

5085E and 5100E (FT4) Tractors Operator's Manual (North American, March 2016)



OPERATOR'S MANUAL 5E Series Tractors (North American, March 2016) OMSU47647 ISSUE C1 (ENGLISH)

CALIFORNIA Proposition 65 Warning

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

If this product contains a gasoline engine:

⚠ WARNING

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Augusta Works
North American 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 -19-03APR09-1/1

Identification Views



5100E Cab Tractor

RXA0145762 —UN—10OCT14

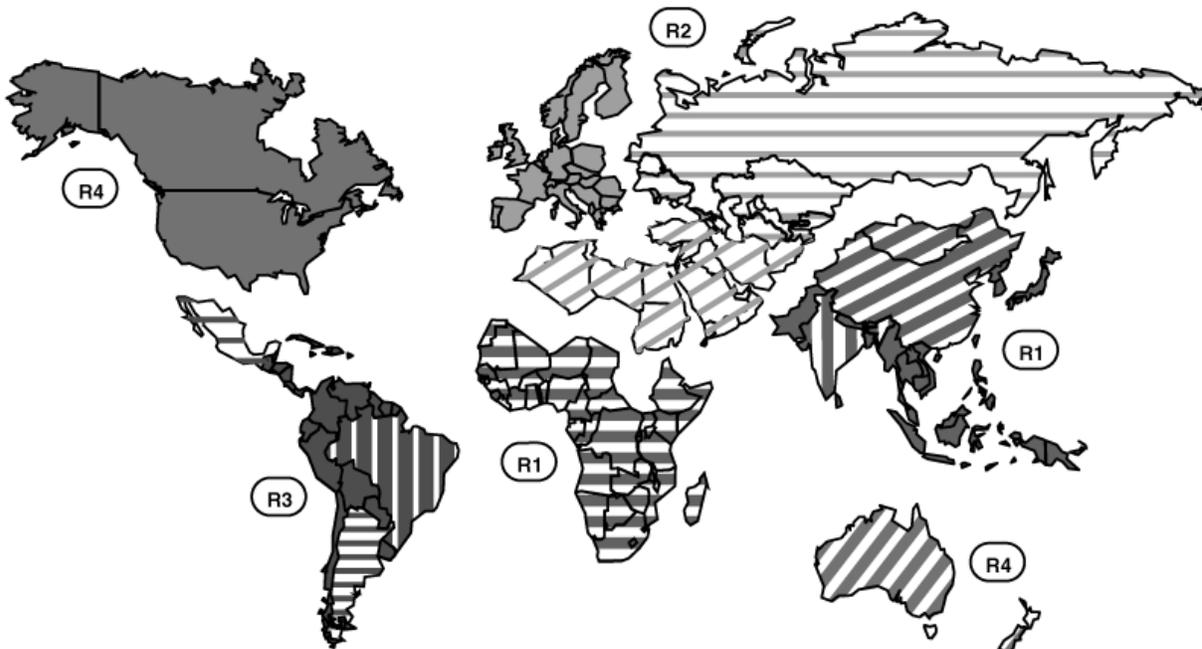


5100E OOS Tractor

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Regions and Country Versions



- | | | | |
|--------------------------------------|--|---|---|
| R1—Asia and Sub-Saharan Africa | R2—Europe, North Africa, Mid East, CIS | R2C—Common Wealth of Independent States (CIS) | R3C—Mexico |
| R1A—Far East, Sri Lanka and Pakistan | R2A—European Union (EU 28+) | R3—Central and South America | R3D—Argentina |
| R1B—China | R2B—North Africa and North Middle East (NANME) | R3A—Latin America (JDLA) | R4—North America |
| R1C—India | | R3B—Brazil | R4A—USA and Canada |
| R1D—Sub-Saharan Africa | | | 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.	
<i>NOTE: Australia and New Zealand (R4B) are available as either region 4 and/or region 2 configurations, only using text-free safety signs.</i>	

GS25068,0001DB2 -19-01FEB16-1/1

RXA0150915—UN—01FEB16

Contents

	Page		Page
Safety			
Recognize Safety Information	05-1	Service Accumulator Systems Safely	05-21
Understand Signal Words	05-1	Service Tires Safely	05-21
Follow Safety Instructions	05-1	Service Front-Wheel Drive Tractor Safely	05-21
Prepare for Emergencies	05-2	Tightening Wheel Retaining Bolts/Nuts	05-22
Wear Protective Clothing	05-2	Avoid High-Pressure Fluids	05-22
Protect Against Noise	05-2	Do Not Open High-Pressure Fuel System	05-22
Handle Fuel Safely—Avoid Fires	05-3	Store Attachments Safely	05-23
Handle Starting Fluid Safely	05-3	Decommissioning — Proper Recycling and Disposal of Fluids and Components	05-23
Fire Prevention	05-3		
In Case of Fire	05-4		
Avoid Static Electricity Risk When Refueling	05-4	Safety Signs	
Keep ROPS Installed Properly	05-5	Replace Safety Signs	10-1
Use Foldable ROPS and Seat Belt Properly	05-5	PTO Shield	10-1
Stay Clear of Rotating Drivelines	05-6	Starter	10-2
Use Steps and Handholds Correctly	05-6	Engine Coolant Heater—If Equipped	10-3
Read Operator's Manuals for ISOBUS Controllers	05-7	Tow Implement Properly	10-4
Use Seat Belt Properly	05-7	Use Seat Belt Properly (Cab)	10-5
Operating the Tractor Safely	05-8	Use Seat Belt Properly (OOS)	10-6
Avoid Backover Accidents	05-9	Operators Manual	10-7
Limited Use in Forestry Operation	05-9	Instructional Seat—If Equipped	10-8
Operating the Loader Tractor Safely	05-9	Front End Loader—If Equipped	10-9
Keep Riders Off Machine	05-10	ROPS	10-10
Instructional Seat	05-10		
Use Safety Lights and Devices	05-10	Controls and Instruments	
Use a Safety Chain	05-11	Front Console Switches and Controls	15-1
Transport Towed Equipment at Safe Speeds	05-11	Foot-Operated Controls	15-3
Use Caution on Slopes, Uneven Terrain, and Rough Ground	05-12	Tractor Controls—Cab	15-5
Freeing a Mired Machine	05-12	Tractor Controls—OOS	15-7
Avoid Contact with Agricultural Chemicals	05-13	Gauges and Indicator Lights	15-9
Handle Agricultural Chemicals Safely	05-14	Aftertreatment Indicators Overview	15-13
Handling Batteries Safely	05-15	Information Display (Roll Mode Switch)	15-14
Avoid Heating Near Pressurized Fluid Lines	05-15	Heater and Air Conditioning Controls (Cab Only)	15-15
Remove Paint Before Welding or Heating	05-16		
Handle Electronic Components and Brackets Safely	05-16	Lights	
Practice Safe Maintenance	05-17	Light Location	20-1
Avoid Hot Exhaust	05-17	Road, Work, and Warning Lights	20-2
Clean Exhaust Filter Safely	05-18	Turn Signal, High, and Low Beam Lights	20-3
Work In Ventilated Area	05-19	Brake Light	20-4
Support Machine Properly	05-19	Loader Auxiliary Driving Lights—If Equipped	20-4
Prevent Machine Runaway	05-19	Implement/Trailer Outlet	20-5
Park Machine Safely	05-20	Rotating Beacon Light—If Equipped	20-6
Transport Tractor Safely	05-20		
Service Cooling System Safely	05-20	Operator Station—OOS	
		Operate Foldable ROPS	25-1

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.

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Page	Page		
ROPS—Certification.....	25-2	PowrReverser Transmission with Hi/Lo	55-4
Adjusting Operator Seat	25-3	Correction Factors for Other Tire Sizes	55-4
Seat Belt	25-4	Electrohydraulic Transmission System	
Adjust Steering Wheel Tilt and Height.....	25-4	Indicator	55-5
Operator Station—Cab		Select a Gear.....	55-5
Door and Windows	30-1	Using Differential Lock.....	55-6
Adjusting Seat	30-2	Mechanical Front-Wheel	
Adjusting Steering Wheel Tilt and Height.....	30-3	Drive—Electrohydraulic Control—If	
HVAC Blower Speed	30-3	Equipped	55-7
HVAC Temperature.....	30-4	Mechanical Front-Wheel Drive—With	
Defrost Windshield	30-4	Brake Assist—If Equipped	55-8
Air Conditioner and Heater Performance	30-5	Operating Brakes.....	55-9
Windshield Wiper and Washer	30-6	Stop Tractor.....	55-9
Rear Window Wiper and Washer—If Equipped ..	30-6	Driving on Public Roads	55-10
Use Dome Light.....	30-7	Rear Hitch Controls	
Using Control Illumination Light.....	30-7	Operate Mechanical Position Control.....	60-1
Installing a Monitor	30-8	Operate Mechanical Draft Control.....	60-2
Instructional Seat—If Equipped	30-8	Operate Mechanical Rate-of-Drop.....	60-3
Accessory Electrical Outlet.....	30-9	3-Point Hitch	
Coat Hook.....	30-9	Match Tractor Power to Implement	65-1
Break-In Period		3-Point Hitch Components.....	65-1
Observe Engine Operation	35-1	Preparing Implement	65-2
Break-In Service	35-2	Convert Category II Hitch to Category I.....	65-2
Prestarting Checks		Position Center Link	65-3
Service Daily Before Start-Up.....	40-1	Attach Implements to 3-Point Hitch	65-4
Operate Engine		Adjust Hitch Side Sway	65-7
Before Starting the Engine	50-1	Level Hitch.....	65-8
Operate Key Switch.....	50-4	Adjust Lateral Float.....	65-9
Start Engine.....	50-5	Hydraulic System Controls and Operations	
Cold Weather Start Aid.....	50-7	Rear SCV Control Lever and Coupler	
Using Engine Coolant Heater—If Equipped	50-8	Identification	70-1
Check Engine Indicators and Gauges	50-9	Mid-Mount SCV Multi-function Lever	
Changing Engine Speeds.....	50-11	and Coupler Identification—If Equipped.....	70-2
Recommended Engine Speeds and		Use Correct Hose Tips	70-2
Operational Procedures	50-12	Connecting or Disconnecting	
Stopping the Engine	50-13	High-Pressure Hoses	70-3
Use Booster Battery or Charger	50-14	Connect Cylinder Hoses to Rear SCV.....	70-3
DEF (Diesel Exhaust Fluid) Level Gauge.....	50-15	Connect Cylinder Hoses to Mid	
Selective Catalytic Reduction (SCR)		SCV—If Equipped	70-4
System Overview	50-16	Connect and Operate Single-Acting Cylinder.....	70-4
Required Machine Stop Warning.....	50-17	Operate Rear SCV Control Levers	70-5
Exhaust Filter System Overview.....	50-19	Set Rear SCV Detents.....	70-6
Automatic (AUTO) Exhaust Filter Cleaning	50-21	Use Deluxe Rear SCV to Operate	
Disabled Exhaust Filter Cleaning	50-22	Hydraulic Motor	70-7
Parked Exhaust Filter Cleaning	50-23	Use Rear SCV to Provide Power	
Service Exhaust Filter Cleaning	50-24	Beyond Oil.....	70-9
Operating the Tractor		Use Rear SCV to Operate Loader.....	70-10
Operating PowrReverser Transmission.....	55-1	Operate Mid SCV Multi-function	
Ground Speed Estimates		Lever—If Equipped	70-10
PowrReverser Transmission	55-2	Adjust Flow Control—Rear SCV and	
Operate PowrReverser Plus Transmission	55-3	Mid SCV—If Equipped	70-14
		Correcting Reversed Cylinder Response	70-14
		Warm Transmission-Hydraulic System Oil	70-15

Continued on next page

	Page		Page
Use Hydraulic Power Beyond Coupler—If Equipped.....	70-16	John Deere COOL-GARD™ II Coolant Extender.....	95-4
Drawbar and PTO		Water Quality for Mixing with Coolant Concentrate.....	95-5
Match Tractor Power to Implement	75-1	Diesel Exhaust Fluid (DEF) — Use in Selective Catalytic Reduction (SCR) Equipped Engines	95-5
Observing Drawbar Load Limitations	75-1	Disposal of Diesel Exhaust Fluid (DEF)	95-6
Selecting Drawbar Position	75-2	Refilling Diesel Exhaust Fluid (DEF) Tank.....	95-6
Adjusting Drawbar Length and Offset.....	75-3	Storing Diesel Exhaust Fluid (DEF).....	95-7
Attaching PTO-Driven Implement.....	75-4	Testing Diesel Exhaust Fluid (DEF).....	95-7
Selecting Correct PTO Speeds	75-5	Testing Coolant Freeze Point	95-8
Operating Tractor PTO	75-6	Extended Diesel Engine Oil Service Intervals	95-8
Performance Ballast		Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V	95-9
Planning for Maximum Productivity	80-1	Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V Engines.....	95-10
Select Ballast Carefully.....	80-1	John Deere Break-In Plus™ Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V.....	95-11
Using Cast Iron Weights.....	80-2	Oil Filters	95-11
Cast Iron Weights Installing	80-2	Fuel Filters.....	95-11
Filling Tires With Liquid Ballast.....	80-3	Diesel Fuel.....	95-12
Draining Tires	80-3	Handling and Storing Diesel Fuel.....	95-13
Wheels, Tires and Treads		Lubricity of Diesel Fuel	95-13
Service Tires Safely.....	85-1	Testing Diesel Fuel	95-13
Check Implement-to-Tire Clearance.....	85-1	Biodiesel Fuel	95-14
Check Tire Inflation Pressure	85-2	Minimizing the Effect of Cold Weather on Diesel Engines	95-16
Selecting Front Tire Rolling Direction	85-2	Supplemental Diesel Fuel Additives	95-17
Tighten Wheel/Axle Hardware Correctly	85-3	Multipurpose Extreme Pressure (EP) Grease	95-17
Tighten Wheel Bolts—MFWD Axle.....	85-3	Mixing of Lubricants.....	95-17
Tighten Wheel Bolts—Rear Axle	85-3	Lubricant Storage	95-18
Observe Rear Wheel Tread Width Limitations	85-4	OilScan™ and CoolScan™	95-18
Jacking Up Tractor—Lifting Points	85-4	Transmission, Steering, Brake, Hydraulic, and Gear Case Oil	95-19
Tread Settings—Multi-Position Rear Wheels	85-6	Maintenance and Service Intervals	
Tread Settings—Multi-Position MFWD Wheels	85-7	Service Interval Charts	100-1
Checking Toe-In—MFWD Axle.....	85-8	Service—As Required	100-3
Adjust Toe-In—MFWD Axle.....	85-8	Maintenance—As Required/Per Condition	
Set MFWD Steering Stops Turn Radius.....	85-9	Service Engine Air Cleaner	105-1
Use Correct Tire Combinations	85-9	Required Emission-Related Information.....	105-2
Additional Equipment		Exhaust Filter Cleaning	105-2
Front Loader Installation - Front Loader Brackets	86-1	Cleaning Diesel Exhaust Fluid (DEF) Tank	105-3
Transporting		Adjust PTO Speed Shift Lever—Open Operator's Station	105-3
Ballasting Front End for Transport.....	90-1	Adjust PTO Speed Shift Lever—Cab	105-3
Using Safety Chain.....	90-1	Adjust Hand Throttle Friction Linkage	105-3
Deliver Safely	90-2	Adjust Rear Fender—Open Operator's Station	105-4
Transport Tractor Safely.....	90-3	Service Air Conditioner—If Equipped	105-4
Towing Tractor	90-4	Clean and Check Battery Condition	105-5
Fuel, Lubricants, and Coolant		Clean Cab Air Filters—If Equipped.....	105-7
Filling Fuel Tank.....	95-1		
Filling Diesel Exhaust Fluid (DEF) Tank	95-2		
Alternative and Synthetic Lubricants	95-2		
Diesel Engine Coolant (engine with wet sleeve cylinder liners)	95-3		
Operating in Warm Temperature Climates	95-4		

Continued on next page

Page	Page		
Clean Grille Screens, Radiator, Oil Cooler, Air Conditioning Screen (If Equipped), and Air Conditioning Condenser (Cab).....	105-8	Maintenance—Every 300 Hours	
Lubricate Rear Axle Bearings.....	105-10	Changing Engine Oil and Filter.....	125-1
Drain and Flush Fuel Tank.....	105-10	Checking MFWD Axle Housing Oil Level.....	125-2
Keep ROPS Installed Properly.....	105-11	Checking MFWD Axle Wheel Hub Oil Level.....	125-2
Keep Cab Protection System Installed Properly.....	105-12	Clean and Check Battery Condition.....	125-3
Bleed Fuel System.....	105-14	Drain and Flush Fuel Tank.....	125-4
Replace Battery.....	105-15	Maintenance—Every 500 Hours	
Locate Fusible Link.....	105-15	Changing Engine Oil and Filter.....	130-1
Locating Fuses.....	105-16	Replacing Fuel Filter.....	130-2
Fuse and Relay Size and Function.....	105-18	Maintenance—Every 600 Hours	
Handling Halogen Light Bulbs Safely.....	105-20	Check Neutral Start System.....	135-1
Replace Headlight Bulb.....	105-21	Clean Cab Air Filters—If Equipped.....	135-3
Replacing Warning Light Bulb—Cab.....	105-23	Changing MFWD Axle Wheel Hub Oil.....	135-3
Replacing Taillight Bulb—Cab.....	105-24	Changing MFWD Axle Housing Oil.....	135-4
Replace Tail Light and/or Warning Light Bulb—Open Operator's Station.....	105-25	Clean Open Crankcase Vent (OCV) Tube.....	135-4
Replace Work Light Bulb—Open Operator's Station.....	105-26	Lubricating Rear Axle Bearings.....	135-5
Replacing Work Light Bulb.....	105-26	Check Front Axle Pivot Pin End Play.....	135-5
Replacing Loader Light Bulb—If Equipped.....	105-27	Tighten Air Intake System and Engine Cooling System Hose Clamps.....	135-6
Replacing Dome Light Bulb.....	105-28	Replacing Transmission-Hydraulic Filter.....	135-7
Replacing Controls Illumination Light Bulb.....	105-28	Maintenance—Every 1200 Hours	
Replacing Rotary Beacon Light Bulb—If Equipped.....	105-29	Inspecting Fan Belt Tensioner.....	140-1
Maintenance—Every 10 Hours or Daily		Replace Fan Belt.....	140-2
Checking Engine Oil Level.....	110-1	Changing Transmission-Hydraulic Oil and Filter.....	140-3
Drain Water and Sediment from Fuel Tank and Fuel Filter.....	110-2	Service Air Cleaner Elements.....	140-4
Cleaning Air Filter Dust Unloading Valve.....	110-3	Clean Fuel Tank Vent Filter.....	140-5
Maintenance—Every Week or 50 Hours		Maintenance—Annually	
Inspecting Tires.....	115-1	Cleaning Cab Air Filters.....	145-1
Check Tire Inflation Pressure.....	115-1	Inspecting Seat Belt.....	145-1
Checking Coolant Level.....	115-2	Check Engine Coolant Properties.....	145-2
Checking Transmission-Hydraulic System Oil Level.....	115-3	Maintenance—First Three Years or 3000 Hours	
Check MFWD for Oil Leaks.....	115-3	Flush Cooling System and Replace Thermostat.....	155-1
Checking MFWD Axle Housing Oil Level.....	115-4	Adjust Engine Valve Clearance.....	155-1
Checking MFWD Axle Wheel Hub Oil Level.....	115-4	Maintenance—First Five Years or 5000 Hours	
Lubricate MFWD Axle Trunnion.....	115-5	Flush Cooling System.....	160-1
Lubricating 3-Point Hitch.....	115-6	Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter.....	160-1
Inspecting Tractor for Loose Hardware.....	115-6	Troubleshooting	
Maintenance—First 100 Hours		Engine.....	165-1
Changing Engine Oil and Filter.....	120-1	Transmission.....	165-7
Replacing Transmission-Hydraulic Filter.....	120-2	Hydraulic System.....	165-8
Inspect Hose Clamps on Air Intake System and Engine Cooling System.....	120-3	Brakes.....	165-8
Inspecting Tractor for Loose Hardware.....	120-4	3-Point Hitch.....	165-9
		Remote Hydraulic Cylinder.....	165-10
		Selective Control Valve.....	165-11

Continued on next page

	Page
Electrical System.....	165-12
Heater and A/C System (Cab).....	165-14
Wipers, Work Lights, Dome Light and Radio (Cab).....	165-17

Storage

Tractor Storage.....	170-1
Remove Tractor from Storage.....	170-2

Specifications

Machine Specifications.....	175-1
Drain and Refill Capacities.....	175-1
Permissible Load Specifications.....	175-2
Metric Bolt and Screw Torque Values.....	175-3
Unified Inch Bolt and Screw Torque Values.....	175-4
Limited Battery Warranty.....	175-5
Emissions Control System Certification Label ..	175-6
CARB Non-road Emissions Control Warranty Statement—Compression Ignition.....	175-7
EPA Non-road Emissions Control Warranty Statement—Compression Ignition.....	175-15

Identification Numbers

Identification Numbers.....	180-1
Record Product Identification Number.....	180-1
Record Front Axle Serial Number.....	180-2
Record Engine Serial Number.....	180-2
Record Transmission Serial Number.....	180-3
Record Cab Serial Number.....	180-3
Keep Proof of Ownership.....	180-3
Keep Machines Secure.....	180-4

Service and Maintenance Record

Daily or 10 Hour Service.....	185-1
Weekly or 50 Hour Service.....	185-1
First 100 Hour Service.....	185-1
300 Hour Service.....	185-2
500 Hour Service.....	185-2
600 Hour Service.....	185-2
1200 Hour Service.....	185-3
Annual Service.....	185-3
First 3 Years or 3000 Hours Service.....	185-3
First 5 Years or 4500 Hours Service.....	185-3
Change of Ownership.....	185-4
Change of Ownership.....	185-4
Change of Ownership.....	185-4

Safety

Recognize Safety Information

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.



T81389 —UN—28JUN13

DX,ALERT -19-29SEP98-1/1

Understand Signal Words

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.



TS187 —19—30SEP88

DX,SIGNAL -19-05OCT16-1/1

Follow Safety Instructions

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.



TS201 —UN—15APR13

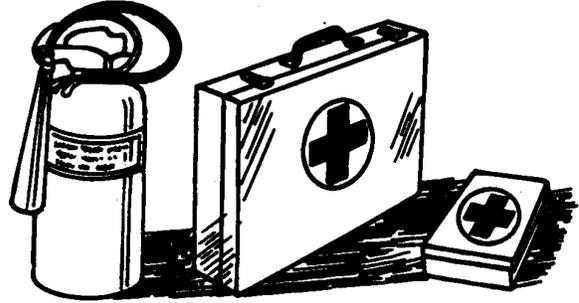
DX,READ -19-16JUN09-1/1

Prepare for Emergencies

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.



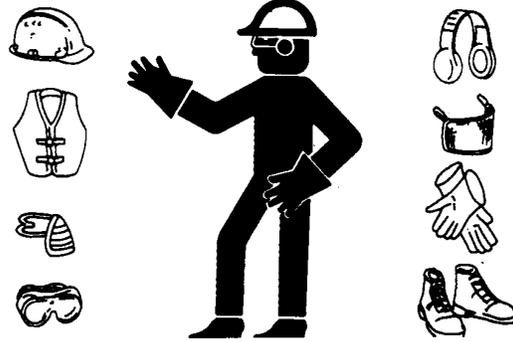
TS291 —UN—15APR13

DX,FIRE2 -19-03MAR93-1/1

Wear Protective Clothing

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.



TS206 —UN—15APR13

DX,WEAR2 -19-03MAR93-1/1

Protect Against Noise

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.



TS207 —UN—23AUG88

DX,NOISE -19-03OCT17-1/1

Handle Fuel Safely—Avoid Fires

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 -19-12OCT11-1/1

TS202—UN—23AUG88

Handle Starting Fluid Safely

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 -19-14MAR14-1/1

TS1356—UN—18MAR92

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 -19-12OCT11-1/1

In Case of Fire

⚠ 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 -19-22AUG13-1/1

TS227 —UN—15APR13

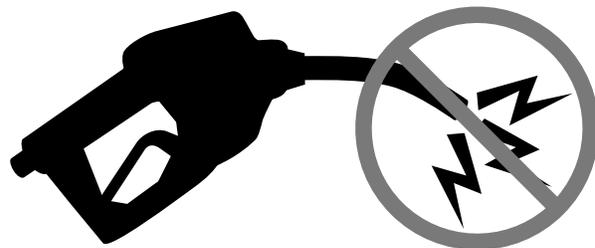
Avoid Static Electricity Risk When Refueling

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 -19-12JUL13-1/1

RG22142 —UN—17MAR14

RG21992 —UN—21AUG13

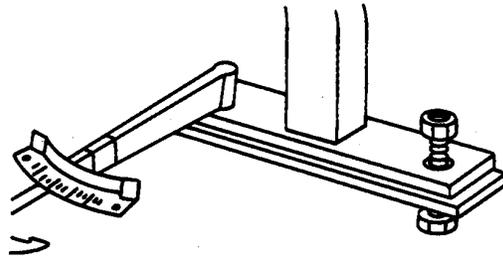
Keep ROPS Installed Properly

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.



TS212—JUN—23AUG88

DX,ROPS3 -19-12OCT11-1/1

Use Foldable ROPS and Seat Belt Properly

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.



TS1729—JUN—24MAY13

DX,FOLDROPS -19-22AUG13-1/1

Stay Clear of Rotating Drivelines

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.

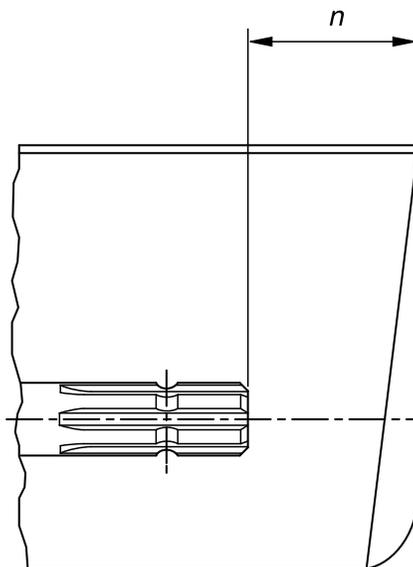
Do not install any adapter device between the tractor and the primary implement PTO driveshaft that will allow a 1000 rpm tractor shaft to power a 540 rpm implement at speeds higher than 540 rpm.

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	$n \pm 5 \text{ mm (0.20 in.)}$
1	35 mm (1.378 in.)	6	85 mm (3.35 in.)
2	35 mm (1.378 in.)	21	85 mm (3.35 in.)
3	45 mm (1.772 in.)	20	100 mm (4.00 in.)
4	57.5 mm (2.264 in.)	22	100 mm (4.00 in.)

DX,PTO -19-28FEB17-1/1

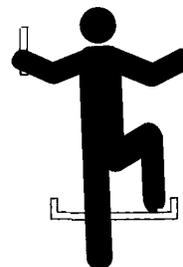
TS 1644 —UN—22AUG95

H96219 —UN—29APR10

Use Steps and Handholds Correctly

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 -19-12OCT11-1/1

T133488 —UN—15APR13

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.

GreenStar is a trademark of Deere & Company

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 -19-15JUL15-1/1

Use Seat Belt Properly

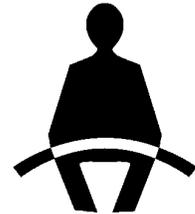
Avoid crushing injury or death during rollover.

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,



TS1729 —UN—24MAY13

discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.

DX,ROPS1 -19-22AUG13-1/1

Operating the Tractor Safely

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

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

Driving Concerns

- Never get on or off a moving tractor.
- Complete any required training prior to operating vehicle.
- Keep all children and nonessential personnel off tractors and all equipment.
- Never ride on a tractor unless seated on a John Deere approved seat with a seat belt.
- Keep all shields/guards in place.
- Use appropriate visual and audible signals when operating on public roads.
- Move to side of road before stopping.
- Reduce speed when turning, applying individual brakes, or operating around hazards on rough ground or steep slopes.
- Stability degrades when attached implements are at high position.
- Couple brake pedals together for road travel.

- Pump brakes when stopping on slippery surfaces.
- Regularly clean fenders and fender valances (mud flaps) if installed. Remove dirt before driving on public roadways.

Heated and Ventilated Operator's Seat

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

Towing Loads

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

Parking and Leaving the Tractor

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

Common Accidents

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

The most common accidents involving tractors are:

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

DX,WW,TRACTOR -19-08MAY19-1/1

Avoid Backover Accidents

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.



PC10857XW —JUN—15APR13

DX,AVOID,BACKOVER,ACCIDENTS -19-30AUG10-1/1

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 -19-12OCT11-1/1

Operating the Loader Tractor Safely

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.

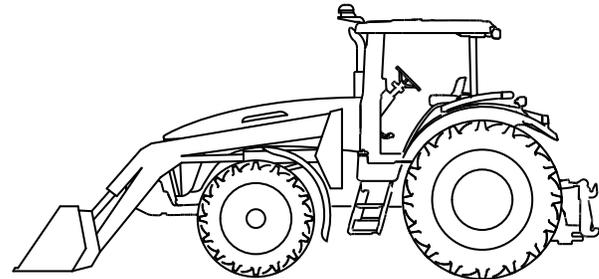
Never allow anyone to walk or work under a raised loader.

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



TS1692 —JUN—08NOV09

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).

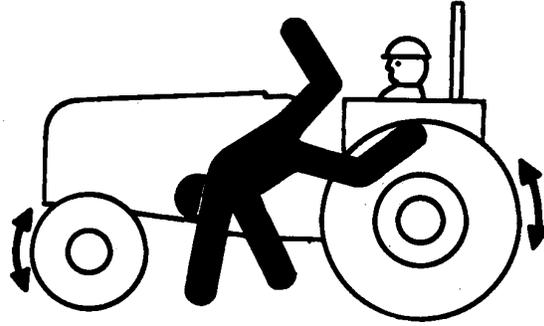
Ballast tractor in accordance to Ballast Recommendations in PREPARE TRACTOR section.

DX,WW,LOADER -19-18SEP12-1/1

Keep Riders Off Machine

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.

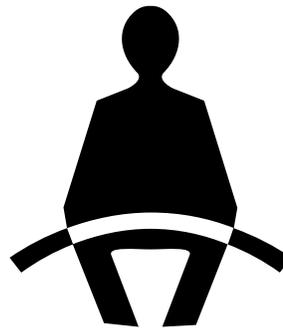


TS290 —UN—23AUG88

DX,RIDER -19-03MAR93-1/1

Instructional Seat

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



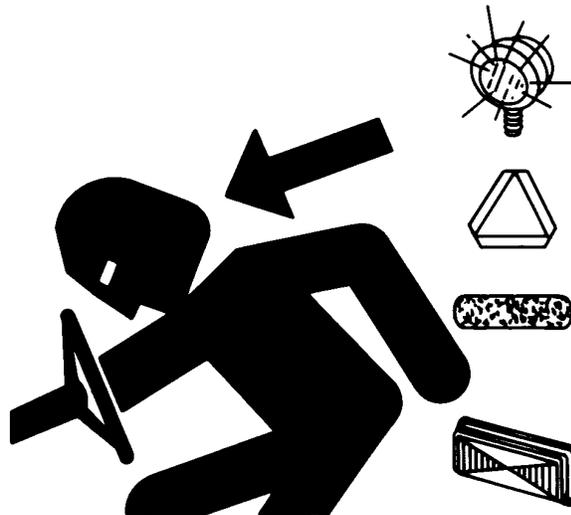
TS1730 —UN—24MAY13

DX,SEAT,NA -19-22AUG13-1/1

Use Safety Lights and Devices

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.



TS951 —UN—12APR90

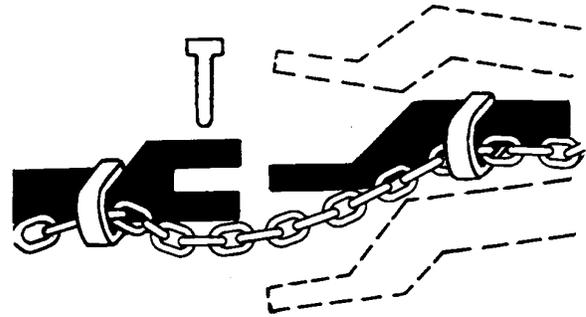
DX,FLASH -19-07JUL99-1/1

Use a Safety Chain

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.



TS217—UN—23AUG88

DX,CHAIN -19-03MAR93-1/1

Transport Towed Equipment at Safe Speeds

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

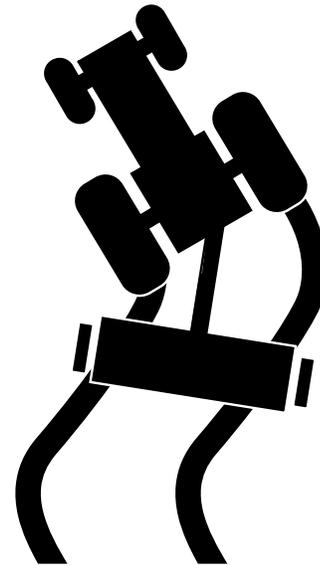
Implements shall be equipped with brakes if the maximum fully loaded weight is greater than 1500 kg (3307 lbs) and greater than 1.5 times the weight of the towing unit.

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.



TS1686—UN—27SEP06

- 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 -19-28FEB17-1/1

Use Caution on Slopes, Uneven Terrain, and Rough Ground

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.

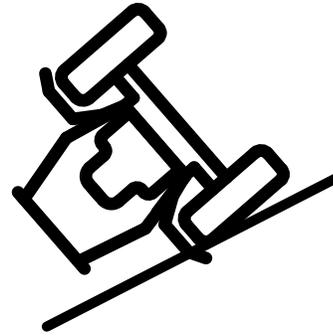
Danger of overturn increases greatly with narrow tread setting, at high speed.

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



RXA0103437 —UN—01JUL09

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 -19-28FEB17-1/1

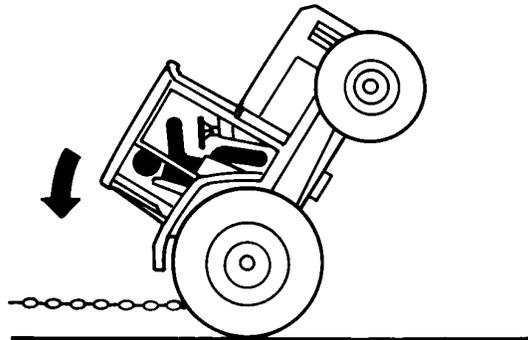
Freeing a Mired Machine

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.



TS1645 —UN—15SEP95

TS263 —UN—23AUG88

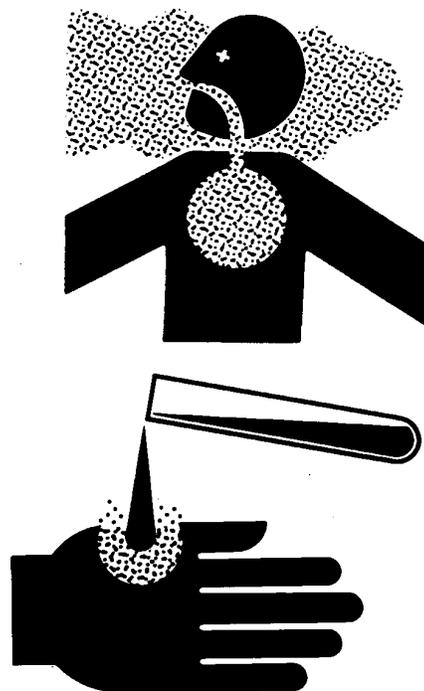
DX,MIREED -19-07JUL99-1/1

Avoid Contact with Agricultural Chemicals

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.



TS220—UN—15APR13

TS272—UN—23AUG88

DX,CABS -19-25MAR09-1/1

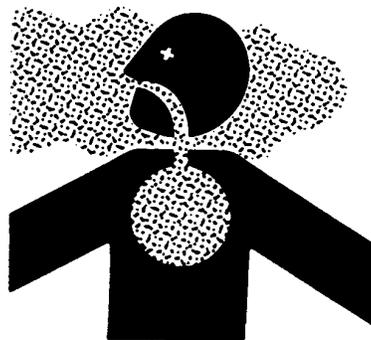
Handle Agricultural Chemicals Safely

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.



A34471

- 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 -19-24AUG10-1/1

TS220 —UN—15APR13

A34471 —UN—11OCT88

Handling Batteries Safely

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.

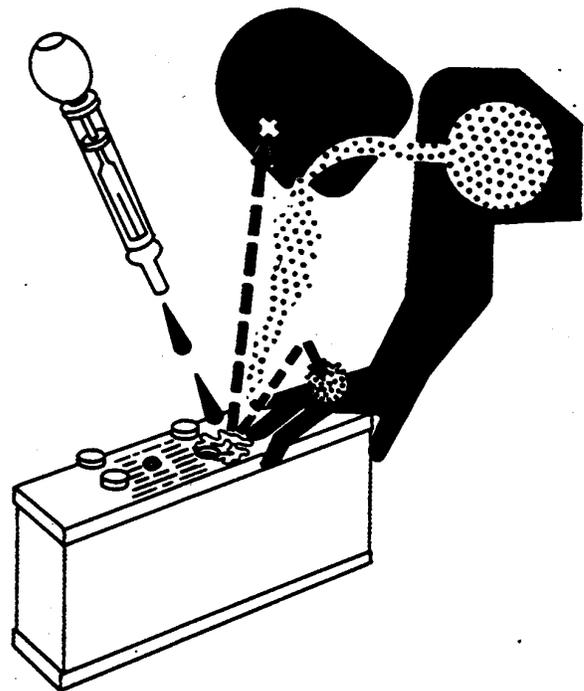
If acid is swallowed:

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.**



TS204 —UN—15APR13



TS203 —UN—23AUG88

DX,WW,BATTERIES -19-02DEC10-1/1

Avoid Heating Near Pressurized Fluid Lines

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.



TS953 —UN—15MAY90

DX,TORCH -19-10DEC04-1/1

Remove Paint Before Welding or Heating

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 -19-24JUL02-1/1

TS220 —UN—15APR13

Handle Electronic Components and Brackets Safely

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 -19-24AUG10-1/1

TS249 —UN—23AUG88

Practice Safe Maintenance

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.



TS218 —UN—23AUG88

DX,SERV -19-28FEB17-1/1

Avoid Hot Exhaust

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.



RG17488 —UN—21AUG09

DX,EXHAUST -19-20AUG09-1/1

Clean Exhaust Filter Safely

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.

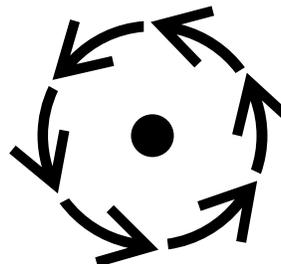
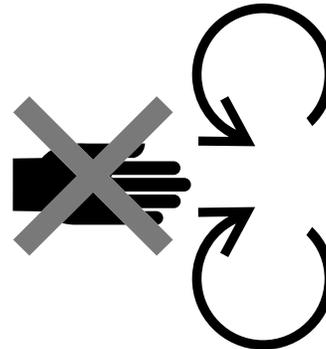
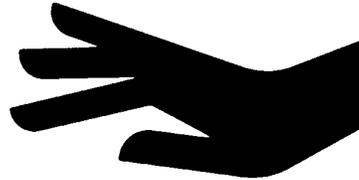
If service procedure requires engine to be running:

- 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.



STOP

TS227 —UN—15APR13

TS271 —UN—23AUG88

TS1693 —UN—09DEC09

TS1695 —UN—07DEC09

DX,EXHAUST,FILTER -19-12JAN11-1/1

Work In Ventilated Area

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.



TS220 —UN—15APR13

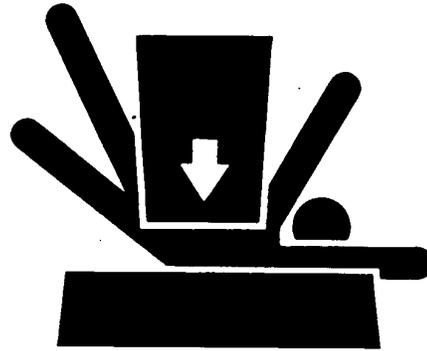
DX,AIR -19-17FEB99-1/1

Support Machine Properly

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.



TS229 —UN—23AUG88

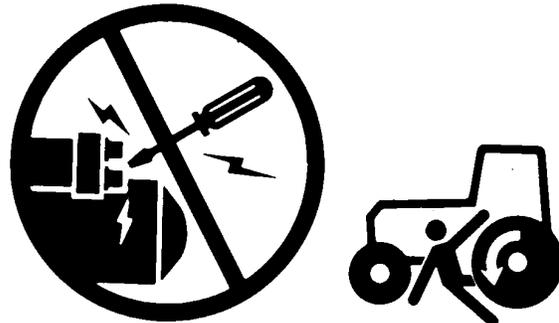
DX,LOWER -19-24FEB00-1/1

Prevent Machine Runaway

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.



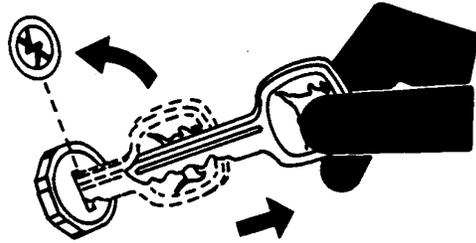
TS177 —UN—11JAN89

DX,BYPAS1 -19-29SEP98-1/1

Park Machine Safely

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.



TS230 —UN—24MAY89

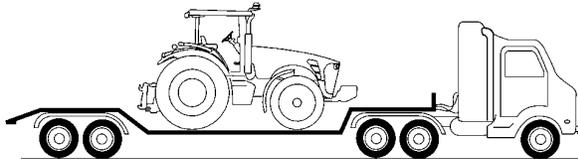
DX,PARK -19-04JUN90-1/1

Transport Tractor Safely

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.



RXA0103709 —UN—01JUL09

DX,WW,TRANSPORT -19-19AUG09-1/1

Service Cooling System Safely

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.



TS281 —UN—15APR13

DX,WW,COOLING -19-19AUG09-1/1

Service Accumulator Systems Safely

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.



TS281 —UN—15APR13

DX,WW,ACCLA2 -19-22AUG03-1/1

Service Tires Safely

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.



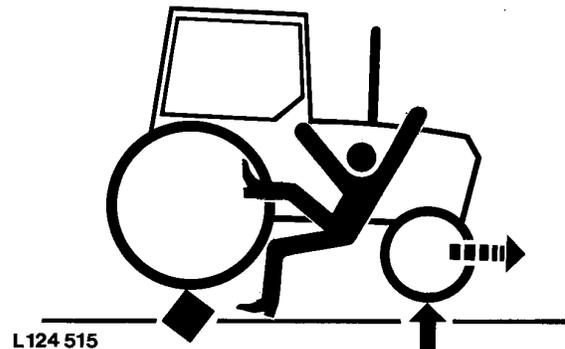
RXA0103438 —UN—11JUN09

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 -19-28FEB17-1/1

Service Front-Wheel Drive Tractor Safely

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.

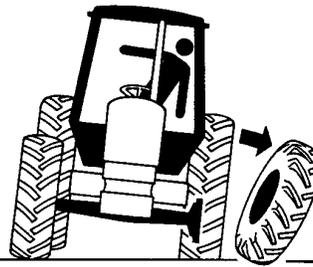


L124515 —UN—06AUG94

DX,WW,MFWD -19-19AUG09-1/1

Tightening Wheel Retaining Bolts/Nuts

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



L124 516

L124516—UN—03JAN95

DX,WW,WHEEL -19-12OCT11-1/1

Avoid High-Pressure Fluids

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.

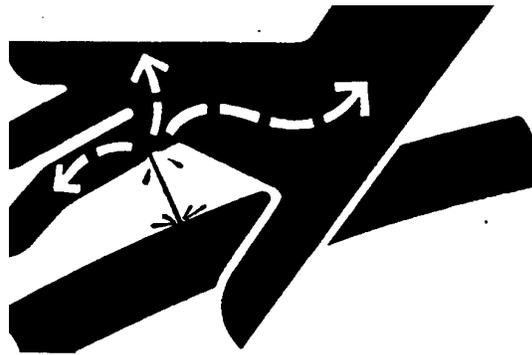
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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.

X9811—UN—23AUG88

DX,FLUID -19-12OCT11-1/1

Do Not Open High-Pressure Fuel System

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.)



TS1343—UN—18MAR92

DX,WW,HPCR1 -19-07JAN03-1/1

Store Attachments Safely

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.



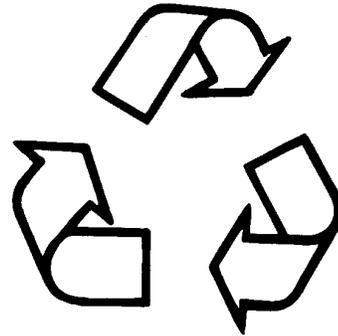
TS219—JUN—23AUG88

DX,STORE -19-03MAR93-1/1

Decommissioning — Proper Recycling and Disposal of Fluids and Components

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);



TS1133—JUN—15APR13

- 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 -19-01JUN15-1/1

Safety Signs

Replace Safety Signs

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.



TS201 —UN—15APR13

DX,SIGNS -19-18AUG09-1/1

PTO Shield

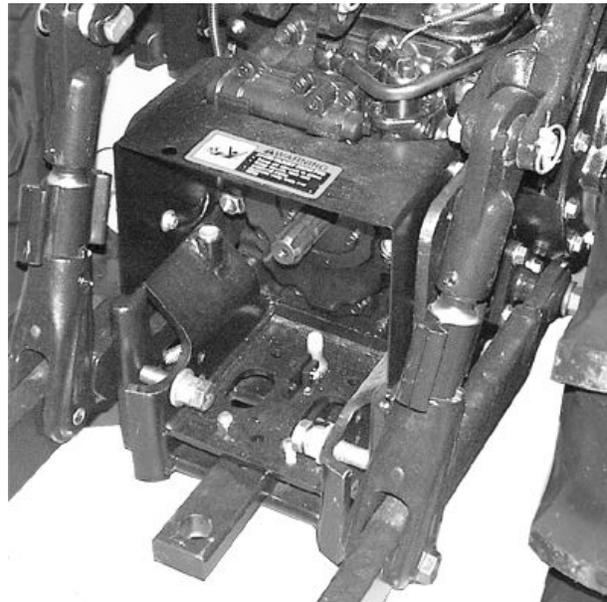
Warning

AVOID INJURY FROM PTO

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



RXA0148607 —19—09JUL15



LV9730 —UN—03SEP04

PTO Shield

GS25068,0001B18 -19-09JUL15-1/1

Starter

DANGER

Start only from seat in park or neutral.

Starting in gear kills.



LV1932 — 19 — 02JUN97



LV16450 — UN — 20DEC12

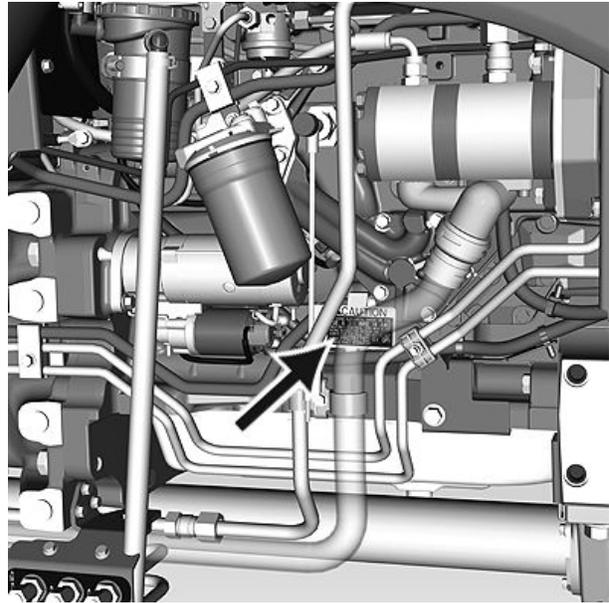
Starter

GS25068,0001487 -19-13NOV14-1/1

Engine Coolant Heater—If Equipped

⚠ CAUTION:

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



Engine Coolant Heater

RXA0148588 —19—09JUL15

RXA0145792 —UN—10OCT14

GS25068,0001B16 -19-09JUL15-1/1

Tow Implement Properly



Left-Hand Door Post

LV15826 —UN—22JUN12



Left-Hand Fender

LV22012 —UN—08JUN14

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.



LV15900 —19—25JUL12

GS25068,0001499 -19-14NOV14-1/1

Use Seat Belt Properly (Cab)

WARNING

AVOID CRUSHING:

- Do not jump if machine tips.

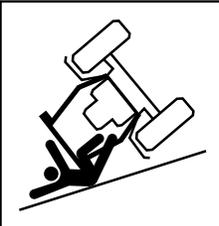
USE SEAT BELT

- 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.

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.



Left-Hand Door Post

GS25068,000155C -19-16DEC14-1/1

LV15901 —19—25JUL12

LV15827 —JUN—22JUN12

Use Seat Belt Properly (OOS)

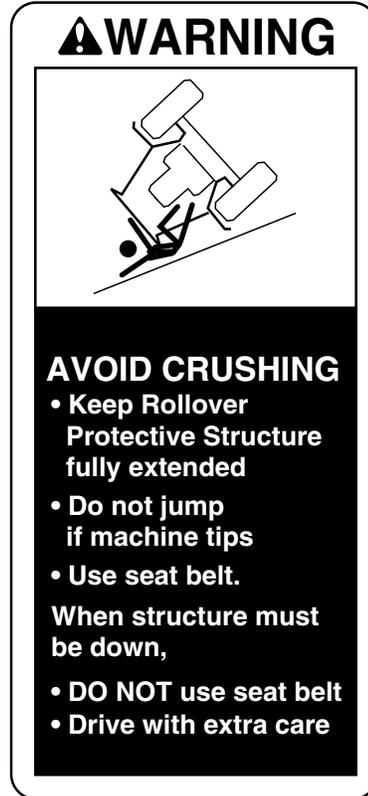
WARNING

AVOID CRUSHING

- Keep rollover protective structure fully extended.
- Do not jump if machine flips.
- Use seat belt.

When structure must be down,

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



Left-Hand Fender

GS25068,000155F -19-16DEC14-1/1

LV6526 —19—14MAR01

LV22010 —UN—09JUN14

Operators Manual



Left-Hand Door Post

LV14479 —UN—28JUL11



Left-Hand Fender

LV22011 —UN—09JUN14

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 or operation.
5. Keep all riders off tractor and equipment.
6. Keep hands, feet and clothing away from power-driven parts.
7. Reduce speed when turning or applying individual brakes or operating around hazards on rough ground or steep slopes.
8. Couple brake pedals together for road travel.
9. Use flashing warning lights on highway unless prohibited by law.
10. Stop engine, lower implement to ground and shift to "PARK" or set handbrake securely before dismounting.
11. Wait for all movement to stop before servicing machinery.
12. Remove key if leaving tractor unattended.

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 or operation.
5. Keep all riders off tractor and equipment.
6. Keep hands, feet and clothing away from power-driven parts.
7. Reduce speed when turning or applying individual brakes or operating around hazards on rough ground or steep slopes.
8. Couple brake pedals together for road travel.
9. Use flashing warning lights on highway unless prohibited by law.
10. Stop engine, lower implement to ground and shift to "PARK" or set handbrake securely before dismounting.
11. Wait for all movement to stop before servicing machinery.
12. Remove key if leaving tractor unattended.

LV5411 —19—17NOV00

GS25068,000149B -19-14NOV14-1/1

Instructional Seat—If Equipped

⚠ 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 safety belt.



Left Hand Front Post

GS25068,0001B11 -19-07JUL15-1/1

RXA0148587 -19-07JUL15

LV15638 -UN-26JUN12

Front End Loader—If Equipped



Cab Right Hand Post

LV14487 —UN—28JUL11



OOS Right-Hand Console

PULV000211 —UN—06MAR08

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 operators manual for use of other knob positions.



RXA0068062 —19—28JUN05

GS25068,0001496 -19-13NOV14-1/1

ROPS

WARNING

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

⚠ WARNING

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



Right-Hand ROPS Post

GS25068,0001491 -19-13NOV14-1/1

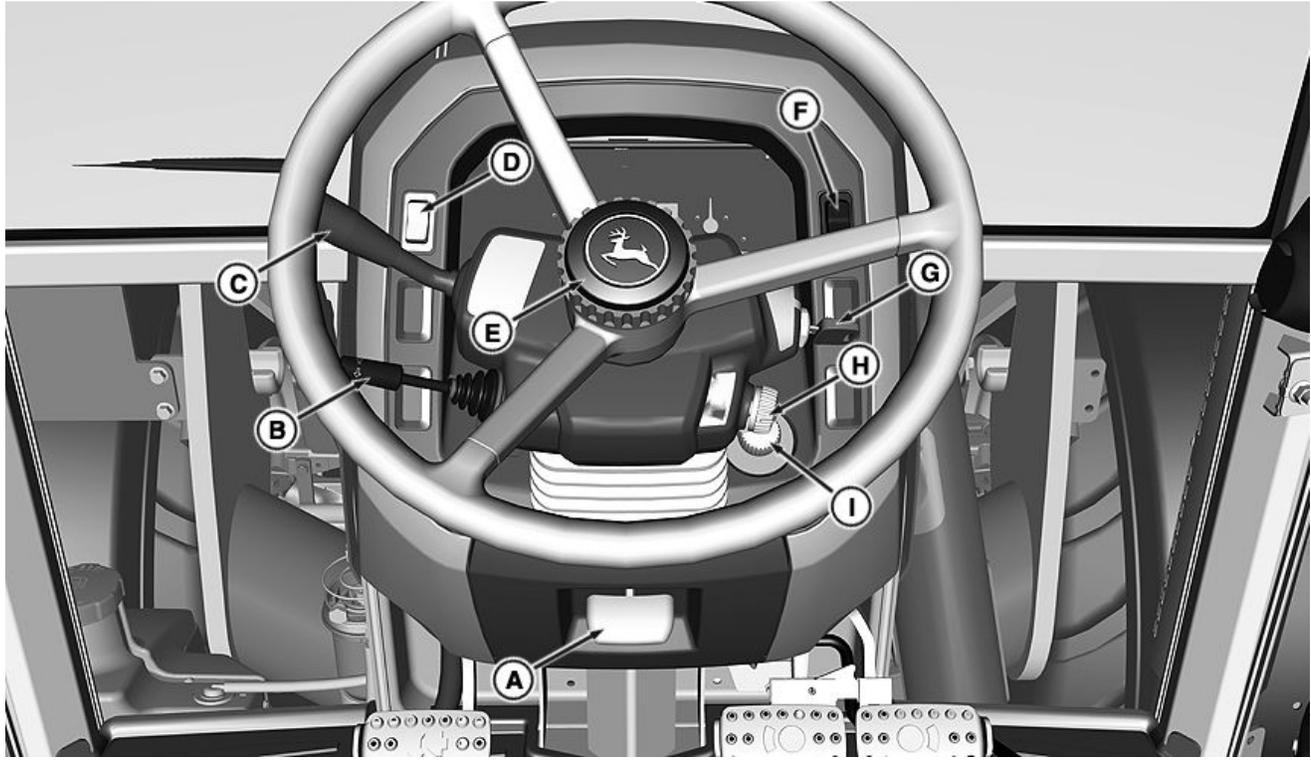
LV6525—19—14MAR01

LV15825—UN—22JUN12

Controls and Instruments

Front Console Switches and Controls

Cab Front Console Switches and Controls



RXA0145855 —UN—13OCT14

A—Steering Wheel Tilt Lever
B—Turn Signal and Horn (If Equipped)

C—Forward-Neutral-Reverse Lever
D—Roll Mode Switch
E—Steering Wheel Telescopic Knob

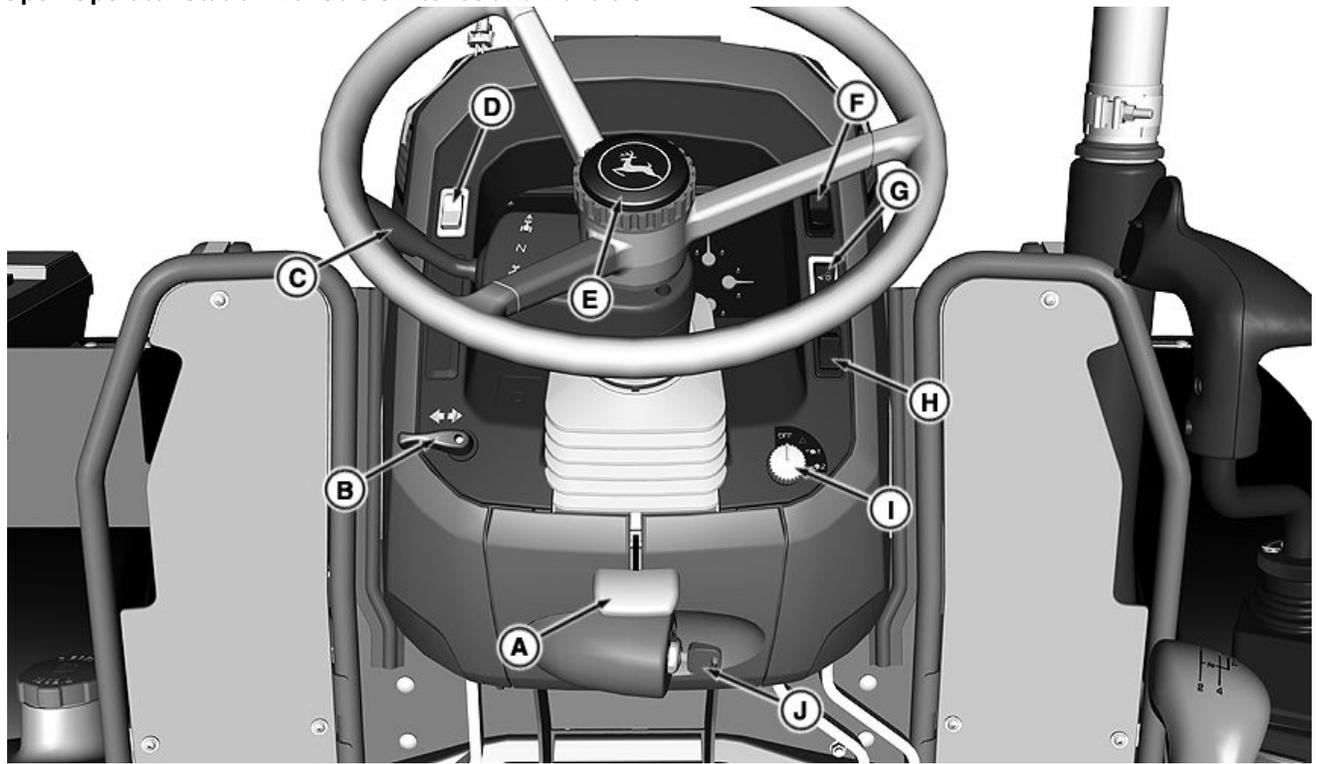
F—Regeneration Switch
G—Key Switch
H—Headlight Switch

I— Wiper Switch

Continued on next page

GS25068,00013E6 -19-17OCT14-1/2

Open Operator Station Console Switches and Controls



RXA0145858 —UN—13OCT14

A—Steering Wheel Tilt Lever
B—Trun Signal
C—Forward-Neutral-Reverse
Lever

D—Roll Mode Switch
E—Steering Wheel Telescopic
Knob
F—Regeneration Sitch

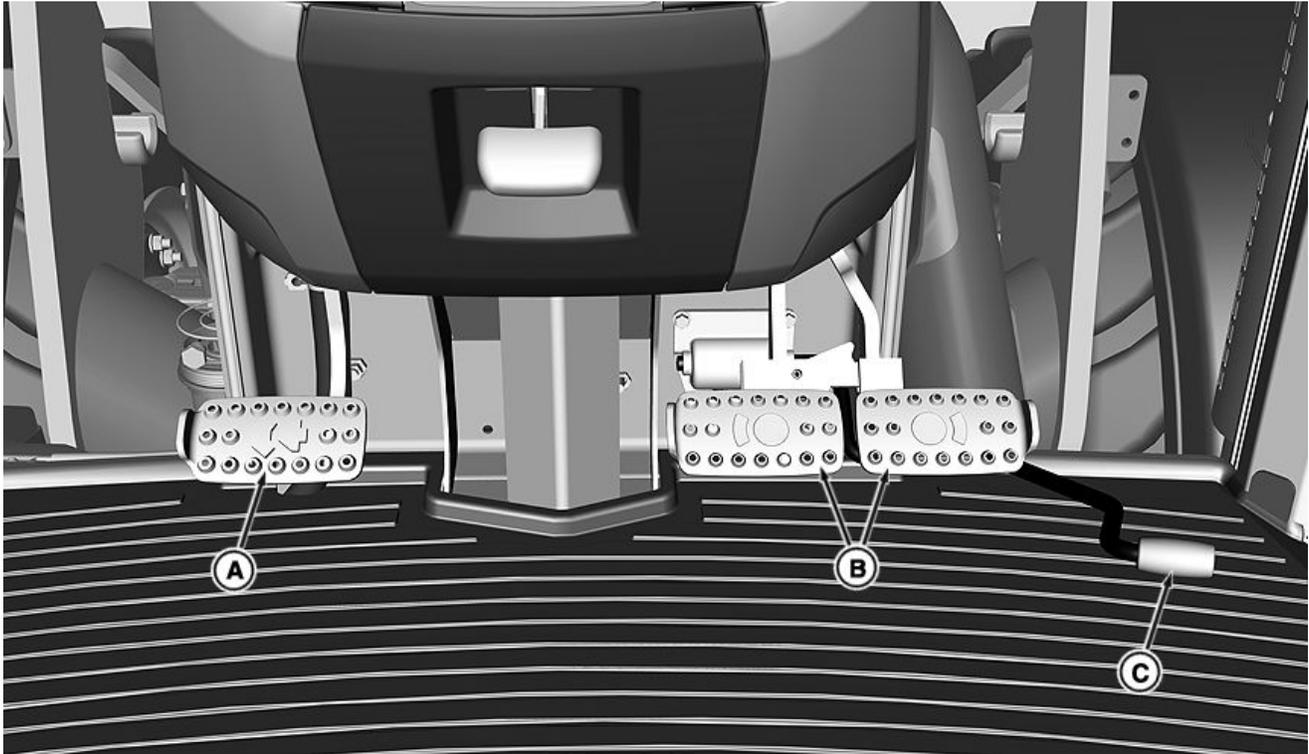
G—MFWD Switch
H—High/Low Beam Switch
I— Headlight Switch

J— Key Switch

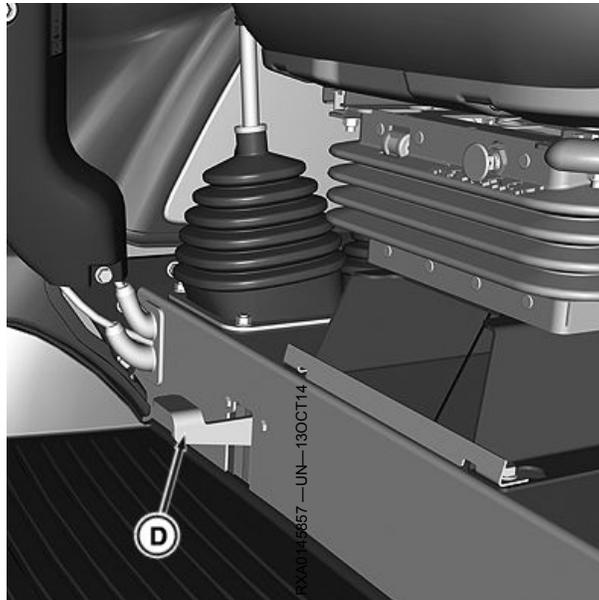
GS25068,00013E6 -19-17OCT14-2/2

Foot-Operated Controls

Cab Foot-Operated Controls



RXA0145856 —UN—13OCT14



RXA0145857 —UN—13OCT14

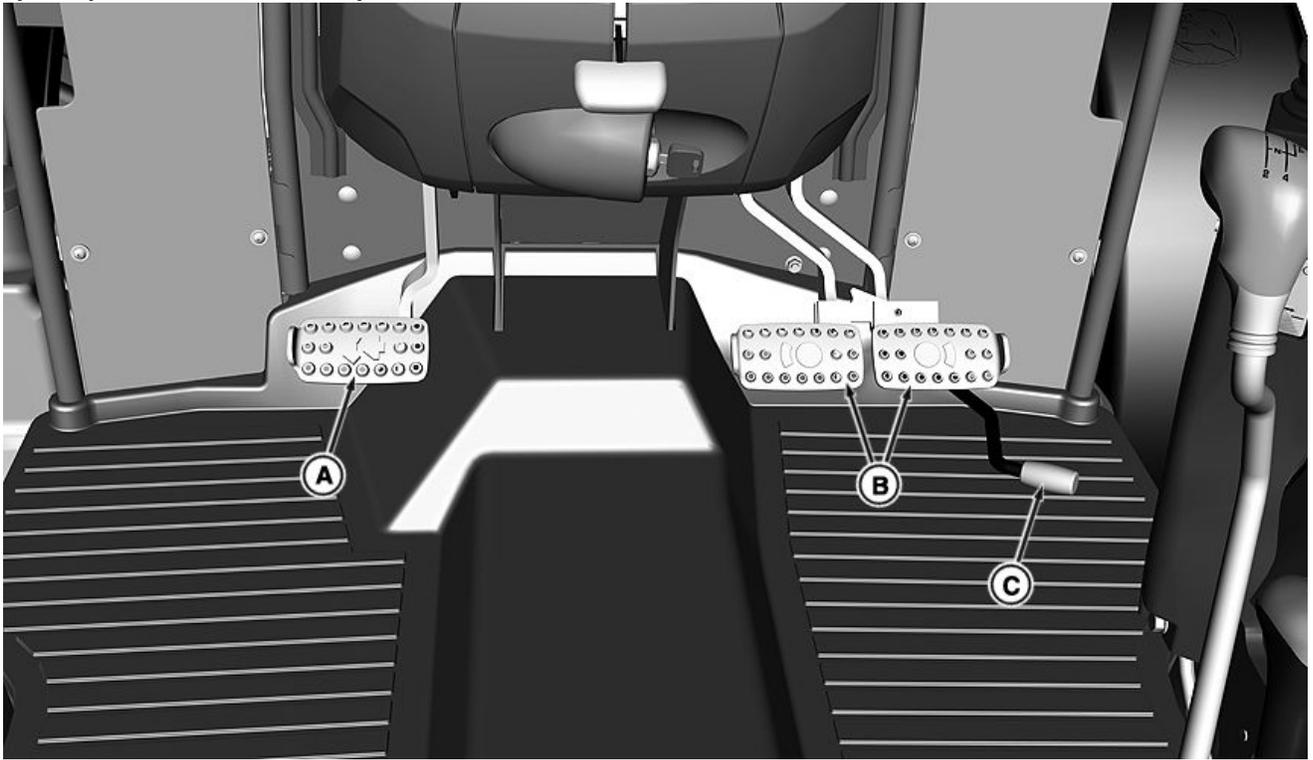
A—Clutch Pedal
B—Brake Pedals

C—Foot Throttle
D—Differential Lock Switch

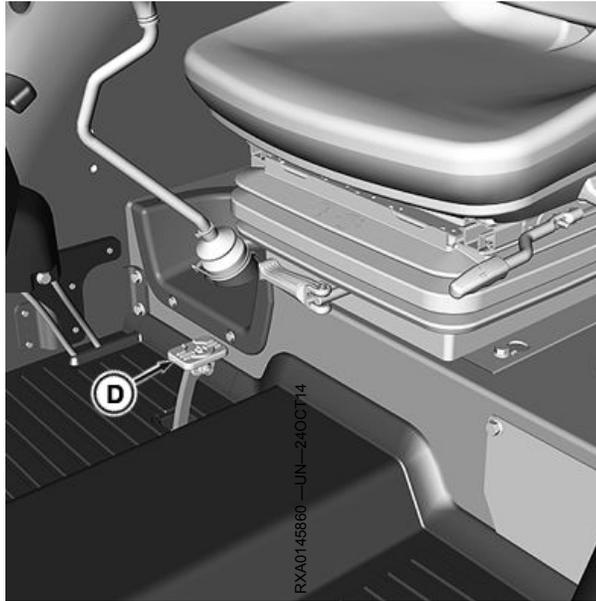
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GS25068,00013E5 -19-17OCT14-1/2

Open Operator Station Foot-Operated Controls



RXA0145859 —UN—13OCT14



RXA0145860 —UN—24OCT14

A—Clutch Pedal
B—Brake Pedals

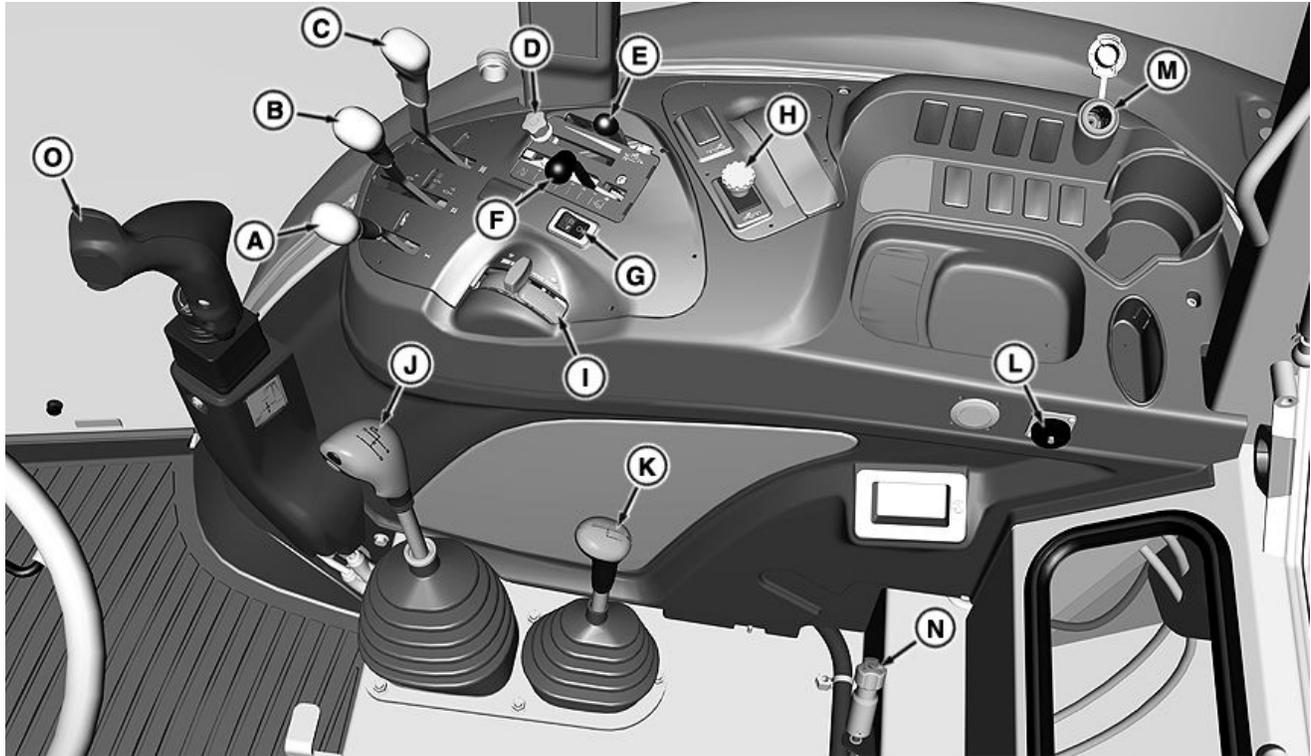
C—Foot Throttle
D—Differential Lock Switch

GS25068,00013E5 -19-17OCT14-2/2

Tractor Controls—Cab

Right-Hand Console

NOTE: The rockshaft rate-of-drop knob (N) is located behind driver's seat on lower right-hand side.



