Breakage of the container, cover, or terminals.

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

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

Limitation of Implied Warranties and Purchaser's Remedies

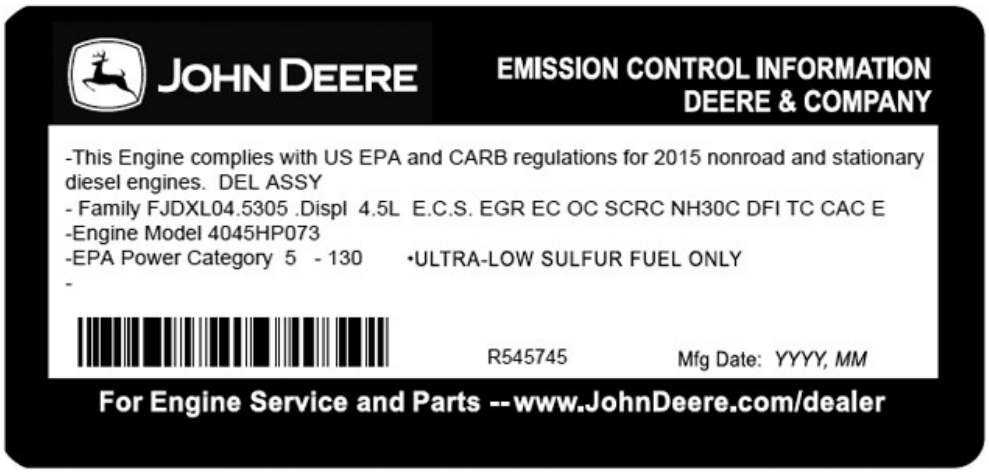
To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations or promises as to the quality, performance or freedom from defect of the products covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE,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

No Dealer Warranty

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

DX,BATWAR,NA-19-06AUG21

Emissions Control System Certification Label



P17657—UN—07MAY15

Engine Emissions Label

⚠ CAUTION: Statutes providing severe penalties for tampering with emissions controls may apply to the user or dealer.

The emissions warranty applies to those engines marketed by John Deere that have been certified by the United States Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB); and used in the United States and Canada in Non-road equipment. The presence of an emissions label like the one shown signifies that the engine has been certified with the EPA and/or CARB. The EPA and CARB warranties only apply to new engines having the

certification label affixed to the engine and sold as stated previous in the geographic areas. The presence of an EU number signifies that the engine has been certified with the European Union countries per Directive 97/68/EC. The EPA and/or CARB emissions warranties do not apply to the EU countries.

The emissions label has applicable US EPA and/or CARB regulatory year. The regulatory year determines which warranty statement is applicable to engine. See “EPA Non-road Emissions Control Warranty Statement—Compression Ignition” and “CARB Non-road Emissions Control Warranty Statement—Compression Ignition”. For additional regulatory year warranty statements, see www.JohnDeere.com or contact the nearest John Deere service dealer for assistance.

Emission Control System(s) Laws

The U.S. EPA and California ARB prohibit the removal or rendering inoperative of any device or element of design installed on or in engines/equipment in compliance with applicable emission regulations prior to or after the sale and delivery of the engines/equipment to the ultimate purchaser.

HL70592,0000835-19-08MAR18

CARB Non-road Emissions Control Warranty Statement—Compression Ignition

Emissions Control Warranty Statement 2019 through 2021

JOHN DEERE

DXLOGOV1—UN—28APR09

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the “Emission Control Information” label located on the engine. If the engine is operated in the United States or Canada and the engine label states: “This engine complies with US EPA regulations for nonroad and stationary diesel engines”, or “This engine complies with US EPA regulations for stationary emergency diesel engines”, refer to the “U.S. and Canada Emission Control Warranty Statement.” If the engine is operated in California, and the engine label states: “This engine complies with US EPA and CARB regulations for nonroad diesel engines” also refer to the “California Emissions Control Warranty Statement.”

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2019 through 2021 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB and is free from defects in materials and workmanship which would cause the failure of a warranted part to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first for all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

EMISSIONS WARRANTY EXCLUSIONS:

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

JOHN DEERE'S WARRANTY RESPONSIBILITY:

Where a warrantable condition exists, John Deere will repair or replace, as it elects, your off-road diesel engine at no cost to you, including diagnosis, parts or labor. Warranty coverage is subject to the limitations and exclusions set forth herein. The off-road diesel engine is warranted for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. The following are emissions-related parts:

Air Induction System
- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system
- Fuel injection system

Exhaust Gas Recirculation
- EGR valve

Catalyst or Thermal Reactor Systems
- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls
- Any device used to capture particulate emissions
- Any device used in the regeneration of the capturing system
- Enclosures and manifolding
- Smoke Puff Limiters

Positive Crankcase Ventilation (PCV) System
- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls
- NOx absorbers and catalysts

SCR systems and urea containers/dispensing systems

Miscellaneous Items used in Above Systems
- Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware

Any warranted emissions-related part scheduled for replacement as required maintenance is warranted by John Deere for the period of time prior to the first scheduled replacement point for the part. Any warranted emissions-related part not scheduled for replacement as required maintenance or scheduled only for regular inspection is warranted by John Deere for the stated warranty period.

