

Nutrient Applicator

(Serial No. 260001 - -)



JOHN DEERE

OPERATOR'S MANUAL

800R Nutrient Applicator

OMKK140856 ISSUE K5 (ENGLISH)

John Deere Des Moines Works

North America
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 www.techpubs.deere.com (Ag&Turf/JDPS), www.johndeeretechnico.com (C&F), or 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 (PIN) in the Specification or Machine Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. PIN information is helpful when ordering 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 at time of purchase.

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.

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

John Deere Is at Your Service



TS201—UN—15APR13

Customer satisfaction is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts, and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.
- **John Deere replacement parts, repair services, and information for maintenance or repair are available. For more information, please visit deere.com or deere.ca.**

DX,IFC,JDS-19-30SEP25

Required Emission-Related Information

Service Provider

A 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-19-08DEC23

Emissions Performance and Tampering

Operation and Maintenance

The engine, including the emissions control system,

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

Tampering

No deliberate tampering with or misuse of the engine emissions control system shall take place; in particular with regard to deactivating or not maintaining an exhaust gas recirculation (EGR) or a DEF dosing

system. Tampering with an engine's emissions control system will void the European Union (EU) type approval and applicable emissions-related warranties.

DX,EMISSIONS,PERFORM-19-12JAN18

Trademarks

Trademarks	
AdBlue™	Trademark of VDA, the German Association of the Automotive Industry
AutoPowr™	Trademark of Deere & Company
AutoTrac™	Trademark of Deere & Company
Bluetooth®	Trademark of Bluetooth SIG
BoomTrac™	Trademark of Deere & Company
Break-In™	Trademark of Deere & Company
ComfortCommand™	Trademark of Deere & Company
CommandARM™	Trademark of Deere & Company
CommandCenter™	Trademark of Deere & Company
Cool-Gard™	Trademark of Deere & Company
Erase™	Trademark of Precision Laboratories, LLC
Fluid Film®	Trademark of Eureka Chemical Company
HMS™	Trademark of Deere & Company
Hy-Gard™	Trademark of Deere & Company
Incide-Out™	Trademark of Precision Laboratories, LLC
IVT™	Trademark of Deere & Company
John Deere	Trademark of Deere & Company
Plus-50™	Trademark of Deere & Company
PowerTech™	Trademark of Deere & Company
RowSense™	Trademark of Deere & Company
SERVICEGARD™	Trademark of Deere & Company
SiriusXM®	Trademark of Sirius XM Radio Inc.
SprayMaster™	Trademark of Deere & Company
Teflon®	Trademark of DuPont Co.
TORX®	Trademark of Acument Intellectual Properties, LLC

Additional Information



THIS NUTRIENT APPLICATOR has been constructed for the application of crop protection chemicals and dry fertilizers in ground cultivation and agriculture ("Intended Use"). The application of crop protection chemicals and dry fertilizers must be done according to the manufacturers' instructions and legal user regulations. Intended Use also implies the observance of all user and maintenance instructions prescribed by the manufacturer. Any other use is regarded as noncompliant with its purpose including:

- Improper use of agrochemicals (herbicides, fungicides, insecticides, growth regulators) and dry fertilizers
- Noncompliance with instructions issued by the manufacturers of fertilizer and crop protection chemicals
- Noncompliance with legal requirements applicable to the use of fertilizers and crop protection chemicals, including their combination with other chemicals

THIS NUTRIENT APPLICATOR MUST ONLY be used and serviced by authorized persons who are informed about the hazards and correct operation of the machine. The relevant safety regulations and all other accepted safety, technical, medical, and traffic instructions must be observed.

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

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Company Info



JOHN DEERE

Deere & Company

One John Deere Place
Moline, IL 61265, USA
www.deere.com

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Contents

	Page		Page
Safety		Avoid Static Electricity Risk When Refueling	05-15
Recognize Safety Information	05-1	Handle Agricultural Chemicals Safely	05-15
Understand Signal Words	05-1	Spreading Dusty Materials (Based on Machine Configuration)	05-16
Follow Safety Instructions	05-1	Avoid Exposure To Chemicals	05-16
Spanish Safety Signs and Operator's Manual	05-1	Clean Vehicle of Hazardous Chemicals, Including Pesticides	05-17
Prepare for Emergencies	05-2	Non-Permissible Use	05-17
Wear Protective Clothing	05-2	Emergency Exit	05-17
Protect Against Noise	05-2		
Practice Safe Maintenance	05-3	Safety Signs	
Handle Electronic Components and Brackets Safely	05-3	Replace Safety Signs	10-1
Park Machine Safely	05-3	Bypass Start Decal	10-1
Remove Paint Before Welding or Heating	05-4	Air System Decals	10-1
Avoid Heating Near Pressurized Fluid Lines	05-4	Seat Belt Decal	10-2
Avoid High-Pressure Fluids	05-4	Axle Load Decal	10-3
Follow Tire Recommendations	05-4	Chemical Exposure Decal	10-3
Service Tires Safely	05-5	Do Not Ride Decal	10-4
Decommissioning — Proper Recycling and Disposal of Fluids and Components	05-5	Shields Decal	10-4
Avoid Contact with Agricultural Chemicals - Cab Category 1, 2, 3, and 4 According to EN 15695-1	05-6	Jacking Instruction Decals	10-5
Service Application Equipment Safely	05-7	Drive Shaft Decal	10-6
Use Proper Tools	05-7	Exhaust Heat Decal	10-6
Work In Ventilated Area	05-7	Do Not Stand Decal	10-7
Handling Batteries Safely	05-7	Battery Box Decal	10-7
Service Drive Belts Safely	05-8		
Do Not Open High-Pressure Fuel System	05-8	Safety Features	
Service Cooling System Safely	05-9	Safety Features	15-1
Service Accumulator Systems Safely	05-9		
Service the On Board Air System Safely	05-9	CommandCenter Display Information	
Clean Exhaust Filter Safely	05-9	Generation 4 and G5 Displays	20-1
Exhaust Filter Ash Handling and Disposal	05-10		
Using Compressed Air For Cleaning	05-10	CommandCenter Display Applications	
Maintain a Safety Area Around the Machine	05-11	CommandCenter Display Applications	25-1
Operator Ability	05-11	Onscreen Help Navigation	25-1
Working Area	05-11	Alerts and Messages	25-2
Avoid Backover Accidents	05-11		
Before Operating	05-11	Calibrations Application	
Operate Safely	05-12	Access Calibrations and Procedures	25-A-1
Use Safety Lights and Devices	05-12	Calibrations and Procedures Overview	25-A-1
Avoid Injury from Dispensed Objects	05-12	Spinner Calibration	25-A-1
Keep Riders Off Machine	05-12	Spinner Calibration Procedure	25-A-2
Instructional Seat	05-13	Conveyor Feed Rate Calibration	25-A-2
Use Steps and Handholds Correctly	05-13	Conveyor Feed Rate Calibration Procedure	25-A-3
Use Seat Belt Properly	05-13	Spreader Check	25-A-4
Use Caution On Hillsides	05-13	Spreader Check Procedure	25-A-4
Understand Implement of Husbandry Roadway Regulations	05-13	Icons Displayed during Spreader Check Procedure	25-A-5
Transport and Operate Safely	05-14	Rate Control Selection	25-A-6
Transporting Machine Using Trailer	05-14	Machine Calibration AutoTrac Wheel Angle Sensor	25-A-6
Prevent Machine Runaway	05-14		
Handle Fuel Safely—Avoid Fires	05-15		

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.

AutoTrac Wheel Angle Sensor Calibration Procedure	25-A-7
Machine Calibration AutoTrac Valve	25-A-7
AutoTrac Valve Calibration Procedure	25-A-7
Machine Calibration Multi-Function Lever	25-A-8
Multi-Function Lever Calibration Procedure	25-A-9
Speed Sensors Calibration	25-A-9
Speed Sensors Calibration Procedure	25-A-9
Reset Calibrations Machine Calibrations	25-A-10
Fan Maintenance Mode	25-A-10
Fan Maintenance Mode Procedure	25-A-11
Machine Calibration AutoTrac	25-A-11
AutoTrac Calibration Procedure	25-A-11
Reset Calibrations Spreader Calibrations	25-A-12

Dry Application System Application

Dry Application System	
Access	25-B-1
Main Page	25-B-1
Edit Rate Presets	25-B-2
Bin Details	25-B-3
Bin Counter Reset	25-B-5
Prime Controls	25-B-5
Bin Chaining	25-B-6
Bin Covers	25-B-7
Bin Purge	25-B-8
Chain Oiler	25-B-9
Bin and Product Alarms	25-B-11
Target Rate Alarm	25-B-11
Product Density Alarm	25-B-11
Select Spinner Preset	25-B-12
Edit Spinner Preset	25-B-13
Advanced Settings	25-B-14
Rate Control/Display Speed	25-B-14

Engine Application

Access Engine	25-C-1
Engine Main Page	25-C-1
Engine Power	25-C-2
Exhaust Filter System Overview	25-C-2
AUTO Exhaust Filter Cleaning	25-C-3
Parked Filter Cleaning	25-C-3
Disable AUTO Exhaust Filter Cleaning	25-C-5

HVAC Application

Access HVAC	25-D-1
Heating, Ventilation, and Air Conditioning (HVAC) Main Page	25-D-1
Set Temperature	25-D-2
Air Flow Mode	25-D-2
Fan Speed	25-D-3
Air Conditioning (A/C)	25-D-3

Lights Application

Access Lights	25-E-1
Lights	25-E-1
Worklights Preset 1	25-E-2
Worklights Preset 2	25-E-2
Worklights Controls	25-E-3

Video

Use Video Display Capability Properly	25-F-1
Install Video Display Camera	25-F-1

Extended Monitor (If Equipped)	25-F-2
Navigate to Video Application	25-F-2
Video	25-F-3
Video Triggers	25-F-3

Transmission Application

Access Transmission	25-G-1
Transmission Main Page	25-G-1
Performance Mode	25-G-2
Set Speeds	25-G-2
Maximum Speed Forward	25-G-3
Maximum Speed Reverse	25-G-4
Brake Pressure	25-G-5

Controls Setup Application

Access Controls Setup	25-H-1
Controls Setup Overview	25-H-1
Multi-Function Lever - Controls Setup	25-H-2
Multi-Function Lever	25-H-2
CommandARM - Controls Setup	25-H-3
CommandARM	25-H-4
Create Single Position Assignments	25-H-4
Create Dual Position Assignments	25-H-5
Application Assignments	25-H-6
Function Assignments	25-H-6

Headland Management System Application

Access Headland Management System	25-I-1
Headland Management System	25-I-1
Boom Control Mode	25-I-2

Operators Station

Spreader Overview	30-1
Front Console	30-2
Corner Post Display	30-3
CommandARM Console and Display	30-6
Multi-Function Lever	30-7
Navigation Bar	30-9
Left-Hand Cab Items	30-10
Right-Hand Cab Items	30-11
Overhead Controls	30-13
Seat Controls	30-15
Key Switch	30-15
Adjusting Steering Wheel	30-16
Operate Turn Signals, Horn and High/Low Beam	30-16
Operate Windshield Wiper/Washer	30-17
ComfortCommand Operator's Seat (Premium Seat)	30-18
ComfortCommand Operator's Seat (Ultimate Seat)	30-20
Seat Belts	30-22
Instructional Seat	30-22
Spreading Controls	30-22
Heating, Ventilation, and Air Conditioning (HVAC)	30-24
Radio	30-24
Engine and Ground Drive	30-25
Lights	30-26
Console and Display	30-26
Dial	30-27
Ladder	30-27
Seek	30-27
Transport Lock Switch	30-27

	Page		Page
Quick Stop Switch	30-28	Electrical System Service	
AutoTrac Resume	30-28	Basic Electrical Component Handling /	
Fuel Level Indicator	30-28	Precautions For Vehicles Equipped With	
Exhaust Filter Cleaning Indicator	30-28	Computer Controlled Systems	55-1
Diesel Exhaust Fluid (DEF) Level Indicator	30-29	Disconnect Battery (Final Tier 4 and Stage V	
Installing Mobile Radio and Antenna	30-29	Engines)	55-1
Operate Radio		Welding Near Electronic Control Units	55-1
Radio Operation	35-1	Keep Electronic Control Unit Connectors	
Break-In Period		Clean	55-1
Engine	40-1	Servicing Batteries	55-2
Prestart Checks		Preventing Battery Damage	55-2
Check Engine Compartment for		Operate a Booster Battery or Charger	55-2
Accumulated Trash and Debris	45-1	Safety Rules when Replacing Halogen Bulbs	55-3
Check Engine Oil Level—Daily	45-1	Replace Front LED Light Assembly	55-4
Drain Water Separator—Daily	45-1	Replace Roof Worklights	55-5
Check Coolant Level—Daily	45-2	Adjust Front Grille Lights	55-5
Check Transmission Oil Level—Daily	45-2	Replace Worklight LED Assembly	55-5
Check Steering/Hydraulic Oil Level—Daily	45-2	Replace Front (Amber) Lights (LED)	55-6
Fill Fuel Tank	45-3	Aim Head Lights	55-7
Fill Diesel Exhaust Fluid (DEF) Tank (Final		Replace Beacon Light	55-8
Tier 4 and Stage V)	45-3	Replace Courtesy Service Light Strip	55-8
Inspect Tires—Daily	45-4	Safeguard Alternator and Regulator	55-9
Drain Moisture from Onboard Air Tank—Daily	45-4	Replace Warning, Tail Light, and Turn-Signal	
Avoid Static Electricity Risk When Refueling	45-5	Lights	55-9
Operate Machine		Replace Worklight Halogen Bulbs	55-9
Avoid Contact with Agricultural Chemicals	50-1	Replace Cab Dome Light	55-11
Prevent Machine Runaway	50-1	Handling Batteries Safely	55-11
Machine Informational Decals	50-1	Fuse Identification	55-12
Use Seat Belts	50-3	Replace Cab Load Center Fuses	55-12
Operate the Engine	50-3	Mid-Chassis Load Center	55-13
Cold-Weather Starting—9.0 L Engine with		Replace Power Distribution Mid-Chassis	
Starting Aid	50-3	Fuses	55-15
Change Starting Fluid Canister	50-4	Battery Disconnect Switch	55-15
Required Machine Stop Warning	50-4	Electrical Connector Service	55-16
Aftertreatment Indicators Overview	50-5	Cab and Air Conditioning	
Selective Catalytic Reduction (SCR) System		Avoid Exposure to Chemicals	60-1
Overview	50-7	Avoid Contact with Agricultural Chemicals -	
Selective Catalytic Reduction (SCR) System		Cab Category 1, 2, 3, and 4 According to	
(Final Tier 4 and Stage V Engines)	50-8	EN 15695-1	60-1
Transmission Controls Identification	50-9	Clean Cab Windows and Service Wiper	60-2
Adjust Set Speeds	50-9	Cab Pressure Indicator	60-2
Set Speeds—Guidelines and Examples	50-10	Cab Air Filters	60-3
Put Machine in Motion	50-10	Check and Replace Cab Air Filter	60-3
Field Operation	50-11	Service Air Conditioner	60-5
Downhill Operation in Slippery Conditions	50-13	Installing Mobile Radio and Antenna	60-6
Reduce Travel Speed	50-13	Engine and Drivetrain	
Stopping and Parking Machine	50-14	Replace Fan Belt	65-1
Come Home Mode	50-14	Inspect Fan Belt Tensioner	65-1
Mechanical Delay and Look-Ahead Times	50-15	Do Not Modify Fuel System	65-2
Light Identification and Operation Table	50-18	Do Not Open High-Pressure Fuel System	65-3
CommandARM Light Switches	50-20	Relieve Fuel System Pressure	65-3
Operate Turn Signals and High/Low Beam	50-20	Cleaning Diesel Exhaust Fluid (DEF) Tank	65-3
Safety Lights and Devices	50-20	Change Diesel Exhaust Fluid (DEF) Dosing	
Hazard Lights and Extremity Warning Lights	50-21	Unit Filter	65-4
Understand Implement of Husbandry		Drain Water Separator—Daily	65-5
Roadway Regulations	50-22	Replace Fuel Filters—500 Hours	65-5
Transport Machine	50-22	Bleed Fuel System	65-6
US EPA Qualified Emergency Use — SCR		Service Air Cleaner	65-6
Derate Override Option	50-23	Replace Engine Air Cleaner Elements	65-6
		Clean Cooling Package	65-7

	Page		Page
Wheels and Tires		Fuel Filters	80-13
Use Proper Lifting Equipment	70-1	Lubricant Storage	80-13
Machine Jacking Locations	70-1	Mixing of Lubricants	80-13
Check Tires for Damage and Proper Inflation		Avoid Static Electricity Risk When Refueling	80-13
Pressure—Daily	70-1		
Tighten Wheel Hardware	70-5	Lubrication and Maintenance	
Replacement Tire Specifications	70-6	Lubrication Symbols	85-1
Check Front Axle Toe-In—Annually	70-6	Clean Vehicle of Hazardous Chemicals, Including Pesticides	85-1
Adjust Front Axle Toe-In	70-6	Prevent Hydraulic System Contamination	85-1
Discarded Tires	70-6	Decommissioning — Proper Recycling and Disposal of Fluids and Components	85-1
Chassis		Service and Operate Chemical Sprayers Safely	85-2
Additional Service Information	75-1	Service Intervals	85-3
Transport and Operate Safely	75-1	Tighten Wheel Hardware—After First Hour	85-4
Arm and Disarm Rear Combination Spring		Check Axle Mounting Hardware Torque— After First Hour	85-5
Brake Chamber	75-1	Change Front Axle Bearing Oil—After First 50 Hours	85-6
Towing Machine	75-3	Change Rear Axle Oil—After First 100 Hours	85-6
Transporting on Flat-Bed Carrier	75-4	Change Planetary Hub Oil—After First 100 Hours	85-7
Transport Machine Using Trailer	75-4	Change Engine Oil and Filter—After First 100 Hours	85-7
Prepare Machine for Transport on Semi- Tractor Trailer	75-4	Check Engine Oil Level—Daily	85-8
Checking Engine Compartment for Accumulated Trash and Debris	75-7	Check Coolant Level—Daily	85-9
Fuels, Lubricants, and Coolants		Check Transmission Oil Level—Daily	85-9
Diesel Fuel	80-1	Check Steering/Hydraulic Oil Level—Daily	85-10
Lubricity of Diesel Fuel	80-1	Drain Water Separator—Daily	85-10
Handling and Storing Diesel Fuel	80-2	Drain Moisture from Onboard Air Tank—Daily	85-10
Supplemental Diesel Fuel Additives	80-2	Inspect Tires—Daily	85-11
Biodiesel Fuel	80-2	Check and Replace Cab Air Filters—As Required	85-11
Testing Diesel Fuel	80-3	Replace Engine Air Filters—As Required	85-11
Minimizing the Effect of Cold Weather on Diesel Engines	80-3	Clean Fuel Tank Vent Filter—As Required	85-11
Diesel Engine Coolant (Engine with Wet Sleeve Cylinder Liners)	80-4	Clean Diesel Exhaust Fluid (DEF) Tank Vent Filter—As Required	85-12
John Deere Cool-Gard II Coolant Extender	80-5	Cleaning Diesel Exhaust Fluid (DEF) Tank	85-12
Operating in Warm Temperature Climates	80-6	Change Diesel Exhaust Fluid (DEF) In-Line Filter—Three Years or 8500 Hours	85-13
Water Quality for Mixing with Coolant Concentrate	80-6	Replace Diesel Particulate Filter (DPF)—As Required	85-15
Testing Coolant Freeze Point	80-6	Exhaust Filter / Diesel Particulate Filter (DPF) Ash Handling and Disposal	85-15
Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V	80-7	Exhaust Filter Disposal	85-15
Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V Engines	80-7	Inspect and Replace Fan Belt—As Required	85-15
John Deere Break-In Plus Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V	80-8	Add Coolant Conditioner—As Required	85-16
Diesel Engine Oil Service Interval for Operation at High Altitude	80-8	Fill Windshield Washer Reservoir—As Required	85-16
Diesel Exhaust Fluid (DEF) — Use in Selective Catalytic Reduction (SCR) Equipped Engines	80-9	Visually Inspect Front Axle Oil-Lubricated Wheel Bearings—100 Hours	85-16
Storing Diesel Exhaust Fluid (DEF)	80-9	Lubricate Front Spindle Housing—100 Hours	85-16
Refilling Diesel Exhaust Fluid (DEF) Tank	80-10	Lubricate Steering Cylinder Ball Joints—100 Hours	85-17
Testing Diesel Exhaust Fluid (DEF)	80-10	Lubricate Suspension Assemblies—100 Hours	85-17
Disposal of Diesel Exhaust Fluid (DEF)	80-11	Lubricate Pump Drive Gear Case Bearing Seal—100 Hours	85-17
Steering, Hydraulic and Transmission Oil	80-11	Tighten Wheel Hardware—100 Hours	85-18
Pump Drive Gear Case Oil	80-11	Check Axle Mounting Hardware Torque— 100 Hours	85-18
Front Axle Bearing Oil	80-12	Inspect Automatic Brake Adjuster—100 Hours	85-19
Rear Axle Oil	80-12	Change Engine Oil and Filter—250 Hours	85-21
Grease	80-12		
Suspension and Steering Grease	80-12		
Oil Filters	80-13		

	Page		Page
Service Batteries—250 Hours	85-22	Storage	
Replace Fuel Filters—500 Hours	85-23	Avoid Exposure To Chemicals	100-1
Replace Transmission Oil Filters—500 Hours	85-23	Clean Vehicle of Hazardous Chemicals, Including Pesticides	100-1
Inspect Driveshaft U-Joints—500 Hours After Initial Interval	85-24	Recommended Cleaners and Coatings	100-2
Check and Replace Cab Air Filters—500 Hours or Annually	85-24	Clean Solution System	100-2
Inspect Seat Belts—Annually	85-24	Ship Machine During Cold-Weather Months	100-3
Replace Air Drier Cartridge—Annually	85-24	Prepare Machine for Cold-Weather Storage – Winterizing	100-3
Clean Engine Vent Tube—Annually	85-25	Prepare Machine for Storage	100-4
Clean Pump Drive Gearcase Breather— Annually	85-25	Remove Machine from Storage	100-6
Clean Rear Axle Breather—Annually	85-26	Specifications	
Inspect Service Brake Components— Annually	85-26	Machine Specifications	105-1
Inspect Axle Components—Annually	85-26	Machine Dimensions	105-6
Inspect Transmission Isolators—Annually	85-27	Unified Inch Bolt and Screw Torque Values	105-7
Check Front Axle Toe-In—Annually	85-27	Metric Bolt and Screw Torque Values	105-8
Change Front Axle Wheel Bearing Oil— Annually	85-28	Face Seal Fittings Assembly and Installation —All Pressure Applications	105-9
Lubricate Ladder Cylinder—Annually	85-28	Metric Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures ..	105-10
Change Planetary Hub Oil—1500 Hours or Annually	85-29	Metric Face Seal and O-Ring Stud End Fitting Torque Chart—High-Pressure Applications	105-11
Air Intake System	85-29	SAE Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures	105-12
Test Coolant—750 Hours or Annually	85-30	SAE Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure Applications ..	105-13
Check Engine Speeds—750 Hours	85-30	Four Bolt Flange Fittings Assembly and Installation—All Pressure Applications	105-14
Replace Steering/Hydraulic Oil Filter—1000 Hours	85-31	SAE Four Bolt Flange Cap Screw Torque Values—Standard Pressure Applications	105-14
Replace Transmission Reservoir Filler Cap— 1000 Hours	85-31	SAE Four Bolt Flange Cap Screw Torque Values—High Pressure Applications	105-15
Replace Steering/Hydraulic Reservoir Filler Cap—1000 Hours	85-31	External Hexagon Port Plug Torque Chart	105-15
Change Transmission Oil—1000 Hours	85-32	Understand Implement of Husbandry Roadway Regulations	105-15
Change Steering/Hydraulic Oil—1000 Hours	85-32	Identification Numbers	105-16
Change Pump Drive Gear Case Oil—1000 Hours	85-33	Keep Proof of Ownership	105-17
Change Rear Axle Oil—1000 Hours	85-33	Keep Machines Secure	105-17
Check Fan Belt Tensioner—1500 Hours	85-34	Limited Battery Warranty	105-18
Adjust Engine Valve Clearance—2000 Hours	85-34	Emissions Control System Certification Label ..	105-18
Inspect Driveshaft U-Joints—3000 Hours and Every 500 Hours Thereafter	85-34	CARB Non-Road Emissions Control Warranty Statement—Compression Ignition	105-19
Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter	85-34	EPA Non-road Emissions Control Warranty Statement—Compression Ignition	105-22
Replace Engine Crankshaft Damper—5000 Hours or Five Years	85-35	Carbon Dioxide Emissions (CO ₂)	105-24
Drain, Flush, and Refill Cooling System— 5000 Hours or Five Years	85-35		
AutoTrac			
AutoTrac Setup	90-1		
Operate AutoTrac	90-3		
Steering Optimization	90-4		
Row Entry Modes	90-6		
Shift Track	90-7		
AutoTrac Turn Automation	90-7		
Sprayer AutoTrac Turn Automation	90-8		
Troubleshooting			
Engine	95-1		
Transmission	95-6		
Hydraulic System	95-7		
Suspension System	95-7		
Operator's Cab	95-8		
Premium Radio	95-11		

Safety

Recognize Safety Information



T81389—UN—28JUN13

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

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Understand Signal Words



▲ WARNING

▲ CAUTION

TS187—19—30SEP88

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

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

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

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

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

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

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

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

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

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

DX,READ-19-01AUG22

Spanish Safety Signs and Operator's Manual

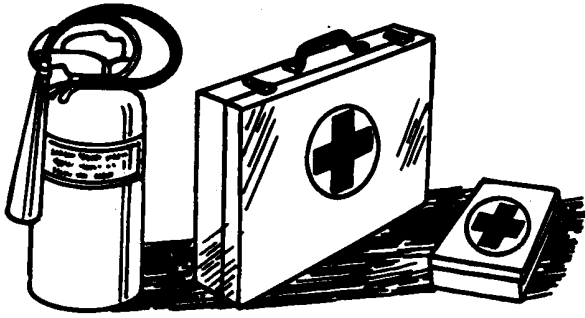


TS201—UN—15APR13

Spanish versions of the Operator's Manual and safety signs are available for this machine via regular spare part channels.