RXA0146001—UN—22OCT14

- | | | | |
|---------------------------------|------------------------------------|-------------------------------|------------------------|
| A—SCV Lever I | F—Rockshaft Position Control Lever | K—Range Shift Lever | O—Multi-function Lever |
| B—SCV Lever II | G—MFWD Switch | L—Convenience Outlet | |
| C—SCV Lever III | H—PTO Switch | M—12 Volt Accessory Outlet | |
| D—Position Control Stop Knob | I—Hand Throttle | N—Rockshaft Rate-of-Drop Knob | |
| E—Rockshaft Draft Control Lever | J—Gear Shift Lever | | |

Continued on next page

GS25068,0001482 -19-13NOV14-1/2

Left Side Controls



RXA0148002 —UN—22OCT14

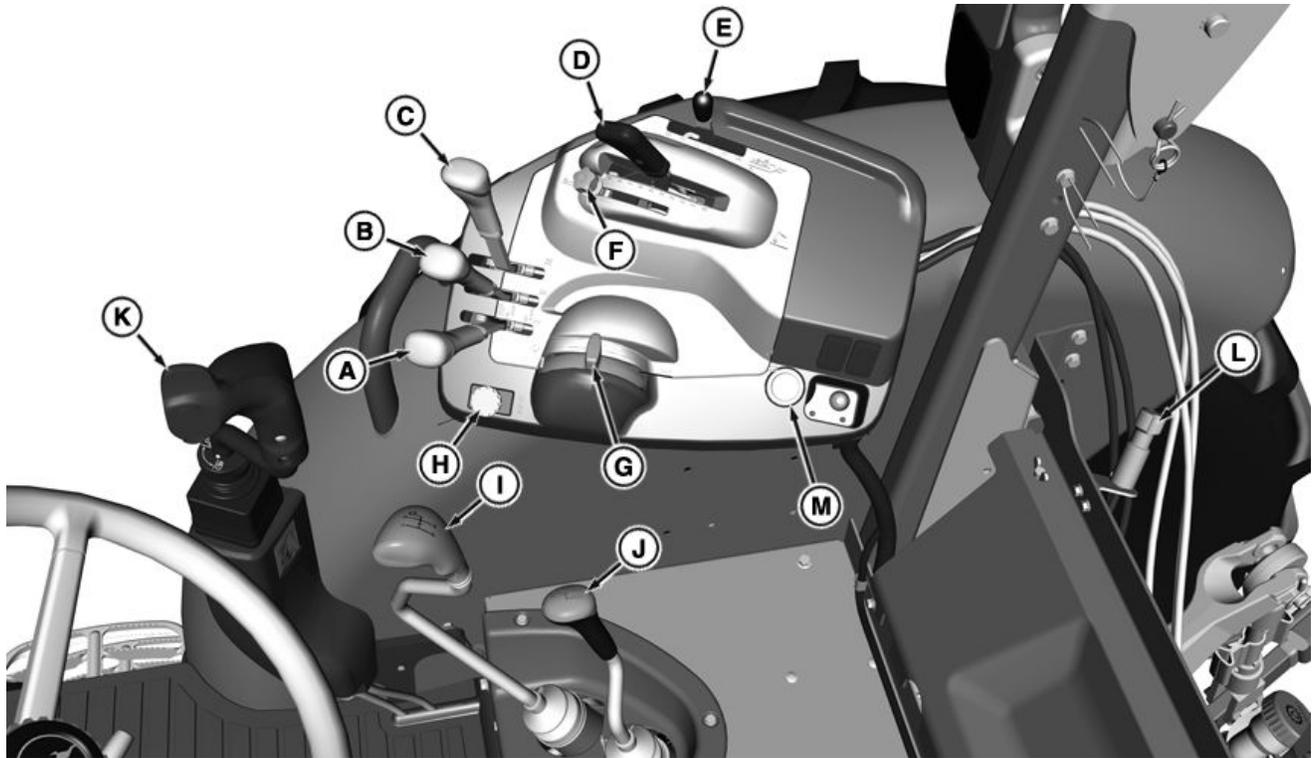
A—540/540E PTO Shift Lever

GS25068,0001482 -19-13NOV14-2/2

Tractor Controls—OOS

Right Side Controls

NOTE: The rockshaft rate-of-drop knob (L) is located behind driver's seat on lower right-hand side.



RXA0146003—UN—19NOV14

A—SCV Lever I
 B—SCV Lever II
 C—SCV Lever III
 D—Rockshaft Position Control Lever

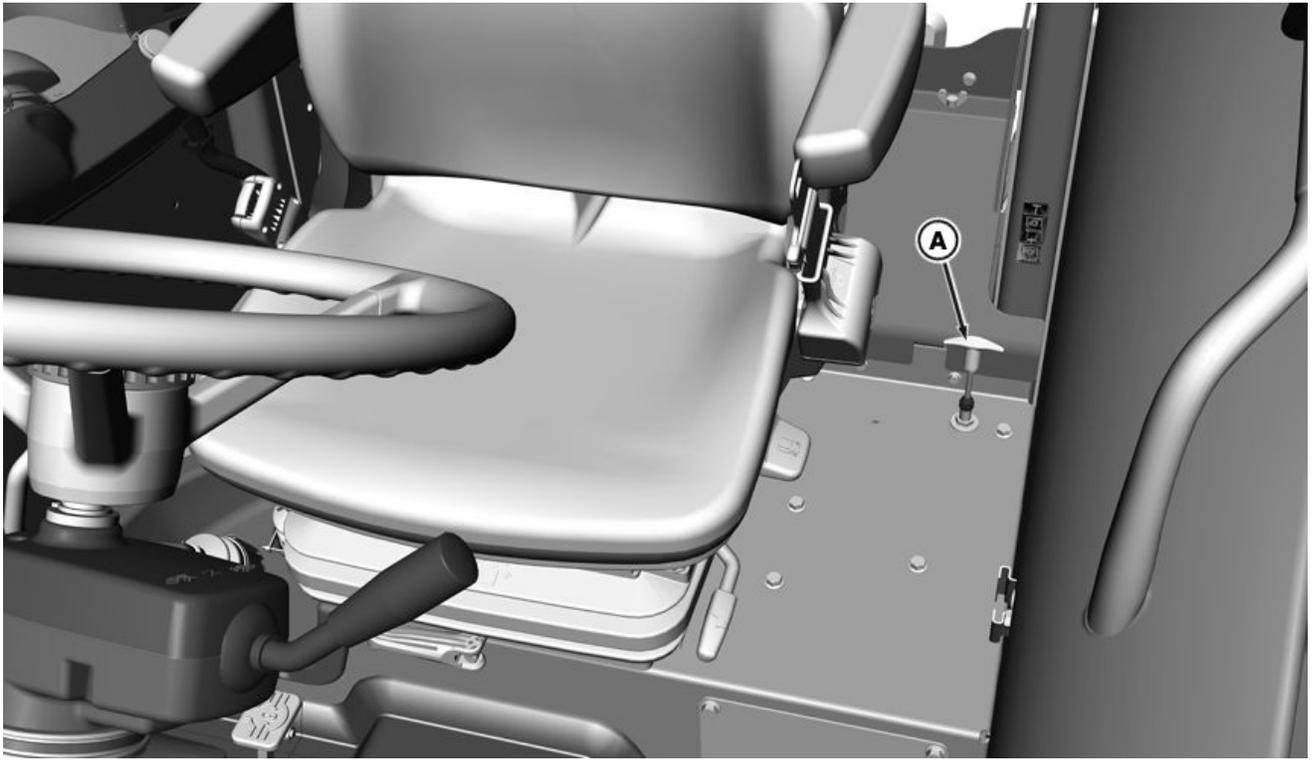
E—Rockshaft Draft Control Lever
 F—Position Control Stop Knob
 G—Hand Throttle
 H—PTO Switch
 I— Gear Shift Lever
 J—Range Shift Lever
 K—Multi-function Lever

L—Rockshaft Rate-of-Drop Knob
 M—Power Outlet

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GS25068,00014A6 -19-20NOV14-1/2

Left Side Controls

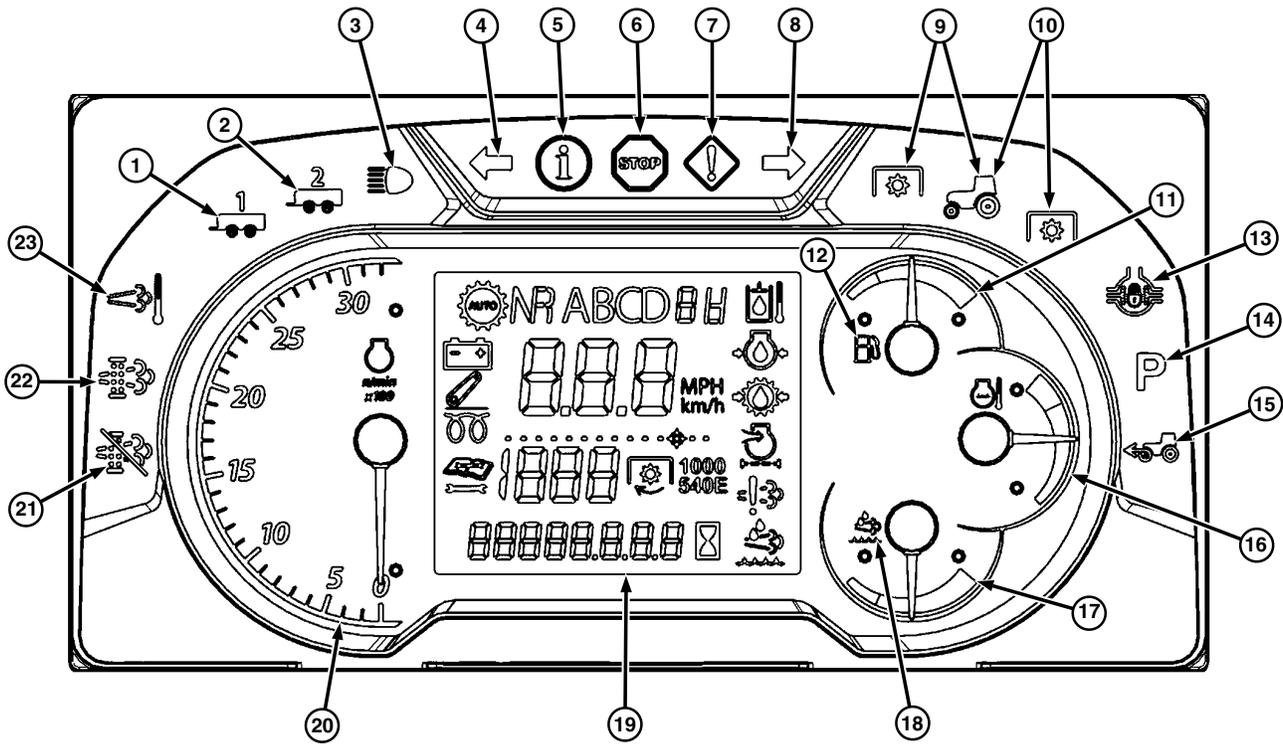


A—540/540E PTO Shift Lever

GS25068,00014A6 -19-20NOV14-2/2

RXA0148004 —UN—22OCT14

Gauges and Indicator Lights



LV21795 —UN—11SEP14

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 left-hand side.
5	Information Alert Indicator	Illuminates when a Diagnostic Trouble Code (DTC) is present. If necessary, have 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 John Deere dealer diagnose vehicle.
7	Warning Indicator	Illuminates when a malfunction occurs (review error message in Information Display). If necessary, have John Deere dealer diagnose vehicle.
8	Right Turn Indicator	Flashes when turn signal switch is switched to 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 Indicator	Illuminates when fuel level indicator moves into red zone.
13	Differential Lock Indicator	Not used.
14	Park Indicator	Illuminates when transmission has been placed in park.
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 John Deere dealer diagnose vehicle.
17	Diesel Exhaust Fluid (DEF) Level Indicator Gauge	Indicates amount of diesel exhaust fluid (DEF) remaining in tank.

Continued on next page

GS25068,00019D3 -19-13MAY15-1/4

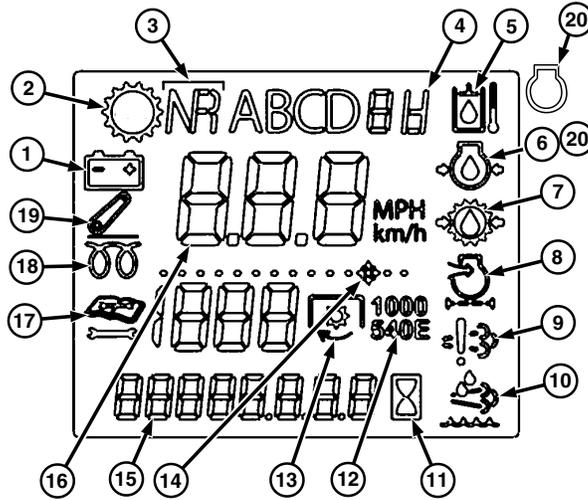
Controls and Instruments

18	Low Diesel Exhaust Fluid (DEF) Indicator	Illuminates when DEF level indicator moves into 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.

Continued on next page

GS25068.00019D3 -19-13MAY15-2/4

Information Display



LV21797—UN—11SEP14

D-i-s-p-l-a-y I-c-o-n	Icon Name	Icon Description
1	Charging System Indicator	Illuminates when charging system malfunction occurs. If necessary, have John Deere dealer diagnose vehicle.
2	Transmission Indicator	Illuminates when transmission DTC is active. If necessary, have 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 John Deere dealer diagnose vehicle.
6	Engine Oil Filter Pressure	Entire icon illuminates to indicate abnormal oil filter pressure. If necessary, have John Deere dealer diagnose vehicle.
7	Transmission Oil Pressure Indicator	Illuminates to indicate abnormal transmission oil pressure. If necessary, have 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 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 John Deere dealer diagnose vehicle.
10	Diesel Exhaust Fluid (DEF) Indicator	Illuminates when DEF is low.
11	Engine Hours Indicator	Illuminates when display is indicating engine hours.
12	PTO rpm Indicator	Indicates what mode PTO is in (540-540E, 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.

Continued on next page

GS25068,00019D3 -19-13MAY15-3/4

Controls and Instruments

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 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 John Deere dealer diagnose vehicle.

GS25068,00019D3 -19-13MAY15-4/4

Aftertreatment Indicators Overview

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.

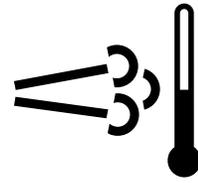
When the exhaust filter indicator is combined with the engine stop indicator engine performance is further reduced by the ECU because there is an aftertreatment system fault or the soot level of the exhaust filter is extremely high. If this combination is present, see your authorized servicing dealer.

RG22487 —UN—21AUG13



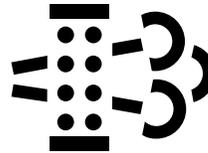
Diesel Exhaust Fluid Indicator

RG22488 —UN—21AUG13



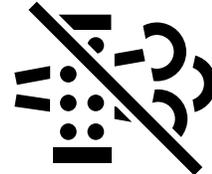
Engine Emissions Temperature Indicator

RG22489 —UN—21AUG13



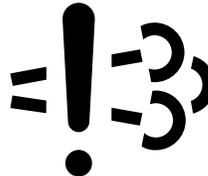
Exhaust Filter Indicator

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

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.

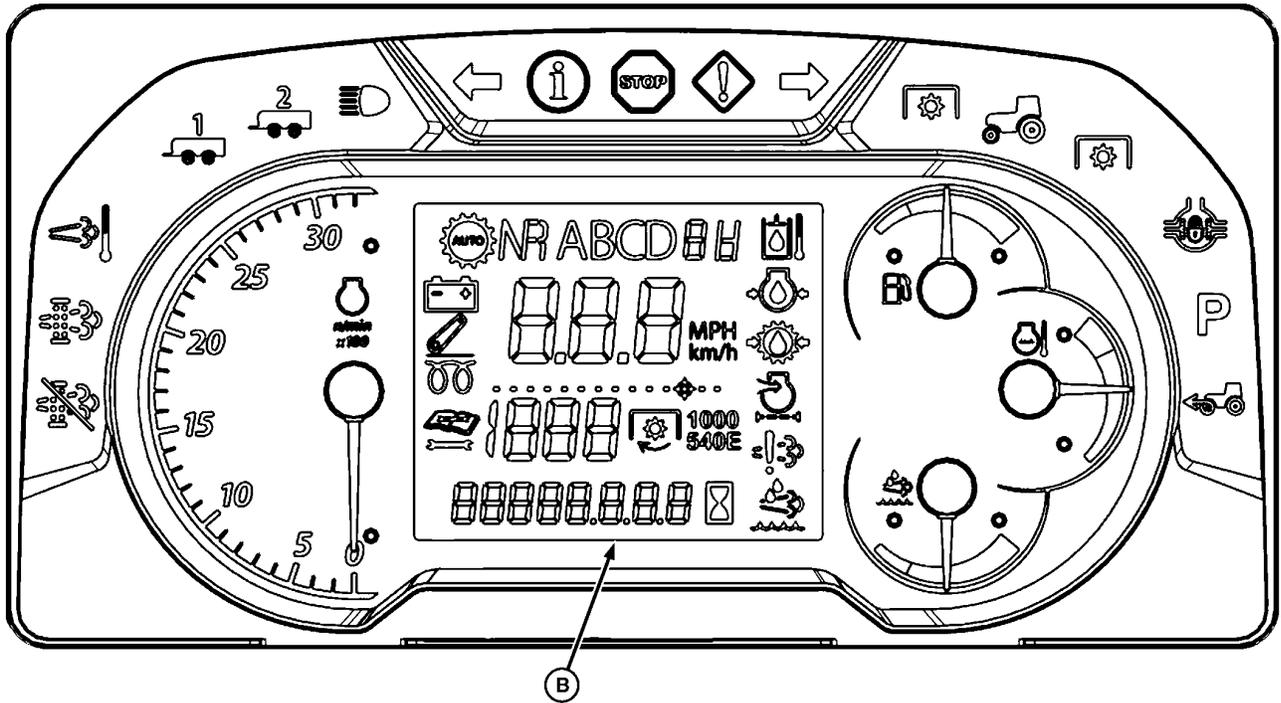
The engine emissions system malfunction indicator illuminates when engine emissions are outside of normal operating range or engine emissions system fault. Follow DTC procedure or see your authorized servicing dealer.

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.

Continued on next page

DX,AFTRTREAT,INDCATRS -19-12FEB18-1/2

Information Display (Roll Mode Switch)



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 diagnostic trouble codes and a limited amount of diagnostic addresses at the information display (B).
- **Technician access**— **Only for John Deere dealer use.** Accesses everything in customer mode plus vehicle set up, configuration, and calibration.

Customer access; recall, record, and clear diagnostic trouble codes:

- Press and hold the roll mode switch for 5 seconds to begin diagnostic session.
- Upon entering diagnostics, any active or previously active codes automatically appear in a scrolling fashion. Each one shows the control unit (three letter abbreviations) and the code number (XXXXXX.XX).
- To view or clear diagnostic trouble codes for any given control unit, do the following:
 1. Use the right turn signal switch to scroll to the desired control unit.
 2. Press and release the roll mode switch to enter the diagnostic addresses for that desired control unit.



A— Roll Mode Switch

B— Information Display

3. Use the right turn signal switch to scroll to diagnostic address 001 for that desired control unit.
4. If codes are present the word "codes" appears. If not, the word "none" appears.
5. Press and release the roll mode switch to view all code details for this control unit.
6. Any codes present in that control unit appears there in scrolling fashion for multiple codes.

Continued on next page

GS25068,00013EC -19-20OCT14-1/2

LV21983 —UN—09JUN14

LV21994 —UN—09JUN14

7. To access the option for clearing codes for this selected control unit, press and release the right turn signal switch.
8. The question "CLR ?" appears.
9. To clear the codes, press and release the roll mode switch.

10. To go back to the entire control unit list, press and release the left turn signal switch.
11. Proceed to the next desired control unit by repeating steps 1-10.

GS25068,00013EC -19-20OCT14-2/2

Heater and Air Conditioning Controls (Cab Only)

A—Air Conditioning/Defrost Switch

B—Air Conditioning Temperature Control

C—Heater Temperature Control

D—Blower Speed Switch

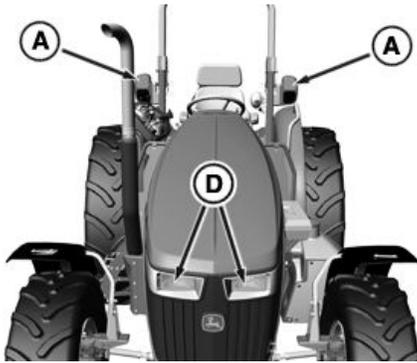


LV14499 —UN—28.JUL.11

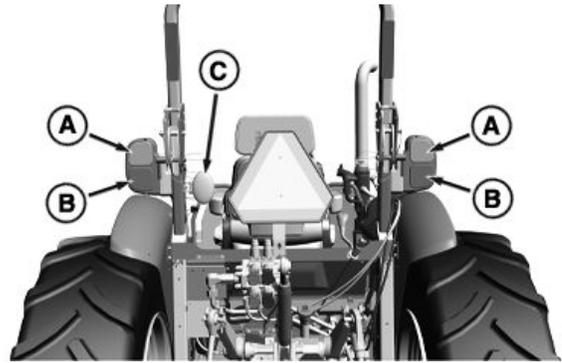
GS25068,00013ED -19-20OCT14-1/1

Lights

Light Location OOS Tractor



OOS - Front



OOS - Rear

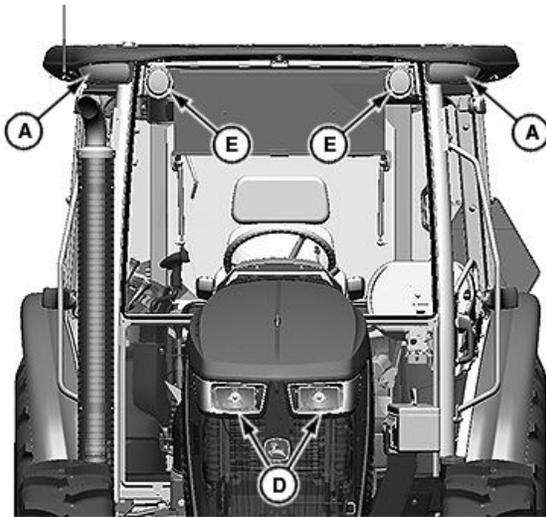
A—Turn/Warning Light

B—Tail Light
C—Rear Field/Work Light

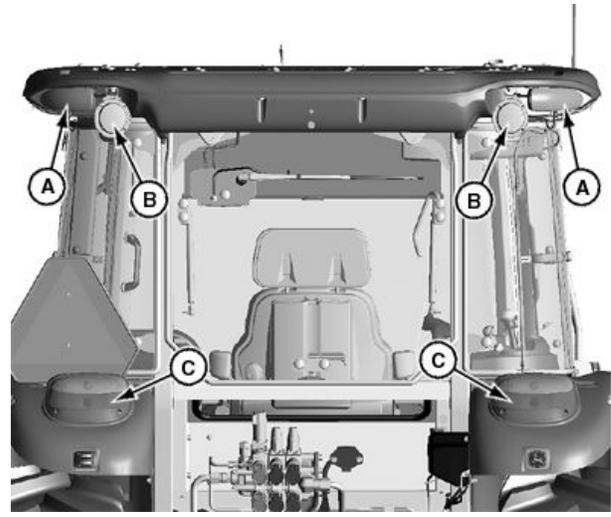
D—Head Light

GS25068,0001421 -19-24OCT14-1/2

Cab Tractor



Cab - Front



Cab - Rear

A—Turn/Warning Light
B—Rear Field/Work light

C—Stop/Turn/Tail Light
D—Head Light

E—Front Field Light

GS25068,0001421 -19-24OCT14-2/2

Road, Work, and Warning Lights

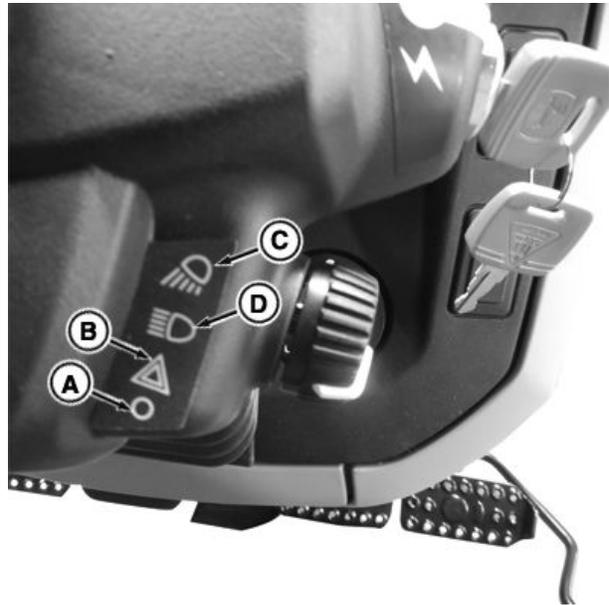
CAUTION: When on public roads, do not use work lights. Ensure that light switch is set to warning or road position dependent on climate conditions.

Bright clear lights can blind or confuse drivers of other vehicles.

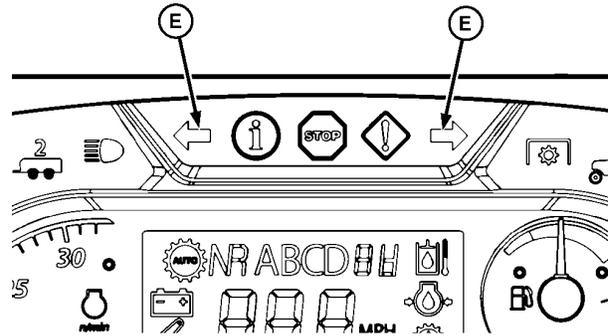
IMPORTANT: Adjust, repair, or replace damaged lights immediately, in accordance with Maintenance Guide.

A—Off Position
B—Warning Position
C—Road Position

D—Work Position
E—Warning Light Indicator



RXA0146346 —UN—25NOV14



LV21831 —UN—20MAY14

Switch Position	Use	Warning Lights Amber	Tail Lights Red	Work Light	Headlights Front Grille
A—Off	Field, Day Time	Off	Off	Off	Off
B—Warning Light	Road, Day Time	On Flashing	Off	Off	Off
C—Road Light	On Road, No Traffic, Night Time	On Flashing	On	Off	On
D—Work Light	Off Road, Night Time	Off	Off	On	On

GS25068,00014A7 -19-24NOV14-1/1

Turn Signal, High, and Low Beam Lights

CAUTION: When on public roads, do not use work lights or high beams. Ensure that light switch is set to warning or road position dependent on climate conditions and turn signal lever is in normal (center) position.

Bright clear lights can blind or confuse drivers of other vehicles.

Turn Signal Control Lever		
Lever Position	Right Turn Signals	Left Turn Signals
Off	Off	Off
Up	On Flashing	On Steady
Down	On Steady	On Flashing

Any time light switch is in working or road position, high beam lights turn on by pushing turn signal lever to forward position.

CAUTION: If passing another vehicle is necessary, ensure that there is adequate clearance on all sides to pass safely.

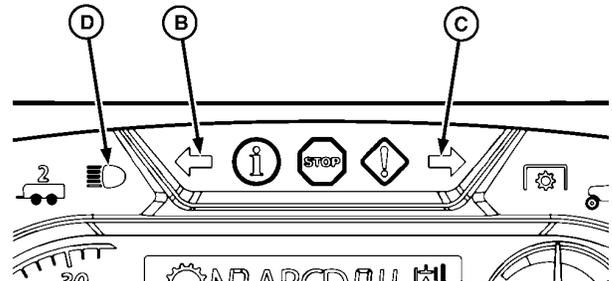
If the operator must pass another vehicle on the road, turn signal is equipped with a flash-to-pass feature.

Before passing a vehicle, pull back on the turn signal lever and release. High and low beams momentarily flash. The lever is spring loaded to return to the normal (center) position.

Turn Signal Control Lever		
Lever Position	High Beam	Low Beam
Normal (Center)	Off	On
Forward	On	Off
Rear (Flash-to-Pass)	On	On



LV15525 —UN—05MAY12



LV21832 —UN—20MAY14

A—Turn Signal-High Beam Lever
B—Left Turn Indicator

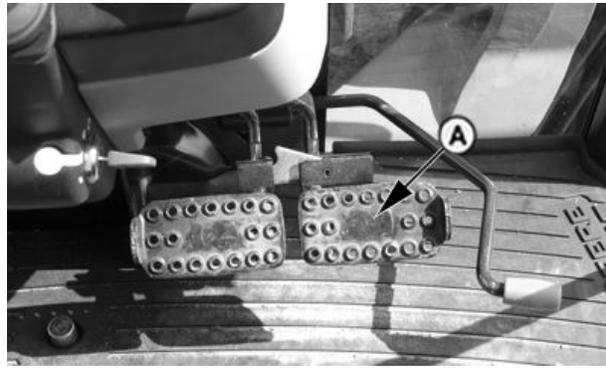
C—Right Turn Indicator
D—High Beam Indicator

Brake Light

NOTE: Brake lights will only function if the brake light kit has been installed on Open Operator's Station tractors. Brake lights are standard equipment on Cab tractors.

Pedal Position	Brake Light
Released	Off
Applied	Steady

IMPORTANT: Keep lighting in good working order. Repair or replace damaged lighting immediately.



A— Brake Pedal

PULV000218 —UN—06MAR08

GS25068,0001AC5 -19-23JUN15-1/1

Loader Auxiliary Driving Lights—If Equipped



Auxiliary Driving Light Assembly (Left Side Shown)

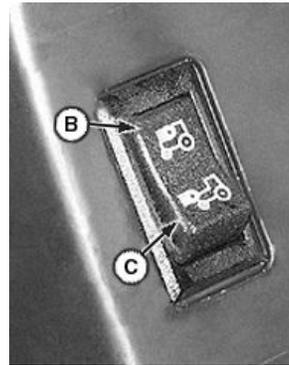
Auxiliary driving lights can be used as an alternative for obscured driving headlights mounted in front grille.

NOTE: Auxiliary light arms swing toward loader frame for storage. Auxiliary driving lights are only available with loader.

Auxiliary Light Switch	Main Light Switch	Auxiliary Driving Lights	Grille Headlights
B—On	D—Road	On	Off
	E—Work	On	Off
C—Off	D—Road	Off	On
	E—Work	Off	On

- A—Auxiliary Driving Light Assembly
- B—Auxiliary Driving Lights On Position
- C—Auxiliary Driving Lights Off Position

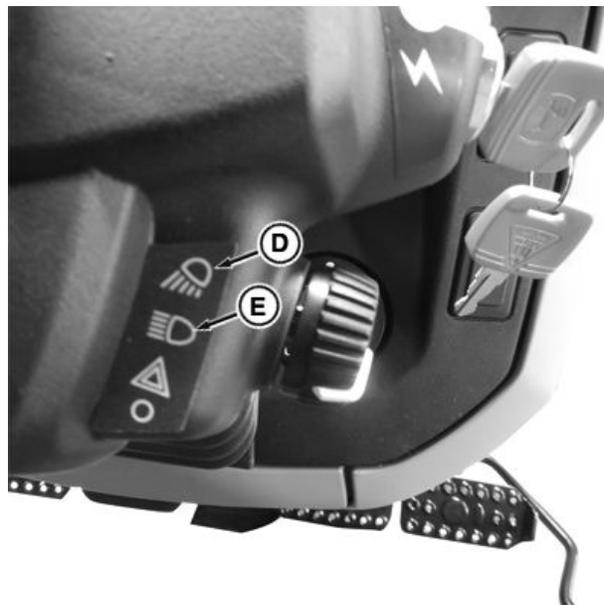
- D—Road Lights Position
- E—Work Lights Position



Loader Auxiliary Driving Light Switch

LV9465 —UN—03SEP04

LV14361 —UN—20MAY11



RXA0146347 —UN—25NOV14

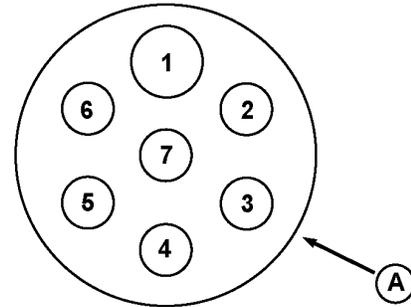
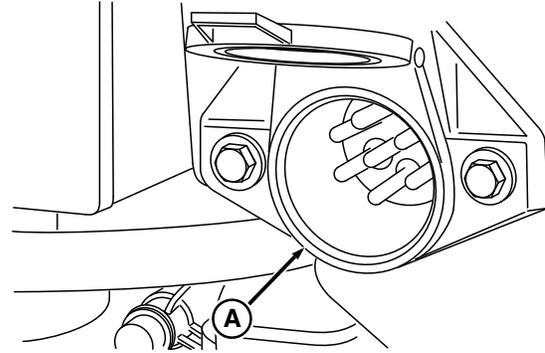
GS25068,00014A8 -19-24NOV14-1/1

Implement/Trailer Outlet

Outlet (A) is used to connect lights, turn signals, and remote electrical equipment on trailers or implements. Always use auxiliary light on towed implement when tractor lights are obscured.

If implement harness is properly wired and connected to outlet, implement lighting operates in conjunction with tractor warning and signal lights.

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



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

A—Implement/Trailer Outlet

RXA0068234 —UN—27JUN03

RW21249A —UN—29APR99

DP51502,0001648 -19-21JAN14-1/1

Rotating Beacon Light—If Equipped

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.

A—Light

B—Switch



LV9687 —UN—19AUG04

LV9688 —UN—19AUG04

GS25068,00013F6 -19-21OCT14-1/1

Operator Station—OOS

Operate Foldable ROPS

CAUTION: Make certain all parts are installed correctly if roll-over protective structure (ROPS) is loosened or removed for any reason. Replace and tighten mounting cap screws to proper torque.

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 should be replaced, not reused. Any alteration to the ROPS must be manufacturer approved.

Always keep upper part of ROPS pinned in vertical position (as pictured) when operating tractor. If tractor is operated with ROPS folded (for example, to enter a low building) drive with extreme caution and **DO NOT** use seat belt.

Lift the ROPS up again and pin in vertical position as soon as the tractor is operated under normal conditions.

NOTE: OOS shown; Premium OOS similar.

Lower ROPS Crossbar (A):

1. Remove quick-lock pins (B) and headed pins (C).
2. Lower crossbar (A) of ROPS onto stops.
3. Install pins (C and B) into holes in ROPS to lock down crossbar.

Raise ROPS Crossbar (A):

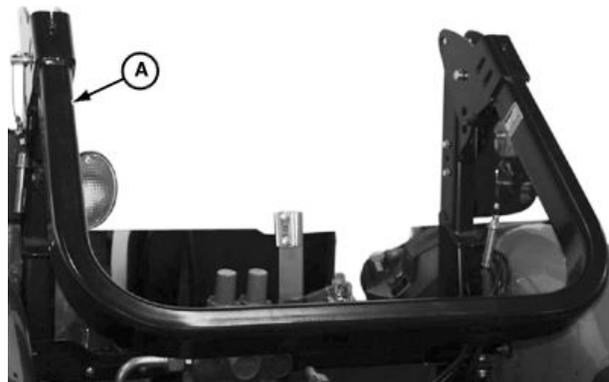
1. Remove headed pins (C) and quick-lock pins (B).
2. Lift crossbar (A) of ROPS to vertical position.
3. Install pins (C and B) into holes in ROPS to lock in position.

A—ROPS Crossbar
B—Quick-Lock Pins

C—Headed Pins



ROPS—Vertical Operating Position



ROPS—Folded

JZ81662,0001360 -19-08AUG14-1/1

LV14501—UN—28JUL11

LV14502—UN—29JUL11

LV14503—UN—29JUL11

ROPS—Certification

ROLL-OVER PROTECTIVE STRUCTURE

To maintain operator protection and ROPS certification:

- Replace damaged ROPS, do not repair, or revise.
- Any alteration to the ROPS must be approved by the manufacturer.

SJ23269 Roll-Gard™

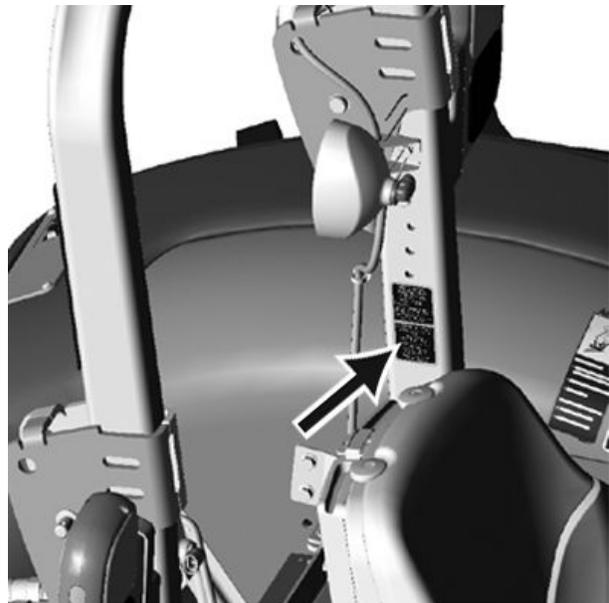
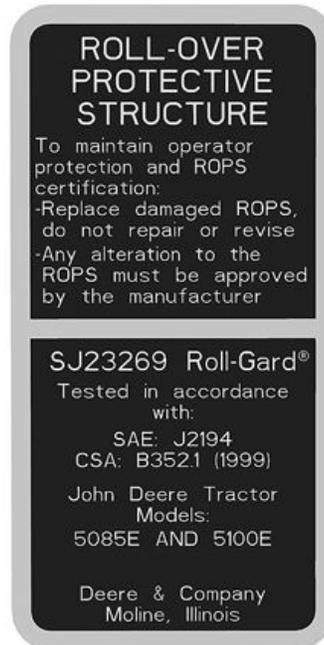
Tested in accordance with:

SAE: J1294

CSA: B352.1 (1999)

John Deere Tractor Models: 5085E and 5100E

Deere & Company Moline, Illinois



RXA0146041 —UN—23OCT14

RXA0146042 —UN—23OCT14

Roll-Gard is a trademark of Deere & Company

GS25068,00013FB -19-21OCT14-1/1

Adjusting Operator Seat

CAUTION: To avoid accidents, adjust seat before driving.

IMPORTANT: While adjusting seat, make sure that all controls can be easily accessed.

Adjust to suit operator. Four seat adjustments are available:

Forward or Backward Adjustment

1. Lift forward or backward adjustment lever (A).
2. Slide seat to desired position.
3. Release forward or backward lever (A) to lock seat in position.

Weight Adjustment

NOTE: When properly adjusted, suspension rides smooth without bottoming out.

Turn weight adjustment lever (B) clockwise or counterclockwise to reach desired suspension travel for operator weight.

Swivel Adjustment

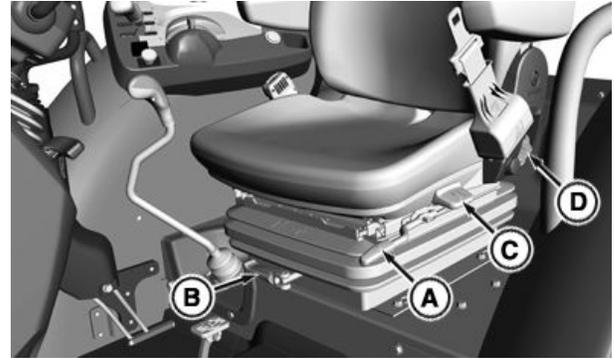
1. Lift on swivel handle (C).
2. Swivel seat to left or right, as desired.
3. Push swivel handle down to lock in position.

Backrest Adjustment

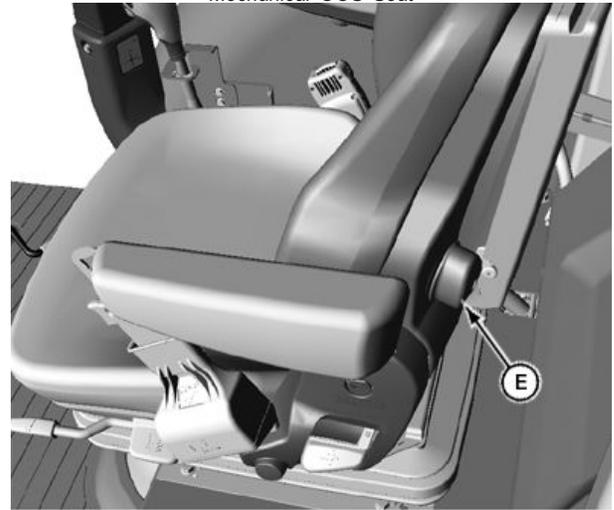
1. Lift on backrest adjustment handle (D).
2. Adjust backrest to desired position.
3. Release handle to lock backrest into position.

Lumbar Support

Turn lumbar support adjustment knob (E) clockwise or counterclockwise until desired lumbar support is reached.



Mechanical OOS Seat



Lumbar Support Knob

- | | |
|--|----------------------------------|
| A—Forward or Backward Adjustment Lever | D—Backrest Adjustment Handle |
| B—Weight Adjustment Lever | E—Lumbar Support Adjustment Knob |
| C—Swivel Handle | |

RXA0140050 —UN—23OCT14

LV21921 —UN—22MAY14

GS25068,00013FD -19-21OCT14-1/1

Seat Belt

⚠ CAUTION: Use seat belt when operating with a Roll-Over Protective Structure (ROPS). **DO NOT** use seat belt when ROPS is folded down.

Fit seat belt snugly across abdomen.

Inspect seat belt and hardware annually.

A—Seat Belt



LV14511 —UN—29JUL11

GS25068,000141F -19-24OCT14-1/1

Adjust Steering Wheel Tilt and Height

Tilt: Lift lever (A) and move steering column to desired angle.

Telescoping: Loosen telescope release ring (B) and adjust steering wheel to desired height. Tighten ring to lock into position.

A—Steering Wheel Tilt Lever

B—Steering Wheel Telescope Release Ring



LV14506 —UN—29JUL11

GS25068,0001401 -19-21OCT14-1/1

Operator Station—Cab

Door and Windows

In an emergency situation, rear window provides a large exit path if cab doors are blocked.



Cab Door - Left Side Shown

LV15549 —UN—14MAR12

GS25068,000145B -19-10NOV14-1/2

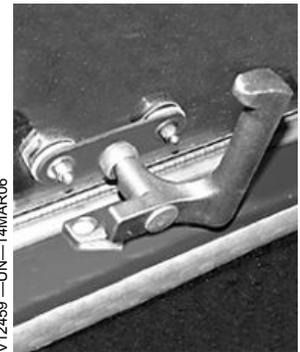
Rear and side windows open by releasing latch and pushing window out.

Rear window is mounted on a two position hinge and comes equipped with a grab handle (A).

A—Grab Handle



Side window



Rear window

LV12459 —UN—14MAR06

LV12460 —UN—12APR05



Grab Handle

LV18017 —UN—11JUN13

GS25068,000145B -19-10NOV14-2/2

Adjusting Seat

CAUTION: To avoid accidents, adjust seat before driving.

NOTE: Use these instructions as a guideline. Since everybody is different, the final settings must be determined by personal preferences. Each operator should make adjustments that suit them best.

the weight adjustment should be performed each time the height adjustment is changed.

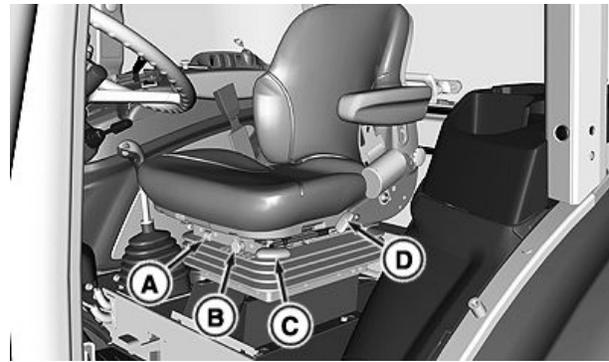
For best results, make adjustments while seated in the operating position.

Air Suspension Seat

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

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

Forward or Backward: Lift forward/backward adjustment lever (C), move seat to desired position.



Air Suspension Seat

- | | |
|-----------------------------|--|
| A—Weight Indicator | C—Forward or Backward Adjustment Lever |
| B—Height Adjustment Control | D—Back Rest Adjustment |

Back Rest Adjustment: Lift back rest adjustment lever (D), to move back rest to desired position.

GS25068,0001403 -19-21OCT14-1/2

RXA0146059 —UN—23OCT14

Mechanical Adjustment Seat

Ride Comfort (Weight) Adjustment: Adjust seat suspension to firm or soft ride. Turn knob (A);

- Clockwise for heavier setting and firmer ride. seat or counterclockwise to lower seat.
- Counterclockwise for lighter setting and softer ride.

Seat Height: Turn seat height adjustment knob (B);

- Clockwise to raise seat.
- Counterclockwise to lower seat.

Forward and Backward Adjustment: Lift lever (C) and slide seat forward or backward to desired position. Mark sure all controls are within easy reach.



Mechanical Adjust Seat

- | | |
|---|---|
| A—Ride Comfort (Weight) Adjustment Knob | C—Forward and Backward Adjustment Lever |
| B—Seat Height Adjustment Knob | |

GS25068,0001403 -19-21OCT14-2/2

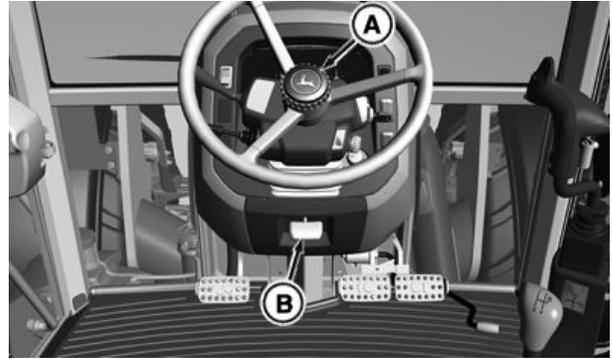
RXA0146060 —UN—23OCT14

Adjusting Steering Wheel Tilt and Height

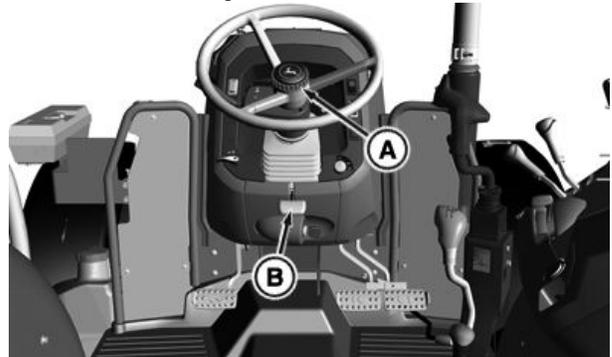
Loosen steering wheel telescope release ring (A) and adjust steering wheel to desired height. Tighten ring to lock into position.

Lift lever (B) and move steering column to desired angle. Release lever to lock into position.

- | | |
|--|------------------------------------|
| A—Steering Wheel Telescope Release Ring | B—Steering Wheel Tilt Lever |
|--|------------------------------------|



Steering Wheel Tilt Lever -- Cab



Steering Wheel Tilt Lever -- OOS

RXA0146063 —UN—23OCT14

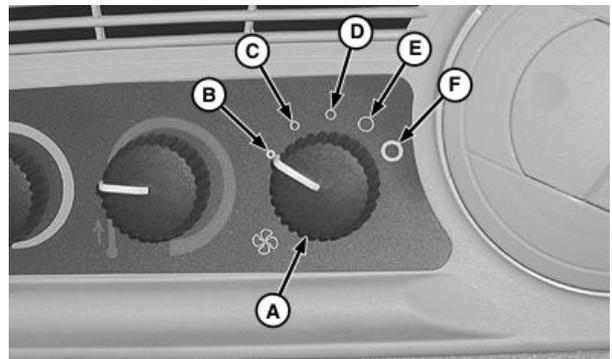
RXA0146064 —UN—23OCT14

GS25068,0001404 -19-22OCT14-1/1

HVAC Blower Speed

Turn HVAC blower speed knob (A) to desired heater, ventilation, or air conditioner setting. For rapid cab cool down, use the purge setting (F).

- | | |
|------------------------------------|-----------------|
| A—Blower Speed Control Knob | D—Medium |
| B—Off | E—High |
| C—Low | F—Purge |



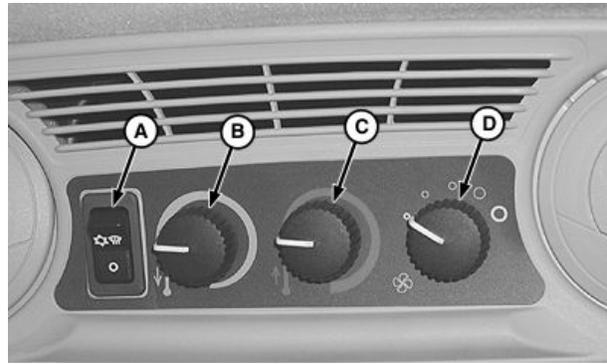
JZ81662,000070B -19-08FEB12-1/1

LV8414 —UN—14JUL03

HVAC Temperature

Push top half of switch (A) to turn on air conditioner/defrost.
 Turn control knob (B) to adjust air conditioner temperature.
 Turn control knob (C) to adjust heater temperature.

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



LV8415 —UN—14JUL03

JZ81662,000070C -19-08FEB12-1/1

Defrost Windshield

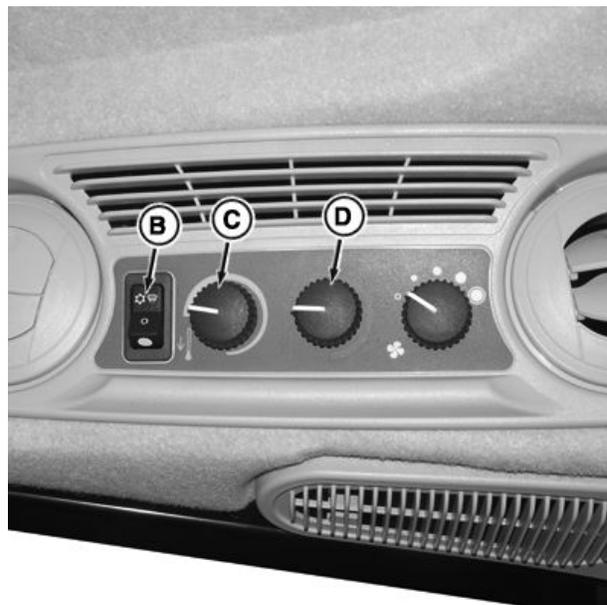
NOTE: Closing middle and rear vents helps clear windshield faster.

1. Aim two front vents (A) toward windshield.
2. Press top half of defrost switch (B) and turn air conditioner temperature control knob (C) to full counterclockwise position.
3. Turn heater temperature control knob (D) clockwise to obtain desired temperature.

- | | |
|--------------------------|--|
| A —Front Vent | C —Air Conditioner Temperature Control Knob |
| B —Defrost Switch | D —Heater Temperature Control Knob |



LV8596 —UN—14AUG03



RXA0146348 —UN—25NOV14

GS25068,00014A9 -19-24NOV14-1/1

Air Conditioner and Heater Performance

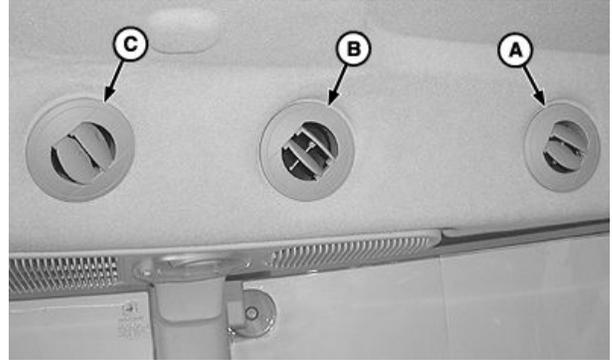
Adjust individual vents to target heating or cooling:

- Aim front vents (A) toward legs and mid-body.
- Aim middle vents (B) toward your head.
- Aim rear vents (C) toward your back.
- Aim all vents (A, B, and C) down to heat the floor and feet.

NOTE: For maximum cooling effect, turn heater temperature control knob (D) to full counterclockwise position.

A—Front Vent
B—Middle Vent

C—Rear Vent
D—Heater Temperature Control Knob



LY10325—UN—21SEP04



LY10326—UN—21SEP04

JZ81662.000070E -19-08FEB12-1/1

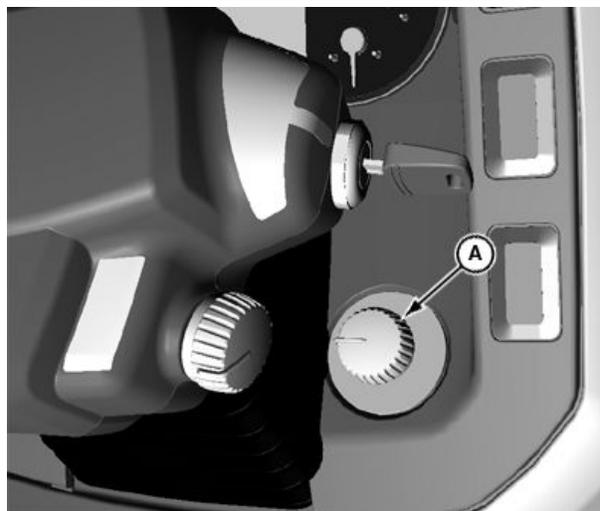
Windshield Wiper and Washer

Rotate wiper switch (A) to move windshield wipers to OFF, SLOW, or FAST position.

Push switch to activate windshield washer.

Fill reservoir (B) with non-freezing windshield washer fluid. Reservoir is located behind cab on inside of right rear fender.

A—Windshield Wiper/Washer Switch **B—Washer Fluid Reservoir**



LV22179 —UN—20JUN14



LV14166 —UN—25APR11

GS25068,0001406 -19-22OCT14-1/1

Rear Window Wiper and Washer—If Equipped

Switch (A) has three positions:

- Top WASH position—Hold switch down to activate washer.
- Center ON position—Rear window wiper is activated.
- Bottom OFF position.

A—Rear Window Wiper/Washer Switch



LV14167 —UN—25APR11

GS25068,0001407 -19-22OCT14-1/1

Use Dome Light

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

Dome light switch (A) has three positions:

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

A—Dome Light Switch



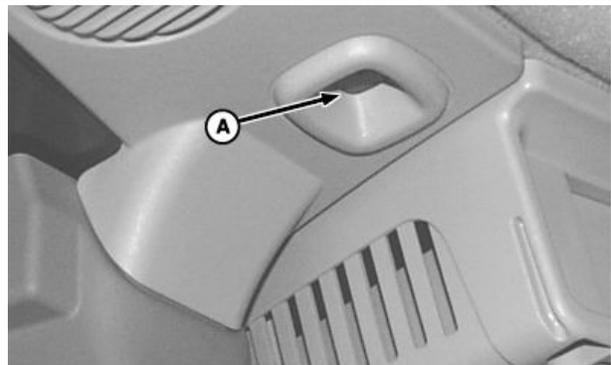
LV8418 —UN—14JUL03

JZ81662,0000711 -19-09AUG12-1/1

Using Control Illumination Light

Control illumination light (A) comes on when tractor light switch is in the bright headlight position or work light position.

A—Control Illumination Light

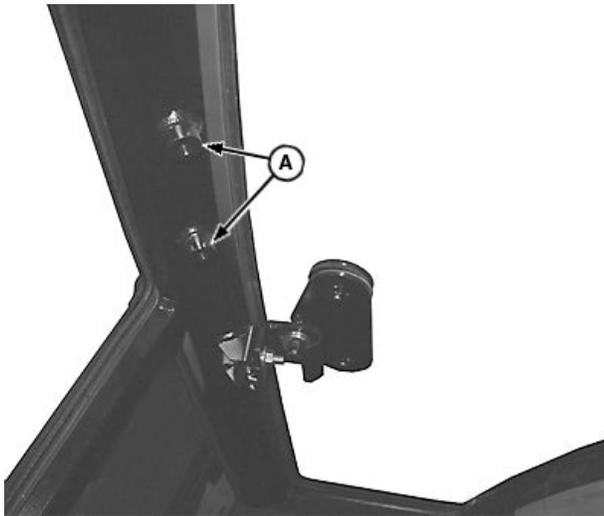


LV09217 —UN—22JUL04

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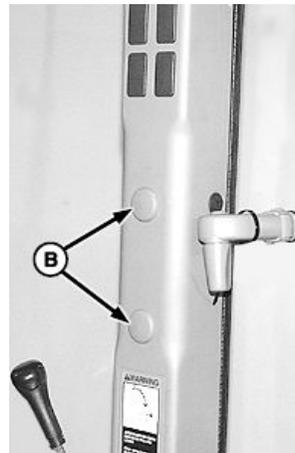
Installing a Monitor

There are two locations to attach monitors and controls in the cab:



LV14168—UN—25APR11

Front Post



LV9691—UN—19AUG04

Right Center Post

A—Mounting Locations

B—Plugs (Mounting Locations)

- Front right post (A).

- Right center post (remove plugs [B]).

JZ81662,0000280 -19-11JUL11-1/1

Instructional Seat—If Equipped

Release lock lever (A) and fold down seat bottom.

A—Lock Lever



LV15643—UN—11APR12

JZ81662,0000F9F -19-04FEB13-1/1

Accessory Electrical Outlet

12-volt electrical convenience outlet (A) is used when connecting auxiliary equipment.

Power outlet (B) is an additional accessory 12-volt electrical outlet for operators use.

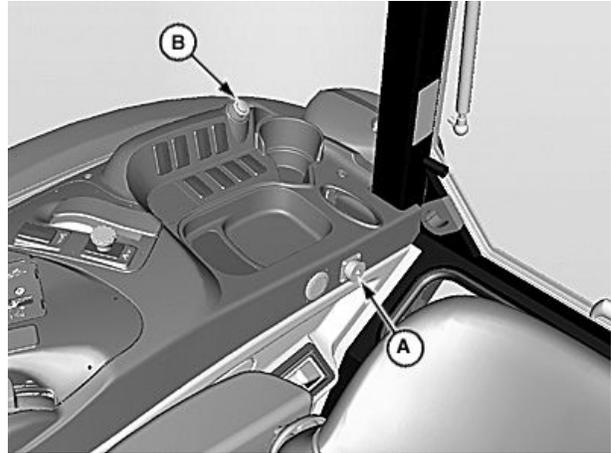
NOTE: Convenience outlet (A) is protected by two 30-amp fuses.

Accessory outlet (B) is protected by one 30-amp fuse.

NOTE: For fuse locations, see Maintenance—As Required/Per Condition section of this manual.

A—12-Volt Electrical Convenience Outlet

B—12-Volt Accessory Power Outlet



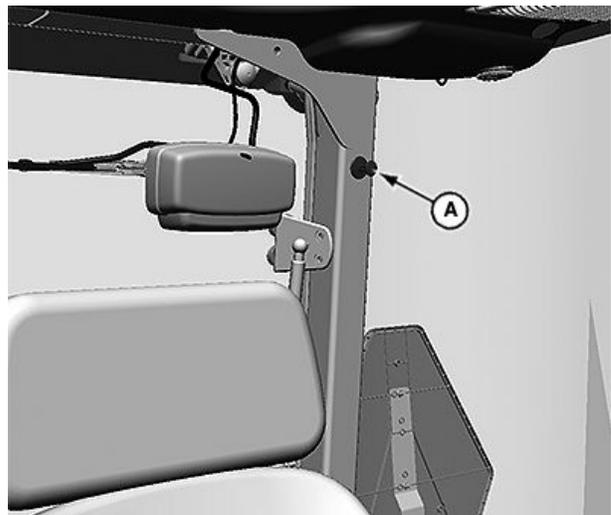
LV16336—UN—28NOV12

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Coat Hook

Coat hook (A) is supplied for operators convenience.

A—Coat Hook

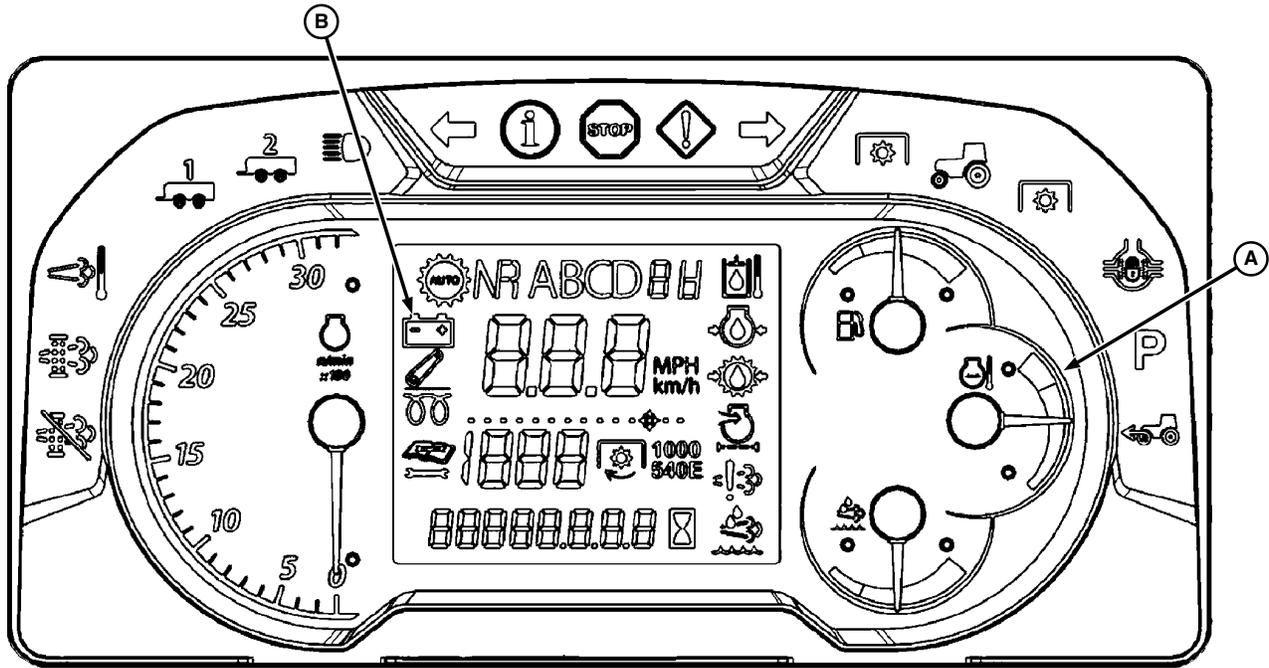


LV22757—UN—19AUG14

JZ81662,00013C7 -19-08AUG14-1/1

Break-In Period

Observe Engine Operation



LV21970 —UN—10SEP14

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.

GS25068,0001409 -19-22OCT14-1/1

Break-In Service

IMPORTANT: Keep wheel hardware tight for safety. Check wheel hardware torque before operating, twice during first ten hours of operation and thereafter every week/50 hours of operation.

New engines are filled at the factory with John Deere Break-In Plus™ Engine Oil.

Do not add make-up oil until the oil level is **BELOW** the ADD mark on dipstick. If make-up oil is required during the break-in period, John Deere Engine Break-In Plus oil should be used whenever possible.

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.

After a minimum of 100 hours and a maximum of 500 hours of operation:

- Replace Break-In Plus™ Engine Oil.¹
- After first 100 hours of operation:**
- Tighten Air Intake System and Cooling System Hose Clamps
- Inspect Tractor for Loose Hardware

Break-In Plus is a trademark of Deere & Company

¹See Diesel Engine Oil in Fuel, Lubricants and Coolant section for additional information.

JZ81662,0000F39 -19-21NOV12-1/1

Prestarting Checks

Service Daily Before Start-Up

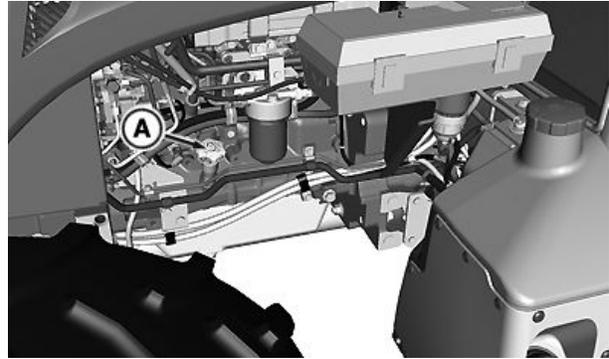
IMPORTANT: Do not operate when oil level is below lower mark on dipstick.

For any off level operation engine oil must be maintained at the FULL mark to avoid engine damage.

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. If operating in extremely wet or muddy conditions, lubricate the following with multipurpose grease:
 - Front axle pivot pin
 - Steering spindles and cylinder ends (adjustable front axle)
 - Rear axle bearings
3. Lubricate hood latch with multipurpose grease. (If necessary, clean first with a pressure washer)
4. 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.

A—Engine Oil Filler
Cap/Dipstick

B—Dust Unloading Valve



RXA0146068 —UN—27OCT14



LV14531 —UN—03AUG11

GS25068,0001AAE -19-22JUN15-1/1

Operate Engine

Before Starting the Engine

⚠ 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 thoroughly ventilate the area.

1. Check fuel gauge.



TS220 —UN—15APR13

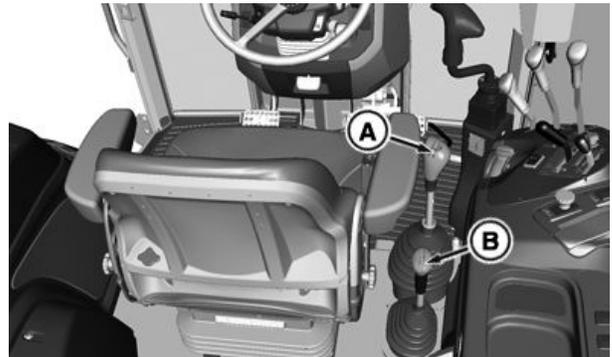
GS25068,000145C -19-10NOV14-1/4

2. **Transmission Controls:** Put gearshift lever (A) in NEUTRAL or PARK and range shift lever (B) in NEUTRAL.

Put electrohydraulic (EH) directional reverser lever (C) in NEUTRAL.

A—Gear Shift Lever
B—Range Shift Lever

C—EH Directional Reverser
Lever



Gear and Range Shifter Levers (Cab shown; OOS similar)



EH Directional Reverser Lever (Cab shown; OOS similar)

RXA0146069 —UN—27OCT14

RXA0146070 —UN—27OCT14

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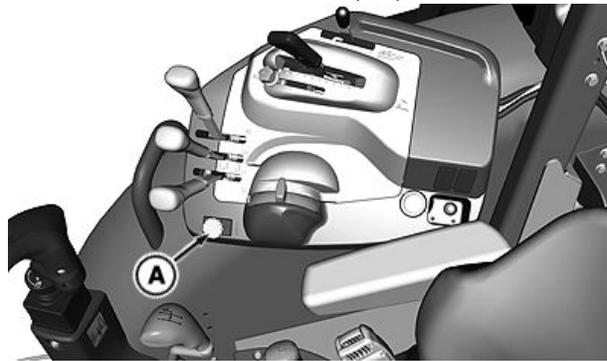
GS25068,000145C -19-10NOV14-2/4

3. Push PTO Switch knob (A) down to disengage.

A—EH PTO Knob



EH PTO Knob (Cab)



EH PTO Knob (OOS)

Continued on next page

GS25068,000145C -19-10NOV14-3/4

LV14213—UN—02MAY11

RXA0146071—UN—27OCT14

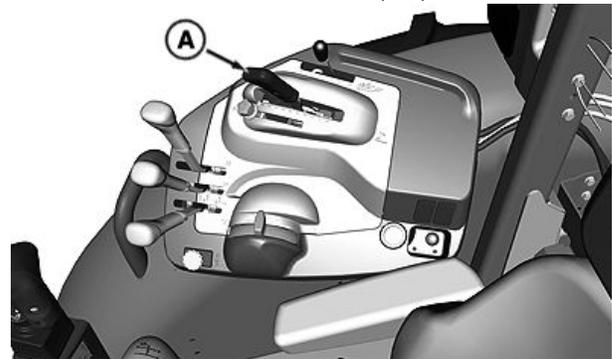
Operate Engine

4. Push hitch control lever (A) forward to lower equipment to the ground.
5. Turn key to RUN position and check to see if all indicators light. (If any indicator does not light, see your John Deere dealer.)

A—Hitch Control Lever



Hitch Control Lever (Cab)



Hitch Control Lever (OOS)

LV14179—UN—03MAY11

RXA0146075—UN—27OCT14

GS25068,000145C -19-10NOV14-4/4

Operate Key Switch

NOTE: If temperature is below 5°C (41°F), refer to *Cold Weather Starting procedure* in this section.

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

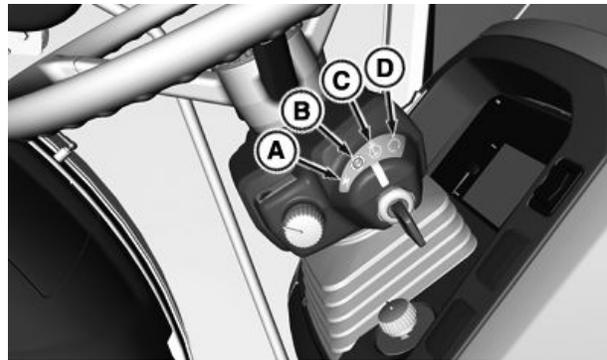
Stop Position (B): Turn key to STOP position to turn off electrical accessories and to shut down engine.