OWNER'S WARRANTY RESPONSIBILITIES:

As the off-road diesel engine owner you are responsible for the performance of the required maintenance listed in your Operator's Manual. John Deere recommends that the owner retain all receipts covering maintenance on the off-road diesel engine, but John Deere cannot deny warranty solely for the lack of receipts or for the owner's failure to ensure the performance of all scheduled maintenance. However, as the off-road diesel engine owner, you should be aware that John Deere may deny you warranty coverage if your off-road diesel engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel may result in the engine no longer operating in compliance with applicable emissions requirements.

The owner is responsible for initiating the warranty process, and should present the machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the authorized John Deere dealer as quickly as possible.

Emissions regulations require the customer to bring the unit to an authorized servicing dealer when warranty service is required. As a result, John Deere is NOT liable for travel or mileage on emissions warranty service calls.

Emission_CI_CARB (01Feb17)

Emissions Control Warranty Statement 2019 through 2021

DXLOGOV1 —UN—28APR09

JOHN DEERE

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the "Emission Control Information" label located on the engine. If the engine is operated in the United States or Canada and the engine label states: "This engine complies with US EPA regulations for nonroad and stationary diesel engines", or "This engine complies with US EPA regulations for stationary emergency diesel engines", refer to the "U.S. and Canada Emission Control Warranty Statement." If the engine is operated in California, and the engine label states: "This engine complies with US EPA and CARB regulations for nonroad diesel engines" also refer to the "California Emissions Control Warranty Statement."

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2019 through 2021 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB and is free from defects in materials and workmanship which would cause the failure of a warranted part to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first for all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

EMISSIONS WARRANTY EXCLUSIONS:

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

RG29280—UN—02FEB17

JOHN DEERE'S WARRANTY RESPONSIBILITY:

Where a warrantable condition exists, John Deere will repair or replace, as it elects, your off-road diesel engine at no cost to you, including diagnosis, parts or labor. Warranty coverage is subject to the limitations and exclusions set forth herein. The off-road diesel engine is warranted for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. The following are emissions-related parts:

Air Induction System

- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system

- Fuel injection system

Exhaust Gas Recirculation

- EGR valve

Catalyst or Thermal Reactor Systems

- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls

- Any device used to capture particulate emissions
- Any device used in the regeneration of the capturing system
- Enclosures and manifolding
- Smoke Puff Limiters

Positive Crankcase Ventilation (PCV) System

- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls

- NOx absorbers and catalysts

SCR systems and urea containers/dispensing systems

Miscellaneous Items used in Above Systems

- Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware

Any warranted emissions-related part scheduled for replacement as required maintenance is warranted by John Deere for the period of time prior to the first scheduled replacement point for the part. Any warranted emissions-related part not scheduled for replacement as required maintenance or scheduled only for regular inspection is warranted by John Deere for the stated warranty period.

OWNER'S WARRANTY RESPONSIBILITIES:

As the off-road diesel engine owner you are responsible for the performance of the required maintenance listed in your Operator's Manual. John Deere recommends that the owner retain all receipts covering maintenance on the off-road diesel engine, but John Deere cannot deny warranty solely for the lack of receipts or for the owner's failure to ensure the performance of all scheduled maintenance. However, as the off-road diesel engine owner, you should be aware that John Deere may deny you warranty coverage if your off-road diesel engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel may result in the engine no longer operating in compliance with applicable emissions requirements.

The owner is responsible for initiating the warranty process, and should present the machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the authorized John Deere dealer as quickly as possible.

Emissions regulations require the customer to bring the unit to an authorized servicing dealer when warranty service is required. As a result, John Deere is NOT liable for travel or mileage on emissions warranty service calls.