OUO6075,0000145-19-18NOV25

Prepare for Emergencies



TS291—UN—15APR13

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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

DX,FIRE2-19-03MAR93

Protect Against Noise



TS207—UN—23AUG88

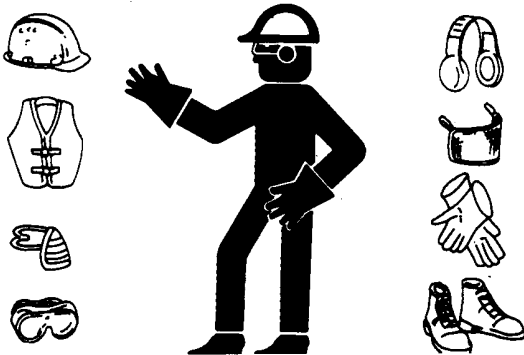
There are many variables that affect the sound level range, including machine configuration, condition and maintenance level of the machine, ground surface, operating environmental, duty cycles, ambient noise, and attachments.

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

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

DX,NOISE-19-03OCT17

Wear Protective Clothing



TS206—UN—15APR13

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

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

DX,WEAR2-19-03MAR93

Practice Safe Maintenance



TS218—UN—23AUG88

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

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

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

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

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

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

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

DX,SERV-19-28FEB17

Handle Electronic Components and Brackets Safely



TS249—UN—23AUG88

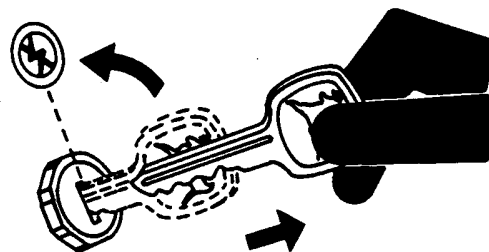
Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

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

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

DX,WW,RECEIVER-19-24AUG10

Park Machine Safely



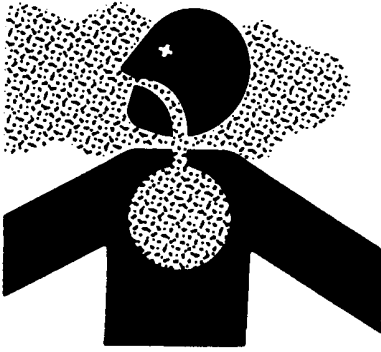
TS230—UN—24MAY89

Before working on the machine:

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

DX,PARK-19-04JUN90

Remove Paint Before Welding or Heating



TS220—UN—15APR13

Avoid potentially toxic fumes and dust.

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

Remove paint before heating:

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

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

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

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02

Avoid Heating Near Pressurized Fluid Lines



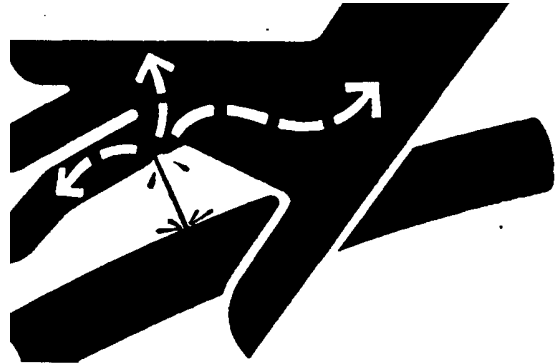
TS953—UN—15MAY90

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to

yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.

DX,TORCH-19-10DEC04

Avoid High-Pressure Fluids



X9811—UN—23AUG88

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

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

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

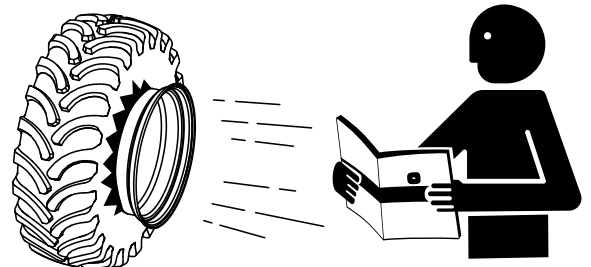
Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

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

In case of accidental skin injection, seek immediate surgical treatment.

DX,FLUID-19-05NOV25

Follow Tire Recommendations



H111235—UN—13MAY14

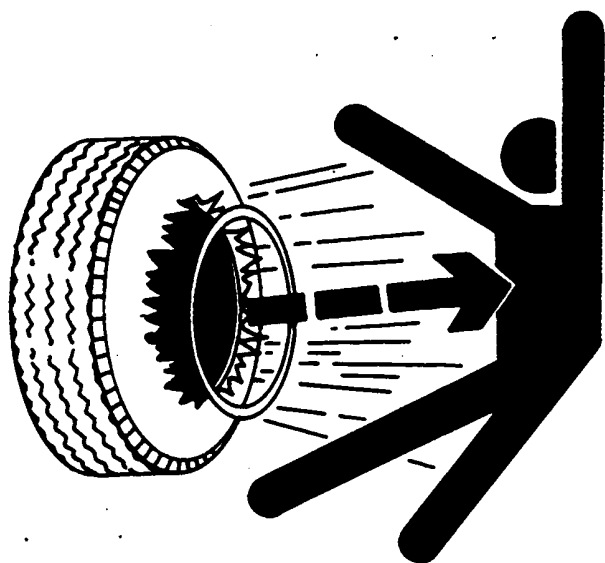
Keep your machine in proper working order.

Use only prescribed tire sizes with correct ratings and inflate to the pressure specified in this manual.

Use of other than prescribed tires may decrease stability, affect steering, result in premature tire failure, or cause other durability or safety issues.

DX,TIRE,INFO-19-19MAY14

Service Tires Safely



TS211—UN—15APR13

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.

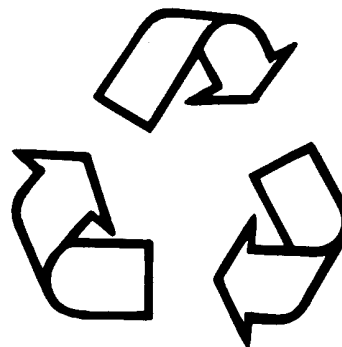
Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

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.

DX,RIM1-19-27OCT08

Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

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

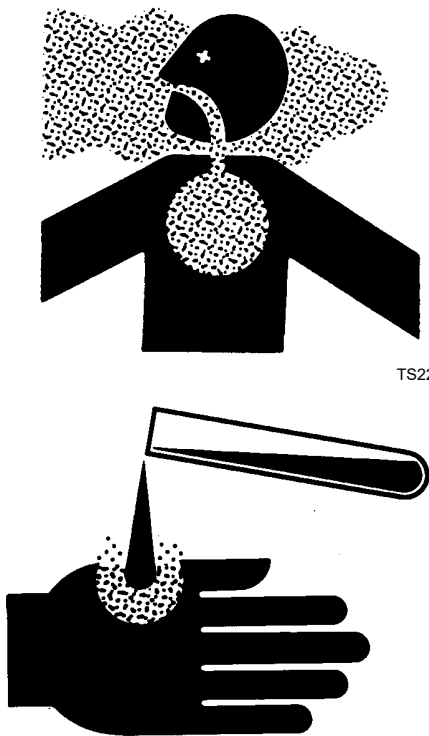
- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as fertilizers and pesticides. Handle and dispose of these components appropriately.
- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.
- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid); filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.
- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air

conditioning refrigerants which could damage the atmosphere if allowed to escape.

- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN-19-01JUN15

Avoid Contact with Agricultural Chemicals - Cab Category 1, 2, 3, and 4 According to EN 15695-1



TS220—UN—15APR13

TS272—UN—23AUG88

CAUTION: Read the information and be aware about the machine cab category stated on the label placed inside the cab.

Category 1 cabs do not provide a specified level of protection against hazardous substances.

Europe Only – tractors or other machines fitted with this cab shall not be used under conditions requiring protection against hazardous substances.

Category 2 cabs provide protection against dust.

Europe Only – tractors or other machines fitted with this cab shall not be used under conditions requiring protection against aerosols and vapors.

Category 3 cabs provide protection against dust and aerosols.

Europe Only – tractors or other machines fitted with this cab shall not be used under conditions requiring protection against vapors.

Category 4 cabs provide protection against dust, aerosols, and vapors.

If utilizing a cab with a rating less than Category 4 under conditions requiring protection, the operator must follow the chemical manufacturer label instructions to protect against dust, aerosols, and vapors when the cab does not provide protection.

Follow the product label provided by the chemical manufacturer for proper use of personal protective equipment.

Follow operational and service instructions for cab and recommended filter replacement intervals.

NOTE: EN 15695-1 is a European Union regulation that defines cab requirements. If this machine is used outside of the European Union, consult national, regional, and local regulations.

1. If the pesticide use instructions require respiratory protection and do not specify the cab category according to EN 15695-1, and the filter according to EN 15695-2, wear an appropriate respirator inside the cab.
2. When operating in an environment where pesticides are present, wear a long-sleeved shirt, long-legged pants, shoes, and socks.
3. Wear personal protective equipment as required by the pesticide use instructions when leaving the enclosed cab:
 - Into a treated area.
 - To work with contaminated application equipment, such as nozzles, which must be cleaned, changed or redirected.
 - To become involved with mixing and loading activities.
4. Before reentering the cab, remove protective equipment and store outside the cab. If the machine is equipped with a protective clothing locker, store protective equipment in the used side of the locker.
5. To prevent soil or other contaminated particles from entering the cab, clean shoes or boots before entering.
6. Never store chemical containers inside the cab.
7. Always close the windows and doors during spraying.

to generate an overpressure inside the cab, preventing polluted air from entering the cab.

DX,CABS,ALL-19-15FEB21

Service Application Equipment Safely

⚠ CAUTION: Treat all chemicals with great caution. DO NOT take chances. When in doubt, proceed as though contamination is present.

Before performing any service activity:

- Wear appropriate personal protective equipment (see Handle Agricultural Chemicals Safely in this section).
- Clean vehicle (see Clean Vehicle of Hazardous Chemicals, Including Pesticide in this section).

BN55050,000010D-19-09APR18

Use Proper Tools



TS779—UN—08NOV89

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

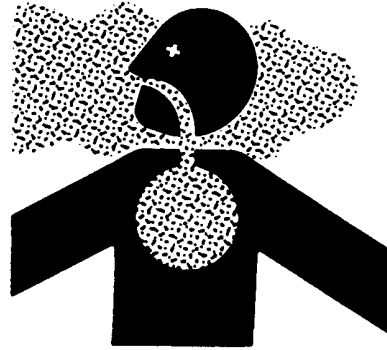
Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.

DX,REPAIR-19-17FEB99

Work In Ventilated Area



TS220—UN—15APR13

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

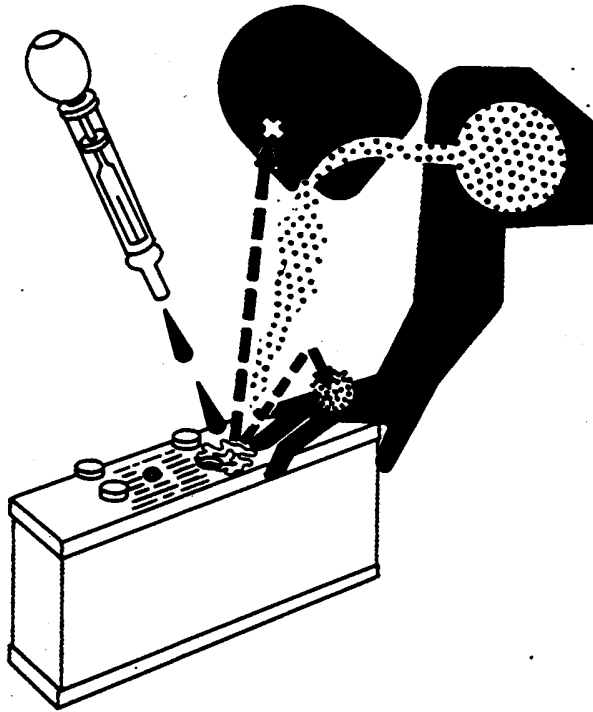
If you do not have an exhaust pipe extension, open the doors and get outside air into the area.

DX,AIR-19-17FEB99

Handling Batteries Safely



TS204—UN—15APR13



TS203—UN—23AUG88

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

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

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

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

Avoid hazards by:

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

If acid is spilled on skin or in eyes:

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

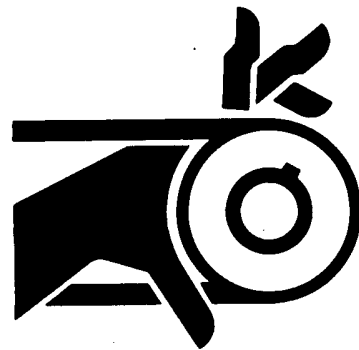
If acid is swallowed:

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

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

DX,WW,BATTERIES-19-02DEC10

Service Drive Belts Safely



TS285—UN—23AUG88

When servicing drive belts always observe these precautions:

- Avoid serious injury from hand or arm entanglement. Never attempt to clean, check or adjust belts while the machine is running. Always shut off the engine, set the parking brake and remove the key.
- Do not attempt to clean belts with flammable cleaning solvents.

OOU6043,00015E3-19-24MAY04

Do Not Open High-Pressure Fuel System



TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. Only technicians familiar with this type of system should perform repairs. 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.

DX,WW,HPCR1-19-07JAN03

Service Cooling System Safely



TS281—UN—15APR13

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

Shut off engine, set park brake, and remove key.

NEVER add coolant when engine is overheated. Wait for it to cool.

NEVER remove surge tank cap when coolant or engine is hot. Wait until engine coolant is cool to remove cap.

SLOWLY loosen cap to relieve pressure before removing completely.

Add coolant only when engine is shut off.

OUC6092,000026F-19-11FEB14

Service Accumulator Systems Safely



TS281—UN—15APR13

Escaping fluid or gas from pressurized hydraulic accumulator 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 hydraulic system before removing accumulator. Never attempt to relieve hydraulic system or accumulator pressure by loosening a fitting.

Accumulators cannot be repaired.

DX,WW,ACCLA-19-15APR03

Service the On Board Air System Safely



TS281—UN—15APR13

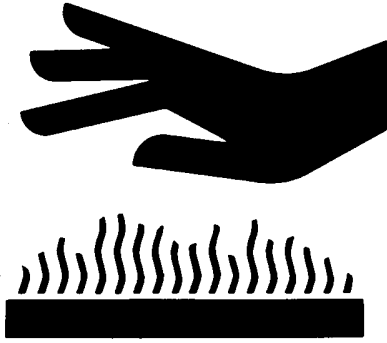
The On Board Air system and tanks, unloader valves, and the air tank exhaust are under high pressure. Wear proper protective equipment including eye and hand protection when servicing any air system components. Relieve air pressure from the system before conducting any air system maintenance.

OUC6092,0000B4B-19-16FEB17

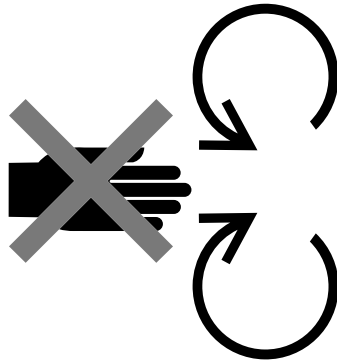
Clean Exhaust Filter Safely



TS227—UN—15APR13



TS271—UN—23AUG88



TS1693—UN—09DEC09



TS1695—UN—07DEC09

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

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

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

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

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

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

Avoid contact with these components until cooled to safe temperatures.

If service procedure requires engine to be running:

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

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

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

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

DX,EXHAUST,FILTER-19-12JAN11

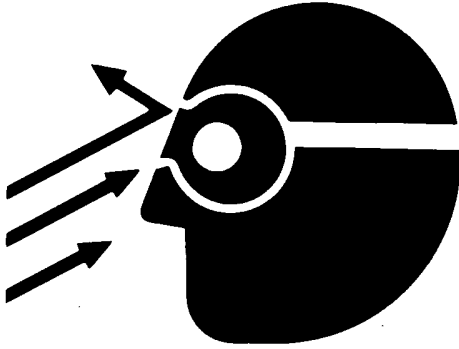
Exhaust Filter Ash Handling and Disposal

CAUTION: Under federal, state and/or local laws or regulations, exhaust filter ash may be classified as a hazardous waste. Hazardous waste must be disposed of in accordance with all applicable federal, state, and local laws or regulations governing hazardous waste disposal. See a John Deere dealer or other service provider to remove ash from the exhaust filter. Personal protective equipment and clothing, maintained in a sanitary and reliable condition, should be used when handling and cleaning exhaust filter. See a John Deere dealer or other service provider for exhaust filter handling and disposal.

OUC6092,00003D1-19-20OCT25

Using Compressed Air For Cleaning

CAUTION: Reduce compressed air to 210 kPa (2 bar) (30 psi) or less when using for cleaning purposes. Clear area of bystanders, guard against flying debris, and wear personnel protective equipment, including eye protection.



TS266—UN—23AUG88
AG,OUO6043,83-19-28JUL99

- The maneuvering zone of the machine, in particular a 1 m (3.3 ft) zone around the machine as a whole and the application pattern area.

BN55050,000010E-19-09APR18

Maintain a Safety Area Around the Machine

Machine movements and parts in motion can cause serious injury. Application system cannot be completely shielded due to its function. Keep away from work area while it is operating.

BN55050,000013B-19-26MAR18

Operator Ability

- Machine owners must make sure that operators are responsible, trained, have read the operating instructions and warnings, and know how to operate the machine properly and safely.
- Age, physical ability, and mental capacity can be factors in machine-related injuries. Operators must be mentally and physically capable of accessing the operator station and/or controls, and operating the machine properly and safely.
- Never allow a child or an untrained person to operate the machine. Instruct all operators not to give children a ride on the machine or an attachment.
- Never operate machine when distracted, fatigued, or impaired. Proper machine operation requires the operator's full attention and awareness.

DX,ABILITY-19-07DEC18

Working Area

The working area is defined and required as follows:

- An area of 1 m (3.3 ft) around the machine for servicing the machine, filling product, and cleaning the application system.
- The seat on the machine from where the crop protection work is carried out.

Danger zones are taken to mean:

- The working area of the operator in which servicing the machine, filling product, and cleaning the machine takes place.

Avoid Backover Accidents



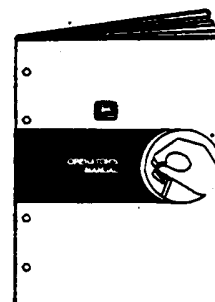
PC10857XW—UN—15APR13

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

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

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

Before Operating



E23482—UN—08MAY89

Become familiar with operator's manual, machine decals, and Safety section of this manual.

Remove foreign objects from machine.

Become familiar with all controls effecting machine functions.

Make sure everyone is clear of the machine. Never allow riders on the machine or near machine while it is running.

Inspect machine for loose, missing or damaged

hardware and parts. Replace any missing or damaged parts with proper specification items.

Verify shields and guards are in place and in good condition before starting.

OUO6092,00007A0-19-28FEB12

Operate Safely

Always check general operating safety of the machine before using.

Before operating machine always check immediate vicinity of the machine for people and obstructions. Ensure adequate visibility.

Operate vehicle only when all guards are installed in their correct position.

DO NOT start engine with multi-function lever engaged.

DO NOT operate close to a ditch or creek.

Always come to a complete stop before reversing directions.

Drive slowly over rough ground.

Slow down when turning.

Always shut off engine when leaving machine. Remove key when leaving machine unattended. Park brake engages when engine is shut off regardless of multi-function lever position.

Keep hands, feet, and clothing away from moving parts.

Wear relatively tight and belted clothing to prevent from being caught on some part of the machine.

DP99999,0000BEC-19-16FEB17

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.

DX,FLASH-19-07JUL99

Avoid Injury from Dispensed Objects

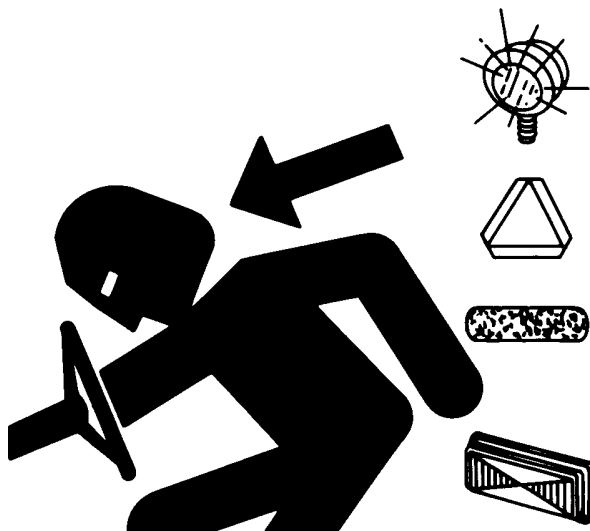


TS265—UN—23AUG88

Extreme care must be exercised to avoid injury from dispensed objects. Do not, under any circumstances, operate the application hydraulics when other people are in the vicinity. Stay out of discharge area.

BN55050,000010F-19-09MAR18

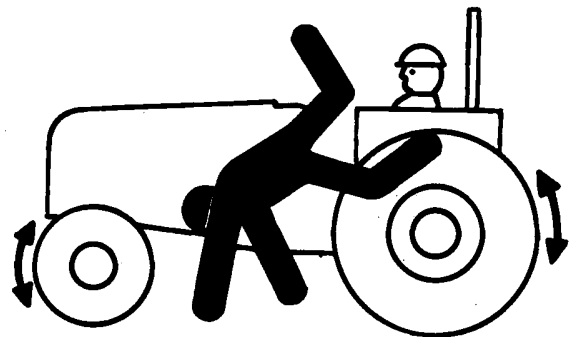
Use Safety Lights and Devices



TS951—UN—12APR90

Prevent collisions between other road users, slow

Keep Riders Off Machine



TS290—UN—23AUG88

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

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

DX,RIDER-19-03MAR93

Instructional Seat



TS1730—UN—24MAY13

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

DX,SEAT,NA-19-22AUG13

Avoid crushing injury or death during rollover.