Run Position (C): Turn key to RUN position and check gauges and indicator light before advancing to START position.

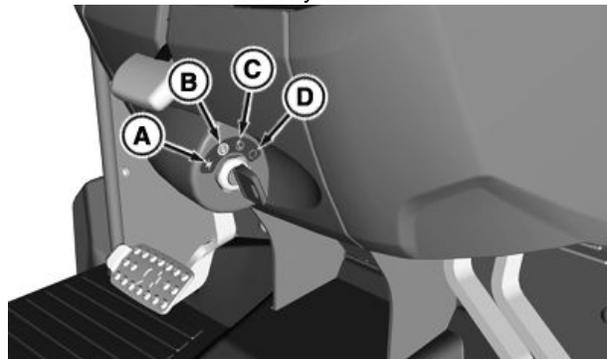
Start Position (D): Turn key to START position to crank and start engine. Key returns to RUN position when released.

A—Accessory Position
B—Stop Position

C—Run Position
D—Start Position



Cab Key Switch



OOS Key Switch

RXA0146027 —UN—23OCT14

RXA0146028 —UN—23OCT14

GS25068,0001420 -19-24OCT14-1/1

Start Engine

⚠ CAUTION: NEVER start engine while standing on ground. Do not start engine by shorting across starter terminals. If normal circuitry is bypassed, machine starts in gear and moves.

IMPORTANT: DO NOT run a cold engine at full throttle. Idle engine until it warms to operating temperature.

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

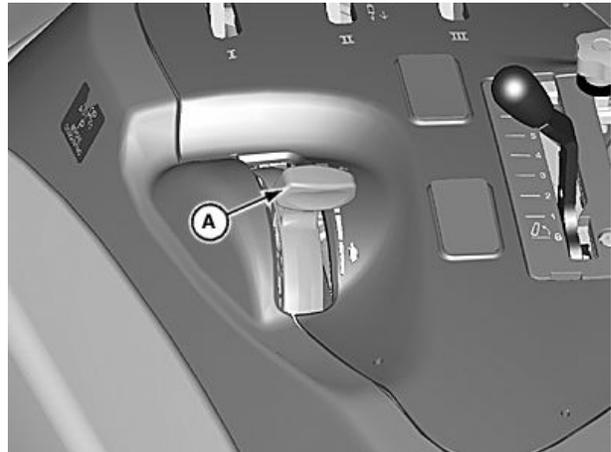
1. Begin procedure from operator seat with transmission in neutral or park.
2. Push engine speed control lever (A) forward from idle position (approximately 1/3 of full throttle).

NOTE: Engine may not start with engine speed control lever pulled rearward.

A—Hand Throttle



Machinery Runaway



Engine Speed Control Lever (Cab shown; OOS similar)

Continued on next page

GS25068.000140F -19-23OCT14-1/2

TS177—UN—11JAN89

LV16348—UN—28NOV12

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.

3. Depress clutch pedal and turn key (B) to START position. Release key when engine starts.

IMPORTANT: If temperature gauge indicates hot, charging system or engine information indicator fail to go out, stop engine, and determine the cause.

4. Warm up tractor and monitor control panel.
5. Monitor for fluid leaks: engine oil, engine coolant, transmission-hydraulic oil, and front axle oil (if MFWD equipped).
6. Avoid unnecessary engine idle.

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 “Storage” section of this Operators Manual.
1. Extend power train and tire life by avoiding high loads at travel speeds below 4.0 mph (6.4 km/h).



LV14540—UN—02AUG11



Left-hand Door Post

LV12667—UN—27APR05

2. Refer to Operators Manual before towing tractor.

GS25068,000140F -19-23OCT14-2/2

Cold Weather Start Aid

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 Warm Transmission-Hydraulic System Oil in “Hydraulic System Controls and Operations” section.)

CAUTION: DO NOT use starting fluid.

An air intake heater (A) is standard equipment to aid in cold weather starting conditions. To activate cold weather starting device:

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

If system determines air intake heater 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. Key switch must be turned to the STOP position (F) then back to RUN position to cycle through and energize air intake heater again.

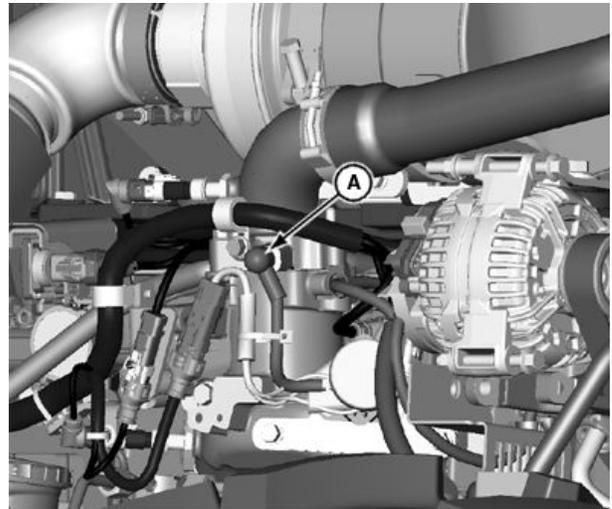
2. Depress clutch pedal and turn key to START position (G).

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 “Hydraulic System Controls and Operations” section.)

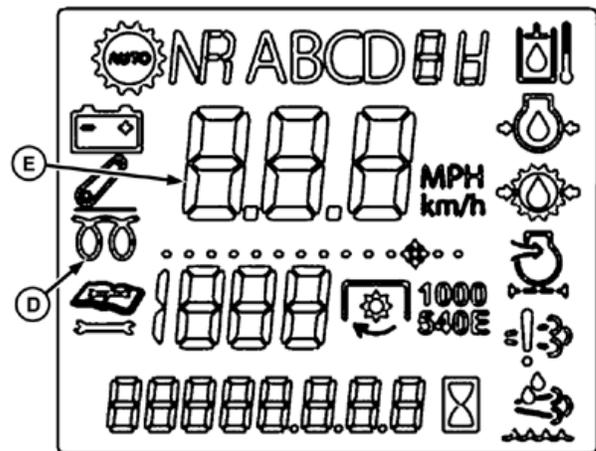
- | | |
|-----------------------------|----------------------|
| A—Air Intake Heater | E—Vehicle Speed Icon |
| B—Key Switch | F—STOP Position |
| C—RUN Position | G—START Position |
| D—Cold Start Indicator Icon | |



Air Intake Heater



Key Switch



Cold Start Indicator Icon

LV22525 —UN—24JUL14

LV22526 —UN—24JUL14

LV22527 —UN—24JUL14

JZ81662,0001395 -19-12SEP14-1/1

Using Engine Coolant Heater—If Equipped

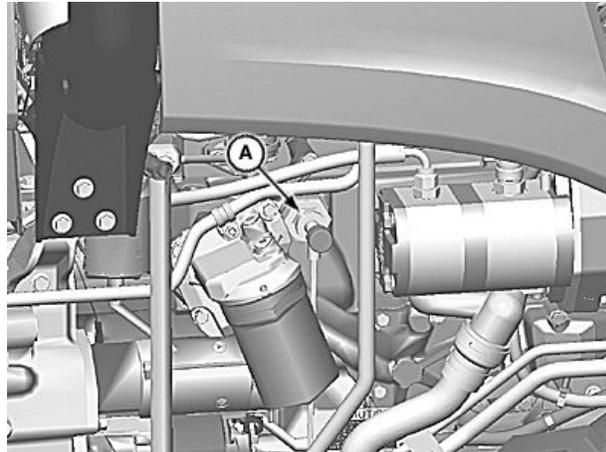
CAUTION: To avoid shock or hazardous operation, always use a three-wire heavy-duty electrical cord (minimum gauge 10 AWG and no longer than 7.6 m [25 ft]) equipped with three connectors. If a two-to-three contact adapter is used at the wall receptacle, connect green wire to a good ground.

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

Located on right-hand side of the engine, the 110-volt coolant heater (A) warms the engine coolant, reduces oil drag, eases starting, and shortens warm-up time.

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

A—Coolant Heater



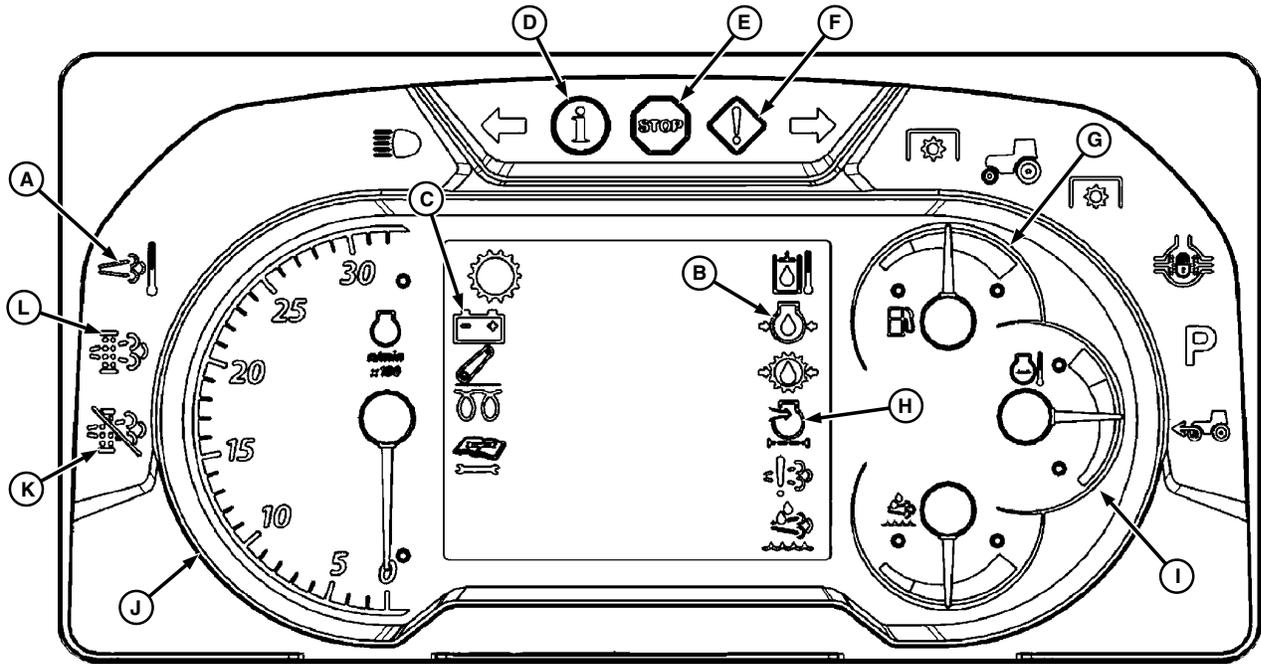
Engine Coolant Heater

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TS210—UN—23AUG88

LV16350—UN—29NOV12

Check Engine Indicators and Gauges



A—Exhaust Emissions Temperature Indicator
 B—Engine Oil Filter Pressure Indicator
 C—Charging System Indicator

D—Information Alert Indicator
 E—Stop Indicator
 F—Warning 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)

When a diagnostic trouble code (DTC) is present, information alert indicator illuminates. If necessary, have John Deere dealer diagnose vehicle.

STOP Indicator (E)

NOTE: Correct problems before restarting.

LV21989—UN—11SEP14

STOP indicator flashes and alarm sounds continuously to alert operator that a serious malfunction has occurred. Immediate attention is required or damage to tractor may occur.

Immediately stop operations, reduce engine to idle, then SHUT OFF engine.

Warning Indicator (F)

NOTE: Correct problems before restarting.

Warning indicator illuminates when a malfunction occurs (review error message in information display). If necessary, have John Deere dealer diagnose 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.

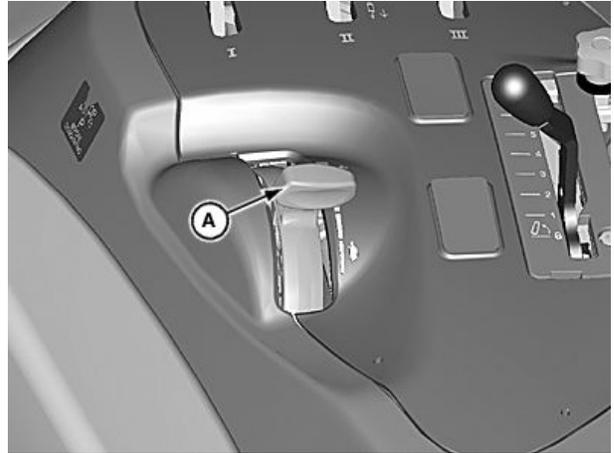
Changing Engine Speeds

Push hand throttle (A) forward to increase speed.

Depress foot throttle (B) to temporarily increase engine speed above hand throttle setting.

A—Hand Throttle

B—Foot Throttle



Hand Throttle (Cab shown; OOS similar)



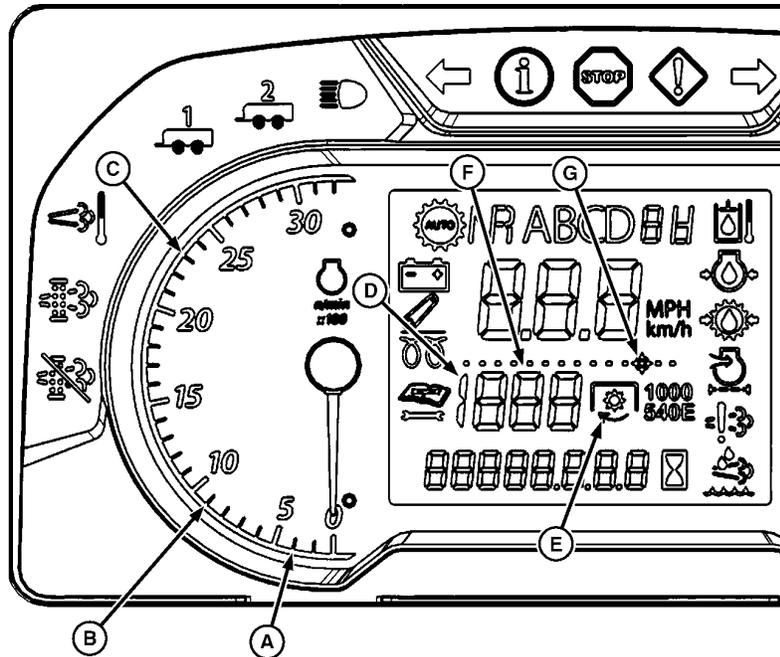
Foot Throttle (Cab shown; OOS similar)

LV16348—UN—28NOV12

LV12798—UN—04OCT06

JZ81662.0000F41 -19-26NOV12-1/1

Recommended Engine Speeds and Operational Procedures



LV21974 —UN—03JUN14

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 Aid” in this section.)

NOTE: If hydraulic functions operate slowly, warm the transmission-hydraulic system oil. (Refer to “Warm Transmission-Hydraulic System Oil” in Hydraulic System Controls and Operations 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, at light or no load (C):
 - 2500 ± 25 rpm.
3. Engine nominal full load speed is 1600—2500 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 (F) is displayed according to PTO speed selected (540E or 540).

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

Continued on next page

GS25068,000145D -19-10NOV14-1/2

Restart Stalled Engine

If engine stops running due to 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.

GS25068,000145D -19-10NOV14-2/2

Stopping the Engine

IMPORTANT: 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.

1. Pull hand throttle (A) back to slow idle.
2. Put range shift lever in NEUTRAL position.
3. Put gear shift lever in PARK, and allow engine to idle for 2—5 minutes.
4. If equipped, place reverser lever into NEUTRAL.
5. Lower all equipment to the ground, put all SCV levers in NEUTRAL, and disengage PTO.
6. Turn key switch (B) to STOP and remove from switch.

A—Hand Throttle

B—Key Switch



Hand Throttle (Cab shown; OOS similar)



Key Switch (Cab shown; OOS similar)

LV16348—UN—28NOV12

LV14540—UN—02AUG11

GS25068,0001414 -19-23OCT14-1/1

Use Booster Battery or Charger

⚠ CAUTION: Battery gas is explosive. Keep sparks and flames away from battery. Make last connection and first disconnection at a point away from battery.

IMPORTANT: Reversed polarity may damage electrical system or cause battery to explode.

Booster battery

1. Attach red power cable to vehicle starter positive terminal and positive terminal of booster battery.
2. Attach black ground cable to negative terminal of booster battery and to a good ground on the engine block.
3. Turn key to START position.
4. When engine starts, remove ground cable first, then power 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.



TS204—UN—15APR13

2. Charge battery according to charger manufacturer instructions.
3. Disconnect negative charger lead first, then positive lead.

AI68620,0000213 -19-03SEP10-1/1

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.

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 "Filling the DEF Tank" in the "Fuel, Lubricants, and Coolant" section in this operator manual.

Normal DEF Level

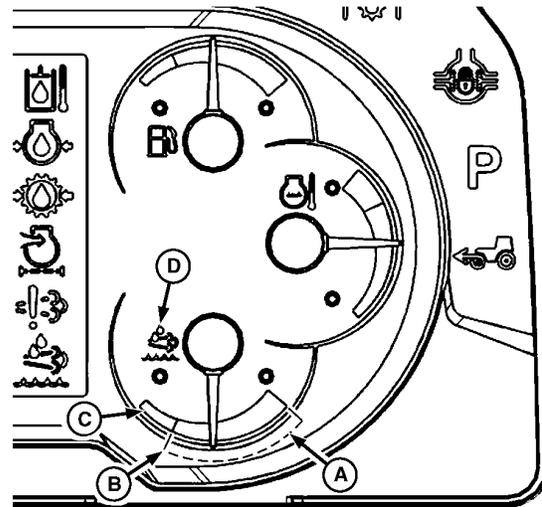
When DEF level is within this range (A) DEF symbol (D) illuminates, white, and tractor operates normally. Always keep level within this range for uninterrupted performance.

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.



A—Normal DEF Level
B—Red Zone DEF Level

C—Zero DEF Level
D—DEF Symbol

DEF at Low Temperatures

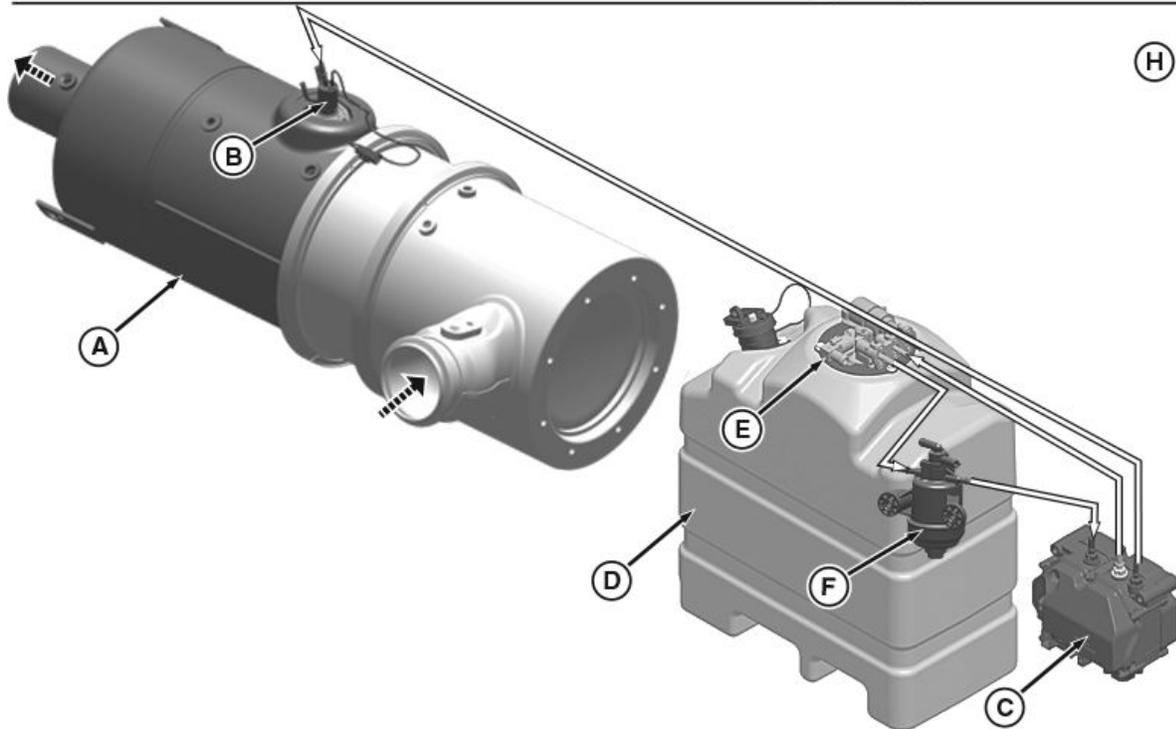
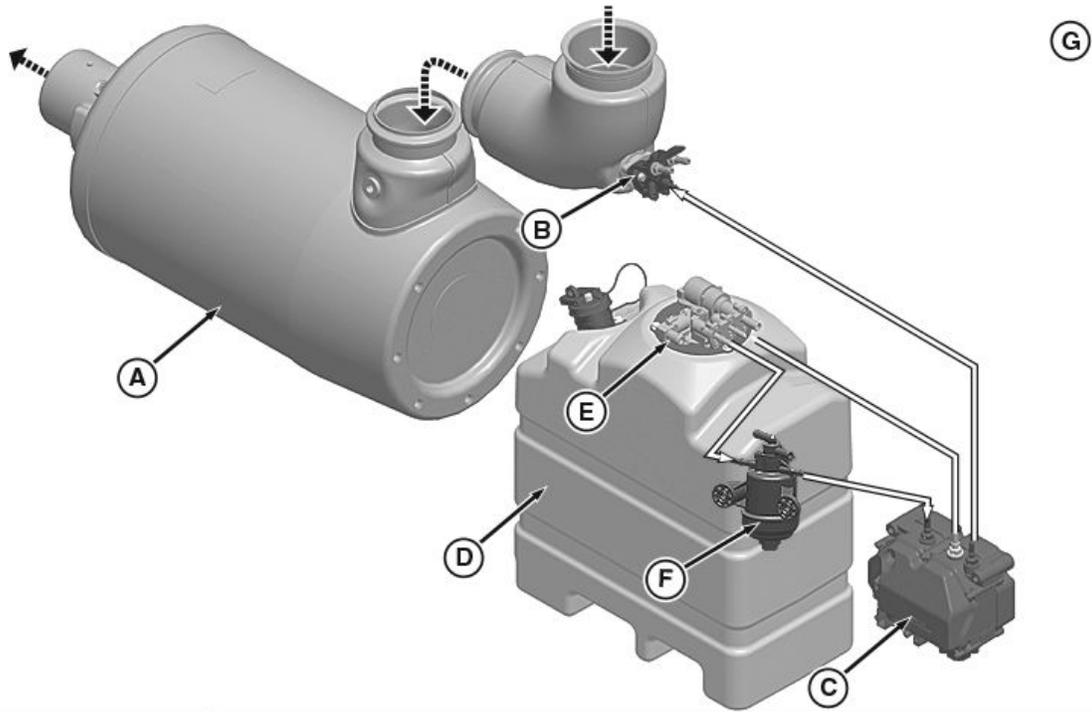
NOTE: The quality of the DEF is not degraded by freezing and thawing.

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.

JZ81662,0001346 -19-12SEP14-1/1

LV22174 —UN—20JUN14

Selective Catalytic Reduction (SCR) System Overview



SCR System

A—SCR Catalyst
B—DEF Dosing Injector
C—DEF Dosing Unit

D—DEF Tank
E—DEF Tank Header Assembly
F—In-line DEF Filter (If Equipped)

G—Modular Canning Configuration
H—In-line Canning Configuration

Continued on next page

DX,SCR,OVERVIEW -19-30MAR20-1/2

RG22427A—UN—07JAN20

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 (D), and DEF tank header assembly (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 it 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.

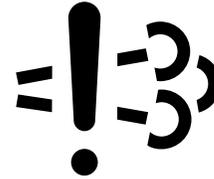
DX,SCR,OVERVIEW -19-30MAR20-2/2

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.

DX,MACHSTOPWARN,AG -19-02OCT15-1/6

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

RG22492 —UN—21AUG13



Continued on next page

DX,MACHSTOPWARN,AG -19-02OCT15-2/6

Operate Engine

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

RG22493 —UN—21AUG13



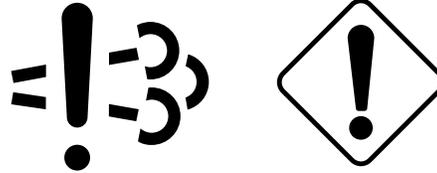
DX,MACHSTOPWARN,AG -19-02OCT15-3/6

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.



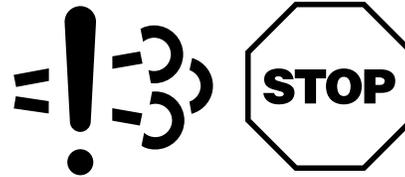
- Contact service provider.

DX,MACHSTOPWARN,AG -19-02OCT15-4/6

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.

RG26972 —UN—26MAR15

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

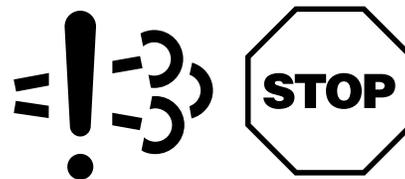


DX,MACHSTOPWARN,AG -19-02OCT15-5/6

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.

RG26972 —UN—26MAR15

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



DX,MACHSTOPWARN,AG -19-02OCT15-6/6

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 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.)

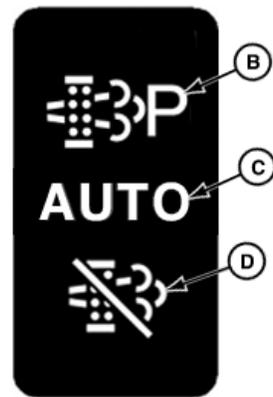
NOTE: Exhaust filter cleaning mode switch (A) is a momentary contact switch. Normal (default) position is AUTO.

Use three position exhaust filter cleaning mode switch (A) to select exhaust filter cleaning modes; Parked Cleaning (B), AUTO Cleaning (C), and Auto Cleaning Disabled (D). To disable auto cleaning, exhaust filter cleaning mode switch needs to be depressed for 5 seconds.

IMPORTANT: Use 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 manual – parked cleaning procedure



Exhaust Filter Cleaning Mode Switch—Location



Exhaust Filter Cleaning Mode Switch

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

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.

GS25068,00016AF -19-20JAN15-1/6

Exhaust Filter Indicators

Exhaust Filter Indicator (A)

Indicates that one of the following has occurred:

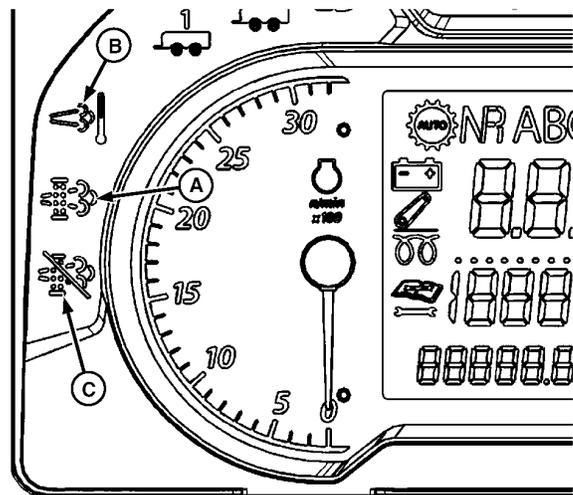
- Exhaust filter cleaning is in process.
- Aftertreatment system has a fault.
- Exhaust filter is in need of cleaning and operator has disabled auto exhaust filter cleaning.

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.



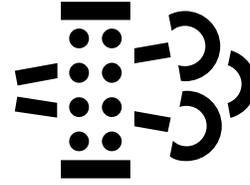
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GS25068,00016AF -19-20JAN15-2/6

Operator Information

H94828 —UN—13OCT09

1. Exhaust Filter Indicator

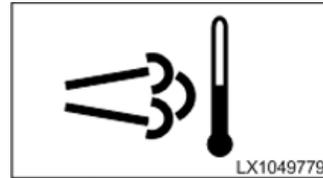


Description	Recommended Procedure
Exhaust filter cleaning is in process. Aftertreatment system has a fault. Exhaust filter is in need of cleaning and the operator has disabled auto exhaust filter cleaning. <i>NOTE: If no cleaning is carried out, engine power is reduced</i>	Activate automatic filter cleaning;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

GS25068,00016AF -19-20JAN15-3/6

2. Engine Emissions Temperature Indicator

LX1049779 —UN—22JUL10



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 .

GS25068,00016AF -19-20JAN15-4/6

3. Parked Exhaust Filter Cleaning Required

LX1049777 —UN—22JUL10

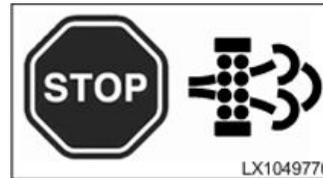


Description	Recommended Procedure
System reduced engine performance because: —There is an aftertreatment system fault. —Sulfur deposits, or urea deposits on exhaust filter are moderately high.	Perform Parked Exhaust Filter Cleaning .

GS25068,00016AF -19-20JAN15-5/6

4. Service Exhaust Filter Cleaning Required

LX1049776 —UN—22JUL10



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 .

GS25068,00016AF -19-20JAN15-6/6

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

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 (B) remains illuminated during the exhaust filter cleaning.

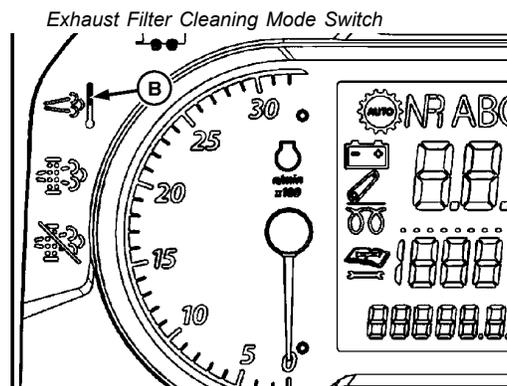
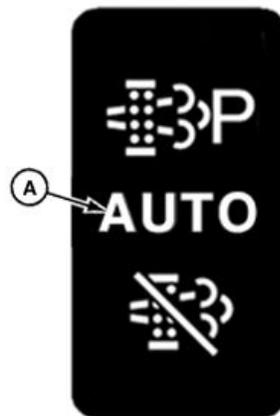
Do not disable automatic exhaust filter cleaning unless it is absolutely necessary.

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 extremely high temperature.

IMPORTANT: See also *Clean Exhaust Filter Safely* in Section 05.

A—Exhaust Filter Cleaning Mode Switch

B—Engine Emissions Temperature Indicator



LV23068 —UN—12SEP14

LV21987 —UN—03JUN14

GS25068,00016B0 -19-20JAN15-1/1

Disabled Exhaust Filter Cleaning

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 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.

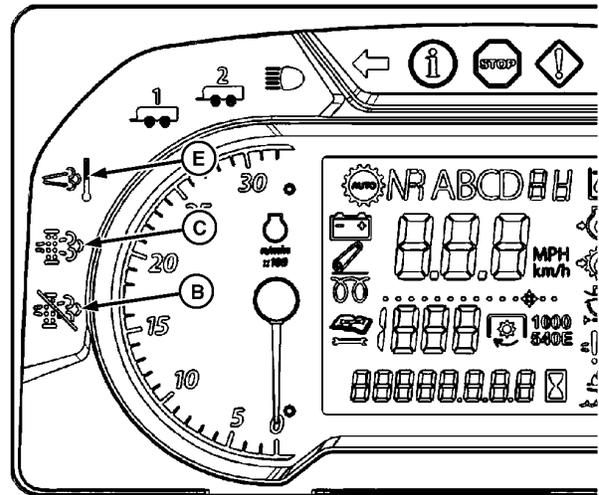
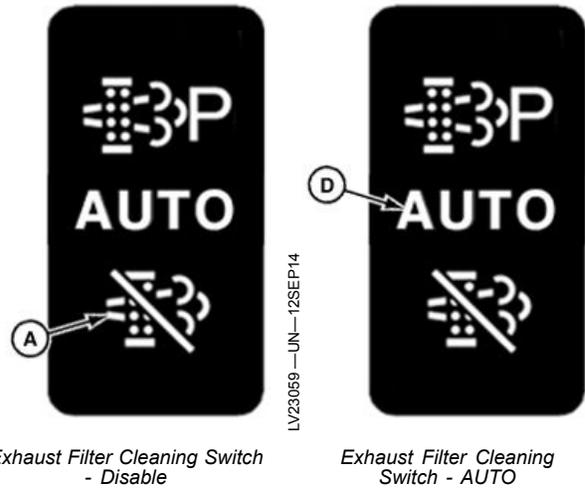
While in disabled mode, if system determines that exhaust filter requires cleaning, exhaust filter indicator (C) illuminates. Exhaust filter cleaning must be reset to automatic (AUTO) exhaust filter cleaning mode. To reset exhaust filter cleaning to Automatic (AUTO) (D) press, and hold bottom of exhaust 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, 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, system, eventually, reduces engine performance requiring a stationary parked exhaust filter cleaning.

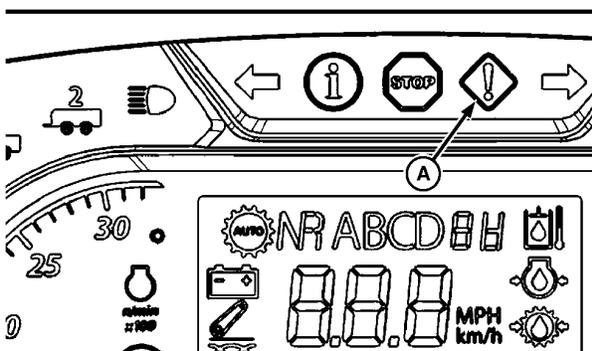
- | | |
|--|--|
| A—Exhaust Filter Cleaning Switch - Disable | D—Exhaust Filter Cleaning Switch - AUTO |
| B—AUTO Cleaning Disabled Indicator | E—Engine Emissions Temperature Indicator |
| C—Exhaust Filter Indicator | |



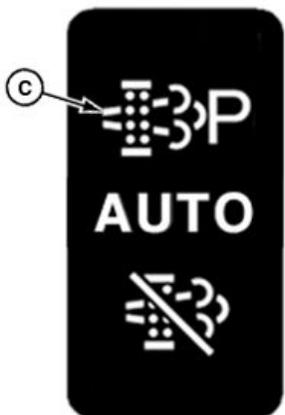
JZ81662,0001313 -19-12SEP14-1/1

Parked Exhaust Filter Cleaning

IMPORTANT: If operator disregards indicators and continues to operate vehicle without allowing an automatic cleaning, engine performance

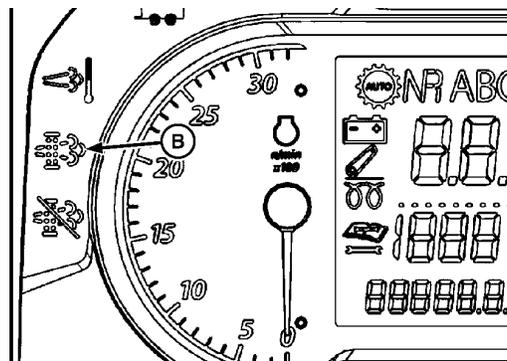


Warning Indicator

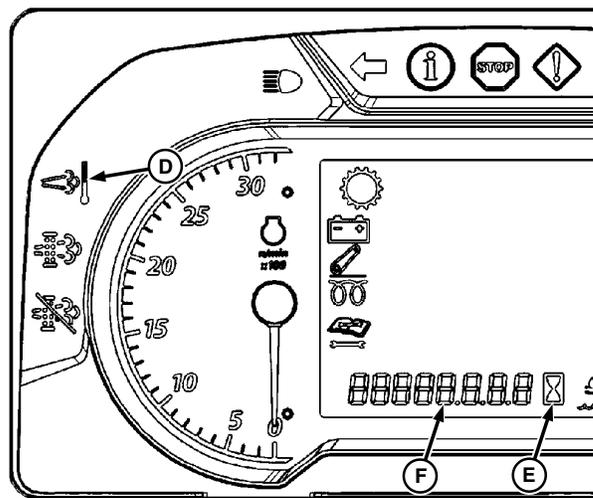


Exhaust Filter Cleaning Switch - Parked Cleaning Position

is reduced. A parked exhaust filter cleaning procedure must be performed.



Exhaust Filter Indicator



Parked Cleaning In Process

A—Warning Indicator
B—Exhaust Filter Indicator

C—Parked Cleaning Position
D—Engine Emissions Temperature Indicator

E—Vehicle Information Display
F—Engine Hours 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 Section 05.

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.
2. Press and hold exhaust filter cleaning switch in parked cleaning position (C) 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.
4. During the parked cleaning process, the engine emissions temperature indicator (D) illuminates.

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

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.

JZ81662,0001314 -19-12SEP14-2/2

Service Exhaust Filter Cleaning

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

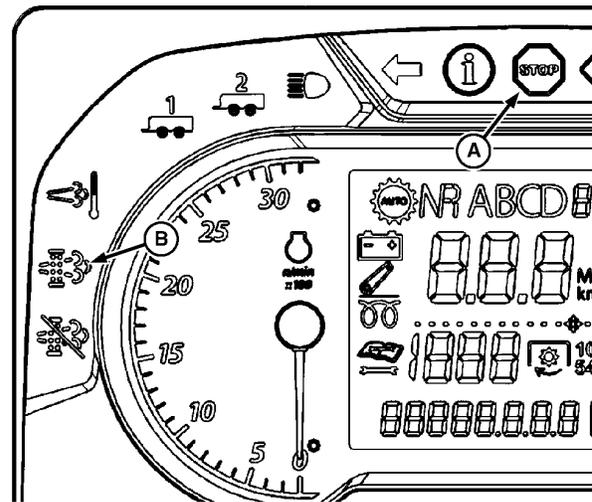
When STOP indicator (A) and exhaust filter indicator (B) are illuminated at the same time; contact your John Deere dealer.

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-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.



A—STOP Indicator

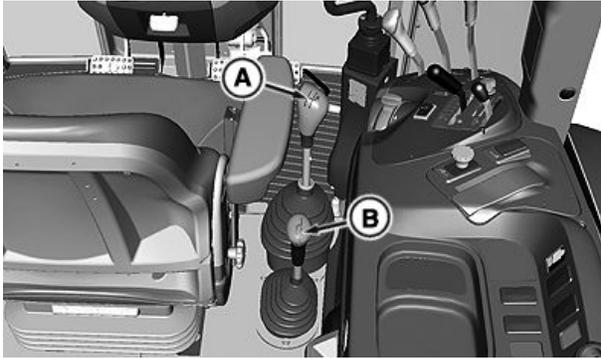
B—Exhaust Filter Indicator

- 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.

JZ81662,0001315 -19-12SEP14-1/1

Operating the Tractor

Operating PowrReverser Transmission



Cab Shown; OOS Similar



CAUTION: Leaving transmission in gear with engine stopped **WILL NOT** prevent tractor from moving. Put transmission gearshift lever in **PARK** and electrohydraulic directional reverser lever in **NEUTRAL** before dismounting.

Gearshift lever (A) provides four forward travel speeds (1, 2, 3, 4), and reverse.

Range shift lever (B) provides three speed ranges (A, B, C).

Electro-hydraulic (EH) directional reverser lever (C) provides travel direction (forward or reverse).

When using range and gearshift levers in different combinations, 12 forward and reverse speeds are available.

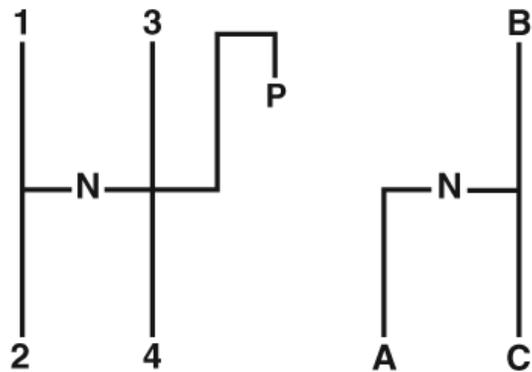
NOTE: Slow speed gearing (creeper) is available as an option.

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

1. When starting tractor, put EH directional reverser lever in neutral and cycle clutch pedal one time to disengage the engagement override valve.

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

2. Depress clutch pedal and stop tractor before shifting range shift lever.



Gear Shift and Range Shift Patterns

A—Gear Shift Lever
B—Range Shift Lever

C—EH Directional Reverser Lever

3. Use EH directional reverser lever to select travel direction. You can change travel direction without depressing the clutch pedal.
4. Depress clutch pedal when shifting gears. Gear shifts (1, 2, 3, 4) can be made on-the-go, without stopping. Release clutch pedal gradually to take up load smoothly.

GS25068.0001422 -19-24OCT14-1/1

Ground Speed Estimates—PowrReverser Transmission

Speeds are calculated using 18.4 R30 1442 R1 rear tires. To calculate ground speeds for tractors equipped with rear tires other than 18.4 R30 1442 R1 tires, see

CORRECTION FACTORS FOR OTHER TIRE SIZES in this section.

FORWARD		REVERSE	
Range-Gear	1600 / 2400 RPM km/h (mph)	Range-Gear	1600 / 2400 RPM km/h (mph)
A-1	1.21 / 1.80 (0.75 / 1.11)	A-1	1.31 / 1.97 (0.81 / 1.22)
A-2	1.63 / 2.45 (1.02 / 1.53)	A-2	1.79 / 2.68 (1.11 / 1.66)
A-3	2.24 / 3.35 (1.39 / 2.08)	A-3	2.43 / 3.66 (1.51 / 2.28)
A-4	3.00 / 4.49 (1.86 / 2.74)	A-4	3.27 / 4.90 (2.03 / 3.05)
B-1	3.46 / 5.20 (2.15 / 3.23)	B-1	3.79 / 5.67 (2.35 / 3.53)
B-2	4.72 / 7.07 (2.93 / 4.40)	B-2	5.15 / 7.72 (3.20 / 4.79)
B-3	6.44 / 9.66 (4.00 / 6.00)	B-3	7.03 / 10.54 (4.37 / 6.54)
B-4	8.63 / 12.95 (5.37 / 8.04)	B-4	9.41 / 14.11 (5.84 / 8.77)
C-1	10.03 / 15.03 (6.23 / 9.34)	C-1	10.93 / 16.40 (6.79 / 10.19)
C-2	13.64 / 20.46 (8.46 / 12.73)	C-2	14.88 / 22.32 (9.34 / 13.86)
C-3	18.62 / 27.93 (11.56 / 17.36)	C-3	20.31 / 30.47 (12.63 / 18.94)
C-4	24.94 / 37.41 (15.50 / 23.24)	C-4	27.21 / 40.81 (16.91 / 25.36)

JZ81662,0000BC4 -19-04MAY12-1/1

Ground Speed Estimates—PowrReverser Plus Transmission

NOTE: The ground travel speeds shown in the table are theoretical. The actual speeds vary with rolling circumference, load, tire pressure, make

of tire, wheel slip, etc. If the precise speed is required for specific applications, then it must be obtained by measurement.

Range-Gear	480/70R30			420/85R30		
	FORWARD (Low)	FORWARD (High)	REVERSE	FORWARD (Low)	FORWARD (High)	REVERSE
	2400 RPM km/h (mph)	2400 RPM km/h (mph)	2400 RPM km/h (mph)	2400 RPM km/h (mph)	2400 RPM km/h (mph)	2400 RPM km/h (mph)
A-1	1.6 (1.0)	1.9 (1.2)	1.8 (1.1)	1.6 (1.0)	2.0 (1.2)	1.8 (1.1)
A-2	2.2 (1.4)	2.6 (1.6)	2.4 (2.5)	2.2 (1.4)	2.7 (1.7)	2.4 (2.5)
A-3	3.0 (1.9)	3.6 (2.2)	3.3 (2.1)	3.1 (1.9)	3.6 (2.2)	3.3 (2.1)
A-4	4.05 (2.5)	4.8 (3.0)	4.4 (2.7)	4.09 (2.5)	4.9 (3.0)	4.5 (2.8)
B-1	4.7 (2.9)	5.6 (3.5)	5.1 (3.2)	4.7 (2.9)	5.7 (3.5)	5.2 (3.2)
B-2	6.4 (4.0)	7.6 (4.7)	7.0 (4.3)	6.4 (4.0)	7.7 (4.8)	7.1 (4.4)
B-3	8.7 (5.4)	10.4 (6.5)	9.5 (5.9)	8.8 (5.5)	10.5 (6.5)	9.6 (6.0)
B-4	11.7 (7.3)	13.9 (8.6)	12.8 (8.0)	11.8 (7.3)	14.1 (8.8)	12.9 (8.0)
C-1	13.6 (8.5)	16.2 (10.1)	14.9 (9.3)	13.7 (8.5)	16.3 (10.1)	15.0 (9.3)
C-2	18.5 (11.5)	22.0 (13.7)	20.2 (12.6)	18.6 (11.6)	22.2 (13.8)	20.4 (12.7)
C-3	25.2 (15.7)	30.1 (18.7)	27.6 (17.1)	25.4 (15.8)	30.4 (18.9)	27.9 (17.3)
C-4	33.8 (21.0)	40.3 (25.4) ^a	37.0 (23.0) ^a	34.1 (21.2)	40.7 (25.3) ^a	37.3 (23.2) ^a

^aLimited by ECU to 35 km/h (21.7).

GS25068,000143F -19-04NOV14-1/1

Correction Factors for Other Tire Sizes

To calculate ground speeds for tractors equipped with rear tires other than 18.4 R30 1442 R1 tires, multiply speeds shown in GROUND SPEED ESTIMATES by the correction factor for the appropriate tire size found in the table.

Be sure to use correct ground speed estimate for your transmission type. Use creeper transmission ground speed estimates, if so equipped.

Example: Forward B-2 (PowrReverser™ Transmission) at 2400 engine rpm with 19.5L-24 R4 tires.

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$$7.07 \text{ km/h (4.49 mph)} \times 0.88 = 6.22 \text{ km/h (3.95 mph)}$$

Tire Size	Correction Factor
19.5L-24 R4	0.88
16.9-30 R1	0.96

NOTE: Speed and correction factor information above is based on rolling circumference information from GoodYear Farm Tire Data Book. Rolling circumference dimensions for "like" size tires vary by manufacturer.

AI68620,0000219 -19-03SEP10-1/1

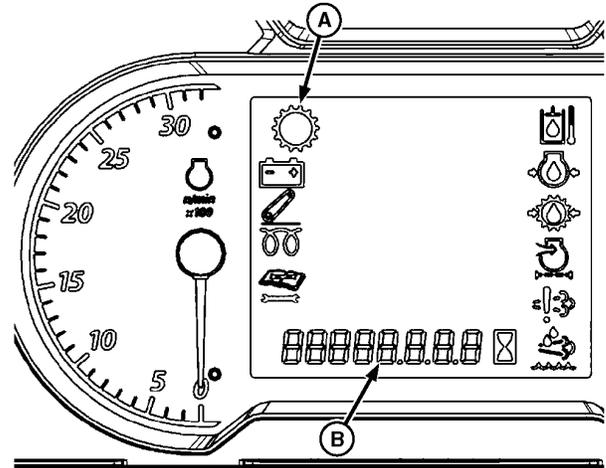
Electrohydraulic Transmission System Indicator

Transmission indicator (A) warns of a malfunction in the electrohydraulic transmission control system. A diagnostic trouble code is displayed at display (B). (See your John Deere dealer)

Electrohydraulic transmission control is available with PowrReverser™ and PowrReverser Plus™ tractors.

NOTE: Under certain circumstances, the tractor can still be driven even if there is an electrical fault in the transmission.

NOTE: Under certain circumstances, transmission control is regained by cycling reverser lever to neutral and back into a direction.



A—Transmission Indicator B—Information Display

Transmission Indicator

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PowrReverser Plus is a trademark of Deere & Company*

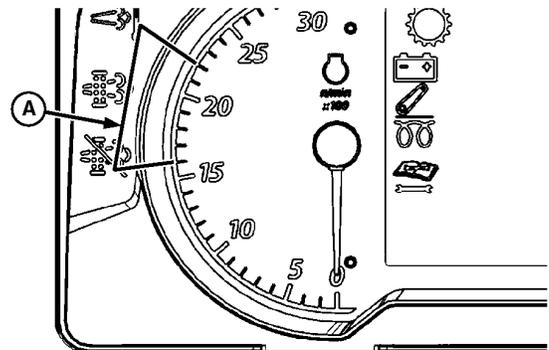
JZ81662.0001318 -19-12SEP14-1/1

LV22005—UN—19AUG14

Select a Gear

IMPORTANT: If equipped with ballast, select one gear lower than normal to extend drive train life and avoid excessive soil compaction and rolling resistance.

The tractor may be operated in any gear with engine speeds between 1600—2500 engine rpm (A). Engine can be operated under full load conditions when engine speed is inside range (A). For light load operation, use a higher gear and lower engine speed. This saves fuel and reduces wear.



A—1600—2500 Rated Engine RPM

GS25068.000145E -19-10NOV14-1/1

LV22006—UN—19AUG14

Using 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.

When one wheel starts to lose traction, stop tractor and depress pedal (A) to engage differential lock. Tractor wheels must be stopped or turning at the same speed 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, then get traction, then slip again, hold pedal down in the engaged position.



Differential Lock

A—Differential Lock Pedal

LV14185—UN—27APR11

JZ81662,000028A -19-12JUL11-1/1

Mechanical Front-Wheel Drive—Electrohydraulic Control—If Equipped

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

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).

IMPORTANT: To extend tire life, engage mechanical front-wheel drive only when needed. **DO NOT** engage when driving on hard surfaces.

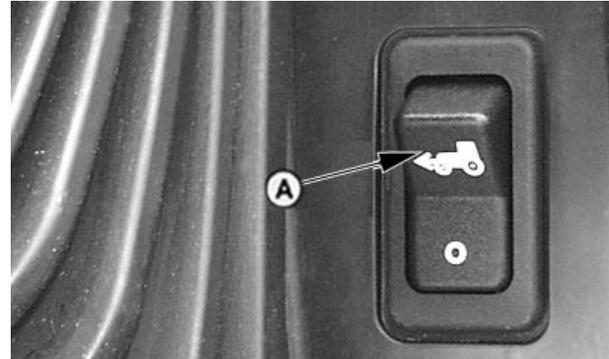
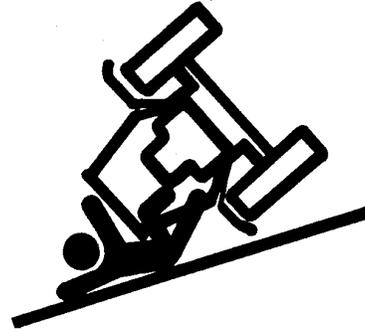
DO NOT install tire chains on tractor front wheels. Chains will strike and damage tractor.

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

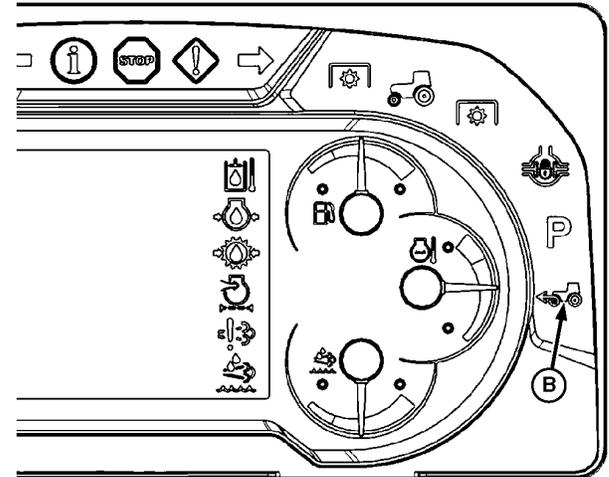
- **ON** (top half pressed down): MFWD engaged. Indicator (B) will light when MFWD is engaged.
- **OFF** (bottom half pressed down): MFWD disengaged. Indicator (B) will go off when MFWD is disengaged.

A—MFWD Switch

B—MFWD Indicator



MFWD Switch (OOS shown; Cab similar and located on right hand console)



RW13093 —UN—07DEC88

PULV000574 —UN—07MAY08

LV22015 —UN—19AUG14

JZ81662.000131B -19-09JUN14-1/1

Mechanical Front-Wheel Drive—With Brake Assist—If Equipped

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).

IMPORTANT: To extend tire life, engage mechanical front-wheel drive only when needed. **DO NOT** engage when driving on hard surfaces.

DO NOT install tire chains on tractor front wheels. Chains will strike and damage tractor.

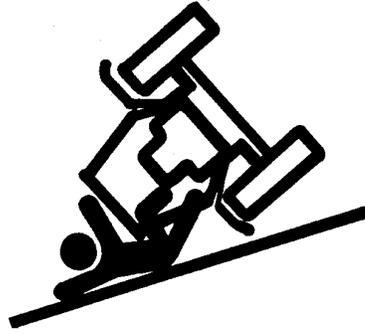
MFWD can be engaged and disengaged in all gears (forward and reverse) during operation and under full load. Switch (A) has two operating positions:

NOTE: When the brakes are applied, MFWD engages automatically regardless of the position selected at the MFWD switch. The MFWD drive indicator light comes on.

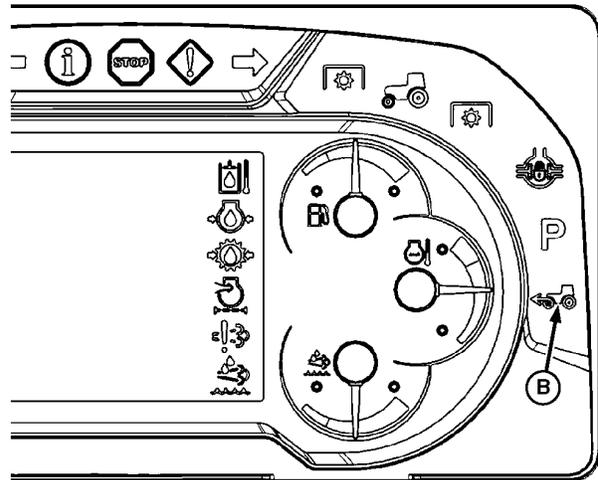
- **MFWD ON** (top half pressed down): MFWD engaged. Indicator (B) will light when MFWD is engaged.
- **Brake Assist ON** (bottom half pressed down): MFWD disengaged and Brake Assist MFWD is engaged.. Indicator (B) will go off when MFWD is disengaged.

A—MFWD Switch

B—MFWD Indicator



MFWD Switch (OOS shown; Cab similar and located on right hand console)



RW13093 —UN—07DEC88

RXA0146936 —UN—26JAN15

LV22015 —UN—19AUG14

GS25068,00016B3 -19-21JAN15-1/1

Operating Brakes

CAUTION: Before operating tractor on a road, lock brake pedals together with locking bar (A). Use brakes lightly and cautiously when slowing from transport speed.

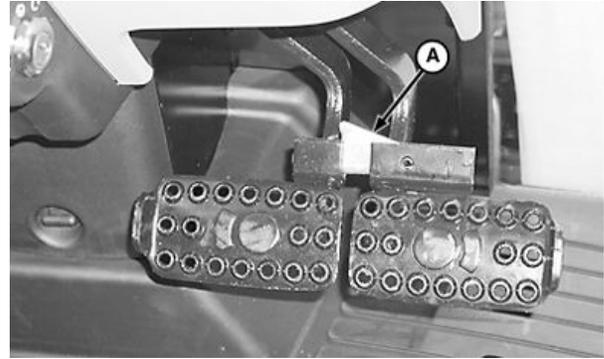
NOTE: Brake pedals shown in locked position.

Use individual brakes to assist in making sharp turns. Disengage brake pedal locking bar (A) and depress only one brake pedal.

To stop tractor, depress both brake pedals.

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

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



A—Brake Pedal Locking Bar

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

AI68620,000021E -19-03SEP10-1/1

LV12837—UN—01NOV06

Stop Tractor

1. Stop tractor travel with brakes.
2. Depress clutch pedal and place gearshift lever (A) to PARK position and range shift lever to NEUTRAL position.

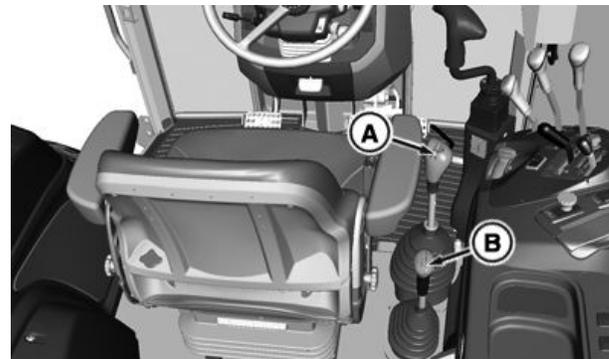
CAUTION: Leaving transmission in gear with engine off **WILL NOT** prevent tractor from moving.

IMPORTANT: Stop tractor before moving gearshift lever to PARK. If tractor is moving, park lock does not engage and damage to transmission is possible.

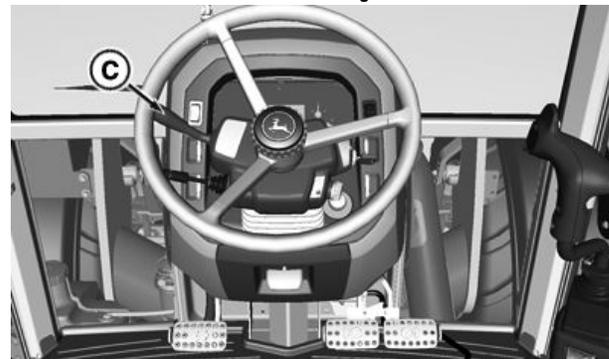
3. If equipped with PowrReverser™ place PowrReverser lever (C) into NEUTRAL.
4. Lower all equipment to the ground.
5. Put all SCV levers in NEUTRAL.
6. Disengage PTO.

A—Gearshift Lever
B—Range Shift Lever

C—PowrReverser Lever



Gearshift Lever and Range Shift Lever



PowrReverser Lever

PowrReverser is a trademark of Deere & Company

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GS25068,0001425 -19-27OCT14-1/2

RXA0146068—UN—27OCT14

RXA0146070—UN—27OCT14

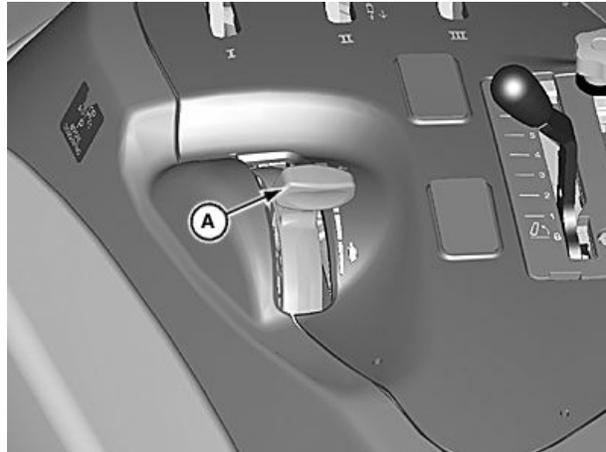
IMPORTANT: Engine oil cools certain engine parts. Damage to these parts by overheating or insufficient lubrication is possible by stopping a hot engine suddenly.

7. Pull engine speed control lever (A) back to slow idle position. Allow engine to idle for 2—5 minutes.

CAUTION: To prevent operation by untrained personnel, remove key from ignition switch.

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

A—Engine Speed Control Lever



Cab Shown; OOS similar

LV16348—UN—28NOV12

GS25068,0001425 -19-27OCT14-2/2

Driving on Public Roads

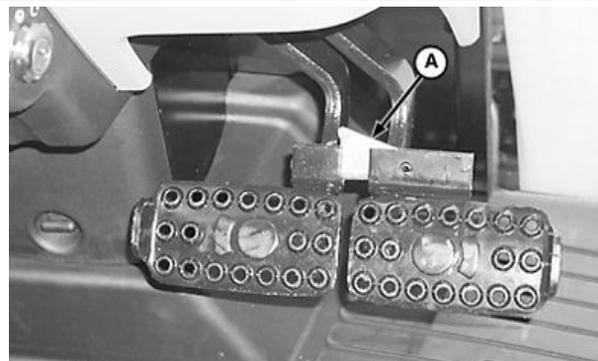
CAUTION: Slow-moving tractors with attachments or towed equipment are difficult to see on public roads. Frequently check for traffic from the rear, especially in turns. Use your turn signals.

1. When driving tractor on roads:
 - Ballast tractor correctly.
 - Clean windows and adjust rear-view mirrors.
 - Use foot throttle instead of hand throttle.

CAUTION: Use brakes lightly and cautiously when slowing from transport speed.

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

2. Tap brake pedal to ensure that differential lock is NOT engaged. Couple brake pedals together using brake locking bar (A). Avoid hard braking application.



A—Brake Locking Bar

LV12837—UN—01NOV06

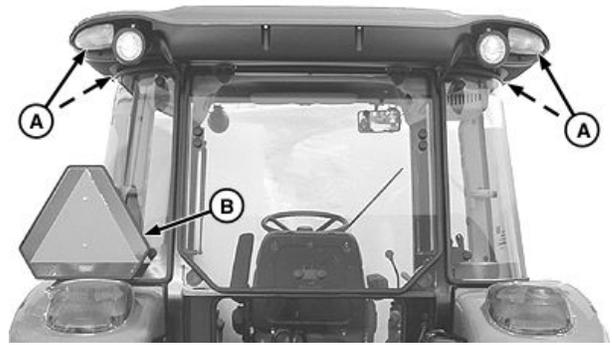
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JZ81662,0000F86 -19-04JAN13-1/2

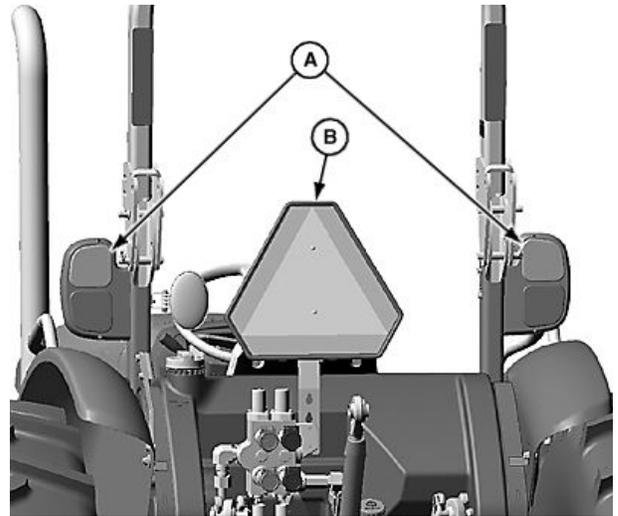
3. Check local laws and regulations for lighting requirements. Clean Slow Moving Vehicle (SMV) emblem (B) and warning lights (A). If towed or rear-mounted equipment obstructs view of safety devices, install SMV emblem and warning lights on equipment.
4. Disengage front wheel drive when transporting tractor.
5. **Loader Cylinders (if equipped):** Engage transport lock to eliminate possibility of loader movement during transport by inadvertently bumping the multi-function lever.
6. **Rear Hitch:** Lock hitch in transport position to eliminate the possibility of lowering an implement during transport by inadvertently bumping the raise-lower lever.
7. Drive slowly to maintain safe control. Before descending a hill, shift to a lower gear to control speed without using brakes. Slow down for rough ground and sharp turns, especially when transporting heavy, rear-mounted equipment.

A—Warning Lights

B—SMV Emblem



LV8507 —UN—24JUL03



LV15728 —UN—07MAY12

JZ81662,0000F86 -19-04JAN13-2/2

Rear Hitch Controls

Operate Mechanical Position Control

CAUTION: Prevent unexpected movement of rear hitch. Put draft control knob (C) in full forward position before attaching implement.

Push draft control lever (B) fully forward when you DO NOT want rear hitch to adjust automatically to draft load, such as when attaching an implement to the tractor.

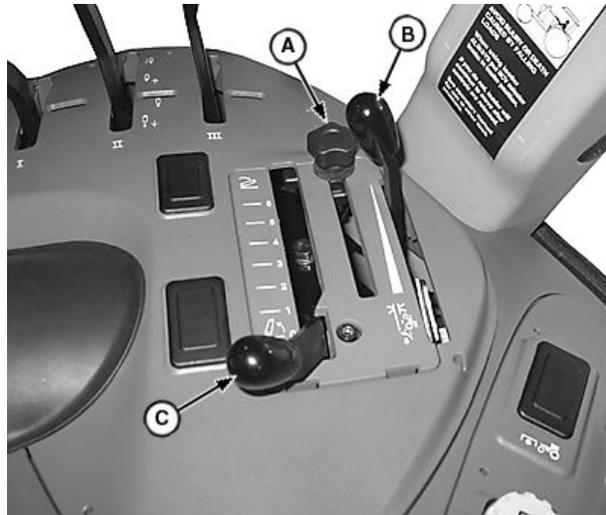
Use position control lever (C) to control hitch movement and depth:

Transport

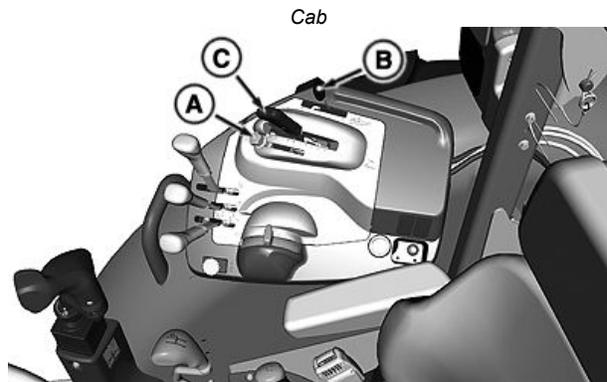
For transport of implements and end of field turn-around, pull control lever (C) fully rearward for both load and non-load sensing usage.

A—Control Lever Stop
B—Draft Control Lever

C—Position Control Lever



LV14194—UN—27APR11



Cab

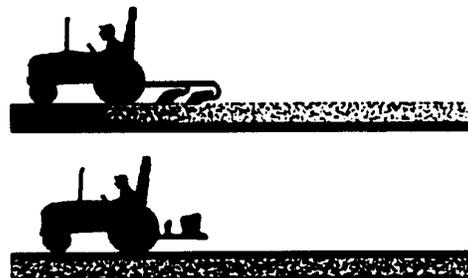
Open Operator Station

RXA0146138—UN—30OCT14

GS25068,0001427 -19-27OCT14-1/3

Constant Depth

1. For constant depth of implements on level terrain and for non-ground engaging implements such as spreaders or sprayers, put position control lever (C) at desired depth.
2. Operate implement for a few minutes to determine proper depth or height.
3. Set control lever stop (A) against position control lever. Rear hitch will return to the same position each time control lever contacts the stop.



LV09233—UN—26JUL04

Continued on next page

GS25068,0001427 -19-27OCT14-2/3

Float

For float operation for implements with skids or depth gauge wheels designed to carry full implement weight, push both position control lever (C) and draft control lever (B) all the way forward, so implement can follow ground contour.

NOTE: Lift links can be adjusted for lateral float. (See Adjusting Lateral Float in 3-Point Hitch section.)



LV9457 —UN—26JUL04

GS25068,0001427 -19-27OCT14-3/3

Operate Mechanical Draft Control

The rear hitch is equipped with variable draft control system:

- Operating with a fully mounted implement in hill and swale terrain, the implement will rise and lower to follow the ground contours while maintaining a nearly constant depth.
- Operating in varying soil conditions, the implement is raised slightly to get through tough spots so you do not have to shift to a lower gear.

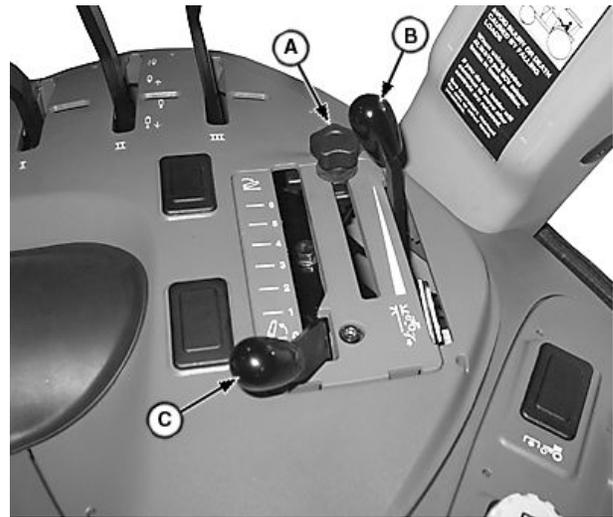
Change draft sensitivity ranges by repositioning the center link.

For draft load sensing operation:

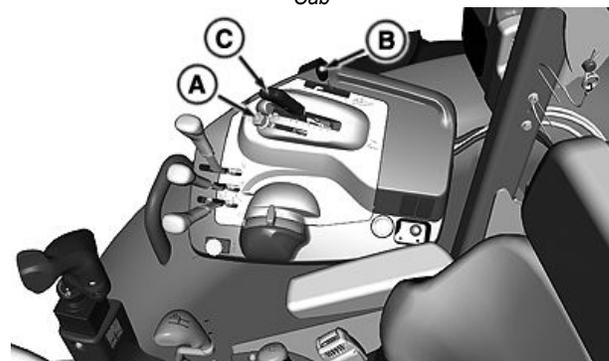
1. Pull position control lever (C) to its fully rearward position and push the draft control lever (B) to the fully forward (least draft) position.
2. With tractor moving, push position control lever (C) forward to set implement operating depth.
3. Set position control stop (A). The operating depth set up will prevent the rear hitch from lowering all the way when the tractor begins to slip.
4. Pull draft control lever (B) rearward until desired draft sensing sensitivity is obtained.
5. To slightly raise implement (for getting through slippery spots in a field), push position control lever (C) forward, more than the draft control lever (B).
6. Pull position control lever (C) fully rearward to raise the hitch at the end of the field.