Emission_CI_CARB (01Feb17)

RG29281—UN—27FEB17

Emissions Control Warranty Statement 2022 through 2024

JOHN DEERE

DXLOGOV1—UN—28APR09

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the "Emission Control Information" label located on the engine. If the engine is operated in the United States or Canada and the engine label states: "This engine complies with US EPA regulations for nonroad and stationary diesel engines", or "This engine complies with US EPA regulations for stationary emergency diesel engines", refer to the "U.S. and Canada Emission Control Warranty Statement." If the engine is operated in California, and the engine label states: "This engine complies with US EPA and California regulations for nonroad/off-road diesel engines" also refer to the "California Emissions Control Warranty Statement."

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you

should contact John Deere at 1-319-292-5400.

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2022 through 2024 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB. John Deere warrants that this engine is free from defects in materials and workmanship which would cause the failure of emissions warrantied parts to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. This applies to all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

EMISSIONS WARRANTY EXCLUSIONS:

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

JOHN DEERE'S WARRANTY RESPONSIBILITY:

Where a warrantable condition exists, John Deere will repair or replace, as it elects, your off-road diesel engine at no cost to you, including diagnosis, parts or labor. Warranty coverage is subject to the limitations and exclusions set forth herein. The off-road diesel engine is warranted for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. The following are emissions-related parts:

Air Induction System
- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system
- Fuel injection system

Exhaust Gas Recirculation
- EGR valve

Catalyst or Thermal Reactor Systems
- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls
- Any device used to capture particulate emissions
- Any device used in the regeneration of the capturing system
- Enclosures and manifolding
- Smoke Puff Limiters

Positive Crankcase Ventilation (PCV) System
- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls
- NOx absorbers and catalysts

SCR systems and urea containers/dispensing systems

Miscellaneous Items used in Above Systems
- Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware

Any warranted emissions-related part scheduled for replacement as required maintenance is warranted by John Deere for the period of time prior to the first scheduled replacement point for the part. Any warranted emissions-related part not scheduled for replacement as required maintenance or scheduled only for regular inspection is warranted by John Deere for the stated warranty period.

OWNER'S WARRANTY RESPONSIBILITIES:

As the off-road diesel engine owner you are responsible for the performance of the required maintenance listed in your Operator's Manual. John Deere recommends that the owner retain all receipts covering maintenance on the off-road diesel engine, but John Deere cannot deny warranty solely for the lack of receipts or for the owner's failure to ensure the performance of all scheduled maintenance. However, as the off-road diesel engine owner, you should be aware that John Deere may deny you warranty coverage if your off-road diesel engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel may result in the engine no longer operating in compliance with applicable emissions requirements.

The owner is responsible for initiating the warranty process, and should present the machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the authorized John Deere dealer as quickly as possible.

Emissions regulations require the customer to bring the unit to an authorized servicing dealer when warranty service is required. As a result, John Deere is NOT liable for travel or mileage on emissions warranty service calls.

Emission_CI_CARB (14Apr20)

Emissions Control Warranty Statement 2022 through 2024

DXLOGOV1 —UN—28APR09

JOHN DEERE

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the "Emission Control Information" label located on the engine. If the engine is operated in the United States or Canada and the engine label states: "This engine complies with US EPA regulations for nonroad and stationary diesel engines", or "This engine complies with US EPA regulations for stationary emergency diesel engines", refer to the "U.S. and Canada Emission Control Warranty Statement." If the engine is operated in California, and the engine label states: "This engine complies with US EPA and California regulations for nonroad/off-road diesel engines" also refer to the "California Emissions Control Warranty Statement."

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2022 through 2024 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB. John Deere warrants that this engine is free from defects in materials and workmanship which would cause the failure of emissions warrantied parts to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. This applies to all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

EMISSIONS WARRANTY EXCLUSIONS:

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

RG32758—UN—19AUG20

JOHN DEERE'S WARRANTY RESPONSIBILITY:

Where a warrantable condition exists, John Deere will repair or replace, as it elects, your off-road diesel engine at no cost to you, including diagnosis, parts or labor. Warranty coverage is subject to the limitations and exclusions set forth herein. The off-road diesel engine is warranted for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. The following are emissions-related parts:

Air Induction System

- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system

- Fuel injection system

Exhaust Gas Recirculation

- EGR valve

Catalyst or Thermal Reactor Systems

- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls

- Any device used to capture particulate emissions
- Any device used in the regeneration of the capturing system
- Enclosures and manifolding
- Smoke Puff Limiters

Positive Crankcase Ventilation (PCV) System

- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls

- NOx absorbers and catalysts

SCR systems and urea containers/dispensing systems

Miscellaneous Items used in Above Systems

- Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware

Any warranted emissions-related part scheduled for replacement as required maintenance is warranted by John Deere for the period of time prior to the first scheduled replacement point for the part. Any warranted emissions-related part not scheduled for replacement as required maintenance or scheduled only for regular inspection is warranted by John Deere for the stated warranty period.