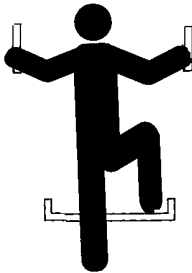
- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

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

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

OUC6092,00009E7-19-15OCT25

Use Steps and Handholds Correctly



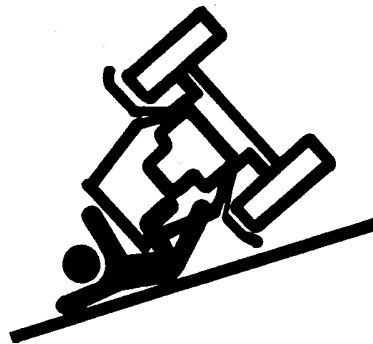
T133468—UN—15APR13

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

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.

DX,WW,MOUNT-19-12OCT11

Use Caution On Hillsides



RW13093—UN—07DEC88

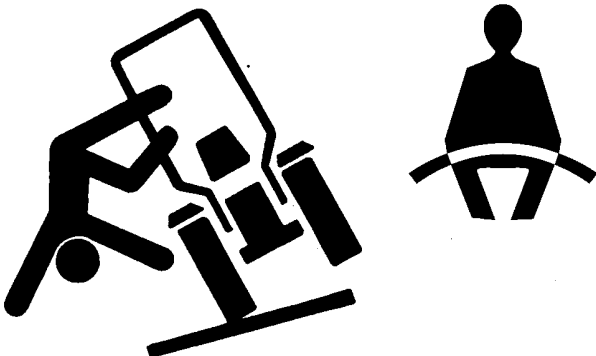
Avoid holes, ditches, and obstructions which may cause sprayer roll-over, especially on hillsides. Avoid sharp turns on hills.

Never drive near the edge of a gully or steep embankment.

Stay off slopes that are too steep for operation.

OUC6092,0000F99-19-28JUN07

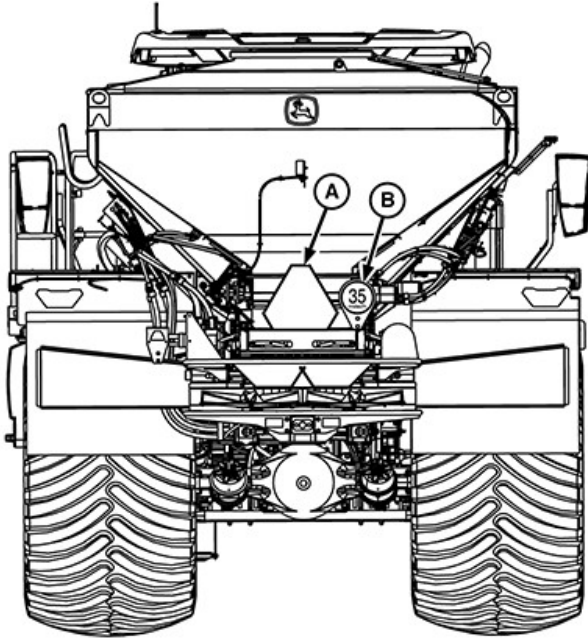
Use Seat Belt Properly



TS1729—UN—24MAY13

Understand Implement of Husbandry Roadway Regulations

⚠ CAUTION: The primary purpose of this machine is for field operation. Operate the machine on the roadway safely by driving slowly and exercising caution to avoid collisions.



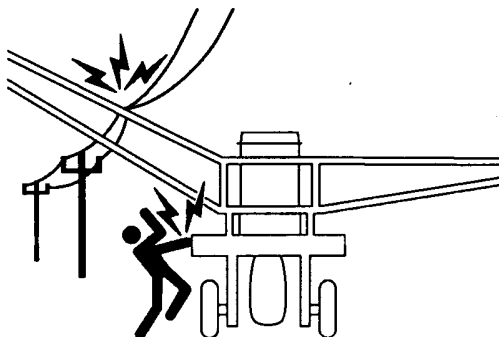
N160098—UN—13JAN22

A—SMV Emblem
B—Speed Identification Symbol

This machine has a maximum travel speed capability of 75 km/h (46.6 mph), and it is equipped with a slow moving vehicle emblem (A). Before roadway operation, ensure that you understand your state or province's regulations for roadway transport of agricultural equipment. Your state or province may have regulations, which would require the removal or covering of the slow moving vehicle identification emblem if operated on a roadway above a specific speed. Contact your local roadway transport authorities if you have any questions or concerns regarding applicable regulations.

MM95366,000068F-19-07JAN22

Transport and Operate Safely



N44191—UN—27APR92

Keep away from overhead power lines. Serious injury or death to you or others can result if machine contacts electrical wires. Know the transport and operating height of your machine.

Perform a complete assessment of the field before performing any operations to determine the best working method.

Stop slowly to avoid "nose diving".

Keep SMV emblem and reflectors clean and in place.

Do not exceed maximum transport speed specified in the operator's manual.

Reduce speeds for icy, wet, graveled, or soft roadway surfaces.

Check and follow local regulations for equipment size, lighting, and marking before driving on public roadways.

DP99999,0000BEE-19-01APR16

Transporting Machine Using Trailer

CAUTION: Avoid collisions. Before transporting on a public roadway check and follow local regulations regarding size limits, the use of lights, flags, signs, pilot vehicles, and other requirements for transporting loads using trailer.

KB78086,0000B63-19-17NOV11

Prevent Machine Runaway



TS177—UN—11JAN89

Avoid possible injury or death from machinery runaway.

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

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

DX,BYPAS1-19-29SEP98

Handle Fuel Safely—Avoid Fires



TS202—UN—23AUG88

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

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

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

Use only an approved fuel container for transporting flammable liquids.

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

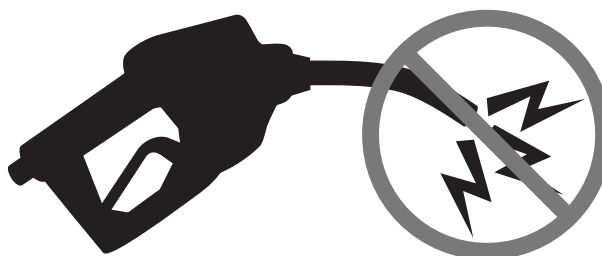
Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.

DX,FIRE1-19-12OCT11

Avoid Static Electricity Risk When Refueling



RG22142—UN—17MAR14



RG21992—UN—21AUG13

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

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

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

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

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

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471

A34471—UN—11OCT88

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

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

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled '**Danger**': Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled '**Warning**': Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled '**Caution**': Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling spray or dusts.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area way 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,CHEM01-19-05APR04

Spreading Dusty Materials (Based on Machine Configuration)

Cover all loads that can spill or blow away. Do not spread dusty materials where dust can create pollution or a traffic visibility problem.

BN55050,0000110-19-09MAR18

Avoid Exposure To Chemicals



TS220—UN—15APR13



TS272—UN—23AUG88

⚠ CAUTION: Exposure to chemicals, including pesticides, can cause injury or death.
DO NOT RELY ONLY ON THIS CAB , CAB PRESSURE INDICATOR, OR CAB AIR FILTERS TO PROTECT AGAINST CHEMICAL EXPOSURE.

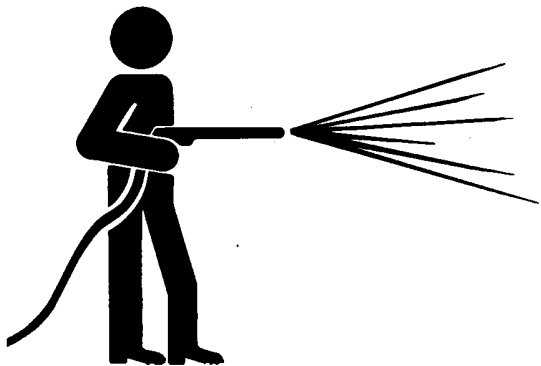
To reduce risk of chemical exposure:

- Wear PERSONAL PROTECTIVE EQUIPMENT in accordance with chemical manufacturer's label
- Allow only trained, certified applicators to apply chemicals
- Always close the windows and doors during application

- Verify that John Deere activated carbon filters, or appropriate substitutes, are installed at all times (see Checking and Replacing Cab Air Filters in the Cab and Air Conditioning section)
- Keep chemicals out of the cab
- Clean or remove contaminated shoes or clothing before entering the cab
- Keep cab interior clean
- Read and follow all instructions in:
 - Manufacturer's label for each chemical applied
 - U.S. Environmental Protection Agency (EPA) Worker Protection Standard for Agricultural Pesticides
 - State or regional guidelines for worker safety and health
 - Operator's Manual for this machine
- Numerous requirements must be met, including but not limited to EPA regulations
- Even while inside cab, always wear long sleeves, long pants, shoes, and socks when applying chemicals, including pesticides
- If necessary to leave cab when chemicals, including pesticides, are present, always use personal protective equipment recommended by chemical manufacturer
- Before reentering cab, remove personal protective equipment used to handle chemicals, including pesticides, and store equipment in accordance with EPA guidelines to prevent contaminating cab

CS12167,000073C-19-02APR15

Clean Vehicle of Hazardous Chemicals, Including Pesticides



T6642EJ—UN—18OCT88

CAUTION: During application of hazardous chemicals, including pesticides, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous chemical.

When exposed to hazardous chemicals, clean exterior

and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

1. Sweep or vacuum the floor of cab.
2. Clean headliners and inside cowlings of cab.

IMPORTANT: Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90 degree angle.

3. Wash entire exterior of vehicle.
4. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

OUC06092,000081B-19-18JAN21

Non-Permissible Use

Pay attention to the following applications for which the machine is NOT SUITABLE:

Spraying or atomization of substances other than crop protection chemicals and/or liquid fertilizers.

Use of the tank as a storage medium for substances not intended for crop protection or fertilization purposes.

CAUTION: Working on an uncleaned machine poses unnecessary danger and is therefore forbidden.

WZ00232,0000066-19-28AUG07

Emergency Exit



N160099—UN—11JAN22

A—Hammer

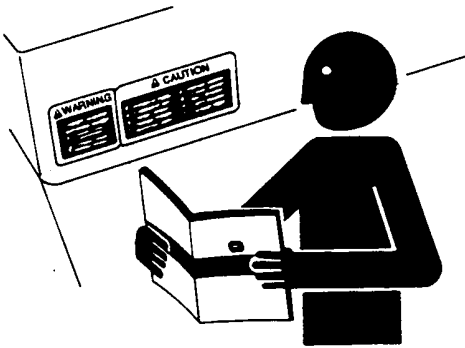
CAUTION: Cover eyes, face, and uncovered skin from jagged or broken glass when using break glass hammer.

In an emergency, exit the cab through the entrance door when possible. In the event an exit cannot be achieved via the entrance door, a hammer (A) is fitted in the cab that can be used to break a window to use as an exit.

MM95366,0000690-19-07JAN22

Safety Signs

Replace Safety Signs



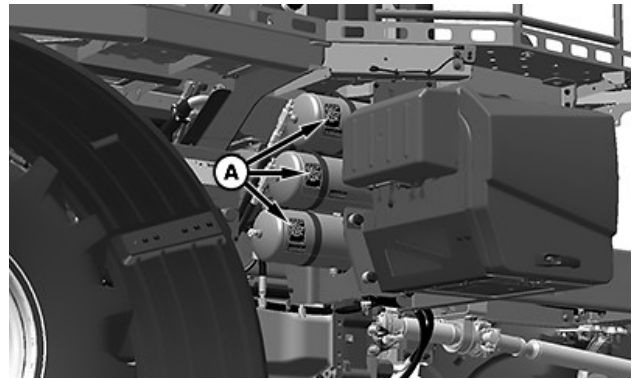
TS201—UN—15APR13

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

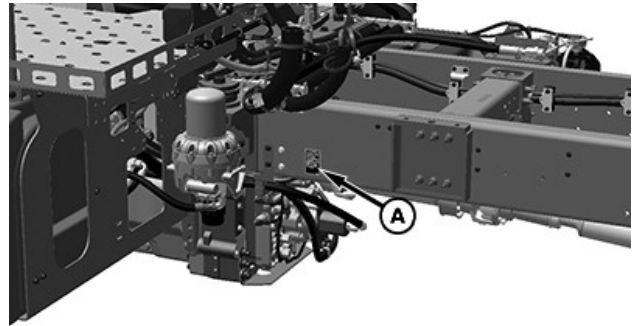
There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

DX,SIGNS-19-18AUG09

Air System Decals

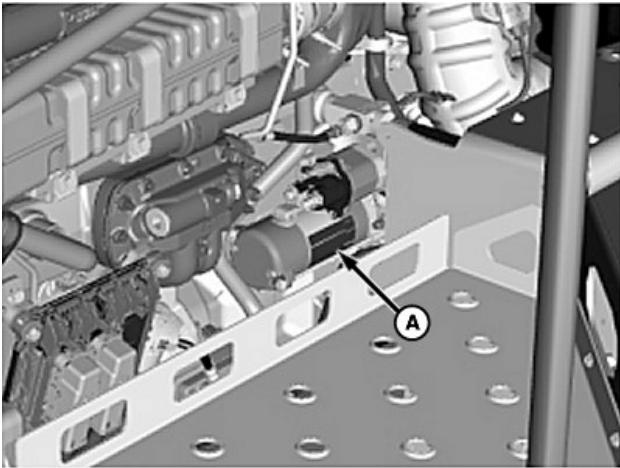


N159991—UN—13JAN22



N159992—UN—13JAN22

Bypass Start Decal



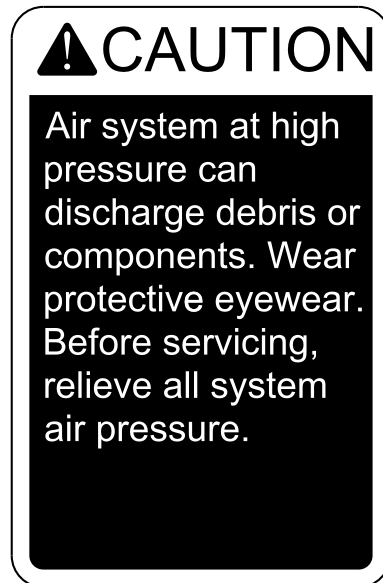
N121896—UN—09MAR16



Decal A

SST146195—19—26JAN22

AOTA2VY,00004CE-19-21JAN22



Decal A

SSKK89595—19—20JAN22

AOTA2VY,00004CF-19-21JAN22

Seat Belt Decal



N159993—UN—13JAN22

! WARNING

AVOID CRUSHING:

- Do not jump if machine tips.

USE SEAT BELT

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

! CAUTION

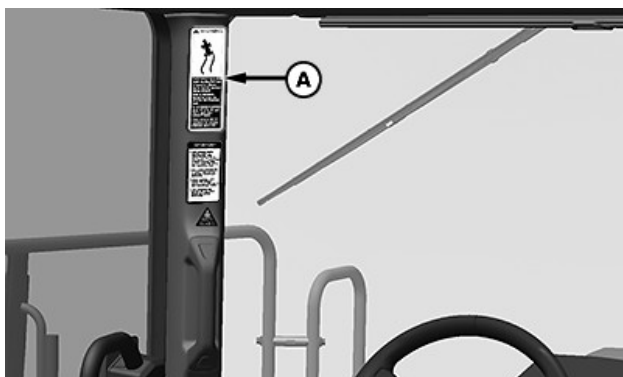
1. Read Operator's Manual before operating this machine.
2. Keep all shields in place.
3. Make certain everyone is clear of machine before starting engine or operation.
4. Keep all riders off machine and equipment.
5. Keep hands, feet and clothing away from moving parts.
6. Reduce speed when turning or operating around hazards, on rough ground or steep slopes.
7. Use flashing warning lights on highway unless prohibited by law.
8. Put transmission in PARK position, turn key switch to OFF position, before dismounting.
9. Wait for all movement to stop before servicing machinery.
10. Remove key if leaving vehicle unattended.

SSKK36934—19—06DEC19

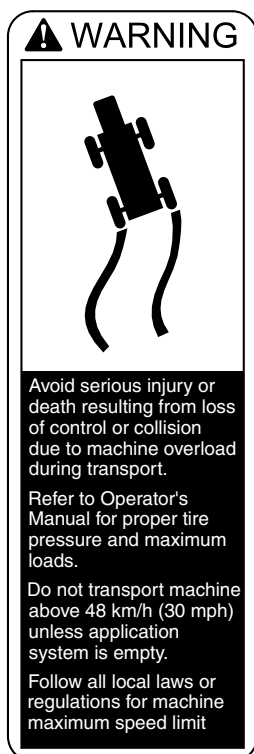
Decal A

AOTA2VY,00004D0-19-13JAN22

Axle Load Decal



N159994—UN—13JAN22



SSKK33536—19—29OCT20

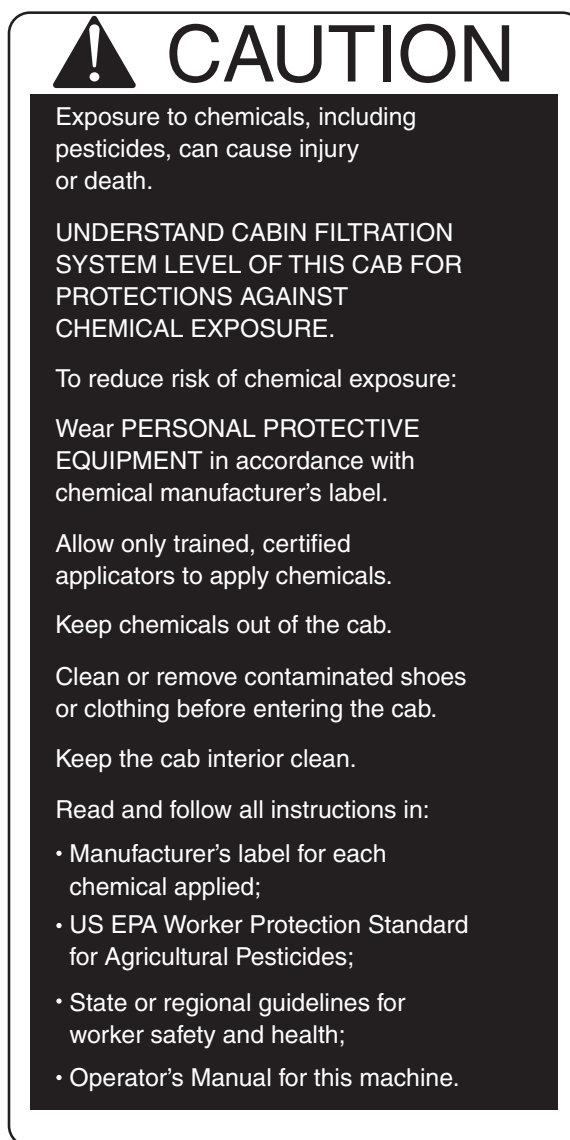
Decal A

AOTA2VY,00004D1-19-13JAN22

Chemical Exposure Decal



N159995—UN—13JAN22

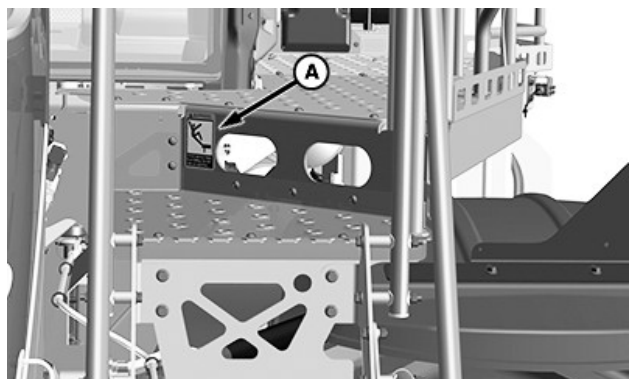


SSKK80667—19—23MAR21

Decal A

AOTA2VY,00004D2-19-13JAN22

Do Not Ride Decal



N160674—UN—02FEB22



SSN403721—19—20JAN11

Decal A

AYCXTDG.0000058-19-02FEB22

! CAUTION

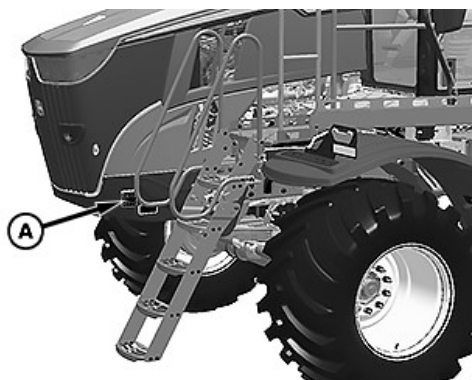
- Keep all shields in place during normal operations.
- Keep hands, feet and clothing away from power-driven parts.
- Disengage power-driven parts and shut off engine before unclogging or servicing machine.
- If service procedure requires engine to be running:
 - Only engage power-driven parts required by service procedure.
 - Ensure other people are clear of operator station and machine.
- Do not leave running machine unattended.