A—Control Lever Stop
B—Draft Control Lever

C—Position Control Lever



LV14194 —UN—27APR11



Open Operator Station

RXA0146138 —UN—30OCT14

GS25068,0001428 -19-27OCT14-1/1

Operate Mechanical Rate-of-Drop

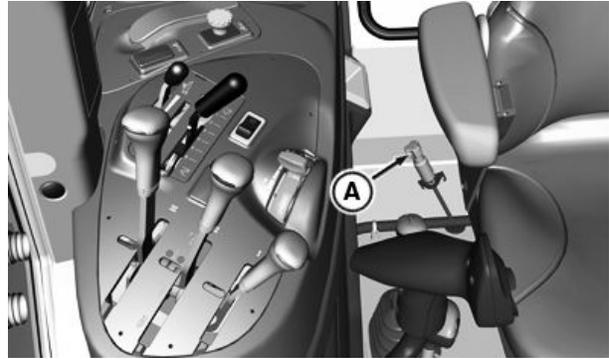
CAUTION: To avoid injury from hitch movement, only adjust rate-of-drop from operator station.

IMPORTANT: Fully lowering implement should take at least 2 seconds. Rate of drop is directly related to implement weight; therefore select a rate slow enough to prevent damage.

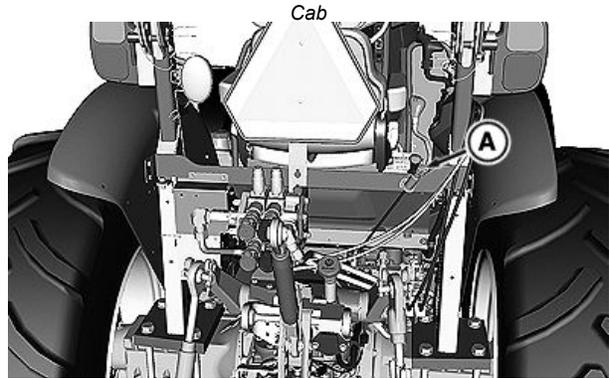
Turn rate-of-drop control knob (A), located behind right rear of seat:

- To slow rockshaft drop, turn **CLOCKWISE**.
- To increase rate-of-drop, turn **COUNTERCLOCKWISE**.

A—Rate-of-Drop Control Knob



RXA0146137 —UN—30OCT14



RXA0146136 —UN—30OCT14

Open Operator Station (OOS)

GS25068,0001429 -19-28OCT14-1/1

3-Point Hitch

Match Tractor Power to Implement

IMPORTANT: Match tractor power to the size of the implement. Excessive power can damage an implement, and too large of an implement can damage the tractor.

Refer to your implement operator's manual for minimum and maximum power requirements before attaching implement to tractor.

AI68620,0000226 -19-03SEP10-1/1

3-Point Hitch Components



A—Lift Arms
B—Lift Links

C—Sway Bars
D—Center Link

E—Draft Links

NOTE: Telescoping draft links shown.

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GS25068,000142A -19-28OCT14-1/1

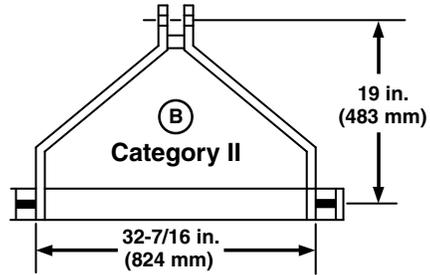
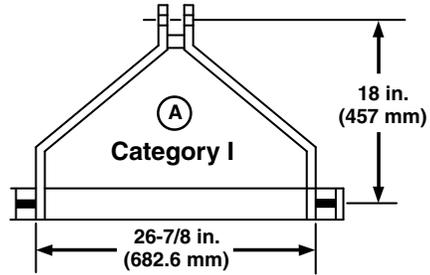
Preparing Implement

When attaching Category I implements to the tractor, sway bars may need adjustment to prevent binding and limiting full raise of the hitch. (See Adjusting Hitch Side Sway in this section.)

Category I (A), 3-Point Hitch is narrower and is used for smaller implements than Category II (B) implements. (See chart below to identify implement category.)

Category II implements should have the top hole of the implement mast located 483 mm (19 in.) above the lower pins. Drill another hole in top mast or extend top mast if necessary.

Category	Mast Height	Width Between Lower Pins	Pin Size	
			Lower	Upper
I (A)	457 mm (18 in.)	682.6 mm (26-7/8 in.)	22 mm (7/8 in.)	19 mm (3/4 in.)
II (B)	483 mm (19 in.)	824 mm (32-7/16 in.)	28 mm (1-1/8 in.)	25.4 mm (1 in.)



A—Category I

B—Category II

LV9639—UN—11AUG04

JZ81662,0000F7E -19-06DEC12-1/1

Convert Category II Hitch to Category I

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

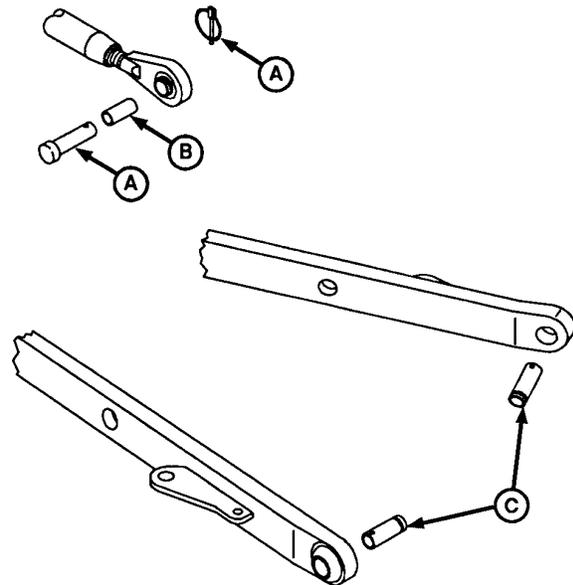
If Category I implements are to be used, the Category II hitch can easily be converted by inserting reducer bushing (B) in center link end, using smaller implement pin (A) through the implement mast, and by adding draft link reducer bushings (C) to end of draft links.

See your John Deere dealer for parts.

NOTE: Category I implements may require center link attaching bracket to be inverted. Refer to "Position Center Link" in this section.

A—Implement Pin
B—Center Link Reducing Bushing

C—Draft Link Reducing Bushing



M47171A—UN—22APR94

JZ81662,000077D -19-02MAR12-1/1

Position Center Link

The center link attaching bracket has holes which allow four different positions for attaching the center link.

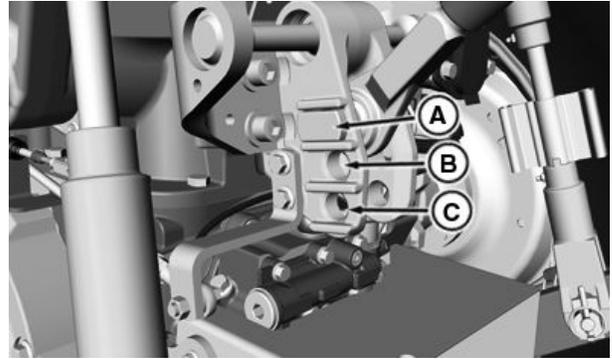
NOTE: Center link attaching bracket can be inverted to provide hole position (D).

If the following conditions occur, move center link to indicated holes to correct.

Condition	Use Holes
Rear of implement rises too much when lifted. ^a	A or B
Rear of implement drags the ground.	B or C

^aThe implement weight which can be lifted is reduced slightly with center link attachment in lower holes.

NOTE: Implements with Category I mast height 457 mm (18 in.) normally use attaching holes (C and D), and implements with Category II mast height 483 mm (19 in.) use holes (A and B).



Positioning Center Link

A—Upper Hole
B—Middle Hole

C—Lower Hole

RXA0146143 —UN—30OCT14

GS25068,0001444 -19-04NOV14-1/1

Attach Implements to 3-Point Hitch

CAUTION: Hitch movement can cause injury or death.

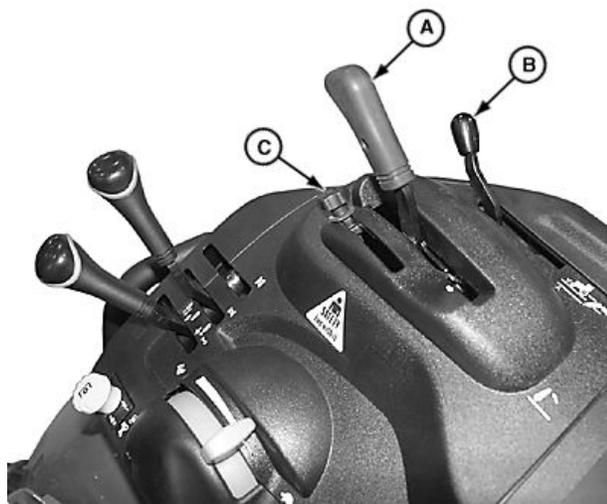
IMPORTANT: Ensure center link and lift link adjustments **DO NOT** cause implement contact with fenders.

NOTE: Engine must be running for 3-point hitch control to work.

Before attaching or detaching implement, place draft control (B) into lowest setting. (See Adjust Draft Controls in Section 60.)

Use position control lever (A) to raise or lower implement.

Be sure drawbar will not interfere. If necessary, move drawbar to fully retracted position or remove it. Check for any other potential interference.



LV14573—UN—06AUG11

Mechanical Hitch (OOS)

A—Position Control Lever

B—Draft Sensing Lever-Knob

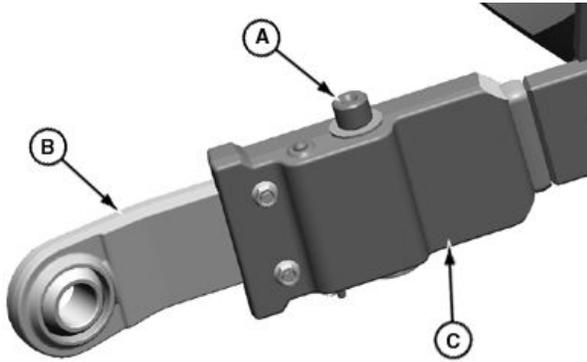
C—Hitch Control Lever Stop

CAUTION: To prevent unexpected movement of rear hitch, place draft sensing control in lowest position before attaching implement to hitch.

Continued on next page

GS25068,000142B -19-28OCT14-1/3

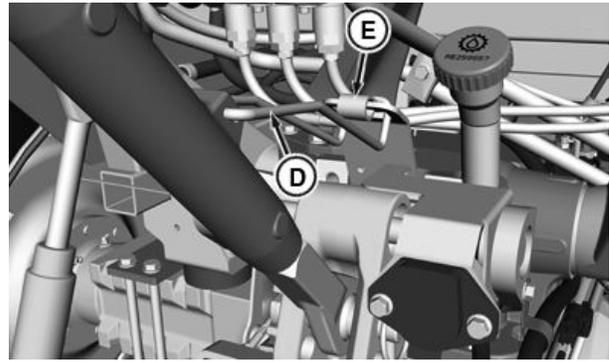
Telescopic Draft Links



Standard Draft Link

A—Button or Lock Pin
B—Draft Link End

C—Draft Arm
D—Center Link Locking Clip



Center Link Locking Clip

LV22035—UN—09JUN14

RXA0146140—UN—30OCT14

1. Move button or lock pin (A) toward center of tractor and pull out draft link end (B). Slip draft link end over implement hitch pin. Retain with quick-lock pin. Repeat on other side.
2. Raise or lower draft arms (C) to align draft link ends (B) with implement, slowly back up tractor to lock ends in place.
3. Back tractor up to implement so hitch points align. Place transmission in PARK and stop engine.
4. Slip draft link ends (B) over implement hitch pins and retain with quick-lock pins.
5. Push tab (E) back and lift center link locking clip (D) to release center link from transport hook.
6. Attach center link to implement top mast.
7. Adjust center link and lift links as necessary. See "Level Hitch" in this section.

Continued on next page

GS25068.000142B -19-28OCT14-2/3

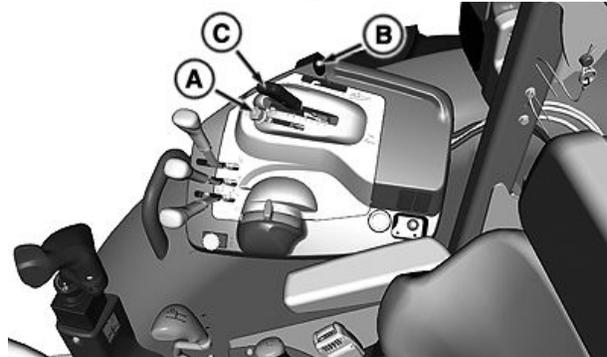
⚠ CAUTION: To avoid bodily injury or machine damage whenever an implement, implement quick coupler, or other attachment is connected to the tractor 3-point hitch, check full range of operation for interference, binding or PTO separation.

8. Start engine. Using rockshaft position control lever (C), slowly raise and lower implement and check for interference.

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



Cab



OOS

LV14194 —UN—27APR11

RXA0146138 —UN—30OCT14

GS25068,000142B -19-28OCT14-3/3

Adjust Hitch Side Sway

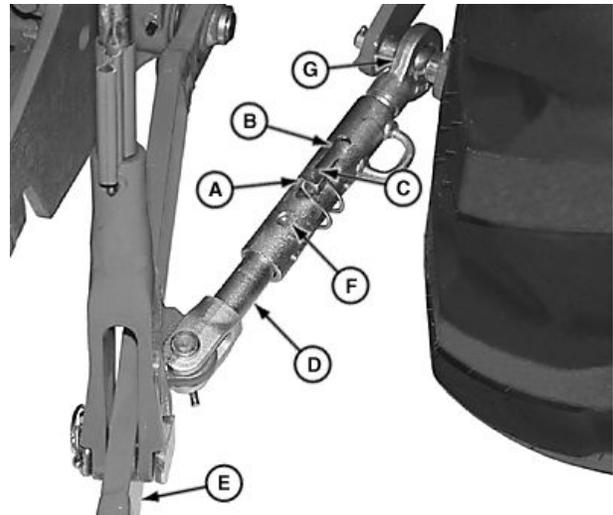
NOTE: Check implement operator's manual for instruction on whether to allow side sway.

If sway is desired, install pin (A) in sway position outer slot (B), ensuring it goes through sway position inner slot (C).

If sway is not desired, move draft link (E) to desired position. Install pin (A) in fixed position hole (F) that lines up with one of the holes (not slot) of the inner sliding member (D).

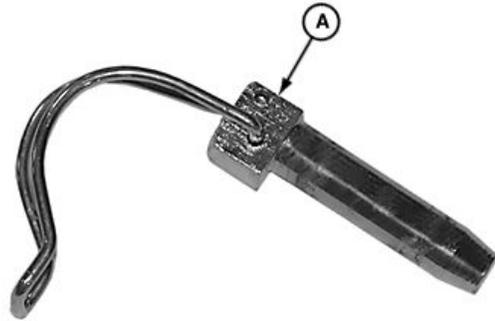
Adjust opposite side sway bar to same position.

NOTE: Additional fixed positions are obtained by adjusting threaded end of stabilizer (G). Remove pin (A), rotate stabilizer to desired position. Insert pin in fixed position hole. Missing thread on stabilizer also acts as a stop indicator.



Sway Bar Pin in Sway Position

- | | |
|----------------------------|------------------------|
| A—Pin | E—Draft Link |
| B—Sway Position Outer Slot | F—Fixed Position Holes |
| C—Sway Position Inner Slot | G—Stabilizer |
| D—Inner Sliding Member | |



LV14575—UN—05AUG11

LV14576—UN—05AUG11

JZ81662,000136F -19-09JUL14-1/1

Level Hitch

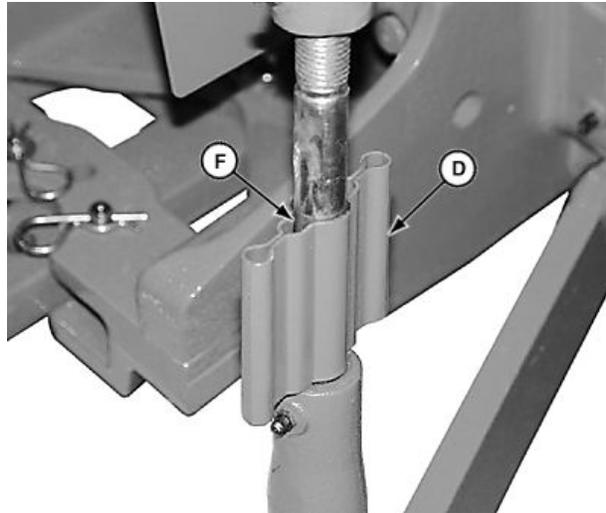
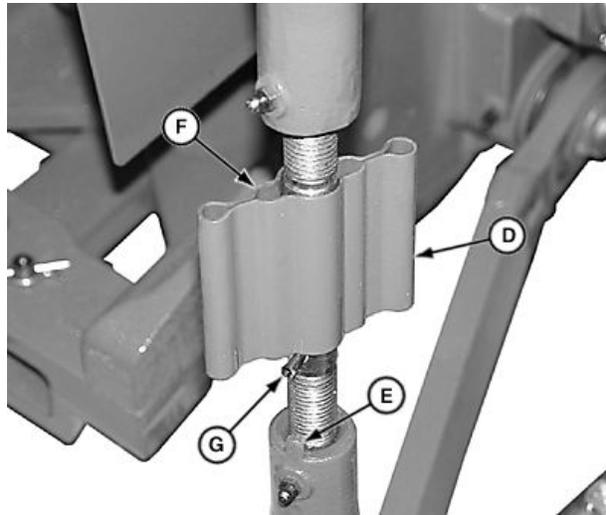
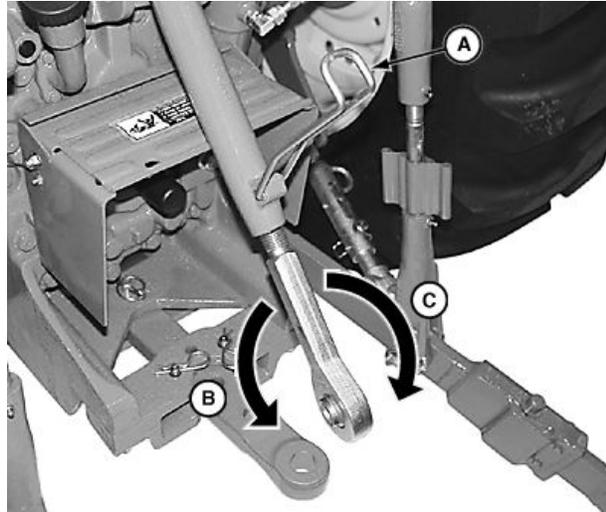
1. Lower implement to take weight off hitch and adjust center link to level implement front-to-rear.
 - a. Unlatch locking clip (A). Rotate center link body:
 - CLOCKWISE to lengthen center link.
 - COUNTERCLOCKWISE to shorten center link.
 - b. Latch locking clip.

IMPORTANT: DO NOT attempt to overextend center link beyond limits of locking clip or lift links past the stops (missed thread). 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.

2. Adjust lift link to level implement side-to-side.
 - a. Lift locking handle (D) to clear locking tab (E). Keeping slot (F) engaged on roll pin (G), turn locking handle (D):
 - CLOCKWISE to raise draft link.
 - COUNTERCLOCKWISE to lower draft link.
 - b. When adjustment is complete, align slot (F) with locking tab (E), and lower to lock in place and prevent change of adjustment during operation.

- | | |
|---|---------------|
| A—Locking Clip | E—Locking Tab |
| B—Center Link Counterclockwise Rotation | F—Slot |
| C—Center Link Clockwise Rotation | G—Roll Pin |
| D—Locking Handle | |



LV14578—UN—05AUG11

LV14579—UN—05AUG11

LV14580—UN—05AUG11

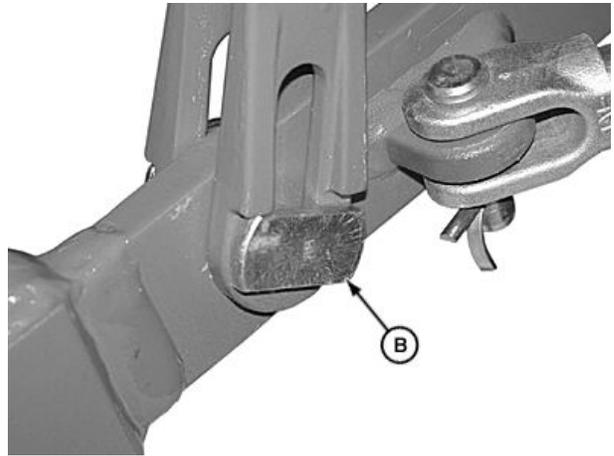
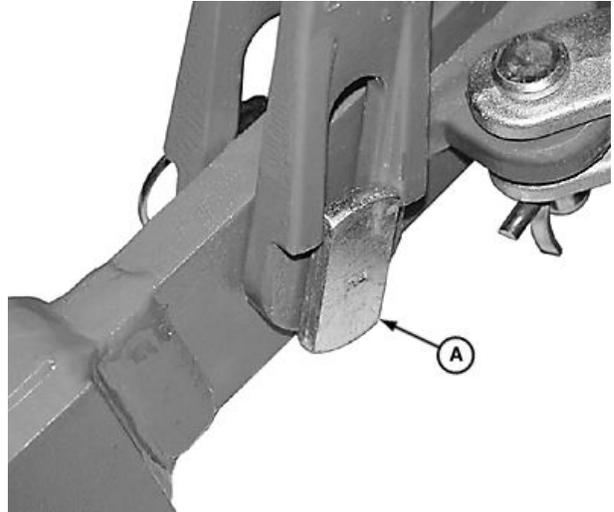
JZ81662,0000369 -19-12AUG11-1/1

Adjust Lateral Float

- **Float Position (A):** Ground following implements (cultivator or mower), use ground gauging skids or wheels to rise/lower slightly or twist as implement follows ground contour.
- **Rigid Position (B):** Ground engaging implements (plows, rippers, disc) require fixed ground depth and alignment with tractor, no relative twisting.

A—Pin in Float Position
(Vertical)

B—Pin in Fixed Position
(Horizontal)



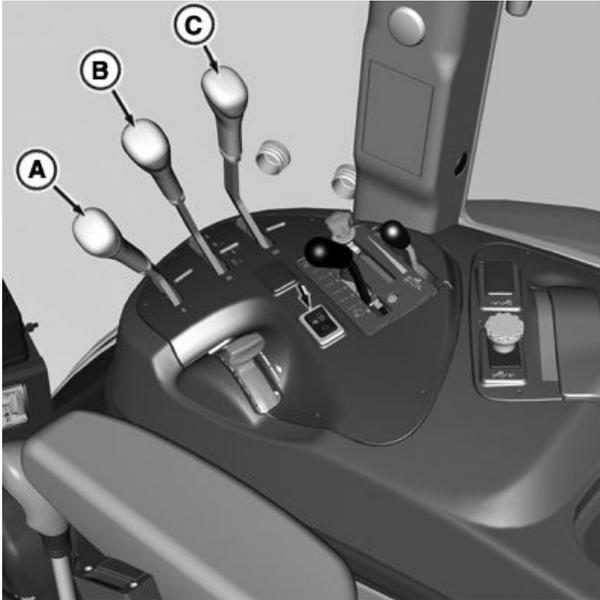
LV14581—UN—05AUG11

LV14583—UN—10AUG11

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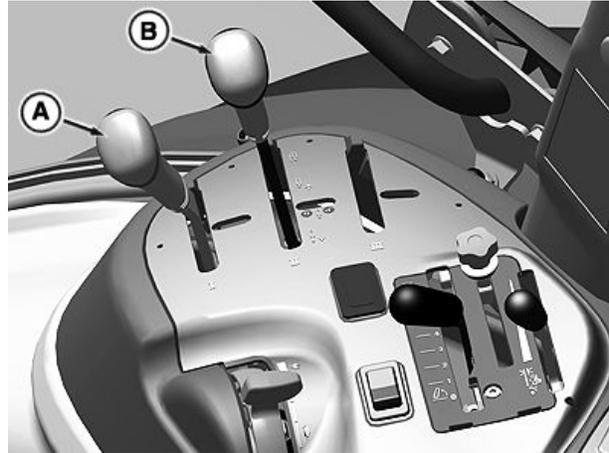
Hydraulic System Controls and Operations

Rear SCV Control Lever and Coupler Identification



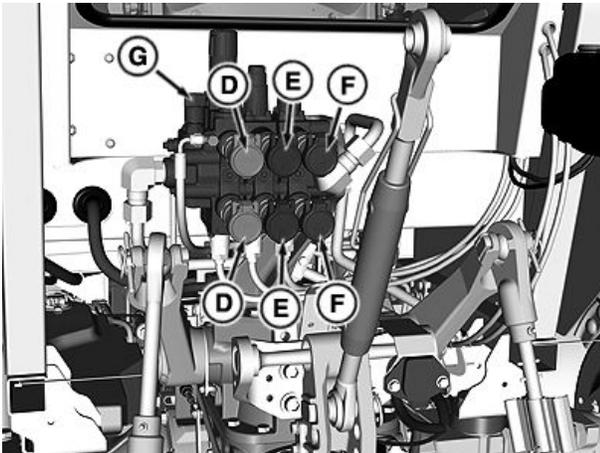
Cab Shown; OOS Similar

RXA0146165 —UN—03NOV14



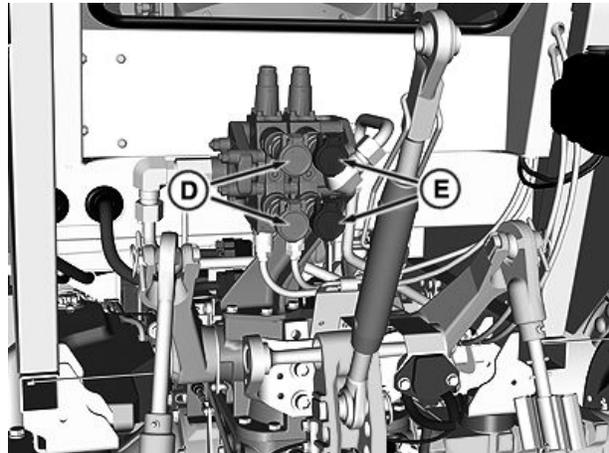
Cab Shown; OOS Similar

RXA0148417 —UN—23JUL15



Deluxe Triple SCV

RXA0149453 —UN—24JUL15



Dual SCV

RXA0149454 —UN—24JUL15

- A—SCV I Control Lever (Green) C—SCV III Control Lever (Brown)
- B—SCV II Control Lever (Blue) D—SCV I Couplers (Green)
- E—SCV II Couplers (Blue)
- F—SCV III Couplers (Brown)
- G—Adjustable Flow Control

Levers (A—C) control oil flow to corresponding selective control valve (SCV) couplers, at the rear of tractor. Top

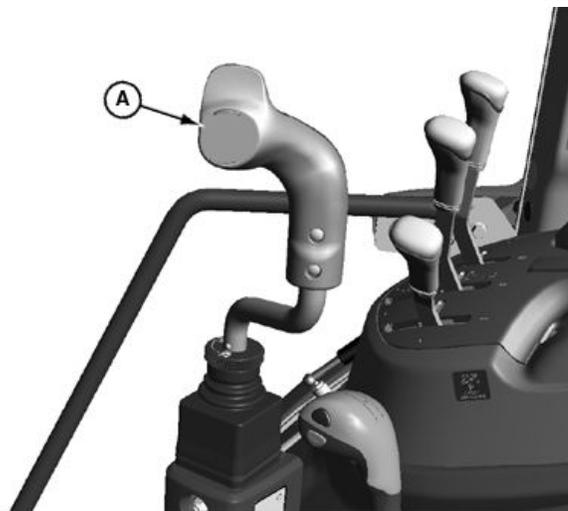
couplers are for retraction; bottom couplers are for extension.

GS25068,0001B8F -19-24JUL15-1/1

Mid-Mount SCV Multi-function Lever and Coupler Identification—If Equipped

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

A—Multi-function lever



Multi-function lever

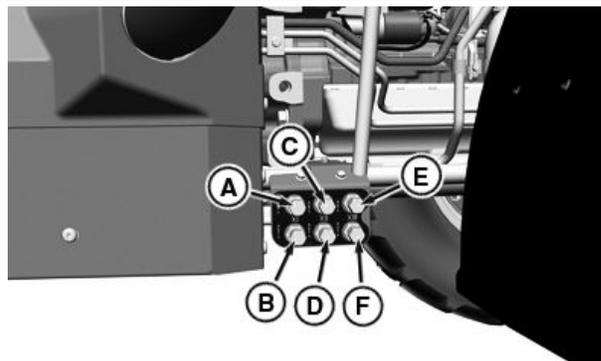
GS25068,000142E -19-29OCT14-1/2

LV22039—UN—09JUN14

Coupler Identification

Top couplers retract; bottom couplers extend.

- | | |
|---------------------------|-----------------------------------|
| A—Boom Cylinder—Retract | D—Bucket Cylinder—Extend |
| B—Boom Cylinder—Extend | E—Third-Function Cylinder—Retract |
| C—Bucket Cylinder—Retract | F—Third-Function Cylinder—Extend |



Mid-Mount SCV Couplers

GS25068,000142E -19-29OCT14-2/2

RXA0146142—UN—30OCT14

Use Correct Hose Tips

Selective control valve (SCV) couplers accept a standard hose tip as recommended by ISO¹ and SAE². Adapters

are available to update older hose tips to the ISO couplers on this tractor.

¹International Standards Organization
²Society of Automotive Engineers

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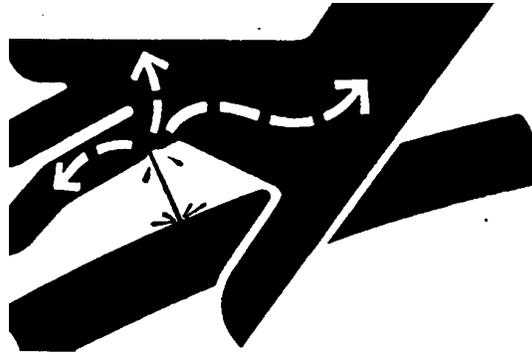
Connecting or Disconnecting High-Pressure Hoses

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 may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

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.



X9811 —UN—23AUG88

- 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.
 3. Wipe clean, then close coupler covers. Install dust caps on hose ends.

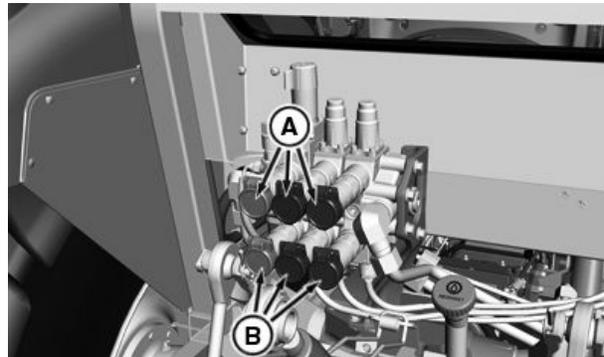
GS25068,0001B90 -19-24JUL15-1/1

Connect Cylinder Hoses to Rear SCV

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

1. Identify extend and retract hoses.
2. Remove dust caps (if equipped) from hose end.
3. Open coupler covers.
4. Making sure hose end and coupler are clean, push hose tip firmly into selective control valve (SCV) coupler. Pull on hose to make sure positive connection was made.
5. Connect retract hoses to top couplers (A) and extend hoses to bottom couplers (B).

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.



Triple Rear SCV Shown

A—Top (Retract) couplers

B—Bottom (Extend) couplers

RXA0146145 —UN—30OCT14

GS25068,0001BDE -19-07AUG15-1/1

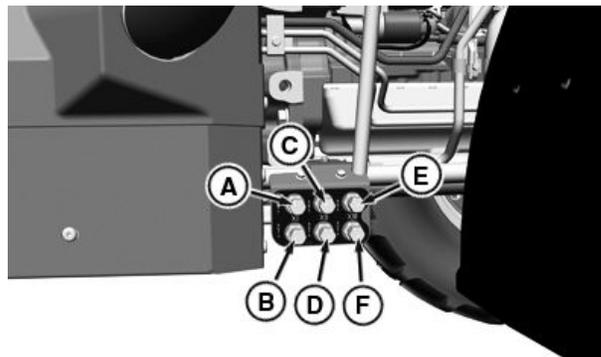
Connect Cylinder Hoses to Mid SCV—If Equipped

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

NOTE: Connections are capped and require couplers to be installed if using hose with ISO ends. Direct connection to the fittings can be made for permanent applications.

1. Match hoses to corresponding couplers.
2. Remove dust caps from hose ends.
3. Remove cap assembly from selective control valve (SCV) couplers.
4. Ensure that hose end and couplers are clean, slide sleeve back, push hose tip firmly into coupler and release sleeve.
5. Make sure that positive connection was made by pulling on hose.

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.



Mid-Mount SCV Couplers

- | | |
|---------------------------|-----------------------------------|
| A—Boom Cylinder—Retract | D—Bucket Cylinder—Extend |
| B—Boom Cylinder—Extend | E—Third-Function Cylinder—Retract |
| C—Bucket Cylinder—Retract | F—Third-Function Cylinder—Extend |

RXA0146142 —UN—30OCT14

GS25068.0001BDF -19-07AUG15-1/1

Connect and Operate Single-Acting Cylinder

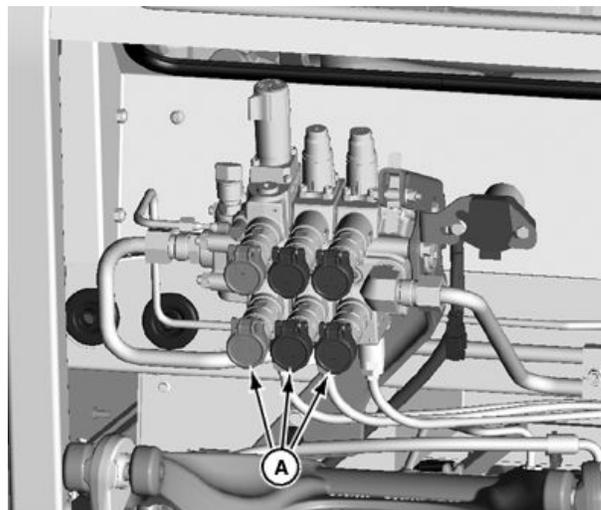
Single-acting cylinder should only be connected to selective control valve (SCV) extend coupler (A).

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

Pull selective control valve (SCV) control lever back to pressurize and extend single-acting cylinder.

Push SCV control lever fully forward to “float” position to retract cylinder.

- A—Extend Couplers



Triple Rear SCV

LV22083 —UN—15AUG14

JZ81662.000132E -19-13JUN14-1/1

Operate Rear SCV Control Levers

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

Rear selective control valve (SCV) control levers (A, B, and C) have four positions:

- Extend
- Retract
- Neutral
- Float

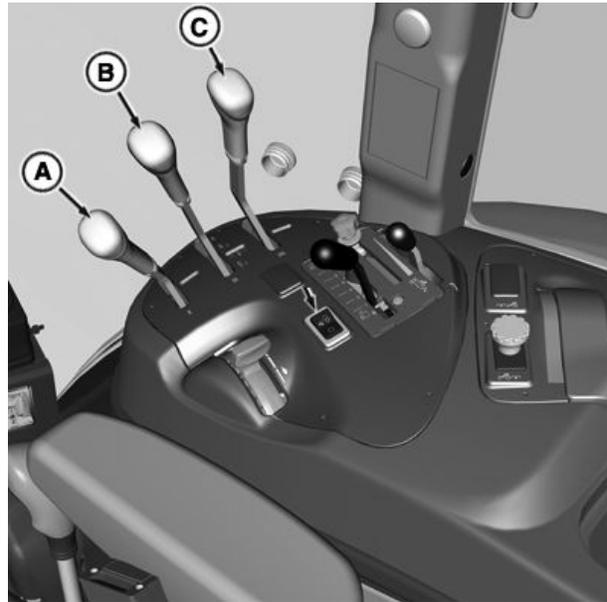
Float is the only position with mechanical detent. Extend and retract automatically spring back to neutral when lever is released. Float has to be manually returned to neutral.

To EXTEND cylinder, pull lever REARWARD.

To RETRACT cylinder, push lever FORWARD.

To bring cylinder in NEUTRAL position, release lever to CENTER position.

To bring cylinder in FLOAT position, push lever further FORWARD past retract.



Cab Shown; OOS similar

A—SCV I Control Lever
B—SCV II Control Lever

C—SCV III Control Lever

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GS25068,0001433 -19-29OCT14-1/1

Set Rear SCV Detents

Setting Control Lever Detents

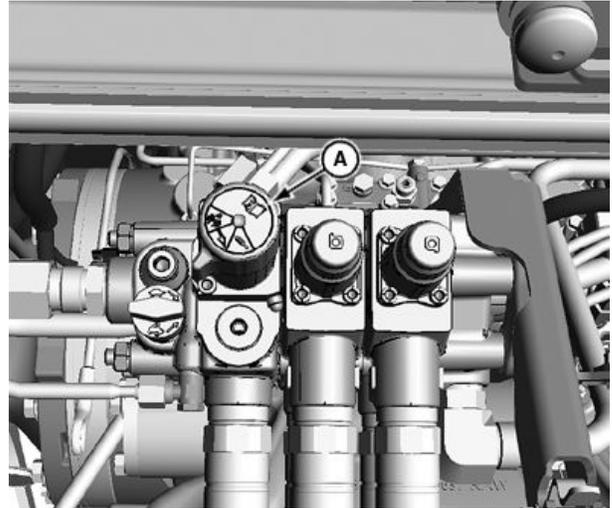
Section 1 of the deluxe SCV has selectable detents, used to change multi-function lever operations to meet operating requirements of different implements. Detent settings affect only extend and retract lever positions, not “float.”

NOTE: Read Operator’s Manual symbol (B) is for reference only and is not a selectable setting.

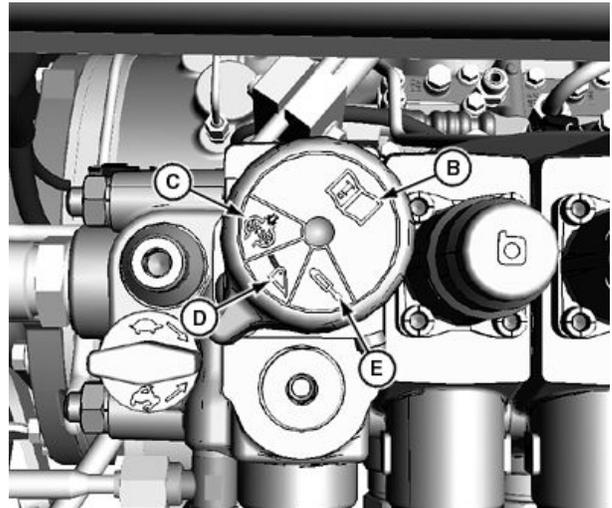
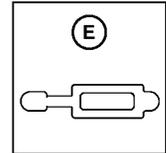
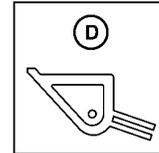
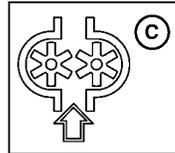
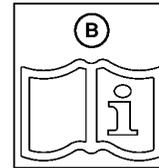
SCV I Knob Position	SCV I Control Lever Detent
Continuous Detent (Motor) (C) for motor operation	Holds lever in operating position until manually returned to neutral.
No Detent (Loader) (D) for loader operation	Lever returns to neutral when released.
Automatic Detent (Cylinder) (E) for cylinder operation	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 long duration “continuous” (motor) operation is required. Section I of deluxe SCV has a flow control valve. When properly adjusted, valve provides flow to operate an implement at required speed while maintaining oil temperature within normal operating range.

- A—SCV Knob
- B—Read Operator Manual
- C—Continuous Detent (Motor)
- D—No Detent (Loader)
- E—Automatic Detent (Cylinder)



Triple Rear SCV



GS25068.0001B93 -19-07JUN19-1/1

LV22089 —UN—12JUN14

LV22102 —UN—12JUN14

LV22090 —UN—12JUN14

Use Deluxe Rear SCV to Operate Hydraulic Motor

NOTE: To understand motor features, refer to implement operator's manual.

If equipped with deluxe rear selective control valve (SCV), use SCV I retract coupler (A), with adjustable (internal) flow control valve (B) for hydraulic motor operations.

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

DO NOT use deluxe rear SCV for any low flow, high-pressure applications such as SEEDSTAR™ variable rate drive planter motor or active downforce circuits. PTO driven hydraulic motor is recommended for low flow, high-pressure applications.

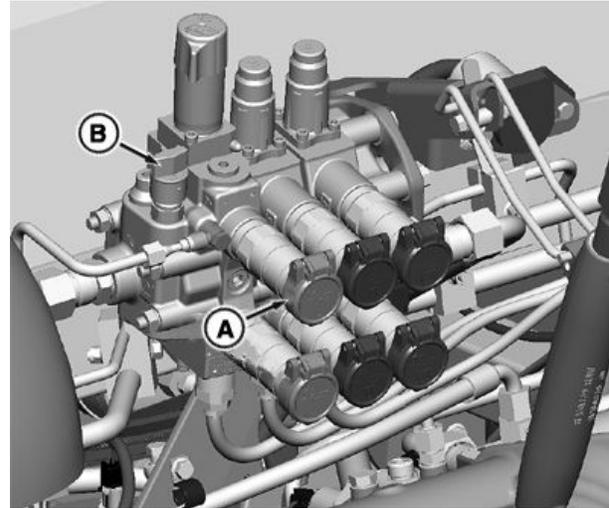
To regulate oil flow when operating a hydraulic motor with any standard valve without adjustable flow control, use an external flow control valve.

Recommendations to Avoid Hydraulic Motor Damage

Use hydraulic motor return coupler (if equipped) for implements having:

- Single directional hydraulic motor.
- Hydraulic motor with low-pressure shaft seal.
- Hydraulic motor with internal case drain.

Use hydraulic motor case drain connection (if equipped) for implements having motor with case drain line. Refer to "Use Hydraulic Motor Case Drain Connection—If Equipped" in this section.



A—SCV I Retract Coupler

B—Adjustable Flow Control Valve

IMPORTANT: If implement motor is not equipped with return coupler, do not use "neutral" lever position to stop hydraulic motor; use "float". Internal load check valve will cause backpressure damage to hydraulic motor or hoses.

Continued on next page

GS25068,0001B94 -19-24JUL15-1/2

RXA0149443 —UN—22JUL15

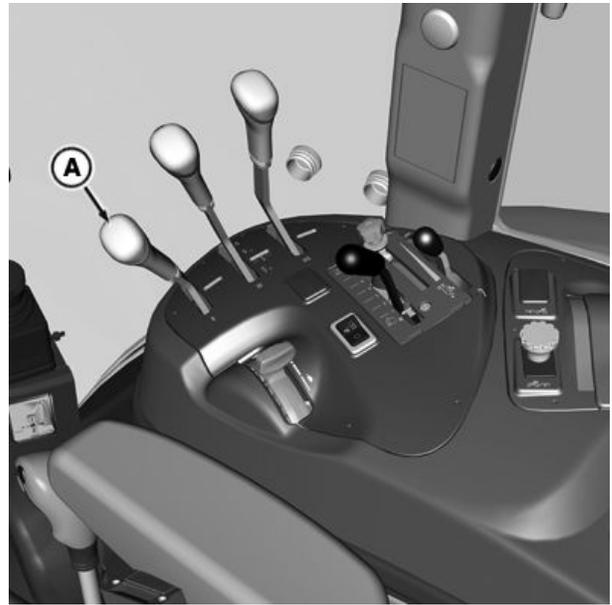
Hydraulic Motor Hose Connections and Control Lever Operations

IMPORTANT: Use only SCV I of rear SCV for “continuous” (motor) applications. SCV I of rear SCV is for high flow and lower pressure application (motor).

DO NOT return hydraulic motor directly to sump via port on differential case, except intermittent high-pressure applications, such as post pounder.

1. Shut off engine.
2. Move SCV control lever full forward, into “float” detent.
3. Connect hydraulic motor supply hose to the retract coupler and return hose to the scv extend, case drain or fast dump port as required by application.
4. **Deluxe Valve:** Set SCV control lever detent for continuous “motor” operation. (See “Set Rear SCV Detents” in this section.)
5. Start engine.
6. To activate hydraulic motor, move SCV control lever forward to “retract” position.

IMPORTANT: To stop hydraulic motor, do not use “neutral” lever position; use “float”. Internal check valves will cause backpressure damage to hydraulic motor or hoses.



Cab Shown, Others Similar

A—SCV I Control Lever

7. To stop hydraulic motor, move SCV control lever fully forward into “float” detent.
8. Shut off engine and disconnect hoses from couplers.

GS25068,0001B94 -19-24JUL15-2/2

RXA0146166 —UN—03NOV14

Use Rear SCV to Provide Power Beyond Oil

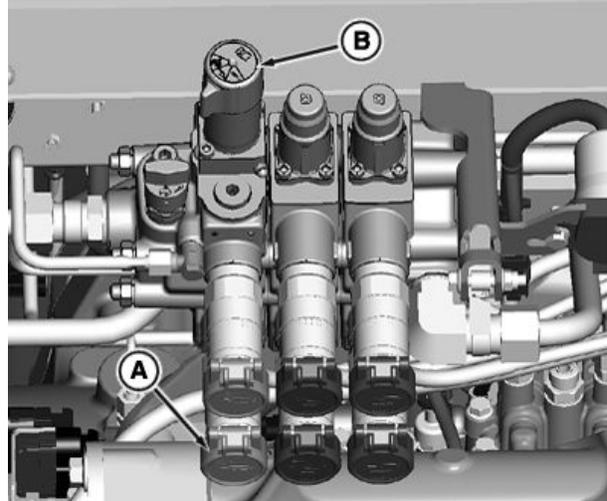
IMPORTANT: Power beyond connections must be used when operating any external hydraulic orbital motor with this tractor. Failure to comply with Power Beyond connections will overheat and possibly damage the tractor's hydraulic system.

NOTE: If equipped with rear selective control valve (SCV), oil can be supplied to power beyond equipment using SCV 1 on the deluxe SCV (in continuous mode) or by using a power beyond kit with the standard dual rear SCV.

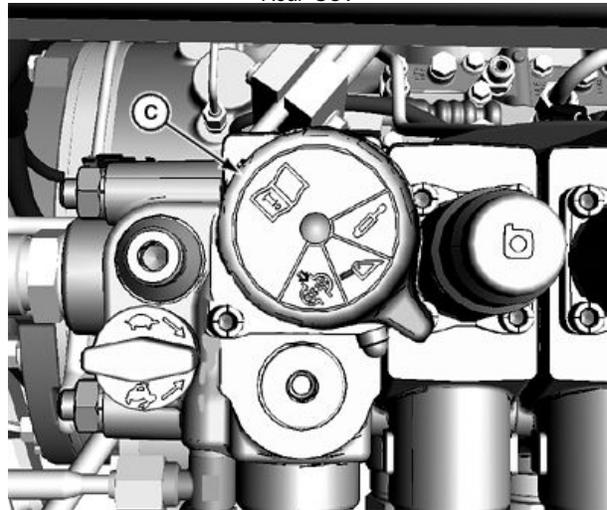
1. SHUT OFF engine.
2. Connect power beyond hose to SCV I extend coupler (A).
3. Set rear SCV I detent (B) to "continuous" (C).
4. START engine.
5. Move SCV control lever I into extend.
6. Oil is now supplied to power beyond device.
7. To stop, de-activate power beyond device, return SCV control lever I to neutral.
8. SHUT OFF engine and disconnect hoses.

A—Rear SCV
B—SCV I Detent

C—Continuous



Rear SCV



RXA0149424 —UN—22JUL15

LV22103 —UN—17JUN14

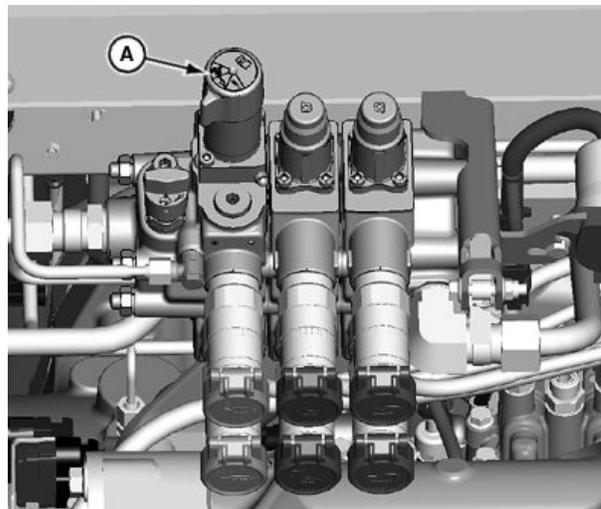
GS25068,0001B99 -19-24JUL15-1/1

Use Rear SCV to Operate Loader

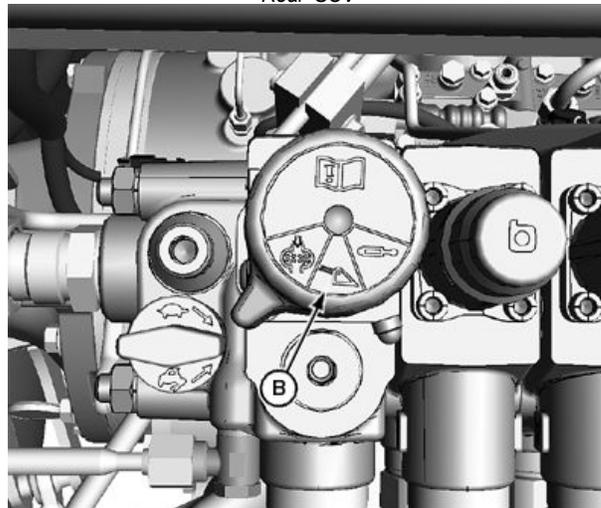
CAUTION: Avoid injury or death caused by falling loads. When using selective control valve (SCV) to operate loader, detent must be set in No Detent (Loader) position (B), for loader movement to stop when control lever is released. Moving control lever to a detented position would cause the loader to unexpectedly rise to full height and the load to fall back on the operator or suddenly lower to the ground, causing crushing injury.

When using loader, always put SCV detent selector knob (A) in no detent (loader) position (B) to prevent unexpected machine movement.

A—SCV Detent Selector Knob B—No Detent (Loader) Position



Rear SCV



No Detent (Loader) Position

JZ81662,0001333 -19-12JUN14-1/1

LV22106 —UN—17JUN14

LV22107 —UN—17JUN14

Operate Mid SCV Multi-function Lever—If Equipped

CAUTION: Overheated hydraulic oil causes personal injury and component malfunctions. To prevent hydraulic oil from overheating, DO NOT hold multi-function lever in operating position for an extended period.

IMPORTANT

○ ○

Install engine side frames when using loader

Continued on next page

GS25068,0001B96 -19-24JUL15-1/5

PULV004891 —UN—11JAN10

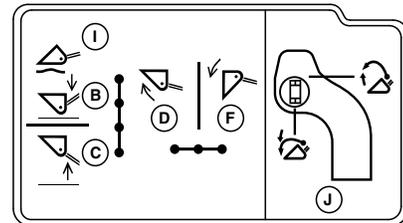
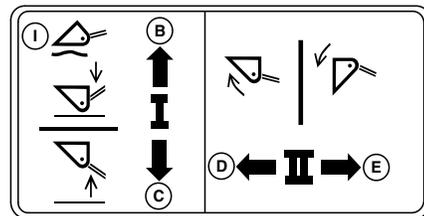
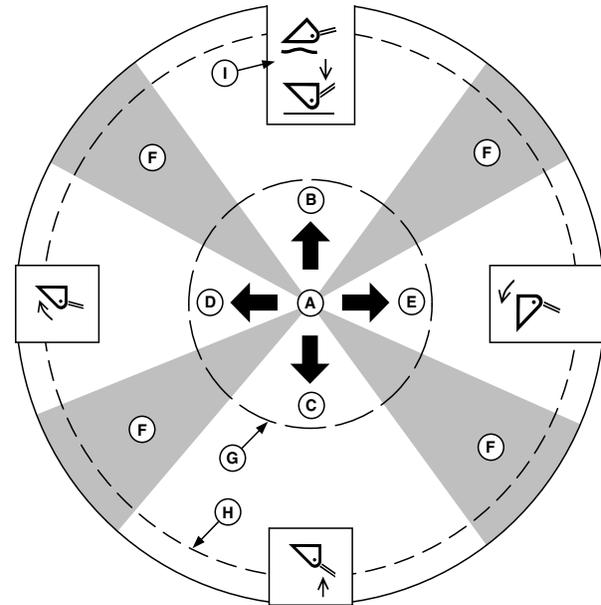
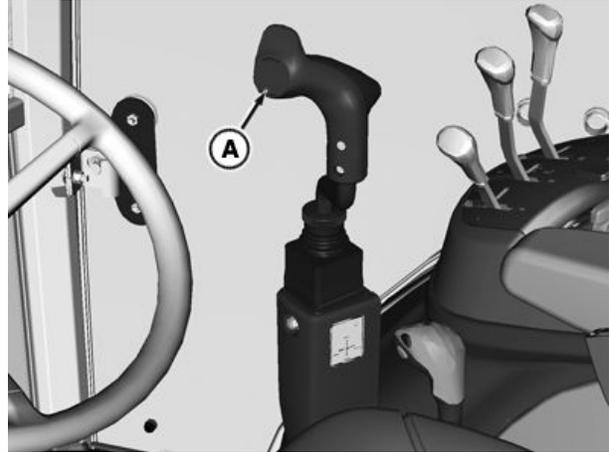
Multi-function lever controls any hydraulically driven device connected to mid selective control valve (SCV), most commonly a loader.

NOTE: Multi-function lever and loader operation depend on hose to coupler connection. See “Connect Cylinder Hoses to Mid SCV—If Equipped” in this section.

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, 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 multi-function lever is moved. When lever is first moved from center, hydraulic functions operate slowly (G). Hydraulic functions move progressively faster as lever is moved farther away from center, out to fast operating position (H).
5. Third functions controlled by switch (J) can be operated simultaneously with any single and two function operations.

“Float”: Push lever full forward into detent when “float” is desired. “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.

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



Continued on next page

GS25068,0001B96 -19-24JUL15-2/5

RXA0147453 —UN—19FEB15

LV14741 —UN—30AUG11

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.

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 multifunction for transport, turn the locking ring (A) clockwise aligning the indicator line of the lock symbol to the rivet.
- To unlock, turn the locking ring counterclockwise aligning the indicator line of the unlock symbol to the rivet.



Transport Lock

A—Transport Lock

GS25068,0001B96 -19-24JUL15-3/5

LV16018 —UN—28AUG12

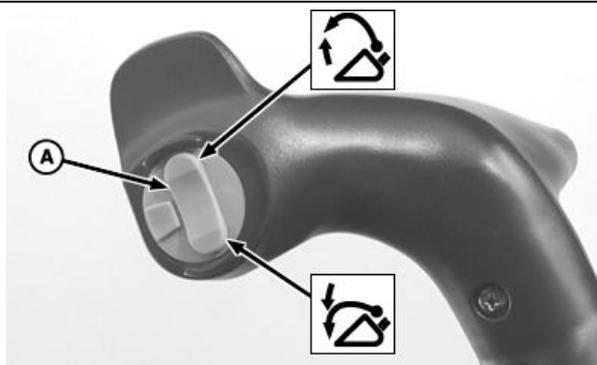
Third-Function (Electrohydraulic)

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.

A—Mid SCV Third-Function Switch



Continued on next page

GS25068,0001B96 -19-24JUL15-4/5

LV9662 —UN—20AUG04

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

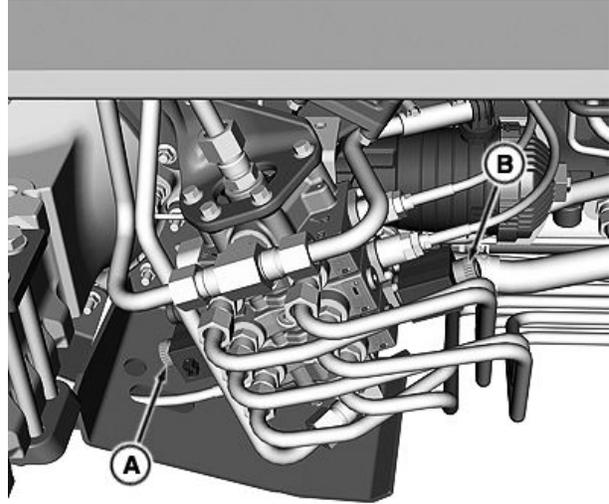
NOTE: Mid SCV is located on the right-hand side of tractor behind rear wheel

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 to release load.

A—Access Hole (Retract)

B—Access Hole (Extend)



RXA0146179 —UN—05NOV14

GS25068,0001B96 -19-24JUL15-5/5

Adjust Flow Control—Rear SCV and Mid SCV—If Equipped

⚠ 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 (A) only affects section I of rear selective control valve (SCV) and the electrohydraulic (grapple) section of the three-function mid SCV. Other valve sections are not affected by this adjustment.

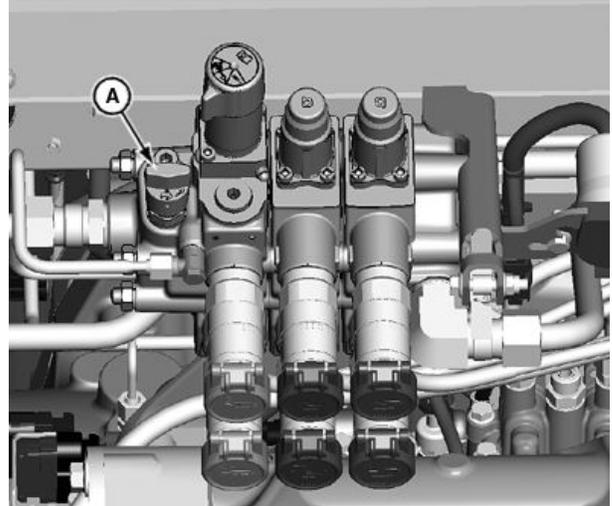
NOTE: Maximum flow possible on electrohydraulic section of three-function mid SCV is 45 L/min (11.9 gal/min).

To INCREASE flow, rotate Left (COUNTERCLOCKWISE).

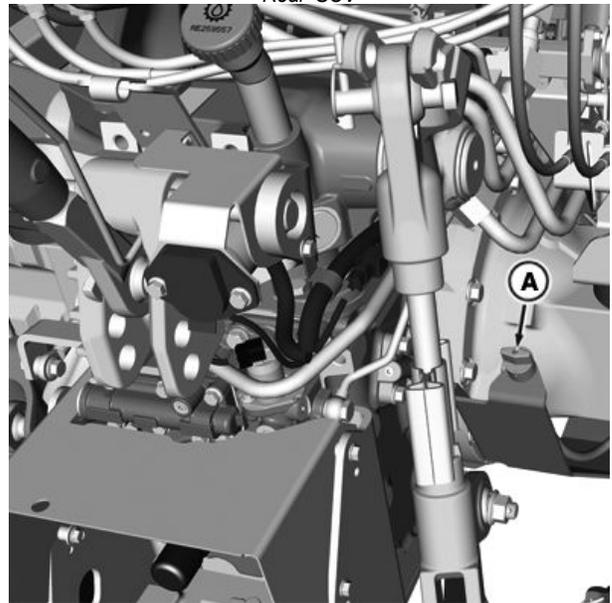
To DECREASE flow, rotate Right (CLOCKWISE).

NOTE: Rear SCV: If detent kicks out before end of cycle, use SCV I and adjust flow control.

A—Flow Control Adjustment



Rear SCV



Mid SCV

LV22108 —UN—17JUN14

RXA0146167 —UN—03NOV14

GS25068,0001435 -19-29OCT14-1/1

Correcting Reversed Cylinder Response

⚠ CAUTION: If cylinder response is opposite of control lever, extending when it should retract, reverse hose connections at couplers.

AI68620,0000239 -19-03SEP10-1/1

Warm Transmission-Hydraulic System Oil

Steering, transmission, and hydraulic systems are slow to function when tractor is started in cold weather.

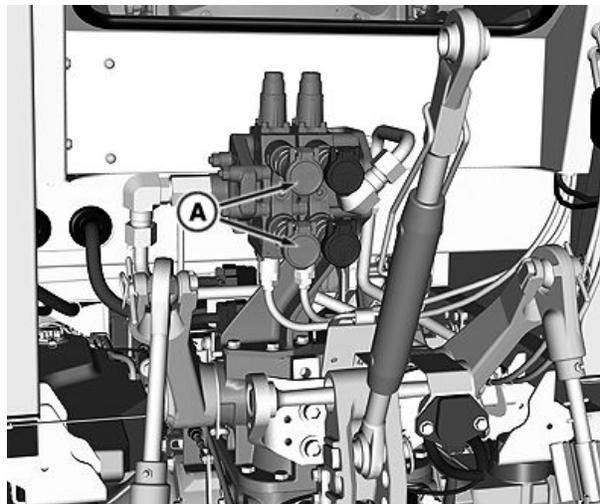
CAUTION: Overheated hydraulic oil may cause personal injury and component malfunctions. To prevent hydraulic oil from overheating, **DO NOT** hold selective control valve (SCV) or multi-function lever in operating position for an extended period.

NOTE: The rear SCV is preferred, but operator can perform oil warm-up operation at mid SCV.

1. Connect jumper hose to SCV I couplers (A).
2. **For tractors equipped with deluxe rear SCV or third function mid SCV, perform the following:**
 - Turn SCV I selector knob to cylinder (automatic) detent position (B).
 - Turn flow control knob (C) fully counterclockwise (open).

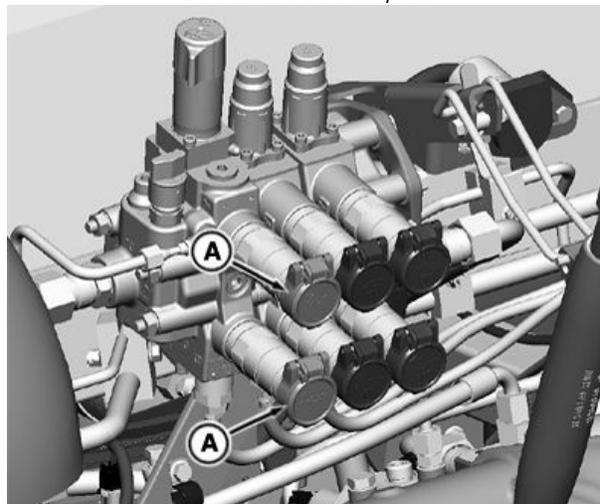
A—SCV I Couplers
B—Automatic Detent Position

C—Flow Control Knob



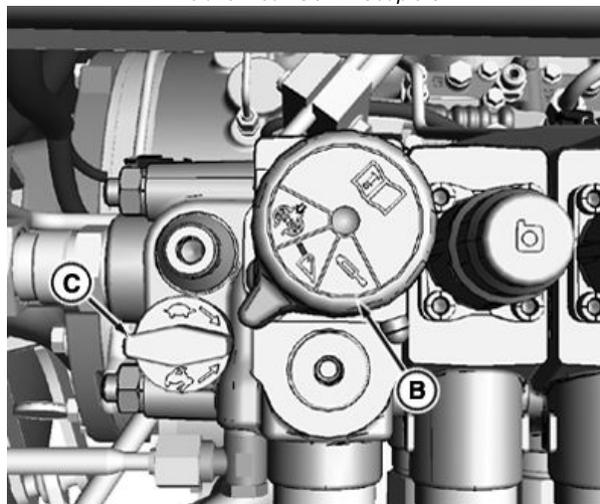
Dual Rear SCV I Couplers

RXA0149455 —UN—24JUL15



Deluxe Rear SCV I Couplers

RXA0149426 —UN—22JUL15



Deluxe Rear SCV Inlet I Section

RXA0149427 —UN—22JUL15

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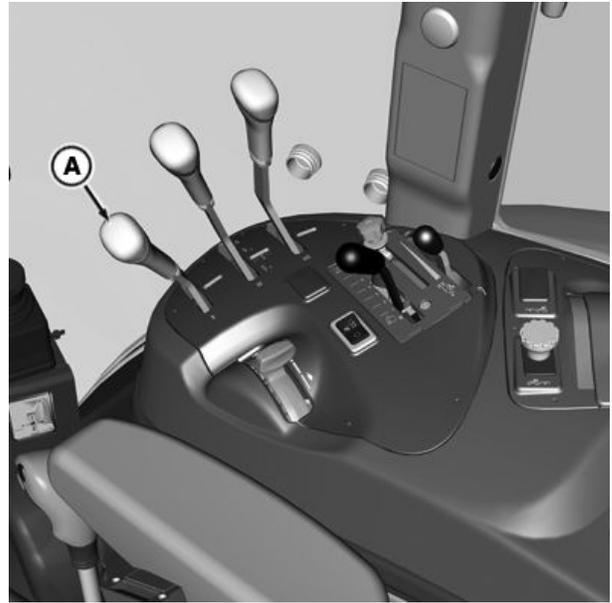
GS25068,0001B98 -19-24JUL15-1/2

3. Depress clutch pedal, start engine and idle at 1200 rpm.
4. Move SCV I multi-function lever (A) forward or rearward until hydraulic oil warms to operating temperature.

NOTE: If equipped with dual rear SCV and for any mid SCV, multi-function lever must be held into extend or retract.

5. To check warm-up progress, turn steering wheel side-to-side. When wheel turns smoothly without hesitation, oil has warmed to operating temperature. After transmission-hydraulic oil has warmed to operating temperature:
6. Return SCV I multi-function lever to neutral.
7. Return detent selector and flow control knobs to original positions and setting.
8. Remove jumper hose.

A—SCV I Multi-Function Lever



Cab Shown; OOS similar

RXA0146166—UN—03NOV14

GS25068,0001B98 -19-24JUL15-2/2

Use Hydraulic Power Beyond Coupler—If Equipped

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

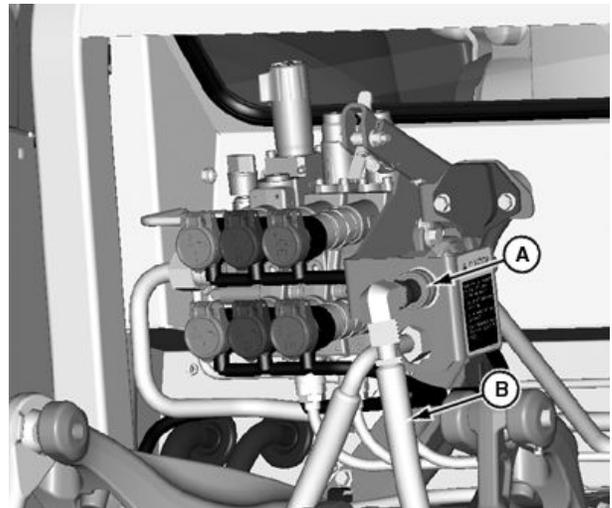
To use power beyond feature, remove hose (B) from coupler (A) and attach to implement “return” port. To complete the hydraulic circuit, attach implement “pressure” hose to open coupler (A).

When not in use, plug hose end into coupler for storage (as shown).

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

A—Hose Coupler

B—Power Beyond Hose



Power Beyond Coupler

LV22141—UN—18JUN14

JZ81662,000133C -19-16JUN14-1/1

Drawbar and PTO

Match Tractor Power to Implement

IMPORTANT: Tractor power should be matched to the size of the implement. 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 implement to tractor.

AI68620,000023B -19-03SEP10-1/1

Observing 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 terrain. Do not exceed maximum static vertical load on drawbar.

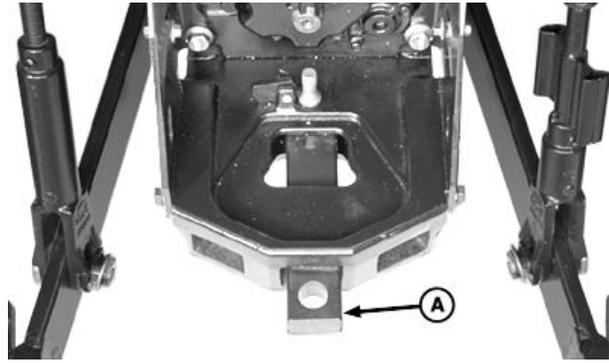
Drive slowly with heavy loads.

Drawbar Maximum Static Vertical Load—Specification

Fully Retracted	
Position—Static Vertical	
Load.....	1120 kg
	(2470 lb)
Fully Extended	
Position—Static Vertical	
Load.....	760 kg
	(1675 lb)

NOTE: Offset and heavy duty drawbars are available as an option. See your John Deere dealer for detailed information on optional drawbars.

A—Drawbar—Fully Retracted B—Drawbar—Fully Extended



Fully Retracted



Fully Extended

LV9614—UN—13AUG04

LV12603—UN—22APR05

JZ81662,000029B -19-13JUL11-1/1

Selecting Drawbar Position

CAUTION: Avoid injury from unexpected equipment movement. 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.

For maximum traction and efficiency, drawbar (A) should be positioned in the center, fully retracted position. (See implement operator's manual for more information.)

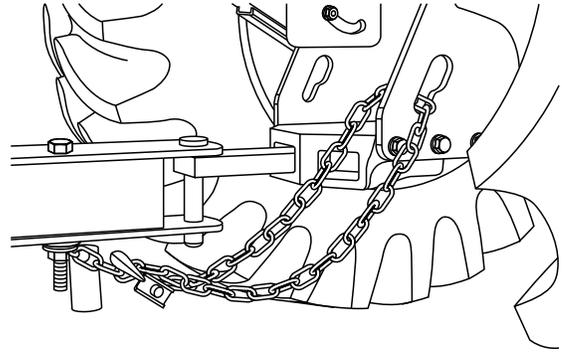
If needed, drawbar can be offset from center using slots provided in the drawbar support.

IMPORTANT: For drawn PTO-driven implements, drawbar must be extended to proper position.

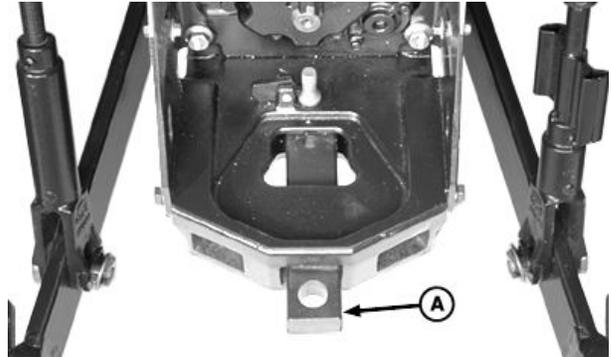
Drawbar Positions	
PTO Shaft	PTO Shaft End-to-Hitch Pin Hole (B)
540 rpm (6 spline)	356 mm (14 in.)