OWNER'S WARRANTY RESPONSIBILITIES:

As the off-road diesel engine owner you are responsible for the performance of the required maintenance listed in your Operator's Manual. John Deere recommends that the owner retain all receipts covering maintenance on the off-road diesel engine, but John Deere cannot deny warranty solely for the lack of receipts or for the owner's failure to ensure the performance of all scheduled maintenance. However, as the off-road diesel engine owner, you should be aware that John Deere may deny you warranty coverage if your off-road diesel engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel may result in the engine no longer operating in compliance with applicable emissions requirements.

The owner is responsible for initiating the warranty process, and should present the machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the authorized John Deere dealer as quickly as possible.

Emissions regulations require the customer to bring the unit to an authorized servicing dealer when warranty service is required. As a result, John Deere is NOT liable for travel or mileage on emissions warranty service calls.

Emission_CI_CARB (14Apr20)

RG32759—UN—19AUG20
DX,EMISSIONS,CARB-19-26AUG20

EPA Non-road Emissions Control Warranty Statement—Compression Ignition

JOHN DEERE

DXLOGOV1—UN—28APR09

U.S. AND CANADA EMISSION CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the "Emissions Control Information" label located on the engine. If the engine is operated in the United States or Canada and the Emissions Control information label states: "This engine complies with US EPA regulations for nonroad and stationary diesel engines", or “This engine conforms to US EPA nonroad compression-ignition regulations”, refer to the "U.S. and Canada Emission Control Warranty Statement." If the engine is operated in California, and the label states: "This engine complies with US EPA and CARB regulations for nonroad diesel engines”, or “This engine conforms to US EPA and California nonroad compression-ignition emission regulations”, also refer to the "California Emission Control Warranty Statement.”

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emissions-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you

should contact John Deere at 1-319-292-5400.

JOHN DEERE'S WARRANTY RESPONSIBILITY

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine including all parts of its emission-control system was designed, built and equipped so as to conform at the time of the sale with Section 213 of the Clean Air Act and is free from defects in materials and workmanship which would cause the engine to fail to conform with applicable US EPA regulations for a period of five years from the date the engine is placed into service or 3,000 hours of operation, whichever first occurs.

Where a warrantable condition exists, John Deere will repair or replace, as it elects, any part or component with a defect in materials or workmanship that would increase the engine's emissions of any regulated pollutant within the stated warranty period at no cost to you, including expenses related to diagnosing and repairing or replacing emission-related parts. Warranty coverage is subject to the limitations and exclusions set forth herein. Emission- related components include engine parts developed to control emissions related to the following:

Air-Induction System
Fuel System
Ignition System
Exhaust Gas Recirculation Systems
Aftertreatment Devices
Crankcase Ventilation Valves
Sensors
Engine Electronic Control Units

EMISSION WARRANTY EXCLUSIONS

John Deere may deny warranty claims for malfunctions or failures caused by:

- Non-performance of maintenance requirements listed in the Operator's Manual
- The use of the engine/equipment in a manner for which it was not designed
- Abuse, neglect, improper maintenance or unapproved modifications or alterations
- Accidents for which it does not have responsibility or by acts of God

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel can harm the emissions control system of the engine/equipment and is not approved for use.

To the extent permitted by law John Deere is not liable for damage to other engine components caused by a failure of an emission-related part, unless otherwise covered by standard warranty.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. REMEDIES UNDER THIS WARRANTY ARE LIMITED TO THE PROVISIONS OF MATERIAL AND SERVICES AS SPECIFIED HEREIN. WHERE PERMITTED BY LAW, NEITHER JOHN DEERE NOR ANY AUTHORIZED JOHN DEERE ENGINE DISTRIBUTOR, DEALER, OR REPAIR FACILITY OR ANY COMPANY AFFILIATED WITH JOHN DEERE WILL BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Emission_CI_EPA (18Dec09)

JOHN DEERE

U.S. AND CANADA EMISSION CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the "Emissions Control Information" label located on the engine. If the engine is operated in the United States or Canada and the Emissions Control information label states: "This engine complies with US EPA regulations for nonroad and stationary diesel engines", or "This engine conforms to US EPA nonroad compression-ignition regulations", refer to the "U.S. and Canada Emission Control Warranty Statement." If the engine is operated in California, and the label states: "This engine complies with US EPA and CARB regulations for nonroad diesel engines", or "This engine conforms to US EPA and California nonroad compression-ignition emission regulations", also refer to the "California Emission Control Warranty Statement."