SSHXE19558XE—19—12NOV20

Decal A

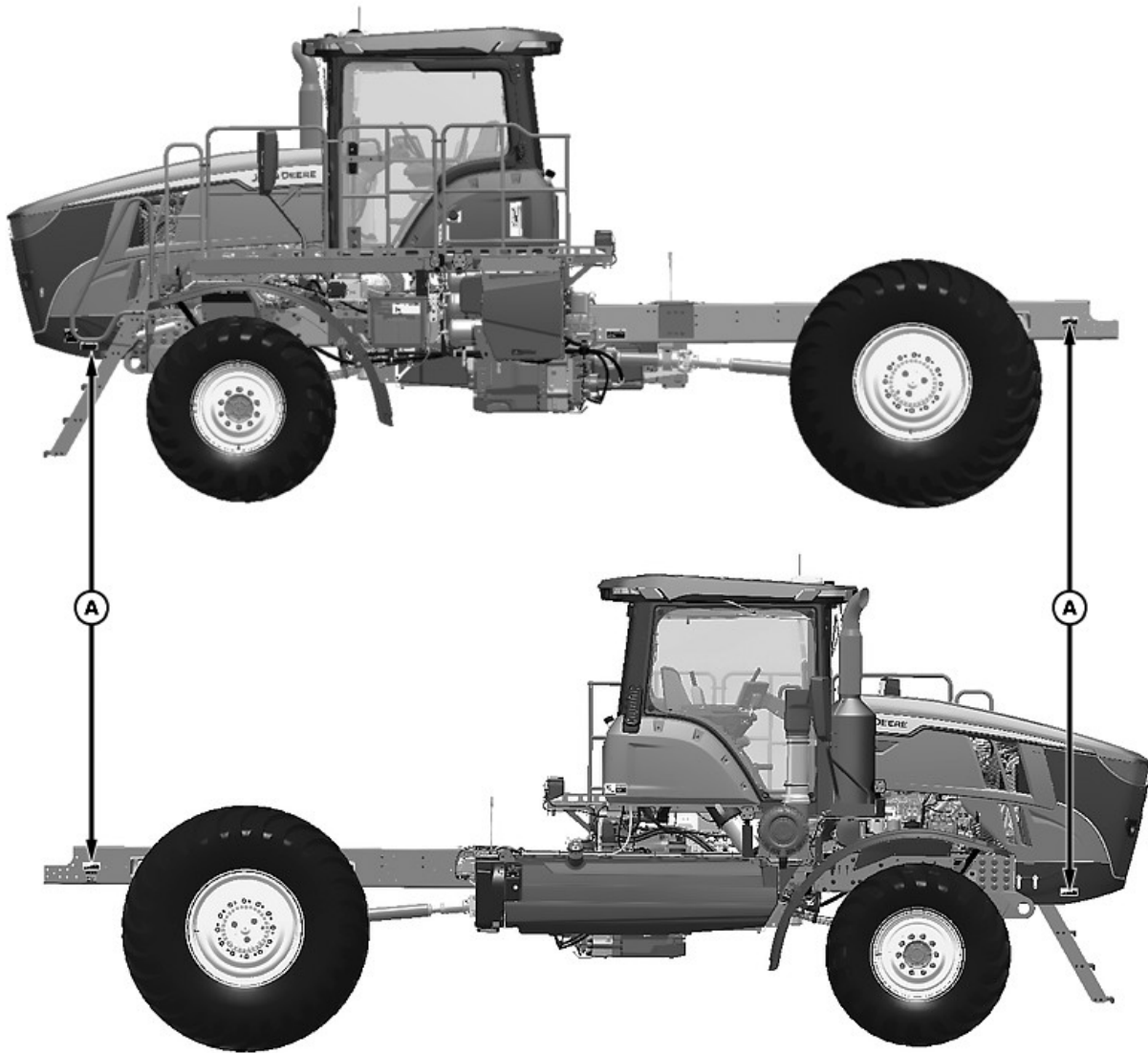
AOTA2VY.0000463-19-18MAY21

Shields Decal



N155498—UN—18MAY21

Jacking Instruction Decals



N155499—UN—18MAY21

CAUTION

Help avoid injury from falling machine while jacking:

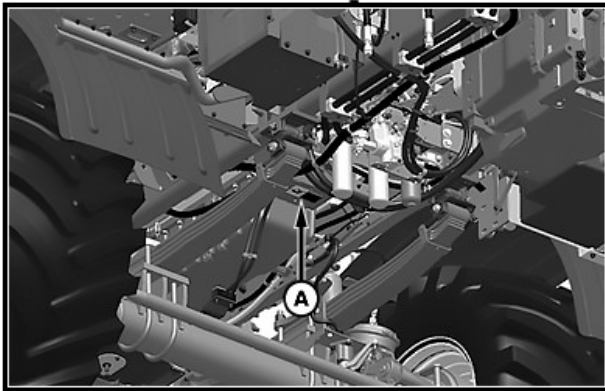
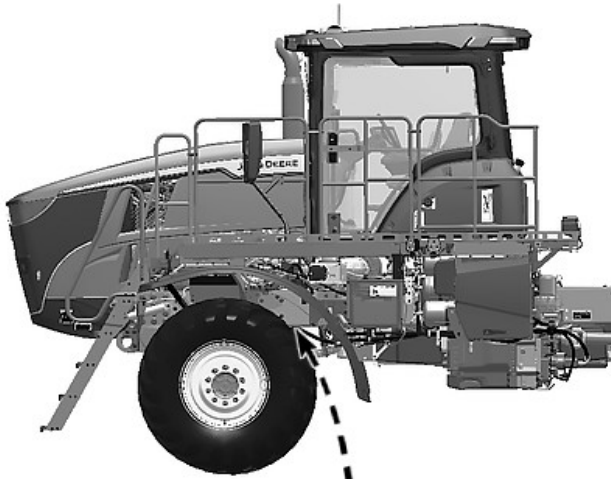
1. See instructions in Operator's Manual.

SSKK31483—19—14FEB17

Decal A

AOTA2VY,0000464-19-18MAY21

Drive Shaft Decal



N155500—UN—18MAY21

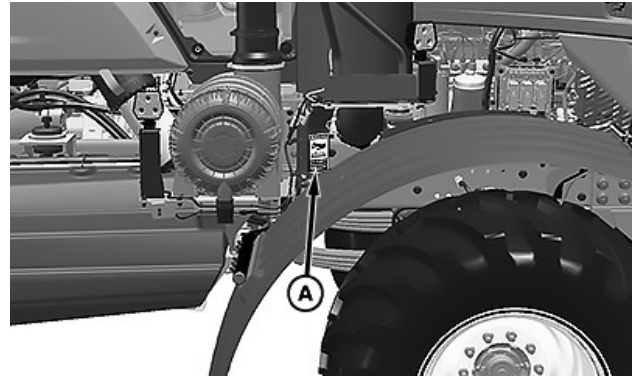


Decal A

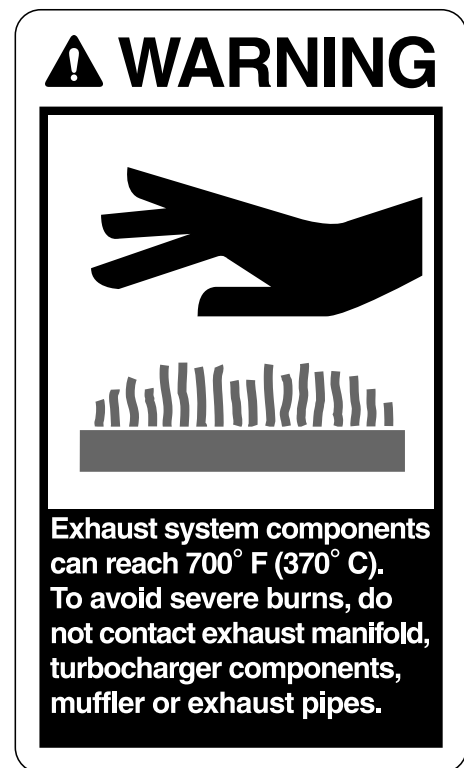
SSE82514NX—19—20APR21

AOTA2VY,0000465-19-18MAY21

Exhaust Heat Decal



N155501—UN—18MAY21

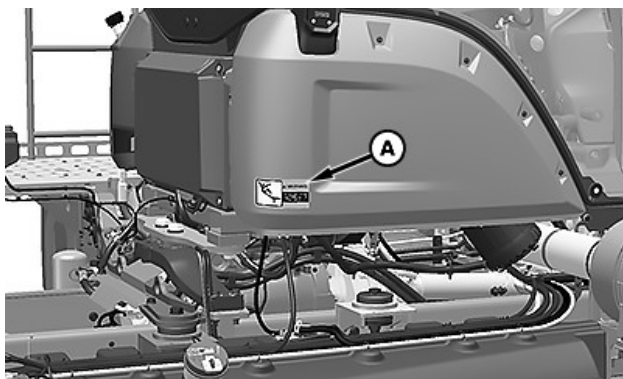


Decal A

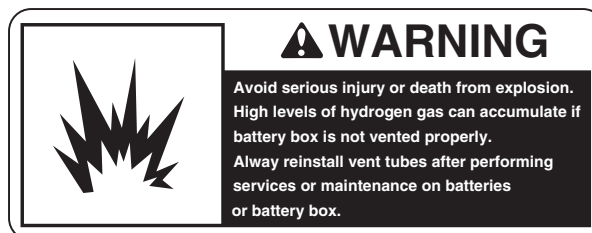
SSN408895—19—05DEC19

AOTA2VY,0000466-19-18MAY21

Do Not Stand Decal



N155502—UN—18MAY21



SSH220610XE—19—14JAN21

Decal A

AOTA2VY,0000468-19-18MAY21

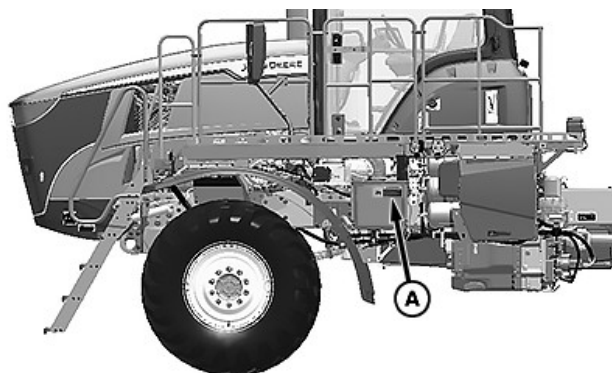


SSA91847—19—16MAY11

Decal A

AOTA2VY,0000467-19-18MAY21

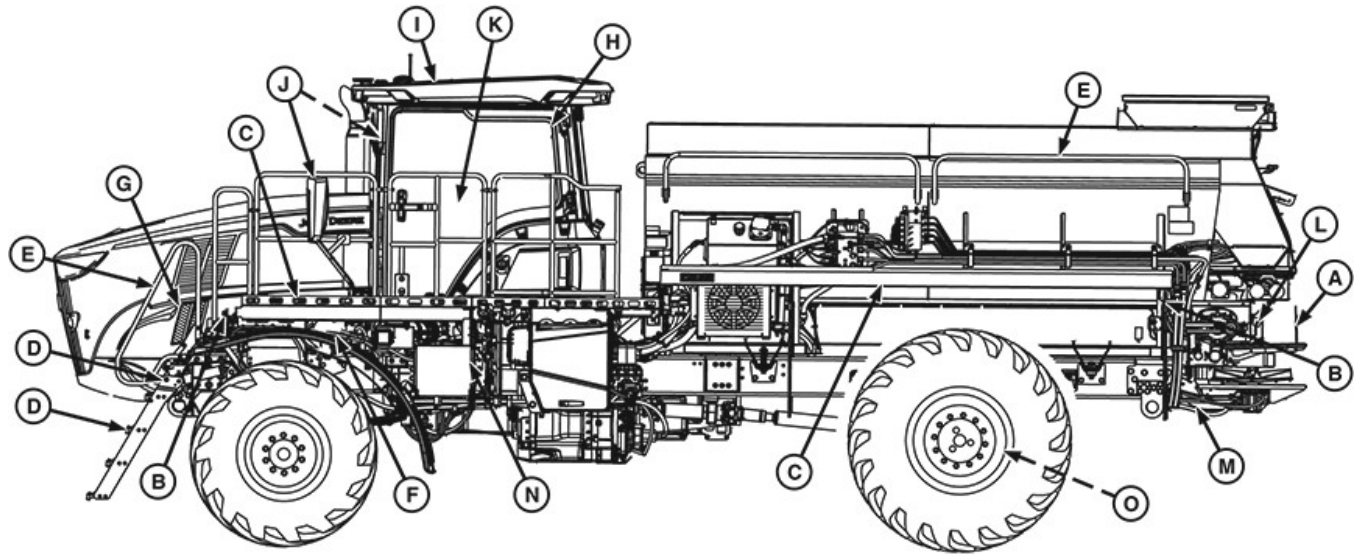
Battery Box Decal



N155503—UN—18MAY21

Safety Features

Safety Features



N160280—UN—17JAN22

- A—SMV EMBLEM—Alerts following traffic of your presence on roads.
- B—FRONT AND REAR HAZARD LIGHTS—Alert oncoming and following traffic of your presence on roads.
- C—SLIP RESISTANT SURFACES—Help prevent slippage when walking on platform.
- D—DIVOTED STEPS AND PLATFORMS—Help prevent slipping when on platform or ladders, also diminish dirt and mud buildup.
- E—HANDRAILS—Give support when climbing onto machine or walking on platforms.
- F—STARTER SOLENOID SHIELDING—For bypass start prevention.
- G—FAN GUARDING—Provides protection from the engine fan.
- H—EMERGENCY EXIT—Allows exit from the right-hand side of cab, if necessary, using the glass hammer on left-hand rear cab post.

- I—SPRAYER-STYLE CAB WITH SEAT BELT—For operator comfort and safety.
- J—WINDSHIELD WIPERS AND LARGE REARVIEW MIRRORS—For clear view of surroundings.
- K—AUTOMATIC PARK BRAKE—IVT park brake and air park brake (rear axle only) prevent unintended machine movement. Automatically engages when machine stops and the multi-function lever is moved to neutral.
- L—CONVEYOR SHIELD—Provides protection from the conveyor belt and conveyor drive motor.
- M—SPINNER SHIELDS—Guide material and provide protection from spinners.
- N—BATTERY DISCONNECT—Ability to disconnect all electrical power to machine.
- O—AIR PARK BRAKES—Engaged when power zero is maintained for 5 seconds.

In addition to the safety features described here, there are other safety components and systems. The safety signs on the machine, safety messages in the

Operator's Manual, and safety information elsewhere inform the operator and bystanders of safety items. The care and concern of a capable operator also contributes to the safety of operators and others nearby.

MM95366,0000691-19-22OCT25

CommandCenter Display Information

Generation 4 and G5 Displays

For additional information on display hardware and software functionality, reference the Display Operator's Manual and the Help Center application on the display. To obtain a copy of the Operator's Manual, contact your dealer, use the Help Center application on the display, or visit techpubs.deere.com.

DX,PC,DISPLAY,REFERENCE-19-23JUN23

CommandCenter Display Applications

CommandCenter Display Applications

The following information contains the Onscreen Help for each application specific to this machine. This information is also available on the CommandCenter display. The section titles of the Operator's Manual match the names of the applications found on the display. To find a feature described in the Operator's Manual on the display, locate the section title at the top of the page. Access the application with the same name on the display.

For information on how to navigate to the desired application on the display, refer to the Access information at the beginning of each section.

N0LMWLO.00001B7-19-12JUN24

Onscreen Help Navigation

There are three ways to access Onscreen Help through the armrest CommandCenter display:

Access Contextual Help



Help Icon

N167187—UN—15APR24

The help icon is found in the title bar of most pages of the on-screen display. Select the help icon for quick access to information about the functions currently being displayed on-screen.

Access Help Center



Help

T8T8742—UN—20JAN20

Books in the Help Center are organized according to applications found in the display menu. In addition to specific application help, there are books in the list with information about the display, machine, and implements. These books contain additional content not found in application books and cannot be accessed using contextual help.

To access the Help Center, select Help from the shortcut bar at the bottom of the run page.

Alternative Procedure to Access Help Center



Menu

H113668—UN—22OCT15

1. Select Menu from the shortcut bar at the bottom of the run page.



Applications

T8T8741—UN—20JAN20

2. Select the Applications tab.



Help

T8T8740—UN—20JAN20

3. Select Help.

Searching Help Center

Use the search bar to search the Help Center for words or phrases.



Search Bar

H128813—UN—05FEB20

Search Bar— Select to enter text in the search bar.



Search

H128815—UN—05FEB20

Search— Select to search for help pages containing the search bar text.



Clear

H128814—UN—05FEB20

Clear— Delete the text in the search bar.

Browsing Help Center



Back Button

H128817—UN—05FEB20



Forward Button

H128818—UN—05FEB20

Navigate forward and back to previously viewed pages. These buttons work similar to a web browser.



Help Contents

H128816—UN—05FEB20

Select the Help Contents button to open a complete list of books in the Help Center and browse for more information.

as09261,1712230115378-19-16APR24

Alerts and Messages

Display software contains many different alerts and messages designed to notify you of safety warnings, service warnings, hazardous or dangerous conditions, and general messages.



Example Alert

T8T8743—UN—21JAN20

Alert— a display window that is normally triggered by a diagnostic trouble code (DTC) and communicates the DTC information to you.



Information Alert

N148316—UN—21JAN20

Information Alert— a condition has been detected that may degrade performance of certain functions. The machine or equipment can continue to operate without damage. You should monitor the condition and consider taking the recommended action.



Service Alert

N148317—UN—21JAN20

Service Alert— a condition exists that requires operator action to avoid damage, a potential hazard, or significant performance reduction. The machine or equipment may be damaged or significant performance reduction may occur if action is not taken. You should operate in a different manner or service the equipment.



Stop Alert

N148318—UN—21JAN20

Stop Alert— a serious or hazardous condition exists that requires operator action. The machine or equipment is being damaged. Primary function cannot be continued or must stop due to a legal requirement. You should stop the engine or system immediately. If the engine is off, do not start the engine.

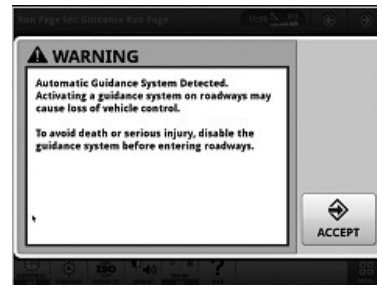


Example Message

N148319—UN—21JAN20

Message— a user interface element that communicates information to you and prompts you for a response. It may display as a small or full-screen window.

- Example: Are you sure you want to exit the new track creation sequence?



Example Safety Warning

N148320—UN—21JAN20

Safety Warning— a user interface element that communicates a warning to you and requires you to accept the warning before continuing. It may display as a small or full screen window.

- Example: Activating a guidance system on roadways may cause loss of vehicle control.



N148321—UN—21JAN20

Example Window Shade Message

Window Shade Message— a user interface element that drops down from the top of the screen to communicate a message to you. It usually goes away after a few seconds so that it does not block the user interface.

- Example: Communication to ISOBUS device lost. If you did not disconnect the device on purpose, check harness connection.

AZ06166,000073A-19-12JUN24

Calibrations Application

Access Calibrations and Procedures

Access Application Through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



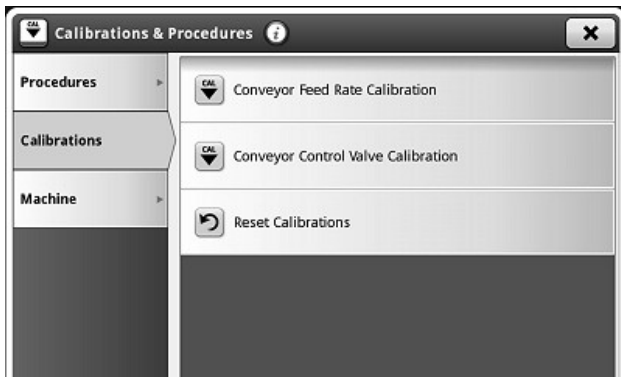
Calibrations and Procedures

N119098—UN—25MAY16

3. Calibrations and Procedures

VM03385,0000082-19-22OCT25

Calibrations and Procedures Overview



Calibrations

N132790—UN—19SEP17

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

The main page shown is for example only. The main page may differ depending on options or connected equipment.

Calibrations and Procedures application provides centralized access to maintenance procedures and calibrations for the machine.



Procedures Tab

N119126—UN—14NOV16

Procedures Tab

Spreader Check

Fan Maintenance Mode



Machine

N119128—UN—23SEP16

Machine Calibration Tab

AutoTrac

AutoTrac Wheel Angle Sensor

AutoTrac Valve

Speed Sensors

Multi-Function Lever

Reset Calibrations



Spreader

N120620—UN—23SEP16

Spreader Calibration Tab

Conveyor Feed Rate

Spreader

Reset Calibrations

ibhz6m2,1721280257738-19-22OCT25

Spinner Calibration

This procedure calibrates the spinner to ensure that the speed reported is accurate. Accurate spinner speed ensures that the desired spread pattern and width is achieved.

Perform Calibration When:

- Spinner drive motors are replaced or repaired.
- Spinner control valve is replaced.
- Hydraulic pump is replaced on machine.
- Hydraulic valves are replaced on spinner.

Items Accessible on the Spinner Calibration Page:



Begin Calibration

N120226—UN—23FEB16

Begin Calibration— begin calibration procedure.

Requirements— machine state required for calibration.

Details Displayed on Page:

Last Calibration	Date and time
Recommended Interval	As needed
Estimated Time Required	2—5 min

Readings Displayed on Page:



Spinner Status

N120249—UN—23FEB16

Spinner Status— current speed.

MM95366,00005D8-19-28OCT25

Spinner Calibration Procedure

Procedure Requirements:

Hydraulic Enable Switch	Engaged
Spreader State	Stopped
Operating State	Machine parked
Engine State	Running
Throttle State	Set to high idle position

Procedure Overview:

CAUTION: The spinners reach maximum speed during the process. Be sure to calibrate in an open, safe area. Ensure that there are no bystanders in the area of the spreaders.

NOTE: If spinners are currently enabled, the system automatically stops the spinners to proceed with calibration.

You must remain seated during calibration.



Next

N118095—UN—23FEB16

NOTE: The Next button is only available if all conditions listed on the screen are met.



Out of Range

N120250—UN—23FEB16

NOTE: Any values recorded during calibration procedure that are considered out of range are displayed in red.



Begin Calibration

N120226—UN—23FEB16

1. Select Begin Calibration to begin procedure.
2. Follow messages on-screen to complete procedure.



Save

N118093—UN—16FEB16

3. Confirm calibration by selecting Save.

If Calibrations Fails:



OK

N120245—UN—23FEB16

1. Select OK and repeat calibration.
2. Verify that all requirements listed on-screen have been met.
3. If calibration fails twice, contact a John Deere dealer or other service provider.

MM95366,00005D9-19-22OCT25

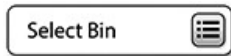
Conveyor Feed Rate Calibration

Adjusts the Conveyor Feed Rate (CFR) by dispensing product into a container without moving the machine and entering the amount collected.

Perform Calibration When:

- The feed gate opening has changed 6.35 mm (0.25 in) or more.
- There is a significant change in product density.
- There is a significant change in product size.
- The CFR is unknown.
- Conveyor control valve has been changed.
- Applied rate does not match target rate.
- Left side or right side belt is emptying sooner than the opposite side (machines equipped with air boom).

Items Accessible on the Conveyor Feed Rate Calibration Page:



Select Bin

N120156—UN—23FEB16

Select Bin— select the desired bin for use during calibration.

NOTE: Bins are grayed out when disabled.



Begin Calibration

N120226—UN—23FEB16

Begin Calibration— begins the calibration procedure. Only available when the product bin is selected.

Details Displayed on Page:

Last Calibration	Date and time
Recommended Interval	As needed
Estimated Time Required	Varies

Readings Displayed on Page:

NOTE: Readings are only displayed after the desired bin is selected.



Bin

N120157—UN—23FEB16

Bin— displays the previously selected bin and the product entered for that bin.



Density

N120158—UN—23FEB16

Density— displays the previously entered value for the selected bin and product.



Conveyor Feed Rate

N120159—UN—23FEB16

Conveyor Feed Rate— displays the previously entered value for the selected bin and product.

MM95366,00005DA-19-28OCT25

Conveyor Feed Rate Calibration Procedure Procedure Requirements:

Engine State	Running at 1800 rpm minimum
Wheel Speed	Parked
Spinner State	Pulse width modulation (PWM) valve disconnected (See Operator's Manual for valve location.)
Product Quantity Used per Test	Bins 1 and 2 — 362.8 kg (800 lb) Bins 3 and 4 — 11.34 kg (25 lb)
Select Product Bin	Loaded with product to be spread
Catch Container	Large enough to catch the amount of product to be dispensed

NOTE: Calibration procedure requires the ability to capture the product dispensed from the spreader conveyor with the fan off. Increasing the CFR increases the amount of product dispensed. Decreasing the CFR decreases the amount of product dispensed.

It is important to measure the actual product depth dispensed on the conveyor. Enter measured value at the Feed Gate Opening for accurate calibration and application.

Use the following table when prompted to input expected Conveyor Feed Rate (CFR) value.

Expected CFR Values			
CFR (metric)	CFR (English)	Conveyor Type	Bin Number
2854	0.256	Belt Over Chain	1
1605	0.144	Belt Over Chain	2
1030	0.0364	Meter Roller	3 and 4

IMPORTANT: Metric CFR value is based on a 1.0 centimeter feed gate opening. English CFR value is based on a 1-inch feed gate opening.

Before performing CFR calibration, ensure that product is dispensing all the way to the product funnels. This check is critical for the front bin (Bin 1) if a second product bin is installed. If the product is not dispersing all the way, the belt runs for a period without any product on it. This situation results in a false calibration value.

Procedure Overview



Begin Calibration

N120226—UN—23FEB16

1. Select Begin Calibration to begin procedure.
2. Follow messages on-screen to complete procedure.



Save

N118093—UN—16FEB16

- Confirm calibration by selecting Save.

NOTE: To check the accuracy of the calibrated value, repeat the procedure again using the calculated CFR value as the expected value.

If Calibration Fails:



Repeat Calibration

N120225—UN—23FEB16

- Select Repeat Calibration button.
- Verify that all requirements listed on-screen have been met.
- If calibration fails twice, contact a John Deere dealer or other service provider.

MM95366,00005DB-19-28OCT25

Spreader Check

This procedure can be used to check the dry spreader application rate capability and troubleshoot component function.