A—Drawbar

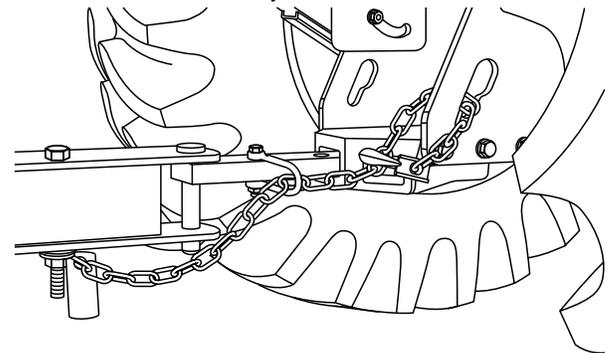
B—Distance from Shaft End-to-Hitch Pin Hole



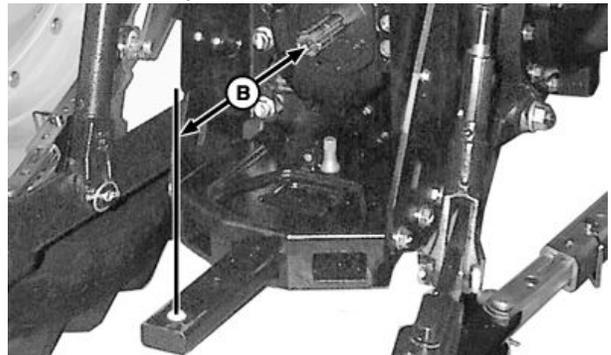
Safety Chain with Drawbar Retracted



Fully Retracted



Safety Chain with Drawbar Extended



JZ81662.000029D -19-13JUL11-1/1

LV12791 —UN—08MAR06

LV9614 —UN—13AUG04

LV12795 —UN—20SEP06

LV9685 —UN—19AUG04

Adjusting Drawbar Length and Offset

1. Lift retaining latch (A).
2. Remove drawbar pin (B).
3. Slide drawbar to desired position.
If moving from centered to offset position, remove drawbar and slide through offset slots in support.
4. Install drawbar pin and rotate latch to retain in-place.

A—Retaining Latch

B—Drawbar Pin



LV14210—UN—02MAY11

JZ81662.000029E -19-13JUL11-1/1

Attaching PTO-Driven Implement

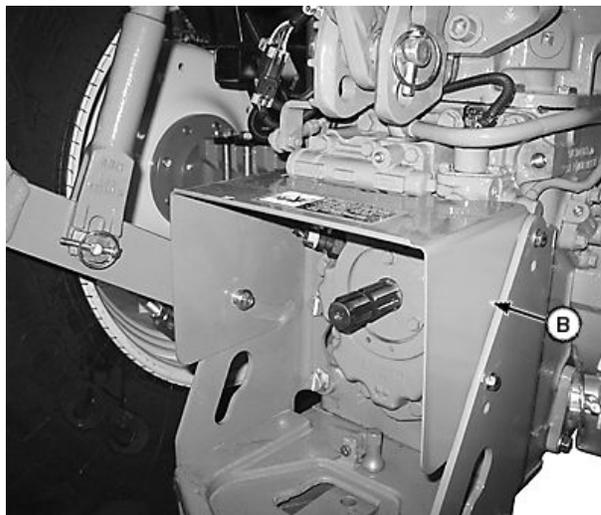
⚠ CAUTION: Entanglement in rotating driveline can cause serious injury or death.

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.



1. Turn key to STOP position to shut off engine.
2. Put drawbar (A) in extended position. If implement will be connected to 3-point hitch, be sure drawbar will not interfere. Fully retract drawbar or remove it if necessary. (See Selecting Drawbar Position in this section.)
3. Install drawbar lock pin.
4. Attach implement to tractor (drawbar or 3-point hitch) before connecting PTO driveline. Raise hitch to full-up (transport) position if it is not to be used.
5. Rotate PTO shield (B) up for clearance. With engine off, 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. Return PTO shield to down position.
6. Check that all shields are in place and in good condition. Never operate PTO unless master shield is properly installed. WITH ENGINE STOPPED, check integral shields on driveline by making sure they rotate freely on shaft. Lubricate or repair as necessary.
7. Check for interference.



A—Drawbar

B—PTO Shield

TS1644 —UN—22AUG95

LV12605 —UN—22APR05

LV14211 —UN—02MAY11

JZ81662,000029F -19-14JUL11-1/1

Selecting Correct PTO Speeds

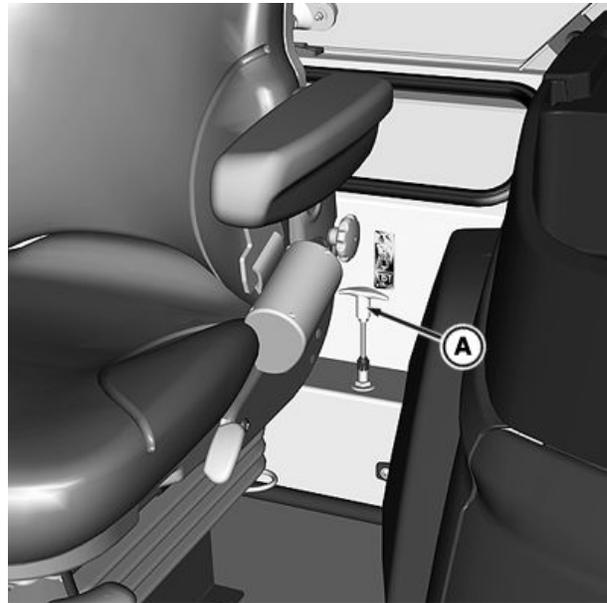
540/540E Operation

For standard 540 PTO operation (load requiring full engine power), pull lever (A) up to 540 position.

For economical PTO operation (lighter load), push lever down for 540E position. In economical mode, engine is run at lower rpm to conserve fuel and reduce overall operating noise while still turning PTO shaft at 540 rpm.

NOTE: With PTO shift lever in 540E position, engine fast idle speed is limited to 1700 rpm.

A—PTO 540/540E Shift Lever



PTO 540/540E Shift Lever (Cab)

RXA0146170 —UN—03NOV14



PTO 540/540E Shift Lever (OOS)

RXA0146169 —UN—03NOV14

GS25068,0001437 -19-30OCT14-1/1

Operating Tractor PTO

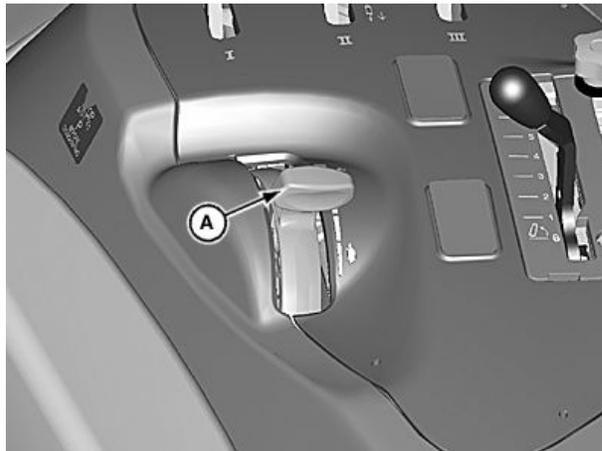
NOTE: Engine will not start if PTO lever is engaged.

1. Depress clutch pedal, start engine and push hand throttle lever (A) forward until tachometer indicates PTO rated speed:

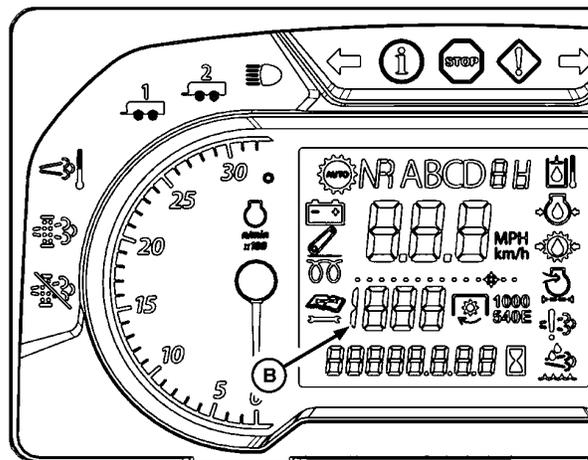
PTO Rated Speed	
PTO	Engine RPM Speed
540E	1700
540	2400 (full power)

NOTE: When in 540E position, engine speed is mechanically limited to a maximum of 1700 rpm.

- A—Hand Throttle Lever
- B—540E Operation Speed
- C—540 Operation Speed



Hand Throttle Lever

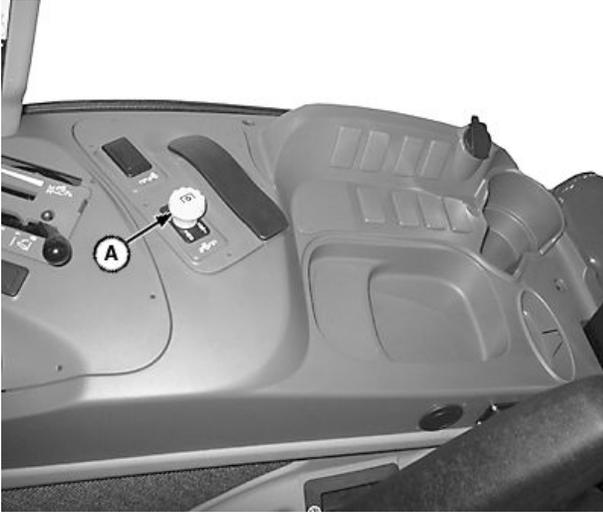


LV16348 —UN—28NOV12

LV22150 —UN—18JUN14

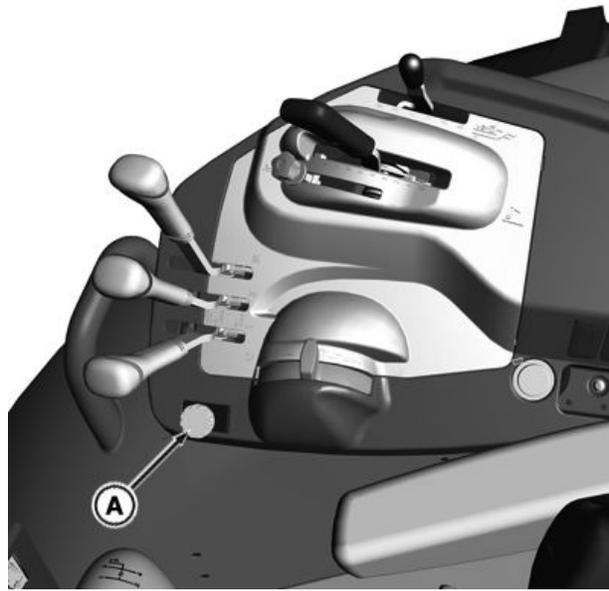
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GS25068.000144E -19-06NOV14-1/3



PTO Control Switch (Cab)

LV14213 —UN—02MAY11



PTO Control Switch (OOS)

RXA0146172 —UN—03NOV14

NOTE: PTO is engaged or disengaged without depressing clutch pedal.

2. Engage PTO:

Lift PTO control switch (A) up to engage.

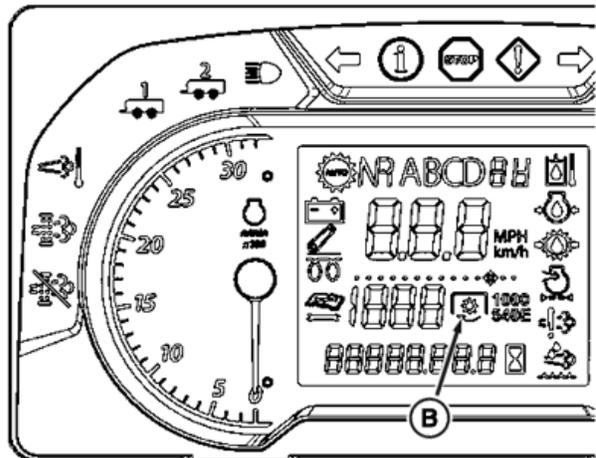
PTO indicator (B) illuminates when PTO is engaged.

IMPORTANT: A warning alarm will sound if operator leaves seat with PTO engaged.

NOTE: If engine is stopped while PTO is engaged, restart engine, depress and lift PTO control switch to reset and engage PTO.

A—PTO Control Switch

B—PTO Indicator

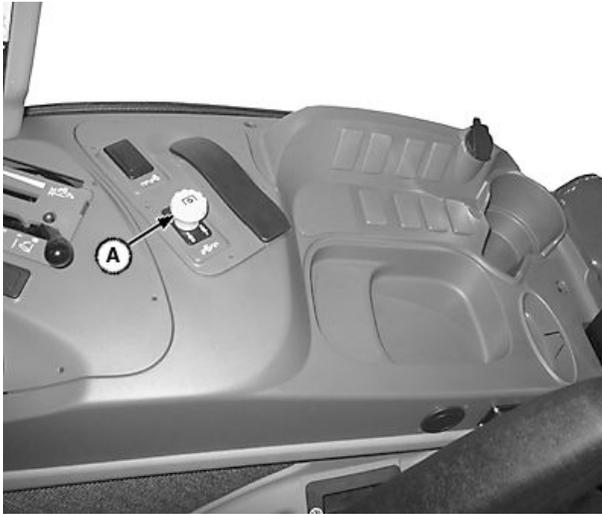


Indicator

RXA0146171 —UN—03NOV14

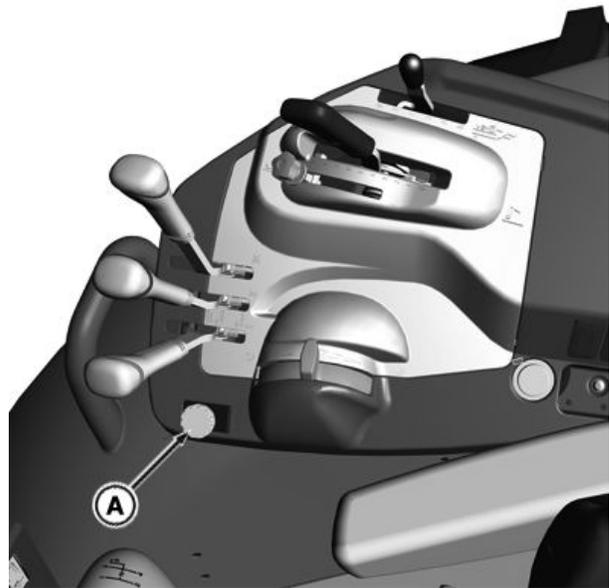
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GS25068,000144E -19-06NOV14-2/3



PTO Control Switch (Cab)

LV14213 —UN—02MAY11



PTO Control Switch (OOS)

RXA0146172 —UN—03NOV14

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

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

3. Disengage PTO:

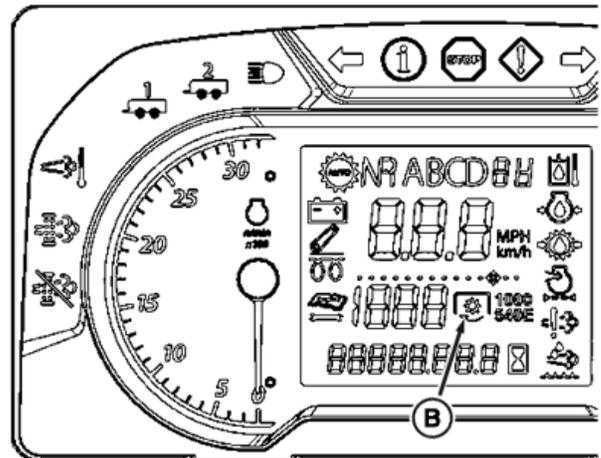
Push PTO control switch (A) down to disengage.

PTO brake automatically engages when PTO is disengaged.

PTO indicator (B) is off when PTO is disengaged.

A—PTO Control Switch

B—PTO Indicator



Indicator

RXA0146171 —UN—03NOV14

GS25068,000144E -19-06NOV14-3/3

Performance Ballast

Planning 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 John Deere Service Literature Available in this manual.):

- “Tractors” 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.

AI68620,0000242 -19-03SEP10-1/1

Select Ballast Carefully

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

Comply with local regulations regarding installation and maximum permissible number of weights. In order to maintain steerability, at least 20% of total weight must be on the front axle.

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

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

Match amount of ballast needed for each job. What is right for one job could 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
- Type of front axle—MFWD

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 is needed in front tires to obtain this weight split.

If equipped with a loader, provide adequate ballast to rear wheels.

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.

To Little Ballast		To 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

CAUTION: Max tractor weight, with ballast, not to exceed 4950 kg (10980 lb).

IMPORTANT: Either liquid ballast or cast iron ballast can be added to front and rear tires.

Ballast limited by either tire capacity or tractor capacity. Each tire has a recommended carrying capacity which must not be exceeded (see “Wheels, Tires, and Treads” section). If a greater amount of weight is needed for traction, consider a larger single tire.

When determining axle ballast, ensure permissible axle loads and the permissible weight are not exceeded. (See Specifications section.)

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, 10—15% travel reduction is acceptable.

Add more weight to drive wheels if slip is excessive. If there is less than 10% slip, remove wheel weights.

GS25068,0000ACE -19-14NOV19-1/1

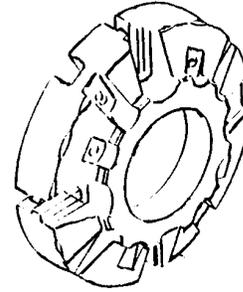
Using Cast Iron Weights

Cast iron weights are available in a 43 kg (95 lb) size. Weights can be installed on the inside or outside of wheel.

Rear wheel weights can be installed for improved traction and/or ballast. See Sales Manual for corresponding bundle numbers.

IMPORTANT: Maximum of two weights can be added per side.

See your John Deere dealer for more information and recommendations on weight use and placement.



AI68620.0000244 -19-03SEP10-1/1

M47215 —UN—29JAN92

Installing Rear Cast Iron Weights

CAUTION: Optional cast iron weight weighs 43 kg (95 lb). Handle with care! Use appropriate equipment or have the job done by your John Deere dealer.

1. Remove wheel.
2. Attach weight (C) to wheel disks using four special round head bolts, washers and nuts (A). Tighten nuts to specifications.

Specification

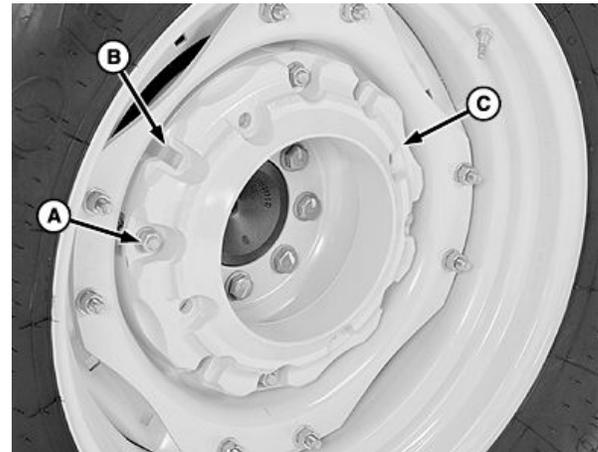
Wheel Weight-to-Disk	
Nuts—Torque.....	215 N·m (159 lb-ft)

3. Install additional weights:
 - a. Insert four round head bolts (D) through slots (B) of first weight. Install bolts with square neck in slot (as shown).
 - b. Align mounting holes of second weight with round head bolts and install weight. Fasten with washers and nuts. Tighten nuts to specifications.

Specification

Wheel Weight-to-Weight	
Nuts—Torque.....	215 N·m (159 lb-ft)

4. Install wheel and tighten mounting hardware. (See Tighten Bolts—Rear Axle in Wheels, Tires and Treads section.)
5. Tighten wheel weights and mounting hardware again after a few hours service. Check regularly.



Single Wheel Weight Shown



Install Bolt in Slot (Additional Weight)

A—Nut, 5/8-11 (4 used)
B—Slot (4 locations)

C—Wheel Weight
D—Round Head Bolt (4 used)

AI68620.0000245 -19-03SEP10-1/1

LV9684 —UN—17AUG04

LV9692 —UN—19AUG04

Filling Tires With Liquid Ballast

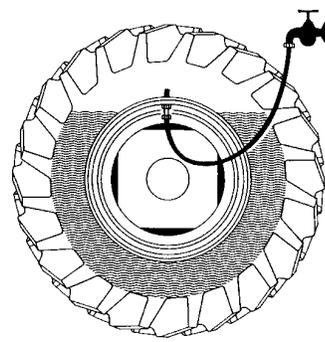
To fill a tire, jack up tractor and turn wheel so that the tire valve is at the top. Remove valve insert and screw water valve onto valve stem. While water is entering, air escapes through lateral bore in water valve. Stop filling tire when water drains from vent hole of valve. Depending on tire size, filling a tire takes 15—30 minutes. After adding liquid, screw in air valve and pump up tire to normal inflation pressure. Quantity of liquid ballast required varies depending on tire size and type. If in doubt, consult your John Deere dealer or tire manufacturer.

NOTE: Add calcium chloride to the water, **NOT** water to calcium chloride.

Do not use this antifreeze solution when filling radiator.

If low temperatures are expected, use an antifreeze solution. Tire manufacturers recommend a mixture of water and calcium chloride.

Suck antifreeze solution from an elevated tank. To speed up filling operation, use a pump (flush pump with clear



LX009450

water afterwards). To provide protection down to -25°C (-13°F), dissolve 34 kg (75 lb) of calcium chloride in 86 L (22.7 gal.) of water. This mixture makes 100 L (26.4 gal.) of antifreeze solution. This solution produces an increase in weight of 120 kg (269 lb).

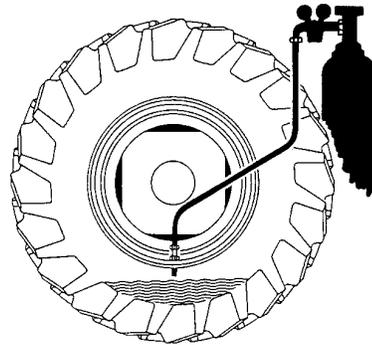
JZ81662,00013D2 -19-21AUG14-1/1

LX009450 —UN—03JAN95

Draining Tires

Jack up tractor. Remove air valve from tire and allow water to drain out.

To clear remainder of water from tire, insert drain tube with hose extension and pump air into tire. The air pressure pushes remaining water out of tire.



LX009451

JZ81662,00013D3 -19-21AUG14-1/1

LX009451 —UN—03JAN95

Wheels, Tires and Treads

Service Tires Safely

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

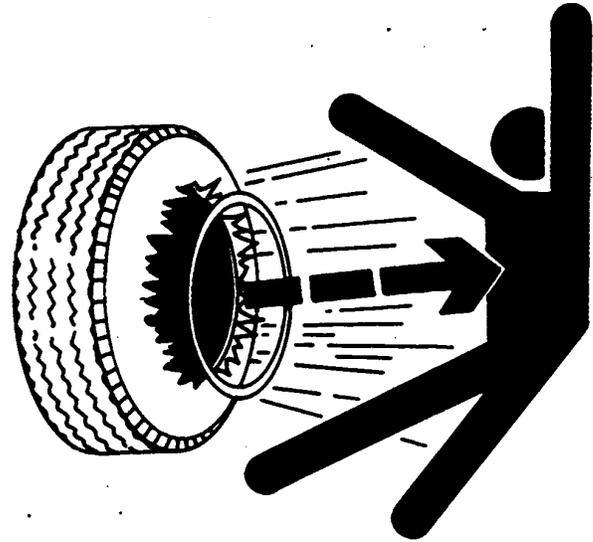
Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

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.



TS211—UN—15APR13

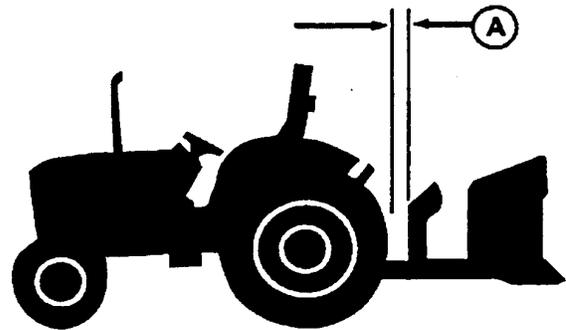
DX,RIM1 -19-27OCT08-1/1

Check Implement-to-Tire Clearance

IMPORTANT: When large diameter rear tires are installed on a tractor with a 3-Point Hitch, a quick coupler or similar device is required to provide adequate implement-to-tire clearance.

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

A—Clearance



M47177—UN—31JAN92

JZ81662,0000787 -19-08MAR12-1/1

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.

IMPORTANT: Always check inflation pressure with an accurate tire gauge to prevent over-inflation. Over-inflation reduces performance and increases strain of both tire and rim.

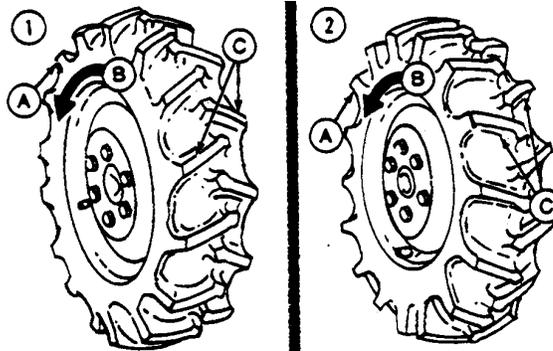
NOTE: Following inflation information applies to both front and rear tires.

1. All inflation pressures are calculated for 29 km/h (18 mph) travel speeds for both diagonal (bias) ply and radial ply tires.

2. Operating tires at the inflation pressures recommended by the tire manufacturer will provide optimum tractive performance of the tire/vehicle system. Correctly inflated radial tires will show a large deflection of the sidewall or "cheeks." This is normal and will not hurt the tire if the inflation pressure is maintained.
3. Regularly monitor inflation pressures less than 80 kPa (0.8 bar) (12 psi) because of the increased risk of low-pressure air leaks (especially due to leaking valve cores).
4. When operating tractors on steep side slopes, increase inflation pressures 28 kPa (0.28 bar) (4 psi) to compensate for lateral weight transfer.
5. Tires run as singles in high-traction conditions sometimes experience bead slip. Increasing the inflation pressure will compensate for this condition but will cause reduced traction. Consult your tire dealer if this problem occurs.
6. If higher load capacities are needed, contact your John Deere dealer for tire manufacturer's load and inflation table information.

JZ81662,0000F54 -19-29JUL20-1/1

Selecting Front Tire Rolling Direction



Left Tire (Viewed From Rear)

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

C—Tire Lugs

(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.

RW510—UN—06APR89

JZ81662,000078A -19-08MAR12-1/1

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 three hours and again after 10 hours.
3. Check all hardware frequently and keep it tight.

JZ81662,000078B -19-08MAR12-1/1

Tighten Wheel Bolts—MFWD Axle

Tighten hardware (A and B) to specifications.

	Specification
MFWD Wheel Rim-to-Disk Bolts	
(A)—Torque.....	245 N·m (180 lb-ft)
MFWD Wheel Disk-to-Hub Nuts	
(B)—Torque.....	300 ± 30 N·m (221 ± 22 lb-ft)

A—MFWD Wheel Rim-to-Disk Bolts **B—MFWD Wheel Disk-to-Hub Nuts**



LV14278 —UN—10MAY11

GS25068,0000ACC -19-14NOV19-1/1

Tighten Wheel Bolts—Rear Axle

Tighten bolts (A and B) to specifications.

	Specification
Rear Wheel Rim-to-Disk Bolts (dry) (A)—Torque.....	245 N·m (180 lb-ft)
Rear Steel Wheel Disk-to-Hub Bolts (lubricated with J20)	
(B)—Torque.....	550 ± 50 N·m (405 ± 36 lb-ft)

A—Rear Wheel Rim-to-Disk Bolts **B—Rear Wheel Disk-to-Hub Bolts**



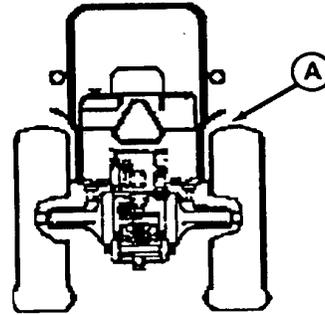
LV14279 —UN—10MAY11

GS25068,0000ACD -19-14NOV19-1/1

Observe Rear Wheel Tread Width Limitations

IMPORTANT: Tires must have at least 25 mm (1 in.) clearance with fenders (A). When large diameter rear tires are installed, check clearance between tire and fenders.

A—Rear Wheel-to-Fender Clearance

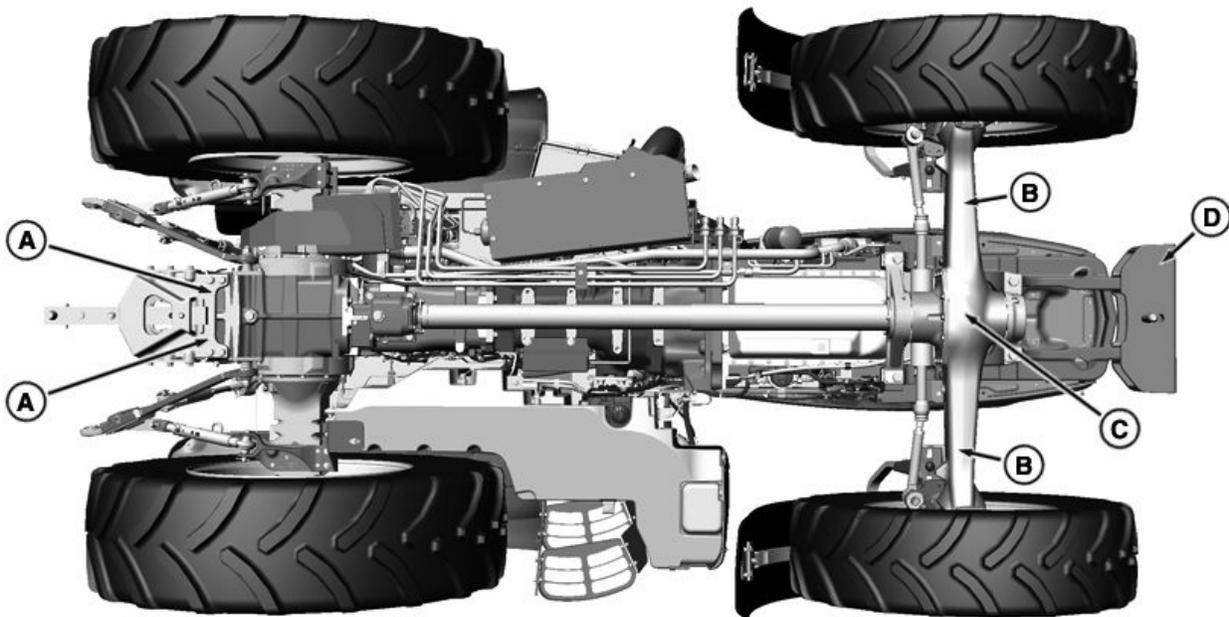


M47179 —UN—31JAN92

JZ81662,000078E -19-08MAR12-1/1

Jacking Up Tractor—Lifting Points

NOTE: Remove front ballast weights before lifting front end of tractor.



RXA0146173 —UN—03NOV14

A—Rear of Tractor Lift Point
B—Front of Tractor Lift Point

C—Center of Axle Lift Point (use wooden wedges to prevent axle from tilting)

D—Front End of Tractor under the Basic Weight

This illustration shows the recommended lifting points for jacking up the tractor. Use a stable jack with sufficient

lifting force. See Specifications, Loads, and Weights in Section 145.

Continued on next page

GS25068,000143A -19-03NOV14-1/2

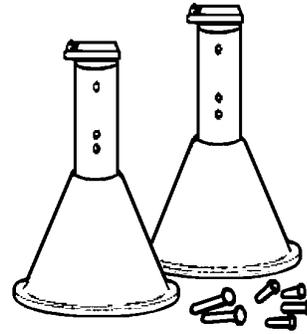
⚠ CAUTION: Use approved lifting equipment only.

Jack up tractor on firm, level ground only.

Before doing any further work on the tractor, first secure it using suitable support stands. The special John Deere tools shown can be used for this purpose. These support stands are available from your John Deere dealer.

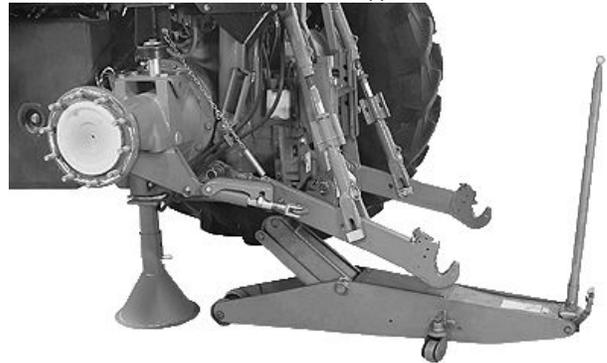
JT02043—Support Stand,
482—736 mm (19—29
in.)

JT02044—Support Stand,
863—1117 mm (34—44
in.)



JT07211

JT02043 and JT02044 Support Stands



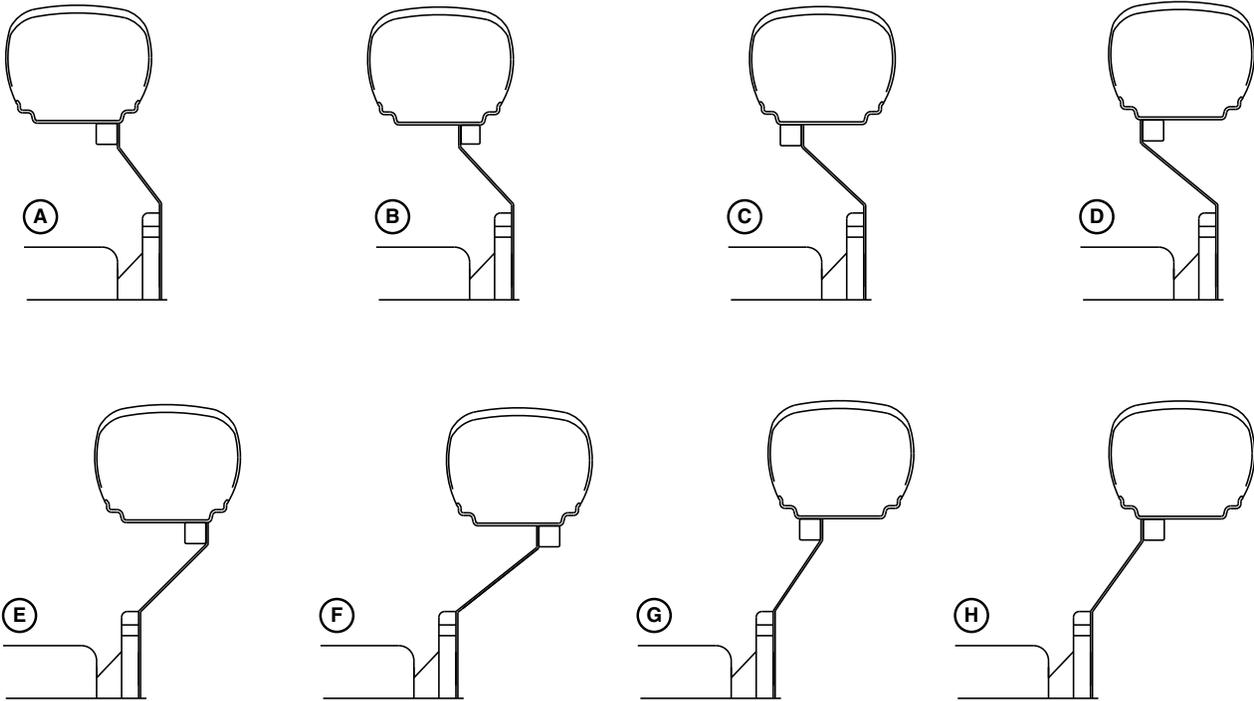
Example

GS25068,000143A -19-03NOV14-2/2

JT07211 —UN—14DEC06

RXA0146174 —UN—03NOV14

Tread Settings—Multi-Position Rear Wheels



LV8610—UN—28AUG03

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 points in the direction of forward rotation.

The relationship of the wheel disk and rim in obtaining the different tread settings is shown in the diagrams.

A study of these diagrams, before attempting to change tread settings, will save unnecessary labor.

IMPORTANT: After setting wheel spacing, tighten rear wheel rim-to-disk bolts and rear wheel disk-to-hub bolts to specification. Drive tractor 100 m (109 yd) and tighten again.

Specification

Rear Wheel	
Rim-to-Disk—Torque.....	245 N·m (180 lb-ft)
Rear Wheel	
Disk-to-Hub—Torque.....	600 N·m (445 lb-ft)

MULTI-POSITION REAR WHEELS—TREAD WIDTH (Centerline-to-Centerline)

Tire	Diagram							
	A	B	C	D	E	F	G	H
16.9-30 6PR R1	INT ^a	INT ^a	INT ^a	INT ^a	1515 mm (59.6 in.)	1613 mm (63.5 in.)	1715 mm (67.5 in.)	1813 mm (71.4 in.)
18.4-30 8PR R1	INT ^a	INT ^a	INT ^a	INT ^a	1515 mm (59.6 in.)	1613 mm (63.5 in.)	1715 mm (67.5 in.)	1813 mm (71.4 in.)
19.5L-24 10PR R4	INT ^a	INT ^a	INT ^a	INT ^a	1512 mm (59.5 in.)	1617 mm (63.7 in.)	1715 mm (67.6 in.)	1820 mm (71.7 in.)

^aInterference (do not use)

Tread Settings—Multi-Position MFWD Wheels

Adjust wheel tread on MFWD axle with multi-position wheels 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 MFWD wheels from one side to the other, the arrow on side wall of tire points in the direction of forward rotation. In certain applications, operating with the arrows in the opposite direction is acceptable. (See Selecting Front Tire Rolling Direction in this section.)

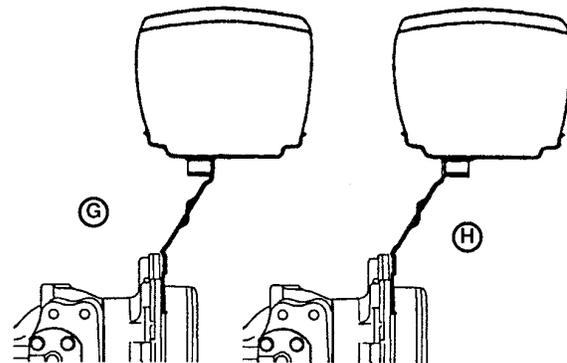
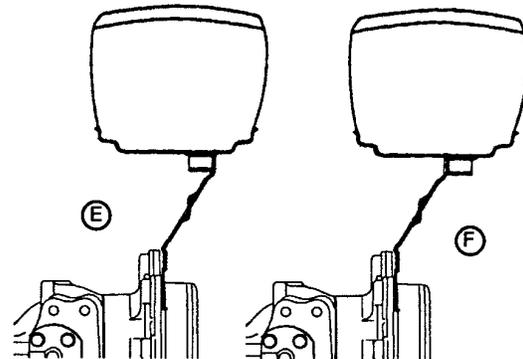
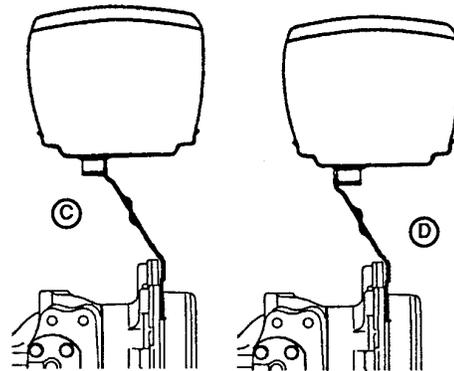
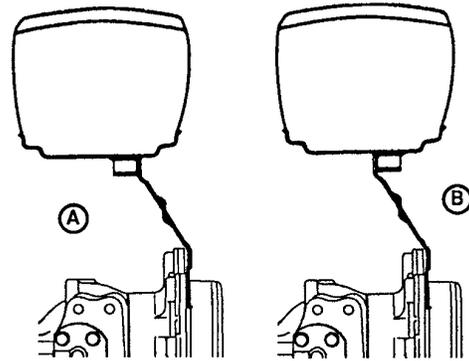
The relationship of the wheel disk and rim in obtaining the different tread settings is shown in the diagrams. To avoid unnecessary labor, study these diagrams before attempting to change tread settings.

Tread settings are measured at the middle of the tires at axle height.

IMPORTANT: After setting wheel spacing, tighten MFWD wheel rim-to-disk bolts and MFWD wheel disk-to-hub bolts to specification. Drive tractor 100 m (109 yd.) and tighten again.

Specification

MFWD Wheel Rim-to-Disk Bolts—Torque.....	245 N·m (180 lb.-ft.)
MFWD Wheel Disk-to-Hub Nuts—Torque.....	300 N·m (220 lb.-ft.)



LV601—UN—22APR94

LV602—UN—22APR94

Continued on next page

JZ81662,0000F85 -19-19DEC12-1/2

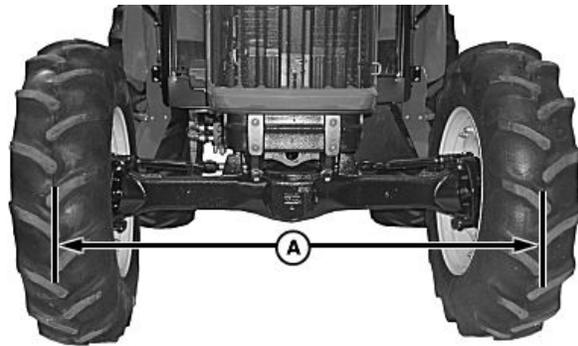
MULTI-POSITION MFWD WHEELS—TREAD WIDTH (Centerline-to-Centerline)

Tire	Diagram							
	A	B	C	D	E	F	G	H
11.2-24 6PR R1	1299 mm (51.1 in.)	1395 mm (54.9 in.)	1501 mm (59 in.)	1597 mm (62.9 in.)	1699 mm (66.9 in.)	1795 mm (70.6 in.)	1901 mm (74.8 in.)	1997 mm (78.6 in.)
12.4-24 8PR R1	1299 mm (51.1 in.)	1395 mm (54.9 in.)	1501 mm (59 in.)	1597 mm (62.9 in.)	1699 mm (66.9 in.)	1795 mm (70.6 in.)	1901 mm (74.8 in.)	1997 mm (78.6 in.)
12.5/80-18 10PR I3 TL R4	1585 mm (62.4 in.)	Not applicable	Not applicable	Not applicable	1714 mm (67.5 in.)	Not applicable	Not applicable	Not applicable

JZ81662,0000F85 -19-19DEC12-2/2

Checking Toe-In—MFWD Axle

1. Disengage MFWD and park tractor on smooth, level surface. Steer front wheels straight ahead. Stop engine.
2. Measure distance (A) between centerline of tires at hub level in front of axle, using an outside bar of each tire or an inside bar of each tire. Record measurement and mark the tires.
3. Move tractor back about 1 m (3 ft), so mark is at hub level behind the axle. Again, measure distance between tires at same point on tire. Record measurement.
4. 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. The difference may be in either direction (toe-in or toe-out), but should be less than 3 mm (1/8 in.). Adjust toe-in if necessary. (See Adjusting Toe-In—MFWD Axle in this section.)



A—MFWD Axle Toe-In Distance

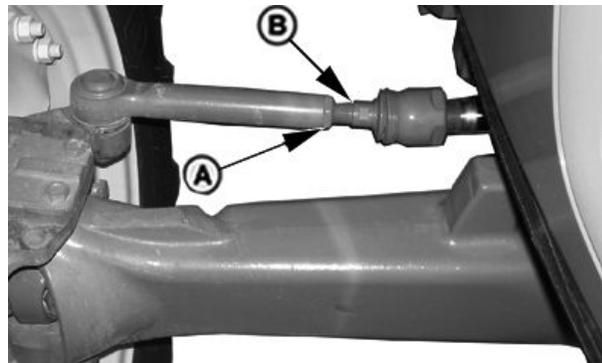
LV13210—UN—02JUN08

JZ81662,0000791 -19-08MAR12-1/1

Adjust Toe-In—MFWD Axle

1. Loosen jam nuts (A) on both ends of tie rod.
2. Adjust both sides equally by rotating the inner rod (B) to lengthen or shorten tie rod, as needed, to obtain toe-in or toe-out of less than 3 mm (1/8 in.).

Tie Rod Rotation	Approximate Change
1/8 turn	4 mm (3/16 in.)
1/4 turn	8 mm (3/8 in.)
1/2 turn	16 mm (5/8 in.)



A—Tie Rod Jam Nuts

B—Inner Rod

PULV000539—UN—21MAR08

3. Tighten jam nuts to specification.

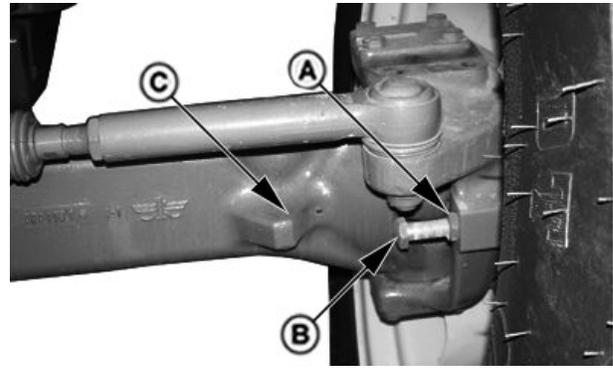
Specification

Jam Nuts—Torque.....220 – 240 N·m
(162 – 177 lb·ft)

JZ81662,0000792 -19-08MAR12-1/1

Set MFWD Steering Stops Turn Radius

1. Raise and support front of tractor so MFWD axle can be oscillated to its stops.
2. Slowly turn steering wheel to the left until steering cylinder travel has reached its limit, the steering stops, or the tires are within 25 mm (1 in.) of grille screen or side panels.
3. Raise left side of axle against its stop and measure clearance between tire and nearest tractor component. The distance should not be less than 25 mm (1 in.).
4. Loosen lock nut (A) on steering stop and adjust steering stop bolt (B) so it touches steering stop (C). It may be necessary to shorten stop bolt (B) in order to obtain maximum turning angle.
5. Tighten steering stop bolt retaining lock nut (A) to specifications.



A—Steering Stop Lock Nut C—Steering Stop
B—Steering Stop Bolt

- | | | |
|--------------------|----------------------|-----------------------|
| | Specification | |
| Steering Stop Bolt | | |
| Retaining Lock | | |
| Nut—Torque..... | | 125 N·m
(92 lb-ft) |
6. Turn wheel fully to the left. Impact knuckle housing to steering stop five times.

7. Tighten steering stop bolt retaining nuts again to specification.
8. Repeat above steps for right side.

NOTE: Wide tread settings and large tire sizes will increase turn radius slightly.

JZ81662,0000793 -19-08MAR12-1/1

Use Correct Tire Combinations

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

Model	Front	Rear
5085E and 5100E (Standard)	11.2-24 R1	16.9-30 R1
5085E and 5100E (Optional)	12.4-24 R1 (not compatible with 553 loader)	18.4-30 R1
	12.5/80-18 I3	19.5L-24 R4

IMPORTANT: When replacing tires, consult your tire dealer. Mixing worn and new tires, bias and radial, or tires of different diameters or loaded radii can reduce tire life and overall tractor performance.

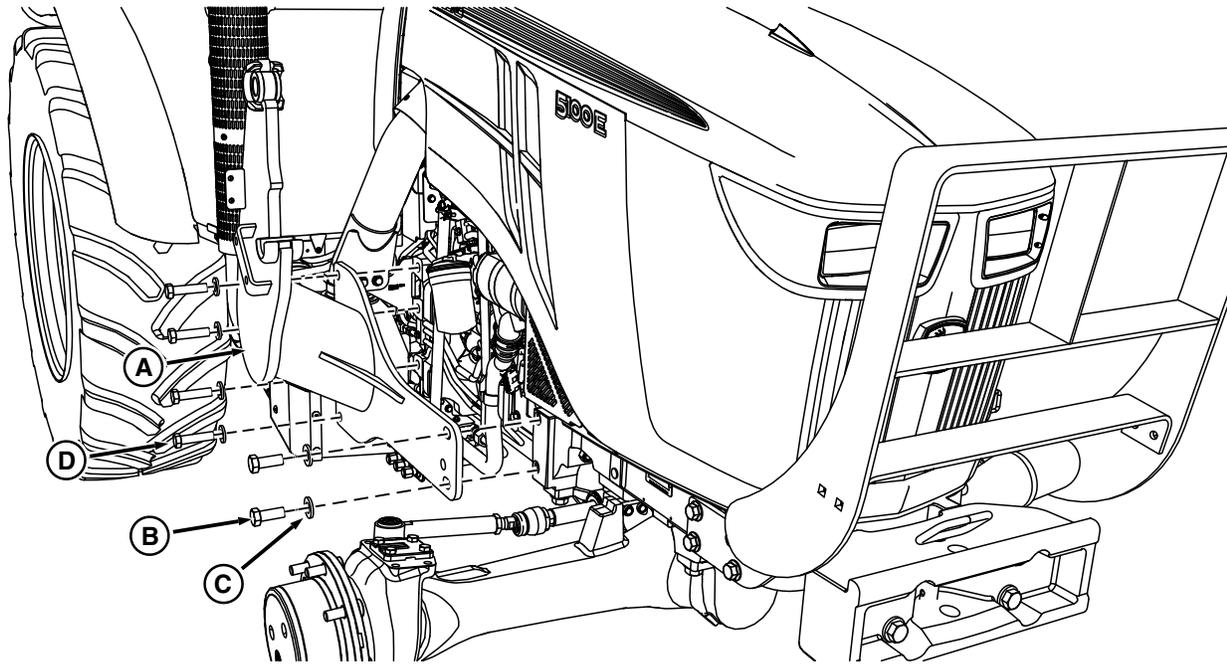
Using any tire combination, other than those listed, could result in premature tire and driveline wear due to excessive underspeed or overspeed.

Should mechanical front wheel drive front tires show excessive wear in comparison with rear tire, the front tires must be replaced to maintain the predetermined tire ratio.

JZ81662,0000F57 -19-28NOV12-1/1

Additional Equipment

Front Loader Installation - Front Loader Brackets



RXA0146175 —UN—06NOV14

A—Front Loader Bracket
(Right-Hand Shown)

B—Hex Head Cap Screws M20 x
50mm (4 used)

C—Flat Washers (12 used)
D—Hex Head Cap Screws M20 x
80mm (8 used)

Hardware for John Deere front loader brackets

Item	Description	Width across flats	Torque	Standard	Thread	Length	Identification/Grade
B	Hex Head Cap Screw	30 mm	490 N·m (361 lb.-ft.)	ISO 4014	M20 x 2.5	50mm	10.9
C	Washer	—	—	JDS 130	—	—	300HV
D	Hex Head Cap Screw	30 mm	490 N·m (361 lb.-ft.)	ISO 4014	M20 x 2.5	80mm	10.9

Using a suitable hoist, position the front loader brackets on the main frame of the tractor and tighten the screws to the specified torque. Check the torque regularly; see Section 100, Maintenance and Service Intervals.

IMPORTANT: A front loader checked and approved by John Deere is available for purchase.

When installing John Deere front-loader brackets, use appropriate hardware only, as shown in the illustration above.

Comply also with Operator's Manual and Installation Instructions of front-loader.

GS25068,000144D -19-06NOV14-1/1

Transporting

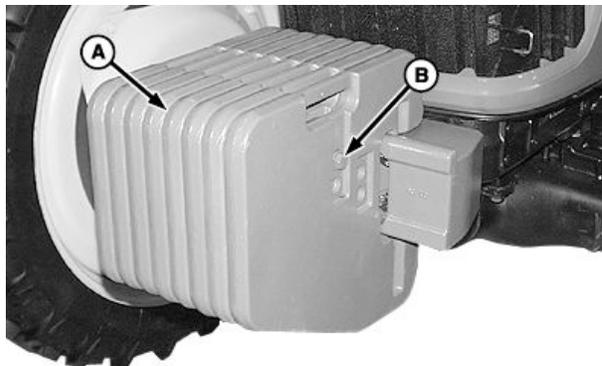
Ballasting Front End for Transport

CAUTION: Additional front ballast may be needed for transporting rear-mounted implements. Heavy pulling and heavy rear-mounted implements tend to lift front wheels. When handling weights, use proper lifting equipment. Approximate weight of QUIK-TATCH weights is 47 kg (104 lb). Drive slowly over rough ground when implement is raised.

NOTE: Determine the minimum number of front weights required from implement code in implement operator's manual.

Up to 10 Quik-Tatch™ weights can be installed on the front of the tractor.

1. Add weight to front end to maintain stability and steering control. Install weights in pairs, one on each side of center (A).
2. To hold weights in place, insert retaining bolts (B) through holes from side-to-side. Tighten to specification.



A—Ballast Center

B—Ballast Retaining Bolt

Specification

Ballast Weights Retaining Bolts—Torque.....	215 N·m (159 lb-ft)
---	------------------------

NOTE: Additional information for ballasting your tractor is available on the internet at www.JohnDeere.com/Tips

Quik-Tatch is a trademark of Deere & Company

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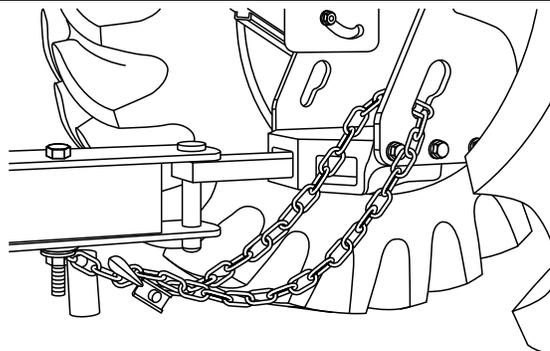
Using Safety Chain

CAUTION: Avoid possible accident and injury by using a safety chain on drawn equipment. Use a safety chain with a strength rating equal to or greater than the gross weight of equipment. Provide only enough slack in the chain to permit turning.

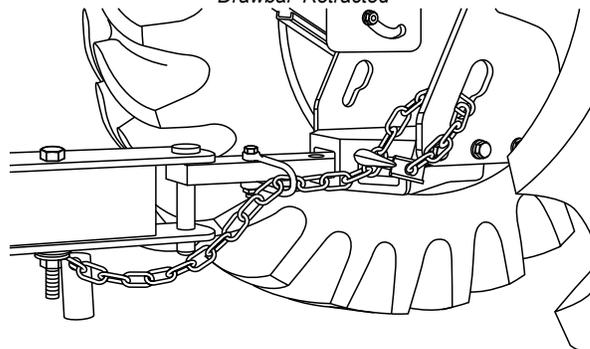
Attach the safety chain to the drawbar support or other specified anchor locations.

IMPORTANT: DO NOT use safety chain for towing, or possible damage to tractor, implement and drawbar may result. Safety chain is provided only for transport.

SLOW DOWN when transporting heavy implements.



Drawbar Retracted



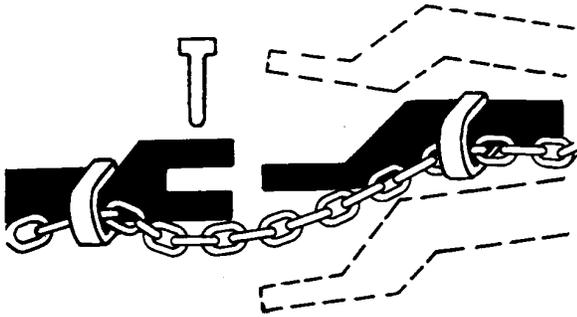
Drawbar Extended

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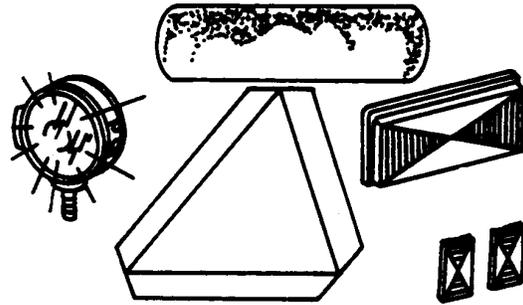
LV12791 —UN—08MAR06

LV12795 —UN—20SEP06

Deliver Safely



TSS217—UN—23AUG88



TSS949—UN—22MAR90

The best method for delivering tractors, self-propelled equipment, and most implements or attachments is on a flatbed truck or trailer. Secure loads with tie down chains, straps, and binders.

Be aware of height and width restrictions to avoid collision with overpasses, bridge abutments, or other road users. Check with local authorities regarding oversized load transport restrictions and requirements.

When towing, remember that towed loads can swerve, upset or cause loss of control when towed with an undersized towing unit.

Never tow an implement behind a truck or other motor vehicle. The ability to maintain control and brake the implement and vehicle mass is compromised. The ability to properly attach the implement hitch and safety chain to the motor vehicle may be marginal. With most motor vehicles it is not possible to properly operate the warning, tail and turn signal lights on the implement, and in most cases the implement tires are not rated for highway speeds.

Tow drawn implements only with a properly sized and weighted tractor equipped with a stationary drawbar. (See tractor operator's manual for ballast requirements.)

Integral and semi-integral implements should be attached to a tractor with a three-point hitch as specified in the implement operator's manual. The tractor should have

the proper size rear tires and the sway blocks should be in the down position. Do not transport unless the tractor front end is ballasted to the weight levels specified in the tractor operator's manual for the correct implement code.

Before transporting, attach a properly sized safety tow chain between the implement and tractor.

Stopping distance increases with speed and weight of towed loads, and when transporting on slopes. Observe these recommended maximum road speeds, or local speed limits that may be lower:

- If towed equipment does not have brakes, do not transport at speeds above 32 km/h (20 mph) and do not tow loads that weigh more than 1.5 times the weight of the tractor.
- If the towed equipment has brakes, do not transport at speeds above 40 km/h (25 mph) and do not tow loads more than 4.5 times the weight of the tractor.

Use additional caution and reduce speed when towing under adverse surface conditions, when turning, and when on inclines.

Attach the implement lighting harness to the tractor and make sure that the warning and taillights on both the tractor and implement are on and functioning properly.

Make sure that the SMV and other markings on the implement are clean and visible.

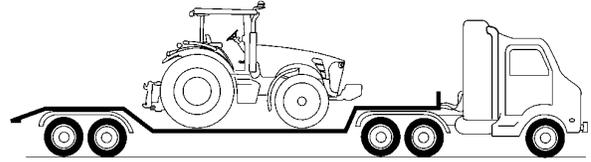
DX_DELIVER -19-26JUL19-1/1

Transport Tractor Safely

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.

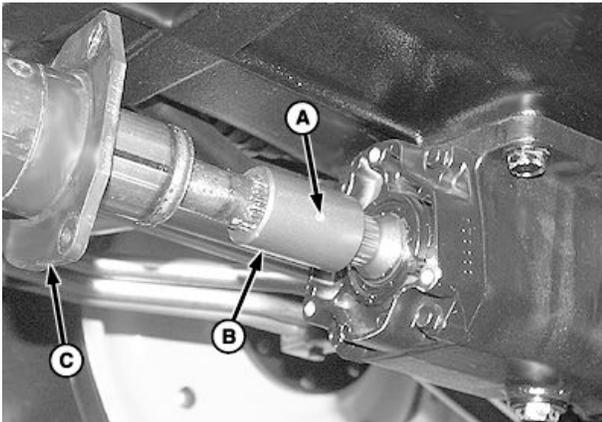
Never tow a tractor at a speed greater than 10 km/h (6 mph). An operator must steer and brake the tractor under tow.



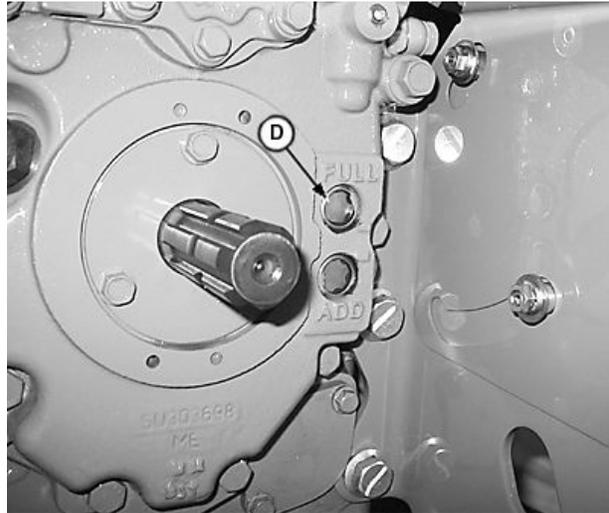
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DX,WW,TRANSPORT -19-19AUG09-1/1

Towing Tractor



MFWD Drive Shaft-to-Drop Housing



Rear of Tractor

LV9702 —UN—24AUG04

LV14193 —UN—27APR11

A—Spring Pin
B—Coupler

C—Drive Shaft Shield

D—Sight Glass

CAUTION: Remove MFWD drive shaft if towing tractor with front wheels on a carrier. Loss of transmission-hydraulic system pressure will engage the MFWD and pull tractor off the carrier, even with lever in the DISENGAGED position.

IMPORTANT: To avoid transmission and drive train component damage, NEVER attempt to start tractor by towing; engine will not start.

1. When towing tractor with front wheels on a carrier, remove drive shaft:
 - a. Remove three cap screws and slide drive shaft shield (C) away from drop housing. Repeat on opposite end.
 - b. Remove spring pin (A) using a punch and hammer.
 - c. Support drive shaft and slide coupler (B) toward drop housing.
 - d. Remove drive shaft, shields and couplers.
2. Check transmission-hydraulic oil level (it must be visible in the top sight glass (D)). Add 1 L (1 qt) for each 90 mm (3-1/2 in.) front wheels are raised off the

ground. DO NOT raise wheels more than 305 mm (12 in.). Drain excess oil after transporting.

3. Tap brake pedals to make sure differential lock is not engaged.
4. Disengage PTO and move range and gear shift levers to NEUTRAL.
5. For PowrReverser™ Transmission, put EH directional reverser lever in NEUTRAL.
6. If possible, operate engine above 1250 rpm to provide lubrication, power steering, and power brakes. Have an operator steer and brake tractor.
7. Do not tow a tractor faster than 8 km/h (5 mph). Do not exceed 3 km/h (2 mph) for the first 10 minutes in below freezing temperatures.

After Towing

Apply multipurpose grease to MFWD couplers and shaft splines, and install drive shaft assembly.

Drain excess transmission-hydraulic oil to lower level back to full.

PowrReverser is a trademark of Deere & Company

JZ81662,0000F53 -19-27NOV12-1/1

Fuel, Lubricants, and Coolant

Filling Fuel Tank

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.

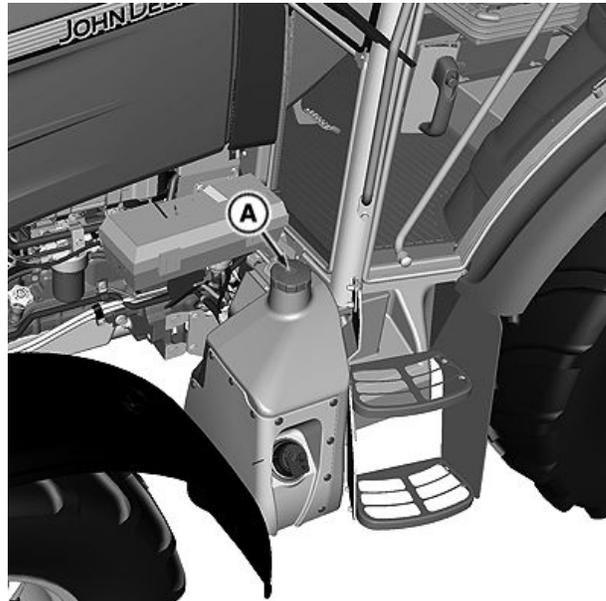


Fill fuel tank at end of each day of operation to prevent condensation in tank as moist air cools.

5085E and 5100E	Cab	114 L (30 gal.)
5085E and 5100E	Open Operator's Station	114 L (30 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.

A—Fuel Tank



Cab Fuel Tank



OOS Fuel Tank

GS25068,0001446 -19-05NOV14-1/1

TS202—UN—23AUG88

RXA0146176—UN—04NOV14

RXA0146177—UN—04NOV14

Filling 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.

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.

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

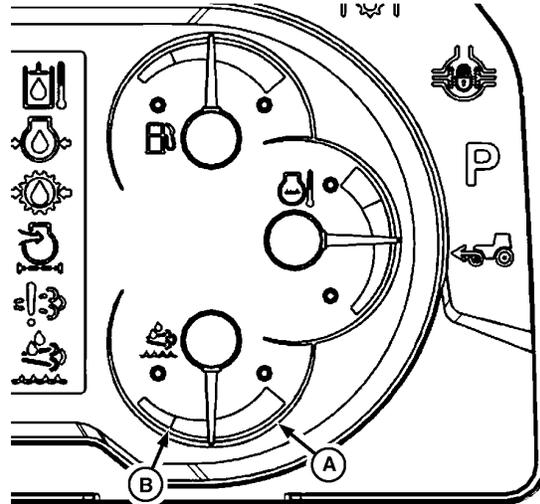
To fill DEF tank:

1. Before using containers, funnels, etc. to dispense DEF, wash and rinse items thoroughly with distilled water to remove contaminants.
2. Wipe DEF tank cap (C) and area around cap and filler neck to reduce chance of contaminating DEF.
3. Remove DEF tank cap.
4. Using funnel, carefully pour DEF in tank, watching level through filler neck.
5. Securely tighten DEF tank cap.
6. 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.

A—DEF Indicator Gauge
B—Low Level Mark

C—DEF Tank Cap



LV22168—UN—20JUN14

RXA0146178—UN—04NOV14

GS25068,0001443 -19-04NOV14-1/1

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 -19-13JAN18-1/1

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.

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:

COOL-GARD is a trademark of Deere & Company

¹Coolant 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.

- 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.

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 -19-17FEB20-1/1

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.

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 is a trademark of Deere & Company

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 -19-15MAY13-1/1

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 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)
Propylene Glycol	Freeze Protection Limit
40%	-21°C (-6°F)
50%	-33°C (-27°F)
60%	-49°C (-56°F)

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

DX,COOL19 -19-13JAN18-1/1

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.

AdBlue is a trademark of VDA, the German Association of the Automotive Industry.

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 -19-13JAN18-1/1

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 -19-13JUN13-1/1

Refilling 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.

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.

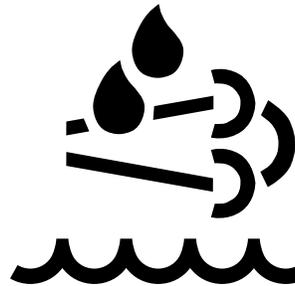
If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

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.

TS1731 —UN—23AUG13

DX,DEF,REFILL -19-15JUL20-1/1

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 -19-15JUL20-1/1

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 -19-13JUN13-1/1

Testing Coolant Freeze Point

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.



SERVICEGARD™ Part Number 75240

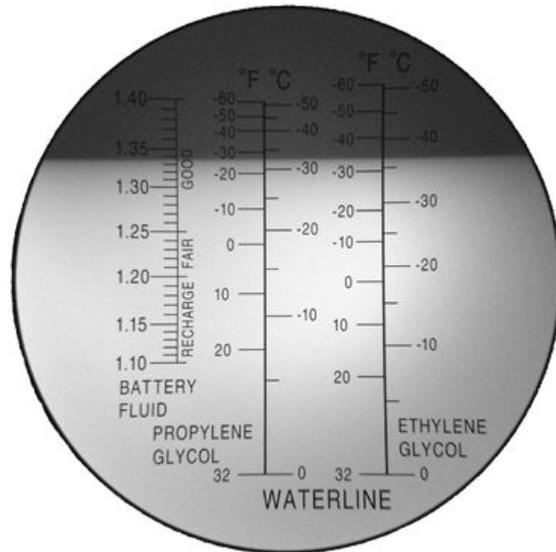


Image with a Drop of 50/50 Coolant Placed on the Refractometer Window

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DX.COOL.TEST -19-13JUN13-1/1

Extended Diesel Engine Oil Service Intervals

When John Deere PLUS-50™ oil is used with the specified John Deere filter, the service interval for engine oil and filter changes may be increased by 50% but not to exceed a maximum of 500 hours.

When ACEA E7, ACEA E6, ACEA E5, or ACEA E4 oils are used with specified John Deere filter, use engine oil analysis to determine if the service interval for engine oil and filter changes may be increased by a maximum of 50% but not to exceed 500 hours.

If John Deere PLUS-50™, ACEA E7, ACEA E6, ACEA E5, or ACEA E4 oils are used with other than the specified

John Deere filter, change the engine oil and filter at the normal service interval.

If John Deere TORQ-GARD SUPREME™, API CJ-4, API CI-4 PLUS, API CI-4, API CH-4, or ACEA E3 oils are used, change the engine oil and filter at the normal service interval.

If API CG-4, API CF-4, or ACEA E2 oils are used, change the engine oil and filter at 50% of the normal service interval.

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TORQ-GARD SUPREME is a trademark of Deere & Company

DX.ENOIL8 -19-13SEP06-1/1

Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V

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:

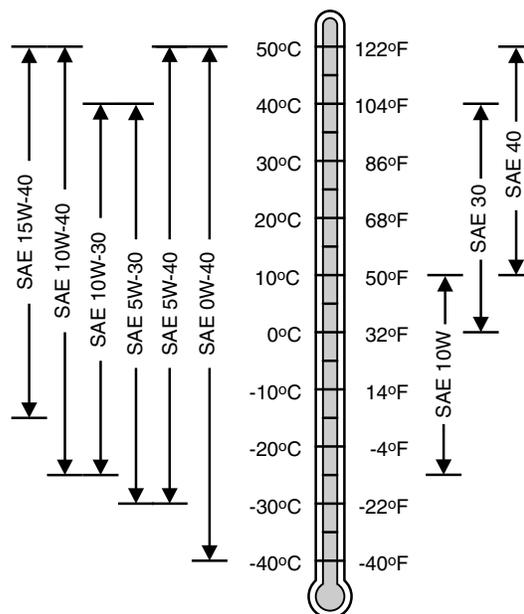
- API Service Category CK-4
- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

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



Oil Viscosities for Air Temperature Ranges

IMPORTANT: Use only ultra low sulfur diesel (ULSD) fuel with a maximum sulfur content of 15 mg/kg (15 ppm).

TS1743 —UN—25APR19

DX,ENOIL14 -19-23APR19-1/1

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**.

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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 -19-13JAN18-1/1

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:

*Break-In Plus is a trademark of Deere & Company
Plus-50 is a trademark of Deere & Company.*

- 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 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 -19-13JAN18-1/1

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 -19-11APR11-1/1

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 -19-14APR11-1/1

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.

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.

¹See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2,EXT for more information on Engine Oil and Filter Service Intervals.

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.¹
- 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.