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emissions-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

JOHN DEERE'S WARRANTY RESPONSIBILITY

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine including all parts of its emission-control system was designed, built and equipped so as to conform at the time of the sale with Section 213 of the Clean Air Act and is free from defects in materials and workmanship which would cause the engine to fail to conform with applicable US EPA regulations for a period of five years from the date the engine is placed into service or 3,000 hours of operation, whichever first occurs.

Where a warrantable condition exists, John Deere will repair or replace, as it elects, any part or component with a defect in materials or workmanship that would increase the engine's emissions of any regulated pollutant within the stated warranty period at no cost to you, including expenses related to diagnosing and repairing or replacing emission-related parts. Warranty coverage is subject to the limitations and exclusions set forth herein. Emission- related components include engine parts developed to control emissions related to the following:

Air-Induction System
Fuel System
Ignition System
Exhaust Gas Recirculation Systems
Aftertreatment Devices
Crankcase Ventilation Valves
Sensors
Engine Electronic Control Units

EMISSION WARRANTY EXCLUSIONS

John Deere may deny warranty claims for malfunctions or failures caused by:

- Non-performance of maintenance requirements listed in the Operator's Manual
- The use of the engine/equipment in a manner for which it was not designed
- Abuse, neglect, improper maintenance or unapproved modifications or alterations
- Accidents for which it does not have responsibility or by acts of God

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel can harm the emissions control system of the engine/equipment and is not approved for use.

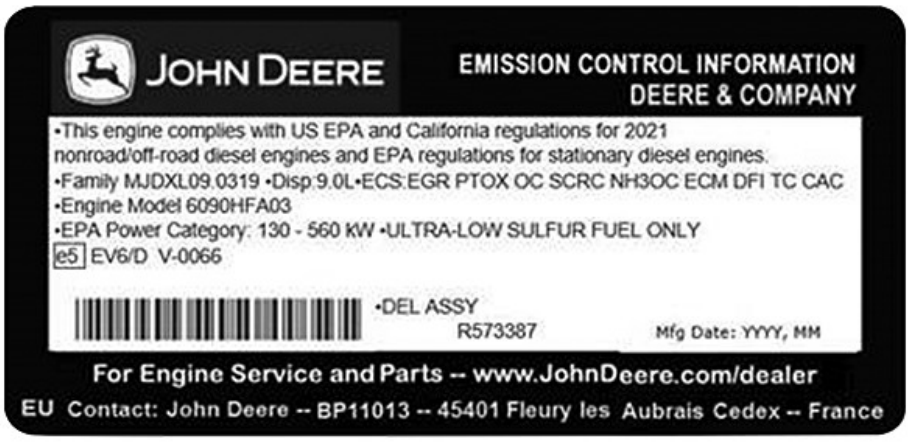
To the extent permitted by law John Deere is not liable for damage to other engine components caused by a failure of an emission-related part, unless otherwise covered by standard warranty.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. REMEDIES UNDER THIS WARRANTY ARE LIMITED TO THE PROVISIONS OF MATERIAL AND SERVICES AS SPECIFIED HEREIN. WHERE PERMITTED BY LAW, NEITHER JOHN DEERE NOR ANY AUTHORIZED JOHN DEERE ENGINE DISTRIBUTOR, DEALER, OR REPAIR FACILITY OR ANY COMPANY AFFILIATED WITH JOHN DEERE WILL BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Emission_CI_EPA (18Dec09)

TS1721—UN—15JUL13
DX,EMISSIONS,EPA-19-12DEC12

Carbon Dioxide Emissions (CO_2)



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SAMPLE - Engine Emissions Label

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

NOTE: The first letter of the family number is not utilized for family identification on the chart.

Emissions Label Family	CO_2 Result
_JDXL02.9323	952 g/kW-hr
_JDXL02.9327	784 g/kW-hr
_JDXL04.5337	819 g/kW-hr
_JDXL04.5338	682 g/kW-hr
_JDXL04.5304	1004 g/kW-hr
_JDXN04.5174	792 g/kW-hr
_JDXL06.8324	720 g/kW-hr
_JDXL06.8328	683 g/kW-hr
_JDXL06.8336	701 g/kW-hr
_JDXN06.8175	771 g/kW-hr
_JDXL09.0319	646 g/kW-hr
_JDXL09.0325	695 g/kW-hr
_JDXL09.0329	657 g/kW-hr
_JDXL09.0333	650 g/kW-hr
_JDXL13.5326	684 g/kW-hr
_JDXL13.6320	651 g/kW-hr
_JDXL13.5340	632 g/kW-hr
_JDXL18.0341	683 g/kW-hr
F28	870 g/kW-hr
F32	710 g/kW-hr
F33	677 g/kW-hr