Perform Spreader Check When:

- Beginning the season.
- Hydraulic pump is replaced.
- Hydraulic motors and valves are replaced on spreader.
- Actual rate and target rate are not equal.
- Verifying the conveyor speed response to the desired rate or ground speed.
- Verifying the spinner speed response when operating at low engine speeds while using manual transmission mode.

Items Accessible on the Spreader Check Page:



Begin Procedure

N119102—UN—23FEB16

Begin Procedure—begin test procedure.

Requirements—the machine state required for the procedure.

AZ06166,0000828-19-28OCT25

Spreader Check Procedure

Procedure Requirements:

Master Switch State	OFF
Conveyor State	OFF
Spinner State	OFF
Engine State	Running
Machine State	Parked, not applying product

Icons Displayed during Spreader Check Procedure:

High Capacity Spreader Procedure:

NOTE: If the spinner is running, it disengages when Begin Procedure is selected.



Begin Procedure

N119102—UN—23FEB16

- Select Begin Procedure.



Rate Selection Buttons

N120898—UN—12MAY16

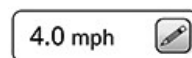
- Select the desired Rate Preset or Manual Rate Control using the rate selection buttons on the CommandARM.



Checkbox

N118434—UN—22JAN20

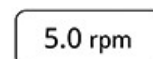
- Select bin(s) to check. Product, target rate, and conveyor speed are displayed.



Test Speed

N120244—UN—23FEB16

- Select to enter the test speed. Use the desired application speed for test.



Conveyor Speed

N120673—UN—23FEB16

- If manual rate mode is selected, then select input box to enter the desired conveyor speed.



Solution Pump

N120497—UN—02NOV16

6. Enable spreader hydraulic system. Press the Solution Pump switch on the CommandARM.

NOTE: Solution Pump switch functions as the hydraulic enable switch when dry spreader is installed.



High Idle

N120670—UN—06DEC16

7. Set the engine speed to high idle.

CAUTION: Belt(s) begin movement on button press. Product discharge can occur if product remains in bin(s).



Spray System Master

N120251—UN—04JAN17

8. Press the Spray System Master switch on the multi-function lever to begin the test. Conveyor speed and the actual rate applied are displayed.

NOTE: Spray System Master switch functions as the Spread System Master switch when dry spreader is installed.



Progress Indicator

N118091—UN—16FEB16

NOTE: Progress indicator displays when a check is in progress for each selected bin.

CAUTION: Spinners cannot be completely shielded due to their function. Keep away from spinners while they are turning.



ON/OFF

N118056—UN—17FEB16

9. Engage the spinners using the ON/OFF toggle button to test speed response if desired. Target speed and actual speed are displayed.



Spray System Master

N120251—UN—04JAN17

10. Press the Spray System Master switch on the CommandARM again to pause the test at any time.



Close

N118396—UN—17FEB16

11. Select close button to end procedure and return to the previous page.

Interpret Check Results:

If the target rate and actual rate are equal, the spreader can achieve the desired application for that product at the entered test speed.

If actual rate is not constant, see the Troubleshooting section of your Operator's Manual, or contact a John Deere dealer or other service provider.

If the actual rate is higher than the target rate, decrease the gate opening.

If the actual rate does not get to the target rate, increase the gate opening.

Compare the target conveyor speed and the actual conveyor speed. These speeds are displayed for the product bin selected and show if the system can reach the target conveyor speed. Adjust machine settings as necessary to achieve desired application.

Compare the target spinner speed and the actual spinner speed to see if the system can reach the target spinner speed. Adjust machine settings as necessary to achieve desired application.

MM95366,00005DC-19-28OCT25

Icons Displayed during Spreader Check Procedure

Spinner Icons Displayed:



Product Bin

N120910—UN—23FEB16

Product— product selected for the bin shown.



Target Rate

N118449—UN—23FEB16

Target Rate— desired application rate.



Actual Applied Rate

N118450—UN—16FEB16

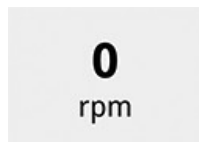
Actual Applied Rate— calculated rate of product applied.



Conveyor Speed

N118399—UN—16FEB16

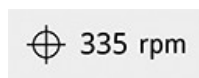
Conveyor Speed— current conveyor speed.



Actual Spinner Speed

N121508—UN—16FEB16

Actual Spinner Speed— current spinner speed.



Target Spinner Speed

N121509—UN—16FEB16

Target Spinner Speed— desired spinner speed.

PR79369,000010E-19-28OCT25

Rate Control Selection

Rate Control Selection

In order to obtain the desired results from the spreader check, you must select the appropriate rate control mode.

Select Rate Preset When:

- Verifying that the desired rates are achievable at the desired ground speed while stationary.

- Checking conveyor speed requirements for the desired rate with the machine empty.

Select Manual Rate Control When:

- Only desiring to check conveyor speed.
- Checking conveyor drive motor function at various conveyor speeds.
- Checking conveyor drive valve function at various conveyor speeds.
- Checking conveyor drive sensor function at various conveyor speeds.
- Assessing conveyor tracking.

MM95366,0000698-19-28OCT25

Machine Calibration | AutoTrac Wheel Angle Sensor

This procedure calibrates the wheel angle sensor used for AutoTrac. Calibration is necessary to optimize system performance.

Perform Calibration When:

- AutoTrac is not performing correctly.
- Wheel angle sensor is replaced.

Items Accessible on Machine Calibration | AutoTrac Wheel Angle Sensor Page:



Calibrate

N119105—UN—02MAY16

Calibrate— begin calibration procedure.

Requirements— machine state required for calibration.

Details Displayed on Page:

Last Calibration	Date and time
Recommended Interval	As needed
Estimated Time Required	Approximately 5 min

Readings Displayed on Page:



Hydraulic Oil Temperature

N119587—UN—02MAY16

Hydraulic Oil Temperature— current oil temperature.

MM95366,00005DD-19-22OCT25

AutoTrac Wheel Angle Sensor Calibration Procedure

Procedure Requirements:

Engine State	Running
Maximum Wheel Speed	4.8 km/h (3 mph)
Operating State	Not applying product
Hydraulic Oil Temperature	Above 40°C (104°F)
Ground Conditions	Firm, level, dry surface
Course Length	91.4 m (300 ft)

Procedure Overview

CAUTION: Front wheels move automatically. To prevent damage or injury, make sure that no obstructions are in the maneuvering zone of machine. Remain seated throughout the entire calibration.



Cancel

N118394—UN—17FEB16

NOTE: Turn the steering wheel or select "Cancel" to stop calibration at any time.



Calibrate

N119105—UN—02MAY16

1. Select Calibrate to begin procedure.
2. Follow messages on-screen to complete procedure.



AutoTrac Resume

N124834—UN—14NOV16

AutoTrac Resume button is on the multi-function lever.



Save

N118093—UN—16FEB16

3. Confirm calibration by selecting Save.

If Calibration Fails:



Retry

N118122—UN—02MAY16

1. Select Retry button.

2. Verify all requirements listed on-screen have been met.
3. If calibration fails twice, contact a John Deere dealer or other service provider.

MM95366,00005DE-19-22OCT25

Machine Calibration | AutoTrac Valve

This procedure calibrates the electric-hydraulic valve used for AutoTrac. Calibration is necessary to optimize system performance.

Perform Calibration When:

- AutoTrac is not performing correctly.
- Machine tires have been changed.
- Wheel angle sensor is replaced.
- AutoTrac valve is replaced.

Items Accessible on Machine Calibration | AutoTrac Valve Page:



Calibrate

N119105—UN—02MAY16

Calibrate— begin calibration procedure.

Requirements— machine state required for calibration.

Details Displayed on Page:

Last Calibration	Date and time
Recommended Interval	As needed
Estimated Time Required	Approximately 5 min

Readings Displayed on Page:



Hydraulic Oil Temperature

N119587—UN—02MAY16

Hydraulic Oil Temperature— current oil temperature.

MM95366,0000699-19-22OCT25

AutoTrac Valve Calibration Procedure

Procedure Requirements:

Engine State	Running
Maximum Wheel Speed	4.8 km/h (3 mph)
Operating State	Not applying product

Hydraulic Oil Temperature	Above 40°C (104°F)
Ground Conditions	Firm, level, dry surface
Course Length	91.4 m (300 ft)

Procedure Overview



CAUTION: Front wheels move automatically.

To prevent damage or injury, make sure that no obstructions are in the maneuvering zone of machine. Remain seated throughout the entire calibration.



Cancel

N118394—UN—17FEB16

NOTE: Turn the steering wheel or select "Cancel" to stop calibration at any time.



Calibrate

N119105—UN—02MAY16

1. Select Calibrate to begin procedure.
2. Follow messages on-screen to complete procedure.



AutoTrac Resume

N124834—UN—14NOV16

AutoTrac Resume button is on the multi-function lever.



Save

N118093—UN—16FEB16

3. Confirm calibration by selecting Save.

If Calibration Fails:



Retry

N118122—UN—02MAY16

1. Select Retry button.
2. Verify all requirements listed on-screen have been met.
3. If calibration fails twice, contact a John Deere dealer or other service provider.

MM95366,00005E0-19-22OCT25

Machine Calibration | Multi-Function Lever

This procedure calibrates the multi-function lever position range for the hydrostatic drivetrain control. Multi-function lever must be calibrated to provide the desired machine performance and control.

Perform Calibration When:

- Multi-function lever has been replaced.
- Propulsion control unit has been replaced.
- Armrest control unit has been replaced.
- Hydrostatic cable has been replaced.

Items Accessible on Machine Calibration | Multi-Function Lever Calibration Page:



Calibrate

N119105—UN—02MAY16

Calibrate— begin calibration procedure.

Details Display on Page:

Last Calibration	Date and time
Recommended Interval	As needed
Estimated Time Required	Approximately 1 min

Readings Displayed on Page:



Forward Max

N119469—UN—14NOV16

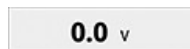
Forward Max— maximum voltage reading for the forward position of the multi-function lever.



Forward Min

N119469—UN—14NOV16

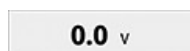
Forward Min— minimum voltage reading for the forward position of the multi-function lever.



Reverse Min

N119469—UN—14NOV16

Reverse Min— minimum voltage reading for the reverse position of the multi-function lever.



Reverse Max

N119469—UN—14NOV16

Reverse Max— maximum voltage reading for the reverse position of the multi-function lever.

MM95366,00005E1-19-22OCT25

Multi-Function Lever Calibration Procedure

Procedure Requirements:

Engine State	Engine OFF, key ON
Operating State	Parked
Multi-Function Lever Position	Park

Calibration Overview:



Calibrate

N119105—UN—02MAY16

1. Select Calibrate to begin procedure.



Save

N118093—UN—16FEB16

2. Follow messages on-screen to complete procedure.
3. Confirm calibration by selecting Save.

If Calibration Fails:



Retry

N118122—UN—02MAY16

1. Select Retry button.
2. Verify all requirements listed on-screen have been met.
3. If calibration fails twice, contact a John Deere dealer or other service provider.



Current Voltage Value

N121512—UN—14NOV16

If Current Voltage Value is red, then current reading is outside the calibrated range.

MM95366,00005E2-19-22OCT25

- New tires were installed or tires have become excessively worn since last calibration.
- Radar has been replaced (if equipped).

Items Accessible on Machine Calibration I Speed Sensors Page:



Calibrate

N119105—UN—02MAY16

Calibrate— begin calibration procedure.



Manually Adjust

N119110—UN—02MAY16

Manually Adjust— enter calibration values rather than perform procedure.

Details Displayed on Page:

Last Calibration	Date and time
Recommended Interval	As needed
Estimated Time Required	Approximately 1 min

Readings Displayed on Page:



Wheel Speed

N121513—UN—02MAY16

Wheel Speed— speed according to wheel speed sensors.



GPS Speed

N121515—UN—02MAY16

GPS Speed— speed according to GPS signal.

MM95366,00005E3-19-22OCT25

Speed Sensors Calibration

This procedure calibrates the wheel speed sensors and radar by comparison with the Global Positioning System (GPS) signal or using a known distance and time. Speed sensors and radar must be calibrated to achieve the desired application rate.

Perform Calibration When:

- A wheel speed sensor has been replaced.
- Speed sources are displaying inconsistent speeds.
- Tire sizes have changed since last calibration.

Speed Sensors Calibration Procedure

Procedure Requirements

Engine State	Running
Wheel Speed (calibrate by distance)	16 km/h (10 mph)
Wheel Speed (calibrate by Global Positioning System [GPS] signal)	32 km/h (20 mph)
Operating State	Not applying product

Ground Conditions	Firm, dry, and level

Methods of Calibration Available:

- **Calibrate by GPS Signal**— drive the machine at approximately 32 km/h (20 mph) in a straight line for 10 seconds and follow messages on the display.
- **Calibrate by Distance**— measure and mark a straight 122 m (400 ft) course. Drive course at approximately 16 km/h (10 mph) and follow messages on the display.

Calibration Overview:

NOTE: This procedure requires driving the machine on a flat surface. Ensure that adequate space is available.



Calibrate

N119105—UN—02MAY16

1. Select Calibrate to begin procedure.
2. Follow messages on-screen to complete procedure.



Save

N118093—UN—16FEB16

3. Confirm calibration by selecting Save.

If Calibration Fails:

Retry

N118122—UN—02MAY16

1. Select Retry button.
2. Verify that all requirements listed on-screen have been met.
3. If calibration fails twice, contact a John Deere dealer or other service provider.



Current Voltage Value

N121516—UN—02MAY16

If Current Voltage Value is red, then current reading is outside the calibrated range.

MM95366,00005E4-19-22OCT25

Reset Calibrations | Machine Calibrations

This procedure resets all machine calibration values to the factory defaults.

Perform When:

- Accurate calibration values cannot be replaced.
- Major machine components are replaced.

Items Accessible on Reset Calibrations | Machine Calibrations Page:

Reset

N119598—UN—02MAY16

Reset— begin reset procedure.

Procedure to Reset Calibrations:

NOTE: This process cannot be undone. Once calibrations have been reset, you have to perform each calibration again.



Reset

N119598—UN—02MAY16

1. Select Reset button.
2. The following calibrations are reset:

- AutoTrac Wheel Angle Sensor
- AutoTrac EH Valve
- Multi-Function Lever
- Speed Sensor
- Tread Adjust (if equipped)



OK

N118151—UN—16FEB16

3. Select OK button to reset calibrations.



Cancel

N118394—UN—17FEB16

4. Select Cancel button to return to previous page.

MM95366,00005E6-19-22OCT25

Fan Maintenance Mode

Fan Maintenance Mode can be used to permit the fan to run while the operator is out of the seat.

CAUTION: Product may still be in the manifold and air tubes. Product can be discharged when the fan is running. Conveyors will not be commanded ON at any time.

Items Accessible on Fan Maintenance Mode Page:



Begin Procedure

N119102—UN—23FEB16

Begin Procedure— begins procedure.

MM95366,000069A-19-22OCT25

Fan Maintenance Mode Procedure

NOTE: Exiting this screen, turning off the engine, or taking the machine out of park will cancel the procedure.

Step 1: Meet the Procedure Prerequisites

- Operator must be in seat.
- Vehicle must be in park.
- Fan must be OFF.
- Conveyors must be OFF.



Next

N118095—UN—23FEB16

If operator meets all prerequisites, press the Next button.

Step 2: Procedure Enabled

When enabled, the fan runs without an operator in the cab seat. The fan can be cycled on and off as needed while the procedure is active.



Procedure Ended

N139450—UN—10MAR20

NOTE: Window shade appears if operator hits Cancel, turns off engine, or takes machine out of park.

MM95366,000069B-19-22OCT25

Machine Calibration | AutoTrac

This procedure calibrates AutoTrac. Calibration is necessary to optimize system performance and reduce application skips when using AutoTrac.

Perform Calibration When:

- AutoTrac is not performing correctly.

- Machine tires have been changed.
- Wheel angle sensor is replaced.
- AutoTrac valve is replaced.

Items Accessible on Machine Calibration | AutoTrac Page:



Calibrate

N145174—UN—09JUN20

Calibrate— begin calibration procedure.

Requirements— machine state required for calibration.

Details Displayed on Page:

Last Calibration	Date and time
Recommended Interval	As needed
Estimated Time Required	Approximately 5 min

Readings Displayed on Page:



Hydraulic Oil Temperature

N119587—UN—02MAY16

Hydraulic Oil Temperature— current oil temperature.

MM95366,00005D5-19-22OCT25

AutoTrac Calibration Procedure

Procedure Requirements:

Engine State	Running
Maximum Wheel Speed	4.8 km/h (3 mph)
Operating State	Not applying product
Hydraulic Oil Temperature	Above 60°C (140°F)
Ground Conditions	Firm, level, dry surface
Course Length	91.4 m (300 ft)

Procedure Overview

CAUTION: Front wheels move automatically. To prevent damage or injury, make sure that no obstructions are in the maneuvering zone of the machine. Remain seated throughout the entire calibration.



Cancel

N118394—UN—17FEB16

NOTE: Turn the steering wheel or select "Cancel" to stop calibration at any time.



Calibrate

N119105—UN—02MAY16

1. Select Calibrate to begin procedure.
2. Follow messages on-screen to complete procedure.



AutoTrac Resume

N124834—UN—14NOV16

3. AutoTrac Resume button is on the multi-function lever.



Save

N118093—UN—16FEB16

4. Confirm calibration by selecting Save.

If Calibration Fails:



Retry

N118122—UN—02MAY16

1. Select Retry button.
2. Verify all requirements listed on-screen have been met.
3. If calibration fails twice, contact a John Deere dealer or other service provider.

MM95366,00005D6-19-22OCT25



Reset

N119598—UN—02MAY16

Reset— begin reset procedure.

Procedure to Reset Calibrations:

NOTE: This process cannot be undone. Once calibrations have been reset, you have to perform each calibration again.



Reset

N119598—UN—02MAY16

1. Select Reset button.
2. The following calibrations are reset:
 - Spreader Calibration (if equipped)
 - Conveyor Control Valve Calibration (if equipped)



OK

N118151—UN—16FEB16

3. Select OK button to reset calibrations.



Cancel

N118394—UN—17FEB16

4. Select Cancel button to return to previous page.

MM95366,00005D7-19-30OCT25

Reset Calibrations | Spreader Calibrations

This procedure resets all spreader calibration values to the factory defaults.

Perform When:

- Accurate calibration values cannot be established.
- Major spreader system components are replaced.
- Conveyor control valve is replaced.

Items Accessible on Reset Calibrations | Spreader Calibrations Page:

Dry Application System Application

Access Dry Application System

Access Application through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



Dry Application System

N119606—UN—16FEB16

3. Dry Application System

Access Application through Navigation Bar:



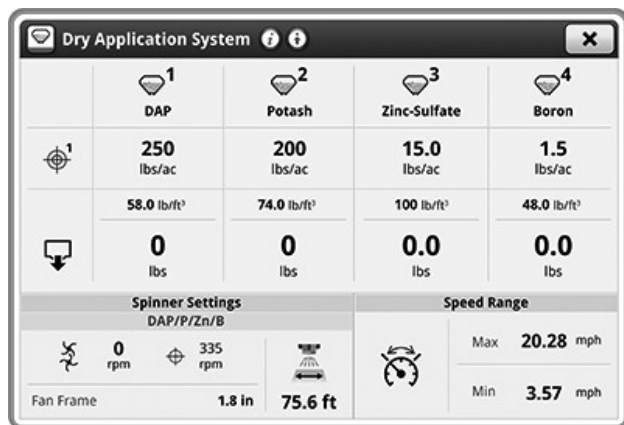
Dry Application System

N119604—UN—03NOV16

Press Dry Application System button on navigation bar below display.

PR79369,0000781-19-30OCT25

Dry Application System Main Page



N121528—UN—16FEB16

Dry Application System

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Main page shown is for example only. Your main page may differ depending on options or connected equipment.

Number of bins available is determined by machine type and your input using the Machine Profile application. (See Machine Profile in the display Operator's Manual for more information.)

Dry Application System application is used to configure the dry spreader to ensure the proper application of fertilizer or chemicals.

Use When:

- Changing application rates.
- Changing the product being applied.
- Changing the spinner settings.
- Operating the roll tarp, chain oiler, and conveyor priming.
- Performing the Conveyor Feed Rate (CFR) calibration.

Items Accessible on Dry Application System Main Page:



Product Bin

N119607—UN—16FEB16

Product Management—displays the product bin number and product selected.



Target Rate

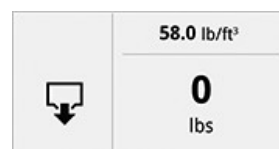
N119608—UN—16FEB16



Manual Mode

N120900—UN—16FEB16

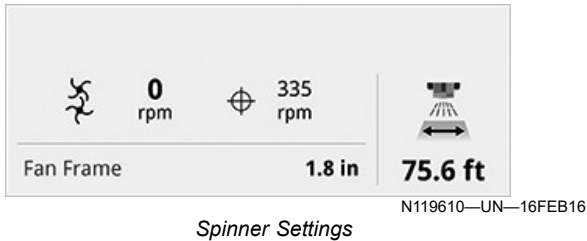
Target Rate—displays the current application rate or displays the conveyor speed when in manual mode.



Bin Details

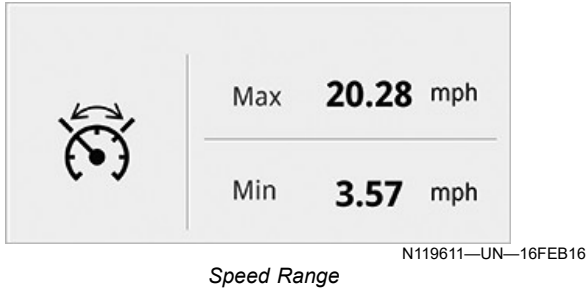
N119609—UN—16FEB16

Bin Details—displays the product density and amount of product that has been applied. Allows access to bin setup and the operation of chain oiler and conveyor priming.



Spinner Settings

Spinner Settings—displays the spinner target and the actual speed, spread width, and fan frame setting.



Speed Range

Speed Range—displays the minimum and maximum speeds that the desired rate can achieve across all enabled bins.



Advanced Settings

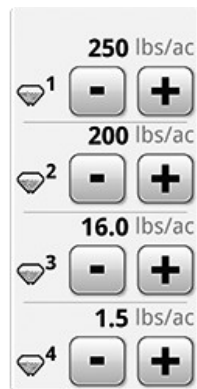
N118004—UN—22OCT15

Advanced Settings—access further adjustments and less common settings.

Run Page Modules

Modules for this application can be added to run pages using Layout Manager. (See Layout Manager in the display Operator's Manual for more information.)

Example:



Bin Rates

N119652—UN—05MAY16

Bin Rates—view target rate and adjust rate as desired.

NOTE: Different modules can be available for your application.

Shortcut Keys

Shortcut keys for this application can be added to the shortcut bar using Layout Manager. (See Layout Manager in the display Operator's Manual for more information.)

Example:



Spreader

N119659—UN—16FEB16

Spreader Status—displays the status of spreader and quick access to the Dry Application System application.

NOTE: Different shortcut keys can be available for your application.

PR79369,0000777-19-30OCT25

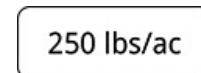
Edit Rate Presets

Edit the desired application rate for each product bin for each rate preset. Rate presets must be adjusted to apply the correct amount of product.

Modify When:

- Changing application rates.
- Changing products being applied.

Items Accessible on Edit Rate Presets Page:



Rate

N119612—UN—16FEB16

Rate— displays the application rate.



Prescription

N120899—UN—16FEB16

Prescription— opens Work Setup application. Allows for selection of prescription if one is loaded to the machine.



Advanced Settings

N118004—UN—22OCT15

Advanced Settings— access further adjustments and less common settings.

NOTE: Prescriptions must be created externally and then loaded to the machine before they can be accessed for rate control.