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 -19-13JAN18-1/1

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 -19-07FEB14-1/1

Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as calculated cetane index, fuel type, sulfur content, water content, appearance, suitability for cold weather

operations, bacteria, cloud point, acid number, particulate contamination, and whether the fuel meets ASTM D975 or equivalent specification.

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

DX,FUEL6 -19-13JAN18-1/1

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

Continued on next page

DX,FUEL7 -19-13JAN18-1/2

Fuel, Lubricants, and Coolant

- 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 -19-13JAN18-2/2

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 -19-13JAN18-1/1

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 -19-07FEB14-1/1

Multipurpose Extreme Pressure (EP) Grease

IMPORTANT: For automated lubrication systems different ambient air temperatures need to be considered.

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:

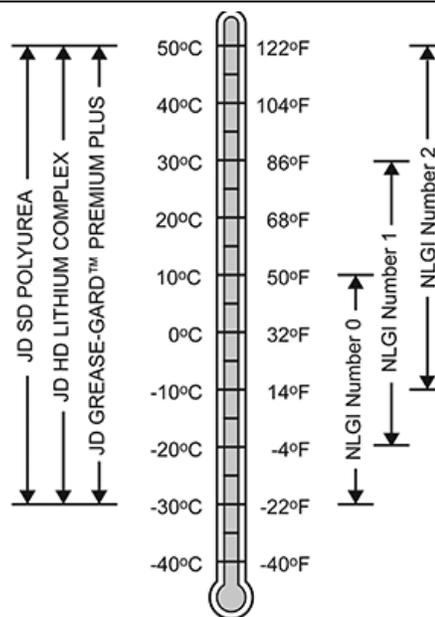
- John Deere HD Lithium Complex Grease
- John Deere Grease-Gard™ Premium Plus

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.

Grease-Gard is a trademark of Deere & Company



Greases for Air Temperature Ranges

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DX,GREA1 -19-13JAN18-1/1

Mixing of Lubricants

In general, avoid mixing different brands or types of oil. 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 -19-18MAR96-1/1

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.

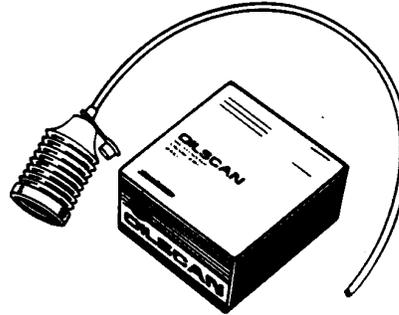
DX,LUBST -19-11APR11-1/1

Oilscan™ and CoolScan™

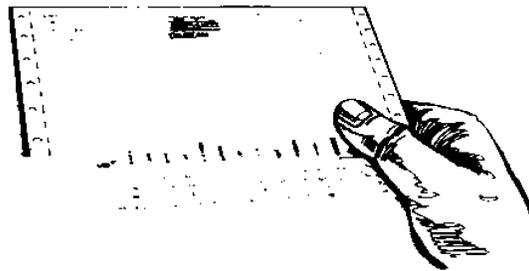
Oilscan™ and CoolScan™ are John Deere sampling programs to help you monitor machine performance and identify potential problems before they cause serious damage.

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 Oilscan™ and CoolScan™ kits.



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*Oilscan is a trademark of Deere & Company
CoolScan is a trademark of Deere & Company*

DX,OILSCAN -19-13SEP11-1/1

Transmission, Steering, Brake, Hydraulic, and Gear Case Oil

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™

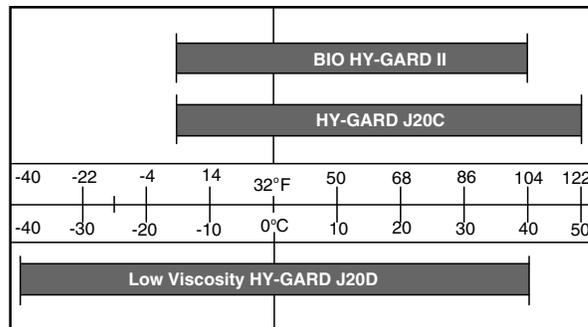
Other oils may be used if they meet one of the following:

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

Use John Deere Bio Hy-Gard™ II oil when a biodegradable fluid is required.¹

*Hy-Gard is a trademark of Deere & Company
Bio Hy-Gard is a trademark of Deere & Company*

¹*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.*



Oils for Air Temperature Ranges

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Maintenance and Service Intervals

Service Interval Chart

Item	Daily or 10 Hours	Weekly or 50 Hours	First 100 Hours	Every 300 Hours	Every 500 Hours	Every 600 Hours
Check Engine Oil Level	•					
Drain Water and Sediment from Fuel Filter ^a	•					
Clean Dust Unloading Valve	•					
Check Coolant Level		•				
Check Transmission-Hydraulic System Oil Level		•				
Look for Oil Leak at MFWD		•				
Inspect Tires and Check Inflation Pressure		•				
Lubricate MFWD Front/Rear Axle Trunnion ^b		•				
Lubricate Front Axle Pivot Point ^b		•				
Lubricate Hitch Linkage and 3-Point Hitch Bushing ^c		•				
Inspect Tractor for Loose Hardware		•				
INITIAL Change Engine Oil ^d and Filter (Change Break-In Plus™ Oil to John Deere Plus-50™ II)			•			
Change Transmission-Hydraulic Filter			•			
Tighten Air Intake System and Coolant System Hose Clamps			•			
Check MFWD Axle Housing and Wheel Hub Oil Level				•		
Check for Wear at Components of Drawbar and Trailer Hitch				•		
Lubricate Draft Sensing Shaft Seal				•		
Drain and Flush Fuel Tank				•		
Check Battery Electrolyte				•		
Change Engine Oil and Filter SCHEDULED: Engine Oil and Filter Change (When USING John Deere Plus-50™ II oil and filter)					•	
Replace Fuel Filter					•	
Clean Cab Air Filters ^c						•
Check Neutral Start System						•
Change MFWD Hub and Axle Housing Oil						•
Clean Engine Crankcase Vent Tube						•
Lubricate Rear Axle Bearings						•
Check Front Axle Pivot Pin End Play ^e						•
Tighten Air Intake System and Coolant System Hose Clamps						•
Change Transmission-Hydraulic Filter ^f						•

Service Chart — Daily (10 Hours) to 600 Hours

^aIf water is found, run engine for 20 seconds; if more water is collected, drain fuel tank. The fuel filter must be drained when the sediment bowl contains water or sediments.

^bDaily service if operating in extremely wet and muddy conditions.

^cService more often if operated in extremely dusty conditions.

^dIf 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.

^eSee your John Deere dealer for service.

^fUsing a shop vac, apply suction to the fill port during filter change to prevent draining of the hydraulic oil.

Break-In Plus is a trademark of Deere & Company

Plus-50 is a trademark of Deere & Company

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Service Interval Chart

Item	Every 1200 Hours	Annually	Every 3000 Hours/Three Years ^{a,b}	Every 4500 Hours/Five Years ^{a,b}
Clean Fuel Tank Vent Filter	•			
Check Belt Tensioner ^c	•			
Replace Fan Belt ^c	•			
Service Air Cleaner Elements ^d	•			
Change Transmission-Hydraulic Oil and Filter	•			
Clean Cab Air Filters ^d		•		
Check Coolant Properties ^e		•		
Inspect Seat Belt		•		
Adjust Engine Valve Clearance ^e			•	
Drain, Flush and Refill Engine Cooling System ^e when coolant is NOT checked annually or NOT serviced with the pre-diluted John Deere COOL-GARD II™ ^f			•	
Test or Replace Thermostat ^e			•	
Replace Transmission Damper				•
Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter				•
Drain, Flush and Refill Engine Cooling System ^e when coolant is checked annually and serviced with the pre-diluted John Deere COOL-GARD II™				•

Service Chart — 1200 Hours to 4500 Hours

^aIf COOL-GARD II is not used, service interval is 3000 hours/three years.

^bFor COOL-GARD II™ used outside North America, please consult the dealer for proper interval, service and testing requirements.

^cCan be delayed up to 1500 hours.

^dService more often if operated in extremely dusty conditions.

^eSee your John Deere dealer for service.

^fService interval can be extended to five years and 4500 hours thereafter if tractor coolant has been checked annually and serviced with pre-diluted John Deere COOL-GARD II™.

COOL-GARD II is a trademark of Deere & Company

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Service—As Required

- Service Engine Air Cleaner—Service after Air Restriction Indicator is ON^{1 2}
- Adjust PTO Speed Shift Lever—Open Operator Station³
- Lubricate Rear Axle Bearings⁴
- Adjust PTO Speed Shift Lever—Cab³
- Adjust Hand Throttle Friction Linkage³
- Adjust Hand and Foot Throttle Cable³
- Adjust Rear Fender—Open Operator Station
- Clean Cab Air Filters—If Equipped²
- Service Air Conditioner—If Equipped³
- Drain and Flush Fuel Tank³
- Clean and Check Battery Condition
- Clean Grille Screens, Radiator, Oil Cooler, Radiator Screen (If Equipped), and Air Conditioning Condenser (Cab)
- Keep ROPS Installed Properly—Open Operator Station
- Keep Cab Protection System Installed Properly
- Bleed Fuel System
- Replace Battery
- Locate Fusible Links
- Locate Fuses—Open Operator Station
- Locate Fuses—Cab
- Fuse and Relay Size and Function
- Replace Headlight Bulb
- Replace Warning Light Bulb—Cab
- Replace Tail Light Bulb—Cab, Premium Open Operator Station
- Replace Tail Light and/or Warning Light Bulb—Open Operator Station
- Replace Work Light Bulb—Open Operator Station
- Replace Work Light Bulb—Cab
- Replace Fender Light Bulb—Open Operator Station
- Replace Loader Light Bulb—If Equipped
- Replace Dome Light Bulb—Cab
- Replace Controls Illumination Light Bulb—Cab
- Replace Rotary Beacon Light Bulb—If Equipped
- Service Exhaust Filter³
- Replace OCV Filter³

NOTE: For maintenance procedure, refer to applicable section in this manual.

¹The primary element is cleanable, up to five times. Thereafter or at the latest after one year of operation, it must be replaced.

²Service more often if operated in extremely dusty conditions.

³See your John Deere dealer for service.

⁴Daily service if operating in extremely wet and muddy conditions.

Maintenance—As Required/Per Condition

Service Engine Air Cleaner

CAUTION: Dirty air cleaner element is indicated when engine intake-combustion air filter indicator (A) illuminates. Dirty air cleaner results in loss of power or excessive smoke.

1. Open hood.
2. Remove latch (B), cover (C) and pull out primary air cleaner element (D).

IMPORTANT: If primary element does not pull out with ease, move side-to-side to remove safely. Do not remove secondary element of air cleaner unless you are replacing it.

3. When primary air cleaner element (D) must be serviced in the field, tap it on the palm of your hand as a temporary measure.

IMPORTANT: The guide ring (E) must not be damaged or deformed.

CAUTION: High pressure compressed air or vibration may damage primary air cleaner element (D).

4. If tapping primary air cleaner element (D) does not remove dust, blow out dust with low pressure compressed air. Do NOT exceed 600 kPa (6 bar; 90 psi). Blow air from engine end of element (guide ring [E]) to outside air end. Do NOT insert nozzle into element material.
5. Replace both elements (primary and secondary) after they have been cleaned five times. Clean out and inspect canister interior before installing new elements.

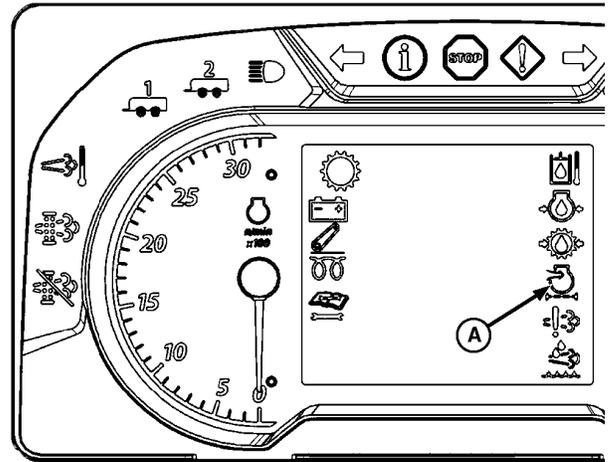
IMPORTANT: Before installation, review decals on canister and primary cleaner.

6. Replace elements if core material or seals (both ends) are damaged, or if engine intake-combustion air filter indicator remains illuminated after elements have been cleaned.
7. Install elements as necessary and latch cover.
8. Lower hood.

NOTE: If frequency of restriction increases, replace air cleaner elements.

Service air cleaner more often in extremely dusty condition.

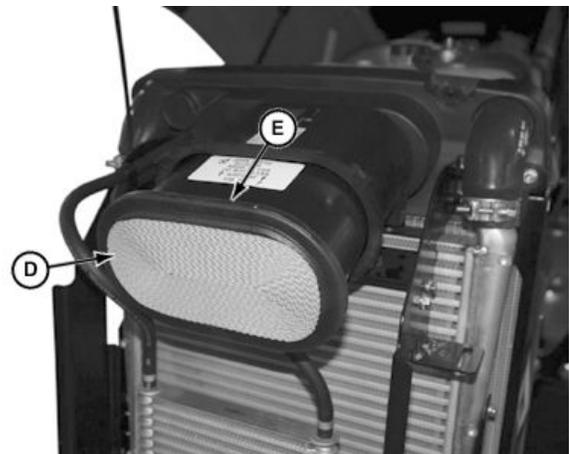
- | | |
|---|-------------------------------|
| A—Engine Intake-Combustion Air Filter Indicator | D—Primary Air Cleaner Element |
| B—Latch | E—Guide Ring |
| C—Cover | |



LV22183 —UN—19AUG14



LV14669 —UN—18AUG11



LV14670 —UN—19AUG11

JZ81662,000134C -19-25JUN14-1/1

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 -19-12JUN15-1/1

Exhaust Filter Cleaning

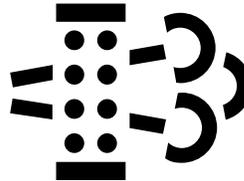
IMPORTANT: Refer to the “Operate Engine” section of the OM for exhaust filter cleaning directions.

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.

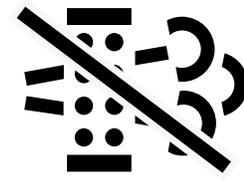
IMPORTANT: The area above and surrounding the engine during a manual exhaust filter cleaning should be free of any flammable objects as temperatures can reach as high as 550 °C (1022 °F).

H94828 —UN—13OCT09



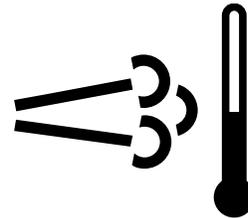
Exhaust Filter Cleaning is Needed

LV14784 —UN—16SEP11



Exhaust Filter Cleaning is Disabled

H94829 —UN—13OCT09



Emission System Temperature is High or Exhaust Filter Cleaning is Underway

JZ81662,0000F5D -19-28NOV12-1/1

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 -19-18SEP19-1/1

Adjust PTO Speed Shift Lever—Open Operator's Station

Have your John Deere dealer check and adjust PTO speed shift lever.

JZ81662,0000F61 -19-10JAN14-1/1

Adjust PTO Speed Shift Lever—Cab

Have your John Deere dealer check and adjust PTO speed shift lever.

JZ81662,0000F62 -19-28NOV12-1/1

Adjust Hand Throttle Friction Linkage

Have your John Deere dealer check and adjust hand throttle friction linkage.

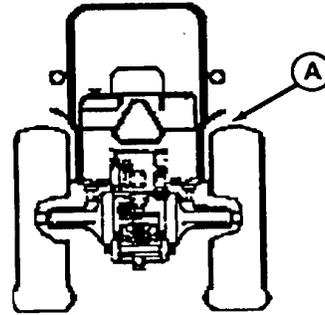
JZ81662,0000F63 -19-28NOV12-1/1

Adjust Rear Fender—Open Operator's Station

IMPORTANT: Tires must have at least 25 mm (1 in.) clearance with fenders (A). When large diameter rear tires are installed, check clearance between tire and fenders.

Have your John Deere dealer check and adjust rear fender.

A—Rear Wheel to Fender Clearance



JZ81662,0000F65 -19-10JAN14-1/1

M47179 —UN—31JAN92

Service Air Conditioner—If Equipped

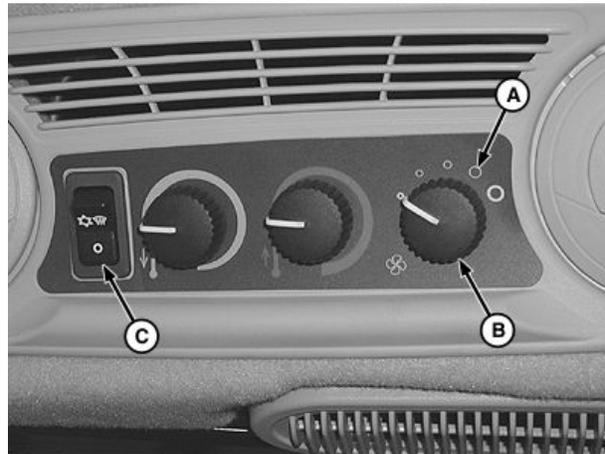
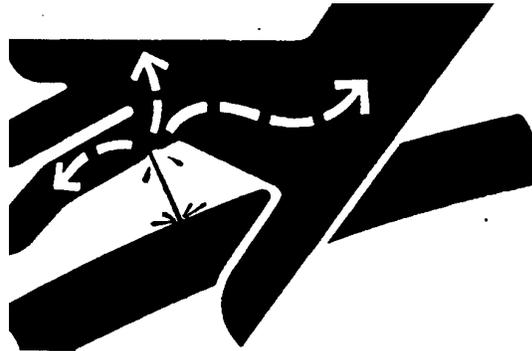
Check the following if air conditioner will not cool, or if cooling is intermittent:

CAUTION: Refrigerant is 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, on the lower front, is normal.

1. If air conditioner clutch slips after tractor has been in storage, compressor may be stuck.
 - a. Place tractor in PARK position and SHUT OFF engine. Remove key.
 - b. Raise hood and remove fan belt. (Refer to Replace Fan Belt in this section.)
 - c. Rotate clutch hub back and forth to free compressor.
 - d. Install fan belt and lower hood. (Refer to Replace Fan Belt in this section.)
2. Run engine at 2000 rpm. Push top half of A/C and defog switch (C) and set blower control knob (B) to HIGH position (A). If cooling is intermittent, clean front grille, radiator, and condenser. (See Clean Grille Screens, Radiator, Oil Cooler—If Equipped in this section. If problem is not solved, see your John Deere dealer.)
3. Inspect operator enclosure (cab) filters for restriction. Clean filters. (See Clean Cab Air Filters—If Equipped



A—High Position
B—Blower Control Knob

C—A/C and Defrost Switch

in this section.) If problem persists, see your John Deere dealer to have evaporator core cleaned.

JZ81662,0001350 -19-18JUN14-1/1

X9811 —UN—23AUG88

LV8577 —UN—14AUG03

Clean and Check Battery Condition

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

Avoid the hazard by:

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

If you spill acid on yourself:

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

If acid is swallowed:

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



Continued on next page

JZ81662,000052D -19-07FEB12-1/2

TS203 —UN—23AUG88

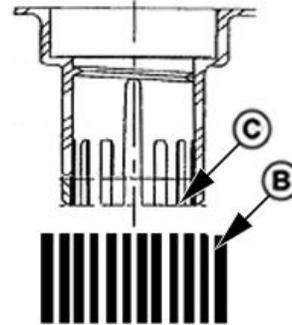
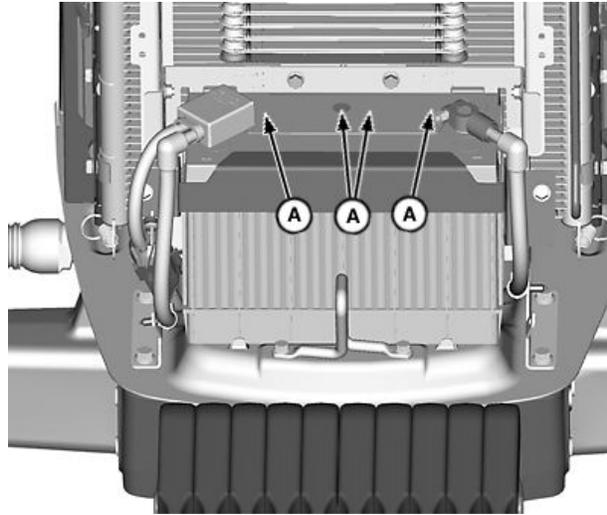
1. Check level of electrolyte in each cell (A) at least every 300 hours. Ensure that every cell has fluid level HIGHER than top of plates. Only use CLEAN, SOFT water to fill up electrolyte level.

IMPORTANT: DO NOT add water in freezing weather unless tractor will be run at least 30 minutes to assure thorough mixing.

2. 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.
3. 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). Corrected specific gravity of a fully charged battery is from 1.265 to 1.280.
4. A battery is considered fully charged when three consecutive hydrometer readings, taken at hourly intervals, show no rise in specific gravity.
5. Wipe battery with a damp cloth. Clean and tighten connections if needed.
6. Coat terminals with a small amount of grease.

A—Cell
B—Plates

C—Electrolyte Level



LV14424—UN—13JUN11

PULV000655—UN—05MAY08

JZ81662,000052D -19-07FEB12-2/2

Clean Cab Air Filters—If Equipped

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.

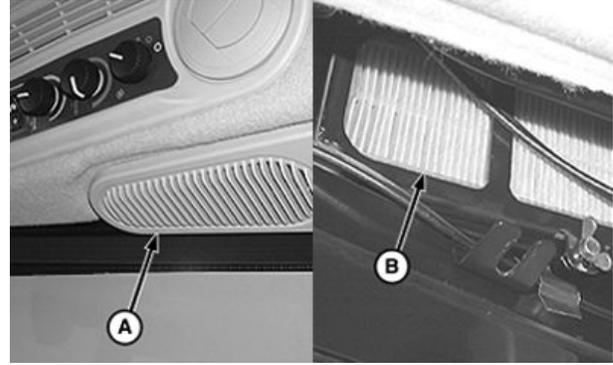
Remove filter covers (A) and filters (B). Clean filters with compressed air. Cleaning filters may be required more often in dusty conditions.

NOTE: A fresh air intake filter is located above each cab door, under roof.

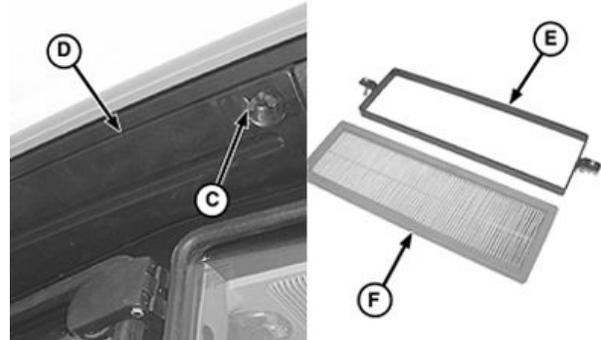
Remove screws (C), filter cover (D), retainer plate (E) and filter (F). Clean filters with compressed air. Inspect filters for damage. Replace as necessary.

A—Filter Cover—Upper Right Side Shown (Left Side Similar)
B—Recirculated Air Filters
C—Screws (2 used)

D—Filter Cover
E—Retainer Plate (2 used)
F—Fresh Air Filter (2 used)



Under Cab Headliner



Under Roof

PULV000657—UN—05MAY08

PULV000658—UN—05MAY08

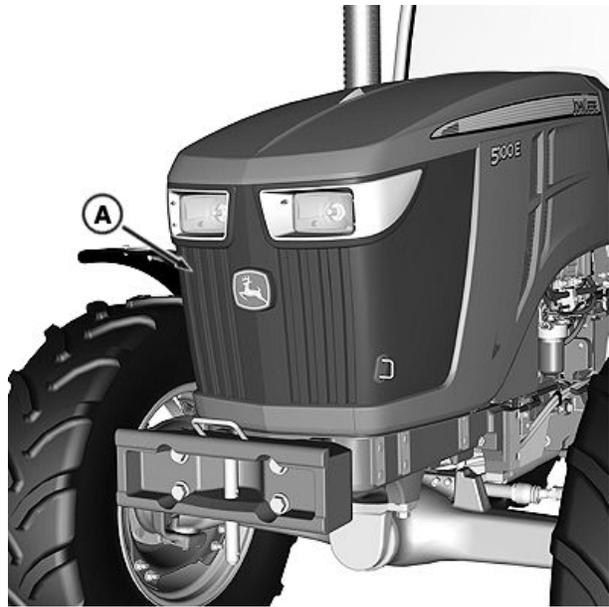
JZ81662.000052E -19-07FEB12-1/1

Clean Grille Screens, Radiator, Oil Cooler, Air Conditioning Screen (If Equipped), and Air Conditioning Condenser (Cab)

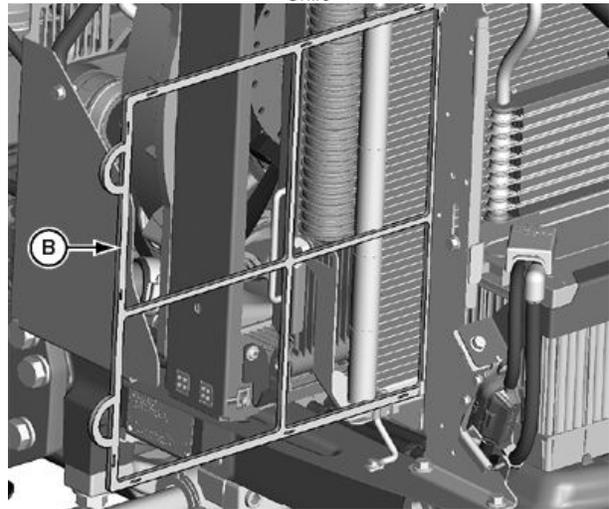
1. When trash builds up on front grille (A), stop engine and brush clean.
2. Raise hood. Remove and clean air conditioning condenser screen (B) using a brush or compressed air. Air conditioning condenser screen is removed by sliding out right-hand side of engine compartment.

A—Grille

B—Air Conditioning
Condenser Screen (Cab)



Grille



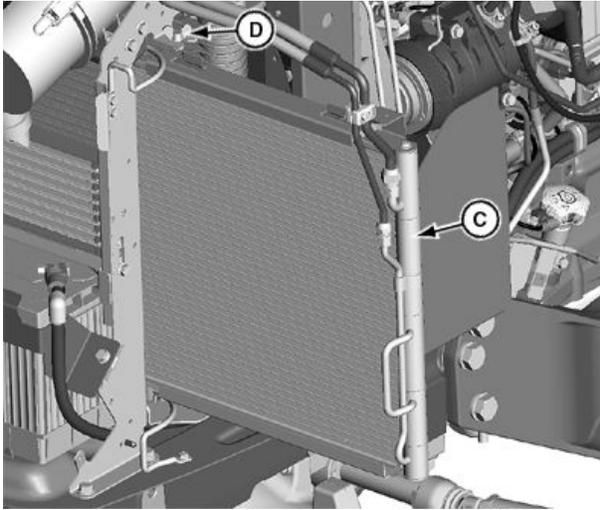
Air Conditioning Condenser Screen

RXA0146180—UN—11NOV14

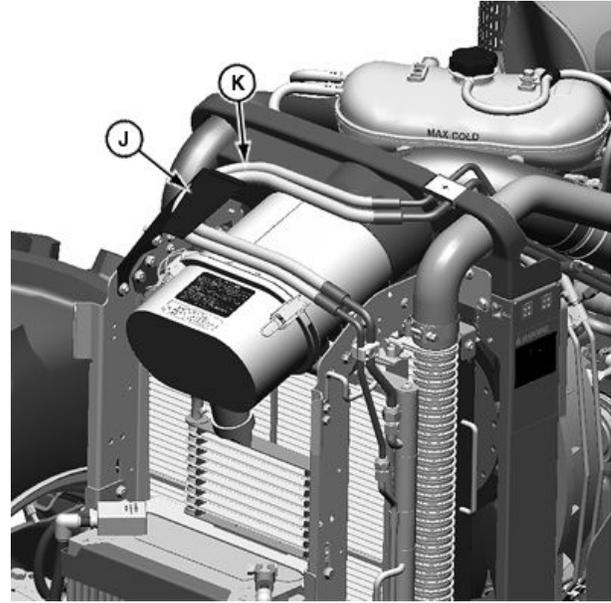
LV22185—UN—20JUN14

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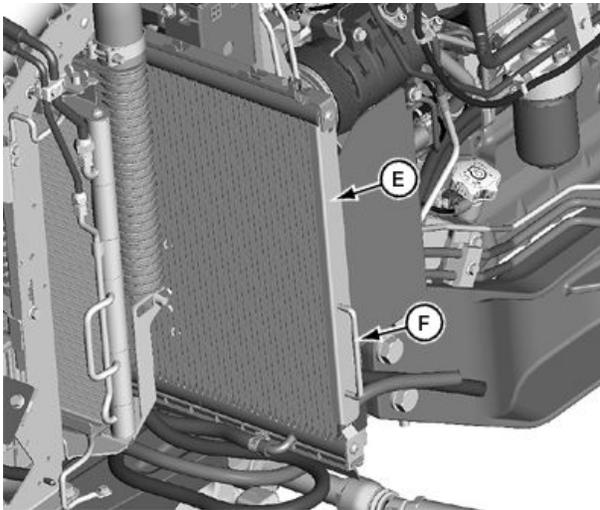
GS25068,0001454 -19-07NOV14-1/3



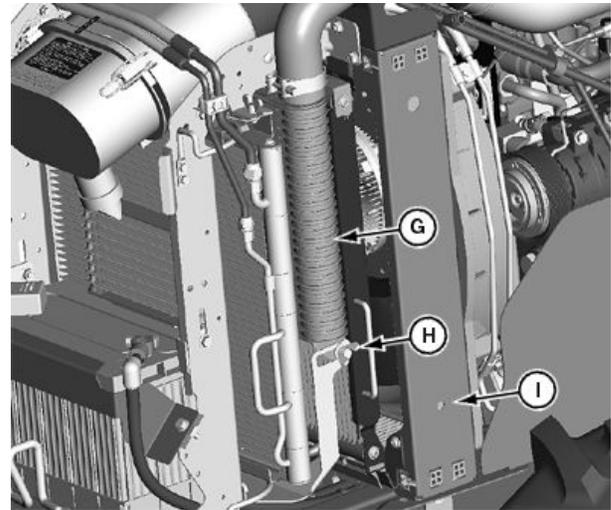
Air Conditioning Condenser (if equipped)



AC Hoses



Oil Cooler



Charge Air Cooler and Radiator

- C—Air Conditioning Condenser (if equipped) (Cab)
- D—Wing Nut (Air Conditioning Condenser)
- E—Oil Cooler
- F—Handle (oil cooler)
- G—Charge Air Cooler

- H—Wing Nut (charge air cooler)
- I—Radiator
- J—Hose Guard
- K—Air Conditioning Hose

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.

3. Inspect air conditioning condenser (C) (cab), oil cooler (E), charge air cooler (G), and radiator (I) for debris. Clean using a brush or compressed air.

- If a more thorough cleaning is required, air conditioning condenser and oil cooler slide out of position for easier access.
4. **Air Conditioning Condenser:** Loosen wing nut (D) and slide air conditioning condenser from left-hand side of engine compartment. Clean as needed.

NOTE: To prevent unnecessary wear to air conditioning hoses, ensure that they are under the hose guard after sliding air conditioning condenser back into its operating position.

Continued on next page

GS25068,0001454 -19-07NOV14-2/3

5. Slide air conditioning condenser back into place. Ensure that air conditioning hoses (K) are secured under hose guard (J).

NOTE: Oil cooler slides out, approximately, half way from either side of the tractor.

6. **Oil Cooler:** Pull firmly on handle (F) to slide oil cooler from side of engine compartment.
7. Loosen wing nut (H) to pivot charge air cooler towards front of tractor. With oil cooler slid out, radiator and charge air cooler are accessible for cleaning.

8. Straighten any bent fins.
9. Push air conditioning condenser, oil cooler, and charge air cooler back into position.
10. To secure, tighten wing nuts. Ensure that oil cooler snaps securely into mounting clips.

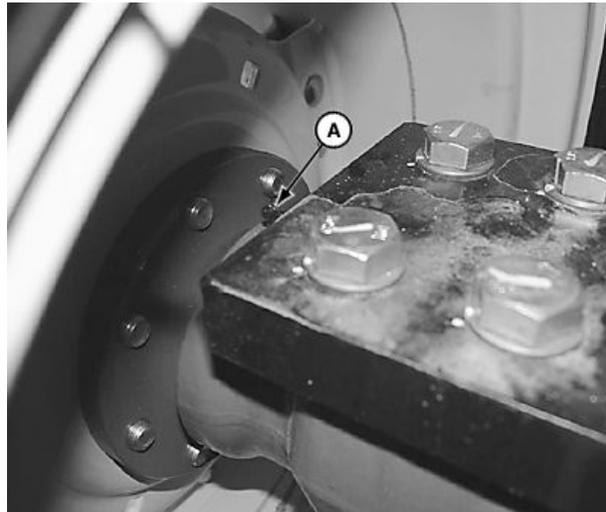
GS25068,0001454 -19-07NOV14-3/3

Lubricate Rear Axle Bearings

Lubricate rear axle grease point (A) with several shots of multipurpose grease. (See Grease in "Fuel, Lubricants, and Coolant" section.)

NOTE: Service more often if operated in wet and muddy conditions.

A—Grease Point



Left Side Shown

LV14653—UN—17AUG11

JZ81662,0001361 -19-27AUG14-1/1

Drain and Flush Fuel Tank

Ask your John Deere dealer to drain and flush fuel tank.

JZ81662,0000534 -19-07FEB12-1/1

Keep ROPS Installed Properly

CAUTION: Make certain all parts are installed correctly if roll over protective structure (ROPS) is loosened or removed for any reason. Replace and tighten mounting cap screws to specification.

If ROPS is subjected to structural damage, as in an overturn incident, the protection a ROPS offers is impaired. Protection is also impaired if ROPS is in any way altered via welding, bending, drilling, or cutting. Replace damaged ROPS, do not reuse. Any alteration to the ROPS requires approval by the manufacturer.

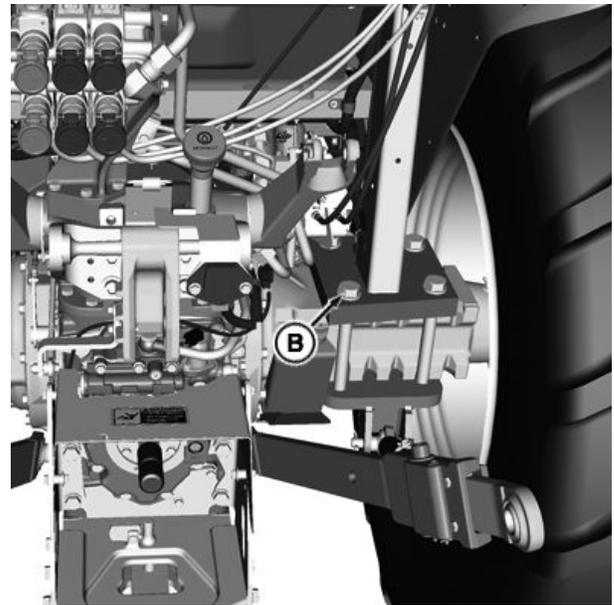
When installation of equipment on a machine necessitates loosening or removing rollover protective structure (ROPS) (A), replace and tighten mounting cap screws (B) to specification.

Specification

ROPS Mounting Cap
Screws—Torque.....365 N·m
(284 lb.-ft.)

A—ROPS Crossbar

B—Mounting Cap Screws (8 used)



OOS Shown

JZ81662,0001362 -19-20JAN15-1/1

LV14680 —UN—24AUG11

RXA0146929 —UN—26JAN15

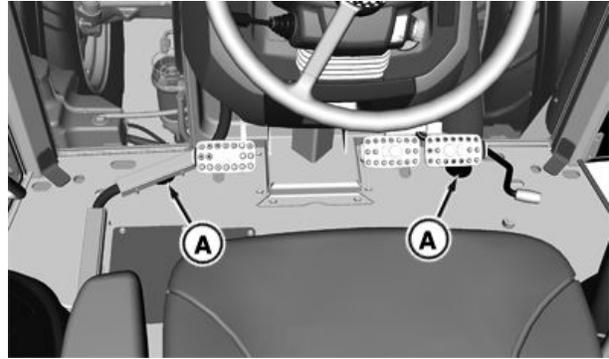
Keep Cab Protection System Installed Properly

CAUTION: Make certain all parts are installed correctly if cab protection system is loosened or removed for any reason. Replace and 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, replace and tighten mounting cap screws to specification.

Lift up rubber floor mat and pry out plugs (A) to access front mounting hardware. Move cab chassis harness to access left-side plug.



Plugs—Front Mount

A—Plugs (2 used)

RXA0146930 —UN—26JAN15

Continued on next page

GS25068,00016B1 -19-21JAN15-1/2

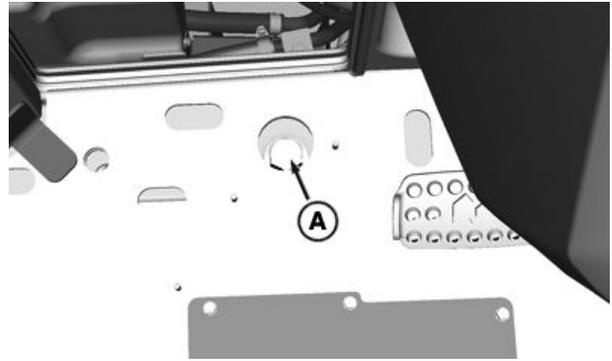
Check front and rear mounting hardware (A—D) for proper torque.

Specification

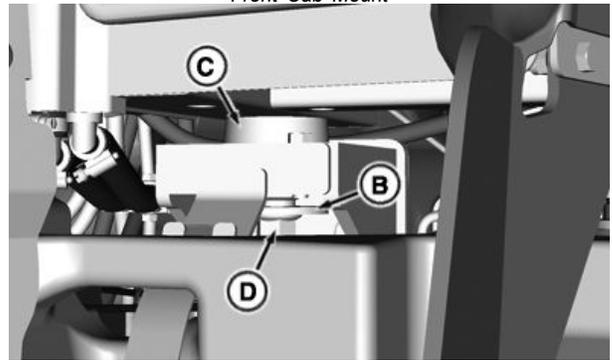
Cab Protection	
System Mounting Cap	
Screws—Front—Torque.....	350 N·m (284 lb-ft)
Cab Protection	
System Mounting Cap	
Screws—Rear—Torque.....	220 N·m (162 lb-ft)

A—Cap Screws (4 used)
B—Washers (6 used)

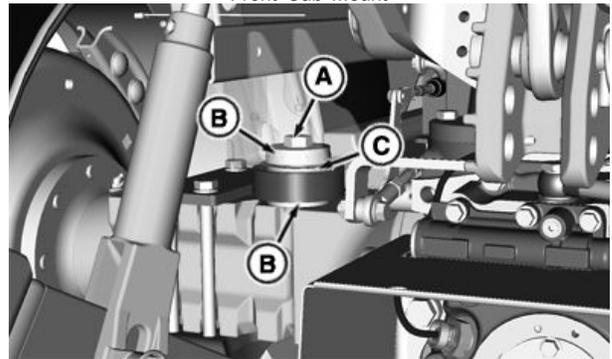
C—Isolators (4 used)
D—Nuts (2 used)



Front Cab Mount



Front Cab Mount



Rear Cab Mount

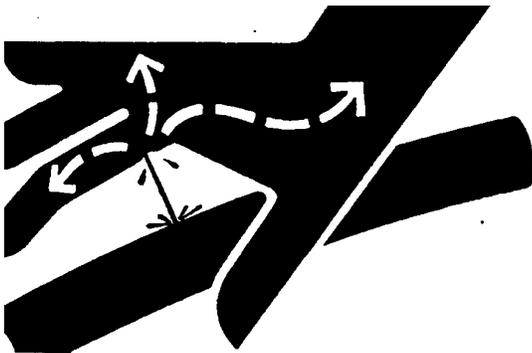
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RXA0146932 —UN—27JAN15

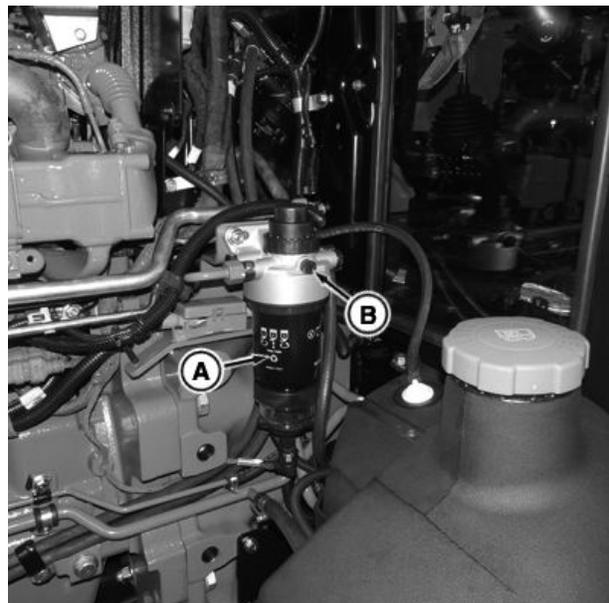
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GS25068,00016B1 -19-21JAN15-2/2

Bleed Fuel System



X9811 —UN—23AUG88



Primary Fuel Filter

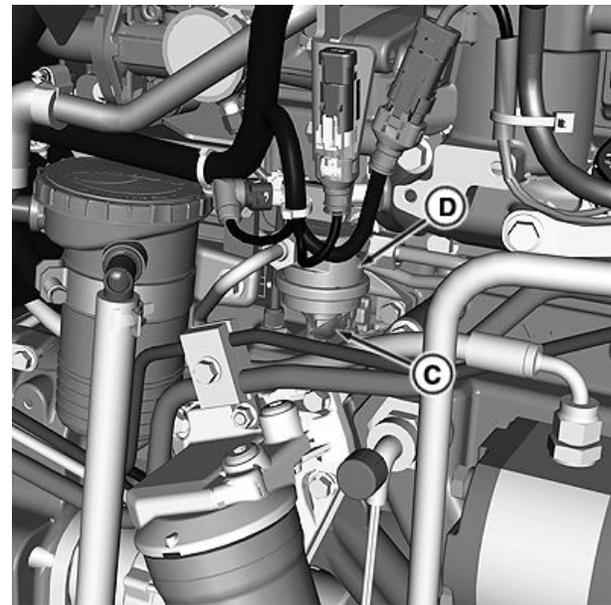
RXA0146345 —UN—25NOV14

CAUTION: Escaping fluid under pressure has the potential to 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 is possible. Doctors unfamiliar with this type of injury must reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 18008228262 or +1 3097485636.

IMPORTANT: To avoid injection pump damage, **DO NOT** attempt to start the engine while bleeding the fuel system.

1. Park tractor on level ground and shut off engine. Remove key.
2. Check fuel level. Add if necessary.
3. Raise hood and locate primary fuel filter (A) on left-hand side of tractor.
4. Loosen filter housing bleed screw (B).
5. Push priming mechanism (C) at transfer pump (D) on right-hand side of tractor until fuel runs out smoothly from bleed screw without spitting. Tighten bleed screw.
6. Lower hood.



RXA0146344 —UN—13NOV14

A—Primary Fuel Filter C—Priming Mechanism
B—Filter Housing Bleed Screw D—Transfer Pump

NOTE: Capture the discharge waste and dispose of properly.

GS25068,0001484 -19-13NOV14-1/1

Replace Battery

1. Raise hood.

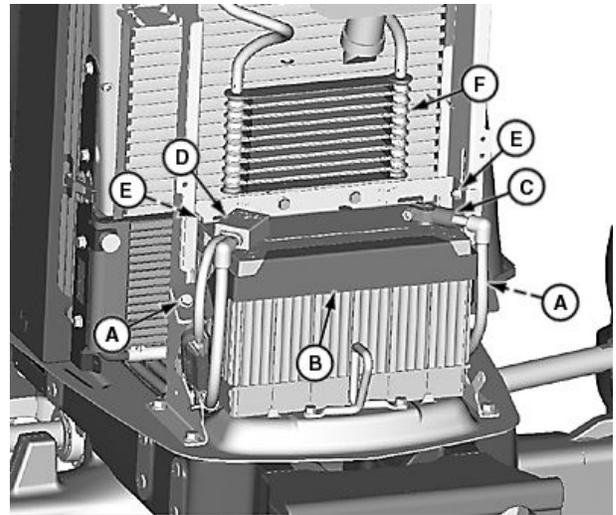
CAUTION: To avoid sparks, disconnect negative (ground) cable first and connect it last.

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.

2. Remove nut and disconnect negative (ground) battery cable (C).
3. Remove nut and disconnect positive cable (D).
4. Remove cap screws (A) and battery hold-down (B).
5. Loosen fuel cooler support cap screws (E).
6. Slide fuel cooler (F) up and tighten cap screws, securing the fuel cooler in the upper slot position.
7. Remove battery.
8. When replacing battery, use John Deere battery or equivalent. (See your John Deere dealer.)

Specification

Battery—Volts.....	12 Volts
BCI Group.....	31
Cold Cranking Amps (CCA) at —18°C (0°F).....	925



A—Cap Screw (2 used)
B—Battery Hold-Down
C—Negative (—) Cable

D—Positive (+) Cable
E—Fuel Cooler Support Cap
Screw (2 used)
F—Fuel Cooler

9. Install battery in reverse order of removal.

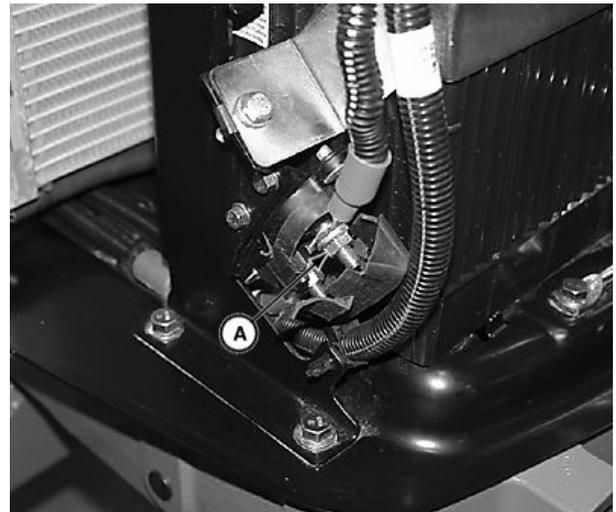
GS25068,0001461 -19-10NOV14-1/1

LV14822—UN—27SEP11

Locate Fusible Link

Electrical circuits are protected by a fusible link that is located along right side of battery.

A—Fusible Link



Fusible Link

JZ81662,0000539 -19-07FEB12-1/1

LV14690—UN—07SEP11

Locating Fuses

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

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, have the electrical system checked by your John Deere dealer.

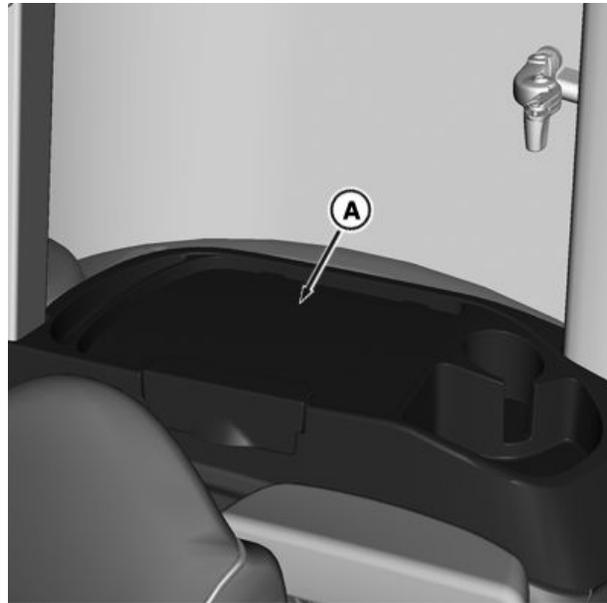
Cab

Remove left console cover (A) to access fuse and relay load center (B).

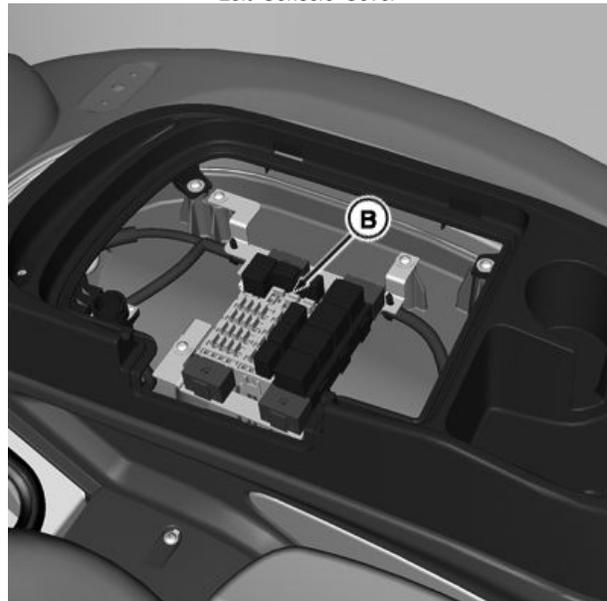
NOTE: A fuse and relay reference label is provided inside cover.

A—Left Console Cover

B—Fuse and Relay Load Center



Left Console Cover



Load Center

RXA0146934 —UN—26JAN15

RXA0146935 —UN—26JAN15

Continued on next page

GS25068,00016B2 -19-21JAN15-1/2

Open Operator Station

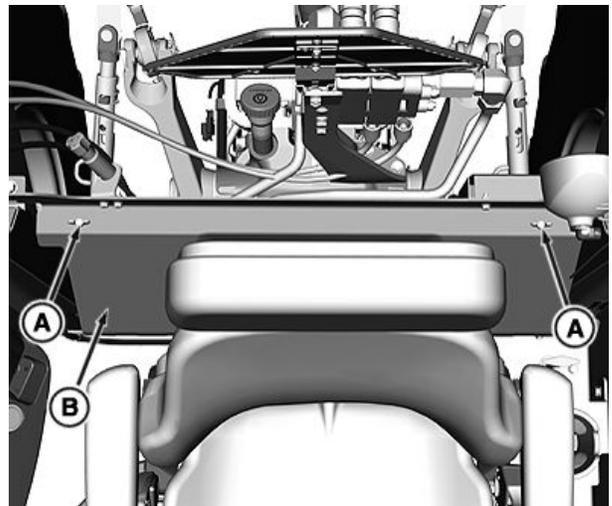
Remove wing nuts (A) and access panel (B).

Remove cover (C) to access main fuse and relay load center.

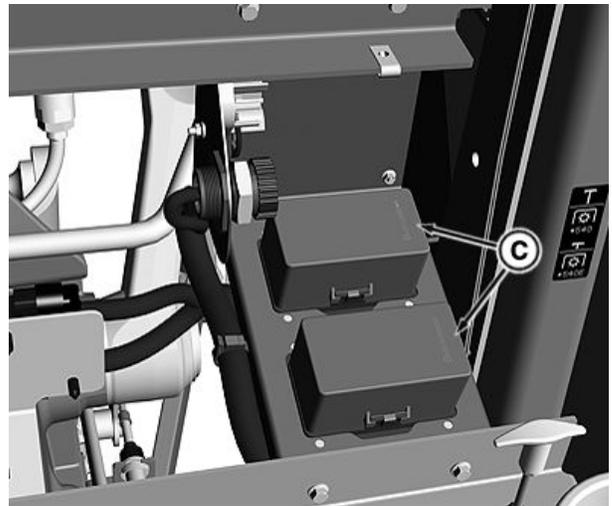
All electrical circuits are protected by fuses. Amperage rating is marked on each fuse, plus fuses are color coded to ensure proper replacement.

A— Wing Nuts
B— Access Panel

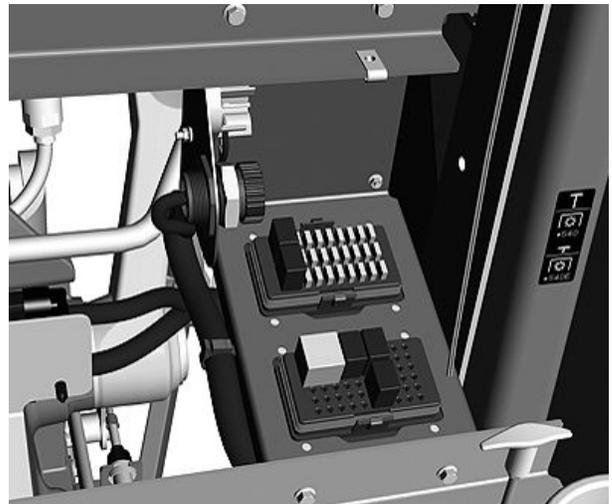
C— Cover



RXA0146181 —UN—13NOV14



RXA0146182 —UN—13NOV14



RXA0146183 —UN—13NOV14

Main Fuse and Relay Load Center (Left-Hand Side Behind Seat)

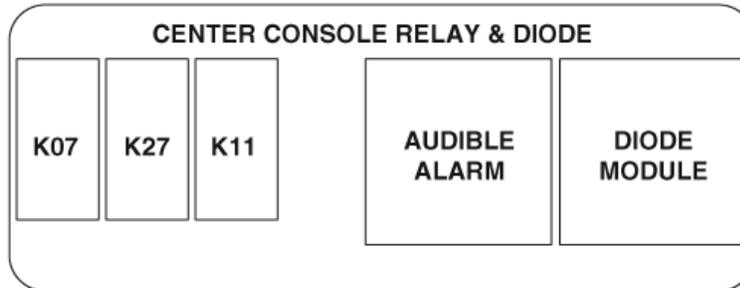
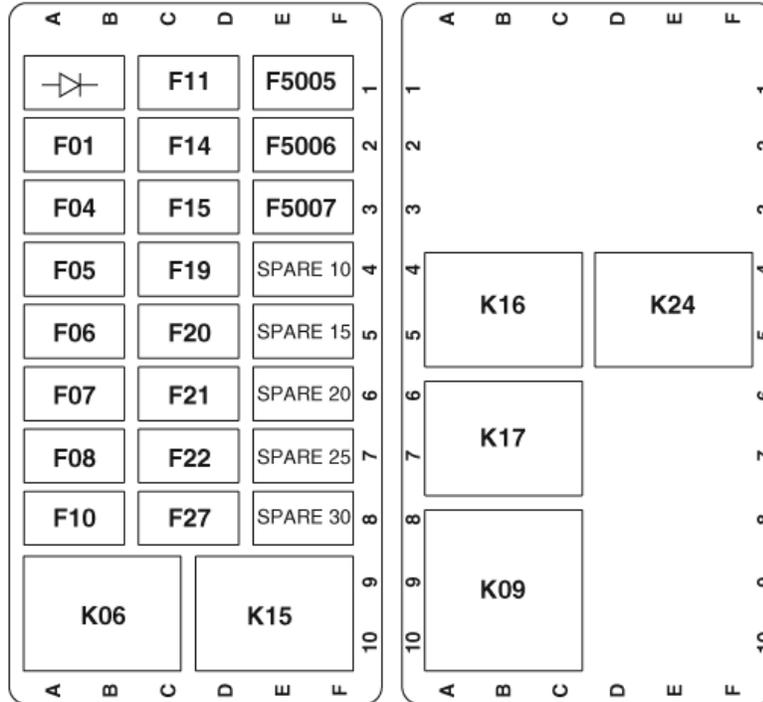
GS25068,00016B2 -19-21JAN15-2/2

Fuse and Relay Size and Function

Module, relay K07, relay K11, and relay K27, located in center console.

Open Operator Station

NOTE: OOS with PowrReverser™ Transmission or PowrReverser™ Plus Transmission—Diode



OOS with PowrReverser Transmission or PowrReverser Plus Transmission

- | | | | |
|---|---|---------------------------------|----------------------------------|
| F01— Key Switch Fuse (30A) | F11— Junction Block Switched Power Fuse (30A) | F22— Horn Fuse (10A) | K15— EH System Power |
| F04— Light Switch Fuse (20A) | F14— Front Work Light Fuse (30A) | F27— Backup Alarm Fuse (5A) | K16— Not Neutral Relay |
| F05— Headlight Fuse (15A) | F15— Tail Lamp Light Fuse (15A) | F5005—ECU Power Fuse (25A) | K17— Transmission Enable Relay |
| F06— Junction Block Unswitched Power Fuse (30A) | F18— ELX Fuse (10A) | F5006—ECU Power Fuse (25A) | K24— Forward High Relay |
| F07— Instrument Cluster Fuse (20A) | F19— Transmission Controller Fuse (10A) | F5007—ECU Power Fuse (25A) | K25— Mid-Mount SCV Retract Relay |
| F08— Instrument Cluster Fuse (20A) | F20— CCU Sensor Fuse (10A) | K06— Implement Power Relay | K26— Mid-Mount SCV Extend Relay |
| F10— Implement Power Fuse (20A) | F21— Transmission Controller Fuse (10A) | K07— Accessory Controller Relay | K27— Headlight Relay |
| | | K09— Front Work Lamp Relay | |
| | | K11— Neutral Relay | |

PowrReverser is a trademark of Deere & Company

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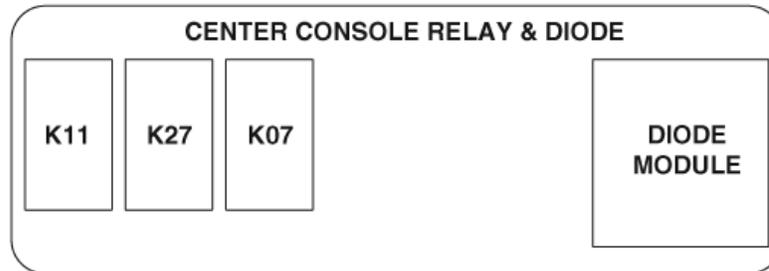
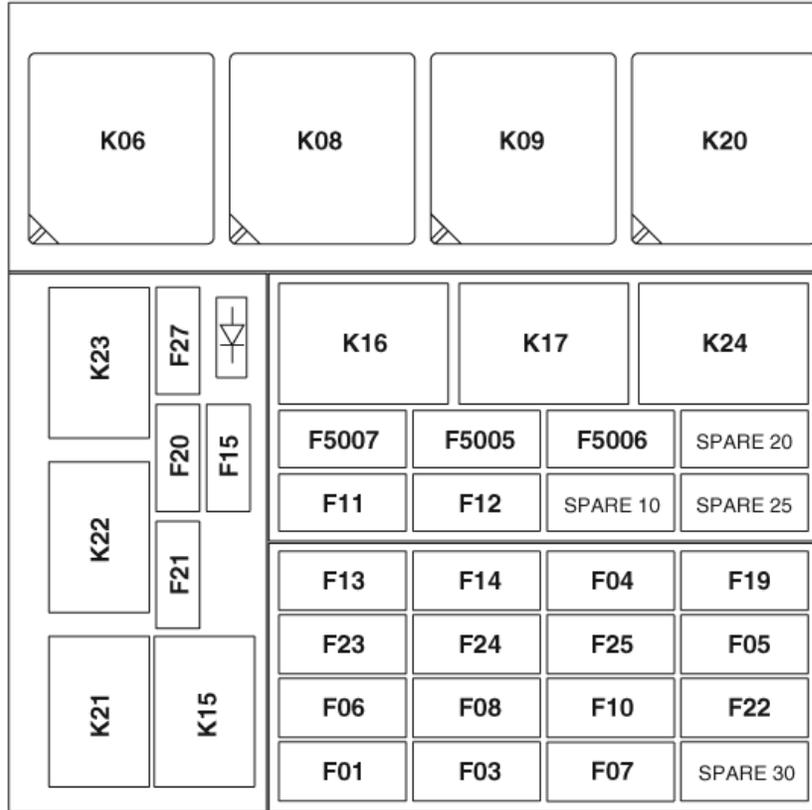
GS25068,0001462 -19-10NOV14-1/3

RXA0146330—UN—11NOV14

Cab

Module, relay K07, relay K11, and relay K27 are located in center console.

NOTE: Cab with PowrReverser™ Transmission or PowrReverser™ Plus Transmission—Diode



Cab with PowrReverser or PowrReverser Plus Transmission

RXA0146184 —UN—11NOV14

F01— Key Switch Fuse (30A)	F14— Front Work Lamp Fuse (30A)	F35— Backup Alarm and Air Seat Fuse (30A)	K10— Accessory Power Relay 2
F03— Dome Light Fuse (10A)	F15— Tail Lamp Fuse (15A)	F36— Monitor and Position Receiver Fuse (10A)	K11— Neutral Relay
F04— Light Switch Fuse (20A)	F18— ELX Fuse (10A)	F37— Monitor and Position Receiver Fuse (10A)	K15— EH System Power
F05— Headlight Fuse (15A)	F19— Transmission Controller Fuse (10A)	F38— ATU Fuse (10A)	K16— Not Neutral Relay
F06— Junction Block Unswitched Power Fuse (30A)	F20— CCU Sensor Fuse (10A)	F5005—ECU Power Fuse (25A)	K17— Transmission Enable Relay
F07— Instrument Cluster Fuse (20A)	F21— Transmission Controller Fuse (10A)	F5006—ECU Power Fuse (25A)	K20— HVAC Relay
F08— Instrument Cluster Fuse (20A)	F23— HVAC Relay-Right Blower Relay Fuse (30A)	F5007—ECU Power Fuse (25A)	K21— Wiper Relay
F10— Implement Power Fuse (30A)	F24— Wiper Relay Fuse (20A)	K06— Implement Power Relay	K22— Left Blower Relay
F11— Junction Block Switched Power Fuse (30A)	F25— Left Blower Relay Fuse (20A)	K07— Accessory Power Relay	K23— Right Blower Relay
F12— Radio Fuse (10A)	F27— Backup Alarm Fuse (5A)	K08— Rear Work Lamp Relay	K24— Forward High Relay
F13— Rear Work Lamp Fuse (30A)	F32— Subwoofer Fuse (10A)	K09— Front Work Lamp Relay	K25— Mid-Mount SCV Retract Relay
			K26— Mid-Mount SCV Extend Relay
			K27— Headlight Relay

PowrReverser is a trademark of Deere & Company

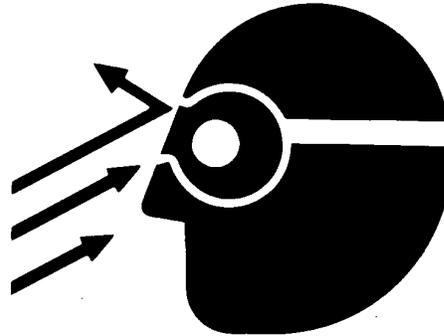
GS25068,0001462 -19-10NOV14-3/3

Handling Halogen Light Bulbs Safely

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 off light switch 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 reach of children.

A—Halogen Bulb



TS266—UN—23AUG88

H39474—UN—30JUN00

JZ81662,0000812 -19-09MAR12-1/1

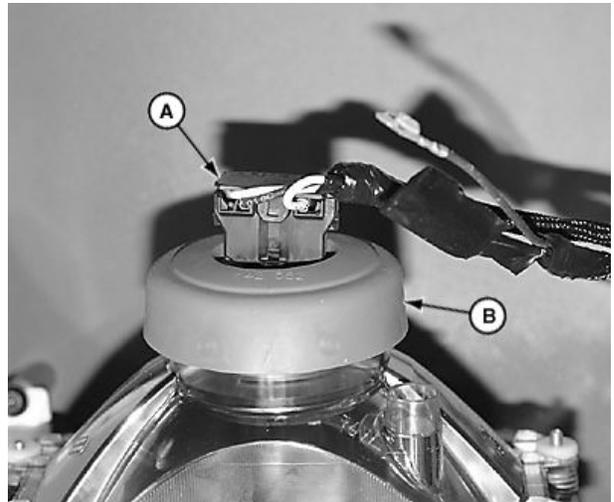
Replace Headlight Bulb

⚠ 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.)

1. Raise hood.
2. Disconnect wiring harness plug (A).
3. Remove dust boot (B).
4. Unlatch retaining spring (C) and remove light bulb (D).
5. Install new bulb in reverse order of removal.
6. Adjust headlights, if necessary.

A—Wiring Harness Plug
B—Dust Boot

C—Retaining Spring
D—Light Bulb



LV14699 —UN—25AUG11



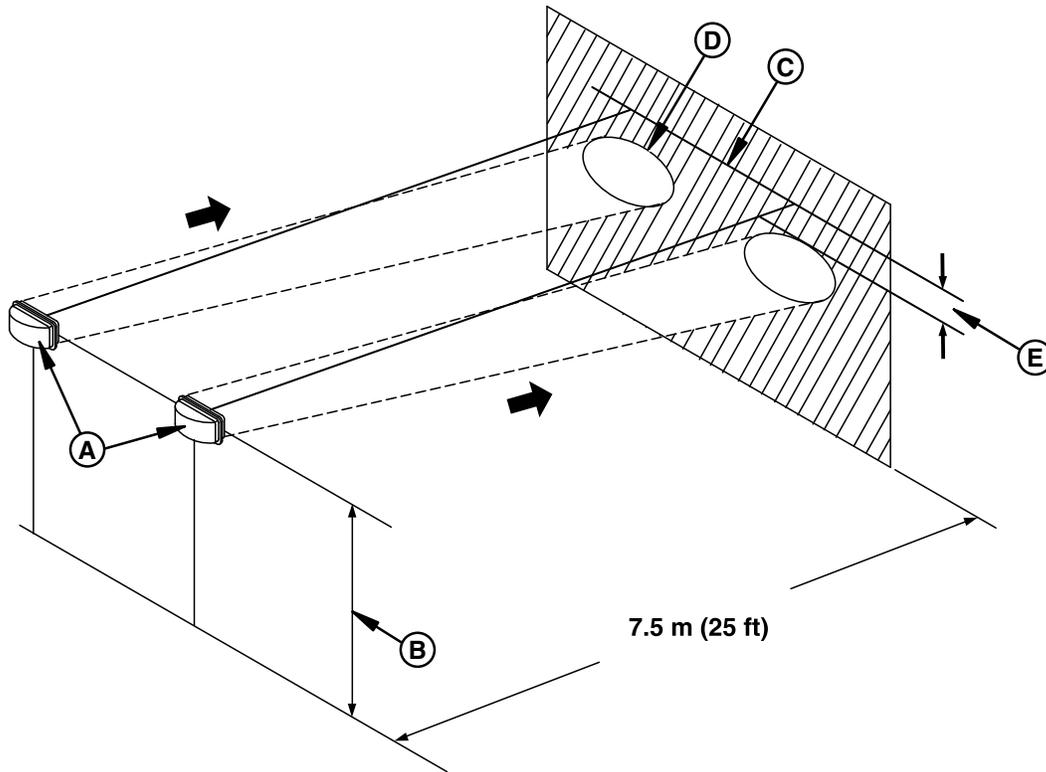
LV9511 —UN—01AUG04

LV9512 —UN—01AUG04

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JZ81662,000053F -19-07FEB12-1/2

Adjust Head Light



Headlight Aiming Diagram

A—Headlights **C—Horizontal Line on Wall** **E—10% of Distance (B)**
B—Distance from Center of **D—Border of Bright Area**

1. Park tractor on a level surface with headlights (A) 7.5 meters (25 ft) from a vertical wall.
2. Measure the distance (B) from the center of a headlight to the ground.
3. Mark a horizontal line (C) on the wall, the same distance from the ground as (B).
4. Set headlights on low beam and observe bright areas on the wall.
5. Use screws at the back of lights for adjustment.

JZ81662,000053F -19-07FEB12-2/2

PULV000659 —UN—05MAY08

Replacing Warning Light Bulb—Cab

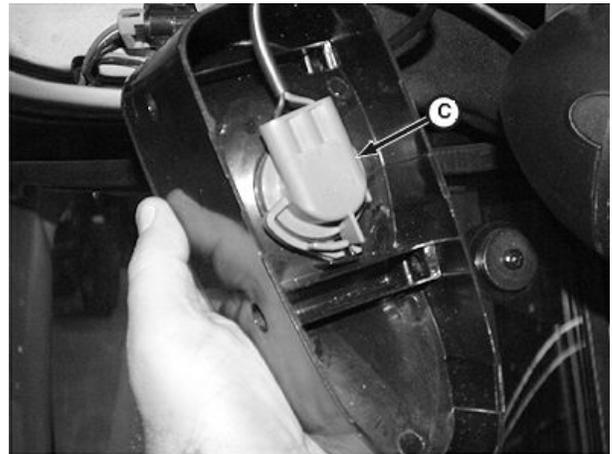
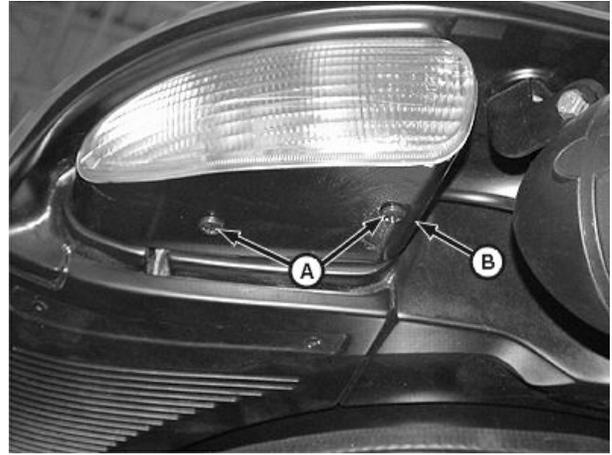
NOTE: Bulb replacement procedures for front and rear warning lights are the same. Rear left side shown.

1. Remove mounting screws (A) securing housing (B) to cab roof.
2. Remove bulb and socket (C) from housing.
3. Pull bulb from socket.
4. Install new bulb and socket into housing.

NOTE: If equipped with auxiliary work light kit: Apply thread lock and sealer (medium strength) to threads of mounting screws (A).