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

DX,EMISSIONS,CO2-19-20JUL21

Service Records

As Required, Daily / Every 10 Hour, and Weekly / Every 50 Hour Service Chart

Service as required

- Inspect engine air intake system
- Clean grille screens, radiator, oil cooler, radiator screen, and A/C condenser
- Bleed fuel system
- Charge battery
- Lubricate operator's seat slide rails (OOS)
- Lubricate hood latch
- Replace headlight element
- Replace roof hazard light bulb—Cab
- Replace hazard light bulb—OOS
- Replace tail and turn bulbs
- Replace floodlight element—OOS
- Replace floodlight element—Cab
- Adjust headlights
- Warming transmission-hydraulic system oil
- Check selective control valve
- Clean Diesel Exhaust Fluid (DEF) Tank
- Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter[1]
- Replace Diesel Exhaust Fluid (DEF) Tank Header Suction Screen[1]

Daily / Every 10 hours

- Check engine oil level
- Check coolant level
- Drain water from fuel filters
- Cleaning air filter dust unloading valve
- Check transmission-hydraulic system oil level
- Lubricate front axle pivot pins[2]
- Lubricate steering linkage[2]
- Lubricate MFWD axle shaft[2]

Weekly / Every 50 hours

- Clean battery
- Check battery condition
- Lubricate front axle pivot pins
- Lubricate steering linkage
- Lubricate MFWD axle shaft
- Inspect tractor for loose hardware
- Lubricate rear axle bearings[3]

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[1] *Maximum 4500 Hours or 36 months.*
[2] *Daily / 10 Hours if operated in extremely wet or muddy conditions*
[3] *Weekly / 50 Hours if operated in extremely wet or muddy conditions*

First 100 Hour and Every 250 Hour Service Chart

First 100 hours

- Change engine oil and filter
- Replace transmission/hydraulic oil filter
- Change MFWD axle housing oil
- Change MFWD axle wheel hub oil
- Check front loader mounting bracket cap screws torque

Every 250 hours

- Check front loader mounting bracket cap screws torque
- Inspect engine air intake filters
- Check MFWD axle wheel hub oil level
- Check MFWD axle housing oil level
- Inspect alternator/fan belt tensioner
- Drain water and sediment from fuel tank
- Check neutral start system—PR
- Adjust brake pedal free travel
- Lubricate hitch components
- Inspect ROPS for loose hardware
- Clean cab air filters
- Keep cab protection system installed properly
- Change engine oil and filter[4]

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Every 500 Hour, 1000 Hour / Annual, 2000 Hour / Two Year, and 5000 Hour / Five Year Service Chart

Every 500 hours

- Replace prefilter / water separator
- Replace primary fuel filter / water separator
- Lubricate front wheel bearings (2WD axle)
- Tighten hose clamps
- Check cooling system for leaks
- Lubricate rear axle bearings
- Replace transmission-hydraulic oil filter
- Change engine oil and filter[5]

Every 1000 hours / Annual

- Change MFWD axle wheel hub oil
- Change MFWD axle housing oil
- Change transmission-hydraulic oil
- Clean open crankcase vent (OCV) tube
- Replace engine air intake filters

[4] Use this interval when using oils such as John Deere Torq-GARD™ oil, or engine oils from other manufacturers that met the conditions specified in the Fuels Lubricants and Coolant section..

[5] If Plus-50™ oil and a John Deere filter are not used, lower this service interval to 250 hours.

- Inspect seat belt

Every 2000 hours / Two Years

- Flush cooling system and replace thermostat

Every 3000 hours / Three Years

- Engine valve adjustment

Every 5000 hours / Five Years

- Flush cooling system and replace thermostat [6]

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[6] *5000 hours / 5 years If John Deere COOL-GUARD™ is used*

Pre-Delivery Inspection

Notes on Pre-Delivery Inspection

NOTE: Depending on the regional peculiarities and individual vehicle configuration, the tasks are only applicable if the corresponding equipment is available. The configuration can be found in the order information of the vehicle. Subsequent additions and conversions must be taken into account.

GS38198,0000F7A-19-22APR21

Service Procedure

The following inspection, adjustment, and service work were performed prior to the delivery of the machine.
Note for the dealer: Visit ccms.deere.com for the most updated information.