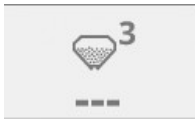
Procedure to Modify:



Target Rate

N119608—UN—16FEB16

1. Select Target Rate.



Product Bin

N131716—UN—08FEB21

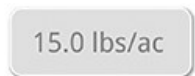
NOTE: Product bins not selected for application are displayed in gray.



Conveyor Disabled

N131715—UN—08FEB21

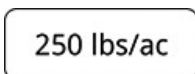
NOTE: Product bins that are selected but disabled are displayed with conveyor disabled. Application rates can be edited for a disabled product bin.



Rate Input Fields

N121510—UN—16FEB16

NOTE: When prescriptions are loaded in Work Setup for a given product, the rate input fields are disabled. This shows that the prescription is handling all of the rate adjustments for that bin and product.



Input Box

N119612—UN—16FEB16

2. Select input box.
3. Enter desired application rate using keypad.



OK Button

N118151—UN—16FEB16

4. Select OK to save value.
5. Repeat procedure as necessary for remaining product bins.

MM95366,00005E8-19-30OCT25

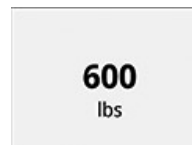
Bin Details

Bin Details allow you to set up bin controls, operate the roll tarp, oil a chain, purge the bin, and prime the conveyor. Bins must be set up properly to achieve the selected target rate.

Modify When:

- Changing product.
- Changing the feed gate opening.
- Enabling or disabling a bin.
- Priming the conveyor.
- Purging a bin.
- Oiling chains.
- Operating bin covers.

Items Accessible on Bin Details Page:



Bin Counter

N119615—UN—17FEB16

Bin Counter—displays the amount of product applied from bin since last reset.



Bin Counter Reset

N119116—UN—17FEB16

Bin Counter Reset—sets the bin counter to zero.



Prime Controls

N119619—UN—16FEB16

Prime Controls—loads the conveyor with product.



Roll Tarp

N119622—UN—16FEB16

Roll Tarp—operates the roll tarp on bins 1 and 2.



Bin Purge

N119625—UN—16FEB16

Bin Purge—empties product from bin using the conveyor or meter rollers.



Chain Oiler

N119627—UN—16FEB16

Chain Oiler—performs chain lubricating cycle.



Active Bin

N119117—UN—17FEB16

Active Bin—allows for editing settings for selected bin only.

NOTE: Number of bins available is determined by machine type and your input using the Machine Profile application. (See Machine Profile in the display Operator's Manual for more information.)



Bin Indicator

N120257—UN—16FEB16

Bin Indicator—displays the current bin selected.



Product Bin

N120258—UN—16FEB16

Product Bin—displays the current application product.



Conveyor Speed

N120902—UN—16FEB16

Conveyor Speed—displays the current conveyor speed.



Toggle Button

N118056—UN—17FEB16

Toggle Button—allows for enabling or disabling selected bin.



Bin Chaining

N119620—UN—16FEB16

Bin Chaining—displays the bin chaining configuration.



Product Density

N119621—UN—16FEB16

Product Density—displays the density of the product being applied.



Conveyor Feed Rate

N119623—UN—16FEB16

Conveyor Feed Rate (CFR) Value—displays the bin chaining CFR value determined through calibration.



Calibration

N119624—UN—16FEB16

CFR Calibration—begins calibration procedure.



Feed Gate Opening

N119626—UN—16FEB16

Feed Gate Opening—displays the current feed gate opening.



Bin Alarms

N119628—UN—12MAY16

Bin Alarms—alarm settings and levels.



Bin Covers

N119629—UN—16FEB16

Micronutrient Bin Items (if equipped)

Bin Covers—operates bin covers on bins 3 and 4.



Advanced Settings

N118004—UN—22OCT15

Advanced Settings—access further adjustments and less common settings.

PR79369,0000782-19-30OCT25

Bin Counter Reset

This process resets the bin counter(s) to zero.

Reset Only the Selected Bin When:

- Only the selected bin has been refilled with product.

Reset All Bins When:

- All bins have been refilled with product at the same time.

VM03385,0000036-19-23OCT25

Prime Controls

Prime Controls allow you to load the conveyor with the product while stationary. Loading the conveyor before application reduces the time necessary to achieve the desired target rate.

Perform When:

- Product bin has been emptied.

Items Accessible on Prime Controls Page:



Spinner Speed

N120904—UN—16FEB16

Spinner Speed—displays the current spinner speed.



Hydraulics System State

N120903—UN—16FEB16

Hydraulic System State—displays the current state of the spreader hydraulic system.



Bin Information

N120905—UN—16FEB16

Bin Information—displays the bin number and the current product selected.



Prime

N119631—UN—16FEB16

Prime—begins the priming procedure.



Conveyor Speed

N120907—UN—16FEB16

Conveyor Speed—displays the current conveyor speed.

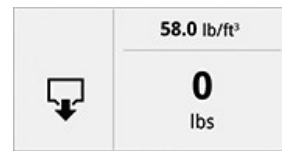


Advanced Settings

N118004—UN—22OCT15

Advanced Settings—access further adjustments and less common settings.

Procedure to Perform:



Bin Details

N119609—UN—16FEB16

1. Select Bin Details.



Prime Controls

N119619—UN—16FEB16

2. Select Prime Controls.

CAUTION: Belt(s) begin movement on press of the button. Product discharge may occur if the spinners are still enabled.

Spinners cannot be shielded due to their function. Keep away from the spinners while they are turning.



Solution Pump

N120497—UN—02NOV16

3. Enable the spreader hydraulic system. Press the Solution Pump switch on the CommandARM.

NOTE: The Solution Pump switch functions as the hydraulic enable switch when dry spreader is installed.



Conveyor Prime

N119631—UN—16FEB16

4. Select the Conveyor Prime button below the desired product bin.

NOTE: You can operate conveyor continuously by selecting and holding the desired Conveyor Prime button.



Progress Indicator

N118091—UN—16FEB16

Progress indicator and the conveyor speed are displayed when priming is in process.



Conveyor Prime

N119631—UN—16FEB16

NOTE: Conveyor Prime button is displayed when the procedure is complete.



Close Button

N118396—UN—17FEB16

5. Select Close button to return to the previous page.

PR79369,0000783-19-22OCT25

Bin Chaining

Bin Chaining allows you to switch manually or automatically from one bin to another during application. The same product must be selected for each bin before bin chaining can be enabled. Operating bin chaining

properly minimizes skips in application when switching between bins.

Modify When:

- Spreading a single product with a dual-bin applicator.
- Switching between manual and automatic chaining.

Select Automatic Bin Chaining:

- For most spreading operations.

Select Manual Bin Chaining:

- When product levels are below the low-level sensor in bin.

NOTE: You must ensure that proper coverage is achieved when operating in manual mode. Higher conveyor speeds can be achieved when a single bin is enabled. Higher conveyor speeds result in a higher application rate.

Procedure to Modify:



Bin Details

N119609—UN—16FEB16

1. Select Bin Details.



Bin Chaining Mode

N1153663—UN—06JAN21

2. Select to choose bin chaining mode.

NOTE: Bin 1 is the front bin and bin 2 is the rear bin. Bin chaining is not available for micronutrient bins.

3. Select desired bin chaining mode:



OFF

N119632—UN—16FEB16

- **OFF**— bin chaining is not active.



Automatic Bin 1 to Bin 2

N119633—UN—16FEB16

- **Automatic Bin 1 to Bin 2**— bin 1 empties first and then application automatically switches to bin 2.



Automatic Bin 2 to Bin 1

N119634—UN—17FEB16

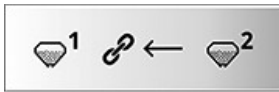
- **Automatic Bin 2 to Bin 1**— bin 2 empties first and then application automatically switches to bin 1.



Manual Bin 1 to Bin 2

N119635—UN—17FEB16

- **Manual Bin 1 to Bin 2**— bin 1 empties first and then select bin 2 to continue application.



Manual Bin 2 to Bin 1

N119636—UN—16FEB16

- **Manual Bin 2 to Bin 1**— bin 2 empties first and then select bin 1 to continue application.

Procedure to Operate:

Automatic Mode

1. Apply product from the first bin in sequence.

NOTE: Spreading automatically switches to the next bin in the sequence when the first bin sensor shows that the bin is empty. Product can remain in the first bin below the bin empty sensor. To empty the bin, disable bin chaining or select manual mode.

2. Apply product from the next bin.



Solution Pump

N120497—UN—02NOV16

If the Solution Pump switch is cycled OFF/ON, or the key is cycled OFF/ON with bin chaining enabled, the following occurs:

- First bin in chaining sequence is selected for spreading.
- Bin chaining will switch to the next bin if first bin sensor reads empty.

NOTE: Solution Pump switch functions as the hydraulic enable switch when dry spreader is installed.

Manual Mode

1. Apply product from the first bin in sequence.



Bin Chain

N119637—UN—16FEB16

NOTE: You can change between bins at any time when in manual mode.

2. Select to change the bin in use.



Solution Pump

N120497—UN—02NOV16

If the Solution Pump switch is cycled OFF/ON, or the key is cycled OFF/ON with bin chaining enabled, the following occurs:

- First bin in chaining sequence is selected for spreading.



Bin Chain

N119637—UN—16FEB16

- Bin chaining will switch to the next bin when Bin Chain button is selected.

PR79369,0000784-19-30OCT25

Bin Covers

Bin Covers application opens and closes the roll tarp on bins 1 and 2 and the lids on micronutrient bins (if equipped). Covering the product bins prevents product from getting wet or blown out during transport or field operation.

Operate Bin Covers When:

- Loading product bins.
- Transporting.
- Operating in the field.
- Precipitation is falling.

Items Accessible on Bin Covers Page:



Roll Tarp Open

N119638—UN—18FEB16

Roll Tarp Open— retracts the roll tarp, allows access to bin.



Roll Tarp Closed

N119653—UN—16FEB16



Time Indicator

N120908—UN—16FEB16

Roll Tarp Closed— closes the roll tarp, covers the bin.

Micronutrient Bin Items (if equipped)



Cover Open

N119654—UN—16FEB16

Cover Open— raises the micronutrient bin lid.



Cover Closed

N121529—UN—18FEB16

Cover Closed— lowers the micronutrient bin lid.



Advanced Settings

N118004—UN—22OCT15

Advanced Settings— access further adjustments and less common settings.

Operating Procedure:



Bin Details

N119609—UN—16FEB16

1. Select Bin Details.



Roll Tarp

N119622—UN—16FEB16

2. Select Roll Tarp.

OR



Bin Covers

N119629—UN—16FEB16

Select Bin Covers.

3. Select and hold desired bin cover function button.

NOTE: A time indicator is displayed on the selected button when function is in process.

4. Visually verify that desired bin cover function is completed.

5. Release button.



Close Button

N118396—UN—17FEB16

6. Select Close button to return to previous screen.

MM95366,00005EC-19-30OCT25

Bin Purge

Bin Purge allows material to be emptied from bin while the machine is stationary.

Perform When:

- Cleaning out at the end of the season.
- Cleaning out before a new job.
- Emptying bin for service.

Items Accessible on Bin Purge Page:



Chain Oiler

N119656—UN—16FEB16

Chain Oiler— oils chain while purging bin. Only available for bin 1.



Bin Purge

N119640—UN—17FEB16

Bin Purge— empties the selected bin using conveyor belt.



Spinner ON/OFF

N118056—UN—17FEB16

Spinner ON/OFF— engages or disengages spinners during bin purging.

Micronutrient Bin Items (if equipped)



Purge Meter Roller

N119641—UN—17FEB16

Purge Meter Roller— empties the micronutrient bin through feed rolls.



Progress Indicator

N118091—UN—16FEB16

NOTE: Progress indicator is displayed while function is in progress.

Chain Oiler is available for Bin 1 only.



Advanced Settings

N118004—UN—22OCT15

Advanced Settings— access further adjustments and less common settings.

Bin Purge Procedure:



Bin Details

N119609—UN—16FEB16

1. Select Bin Details.



Bin Purge

N119625—UN—16FEB16

2. Select Bin Purge.

CAUTION: The conveyor begins movement as soon as the button is pressed. Product discharge can occur if the spinners are still enabled.

Spinners cannot be shielded due to their function. Keep away from the spinners while they are turning.



ON/OFF Toggle Button

N118056—UN—17FEB16

3. If necessary, engage the spinners using the ON/OFF toggle button.



Bin Purge

N119640—UN—17FEB16

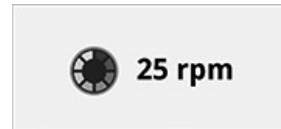
4. Select desired bin purge function.



Chain Oiler

N119656—UN—16FEB16

5. Select Chain Oiler to lubricate chain if necessary.



Progress Indicator

N119642—UN—17FEB16

NOTE: Progress indicator and conveyor speed are displayed while oiling is in process.



Bin Purge

N119640—UN—17FEB16

6. Select purge function to end the procedure.



Close

N118396—UN—17FEB16

7. Select Close button to return to the previous screen.

MM95366,00005ED-19-30OCT25

Chain Oiler

Chain Oiler lubricates the conveyor drive chain. Conveyor drive chain must be properly lubricated to prevent premature wear and failure.

Perform Procedure:

- Daily.
- At the beginning of the season.

Items Accessible on Chain Oiler Page:



Chain Oiler

N119656—UN—16FEB16

Chain Oiler— begins chain oiling.



Conveyor Status

N120909—UN—16FEB16

Conveyor Status— displays the current conveyor status. Status indicates that oiling is in process.



Advanced Settings

N118004—UN—22OCT15

Advanced Settings— access further adjustments and less common settings.

Chain Oiling Procedure:

CAUTION: The belt begins movement as soon as the button is pressed. Product discharge can occur if the spinners are still enabled.

Spinners cannot be shielded due to their function. Keep away from the spinners while they are turning.

NOTE: An oiling cycle is approximately two conveyor revolutions. Conveyor must be running to perform oiling cycle.



Manual Rate

N124439—UN—22SEP16

1. Select manual rate mode. Press Manual Rate switch on CommandARM.



Solution Pump Switch

N120497—UN—02NOV16

2. Enable the spreader hydraulic system. Press the Solution Pump switch on the CommandARM.

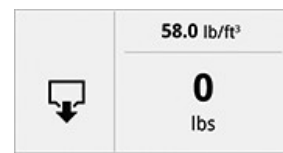


Spread System Master

N120251—UN—04JAN17

3. Engage the conveyor. Press the Spread System Master switch on the CommandARM.

NOTE: Oiling cycle can also be performed while application is in process if desired.



Bin Details

N119609—UN—16FEB16

4. Select Bin Details.



Chain Oiler

N119627—UN—16FEB16

5. Select Chain Oiler.



Chain Oiler

N119656—UN—16FEB16

6. Select chain oiler to begin cycle.



Progress Indicator

N118091—UN—16FEB16

NOTE: Progress indicator and conveyor speed are displayed while chain is being oiled.

Progress indicator disappears when oiling is complete.



Close

N118396—UN—17FEB16

7. Select to return to the previous screen.

Bin and Product Alarms

Bin and Product Alarms adjust and enable all alarms for each product bin. Alarms inform the operator of deviations that negatively affect application accuracy.

Modify When:

- Adjusting deviation allowed for target rate and product density.
- Enabling or disabling bin low-level alarm.
- Adjusting deviation allowed for target rate and product density.

Items Accessible on Bin and Product Alarms Page:

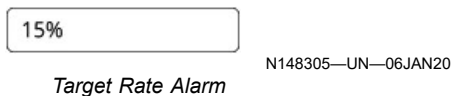


Bin Selector— select bin to adjust on toggle bar.

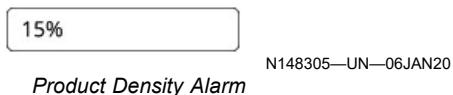
NOTE: Number of bins available is determined by machine type and your input using the Machine Profile application. (See Machine Profile in the display Operator's Manual for more information.)



Bin Low-Level Alarm— alerts you of low product level in the bin. Each installed bin has a low-level sensor.



Target Rate Alarm— allows you to adjust the deviation allowed from target rate.



Product Density Alarm— allows you to adjust the deviation allowed from target product density.



Advanced Settings— access further adjustments and less common settings.

Target Rate Alarm

Target Rate Alarm informs you when the applied rate is at or above the set deviation from the target application rate for 6 seconds continuously. Machine or display settings may require adjustment if the target rate cannot be maintained.

Target Rate Alarm Characteristics:

- Default level is 15%.
- If deviation percentage is too small, alarm sounds frequently. In this case, the machine may not be able to maintain rate within deviation due to field conditions and product characteristics.
- If deviation percentage is too large, alarm will not sound often enough. In this case, application may not be even and desired results are not achieved.

Procedure to Modify:



1. Select Bin Details.



2. Select Bin Alarms.



3. Select Target Rate Alarm to edit the value.

4. Enter desired value using keypad.



5. Select OK to confirm.

MM95366,00005F0-19-30OCT25

Product Density Alarm

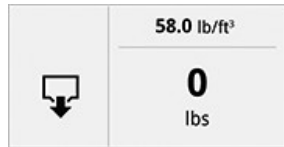
Product Density Alarm informs you when the difference between the density of the selected product and the density of the product used during the Conveyor Feed Rate (CFR) calibration is at or above the set deviation.

Product Density Alarm Characteristics:

MM95366,00005EF-19-30OCT25

- Default percentage is 15%.
- If deviation percentage is too small, alarm indicates that the calibration is needed too often. Excessive calibration reduces application time.
- If deviation percentage is too large, alarm does not indicate that the calibration is necessary soon enough. Application rates will not be accurate.

Procedure to Modify:



Bin Details

N119609—UN—16FEB16

1. Select Bin Details.



Bin Alarms

N119628—UN—12MAY16

2. Select Bin Alarms.



Product Density Alarm

N148305—UN—06JAN20

3. Select Product Density Alarm to edit the value.
4. Enter desired value using keypad.



OK

N118151—UN—16FEB16

5. Select OK to confirm.

MM95366,00005F1-19-30OCT25

Select Spinner Preset

Select Spinner Preset allows selection of the spinner settings used for the application. You can also create a preset or edit an existing preset.

Modify When:

- Changing application products.
- Adding a product or mix.

Items Accessible on Select Spinner Preset Page:



Edit

N119644—UN—17FEB16

Edit— modifies existing settings for a preset.



Add Preset

N119645—UN—17FEB16

Add Preset— creates a preset.



Cancel

N118394—UN—17FEB16

Cancel— returns to previous page. No changes are saved.

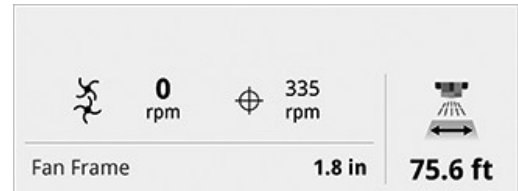


OK

N118151—UN—16FEB16

OK— saves selection change.

Procedure to Select Spinner Preset:



Spinner Settings

N119610—UN—16FEB16

1. Select Spinner Settings.



Spinner Preset

N121511—UN—18FEB16

2. Select desired Spinner Preset.

Alternative Procedure to Select Spinner Preset:



Add Preset

N119645—UN—17FEB16

1. Select to add a new preset.



Edit

N119644—UN—17FEB16

2. Select to edit selected preset if desired.



OK Button

N118151—UN—16FEB16

3. Select OK to confirm selected preset.



Cancel Button

N118394—UN—17FEB16

4. Select Cancel to return to previous screen and use previous preset.

MM95366,00005F2-19-30OCT25

Edit Spinner Preset

Edit Spinner Preset configures the spinner target speed, spread width, and fan frame setting for the selected product blend. Spinner settings must be correct to ensure proper application pattern and coverage.

Modify When:

- Changing application product or mix.
- Product is pulverized by spinners.
- Desired spread width is not achieved.
- Adding a new preset.

Items Accessible on Edit Spinner Preset Page:



Name

N119646—UN—17FEB16

Name— displays the product or product mix name.



Spinner Target Speed

N119647—UN—17FEB16

Spinner Target Speed—displays the desired spinner speed.



Spread Width

N119648—UN—16FEB16

Spread Width—displays spread width achieved during the spread pattern test.

NOTE: See the spreader Operator's Manual for instructions to perform spread pattern test.



Fan Frame Settings

N119649—UN—16FEB16

Fan Frame Settings—display fan frame settings used for the application.

NOTE: Fan frame setting must be changed outside the cab. Entering the value here only informs the control unit of the setting in use.



Delete

N119650—UN—16FEB16

Delete—removes preset from control unit memory.



Cancel

N118394—UN—17FEB16

Cancel—returns to previous page. No changes are saved.



Save

N118093—UN—16FEB16

Save—saves all changes and returns to the previous page.



Advanced Settings

N118004—UN—22OCT15

Advanced Settings—access further adjustments and less common settings.

Procedure to Modify or Add New:



Preset Name

N119646—UN—17FEB16

1. Enter the preset name.



OK

N118151—UN—16FEB16

2. Select OK to confirm.



Spinner Target Speed

N119647—UN—17FEB16

3. Enter the Spinner Target Speed.



OK

N118151—UN—16FEB16

4. Select OK to confirm.



Spread Width

N119648—UN—16FEB16

5. Enter the spread width achieved during the spread pattern test.



OK

N118151—UN—16FEB16

6. Select OK to confirm.



Fan Frame Setting

N119649—UN—16FEB16

7. Enter the fan frame setting.



OK

N118151—UN—16FEB16

8. Select OK to confirm.



N118093—UN—16FEB16
Save



N118394—UN—17FEB16
Cancel

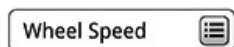
9. Select Save to save changes or Cancel to return to the previous page without saving changes.

PR79369,0000785-19-30OCT25

Information and Settings | Dry Application System

Information and Settings | Dry Application System provides access to further adjustments and less common settings.

Items Accessible on Information and Settings | Dry Application System Page:



Rate Control/Display Speed

N119651—UN—16FEB16

Rate Control/Display Speed— select to choose the appropriate speed source for the rate control unit.



Spinner Control Response

N142962—UN—24MAR20

Spinner Control Response— select to adjust the responsiveness of the spinner.

PR79369,000013E-19-30OCT25

Rate Control/Display Speed

Rate Control/Display Speed displays available speed sources for the rate control unit. Speed source must be adjusted based on ground conditions, availability of Global Positioning System (GPS) signal, and options installed.

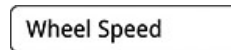
Select Global Positioning System (GPS) When:

- Wheel slip is likely to occur.
- Performing normal operations.

Select Wheel Speed When:

- GPS signal is degraded.
- GPS is not installed.
- Wheel slip is not likely to occur.

Procedure to Modify:



Rate Control/Display Speed

N153664—UN—06JAN21

1. Press Rate Control/Display Speed.
2. Select speed source.

MM95366,00005F4-19-30OCT25

Engine Application

Access Engine

Access Application Through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



Engine

N119473—UN—09MAR16

3. Engine

Access Application Through Navigation Bar:



Engine

N119603—UN—09MAR16

Press Engine button on navigation bar below display.

aota2vy,1688571668074-19-05JUL23

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Main page shown is for example only. Your main page may differ depending on options or connected equipment.

The Engine application is used to access and adjust engine settings.

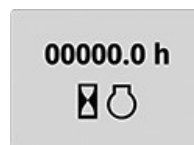
Items Accessible on Engine Main Page:



Engine Power

N119480—UN—09MAR16

Engine Power— amount of engine power the machine is using.



Engine Hours

N119479—UN—09MAR16

Engine Hours— accumulated engine hours.



Exhaust Filter Cleaning

N119481—UN—09MAR16

Auto Exhaust Filter Cleaning— automated process to perform exhaust filter cleaning during normal operation as required.



Parked Filter Cleaning

N119474—UN—09MAR16

Parked Filter Cleaning— process which allows the system to perform additional exhaust filter cleaning when required.

NOTE: Parked filter cleaning requires 1 hour to complete.



Request Exhaust Filter Cleaning

N119475—UN—09MAR16

Engine Main Page



Engine

N167215—UN—17APR24

Request Exhaust Filter Cleaning— performs a more severe cleaning procedure than parked filter cleaning when required.