5. Install housing and screws to cab roof.

A—Mounting Screw (2 used) C—Bulb and Socket
B—Housing



LV5559—UN—29NOV00

LV5560—UN—29NOV00

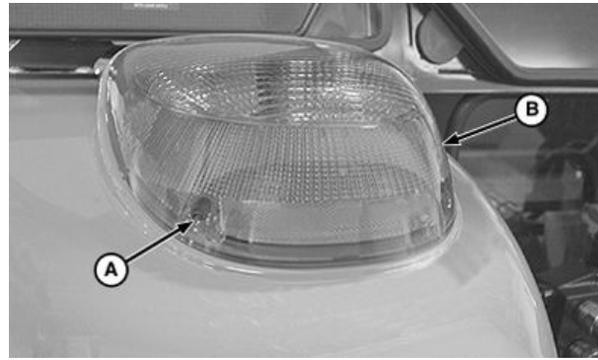
JZ81662,0000814 -19-10MAY12-1/1

Replacing Taillight Bulb—Cab

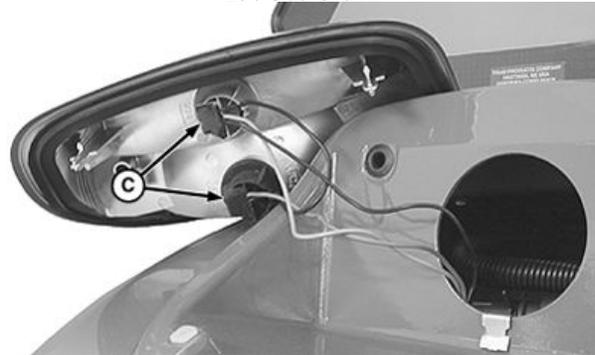
1. Remove screws (A).
2. Pull housing (B) away from fender.
3. Rotate socket (C) and remove from housing.
4. Pull bulb to remove from socket.
5. Install new bulb and socket in housing.
6. Install housing and screws to fender.

A—Screw (2 used)
B—Housing

C—Socket (2 used)



Left Side Shown



LV12531—UN—13APR05

LV12532—UN—13APR05

JZ81662,0000815 -19-10MAY12-1/1

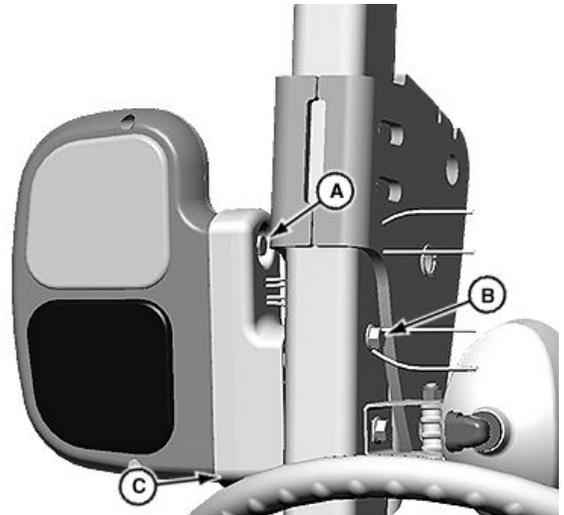
Replace Tail Light and/or Warning Light Bulb—Open Operator's Station

NOTE: Bulb replacement is the same for tail light and warning light. Left side shown.

1. Remove upper bolt (A) and lower bolt (B) securing tail light housing to offset bracket (C).
2. To access light bulbs and sockets, remove screws (D).
3. Push and twist bulb to remove from socket.
4. Install new bulb, lens housing, and screws.
5. Install tail light to bracket ensuring that wires are routed in wiring channel (E).
6. Install upper and lower bolts.

A—Upper Bolt
B—Lower Bolt
C—Offset Bracket

D—Screws (4 used)
E—Wiring Channel



LV22993 —UN—09SEP14



LV22998 —UN—09SEP14



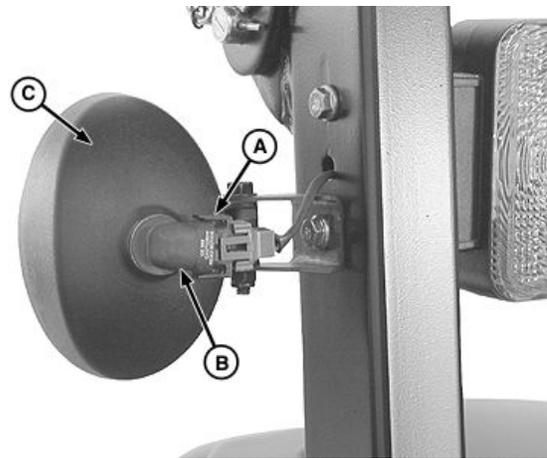
LV22999 —UN—09SEP14

GS25068,0001459 -19-10NOV14-1/1

Replace Work Light Bulb—Open Operator's Station

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

A—Wiring Harness Connector C—Housing
B—Bulb



Open Operator's Station

LV8585—UN—14AUG03

JZ81662,0000BD9 -19-10MAY12-1/1

Replacing Work Light Bulb

⚠ CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handling Halogen Light Bulbs Safely in this section.)

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

1. Remove screw cover by prying in screw cover slot (A) with a screwdriver.
2. Remove retaining ring screws (B), retaining ring (C) and bulb (E).
3. Disconnect wiring connectors (D).
4. Install new bulb and connect wiring connectors.
5. Install bulb, retaining ring and screws.
6. Install cover.

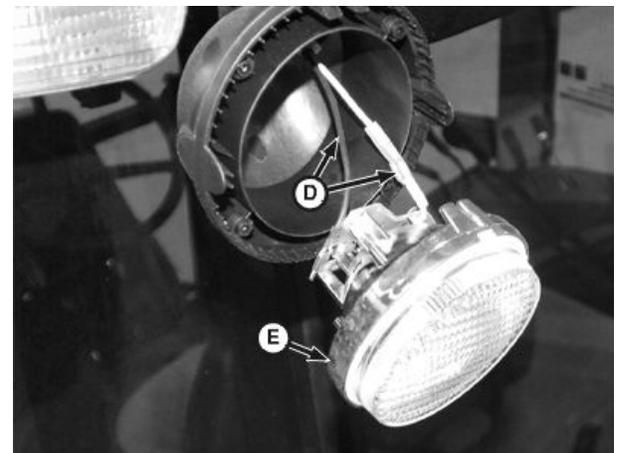
A—Screw Cover Slot D—Wiring Connector (2 used)
B—Retaining Ring Screw (4 used) E—Bulb
C—Retaining Ring



LV5569—UN—07DEC00



LV5570—UN—07DEC00



LV5571—UN—07DEC00

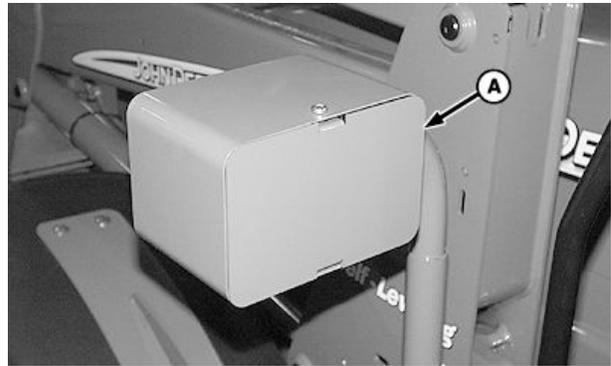
JZ81662,0000816 -19-09MAR12-1/1

Replacing Loader Light Bulb—If Equipped

⚠ CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handling Halogen Light Bulbs Safely in this section.)

1. Remove two screws and cover (A).

A—Cover



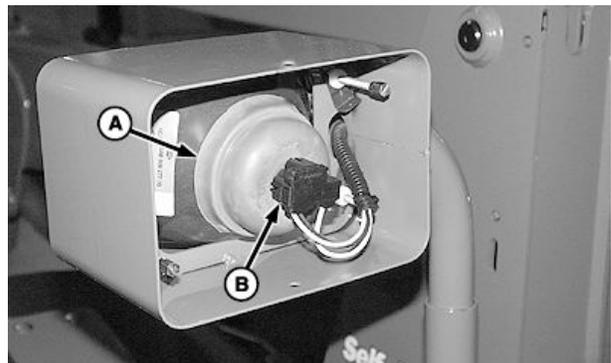
LV9548—UN—03AUG04

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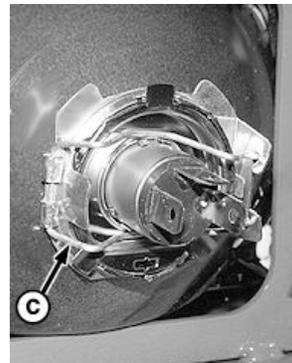
2. Disconnect wiring harness plug (B).
3. Remove dust boot (A).
4. Unlatch retaining spring (C) and remove light bulb (D).
5. Install new bulb in reverse order of removal.
6. Adjust, if necessary.

A—Dust Boot
B—Wiring Harness Plug

C—Retaining Spring
D—Light Bulb



LV9549—UN—03AUG04



LV9550—UN—03AUG04



LV9512—UN—01AUG04

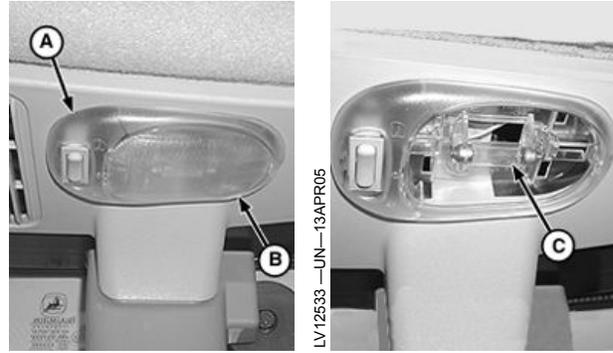
JZ81662.0000817 -19-09MAR12-2/2

Replacing Dome Light Bulb

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

A—Housing
B—Cover

C—Bulb



JZ81662,0000818 -19-09MAR12-1/1

Replacing Controls Illumination Light Bulb

1. Pry off panel (A).
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.

A—Panel

B—Light Bulb Retainer



JZ81662,0000819 -19-09MAR12-1/1

Replacing Rotary Beacon Light Bulb—If Equipped

⚠ CAUTION: Halogen bulbs contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. (See Handling Halogen Light Bulbs Safely in this section.)

1. Loosen wing nut (A) and remove rotary beacon light assembly.
2. Install rubber cap (B).

A—Wing Nut

B—Rubber Cap



LV12523 —UN—13APR05



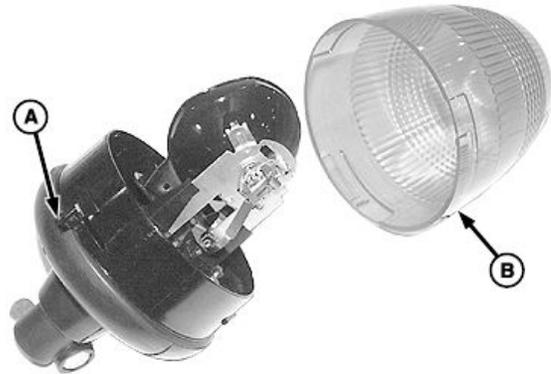
LV12524 —UN—13APR05

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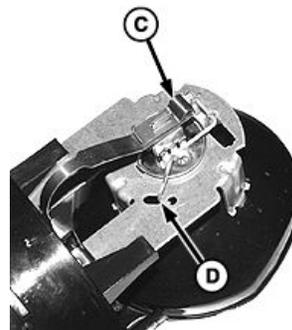
3. Depress tab (A) and rotate lens (B) counterclockwise to remove.
4. Pull tab (C) away from bulb.
5. Unlatch retaining spring (D) and remove light bulb (E).
6. Install new bulb in reverse order of removal.

A—Tab
B—Lens
C—Tab

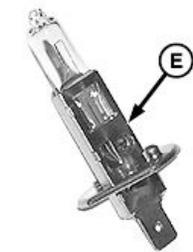
D—Retaining Spring
E—Bulb



LV9695 —UN—19AUG04



LV9696 —UN—19AUG04



LV9697 —UN—19AUG04

JZ81662,000081A -19-09MAR12-2/2

Maintenance—Every 10 Hours or Daily

Checking Engine Oil Level

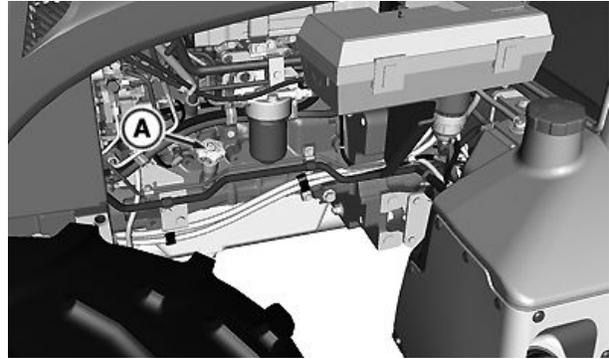
IMPORTANT: During the first 100 hours of operation, fill with John Deere DIESEL ENGINE BREAK-IN OIL. (See Fuel, Lubricants, and Coolant section for oil specifications.)

NOTE: Make sure to push dipstick all the way in to check oil level.

1. Park tractor on level ground, place transmission in park, turn off engine and 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 Fuel, Lubricants, and Coolant section.)

IMPORTANT: Do not operate engine with oil level below low mark on dipstick.

For any off level operation engine oil must be maintained at the FULL mark to avoid engine damage.



A—Engine Oil Filler
Cap/Dipstick

RXA0146068 —UN—27OCT14

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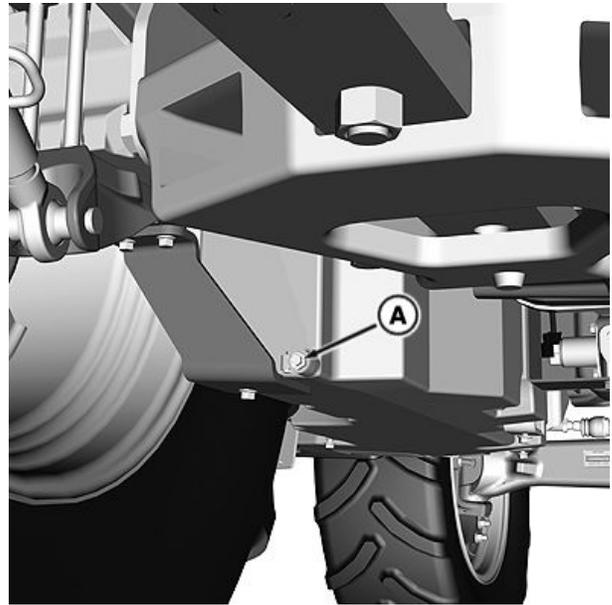
Drain Water and Sediment from Fuel Tank and Fuel Filter

NOTE: Place a small container under drain fitting to catch draining fuel. Dispose of waste properly.

1. Open fuel tank drain plug (A) to bleed accumulated moisture and sediment from the fuel tank. Tighten plug when clear fuel runs from fitting.
2. Open fuel filter/water separator drain (B) to bleed accumulated moisture and sediment from filter. Tighten drain when clear fuel runs from drain.

A—Fuel Tank Drain Plug

B—Fuel Filter/Water Separator Drain



RXA0146331 —UN—12NOV14



RXA0146332 —UN—25NOV14

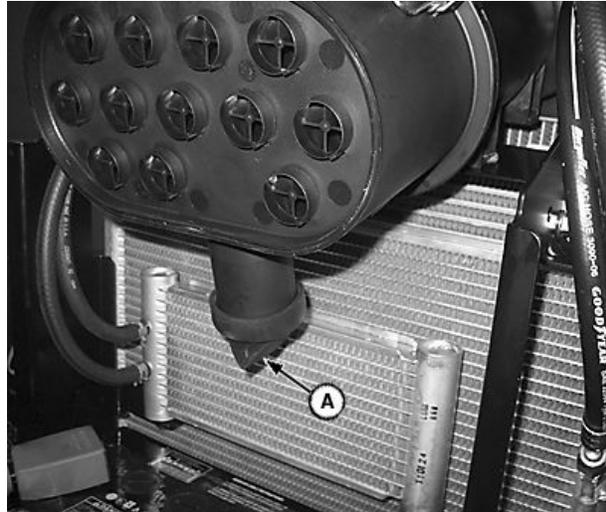
GS25068.0001464 -19-11NOV14-1/1

Cleaning Air Filter Dust Unloading Valve

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 Parking Safely in the Safety 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.

A—Dust Unloading Valve



LV14238—UN—10MAY11

JZ81662,00007BA -19-08MAR12-1/1

Maintenance—Every Week or 50 Hours

Inspecting Tires

1. Check tires daily for damage or noticeably low pressure.
2. Have any cuts or breaks repaired as soon as possible.
3. Protect tires from exposure to sunlight, petroleum products and chemicals.
4. Drive carefully. Try to avoid rocks and sharp objects.

IMPORTANT: Minimum pressures may be used only for light loads and only if tractor has

no added weight. If you install ballast or mounted implements, or if you pull heavy loads, increase pressure.

5. At least every week or 50 hours of operation, check tires with 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. (See Check Tire Inflation Pressure and Tire Inflation Pressure Charts in Wheels, Tires, and Treads section.)

GS25068,0001469 -19-11NOV14-1/1

Check Tire Inflation Pressure

Check tires daily for damage or noticeably low pressure.

At least every 50 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.

IMPORTANT: Always check inflation pressure with an accurate tire gauge to prevent over-inflation. Over-inflation reduces performance and increases strain of both tire and rim.

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

1. All inflation pressures are calculated for 29 km/h (18 mph) travel speeds for both diagonal (bias) ply and radial ply tires.
2. Operating tires at the inflation pressures listed on the chart will provide optimum tractive performance of the

tire/vehicle system. Correctly inflated radial tires will show a large deflection of the sidewall or “cheeks”. This is normal and will not damage the tire if the inflation pressure is maintained.

3. Regularly monitor inflation pressures less than 80 kPa (12 psi) because of the increased risk of low pressure air leaks (especially due to leaking valve cores).
4. When operating tractors on steep side slopes, increase inflation pressures 28 kPa (0.28 bar) (4 psi) above the values listed to compensate for lateral weight transfer.
5. Tires run in high traction conditions sometimes experience bead slip. Increasing the inflation pressure will compensate for this condition but will cause reduced traction. Consult your tire dealer if this problem occurs.
6. If higher load capacities are needed, contact your John Deere dealer for tire manufacturers load and inflation table information.

NOTE: For tire inflation pressure refer to Tire Inflation Pressure Charts in Wheels, Tires and Treads section.

JZ81662,0000551 -19-06FEB14-1/1

Checking Coolant Level

⚠ CAUTION: Avoid injury from hot, spraying fluid. Add make-up coolant through the coolant recovery tank, not directly to the radiator. If cap must be removed, do not remove when engine is hot. Shut engine off and wait until cap is cool enough to touch with bare hands. Slowly loosen cap to relieve pressure before removing completely.

IMPORTANT: Periodically check coolant level in radiator. If cap should become defective, coolant would not be drawn from recovery tank and could cause the engine to overheat. Replace cap as necessary.

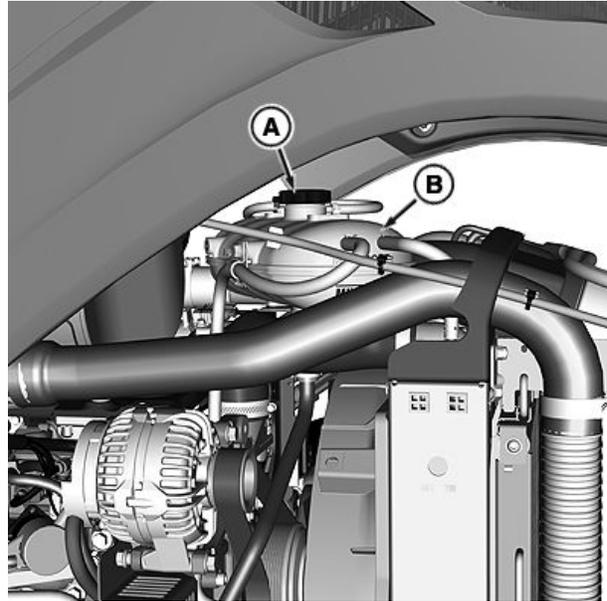
1. Raise hood and check level in coolant recovery tank (B), BEFORE starting tractor.

NOTE: Coolant level should be checked when engine is COOL.

2. If engine is COOL and level is below “MIN” mark, remove cap (A) and add coolant to recovery tank to bring level between “MIN” and “MAX” marks. (See Heavy Duty Diesel Engine Coolant in Fuel, Lubricants, and Coolant section.)
3. Install cap and lower hood.

A—Cap

B—Coolant Recovery Tank



TS281—UN—15APR13

RXA0146333—UN—12NOV14

GS25068,0001465 -19-11NOV14-1/1

Checking Transmission-Hydraulic System Oil Level

1. Operate engine at approximately 1000 rpm for at least one minute.
2. Stop engine and wait an additional three minutes before checking oil level.

NOTE: Tractor should be on level ground, hitch in the lowered position, engine stopped and transmission in park when checking oil level.

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.

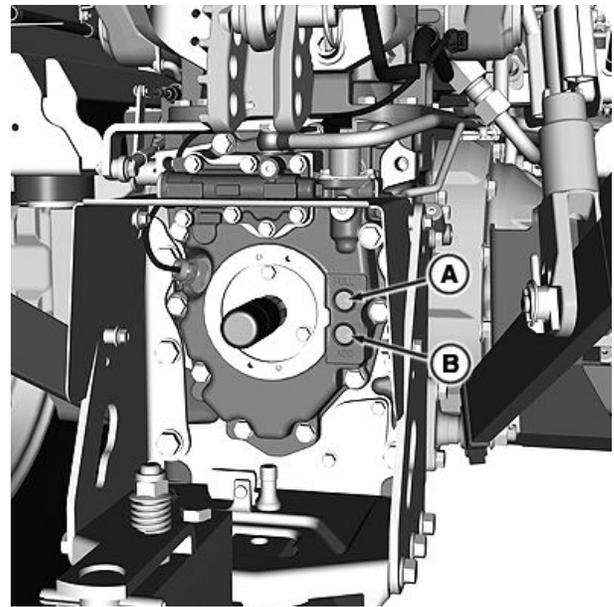
3. Observe oil level in sight glasses at rear of tractor. Oil level should appear at BOTTOM of sight glass (A).

IMPORTANT: Oil level below top sight glass can result in power loss and heat generation during transport.

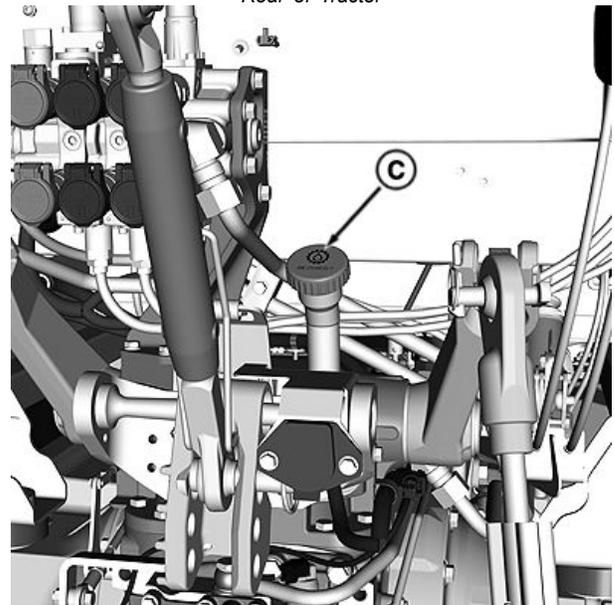
4. If oil level is at TOP of sight glass (B), remove filler cap (C) and add hydraulic oil. (See Transmission and Hydraulic Oil in Fuel, Lubricants, and Coolant section.)

A—FULL Sight Glass
B—ADD Sight Glass

C—Filler Cap



Rear of Tractor



GS25068,0001466 -19-11NOV14-1/1

RXA0146334 —UN—12NOV14

RXA0146335 —UN—12NOV14

Check MFWD for Oil Leaks

1. Check MFWD axle housing and MFWD axle wheel hub for leaks.
2. Make sure that no oil leaks from drain plug and fill port.

NOTE: If oil leaks replace drain plug and fill port.

If oil leaks in excess, see your John Deere Dealer.

JZ81662,00007BD -19-08MAR12-1/1

Checking MFWD Axle Housing Oil Level

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Remove oil level/filler plug (A). Oil level should be even with bottom of the filler plug hole.
3. If level is low, add oil through same hole. John Deere Hy-Gard™ oil is recommended. (See MFWD Axle Housing and Wheel Hub Oil in Fuel, Lubricants, and Coolant section.)

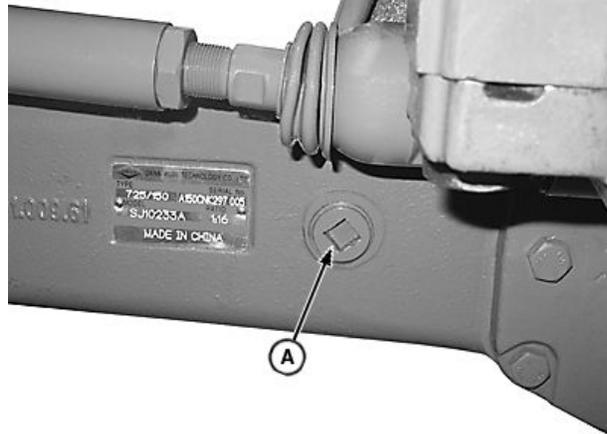
NOTE: Approximate MFWD axle housing oil capacity is 5 L (1.32 gal).

4. Apply thread sealant to threads of plug.
5. Install plug and tighten to specifications.

Specification

Plug to Axle
Housing—Torque.....70 N·m
(52 lb·ft)

Hy-Gard is a trademark of Deere & Company



A—Oil Level/Filler Plug

LV14247—UN—10MAY11

JZ81662,0000BEE -19-16MAY12-1/1

Checking MFWD Axle Wheel Hub Oil Level

1. Park tractor so that oil fill mark (A) on MFWD hub is level with the ground.
2. Remove filler plug (B). Oil level should be even with bottom of the filler plug hole.
3. If level is low, add oil through same hole. John Deere Hy-Gard™ oil is recommended. (See MFWD Axle Housing and Wheel Hub Oil in Fuel, Lubricants, and Coolant section.)

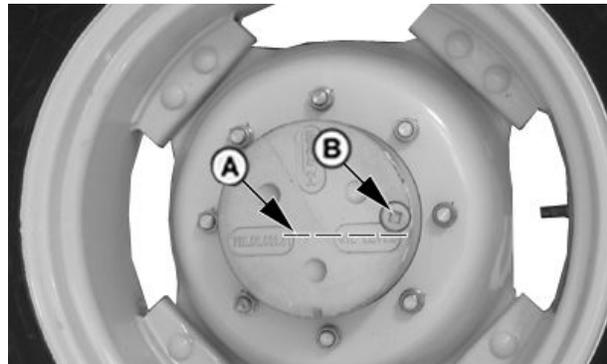
NOTE: Approximate MFWD wheel hub oil capacity is 0.8 L (0.2112 gal).

4. Apply thread sealant to threads of plug.
5. Install plug and tighten to specifications.

Specification

Plug-to-Hub—Torque.....70 N·m
(52 lb·ft)

Hy-Gard is a trademark of Deere & Company



Oil fill mark and filler plug

A—Oil fill mark

B—Oil filler plug

PULV00612—UN—19MAR08

JZ81662,0000BEF -19-16MAY12-1/1

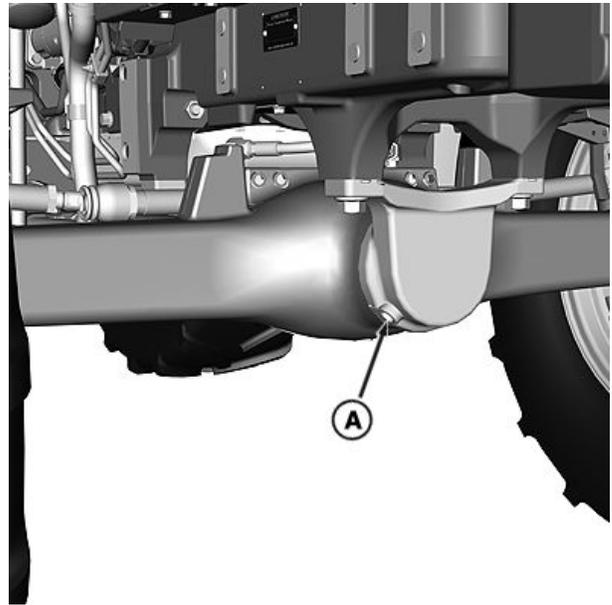
Lubricate MFWD Axle Trunnion

Apply several shots of multipurpose grease (see Grease, in Section 75) to trunnion.

NOTE: Daily service is necessary when operating in extremely wet and muddy conditions.

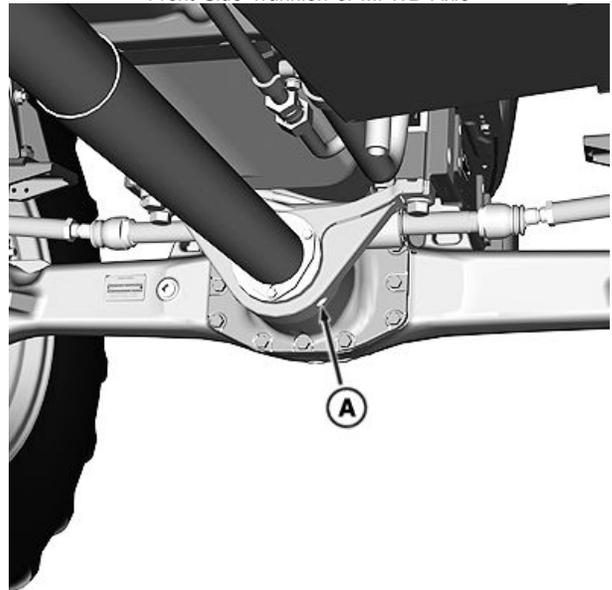
Greasing too frequently can cause seal fatigue.

A—Trunnion grease points



RXA0146336 —UN—12NOV14

Front Side Trunnion of MFWD Axle



RXA0146337 —UN—12NOV14

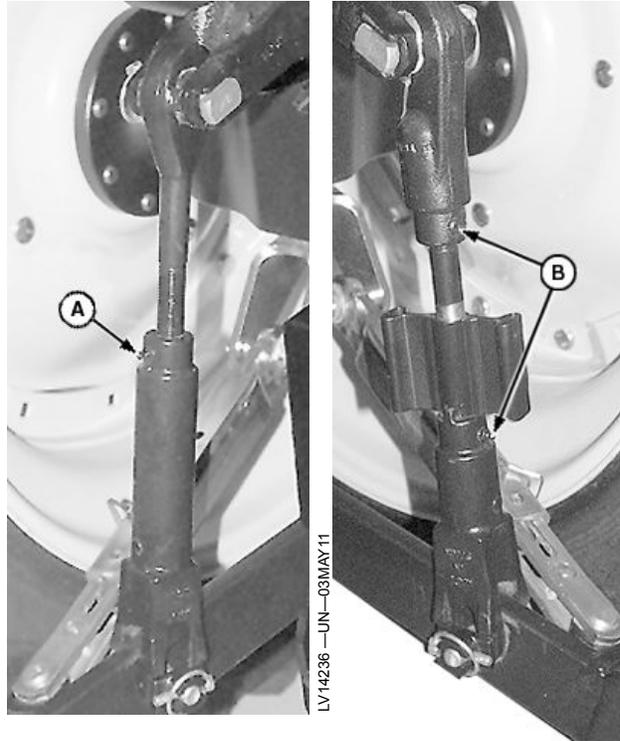
Back Side Trunnion of MFWD Axle

GS25068,000146C -19-11NOV14-1/1

Lubricating 3-Point Hitch

Lubricate fittings on BOTH left and right lift links with several shots of multipurpose grease. (See Grease in Fuel, Lubricants, and Coolant section.)

A—Left Link Lift Grease Point **B—Right Link Lift Grease Point**



JZ81662,00007C1 -19-08MAR12-1/1

Inspecting Tractor for Loose Hardware

Tighten all wheel bolts. (See Tighten Wheel/Axle Hardware Correctly and Tighten Wheel Bolts—MFWD Axle and Tighten Wheel Bolts—Rear Axle in Wheels, Tires, and Treads section.)

See Keeping Cab Protection System Installed Properly, in Maintenance—As Required/Per Condition section, for hardware torque specifications.

GS25068,000146B -19-11NOV14-1/1

Maintenance—First 100 Hours

Changing Engine Oil and Filter

SERVICE INTERVAL

INITIAL — 100 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ II oil and John Deere filter are used.

IMPORTANT: During the first 100 hours of operation, fill with John Deere DIESEL ENGINE BREAK-IN OIL. (See Fuel, Lubricants, and Coolant section for oil specifications.)

If diesel fuel has a high sulfur content, refer to Diesel Engine Oil in Fuel, Lubricants, and Coolant section.

1. Operate engine to warm oil.
2. Park tractor on level ground, place transmission in park, turn off engine and remove key. Raise hood.
3. Remove engine oil drain plug (A) and drain oil into an adequate size container.
4. Remove engine oil filter (B).

NOTE: Make sure old filter gasket is completely removed from manifold before installing new filter.

5. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
6. Install drain plug.
7. Add oil to engine oil filler port (C).

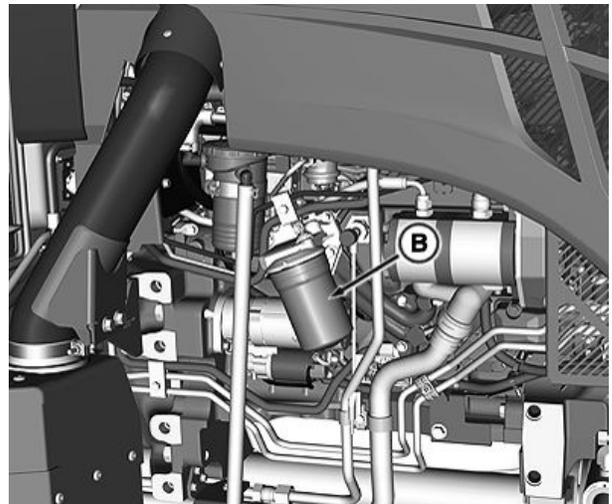
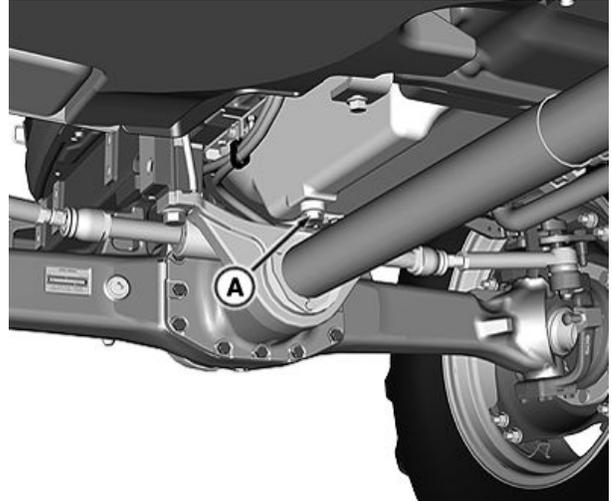
Specification

Engine Crankcase	
Oil—Capacity with Filter.....	12.1 L (3.2 gal.)

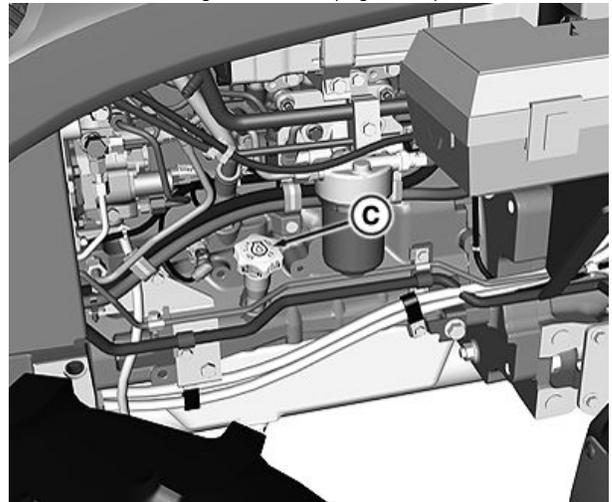
8. Start engine and check for leaks.
9. Stop engine and remove key. Recheck oil level.
10. Lower hood.

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Engine Oil Filler Port



Engine Oil Filter (Right Side)



Engine Oil Filler Port (Left Side)

Plus-50 is a trademark of Deere & Company

GS25068,00014A1 -19-14NOV14-1/1

RXA0146338 —UN—12NOV14

RXA0146339 —UN—12NOV14

RXA0146340 —UN—12NOV14

Replacing Transmission-Hydraulic Filter

SERVICE INTERVAL

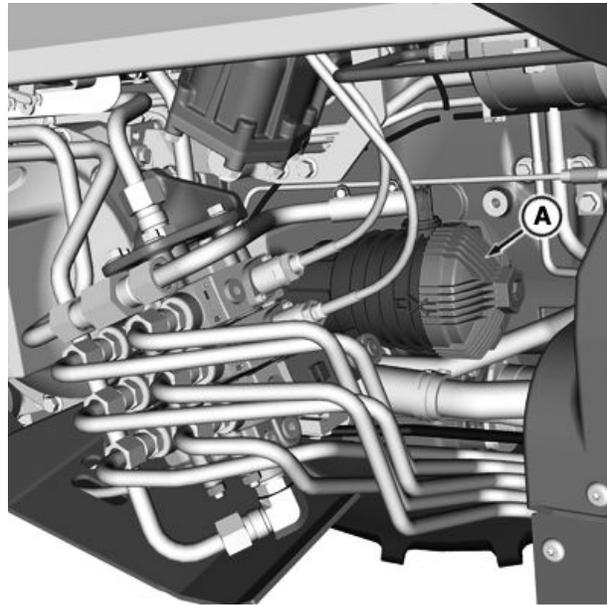
INITIAL — 100 HOURS

REGULAR — 600 HOURS

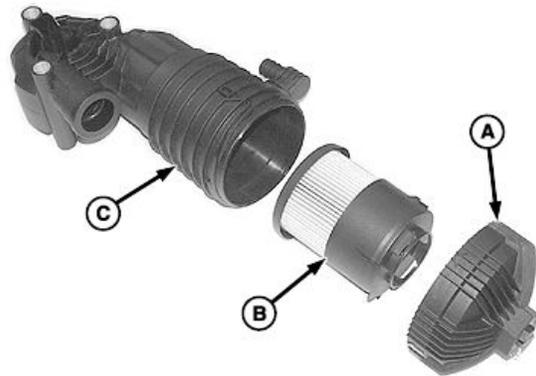
1. Remove cover (A) and filter.
2. Separate filter element (B) from cover. Discard filter element.
3. Clean cover, threads on filter housing and seal inside cover.
4. Assemble filter and cover. (Filter should “snap” into cover.)
5. Install cover and filter assembly.
6. Run engine several seconds and recheck transmission-hydraulic oil level.
7. Add transmission-hydraulic oil as required. (See Transmission and Hydraulic Oil in Fuel, Lubricants, and Coolant section.)

A—Cover
B—Filter Element

C—Housing



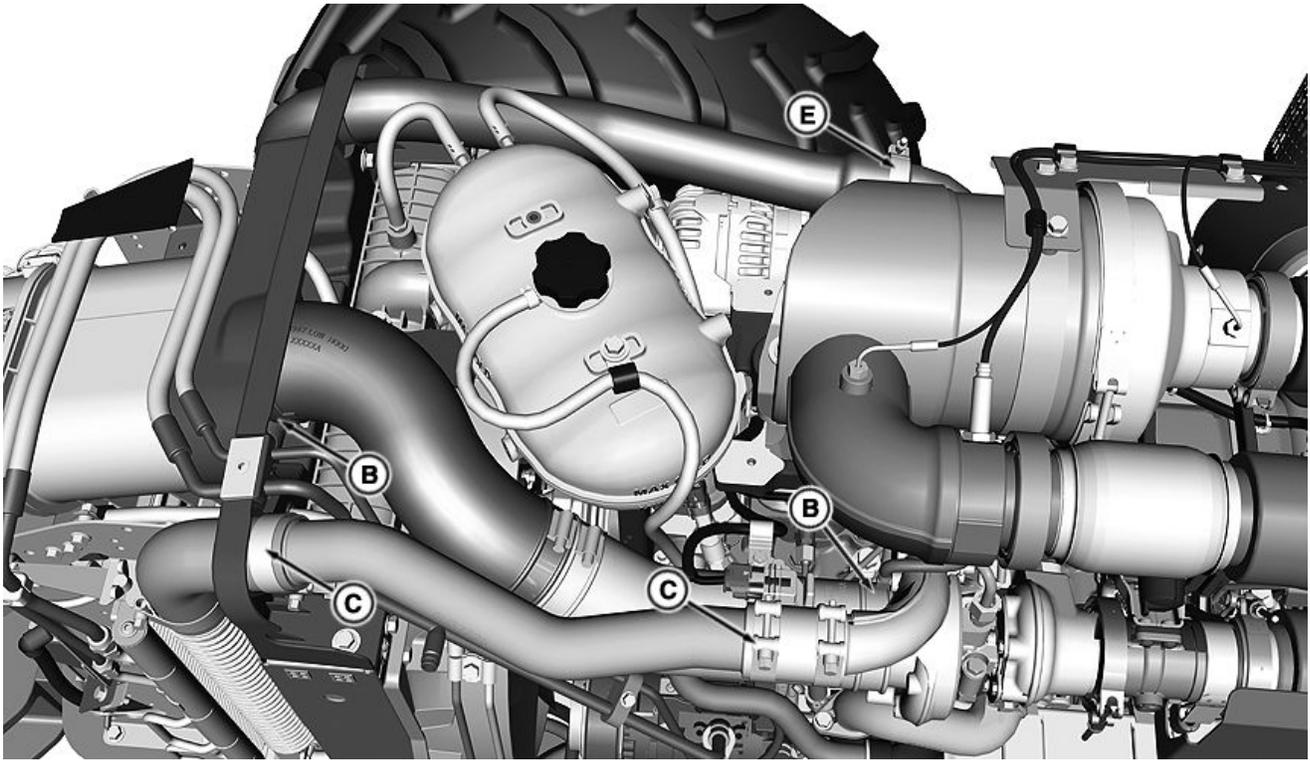
RXA0146168 —UN—03NOV14



LV9610 —UN—10AUG04

GS25068,000146E -19-11NOV14-1/1

Inspect Hose Clamps on Air Intake System and Engine Cooling System



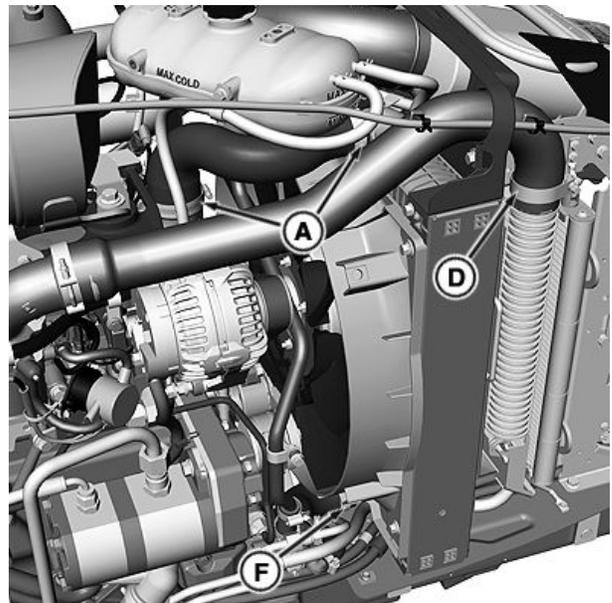
Top View

RXA0146342 —UN—12NOV14

Inspect air intake system and engine cooling system for leaks.

Inspect hose clamps of air intake system and engine cooling system for loose hose clamps and tighten if found.

- | | |
|--|---|
| <ul style="list-style-type: none"> A—Engine to Radiator Cooling System (Radiator Supply) Hose Clamps (2 used) B—Air Cleaner to Turbocharger Hose Clamps (2 used) C—Turbocharger to Charge Air Cooler Hose Clamps (2 used) | <ul style="list-style-type: none"> D—Charge Air Cooler Outlet Hose Clamp E—Engine Intake Hose Clamp F—Radiator to Engine Cooling System (Water Pump Supply) Hose Clamp |
|--|---|



Left-Side View

RXA0146341 —UN—12NOV14

GS25068,000146F -19-11NOV14-1/1

Inspecting Tractor for Loose Hardware

Tighten all wheel bolts. (See Tighten Wheel/Axle Hardware Correctly and Tighten Wheel Bolts—MFWD Axle and Tighten Wheel Bolts—Rear Axle in Wheels, Tires, and Treads section.)

See Keeping Cab Protection System Installed Properly, in Maintenance—As Required/Per Condition section, for hardware torque specifications.

GS25068,000146B -19-11NOV14-1/1

Maintenance—Every 300 Hours

Changing Engine Oil and Filter

SERVICE INTERVAL

INITIAL — 100 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ II oil and John Deere filter are used.

IMPORTANT: During the first 100 hours of operation, fill with John Deere DIESEL ENGINE BREAK-IN OIL. (See Fuel, Lubricants, and Coolant section for oil specifications.)

If diesel fuel has a high sulfur content, refer to Diesel Engine Oil in Fuel, Lubricants, and Coolant section.

1. Operate engine to warm oil.
2. Park tractor on level ground, place transmission in park, turn off engine and remove key. Raise hood.
3. Remove engine oil drain plug (A) and drain oil into an adequate size container.
4. Remove engine oil filter (B).

NOTE: Make sure old filter gasket is completely removed from manifold before installing new filter.

5. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
6. Install drain plug.
7. Add oil to engine oil filler port (C).

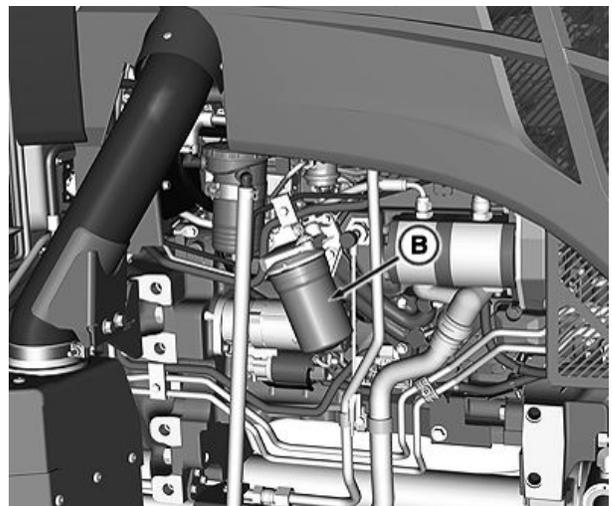
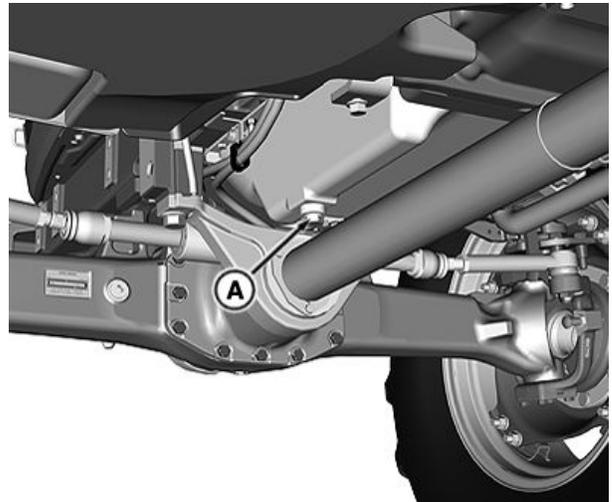
Specification

Engine Crankcase	
Oil—Capacity with Filter.....	12.1 L (3.2 gal.)

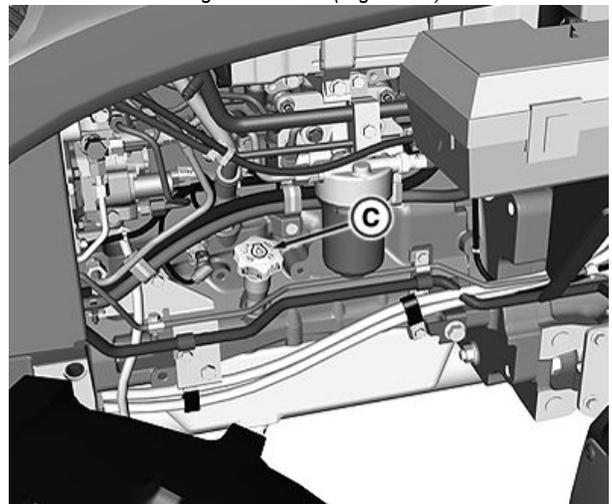
8. Start engine and check for leaks.
9. Stop engine and remove key. Recheck oil level.
10. Lower hood.

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Engine Oil Filler Port



Engine Oil Filter (Right Side)



Engine Oil Filler Port (Left Side)

Plus-50 is a trademark of Deere & Company

GS25068,00014A1 -19-14NOV14-1/1

RXA0146338 —UN—12NOV14

RXA0146339 —UN—12NOV14

RXA0146340 —UN—12NOV14

Checking MFWD Axle Housing Oil Level

1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Remove oil level/filler plug (A). Oil level should be even with bottom of the filler plug hole.
3. If level is low, add oil through same hole. John Deere Hy-Gard™ oil is recommended. (See MFWD Axle Housing and Wheel Hub Oil in Fuel, Lubricants, and Coolant section.)

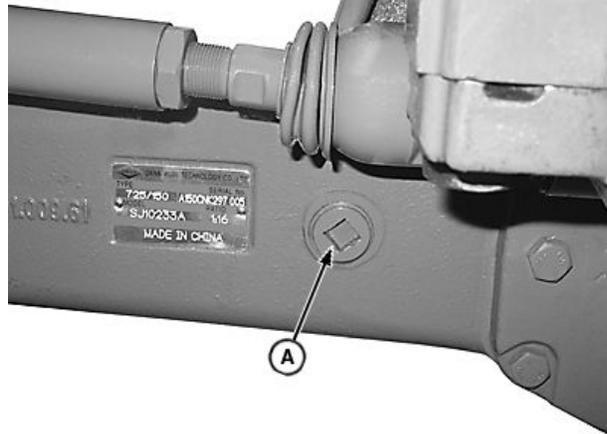
NOTE: Approximate MFWD axle housing oil capacity is 5 L (1.32 gal).

4. Apply thread sealant to threads of plug.
5. Install plug and tighten to specifications.

Specification

Plug to Axle
Housing—Torque.....70 N·m
(52 lb·ft)

Hy-Gard is a trademark of Deere & Company



A—Oil Level/Filler Plug

LV14247—UN—10MAY11

JZ81662,0000BEE -19-16MAY12-1/1

Checking MFWD Axle Wheel Hub Oil Level

1. Park tractor so that oil fill mark (A) on MFWD hub is level with the ground.
2. Remove filler plug (B). Oil level should be even with bottom of the filler plug hole.
3. If level is low, add oil through same hole. John Deere Hy-Gard™ oil is recommended. (See MFWD Axle Housing and Wheel Hub Oil in Fuel, Lubricants, and Coolant section.)

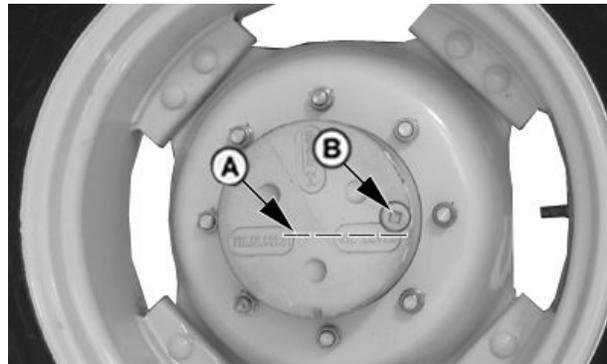
NOTE: Approximate MFWD wheel hub oil capacity is 0.8 L (0.2112 gal).

4. Apply thread sealant to threads of plug.
5. Install plug and tighten to specifications.

Specification

Plug-to-Hub—Torque.....70 N·m
(52 lb·ft)

Hy-Gard is a trademark of Deere & Company



Oil fill mark and filler plug

A—Oil fill mark

B—Oil filler plug

PULV000612—UN—19MAR08

JZ81662,0000BEF -19-16MAY12-1/1

Clean and Check Battery Condition

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

Avoid the hazard by:

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

If you spill acid on yourself:

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

If acid is swallowed:

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



Continued on next page

JZ81662,0000560 -19-09FEB12-1/2

TS203 —UN—23AUG88

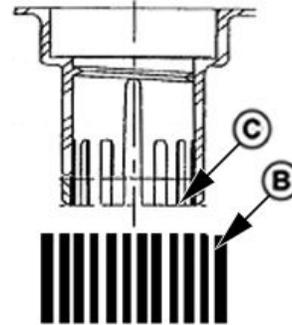
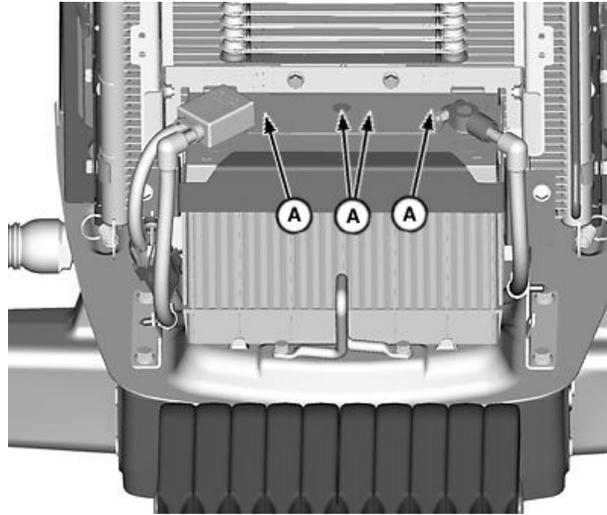
1. Check level of electrolyte in each cell (A) at least every 300 hours. Ensure that every cell has fluid level HIGHER than top of plates. Only use CLEAN, SOFT water to fill up electrolyte level.

IMPORTANT: DO NOT add water in freezing weather unless tractor will be run at least 30 minutes to assure thorough mixing.

2. 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.
3. 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). Corrected specific gravity of a fully charged battery is from 1.265 to 1.280.
4. A battery is considered fully charged when three consecutive hydrometer readings, taken at hourly intervals, show no rise in specific gravity.
5. Wipe battery with a damp cloth. Clean and tighten connections if needed.
6. Coat terminals with a small amount of grease.

A—Cell
B—Plates

C—Electrolyte Level



LV14424—UN—13JUN11

PULV000655—UN—05MAY08

JZ81662,0000560 -19-09FEB12-2/2

Drain and Flush Fuel Tank

Ask your John Deere dealer to drain and flush fuel tank.

JZ81662,00007CD -19-08MAR12-1/1

Maintenance—Every 500 Hours

Changing Engine Oil and Filter

SERVICE INTERVAL

INITIAL — 100 HOURS Maximum

REGULAR — 300 HOURS Can be extended to 500 Hours if John Deere Plus-50™ II oil and John Deere filter are used.

IMPORTANT: During the first 100 hours of operation, fill with John Deere DIESEL ENGINE BREAK-IN OIL. (See Fuel, Lubricants, and Coolant section for oil specifications.)

If diesel fuel has a high sulfur content, refer to Diesel Engine Oil in Fuel, Lubricants, and Coolant section.

1. Operate engine to warm oil.
2. Park tractor on level ground, place transmission in park, turn off engine and remove key. Raise hood.
3. Remove engine oil drain plug (A) and drain oil into an adequate size container.
4. Remove engine oil filter (B).

NOTE: Make sure old filter gasket is completely removed from manifold before installing new filter.

5. Apply a film of oil on new oil filter gasket and install new filter. Hand-tighten plus 1/2 turn.
6. Install drain plug.
7. Add oil to engine oil filler port (C).

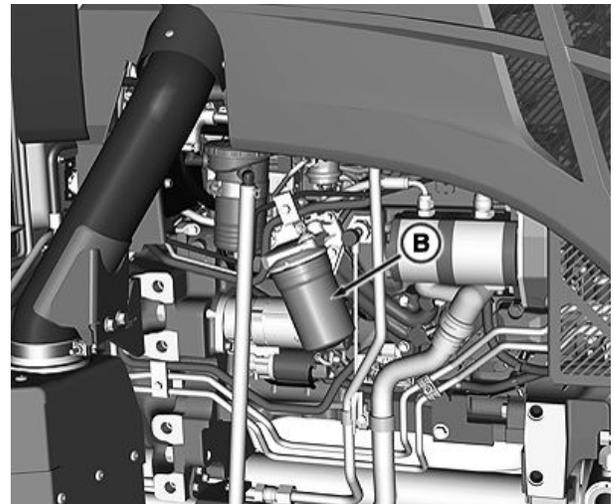
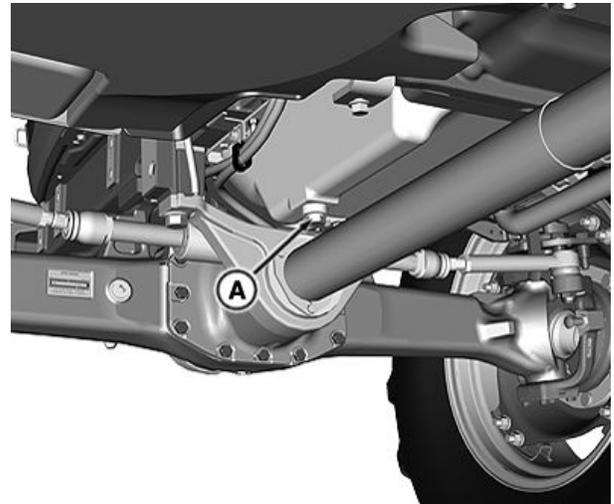
Specification

Engine Crankcase	
Oil—Capacity with Filter.....	12.1 L (3.2 gal.)

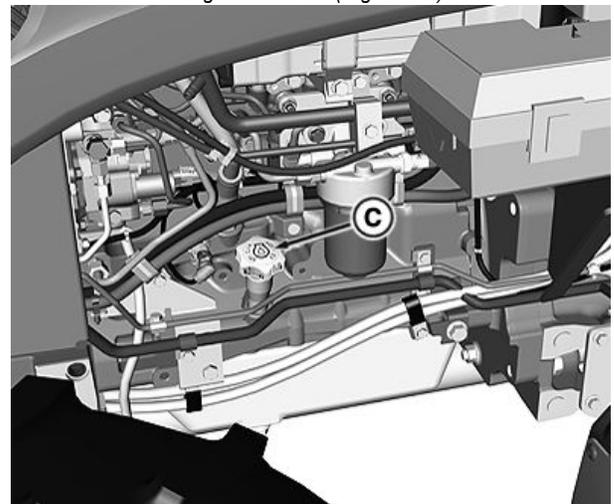
8. Start engine and check for leaks.
9. Stop engine and remove key. Recheck oil level.
10. Lower hood.

A—Engine Oil Drain Plug
B—Engine Oil Filter

C—Engine Oil Filler Port



Engine Oil Filter (Right Side)



Engine Oil Filler Port (Left Side)

Plus-50 is a trademark of Deere & Company

GS25068,00014A1 -19-14NOV14-1/1

RXA0146338 —UN—12NOV14

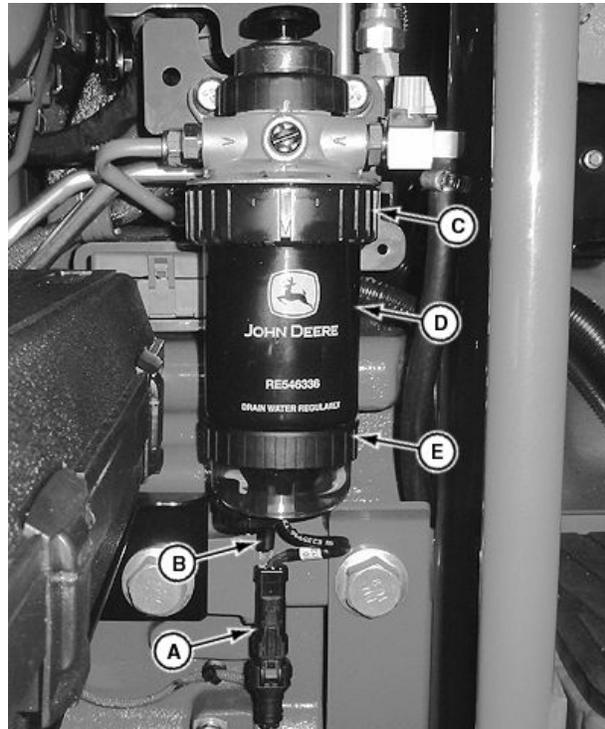
RXA0146339 —UN—12NOV14

RXA0146340 —UN—12NOV14

Replacing Fuel Filter

1. Disconnect water sensor connector (A).
2. Open drain valve (B) and drain fuel.
3. Lift and rotate retaining ring (C) counterclockwise. Remove ring with filter (D).
4. Remove separator (E) from filter.
 - a. Drain and clean separator. Dry with compressed air.
 - b. Install water separator on new filter.
5. Install new filter assembly. Tighten retaining ring hand-tight.
6. Bleed the fuel system. (See Bleeding Fuel System in Maintenance—As Required/Per Condition section.)

A—Water Sensor Connector **D—Fuel Filter**
B—Drain Valve **E—Water Separator**
C—Retaining Ring



LV16463—UN—04JAN13

JZ81662,0000F8E -19-03JAN13-1/1

Maintenance—Every 600 Hours

Check Neutral Start System

Tractor is equipped with interlocks to prevent inadvertent movement when engine is cranked to start.

Transmission Controls

1. Depress clutch pedal and brake pedals.
2. Place gear shift lever (A) in any position EXCEPT neutral or park.

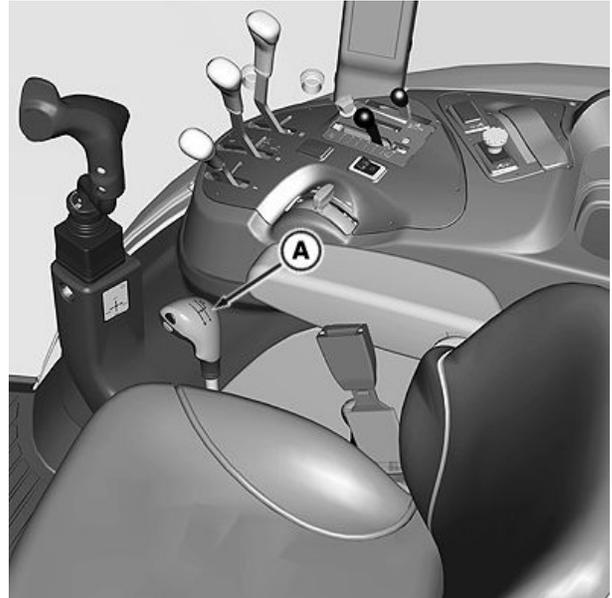
If equipped with reverser, place reverser lever (B) into forward or reverse direction position.

3. Attempt to start engine. If engine starts when transmission controls are not in neutral or park position, neutral start system should be repaired. See your John Deere dealer **immediately**.

Engine should start in NEUTRAL or PARK positions only.

A—Gear Shift Lever

B—Reverser Lever



RXA0146343—UN—12NOV14



LV14425—UN—17AUG11

Continued on next page

GS25068,0001471 -19-12NOV14-1/2

PTO Switch

1. Depress clutch pedal and brake pedals.
2. Lift PTO switch knob (A) up to engage PTO.

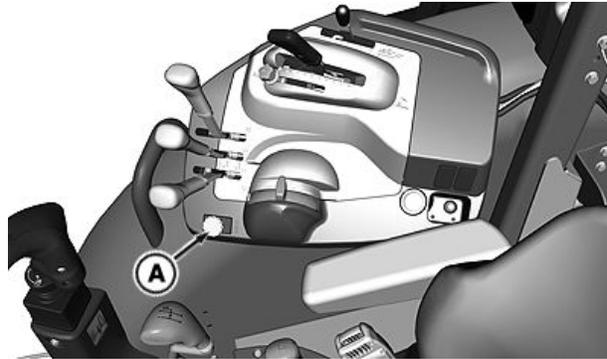
NOTE: Engine should start with switch in disengaged position only.

3. Start engine. If engine starts in this position, neutral start system should be repaired. See your John Deere Dealer **immediately**.

A—PTO Switch



PTO Switch; Cab



PTO Switch; OOS

LV14213—UN—02MAY11

RXA0146071—UN—27OCT14

GS25068,0001471 -19-12NOV14-2/2

Clean Cab Air Filters—If Equipped

CAUTION: Before working in an environment containing hazardous substances, i.e. when using pesticides, check whether the cab offers sufficient protection. Refer to the product data sheets of the spraying liquid manufacturer specifying the category required for the cab.

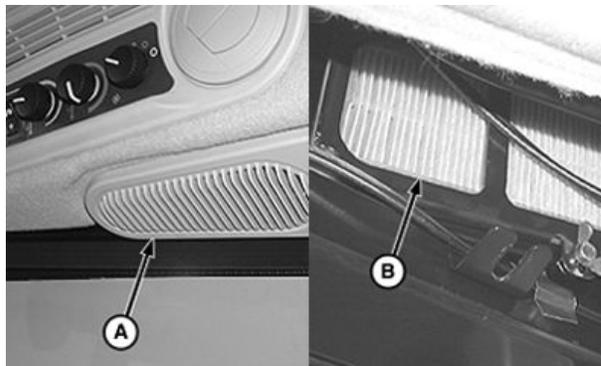
CAUTION: Refer to product data sheets and product identification of the crop protection chemicals. These contain important information on how to avoid hazards.

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.

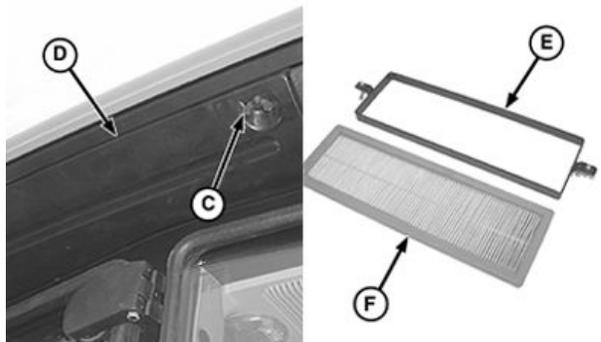
Remove filter covers (A) and filters (B). Clean filters with compressed air. Cleaning filters may be required more often in dusty conditions.

NOTE: A fresh air intake filter is located above each cab door, under roof.

Remove screws (C), filter cover (D), retainer plate (E) and filter (F). Clean filters with compressed air. Inspect filters for damage. Replace as necessary.



Under Cab Headliner



Under Roof

- A—Filter Cover—Upper Right Side Shown (Left Side Similar)
- B—Recirculated Air Filters
- C—Screws (2 used)
- D—Filter Cover
- E—Retainer Plate (2 used)
- F—Fresh Air Filter (2 used)

JZ81662,0000565 -19-26JUN12-1/1

PULV000657—UN—05MAY08

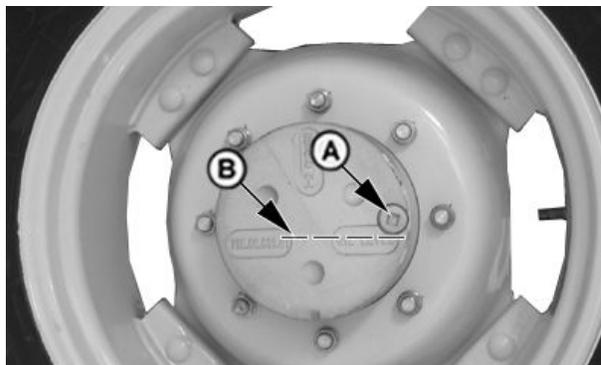
PULV000658—UN—05MAY08

Changing MFWD Axle Wheel Hub Oil

1. Park tractor on level surface, with wheel rotated until drain/filler plug (A) at bottom of hub.
2. Remove plug (A) and drain oil.
3. After oil has drained, move and park tractor so that "OIL LEVEL" mark at drain/filler plug (A) is parallel to ground.
4. Add Hy-Gard™ J20C until it reaches level (B) at bottom of drain/filler plug (A). (See MFWD Axle Housing and Wheel Hub Oil, in Fuel, Lubricants, and Coolant section.)

NOTE: Approximate MFWD wheel hub oil capacity is 0.8 L (0.2112 gal).

5. Apply pipe sealant with thread sealant to threads of plug (A).
6. Install plug and tighten to specifications.



Check oil level

- A—Drain/filler plug
- B—Oil level

Specification

Plug to Hub—Torque..... 70 N·m (52 lb-ft)

GS25068,0000AD3 -19-14NOV19-1/1

PULV000620—UN—19MAR08

Changing MFWD Axle Housing Oil

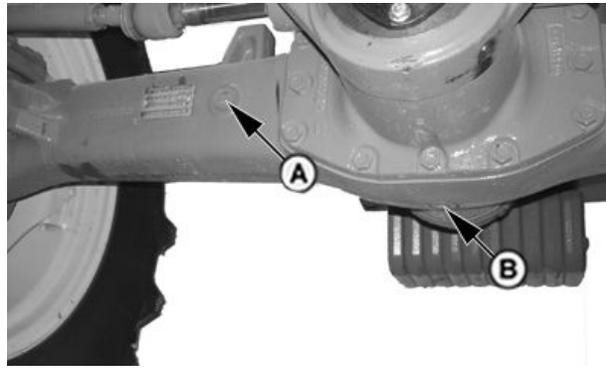
1. PARK tractor on level ground and SHUT OFF engine. Remove key.
2. Open both plugs (A and B).
3. After oil drained, apply thread sealant on threads of drain plug (B).
4. Install plug (B) and tighten to specifications.
5. Add Hy-Gard™ J20C until even with bottom of filler plug (A). (See MFWD Axle Housing and Wheel Hub Oil, in Fuel, Lubricants, and Coolant section.)

NOTE: Approximate MFWD axle housing oil capacity is 5 L (1.32 gal).

6. Apply thread sealant on threads of filler plug (A).
7. Install filler plug (A) and tighten to specification.

Specification

Plug to Housing—Torque..... 70 N·m (52 lb-ft)



A—Filler plug

B—Drain plug

PULV000621—UN—19MAR08

GS25068,0000AD4 -19-14NOV19-1/1

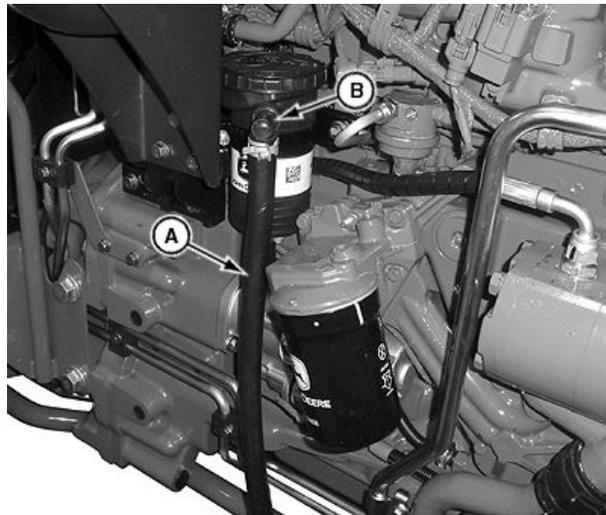
Clean Open Crankcase Vent (OCV) Tube

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.