1. Fill levels of the following systems were checked and refilled if necessary:
- ☐ 1.1 Engine oil*
- ☐ 1.2 Transmission and hydraulic oil*
- ☐ 1.3 Front-wheel drive axle, oil*
- ☐ 1.4 Coolant
- ☐ 1.5 Wheel Hub (if equipped)

2. Screws and nuts of the following components have been tightened to the specified torque:
- ☐ 2.1 Wheels and rims
- ☐ 2.2 Additional weights (if equipped), Number of pieces (if equipped)
- ☐ 2.3 Front loader, mounting frame (if equipped)

☐ 3. All grease fittings have been lubricated.

☐ 4. Guards and shields have been checked.

☐ 5. Check battery voltage (should be greater than 12.5V).

☐ 6. Operator's cab controls have all been checked (heater, blower, windshield wiper, and windshield washer).

☐ 7. Operator's seat adjustment working properly.

☐ 8. Seat belts checked.

☐ 9. Headlights have been adjusted**.

☐ 10. Lights working properly.

- ☐ 10.1 Headlights
- ☐ 10.2 Front worklights
- ☐ 10.3 Rear Work lights
- ☐ 10.4 Tail Lights

☐ 12 Transmission shifting mechanism working properly.

13. PTOs working properly:
- ☐ 13.1 Rear PTO

14. Hitches working properly:
- ☐ 14.1 Rear hitch
- ☐ 14.2 Front hitch (if equipped)

☐ 15. Selective control valves working properly.

☐ 16. Trailer hitches working properly.

☐ 17. Check tire pressure, check tires for low pressure, cuts, bubbles, damage rims.

☐ 18. Front axle toe-in has been checked with tractor fully ballasted; adjust, if necessary.

☐ 19. Pivoting fenders have been adjusted.

☐ 20. Steering stops checked and adjusted. Inspection of the clearances when the front-wheel drive axle is pivoted and steering is at the stop.

☐ 21. Steering system working properly.

☐ 22. Park lock and park function of air brake valve of trailer have been checked. (If equipped)

☐ 25. Check and clear codes. If applicable. Repair as needed.

☐ 26. Display language, units of measurement, and date have been adjusted according to operator's needs.

☐ 27. Attach the StarFire™ receiver (if equipped).

☐ 28. Paint has been checked for the good condition.

☐ 29. Take evidence, pictures, or videos and report immediately to your TCSM if we found damages.

☐ 30. All warning and information stickers.

31. The SMV emblem is attached:

32. The following systems have been checked and are free of leaks:
- ☐ 32.1 Engine cooling system
- ☐ 32.2 Fuel system
- ☐ 32.3 Hydraulic system

☐ 33. All obligatory and open product improvement programs must be completed prior to delivering the machine to a customer.

The following inspection, adjustment, and service work were performed prior to the delivery of the machine.
Note for the dealer: Visit ccms.deere.com for the most updated information.

☐ 10.5 Warning lights

☐ 10.6 Turn signals

☐ 10.7 Beacon light (if equipped)

☐ 11. Info board display and indicator lights work flawlessly.

☐ 23. Service brakes and secondary brake have been checked.

☐ 24. Trailer brake has been checked. (If equipped)

☐ **34. Test drive has been performed.**

***** *Top up with oil only if the oil level is at or below the MIN mark.*
****** *Lights checked for compliance with local regulations and adjusted if necessary (also additional headlights, if equipped).*

AG32641,0000476-19-13SEP21

Copy for Owner

Serial Number: _____ Vehicle model: _____

Operator's Manual No.: _____ Issue: _____ Registration Number: _____

Engine Number: _____ Delivery Date: _____

Owner's Name: _____ Operating Hours at Delivery: _____

Address: _____ Number of Keys Handed Over (only for immobilizer): _____

_____ Dealer: _____

_____ Dealer's Stamp:

DELIVERY CHECK LIST

The following checklist is a reminder of important information, which should be conveyed directly to the customer at the time tractor is delivered. Tick off each item as it is fully explained to the customer. Refer to the Operator's Manual and the Technical Manual for more information.

□ Give Operator’s Manual to customer. Encourage the customer to read manual.

□ John Deere warranty

□ Safe and correct operation and service

□ Daily and periodic inspections

□ Servicing machine regularly and correctly

□ Recommended machine storage

□ Transporting machine correctly

□ Make the customer aware of all the safety precautions that must be exercised while using this machine.

□ Recommended lubricants. (See the lubrication and maintenance section in Operator’s Manual.)

□ Review service intervals and lubrication points. (See the lubrication and maintenance section in Operator’s Manual.)

□ Review all adjustments. (See the service section in Operator’s Manual.)

□ When the tractor is transported on a road or highway at night or during the day, lights and devices should be used for adequate warning to operators of other vehicles.

□ John Deere parts and service

□ Remove and file this page.