NOTE: Request exhaust filter cleaning requires 2 to 3 hours to complete.



Engine Power

N119482—UN—09MAR16

Run Page Modules

Modules for this application can be added to run pages using Layout Manager. (See Layout Manager in the display Operator's Manual for more information.)

Example:

Engine Power— shows engine hours and power output of the engine.

NOTE: Different modules can be available for your application.

as09261,1713285508325-19-17APR24

Engine Power

Engine Power displays the amount of engine power the machine is providing; engine operating hours are also displayed here. Engine operating hours are necessary for monitoring machine maintenance.

IMPORTANT: If alerts or excessive exhaust smoke are visible, contact a John Deere dealer or other service provider for further diagnosis.

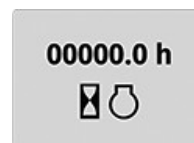
Items Displayed on Engine Power Page:



Engine Power

N119480—UN—09MAR16

Engine Power— green area indicates the amount of engine power being used. Reading is not displayed until 40% of the available engine power is being used.



Engine Hours

N119479—UN—09MAR16

Engine Hours— displays the total engine operating hours for the machine.

Operating in the following conditions will increase power consumption:

- Hilly terrain
- Wet ground conditions
- Excessive ground speed

VM03385,000004B-19-30OCT25

Exhaust Filter System Overview

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

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

- Utilize AUTO Exhaust Filter Cleaning mode.
- Avoid unnecessary idling.
- Use proper engine oil.
- Use only ultra-low sulfur fuel.

NOTE: For more information, refer to the *Fuels, Lubricants, and Coolants* section.

CAUTION: The exhaust temperature can be high under no load or light load conditions at certain times during the exhaust filter cleaning cycle.

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

During automated or manual/stationary exhaust filter cleaning operations, the engine runs at elevated idle and hot temperatures for an extended period. Exhaust gases and exhaust filter components reach temperatures hot enough to cause burns to people, or ignite or melt common materials.

Never perform exhaust filter cleaning procedures in a closed building unless suitable exhaust is provided.



Automatic

N119481—UN—09MAR16

AUTO Mode— automated process to perform exhaust filter cleaning during normal operation.



Disabled

N120260—UN—09MAR16

Disable AUTO Exhaust Filter— in conditions where it can be unsafe for elevated exhaust temperatures.



Parked Filter Cleaning

N119474—UN—09MAR16

Parked Filter Cleaning— process which allows the system to perform exhaust filter cleaning when required.

NOTE: Parked filter cleaning requires 1 hour to complete.



Request Exhaust Filter Cleaning

N119475—UN—09MAR16

Request Exhaust Filter Cleaning— performs a more intense cleaning procedure than parked filter cleaning when required.

NOTE: Request exhaust filter cleaning requires 2 to 3 hours to complete.

VM03385,000004C-19-30OCT25

AUTO Exhaust Filter Cleaning



AUTO Mode

N119481—UN—09MAR16

AUTO Mode— allows the Exhaust Filter System to perform exhaust filter cleaning as required. Corner post display indicator and armrest display provide you with information related to exhaust filter system activity.



Exhaust Filter Cleaning Indicator

N119478—UN—09MAR16

Exhaust Filter Cleaning Indicator— illuminates when exhaust filter system is actively performing exhaust filter cleaning.



High Exhaust System Temperature (HEST) Indicator

H113561—UN—07NOV16

High Exhaust System Temperature (HEST) Indicator (if equipped)— illuminates on corner post display when high exhaust temperatures are detected.

CAUTION: When AUTO, PARKED, or REQUESTED cleaning is enabled, the exhaust temperature can be high under no load or light load conditions at certain times during the exhaust filter cleaning cycle. Disable exhaust filter cleaning system in conditions where it can be unsafe for elevated exhaust temperatures.

NOTE: System defaults to AUTO mode when parked exhaust filter cleaning is complete or key switch is cycled.

Disable AUTO Exhaust Filter Cleaning— system in conditions where it can be unsafe for elevated exhaust temperatures.

IMPORTANT: Damage to exhaust cleaning components can occur if engine is turned OFF while performing exhaust filter cleaning or shortly after cleaning is complete.

VM03385,000004D-19-30OCT25

Parked Filter Cleaning

Parked Filter Cleaning is a process which you initiate to clean the exhaust filter when required.

During the process, engine speed is controlled by the system and the machine must remain parked to complete procedure. Time required for the Parked Filter Cleaning process is dependent upon the level of exhaust filter restriction, ambient temperatures, and current exhaust gas temperature.

Perform When:

- Message displayed on-screen indicates that cleaning is required.

Parked Filter Cleaning is Commonly Caused By:

- Constantly disabling Automatic cleaning mode.
- Excessive idling.
- Use of incorrect fuel quality.

Request Filter Cleaning is Commonly Caused By:

- Ignoring machine request for Parked filter cleaning.
- Exhaust system components nearing the end of their service life.

Procedure to Modify:

CAUTION: When AUTO, PARKED, or REQUESTED cleaning is enabled, the exhaust temperature can be high under no load or light load conditions at certain times during the exhaust filter cleaning cycle.

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

During auto or manual/stationary exhaust filter cleaning operations, the engine runs at elevated idle and hot temperatures for an extended period. Exhaust gases and exhaust filter components reach temperatures hot enough to cause burns to people, or ignite or melt common materials.

IMPORTANT: Damage to exhaust cleaning components can occur if engine is turned OFF while performing exhaust filter cleaning or shortly after cleaning is complete.

NOTE: Parked Filter Cleaning requires 1 hour to complete. Request Exhaust Filter Cleaning requires 2 to 3 hours to complete.



N119474—UN—09MAR16

Parked Exhaust Filter Cleaning

1. Select Parked Exhaust Filter Cleaning button.



N119475—UN—09MAR16

Request Exhaust Filter Cleaning

2. Select Request Exhaust Filter Cleaning button (if equipped).

3. Verify that machine is configured for Parked or Request Filter Cleaning.

- Stop machine motion
- Set engine speed to low idle
- Engage park brake
- Stop remote loading
- Turn spread system master OFF



Checkmark

N118440—UN—09MAR16

Once a condition has been met, a green checkmark in box will appear preceding condition.



Next

H113803—UN—09MAR16

4. Once all conditions have been met select Next on display.

NOTE: Exhaust Filter System controls engine speed to increase exhaust temperature.



Progress Indicator

N118091—UN—16FEB16

Exhaust filter cleaning is shown by Progress Indicator.



Cleaning Complete

N118025—UN—09MAR16

System informs you when exhaust filter cleaning is complete.



Abort

H113804—UN—09MAR16

5. Select Abort at any time during Parked Filter Cleaning procedure to cancel process.

If you are not returning the machine to service immediately after procedure, allow engine time to return to normal operating temperature before stopping engine.

NOTE: System defaults to AUTO mode when parked exhaust filter cleaning is complete.

VM03385,000004E-19-30OCT25

Disable AUTO Exhaust Filter Cleaning

Auto Exhaust Filter Cleaning can be disabled in certain conditions.

IMPORTANT: Disable the automatic exhaust filter cleaning system only when necessary.

Modify When:

- Indoors or under a roof unless a high temperature externally vented exhaust system is connected.
- There is not enough time available for the machine to complete a cleaning cycle before it is shut down.
- Operating in high crop dust or chaff conditions.
- Next to a fueling area.

Procedure to Modify:



Automatic

N119481—UN—09MAR16

1. Select to open Exhaust Filter Cleaning.



ON/OFF

N119477—UN—09MAR16

2. Select to enable or disable Automatic Filter Cleaning.



Close

N118396—UN—17FEB16

3. Select to close Exhaust Filter Cleaning.

aota2vy,1688571667133-19-05JUL23

HVAC Application

Access HVAC

Access Application Through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



HVAC

H114795—UN—04JAN17

3. HVAC

Access Application Through Navigation Bar:



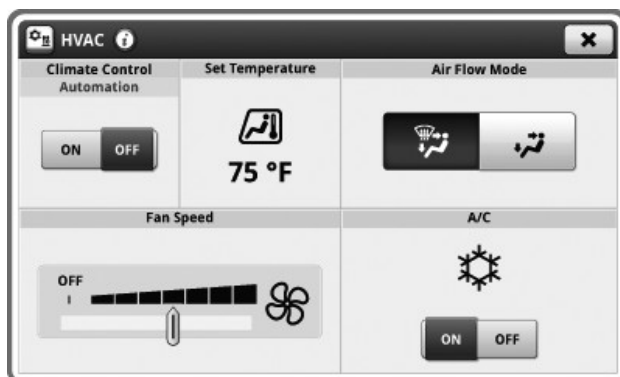
HVAC

H114794—UN—17MAR16

Press HVAC button on navigation bar below display.

aota2vy.1688573476750-19-05JUL23

Heating, Ventilation, and Air Conditioning (HVAC) Main Page



HVAC

H128158—UN—16JAN20

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Main page shown is for example only. Your main page may differ depending on options or connected equipment.

HVAC application is used to adjust temperature, fan speed, and air flow mode inside of cab.

Items Accessible on HVAC Main Page:



Climate Control Automation

H114790—UN—04JAN17

Climate Control Automation— enable to allow automatic control over air conditioning, air flow mode, and fan speed.

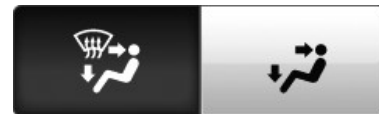


75° F

Set Temperature

N145866—UN—26SEP19

Set Temperature— set a desired temperature inside cab.



Air Flow Mode

N145867—UN—26SEP19

Air Flow Mode— adjust distribution of air flow inside cab.



Fan Speed

N145868—UN—26SEP19

Fan Speed— control fan speed inside cab.



Air Conditioning

N145869—UN—26SEP19

Air Conditioning (A/C)— enable or disable air conditioning.

Run Page Modules

Modules for this application can be added to run pages using Layout Manager.

Example:



A/C

H115024—UN—04JAN17

A/C— toggle gives you direct access to enable/disable the A/C.

NOTE: Different modules can be available for your application.

Shortcut Keys

Shortcut keys for this application can be added to the shortcut bar using Layout Manager.

Example:



A/C ON/OFF

H116265—UN—04JAN17

A/C ON/OFF— quick access to turn air conditioning on and off.

NOTE: Different shortcut keys may be available for your application.

N0LMWLO,0000144-19-30OCT25

Set Temperature

Set Temperature allows you to set a desired temperature inside the cab.

Procedure to Modify:



75° F

Set Temperature

N145866—UN—26SEP19

1. Select Set Temperature value to modify cab temperature setting.



Decrease

H114792—UN—22JAN20

2. Select minus (-) to decrease value.



Increase

H114791—UN—22JAN20

3. Select plus (+) to increase value.



Close

H114770—UN—22JAN20

4. Select to close cab temperature setting.

Alternate Procedure to Modify:



Temperature Control

N121549—UN—12MAY16

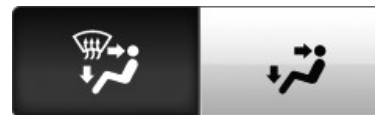
CommandARM Temperature Control— press temperature increase or decrease buttons on armrest to modify temperature.

N0LMWLO,0000145-19-30OCT25

Air Flow Mode

Air Flow Mode allows you to adjust the distribution of air flow inside the cab or enable windshield defrost.

Procedure to Modify:



Air Flow Modes

N145867—UN—26SEP19

Select the desired air flow mode on the toggle bar.



Defrost, Operator, and Floor

N145870—UN—26SEP19

Defrost, Operator, and Floor— distribute air flow evenly throughout the cab and defrost the windshield.

NOTE: Air conditioning turns ON when Defrost air flow mode is selected.



Operator and Floor

N145871—UN—26SEP19

Operator and Floor— direct air flow evenly throughout the cab.

Alternate Procedure to Modify:



Air Flow Control

H117877—UN—29MAR16

CommandARM Air Flow Control— press the air flow mode button on the armrest to toggle between modes.

N0LMWLO,0000147-19-22OCT25

Fan Speed

Fan Speed allows you to control fan speed inside the cab.

Procedure to Modify:



Fan Speed

N145868—UN—26SEP19

1. Select the screen area under Fan Speed to modify it.



Indicator

H114802—UN—17MAR16

2. The indicator moves to the selected fan speed or is turned off by selecting the minus (-) or plus (+) buttons.



Decrease

H114998—UN—04JAN17

- a. Select minus (-) to decrease the fan speed. The

fan speed decreases until the indicator reaches the OFF position.



Increase

H114997—UN—04JAN17

- b. Select plus (+) to increase the fan speed. The fan speed increases until the highest setting is reached.



Close

H114770—UN—22JAN20

3. Select to close the fan speed setting.

NOTE: When climate control automation is enabled on the HVAC main page, the fan speed decreases as the temperature approaches the temperature Setpoint.

Alternate Procedure to Modify:



Fan Speed

N120890—UN—05MAY16

CommandARM Fan Speed Control— press fan speed increase or decrease buttons on armrest to modify fan speed.

CommandARM is a trademark of Deere & Company

N0LMWLO,0000146-19-22OCT25

Air Conditioning (A/C)

Air Conditioning allows you to enable or disable air conditioning.

NOTE: Air conditioning turns ON when defrost air flow mode is selected.

Procedure to Modify:



ON/OFF

H114790—UN—04JAN17

Select to enable or disable air conditioning.

aota2vy.1688573475933-19-05JUL23

Lights Application

Access Lights

Access Application Through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



Lights

H115004—UN—11MAR16

3. Lights

Access Application Through Navigation Bar:



Lights

H115005—UN—11MAR16

Press Lights button on navigation bar below display.

VM03385,0000055-19-30OCT25

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Main page shown is for example only. Your main page may differ depending on options or connected equipment.

Lights application allows you to access light preset configurations. Selecting one of the tab presets allows you to make adjustments.

NOTE: Worklights are configurable. Road lights are not configurable.

Tabs Available in Lights Application:



Worklights Preset 1

N153122—UN—01DEC20

Worklights Preset 1— lights that illuminate in Worklights Preset 1.



Worklights Preset 2

N153123—UN—01DEC20

Worklights Preset 2— lights that illuminate in Worklights Preset 2.



Highlighted Tabs

N153124—UN—08JAN21

Highlighted Tabs— indicate which light preset is selected.

Worklights Controls— provide you with controls to select worklights.

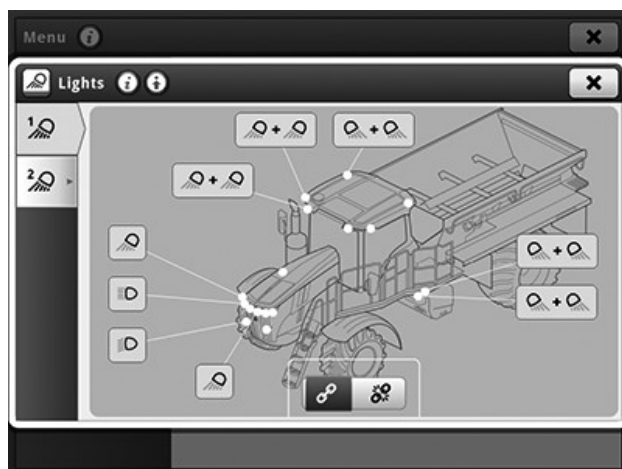


Light with Fault

H113862—UN—11MAR16

Light with Fault— exclamation point indicates that light is in error. For example, light bulb is burnt out.

Lights



Lights Application

N160233—UN—11JAN22



Advanced Settings

N118004—UN—22OCT15

Advanced Settings— allows you to access further adjustments and less common settings.

PR79369,000018A-19-30OCT25

Worklights Preset 1

Worklights Preset 1 allows you to customize presets for specific needs. Modify when needing customized lighting in low-visibility conditions.

Procedure to Modify:



Worklights Preset 1

N153122—UN—01DEC20

1. Select to allow customization of each individual light in this mode.



Link

H113857—UN—11MAR16

- Select Link on toggle button to link paired left-hand and right-hand lights for simultaneous ON and OFF operation on all tabs.



Unlink

H113858—UN—11MAR16

- Select Unlink on toggle button to allow paired left-hand and right-hand lights individual ON and OFF operation on all tabs.



Light Button

H114591—UN—11MAR16



Light Pair Button

H113853—UN—11MAR16

2. Select Light or Light Pair button for lights you want illuminated.



Highlighted Button

H114592—UN—11MAR16

NOTE: Button becomes highlighted when selected.

PR79369,000018B-19-30OCT25

Worklights Preset 2

Worklights Preset 2 allows you to customize presets for specific needs. Modify when needing customized lighting in low-visibility conditions.

Procedure to Modify:



Worklights Preset 2

N153123—UN—01DEC20

1. Select to allow customization of each individual light in this mode.



Link

H113857—UN—11MAR16

- Select Link on toggle button to link paired left-hand and right-hand lights for simultaneous ON and OFF operation on all tabs.



Unlink

H113858—UN—11MAR16

- Select Unlink on toggle button to allow paired left-hand and right-hand lights individual ON and OFF operation on all tabs.



Light Button

H114591—UN—11MAR16



Light Pair Button

H113853—UN—11MAR16

2. Select Light or Light Pair button for lights you want illuminated.



Highlighted Button

H114592—UN—11MAR16

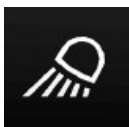
NOTE: Button becomes highlighted when selected.

PR79369,000018D-19-30OCT25

Worklights Controls

Worklights Controls allows you to select the desired worklight preset and mode.

Procedure to Modify:



Worklights Button

H127047—UN—26SEP19

1. Press the Worklights button on the CommandARM armrest.

NOTE: LED illuminates when the worklights button is selected.

NOTE: Rear Cab Worklights provide improved nighttime loading visibility. See Overhead Controls for switch location.



Lever

H127048—UN—26SEP19

2. Select desired Worklight preset.
 - Pull the lever rearward (momentary high beam position) to activate worklight preset 1.
 - Push the lever forward (high beam position) to activate worklight preset 2.

NOTE: After the lever is released and returns to home (middle) position, the selected preset remains active.



N153122—UN—01DEC20
Worklights Preset 1



N153123—UN—01DEC20
Worklights Preset 2

3. To customize the lighting presets, access the Lights application and make changes to Worklights Preset 1 and Worklights Preset 2 as desired.

NCHYUSK,1757685144768-19-28OCT25

Video

Use Video Display Capability Properly Avoid Backover Accidents



RXA0109491—UN—05AUG10

Avoid Backover Accidents

CAUTION: Before moving machine, be sure that all persons are clear of the machine path. Give an audible warning by sounding the horn. Turn around and look directly for best visibility. Use mirrors to assist in checking all around the machine. Keep the windows and mirrors clean, adjusted, and in good condition. 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.

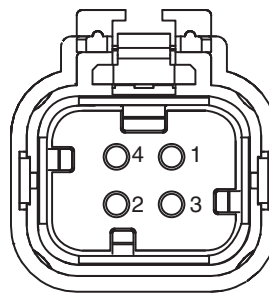
CAUTION: Do not rely on a camera for collision avoidance or bystander detection. To avoid possible injury or death to the operator or others, always remain alert and aware of surroundings when operating the machine. Read and understand **AVOID BACKOVER ACCIDENTS** in this section.

IMPORTANT: Avoid damage to equipment. Correctly understand whether the camera is "mirrored" and whether the video application is mirrored.

- Mount camera in a sturdy and secure location.
- Understand camera's field of view.
- Keep camera properly serviced.
- Keep camera lens clean.

CS12167,000088F-19-06SEP16

Install Video Display Camera



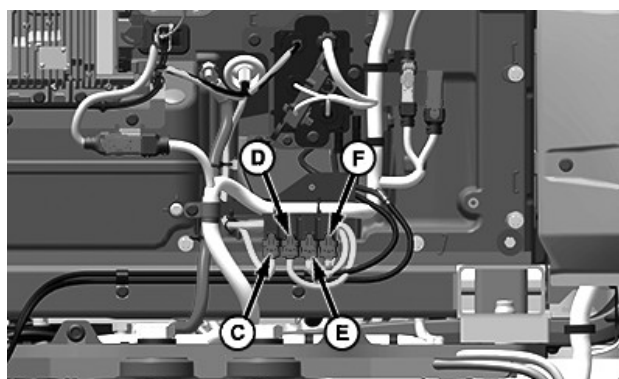
RXA0107925—UN—28MAY10

Video Connector Pin Identification



RXA0132177—UN—23APR13

Remove Rear Panel



N160278—UN—18JAN22

Video Connectors Location (equipped with CommandCenter Processor)

- A—Cap Screws (4 used)
- B—Rear Panel
- C—Video 1 Connector
- D—Video 2 Connector
- E—Video 3 Connector
- F—Video 4 Connector

IMPORTANT: Avoid damaging camera by mounting camera securely to equipment and in a location where the camera will not be pinched, crushed, kicked, or knocked off.

NOTE: Camera placement is limited to video-camera cable length. Consider the camera field of view when selecting location.

Machines equipped with armrest CommandCenter display has 4 analog video inputs and 2 digital video inputs.

1. Machines are equipped with one or four, 4-pin video connector(s) to attach camera(s). Remove rear cab panel cap screws (A). Remove cab rear panel (B) to access each marked video camera connector(s) (C, D, E, or F). Chart shows connector pin/function information.

Pin Number	Function
1	Power
2	Ground
3	Signal
4	Signal—Ground

2. Connect camera cable into 4-pin connectors, route cable, and mount the camera at desired location.
3. Install rear panel on cab and tighten screws.
4. Proceed to Video Triggers in this section of this Operator's Manual to select camera settings.

ibhz6m2,1722850719995-19-06AUG24

Extended Monitor (If Equipped)



N160276—UN—19JAN22

A—Connector

Attach the extended monitor to connector (A).

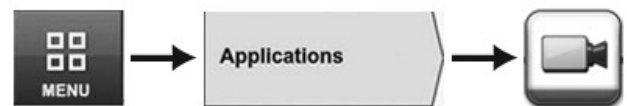
The extended monitor can be mounted in the cab to give operators the ability to utilize an additional monitor with the CommandCenter display for viewing and adjusting multiple operational activities. Some of those activities include making adjustments to the spreader rate controller as well as viewing different coverage and as-applied map views. Using the extended monitor solution

with the CommandCenter provides the following benefits:

- Make adjustments on the go with either display while having direct access to more information on run pages at all times.
- Minimal setup time with quick and easy plug and play.
- Reduce the chance for costly mistakes during a product application by allowing the operator to monitor more parts of the machine through two displays.

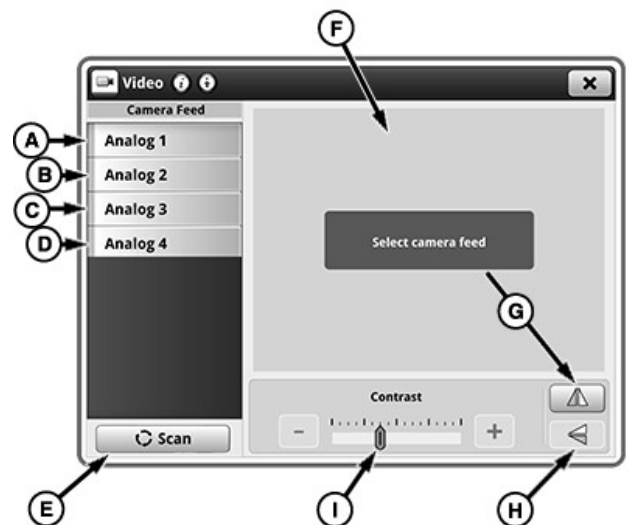
ibhz6m2,1721280760101-19-02AUG24

Navigate to Video Application



RXA0144375—UN—06AUG14

Menu → Applications Tab → Video Icon



N160627—UN—28JAN22

- A—Analog 1 Button
- B—Analog 2 Button
- C—Analog 3 Button
- D—Analog 4 Button
- E—Scan Button
- F—Video Display Screen
- G—Vertical Mirror Button
- H—Horizontal Mirror Button
- I—Contrast Adjustment Bar

1. Select **Menu**.
2. Select **Applications** tab.

3. Select **Video icon**.

MM95366,0000696-19-28JAN22

IMPORTANT: Determine if camera image or video application is mirrored before using Video application.

as09261,1712234662103-19-04APR24

Video



Video

PC15312—UN—15MAY13

CAUTION: Do not rely on a camera for collision avoidance or bystander detection. To avoid possible injury or death to operator or others, always remain alert and aware of surroundings when operating the machine. Read and understand **AVOID BACKOVER ACCIDENTS** in the safety section.