Remove open crankcase vent tube (A) from OCV filter housing. Wash in solvent or blow clean with compressed air. Install OCV tube to OCV filter housing. Be sure that vent tube is not kinked or pinched.

A—Open Crankcase Vent (OCV) Tube

B—OCV Filter Housing



Right Side

LV16464—UN—04JAN13

JZ81662,0000F75 -19-03JAN13-1/1

Lubricating Rear Axle Bearings

Lubricate rear axle lubrication fittings (A) with several shots of multipurpose grease. (See Grease in Fuel, Lubricants, and Coolant section.)

A—Lubrication Fitting



LV14229—UN—03MAY11

JZ81662,00007D9 -19-08MAR12-1/1

Check Front Axle Pivot Pin End Play

Ask your John Deere dealer to check the front axle pivot pin (A) for correct end play.

A—Front Axle Pivot
Pin—MFWD Axle

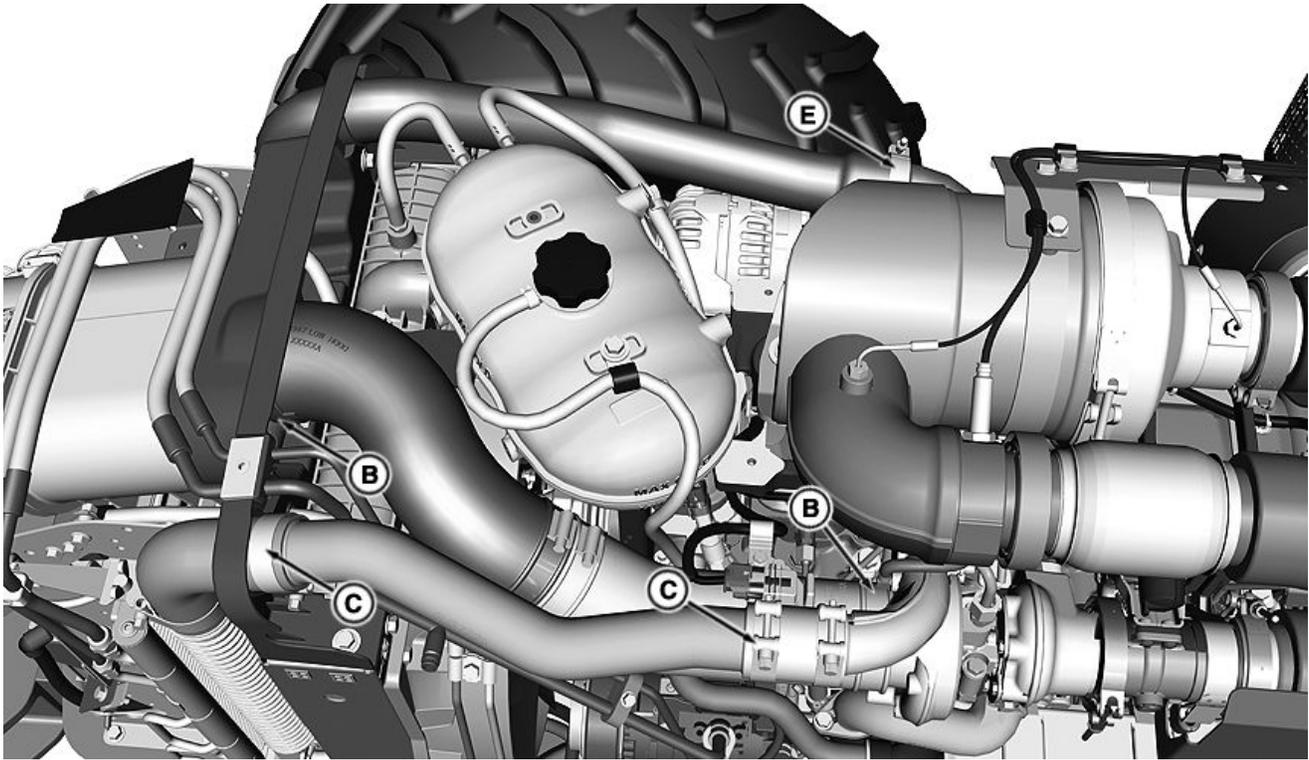
B—Front Axle Pivot
Pin—Adjustable Front Axle



LV14654—UN—17AUG11

GS25068,0001474 -19-12NOV14-1/1

Tighten Air Intake System and Engine Cooling System Hose Clamps



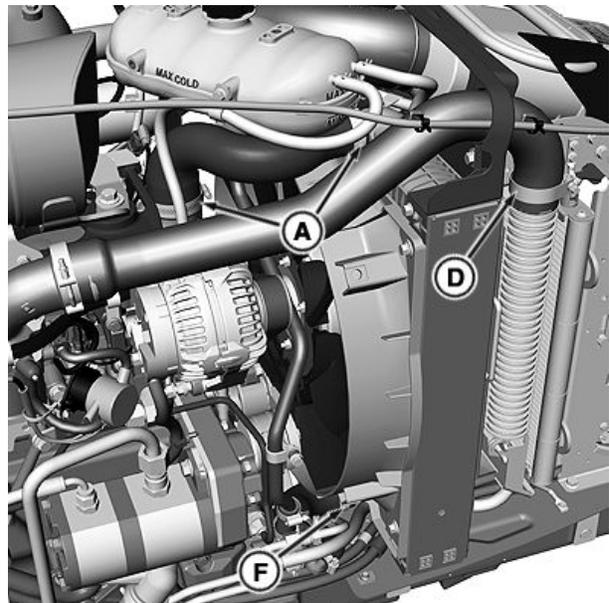
Top View

RXA0146342 —UN—12NOV14

Inspect air intake system and engine cooling system for leaks.

Inspect hose clamps of air intake system and engine cooling system for loose hose clamps and tighten if found.

- | | |
|---|---|
| A—Engine to Radiator Cooling System (Radiator Supply) Hose Clamps (2 used) | D—Charge Air Cooler Outlet Hose Clamp |
| B—Air Cleaner to Turbocharger Hose Clamps (2 used) | E—Engine Intake Hose Clamp |
| C—Turbocharger to Charge Air Cooler Hose Clamps (2 used) | F—Radiator to Engine Cooling System (Water Pump Supply) Hose Clamp |



Left-Side View

RXA0146341 —UN—12NOV14

GS25068,0001472 -19-12NOV14-1/1

Replacing Transmission-Hydraulic Filter

SERVICE INTERVAL

INITIAL — 100 HOURS

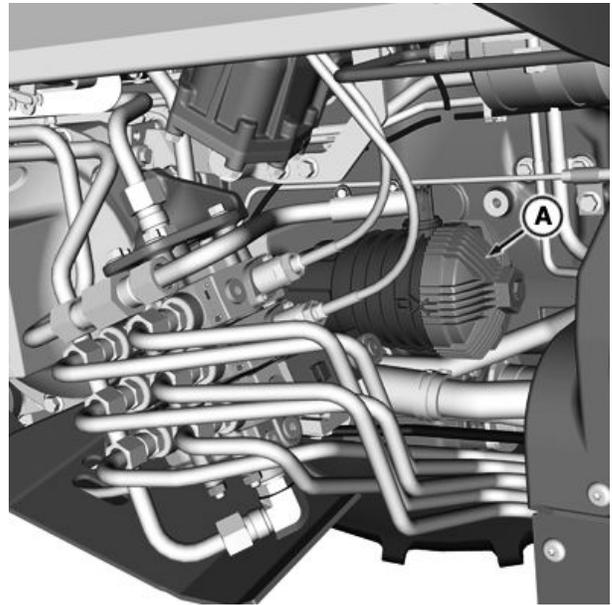
REGULAR — 600 HOURS

1. Remove cover (A) and filter.
2. Separate filter element (B) from cover. Discard filter element.
3. Clean cover, threads on filter housing and seal inside cover.
4. Assemble filter and cover. (Filter should “snap” into cover.)
5. Install cover and filter assembly.
6. Run engine several seconds and recheck transmission-hydraulic oil level.
7. Add transmission-hydraulic oil as required. (See Transmission and Hydraulic Oil in Fuel, Lubricants, and Coolant section.)

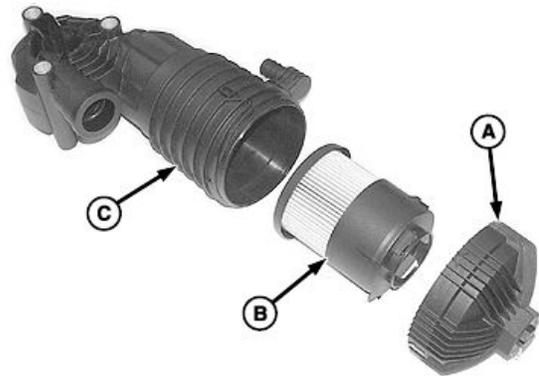
A—Cover

B—Filter Element

C—Housing



RXA0146168 —UN—03NOV14



LV9610 —UN—10AUG04

GS25068,000146E -19-11NOV14-1/1

Maintenance—Every 1200 Hours

Inspecting Fan Belt Tensioner

NOTE: A belt tension gauge will not give an accurate measurement of the belt tension. Measure tensioner spring tension using a torque wrench.

1. Remove fan belt. (See Replacing Fan Belt in this section.)
2. Put a mark (A) on swing arm of tensioner as shown.
3. Measure 21 mm (0.83 in.) from (A) and put a mark (B) on tensioner mounting base.
4. Rotate the swing arm using a torque wrench (C) until marks (A and B) are aligned.
5. Record torque wrench measurement and compare with specification. If recorded measurement is below specification, have your John Deere dealer replace tensioner assembly.

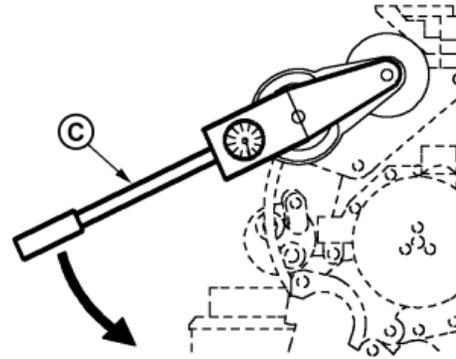
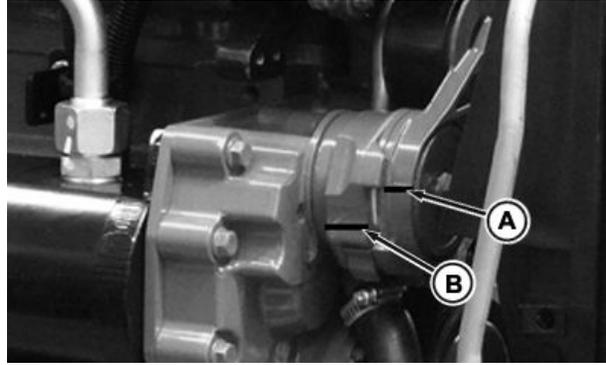
Specification

Belt Tensioner—Torque..... 18—22 N·m
(159—195 lb-in.)

6. Install fan belt. (See Replacing Fan Belt in this section.)

A—Mark on Swing Arm
B—Mark on Tensioner
Mounting Base

C—Torque Wrench



PULV008098 —UN—22JUN10

RG12065 —UN—28JAN02

JZ81662,0000F7A -19-30NOV12-1/1

Replace Fan Belt

NOTE: Fan drive belt is equipped with an automatic tensioner which does not require adjustment.

1. Place tractor in park and SHUT OFF engine. Remove key.
2. Release tension on belt using a long-handle 1/2 in. drive breaker bar (B) to pull tensioner away from engine.

Remove belt (A) from alternator pulley.

3. Release tension on tensioner and remove breaker bar.
4. Remove belt by bringing it over the fan clutch wire harness support and cooling fan. Slip it between the fan blades and fan shroud.
5. Install new belt in reverse order of removal.

Belt Routing	
1	Alternator
2	Fan Drive
3	Idler
4	Crankshaft Pulley
5	Coolant Pump
6	Tensioner
7	Air Conditioning Compressor ^a

^aCab only.

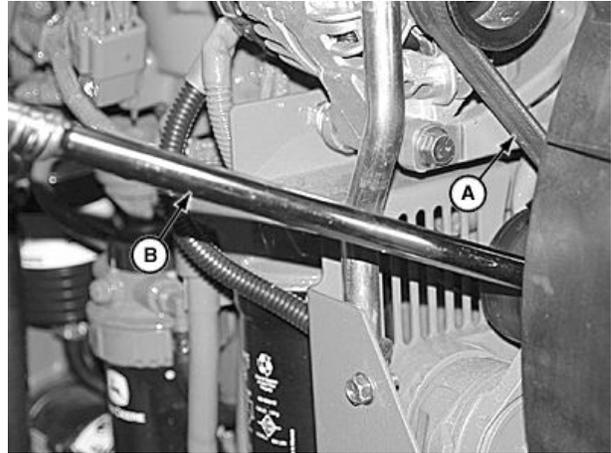
6. Install fan clutch wire harness support with locknut and flanged bolt.

Tighten to specification.

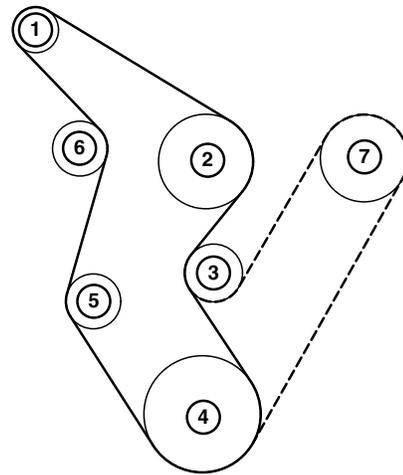
Specification

Wire Harness Support
 Lock Nut—Torque..... 14 N•m

7. Use breaker bar to push tensioner into position for belt installation. (Refer to Inspect Fan Belt Tensioner in this section.)



Remove Belt



A—Belt

B—Breaker Bar

LY14687—UN—18AUG11

LY22215—UN—24JUN14

GS25068,00014AC -19-24NOV14-1/1

Changing Transmission-Hydraulic Oil and Filter

1. Lower rockshaft to remove trapped oil.
2. Remove drain plug(s).
 - MFWD Axle—Remove drain plugs (B and C)
 Drain oil into pan and dispose of waste oil properly.
3. Replace filter (A) while changing oil. (See Replacing Transmission-Hydraulic Filter in Maintenance—First 100 Hours section.)
4. Fill system with transmission-hydraulic oil. (See Checking Transmission-Hydraulic System Oil Level in Maintenance—Every Week or 50 Hours section.)

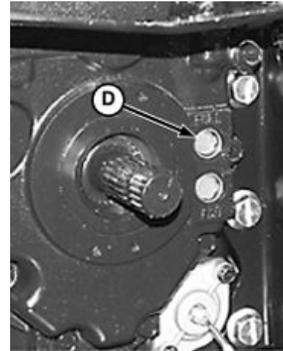
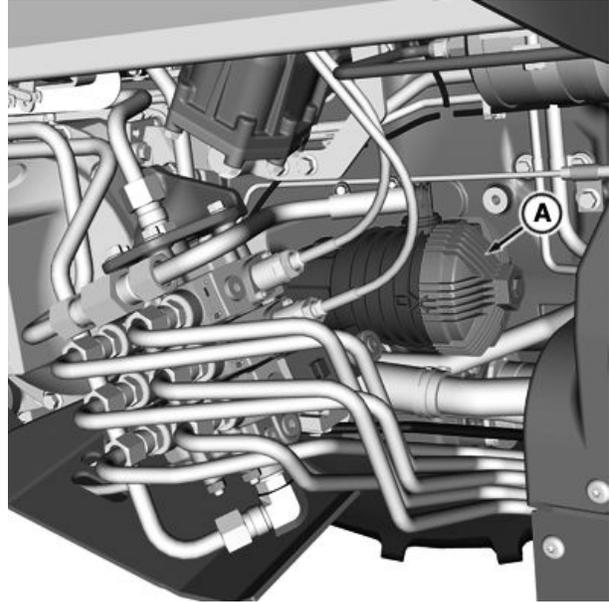
Specification

12/12 PowrReverser™ Transmission—Capacity.....	43.5 L (11.5 gal.)
24/12 PowrReverser™ Transmission—Capacity.....	45 L (12 gal.)

5. Check oil level at sight glass (D) after filling, and again after operating for 5 minutes.

A—Filter
B—MFWD Drain Plug

C—Transmission Case Drain Plug
D—Sight Glass



RXA0146168 —UN—03NOV14

LV9622 —UN—10AUG04

LV12927 —UN—07DEC06

GS25068,0001477 -19-12NOV14-1/1

Service Air Cleaner Elements

CAUTION: Dirty air cleaner element is indicated when engine intake-combustion air filter indicator (A) illuminates. Dirty air cleaner results in loss of power or excessive smoke.

1. Open hood.
2. Remove latch (B), cover (C) and pull out primary air cleaner element (D).

IMPORTANT: If primary element does not pull out with ease, move side-to-side to remove safely. Do not remove secondary element of air cleaner unless you are replacing it.

3. When primary air cleaner element must be serviced in the field, tap it on the palm of your hand as a temporary measure.

IMPORTANT: The guide ring (E) must not be damaged or deformed.

CAUTION: High pressure compressed air or vibration may damage primary air cleaner element.

4. If tapping primary air cleaner element does not remove dust, blow out dust with low pressure compressed air. Do NOT exceed 600 kPa (6 bar; 90 psi). Blow air from engine end of primary air cleaner element to outside air end. Do NOT insert nozzle into element material.
5. Replace both elements (primary and secondary) after they have been cleaned five times. Clean out and inspect canister interior before installing new elements.

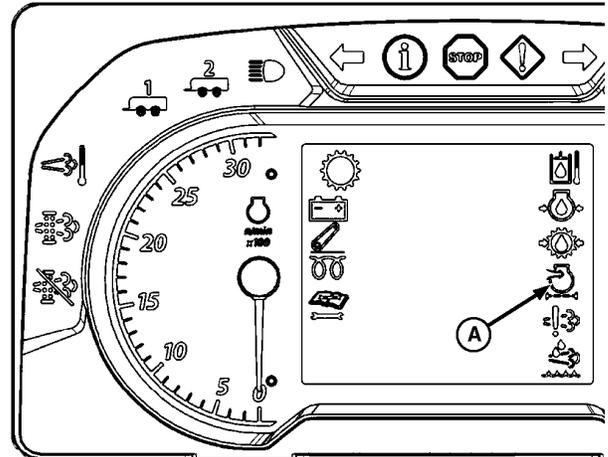
IMPORTANT: Before installation, review decals on canister and primary cleaner.

6. Replace elements if core material or seals (both ends) are damaged, or if engine intake-combustion air filter indicator remains illuminated after elements have been cleaned.
7. Install elements as necessary and latch cover.
8. Lower hood.

NOTE: If frequency of restriction increases, replace air cleaner elements.

Service air cleaner more often in dusty conditions.

A—Engine Intake-Combustion Air Filter Indicator	D—Primary Air Cleaner Element
B—Latch	E—Guide Ring
C—Cover	



Engine Intake-Combustion Air Filter Indicator



LV22183—UN—19AUG14

LV14689—UN—18AUG11

LV14670—UN—19AUG11

JZ81662.000135C -19-10JUL14-1/1

Clean Fuel Tank Vent Filter

⚠ 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.

Raise hood and locate fuel tank vent filter (A) on left-hand side of tractor.

1. Remove and clean fuel tank vent filter with a soapy solution.
2. Blow dry with compressed air and install.
3. If fuel tank vent filter is damaged, replace.

A—Fuel Tank Vent Filter



Fuel Tank Vent Filter (Left-Hand Side)

JZ81662,0001374 -19-10JUL14-1/1

LV22351—UN—11JUL14

Maintenance—Annually

Cleaning Cab Air Filters

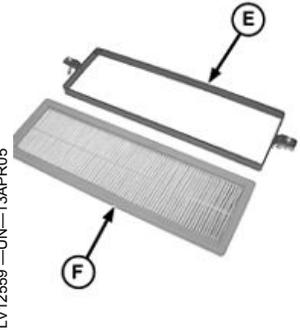
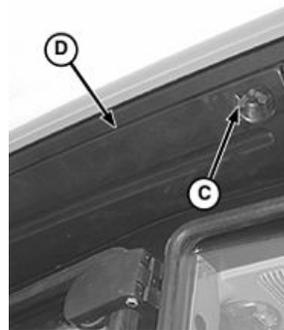
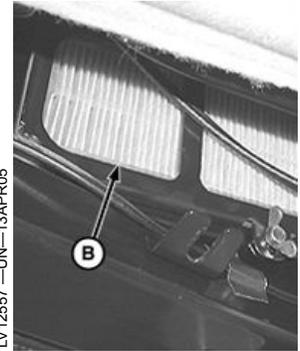
CAUTION: The air quality system air filters are not designed to filter out harmful chemicals. Follow the instructions in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.

Remove filter covers (A) and filters (B). Clean filters with compressed air. Cleaning filters may be required more often in dusty conditions.

NOTE: A fresh air intake filter is located above each cab door, under roof.

Remove screws (C), filter cover (D), retainer plate (E) and filter (F). Clean filters with compressed air. Inspect filters for damage. Replace as necessary.

- | | |
|---|-----------------------------|
| A—Filter Cover—Upper Right Side Shown (Left Side Similar) | D—Filter Cover |
| B—Recirculated Air Filters | E—Retainer Plate (2 used) |
| C—Screws (2 used) | F—Fresh Air Filter (2 used) |



JZ81662,00007E0 -19-08MAR12-1/1

Inspecting Seat Belt

CAUTION: If the seat belt system, including the mounting hardware, buckle, belt, or retractor shows any sign of damage such as cuts, fraying, extreme or unusual wear, discoloring or abrasion, the entire seat belt system should be replaced immediately. Replace the belt system only with replacement parts approved for your machine.

Inspect seat belts and mounting hardware. If seat belt needs to be replaced, see your John Deere dealer.

- A—Seat Belt



JZ81662,00007E1 -19-08MAR12-1/1

Check Engine Coolant Properties

NOTE: Coolant replacement period is after three years or 3000 hours thereafter. It can be extended to five years or 4500 hours thereafter when coolant is checked annually and replaced by COOL-GARD™ II.

COOL-GARD is a trademark of Deere & Company

Ask your John Deere dealer to check engine coolant properties. (Refer to Heavy Duty Diesel Engine Coolant, in Fuel, Lubricants, and Coolant section of this manual.)

JZ81662,0000F7B -19-03JAN13-1/1

Maintenance—First Three Years or 3000 Hours

Flush Cooling System and Replace Thermostat

IMPORTANT: Service interval can be extended to five years or 4500 hours thereafter when tractor coolant has been checked annually and serviced with pre-diluted John Deere COOL-GARD™ II.

COOL-GARD is a trademark of Deere & Company

Have your John Deere dealer drain old coolant, flush the entire system, install new thermostat and fill with clean antifreeze solution after first three years and after every 3000 hours of operation.

JZ81662,0000F90 -19-03JAN13-1/1

Adjust Engine Valve Clearance

Have your John Deere dealer check and adjust engine valve clearance.

JZ81662,000140A -19-08SEP14-1/1

Maintenance—First Five Years or 5000 Hours

Flush Cooling System

Have your John Deere dealer drain old coolant, flush the entire system, install new thermostat and fill with clean

COOL-GARD is a trademark of Deere & Company

¹If coolant is checked annually and replaced by COOL-GARD™ II

antifreeze solution, COOL-GARD™ II, after first five years or after 4500 hours¹ of operation.

JZ81662,0000F91 -19-03JAN13-1/1

Change Diesel Exhaust Fluid (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: See your John Deere equipment technical manual or OEM manufacturer's technical manual for DEF dosing unit filter location.

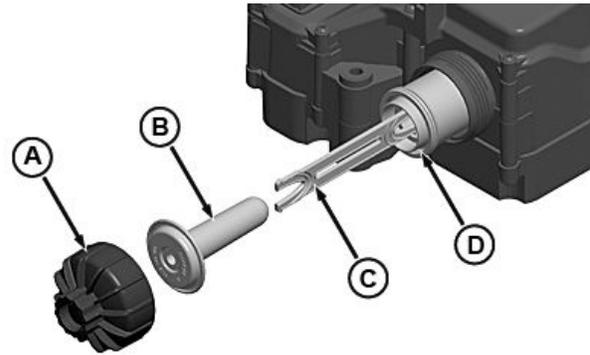
IMPORTANT: Avoid system and filter damage. Ensure that DEF system is not frozen before changing filter. If system is frozen, operate engine until system has thawed completely.

1. Remove DEF dosing unit filter cover (A).
2. Remove and discard DEF dosing unit filter equalizing element (B).

NOTE: DEF dosing unit filter tool (C) is supplied with replacement filter.

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.



DEF Dosing Unit Filter

- A—DEF Dosing Unit Filter Cover
- B—DEF Dosing Unit Filter Equalizing Element
- C—DEF Dosing Unit Filter Tool (supplied with new filter)
- D—DEF Dosing Unit Filter

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 DEF filter O-rings with clean DEF. 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 specification.

Specification

DEF Dosing Unit Filter	
Cover—Torque.....	23 N·m (204 lb·in)

DX,DEF,CHANGE,FILT -19-31OCT19-1/1

RG22634 —UN—21MAR13

Troubleshooting

Engine

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.

Continued on next page

JZ81662,000057C -19-07FEB12-1/6

Troubleshooting

Symptom	Problem	Solution
	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.
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.

Continued on next page

JZ81662.000057C -19-07FEB12-2/6

Troubleshooting

Symptom	Problem	Solution
	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.
	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.

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JZ81662,000057C -19-07FEB12-3/6

Troubleshooting

Symptom	Problem	Solution
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.
	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.
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.

Continued on next page

JZ81662.000057C -19-07FEB12-4/6

Troubleshooting

Symptom	Problem	Solution
	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.
	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 belts.
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.

Continued on next page

JZ81662,000057C -19-07FEB12-5/6

Troubleshooting

Symptom	Problem	Solution
	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.
	Sulfated or worn-out batteries.	See your John Deere dealer or engine distributor.

JZ81662,000057C -19-07FEB12-6/6

Transmission

Symptom	Problem	Solution
Transmission 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.
	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.

JZ81662.000057D -19-07FEB12-1/1

Hydraulic System

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.
	Deluxe Valve: Flow control or detent setting incorrect.	Adjust flow control and/or detent setting.

JZ81662,000057E -19-07FEB12-1/1

Brakes

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.

JZ81662,000057F -19-07FEB12-1/1

3-Point Hitch

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.
Implement will not operate at desired depth	Transmission-hydraulic oil filter clogged.	Replace filter.
	Lift links too short.	Adjust lift links.
	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 60: Rear Hitch Controls.)
	Insufficient or no hitch response to draft load	Draft control lever in OFF (forward) 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.

Continued on next page

GS25068,000144C -19-05NOV14-1/2

Troubleshooting

Symptom	Problem	Solution
	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.

GS25068,000144C -19-05NOV14-2/2

Remote Hydraulic Cylinder

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.

JZ81662,0000582 -19-07FEB12-1/1

Selective Control Valves (SCV)

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 Rear SCV)	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.
SVC lever released too soon (Deluxe Rear SCV)	Flow control or detent setting incorrect.	Adjust flow control and detent setting.
	Detent selector in wrong position.	Turn selector to correct position.
SCV lever does not release	Implement is not connected to SCV I.	Connect implement to SCV I.
	Detent selector not in automatic detent position (Deluxe Rear SCV).	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.
Rear SCV fails to function	Incorrect flow control (Deluxe rear SCV).	Adjust flow control.
	Over torqued cable to valve connection	Adjust torque at the connector.
	Rear SCV does not generate pressure.	Check O-ring and backup ring on power beyond fitting in mid SCV.

JZ81662,00013CB -19-14AUG14-1/1

Electrical System

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.
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	Gear shift lever not in PARK.	Move lever to PARK.
	PowrReverser™ Transmission: EH directional reverser lever in forward or reverse.	Move lever to NEUTRAL.
	Mechanical PTO lever engaged.	Disengage PTO.
	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.

Continued on next page

JZ81662.0000583 -19-07FEB12-1/2

Troubleshooting

Symptom	Problem	Solution
	Blown fuse.	Replace fuse.
Relay(s) sticking or nonfunctional; repeated failures	Diode to protect circuit from arcing has failed.	See your John Deere dealer.

JZ81662,0000583 -19-07FEB12-2/2

Heater and A/C System (Cab)

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.
	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.
Inadequate air flow		Clogged air filters.
	Evaporator core air flow restricted.	Clean evaporator and housing with compressed air.

Continued on next page

JZ81662.0000584 -19-07FEB12-1/3

Troubleshooting

Symptom	Problem	Solution
	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.
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.

Continued on next page

JZ81662,0000584 -19-07FEB12-2/3

Troubleshooting

Symptom	Problem	Solution
	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.
	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.

JZ81662,0000584 -19-07FEB12-3/3

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 switch(es).	See your John Deere dealer.
	Defective motor(s).	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 switch(es).	See your John Deere dealer.
	Faulty wiring or loose connections.	See your John Deere dealer.
Radio does not work	Blown fuse.	Replace fuse.

JZ81662,0000585 -19-07FEB12-1/1

Storage

Tractor 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 “Fuel, Lubricants, and Coolant”.

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 “Service Engine Air Cleaner” in “Maintenance—As Required-/Per Condition” in this manual.
2. Change engine oil and filter. See “Change Engine Oil and Filter” in “Maintenance—First 100 Hours” in this manual.
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 slow 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. Touch up any painted surfaces that are scratched or chipped.
17. Wax entire tractor.
18. 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.
19. **Caution:** Rotate A/C compressor pulley several turns once a month to prevent seizure of compressor.

¹Disconnect battery ground cable for short-term storage periods (30 to 90 days).

JZ81662,00013CE -19-28AUG14-1/1

Remove Tractor from Storage

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 Section "Wheels, Tires, and Treads" in this manual.
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 "Fuel, Lubricants, and Coolant".
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 the engine.
15. Operate engine at slow idle for some time.
IMPORTANT: If air conditioning compressor is locked up, engine operation with compressor clutch engaged will damage belt or compressor.
16. Check air conditioning system.
17. Check all other system functions.

GS25068.0001447 -19-05NOV14-1/1

Specifications

Machine Specifications

Power	
SAE Gross Engine Horsepower - 5085E	63 kW (85 hp)
PTO Horsepower - 5085E (Factory Observed)	52 kW (70 hp)
SAE Gross Engine Horsepower 5100E	75 kW (100 hp)
PTO Horsepower - 5100E (Factory Observed)	63 kW (85 hp)
Rated Speed (All)	2400 rpm
Engine	
Slow Idle Speed	900 rpm
Fast Idle Speed	2500 rpm
Electrical System	
Battery Voltage	12 volt
Battery Cold Cranking Amps	950
Reserve Capacity (minutes)	180
Battery BCI Group Size	31
Alternator	90 amp
Power Take-Off (PTO)	
Speed—540E	1716 engine rpm
Speed—540	2400 engine rpm
Machine Weight	
Approximate Shipping Weight	3350 kg (7385 lb)

GS25068,00014A4 -19-02FEB16-1/1

Drain and Refill Capacities

Drain and Refill Capacities	
Fuel Tank	Open Operator's Station—114 L (30 gal.) Cab—114 L (30 gal.)
Cooling System	11.4 L (12 qt.)
Crankcase with Filter	12.1 L (3.2 gal.)
Transmission Hydraulic System	43.5 L (11.5 gal)
Mechanical Front Wheel Drive (MFWD) Axle	
Differential Housing	5 L (5.3 qt.)
Wheel Hub (Each)	0.7 L (0.74 qt.)
Diesel Exhaust Fluid (DEF)	
Open Operator's Station	12 L (3.1 gal.)
Cab	12 L (3.1 gal.)

GS25068,0001B62 -19-17JUL15-1/1

Specifications

Permissible Load Specifications

IMPORTANT: Always consult your tire manufacturers information, as permissible load varies per

manufacturer, load capacity, inflation pressure, speed-radius index, and travel speed.

Maximum Permissible Axle Load	
Axle	kg (lb)
MFWD	2700 (5952)
Rear	3400 (7496)
MFWD Total (Front and Rear)	5220 (11508)

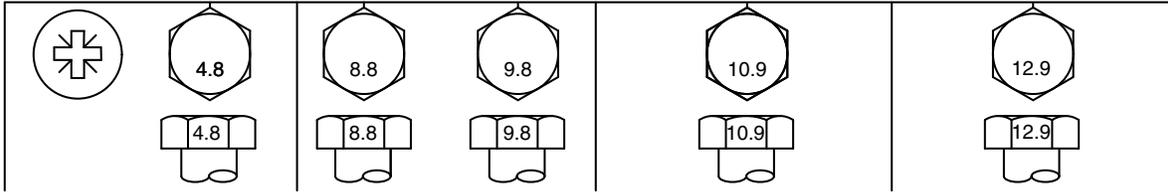
Maximum Unladen Permissible Weight	
Axle	kg (lb)
MFWD	1700 (3748)
Rear	2200 (4850)
MFWD Total (Front and Rear)	3900 (8598)

GS25068,00014A5 -19-18NOV14-1/1

Specifications

Metric Bolt and Screw Torque Values

TS1742 —UN—31MAY18



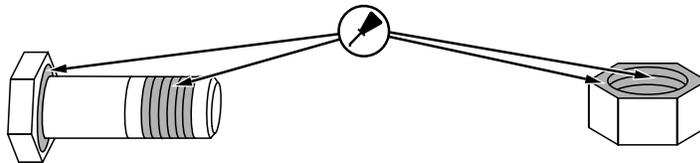
Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b	
	N·m	lb·in	N·m	lb·in												
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497
M24	—	—	—	—	468	345	518	382	666	491	738	544	780	575	864	637
M27	—	—	—	—	683	504	758	559	973	718	1080	797	1139	840	1263	932
M30	—	—	—	—	932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265
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



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

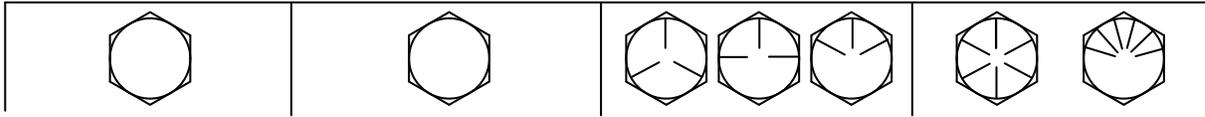
^bHex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2 -19-30MAY18-1/1

Specifications

Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



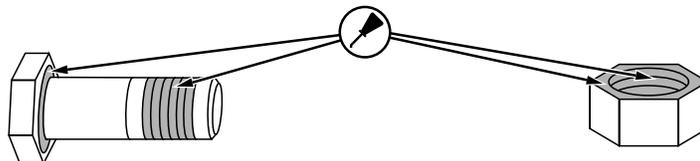
Bolt or Screw Size	SAE Grade 1 ^a				SAE Grade 2 ^b				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
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
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
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
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
1/2	25.9	19.1	28.2	20.8	43.1	31.8	47	34.7	66.6	49.1	72.8	53.7	94	69.3	103	75.8
9/16	36.7	27.1	40.5	29.9	61.1	45.1	67.5	49.8	94.6	69.8	104	77	134	98.5	148	109
5/8	51	37.6	55.9	41.2	85	62.7	93.1	68.7	131	96.9	144	106	186	137	203	150
3/4	89.5	66	98	72.3	149	110	164	121	230	170	252	186	325	240	357	263
7/8	144	106	157	116	144	106	157	116	370	273	405	299	522	385	572	422
1	216	159	236	174	216	159	236	174	556	410	609	449	785	579	860	634
1-1/8	305	225	335	247	305	225	335	247	685	505	751	554	1110	819	1218	898
1-1/4	427	315	469	346	427	315	469	346	957	706	1051	775	1552	1145	1703	1256
1-3/8	564	416	618	456	564	416	618	456	1264	932	1386	1022	2050	1512	2248	1658
1-1/2	743	548	815	601	743	548	815	601	1665	1228	1826	1347	2699	1991	2962	2185

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.

TS1741 —UN—22MAY18



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

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

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

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

DX.TORQ1 -19-30MAY18-1/1

Limited Battery Warranty

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

To Secure Warranty Service

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

Free Replacement

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within 90 days of purchase will be replaced free of charge. Installation costs will be covered by warranty if (1) the unserviceable battery was installed by a John Deere factory or dealer, (2) failure occurs within 90 days of purchase, and (3) the replacement battery is installed by a John Deere dealer.

Pro Rata Adjustment

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship more than 90 days after purchase, but before the expiration of the applicable adjustment period, will be replaced upon payment of the battery's current list price less a pro rata credit for unused months of service. The applicable adjustment period is determined from the Warranty Code printed at the top of the battery and chart below. Installation costs are not covered by warranty after 90 days from the date of purchase.

This Warranty Does Not Cover

Breakage of the container, cover, or terminals.

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

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

Limitation of Implied Warranties and Purchaser's Remedies

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

No Dealer Warranty

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

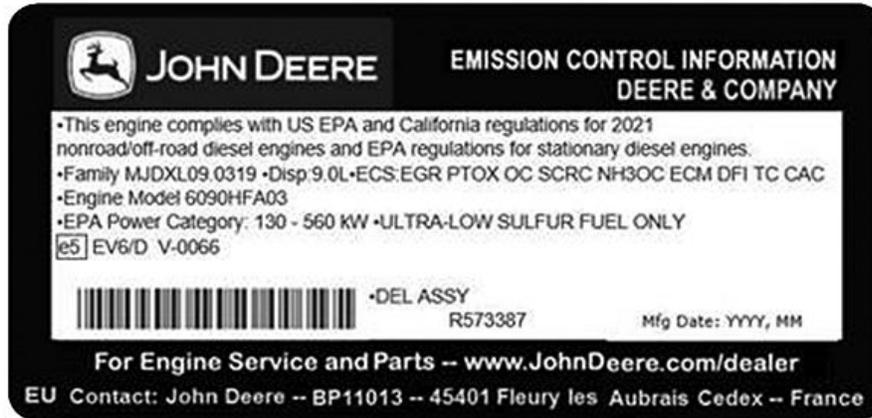
Pro Rata Months of Adjustment

Warranty Code	Warranty Period
A	40 Months
B	36 Months
C	24 Months

NOTE: If your battery is not labeled with a warranty code, it is a warranty code "B".

DX.BATWAR,NA -19-16APR92-1/1

Emissions Control System Certification Label



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 above in the geographic areas. The presence of an EU number signifies that the engine has been certified with the European Union countries per Regulation (EU) 2016/1628 and supplementing legislation. 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.

DX,EMISSIONS,LABEL -19-05FEB21-1/1

RG33429 —UN—04FEB21

CARB Non-road Emissions Control Warranty Statement—Compression Ignition

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.

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DX,EMISSIONS,CARB -19-26AUG20-1/8

Specifications

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)

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DX,EMISSIONS,CARB -19-26AUG20-2/8

Emissions Control Warranty Statement 2019 through 2021

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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.

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DX,EMISSIONS,CARB -19-26AUG20-3/8

RG29280 —UN—02FEB17

Specifications

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)

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DX,EMISSIONS,CARB -19-26AUG20-4/8

RG29281 —UN—27FEB17

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 warranted 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.

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DX,EMISSIONS,CARB -19-26AUG20-5/8

Specifications

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)

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DX,EMISSIONS,CARB -19-26AUG20-6/8

Emissions Control Warranty Statement 2022 through 2024

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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 warranted 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.

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DX,EMISSIONS,CARB -19-26AUG20-7/8

RG32758 —UN—19AUG20

Specifications

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)

DX,EMISSIONS,CARB -19-26AUG20-8/8

RG32759 — UN — 19AUG20

EPA Non-road Emissions Control Warranty Statement—Compression Ignition

DXLOGOV1 —UN—28APR09



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	Aftertreatment Devices
Fuel System	Crankcase Ventilation Valves
Ignition System	Sensors
Exhaust Gas Recirculation Systems	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)

Continued on next page

DX,EMISSIONS,EPA -19-12DEC12-1/2



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 | Aftertreatment Devices |
| Fuel System | Crankcase Ventilation Valves |
| Ignition System | Sensors |
| Exhaust Gas Recirculation Systems | 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
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Emission_CI_EPA (18Dec09)

TS1721 —UN—15JUL13

DX,EMISSIONS,EPA -19-12DEC12-2/2

Identification Numbers

Identification Numbers

Each tractor has the identification plates and/or pin stamped markings shown in the following information. The letters and numbers stamped on the plates identify a component or assembly. ALL these characters are needed when ordering parts or identifying a tractor or component for any John Deere product support program.

Also, they are needed for law enforcement to trace your tractor if it is ever stolen. ACCURATELY record these characters in the spaces provided in each of the following photographs.

AI68620,0000259 -19-03SEP10-1/1

Record Product Identification Number

Product Identification Number (PIN) plate is located on right front support member of the machine.

Product Identification Number _____

Each machine has its own unique Product Identification Number (PIN). The PIN number is broken down as follows:



LV14221—UN—03MAY11

1	L	V	5	0	8	5	M	#	#	A	1	0	0	1	0	1
WMC	Build Factory	Ma- chine Series	Engine Hp	Machine Family			Check Letter	Calendar Year	Model Year	Operator Station Identifier	Build Sequence					
Model Number									Serial Number							

WMC: World Manufacturing Code.

Build Factory: represents manufacturing location.

Machine Series: represents tractor series.

Engine Hp: represents approximate engine horsepower.

Machine Family: represents overall machine configuration.

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

Calendar Year = represents calendar year of manufacture (2010 = A, 2031 = 1, 2040 = A again).

Model Year = represents number of years manufactured.

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

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

Model Number: made up of series, Hp, and family; example shown 5085M.

Serial Number: made up of model year, operator station, and build sequence; example shown 100101.

GS25068,0001DA5 -19-07JAN16-1/1

Identification Numbers

Record Front Axle Serial Number

Serial number plate is located on rear side of left axle housing.

Front Axle Serial Number _____



MFWD Axle Shown

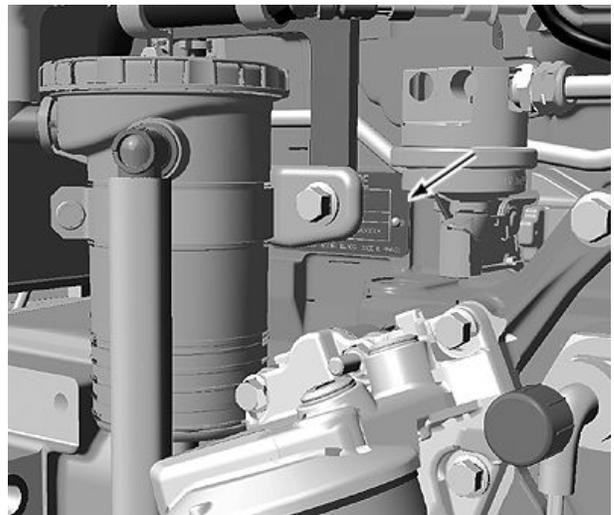
JZ81662,0000592 -19-07FEB12-1/1

LV14645 —UN—12AUG11

Record Engine Serial Number

Serial number plate is located on right side of engine block behind the OCV filter housing.

Engine Serial Number _____



JZ81662,0000F92 -19-03JAN13-1/1

LV16466 —UN—04JAN13

Record Transmission Serial Number

Serial number is stamped on the top left side of front housing.

Transmission Serial Number _____



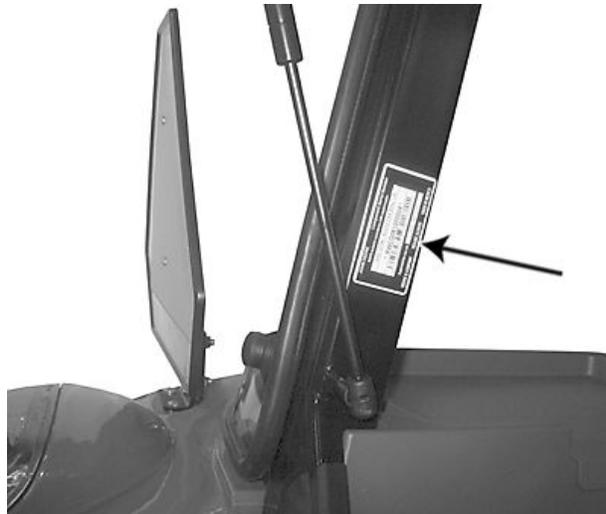
LV15796 —UN—23MAY12

JZ81662,0000C0B -19-23MAY12-1/1

Record Cab Serial Number

Serial number label is located on inside of rear left post.

Cab Serial Number _____

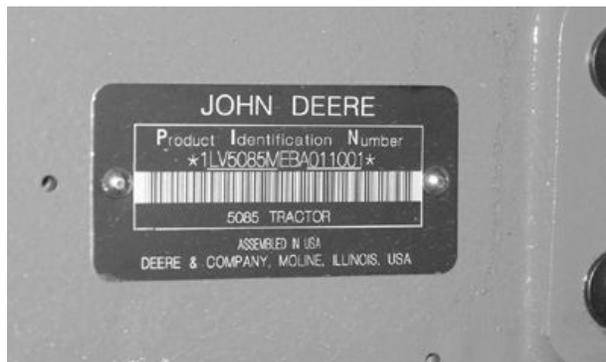


LV14224 —UN—03MAY11

JZ81662,00002AE -19-14JUL11-1/1

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

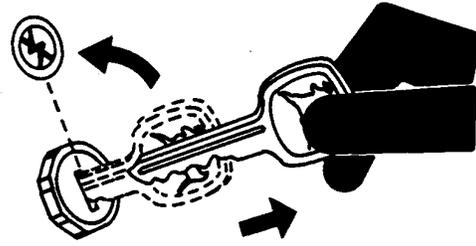


LV15771 —UN—17MAY12

JZ81662,0000BF0 -19-16MAY12-1/1

Keep Machines Secure

1. Install vandal-proof devices.
2. When machine is in storage:
 - Lower equipment to the ground
 - Set wheels to widest position to make loading more difficult
 - Remove any keys and batteries
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When parking outdoors, store in a well-lighted and fenced area.
5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
6. Notify your John Deere dealer of any losses.



TSS230 —JUN—24MAY89

DX,SECURE2 -19-18NOV03-1/1

Service and Maintenance Record

Daily or 10 Hour Service

SERVICE PROCEDURE		
<input type="checkbox"/> Check Engine Oil Level	<input type="checkbox"/> Drain Water and Sediment from Fuel Filter	
<input type="checkbox"/> Clean Air Filter Unloader Valve		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

JZ81662,0000D00 -19-13JUN12-1/1

Weekly or 50 Hour Service

SERVICE PROCEDURE		
<input type="checkbox"/> Inspect Tires and Check Inflation Pressure	<input type="checkbox"/> Check Coolant Level	
<input type="checkbox"/> Check Transmission-Hydraulic System Oil Level	<input type="checkbox"/> Check MFWD for Oil Leaks	
<input type="checkbox"/> Check MFWD Axle Housing Oil Level	<input type="checkbox"/> Check MFWD Axle Wheel Hub Oil Level	
<input type="checkbox"/> Lubricate MFWD Front/Rear Axle Trunnion ^a	<input type="checkbox"/> Lubricate Hitch Linkage and 3-Point Hitch Bushing ^b	
<input type="checkbox"/> Inspect Tractor for Loose Hardware		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

^aDaily service if operating in extremely wet and muddy conditions.

^bService more often if operated in extremely dusty conditions.

GS25068,0001478 -19-12NOV14-1/1

First 100 Hour Service

SERVICE PROCEDURE		
<input type="checkbox"/> Change Engine Oil and Filter	<input type="checkbox"/> Replace Transmission-Hydraulic Filter	
<input type="checkbox"/> Tighten Air Intake System and Engine Cooling System Hose Clamps	<input type="checkbox"/> Inspect Tractor for Loose Hardware	
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

GS25068,0001479 -19-12NOV14-1/1

Service and Maintenance Record

300 Hour Service

SERVICE PROCEDURE		
<input type="checkbox"/> Change Engine Oil and Filter ^a	<input type="checkbox"/> Check MFWD Axle Housing Oil Level	
<input type="checkbox"/> Check MFWD Axle Wheel Hub Oil Level	<input type="checkbox"/> Clean and Check Battery Condition	
<input type="checkbox"/> Drain and Flush Fuel Tank		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

^aWhen NOT using John Deere Plus-50 engine oil with John Deere filter

GS25068,000147A -19-12NOV14-1/1

500 Hour Service

SERVICE PROCEDURE		
<input type="checkbox"/> Change Engine Oil and Filter	<input type="checkbox"/> Replace Fuel Filters	
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

GS25068,000147B -19-12NOV14-1/1

600 Hour Service

SERVICE PROCEDURE		
<input type="checkbox"/> Check Neutral Start System	<input type="checkbox"/> Clean Cab Air Filters—If Equipped	
<input type="checkbox"/> Change MFWD Axle Wheel Hub Oil	<input type="checkbox"/> Change MFWD Axle Housing Oil	
<input type="checkbox"/> Clean Open Crankcase Vent (OCV) Tube	<input type="checkbox"/> Lubricate Rear Axle Bearings	
<input type="checkbox"/> Check Front Axle Pivot Pin End Play	<input type="checkbox"/> Tighten Air Intake System and Engine Cooling System Hose Clamps	
<input type="checkbox"/> Change Transmission-Hydraulic Oil and Filter		
Hours:	Comments:	Dealer's Stamp
Date:		
Work Carried Out By:		

GS25068,000147C -19-12NOV14-1/1

Service and Maintenance Record

1200 Hour Service

SERVICE PROCEDURE

- | | |
|---|---|
| <input type="checkbox"/> Inspect Fan Belt Tensioner | <input type="checkbox"/> Replace Fan Belt |
| <input type="checkbox"/> Change Transmission-Hydraulic Oil and Filter | <input type="checkbox"/> Service Air Cleaner Elements |
| <input type="checkbox"/> Clean Fuel Tank Vent Filter | |

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

GS25068,000147D -19-12NOV14-1/1

Annual Service

SERVICE PROCEDURE

- | | |
|--|--|
| <input type="checkbox"/> Clean Cab Air Filters—If Equipped | <input type="checkbox"/> Inspect Seat Belt |
| <input type="checkbox"/> Check Engine Coolant Properties | |

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

GS25068,000147E -19-12NOV14-1/1

First 3 Years or 3000 Hours Service

SERVICE PROCEDURE

- | | |
|--|--|
| <input type="checkbox"/> Flush Cooling System and Replace Thermostat | <input type="checkbox"/> Adjust Engine Valve Clearance |
|--|--|

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

GS25068,000147F -19-12NOV14-1/1

First 5 Years or 4500 Hours Service

SERVICE PROCEDURE

- | | |
|--|---|
| <input type="checkbox"/> Flush Cooling System and Replace Thermostat | <input type="checkbox"/> Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter |
|--|---|

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

GS25068,0001480 -19-12NOV14-1/1

Service and Maintenance Record

Index

	Page		Page
A			
A/C System		Service	35-2
Troubleshooting	165-14	Break-in engine oil	
AC Condenser Screen, Clean	105-8	Interim tier 4, final tier 4, stage IIIB, stage	
Accessory electrical outlet	30-9	IV, and stage V	95-11
Adjust Engine Valve Clearance	155-1	C	
Adjust Flow Control		Cab	
Rear SCV	70-14	Air filters, cleaning	145-1
Three-Function Mid SCV	70-14	Clean Air Filters	105-7, 135-3
Adjust Hand Throttle Friction Linkage	105-3	Protection System, Keep Installed Properly	105-12
Adjust PTO Speed Shift Lever		Capacities, drain and refill	175-1
Cab	105-3	Cast iron wheel weights	
OOS	105-3	Installing	80-2
Adjust Rear Fender		Using	80-2
OOS	105-4	Center Link, Position	65-3
Adjust Seat		Check Battery Condition	105-5, 125-3
Mechanical	25-3	Check Neutral Start System	135-1
Open Operators Station	25-3	Clean Battery	105-5, 125-3
Adjust Steering wheel	25-4	Cleaning Exhaust Filter	
Aftertreatment indicators overview	15-13	Filter, Exhaust	105-2
Air Conditioner and Heater Performance	30-5	Coat Hook	30-9
Air Conditioner Condenser, Clean	105-8	Cold Weather Start	50-7
Air conditioning		Control illumination light	30-7
Controls	15-15	Controls	
Air filter dust unloading valve		Foot Operated	15-3
Cleaning	110-3	Front console	15-1
Air filters (cab), clean	105-7, 135-3	Heater and air conditioning	15-15
Air filters (cab), cleaning	145-1	Instrument panel	15-14
Air Intake System		Controls illumination light bulb, replacing	105-28
Tighten Hose Clamps	120-3, 135-6	Controls, tractor	
Automatic (AUTO) Exhaust Filter Cleaning	50-21	Right-hand console	15-5
Avoid static electricity risk when fueling	05-4	Coolant	
B			
Ballast	80-1	Diesel engine	
Cast iron wheel weights		Engine with wet sleeve cylinder liners	95-3
Installing	80-2	John deere COOL-GARD II coolant extender	95-4
Using	80-2	Level, checking	115-2
Front end for transport	90-1	Mixing with concentrate, water quality	95-5
Battery		Testing freeze point	95-8
Remove	105-15	Warm temperature climates	95-4
Warranty	175-5	Coolant properties	
Battery booster or charger	50-14	Check, annual	145-2
Battery Handling, Safety		Cooling system	
Safety, Battery Handling	05-15	Flush, cooling system	
Biodiesel fuel	95-14	First five years, 5000 hours	160-1
Bolt and screw torque values		First three years, 3000 hours	155-1
Metric	175-3	CoolScan	95-18
Unified inch	175-4	Correct hose tips	70-2
Brakes		Couplers, Mid-Mount	70-2
Operating	55-9	D	
Troubleshooting	165-8	DEF	
Break-In		Disposal	95-6
Engine Operation	35-1	Dosing unit filter, change	160-1
Oil	35-2	Filling DEF Tank	95-2

Continued on next page

Index

	Page		Page
Storing.....	95-7	Engine Air Cleaner, Service.....	105-1
Tank, cleaning.....	105-3	Engine Cooling System	
Tank, refilling.....	95-6	Tighten Hose Clamps.....	120-3, 135-6
Testing.....	95-7	Engine Fan Belt	
Use in SCR equipped engines.....	95-5	Replace.....	140-2
DEF dosing unit filter		Engine Indicator and Gauges.....	50-9
Change.....	160-1	Engine oil	
DEF Level Gauge		Break-In	
Diesel Exhaust Fluid.....	50-15	Interim tier 4, final tier 4, stage IIIB,	
DEF tank		stage IV, and stage V.....	95-11
Cleaning.....	105-3	Diesel	
Defrost Windshield.....	30-4	Interim tier 4, final tier 4, stage IIIB,	
Deluxe Valve		stage IV, and stage V.....	95-9
Rear SCV Control Levers.....	70-5	Engine oil and filter service intervals	
Diesel engine oil		Interim tier 4, final tier 4, stage IIIB, stage	
Interim tier 4, final tier 4, stage IIIB, stage		IV, and stage V	
IV, and stage V.....	95-9	0.12 L/kW or greater oil pan.....	95-10
Diesel engines, cold weather effect.....	95-16	Engine Speeds and Operational Procedures	
Diesel fuel.....	95-12	High Speed Idle.....	50-12
Supplemental additives.....	95-17	Low Speed Idle.....	50-12
Diesel fuel, testing.....	95-13	Exhaust Filter System Overview.....	50-19
Differential lock, using.....	55-6	Exhaust Filter, Safety	
Disabled Exhaust Filter Cleaning.....	50-22	Safety, Exhaust Filter.....	05-18
Dome light			
Bulb, replacing.....	105-28	F	
Dome Light.....	30-7	Fan belt	
Troubleshooting.....	165-17	Tensioner, inspecting.....	140-1
Doors.....	30-1	Filter, Fuel Tank Vent	
Doors and windows		Fuel Tank Vent.....	140-5
Sun roof.....	30-1	Filters, Oil	
Drain and Flush Fuel Tank.....	105-10, 125-4	Oil Filters.....	95-11
Drain and refill capacities.....	175-1	Flush cooling system	
Drawbar		First five years, 5000 hours.....	160-1
Length and offset, adjusting.....	75-3	Flush Cooling System	
Load limitations.....	75-1	First Three Years, 3000 hours.....	155-1
Position, selecting.....	75-2	Foot Operated Controls.....	15-3
Driving on public roads.....	55-10	Front Axle Serial Number.....	180-2
E		Front console switches and controls.....	15-1
Effect of cold weather on diesel engines.....	95-16	Front loader installation.....	86-1
Electric System		Front-loader brackets.....	86-1
Troubleshooting.....	165-12	Fuel	
Electrohydraulic transmission system indicator.....	55-5	Biodiesel.....	95-14
Emission system		Diesel.....	95-12
Certification label.....	175-6	Handling and storing.....	95-13
Emissions		Lubricity.....	95-13
Required language		Fuel filter	
EPA.....	105-2	Drain.....	110-2
Engine		Replacing.....	130-2
Before starting.....	50-1	Fuel Filters	
Coolant heater, using.....	50-8	Filters, Fuel.....	95-11
Crankcase vent tube, cleaning.....	135-4	Fuel system	
Oil and filter, changing.....	120-1, 125-1, 130-1	Bleed.....	105-14
Oil level, checking.....	110-1	Fuel tank	
Speeds, changing.....	50-11	Drain.....	110-2
Stopping.....	50-13	Filling.....	95-1
Troubleshooting.....	165-1	Fuses	
		Locating.....	105-16

Continued on next page

	Page		Page
Relays	105-18		
Fusible links, locate	105-15		
G			
Gauges and Indicator Lights.....	15-9		
Gear case oil	95-19		
Gear Selection.....	55-5		
Grease			
Multipurpose Extreme Pressure (EP)	95-17		
Grille Screens, Clean.....	105-8		
Ground speed estimates			
Correction factors for other tires	55-4		
PowrReverser transmission	55-2		
Ground Speed Estimates			
PowrReverser Plus Transmission.....	55-4		
H			
Hardware torque values			
Metric	175-3		
Unified inch	175-4		
Headlights			
Bulb, replace	105-21		
Heater			
Controls.....	15-15		
Troubleshooting	165-14		
Hitch			
Attach Implements	65-4		
Components.....	65-1		
Converting.....	65-2		
Lateral Float, Adjusting	65-9		
Level	65-8		
Lubricating	115-6		
Side Sway, Adjusting	65-7		
HVAC			
Blower Speed.....	30-3		
Temperature.....	30-4		
HVAC Blower Speed	30-3		
HVAC Temperature.....	30-4		
Hydraulic Motor	70-7		
Hydraulic oil.....	95-19		
Hydraulic Power Beyond Coupler.....	70-16		
Hydraulic System			
Troubleshooting	165-8		
I			
Implement, preparing.....	65-2		
Indicator Lights and Gauges.....	15-9		
Indicators overview.....	15-13		
Instructional seat - Cab.....	30-8		
Instrument panel.....	15-14		
K			
Key Switch.....	50-4		
		L	
		Light.....	20-1
		Auxiliary Driving	20-4
		Brake.....	20-4
		Dome Light.....	30-7
		Turn Signal, High and Low Beam Lights.....	20-3
		Light Location	20-1
		Light Location, Cab.....	20-1
		Light Location, OOS	20-1
		Light Switch	
		Road, Work, and Warning.....	20-2
		Lighting	
		Tail Light Replacement.....	105-25
		Work Light Bulb Replacement	105-26
		Lights	
		Halogen light bulbs	
		Handling safely.....	105-20
		Road, Work and Warning.....	20-2
		Liquid Ballast, Draining	
		Draining Tires.....	80-3
		Loader lights (if equipped)	
		Bulb, replacing	105-27
		Lubricant	
		Mixing.....	95-17
		Lubricant Storage	
		Storage, Lubricant.....	95-18
		Lubricants, safety	95-2
		Lubricate Rear Axle Bearings.....	105-10
		Lubrication and maintenance	
		As required	
		Cleaning DEF tank	105-3
		Lubricity of diesel fuel.....	95-13
		M	
		Machine stop warning, required	50-17
		Metric bolt and screw torque values	175-3
		MFWD	
		Check Front Axle Pivot Pin End Play.....	135-5
		Oil leaks, checking	
		Service	
		50 hours.....	115-3
		MFWD axle	
		Housing	
		Oil level, checking	115-4, 125-2
		Oil, changing	135-4
		Operating	
		EH control.....	55-7, 55-8
		Steering stops, set	85-9
		Toe-In	
		Adjust	85-8
		Checking	85-8
		Wheel bolts, tighten	85-3
		Wheel hub	
		Oil level, checking	115-4, 125-2
		Oil, changing	135-3

Continued on next page

	Page		Page
Mid SCV Couplers	70-2	Record	
Mid SCV Cylinder Hoses	70-4	Front Axle Serial Number.....	180-2
Mixing lubricants.....	95-17	Product Identification Number.....	180-1
Monitor locations, installing	30-8	Refueling, avoid static electricity risk.....	05-4
Multi-function Controls Identification.....	70-2	Remote Hydraulic Cylinder	
Multi-Function Lever	70-10	Troubleshooting	165-10
Multipurpose Extreme Pressure (EP) grease	95-17	Remove Tractor from Storage	170-2
		Required machine stop warning	50-17
N		Restriction Indicator Pops Up	105-1
Neutral Start System, Check	135-1	Reversed cylinder response, correcting	70-14
		Rockshaft	
O		Draft control, using.....	60-2
Oil		Position control, using.....	60-1
Engine		Rate-of-drop, adjusting	60-3
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V	95-9	ROPS	
Gear case	95-19	Keep Installed Properly.....	105-11
Hydraulic.....	95-19	ROPS - OOS	25-1
Steering.....	95-19	ROPS, Certification	
Transmission.....	95-19	Safety.....	25-2
Oil Cooler, Clean	105-8	Rotating beacon light	
Oilscan.....	95-18	Operating	20-6
		Rotating beacon light (cab)	
P		Bulb, replacing	105-29
Parked Exhaust Filter Cleaning	50-23		
PowrReverser Plus Transmission	55-3	S	
Prestart checks.....	40-1	Safety	
Product Identification Number	180-1	Protect against noise	05-2
PTO		Rotating drivelines, stay clear	05-6
Attach driven implement	75-4	Safe maintenance, practice	05-17
Operating	75-6	Tires, service safely	05-21
Speeds, selecting.....	75-5	Towed equipment, transport at safe speeds	05-11
		Tractor, operating safely	05-8
R		Use caution on slopes, uneven terrain, and rough ground.....	05-12
Radiator, Clean.....	105-8	Safety chain, using	90-1
Radio		Safety, Avoid High-Pressure Fluids	
Troubleshooting	165-17	Avoid High-Pressure Fluids	05-22
Rear Axle Bearings		Safety, Fire Prevention	
Lubricating	135-5	Fire Prevention.....	05-3
Rear axle wheel bolts		Safety, Forestry Operations	
Bolts, tighten	85-3	Limited Use in Forestry Operation	05-9
Rear SCV		Safety, Handle Fuel Safely, Avoid Fires	
Power Beyond Oil	70-9	Avoid Fires, Handle Fuel Safely.....	05-3
Rear SCV - Set Detents	70-6	Safety, lubricants	95-2
Rear SCV Control Lever - Operation.....	70-6	Safety, ROPS	
Rear SCV Control Levers	70-5	ROPS, Keep Installed Properly.....	05-5
Rear SCV Controls Identification.....	70-1	Safety, Steps and Handholds	
Rear SCV Couplers	70-1	Use Steps and Handholds Correctly.....	05-6
Rear SCV for Hydraulic Motor	70-7	Safety, Tightening Wheel Retaining Bolts/Nuts	
Rear SCV for loader	70-10	Tightening Wheel Retaining Bolts/Nuts	05-22
Rear SCV hoses.....	70-3	SCR	
Rear window wiper		System overview.....	50-16
Operating	30-6	Seat belt	
		Inspecting.....	145-1
		Seat, adjusting.....	30-2
		Select Ballast Carefully.....	80-1

Continued on next page

	Page		Page
Selective Control Valves		Annual	
Troubleshooting	165-11	Seat belt, inspecting	145-1
Serial numbers, location	180-1	As required	
Service		Cleaning DEF tank	105-3
10 hours		As Required	
Drain water and sediment		Service Engine Air Cleaner	105-1
Fuel filter	110-2	Cab Protection System, Inspect.....	105-12
Fuel tank	110-2	Every week or 50 hours	
Dust unloading valve		Coolant level, checking	115-2
Air filter.....	110-3	Every Week or 50 Hours	
Engine oil level, checking	110-1	Check Tire Inflation Pressure	115-1
100 hours		First 100 Hours	
Engine oil and filter, changing	120-1, 125-1, 130-1	Tighten Air Intake System and Engine	
Transmission-hydraulic filter,		Cooling System Hose Clamps.....	120-3, 135-6
replacing	120-2, 135-7	ROPS, Inspect	105-11
1200 hours		Service Air Cleaner Elements.....	140-4
Transmission-hydraulic oil and filter, changing..	140-3	Service Air Conditioner.....	105-4
1200 Hours		Service as Required	100-3
Fan Belt.....	140-2	Service Exhaust Filter Cleaning	50-24
Replace Air Cleaner Elements	140-4	Service Interval Chart.....	100-1, 100-2
250 hours		Seven-terminal outlet.....	20-5
Engine oil and filter, changing	120-1, 125-1, 130-1	Signal words, understand	05-1
MFWD axle oil level, checking		Single-acting cylinder	70-4
Housing.....	115-4, 125-2	Specifications	
Wheel hub.....	115-4, 125-2	Drain and refill capacities.....	175-1
300 hours		Start Engine.....	50-5
Cab air filters, cleaning.....	145-1	Starting, Cold Weather	50-7
300 Hours		Steering oil.....	95-19
Clean and Check Battery		Steering stops (MFWD), set	85-9
Condition	105-5, 125-3	Steering wheel, adjusting	30-3
3000 Hours		Stop Tractor.....	55-9
Adjust Engine Valve Clearance	155-1	Storing fuel	95-13
50 hours		Sun roof	
Hitch, lubricating.....	115-6	Emergency exit	30-1
Tires, inspecting	115-1		
Tractor hardware	115-6, 120-4	T	
Transmission-hydraulic oil level, checking	115-3	Taillight	
500 hours		Bulb, replacing	105-24
Fuel filter, replacing	130-2	Tensioner, fan belt, inspecting	140-1
600 hours		Testing diesel fuel	95-13
Check Neutral Start System.....	135-1	Thermostat	
Engine open crankcase vent tube, cleaning.....	135-4	Replace	
MFWD axle oil, changing		First three years, 3000 hours	155-1
Housing.....	135-4	Three-point hitch, lubricating	115-6
Wheel hub.....	135-3	Tighten Clamps	
Transmission-hydraulic filter,		Air Intake System.....	120-3, 135-6
replacing	120-2, 135-7	Engine Cooling System.....	120-3, 135-6
600 Hours		Tires	
2WD		Combinations	85-9
Check Front Axle Pivot Pin End Play.....	135-5	Front, rolling direction	85-2
Clean Cab Air Filters	105-7, 135-3	Hardware, tighten.....	85-3
Lubricate Rear Axle Bearings.....	105-10	Implement-to-tire clearance	85-1
MFWD		Inflation pressure	85-2
Check Front Axle Pivot Pin End Play.....	135-5	Inflation Pressure	115-1
Tighten Air Intake System and Engine		Inspecting.....	115-1
Cooling System Hose Clamps.....	120-3, 135-6	Tires, service safely.....	05-21

Continued on next page

	Page		Page
Toe-in			
Adjust		W	
MFWD axle.....	85-8	Warm Transmission Oil	70-15
Checking		Warning light	
MFWD axle.....	85-8	Bulb, replacing	105-23
Torque charts		Warranty	
Metric	175-3	Non-road emissions control warranty	
Unified inch	175-4	statement--compression ignition	
Torque values		CARB	175-7
MFWD axle wheel bolts	85-3	EPA	175-15
Wheel bolts rear axle	85-3	Wheel Bolts, tighten	
Wheel/axle hardware	85-3	MFWD axle	85-3
Towed equipment, transport at safe speeds.....	05-11	Rear axle.....	85-3
Towing		Wheel weights, cast iron	
Tractor.....	90-4	Installing.....	80-2
Tractor		Using.....	80-2
PTO, operating.....	75-6	Windows.....	30-1
Remove from Storage.....	170-2	Windshield	
Storage	170-1	Defrost	30-4
Tractor controls		Windshield wiper	
OOS	15-7	Operating	30-6
Tractor Storage.....	170-1	Wiper	
Tractor, operating safely	05-8	Troubleshooting	165-17
Transmission		Work Light	
Operating		Troubleshooting	165-17
PowrReverser.....	55-1	Work lights	
Troubleshooting	165-7	Bulb, replacing	105-26
Transmission oil.....	95-19		
Transmission-hydraulic system			
Filter, replacing.....	120-2, 135-7		
Oil and filter, changing	140-3		
Oil level, checking.....	115-3		
Transporting			
Driving on roads.....	55-10		
Safety chain, using.....	90-1		
Tractor, towing	90-4		
Tread settings			
Multi-position MFWD wheels	85-7		
Multi-position rear wheels	85-6		
Tread width			
Rear wheel limitations.....	85-4		
Troubleshooting			
3-Point Hitch	165-9		
Brakes.....	165-8		
Electric system.....	165-12		
Engine.....	165-1		
Heater and A/C System	165-14		
Hydraulic System.....	165-8		
Remote Hydraulic Cylinder	165-10		
Selective Control Valves	165-11		
Transmission.....	165-7		
Wiper, Work Light, Dome Light and Radio.....	165-17		

U

Unified inch bolt and screw torque values.....	175-4
Use Rear SCV to Operate Hydraulic Motor.....	70-7
Use rear SCV to operate loader	70-10

John Deere Service

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:

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.



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OPERATOR'S MANUALS providing safety, operating, maintenance, and service information.



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Continued on next page

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- 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.



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John Deere Is At Your Service

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.



TS201—UN—15APR13

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/.

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