To the best of my knowledge, this machine has been delivered ready for field use and above points has been explained in detailed for the proper care and operation.

DELIVERY CHECK LIST

Signature of Customer

Date:

Operating the Tractor

- □ Operator's seat, all possible seat configurations
- □ Consoles/corner post display
- □ Differential lock
- □ Transmission
- □Starting and stopping
- □ Steering and steering system
- □ Brakes and brake systems
- □ Speed control
- □ Lights
- □ Wipers
- □ Heater
- □ Air conditioning system
- □ PTOs
- □ Rear hitch, front hitch, and selective control valves
- □ Hydraulic pickup hitch
- □ Three-point hitch adjustment
- □ Fuel system and fuel quality
- □ Checking fluid levels (radiator, engine, transmission)
- □ Settings on the corner post display
- □ Front axle suspension
- □ Cab suspension

To the best of my knowledge, this machine has been delivered ready for field use and above points has been explained in detailed for the proper care and operation.

Signature of Customer

Date:

GS38198,0000F7C-19-22APR21

Copy for Dealer

Serial Number: _____ Vehicle model: _____

Operator's Manual No.: _____ Issue: _____ Registration Number: _____

Engine Number: _____ Delivery Date: _____

Owner's Name: _____ Operating Hours at Delivery: _____

Address: _____ Number of Keys Handed Over (only for immobilizer): _____

_____ Dealer: _____

_____ Dealer's Stamp:

DELIVERY CHECK LIST

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- □ Give Operator's Manual to customer. Encourage the customer to read manual.
- □ John Deere warranty
- □ Safe and correct operation and service
- □ Daily and periodic inspections
- □ Servicing machine regularly and correctly
- □ Recommended machine storage
- □ Transporting machine correctly
- □ Make the customer aware of all the safety precautions that must be exercised while using this machine.
- □ Recommended lubricants. (See the lubrication and maintenance section in Operator's Manual.)
- □ Review service intervals and lubrication points. (See the lubrication and maintenance section in Operator's Manual.)
- □ Review all adjustments. (See the service section in Operator's Manual.)
- □ When the tractor is transported on a road or highway at night or during the day, lights and devices should be used for adequate warning to operators of other vehicles.
- □ John Deere parts and service
- □ Remove and file this page.

To the best of my knowledge, this machine has been delivered ready for field use and above points has been explained in detailed for the proper care and operation.

Signature of Dealer

Date:

Operating the Tractor

- □ Operator's seat, all possible seat configurations
- □ Consoles/corner post display
- □ Differential lock
- □ Transmission
- □Starting and stopping
- □ Steering and steering system
- □ Brakes and brake systems
- □ Speed control
- □ Lights
- □ Wipers
- □ Heater
- □ Air conditioning system
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- □ Rear hitch, front hitch, and selective control valves
- □ Hydraulic pickup hitch
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Signature of Dealer

Date:

GS38198,0000F7D-19-22APR21

Index

D

E

F

G

H

I

K

L

Q

R

S

T

U

V

W

John Deere Service Literature Available

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

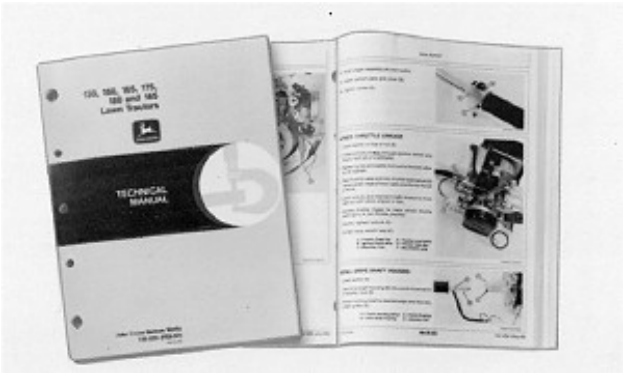
Available information includes:

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

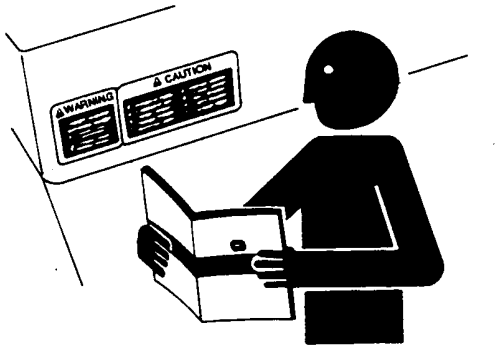
EDUCATIONAL CURRICULUM including five comprehensive series of books detailing basic information regardless of manufacturer:

- 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

John Deere Service Keeps You On The Job

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