The Video application is used to observe areas around the machine. Only one video can be viewed at a time.

NOTE: A Run Page can be created, allowing multiple videos to be viewed.

The armrest CommandCenter display has (4) Analog Video Inputs and (2) Digital Video Inputs.

Navigate to Video

1. Select Menu.
2. Select Applications tab.
3. Select Video application.



(A)



(B)



(C)

PC15313—UN—16MAY13

A—Camera Icon
B—Mirror Icon
C—Contrast Icon

Switching Cameras

If more than one camera is connected, choose between video inputs by selecting different camera numbers (A).

Mirror Video

Select Mirror Video button (B) to simulate a rear view mirror. This swaps left and right sides of video image.

Contrast

Adjust video contrast (C) using plus (+) and minus (-) buttons. Brighten video by selecting the plus button, and darken video by selecting minus button.

Video Triggers

Video can be displayed when certain machine functions are performed (For example: Reversing, PTO engage).

1. Select Edit Triggers to configure settings.
2. Select a trigger.
3. Select camera input for the current trigger. This camera is displayed when trigger is activated.

NOTE: To prevent video from displaying for a trigger, select No Camera.

4. Enter video Timeout length. This is the amount of time video is shown after the trigger becomes inactive.

DX,PC,VIDEO,TRIGGERS-19-23DEC15

Transmission Application

Access Transmission

Access Application Through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



Transmission

H113847—UN—14MAR16

3. Transmission

Access Application Through Navigation Bar:



Transmission

N120647—UN—14MAR16

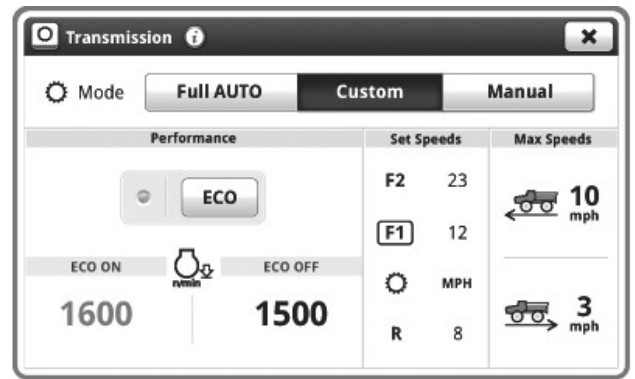
Press Transmission button on navigation bar below display.

VM03385,000005C-19-30OCT25

Transmission Main Page

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Main page shown is for example only. Your main page may differ depending on options or connected equipment.



Transmission

N159838—UN—13JAN22

Transmission application is used to display transmission information and adjust settings.



Mode

N120624—UN—12MAY16

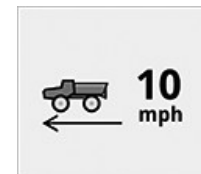
Mode— displays current performance mode selection. Allows you to choose desired mode of operation.



Set Speeds

N159843—UN—13JAN22

Set Speeds— displays current set speeds for each forward and reverse set point.



Max Speed Forward

N120639—UN—14MAR16

Maximum Speed Forward— maximum forward speed achievable.



Max Speed Reverse

N120640—UN—14MAR16

Maximum Speed Reverse— maximum reverse speed achievable.



Brake Pressure

N120629—UN—14MAR16

Brake Pressure— shown on-screen when air pressure is low. It also indicates when air pressure is adequate for operation.

Run Page Modules

Modules for this application can be added to run pages using Layout Manager. (See [Layout Manager](#) in the display Operator's Manual for more information.)

Example:



Transmission Set Speed

N159843—UN—13JAN22

Transmission Set Speed— view set speeds for the transmission ranges and performance mode selected.

NOTE: Different modules can be available for your application.

PR79369,000019A-19-30OCT25

Performance Mode

Performance Mode allows you to optimize fuel efficiency and load control.

Modify When:

- Desiring automated control of fuel economy and load control.
- No automatic control is desired.

Performance Modes Available:

Full Auto— automatically adjusts Fuel Economy and Minimum Engine Speed, allowing the machine to use the most fuel efficient engine speed for the current load.

Manual Mode— you are in full control of machine operation. Transmission and engine react to manual control inputs. No Fuel Economy or Load Control functions are active.

Procedure to Modify:



Performance Mode

N120624—UN—12MAY16

- Select desired mode from the toggle bar.

VM03385,000005D-19-30OCT25

Set Speeds

Set Speeds are the maximum achievable speed set for each set speed range when the multi-function lever is in the full forward position and engine is operating at high idle. Using set speeds allows you to avoid operating the machine too fast for the operation or conditions.

Modify When:

- Your experience requires limited speed.
- Conditions or the application require limited speed.

Items Accessible on Set Speeds Page:



Field 2 Set Speed

N159844—UN—13JAN22

F2— maximum forward speed when Field 2 set speed is selected.



Field 1 Set Speed

N159845—UN—13JAN22

F1— maximum forward speed when Field 1 set speed is selected.



Speed Units

N159846—UN—13JAN22

Speed Units— displayed units of measure for speed.



Reverse Set Speed

N159847—UN—13JAN22

R— maximum reverse set speed.



Close

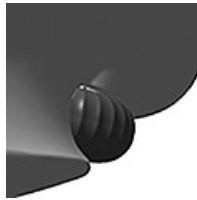
N118396—UN—17FEB16

Close— returns you to the previous page.

Procedure to Modify:

NOTE: Set speeds cannot exceed the maximum speeds set for the machine.

1. Start engine.

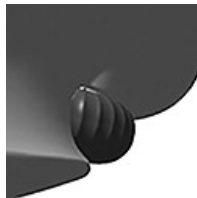


Speed Range Adjustment Wheel

N120894—UN—06DEC16

2. To toggle between F1 and F2 set speeds, depress the speed range adjustment wheel on the multi-function lever.

NOTE: Speed range and the current set speed are displayed on the corner post display. Corner post display scrolls through available set speeds and displays each set speed for 2 seconds. Corner post display scrolls through each range (F1, F2, and R) and displays current set speed.



Speed Range Adjustment Wheel

N120894—UN—06DEC16

3. Adjust the set speed by rotating the speed range adjustment wheel when the desired speed range is displayed.

NOTE: Corner post display resumes scrolling once speed adjustment is complete. Speed range and the current set speed can also be viewed on the display screen.

NOLMWLO.0000018-19-30OCT25

Modify When:

- Your experience requires limited speed.
- Conditions or application require limited speed.
- Local regulations do not allow operation at maximum speed.

Procedure to Modify:

1. Select Maximum Speed Forward.



Maximum Speed Forward

N120877—UN—05MAY16

2. Adjust maximum speed forward to desired level.



Maximum Speed Forward

N120639—UN—14MAR16

Select plus (+) to increase or minus (-) to decrease desired level.

Maximum: Maximum allowed by machine

Minimum: 15 km/h (10 mph)

Increment: 1 km/h (1 mph)

NOTE: Adjustment buttons are disabled when maximum or minimum speed is reached.



Close

N118396—UN—17FEB16

3. Select close to return to the Transmission main page.

Alternate Procedure to Modify:

Maximum Speed Forward

Maximum Speed Forward allows you to set the maximum achievable speed for the machine.



N120639—UN—14MAR16

Maximum Speed Forward

1. Select Maximum Speed Forward.



N124440—UN—30NOV16

Navigation Bar

2. Use navigation bar to select desired speed.
 - Turn dial clockwise to increase value.
 - Turn dial counterclockwise to decrease value.

PR79369,000019C-19-30OCT25



N120878—UN—05MAY16

Maximum Speed Reverse

Select plus (+) to increase or minus (-) to decrease desired level.

Maximum: Maximum allowed by machine

Minimum: 5 km/h (3 mph)

Increment: 1 km/h (1 mph)

NOTE: Adjustment buttons are disabled when maximum or minimum speed is reached.

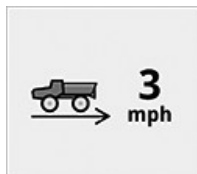
Maximum Speed Reverse

Maximum Speed Reverse allows you to set the maximum achievable speed for the machine while in reverse.

Modify When:

- Your experience requires limited speed.
- Terrain conditions or application require limited speed.

Procedure to Modify:



N120640—UN—14MAR16

Maximum Speed Reverse

1. Select Maximum Speed Reverse.
2. Adjust maximum speed to desired level.



Close

N118396—UN—17FEB16

3. Select close to return to the Transmission main page.

Alternate Procedure to Modify:



N120640—UN—14MAR16

Maximum Speed Reverse

1. Select Maximum Speed Reverse.



N124440—UN—30NOV16

Navigation Bar

2. Use navigation bar to select desired speed.
 - Turn dial clockwise to increase value.
 - Turn dial counterclockwise to decrease value.

PR79369,000019D-19-30OCT25

Brake Pressure

Brake Pressure message is shown on-screen when air pressure is low. It also indicates when air pressure is adequate for operation. Brakes do not function properly without adequate air pressure.

CAUTION: Do not drive machine until operating pressure is reached and brake pressure message disappears.

Items Displayed on Brake Pressure Message Page:



N120641—UN—14MAR16

Red Zone

Red Zone— air pressure is low. Wait for adequate air pressure before operating machine.



N120642—UN—14MAR16

Green Zone

Green Zone— air pressure is adequate. Brakes are functioning normally.

NOTE: Message will automatically disappear 7 seconds after air pressure reaches the green zone and reappears if air pressure returns to the red zone.



N118396—UN—17FEB16

Close

Close— allows you to dismiss the message from the screen.

NOTE: If the message was manually dismissed using the close button, it will reappear if air pressure remains in the red zone for 20 seconds.

PR79369,000019E-19-30OCT25

Controls Setup Application

Access Controls Setup

Access Application through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



Controls Setup

H118152—UN—20JAN17

3. Controls Setup

Access Application through Navigation Bar:



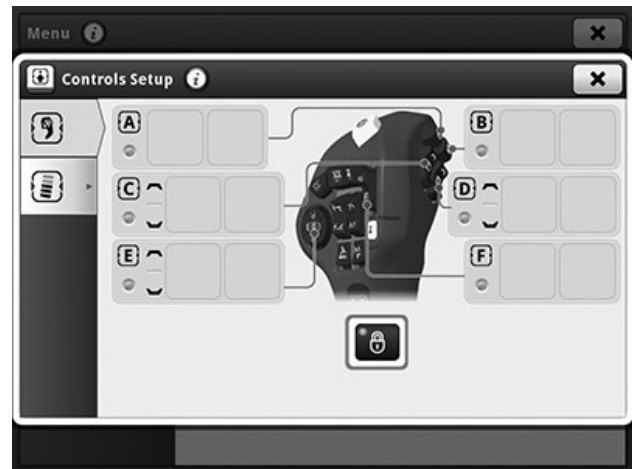
Controls Setup

H118151—UN—20JAN17

Press Controls Setup button on navigation bar below display.

VM03385,00002B7-19-22OCT25

Controls Setup Overview



Controls Setup

N161010—UN—23FEB22

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Main page shown is for example only. Your main page may differ depending on options or connected equipment.

Controls Setup application is used to make new assignments or access custom presets that you previously configured on the multi-function lever or the CommandARM.

NOTE: Controls Setup contains no default assignments; the multi-function lever and CommandARM reset to a locked state upon a key cycle.

NOTE: Display must be booted in order for you to disengage the Control Group locks for function assignment. Control Group refers to the reconfigurable buttons on both the multi-function lever and CommandARM.

Alignment Tabs Available in the Controls Setup Application:



Multi-Function Lever

H118141—UN—20JAN17

Multi-Function Lever— select to access the multi-function lever presets.



CommandARM

H118139—UN—20JAN17

CommandARM— select to access the CommandARM presets.



Highlighted Tab

H118169—UN—20JAN17

Highlighted Tab— indicates which preset is selected.

NOTE: The on-screen Lock Indicator is illuminated whenever the displayed control group is locked with the control group lock button on the CommandARM. Applications or functions setup will not operate.



Lock Indicator

H118140—UN—20JAN17

Lock Indicator— illuminates to indicate that the Control Group Lock button is locked.



Close

N118396—UN—17FEB16

Select to close the Controls Setup application.

PR79369,000019F-19-22OCT25

Multi-Function Lever - Controls Setup

Multi-Function Lever Controls Setup is used to assign Applications and Functions to buttons on the Multi-Function Lever.

Items Accessible on the Multi-Function Lever Controls Setup Page:



Multi-Function Lever

H118141—UN—20JAN17

Multi-Function Lever— allows you to make assignments to the buttons on the multi-function lever.



Programmable Button

H118143—UN—20JAN17



Programmable Button

H118147—UN—20JAN17

Buttons A and B— are used for applications that require you to select from single position assignments.



Programmable Button

H118144—UN—20JAN17



Programmable Button

H118148—UN—20JAN17

Buttons C and D— are used for applications that require you to select from multiple positions, to increase or decrease a value, or to make a left-hand or right-hand adjustment.



Lock Indicator

H118140—UN—20JAN17

Lock Indicator— illuminates to indicate that the Control Group Lock button is locked.



Programmable Button

N161012—UN—23FEB22

Button E— is used for applications that require you to select from multiple positions, to increase or decrease a value, or to make a left-hand or right-hand adjustment.



Programmable Button

N153268—UN—08JAN21

Button F— is used for applications that require you to select from single position assignments.

MM95366,0000439-19-22OCT25

Multi-Function Lever

Multi-Function Lever Controls Setup is used to assign applications and functions to buttons on the multi-function lever.

Procedure to Modify:



Multi-Function Lever

H118141—UN—20JAN17

Select the Multi-Function Lever assignments tab.



Active State

N118420—UN—02NOV16

NOTE: As you select the control group lock button, all previously assigned custom controls are illuminated "green" to indicate their active state, and the on-screen lock indicator is hidden.



Lock Indicator

H118140—UN—20JAN17

NOTE: If there are no custom assignments present, the application does not open upon unlocking the control group.



H118143—UN—20JAN17

Programmable Button



H118147—UN—20JAN17

Programmable Button

Buttons A and B— are used for applications that require you to select from single position assignments.

NOTE: The on-screen lock indicator is present whenever the displayed control group is locked with the control group lock button on the CommandARM. Control group locks re-engage on a key cycle.



H118144—UN—20JAN17

Programmable Button



H118148—UN—20JAN17

Programmable Button

Buttons C and D— are used for applications that require you to select from multiple positions, to increase or decrease a value, or to make a left-hand or right-hand adjustment.



Lock Indicator

H118140—UN—20JAN17

Lock Indicator— illuminates to indicate that the control group lock button is locked.



Close

N118396—UN—17FEB16

Select to close the Controls Setup application.



N161012—UN—23FEB22

Programmable Button

Button E— is used for applications that require you to select from multiple positions, to increase or decrease a value, or to make a left-hand or right-hand adjustment.



N153268—UN—08JAN21

Programmable Button

Button F— is used for applications that require you to select from single position assignments.

PR79369,00001A0-19-22OCT25

CommandARM - Controls Setup

CommandARM Controls Setup is used to assign application and functions to the CommandARM.

Items Accessible on the CommandARM Controls Setup Page:



CommandARM

H118139—UN—20JAN17

CommandARM Button— allows you to make assignments to the buttons on the CommandARM.



H125750—UN—10APR19

Programmable Button

Button 1— is used for applications that require you to select from single position assignments.



N153271—UN—08JAN21

Programmable Button

Button 2— is used for applications that require you to select from multiple positions, to increase or decrease a value, or to make a left-hand or right-hand adjustment.



Lock Indicator

H118140—UN—20JAN17

Lock Indicator— illuminates to indicate that the control group lock button is locked.

PR79369,00001A1-19-22OCT25

CommandARM

CommandARM Controls Setup is used to assign applications and functions to the CommandARM.

Procedure to Modify:



CommandARM

H118139—UN—20JAN17

Select the CommandARM assignments tab.



Active State

N118420—UN—02NOV16

NOTE: As you select the control group lock button all previously assigned custom controls are illuminated "green" to indicate their active state, and the on-screen lock Indicator is hidden.



Lock Indicator

H118140—UN—20JAN17

NOTE: If there are no custom assignments present, the application does not open upon unlocking the control group.



Programmable Button

H125750—UN—10APR19

Button 1— is used for applications that require you to select from single position assignments.



Programmable Button

N1153271—UN—08JAN21

Button 2— is used for applications that require you to select from multiple positions, to increase or decrease a value, or to make a left-hand or right-hand adjustment.



Lock Indicator

H118140—UN—20JAN17

NOTE: The on-screen lock indicator is present whenever the displayed control group is locked with the control group lock button on the CommandARM. Control group locks reengage on a key cycle.

Lock Indicator— illuminates to indicate that the control group lock button is locked.



Close

N118396—UN—17FEB16

Select to close the Controls Setup application.

MM95366,0000440-19-22OCT25

Create Single Position Assignments

Create Single Position Assignments to assign and activate your preferred applications, then make function assignments. Use the controls setup reconfigurable buttons to personalize your machine and perform tasks quickly with the press of a button.

For more information on which reconfigurable buttons can be assigned single position assignments, see [Multi-Function Lever - Controls Setup](#) and [CommandARM - Controls Setup](#).

Procedure to Modify:

NOTE: The example shown is typical for making application assignments. For a list of available application or function assignments, see [Application Assignment](#) or [Function Assignments](#). This example will assign the AutoTrac Guidance application to button A.



Control Group Lock

H117027—UN—28MAR16

1. Press the Control Group Lock button on the CommandARM.

NOTE: Light is on when locked. Light is off when unlocked. When unlocked, applications and functions may be modified.



Single Position Assignment Button

N153274—UN—08JAN21

2. Select the desired single position assignment button that you wish to assign control to. Button A is selected in this example.



Select Application

N153275—UN—08JAN21

3. Select to activate the Select Application display.



Remove Assignment

H118506—UN—20JAN17

NOTE: If an assignment is already present on the Control Setup display, the "Remove Assignment" option is placed at the top of the list. Select to close and clear the assignment.



AutoTrac Guidance

H118156—UN—20JAN17



AutoTrac Guidance Selected

H118509—UN—20JAN17

4. Select the application you want to assign to the reconfigurable button. The AutoTrac Guidance application is selected in this example.



Center Track

H118157—UN—20JAN17

5. Select Center Track function.



Center Track Selected

H118510—UN—20JAN17

NOTE: After selecting the function, the control assignment is made.



Close

N118596—UN—17FEB16

6. Select to close the Controls Setup application.

N0LMWLO,0000460-19-22OCT25

Create Dual Position Assignments

Create Dual Position Assignments to assign and activate your preferred applications, then make function assignments. Use the controls setup reconfigurable buttons to personalize your machine and perform tasks quickly with the press of a button.

For more information on which reconfigurable buttons can be assigned dual position assignments, see [Multi-Function Lever - Controls Setup](#) and [CommandARM - Controls Setup](#).

Procedure to Modify:

NOTE: The example shown is typical for making application assignments. For a list of available application or function assignments, see [Application Assignments](#) or [Function Assignments](#). This example will assign the AutoTrac Guidance application to button C.



Control Group Lock

H117027—UN—28MAR16

1. Press the Control Group Lock button on the CommandARM.

NOTE: Light is on when locked. Light is off when unlocked. When unlocked, applications and functions may be modified.



N153276—UN—08JAN21

Dual Position Assignment Button

2. Select the desired dual position assignment button that you wish to assign control to. Button C is selected in this example.

NOTE: Programmable buttons are rocker switches. They are programmed one way. Example: Left = down (close) and right = up (open).



N153595—UN—08JAN21

Select Application

3. Select to activate the Select Application display.



H118506—UN—20JAN17

Remove Assignment

NOTE: If an assignment is already present on the Control Setup display, the "Remove Assignment" option is placed at the top of the list. Select to close and clear the assignment.



H118156—UN—20JAN17
AutoTrac Guidance



H118509—UN—20JAN17
AutoTrac Guidance
Selected

4. Select the AutoTrac Guidance application.



N132522—UN—11JAN21

Shift Track

5. Select the Shift Track function.



N143179—UN—19MAR19

Center Track Selected

NOTE: After selecting the function, the control assignment is made.



Close

N118396—UN—17FEB16

6. Select to close the Controls Setup application.

N0LMWLO,0000461-19-22OCT25

Application Assignments

Application Assignments is a list of applications that can be assigned to the reconfigurable buttons.

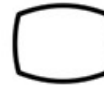
Application Assignments Available:



H118511—UN—20JAN17

AutoTrac Guidance Application

AutoTrac Guidance Application— allows you to access functions to make guidance system adjustments.



H118512—UN—20JAN17

Display Application

Display Application— allows you to access the display.



N128635—UN—14FEB17

Spreader Application

Spreader Application— allows you to access applications to make spread system adjustments.

MM95366,000043E-19-22OCT25

Function Assignments

Function Assignments is a list of functions that can be assigned to the reconfigurable buttons.

Single Position Function Assignments Available:



Center Track

H118518—UN—20JAN17

Center Track— select to establish a new track.



Shift Track

H118519—UN—20JAN17

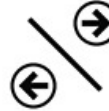
Shift Track— select to make left-hand or right-hand adjustments to your track.



Swap Track

H118520—UN—20JAN17

Swap Track— select to change from the current guidance system track you are using and change to the next track.



Run Page Swap

H118522—UN—20JAN17

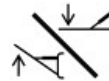
Run Page Swap— select to change the displayed run page to the next or previous page in the system.



Close Overlay

H118521—UN—20JAN17

Close Overlay— select to close the overlay.



Left-Hand Boom Tilt

N134192—UN—20MAR19

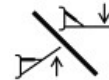
Left-Hand Boom Tilt— raises or lowers the left-hand boom.



BoomTrac Pro Resume

N134191—UN—20MAR19

BoomTrac Pro Resume— resumes BoomTrac control of the boom height.



Right-Hand Boom Tilt

N134193—UN—20MAR19

Right-Hand Boom Tilt— raises or lowers the right-hand boom.



Fence Row

N134194—UN—20MAR19

Fence Row— turns the left-hand or right-hand fence row nozzle on or off.



Bin Chaining

N143724—UN—21MAR19

Bin Chaining— select to initiate bin chaining between configured bins in the Dry Application System application.

Dual Position Function Assignments Available:

PR79369,00001A5-19-30OCT25

Headland Management System Application

Access Headland Management System

Access Application Through Display:



Menu

H113668—UN—22OCT15

1. Menu



Machine Settings

N119118—UN—23SEP16

2. Machine Settings tab



Headland Management System

N120154—UN—08NOV16

3. Headland Management System

VM03385,00000F8-19-22OCT25

Headland Management System (HMS) allows you to configure multiple machine systems to function by pressing a single switch when leaving a headland. HMS increases ease of machine operation and allows you to give more attention to driving the machine.

Modify When:

- Enabling or disabling HMS.
- Changing functions controlled by HMS.
- Desiring individual control of some functions due to terrain conditions or your preference, disable HMS.
- Returning to application operations after temporarily disabling HMS, enable HMS.

Items Accessible on HMS Page:



ON/OFF

N119477—UN—09MAR16

Toggle Button— enable or disable HMS.

NOTE: HMS defaults to OFF when key switch is cycled.



AutoTrac Resume

N120152—UN—08NOV16

AutoTrac Resume— resumes AutoTrac when leaving headland.



Master Spread ON

N120622—UN—08NOV16

Master Spread ON— activates the enabled boom sections when leaving headland.



Target Field Speed Range

N120659—UN—08NOV16

Target Field Speed Range— enable or disable Target Field Speed Range when HMS is in use.

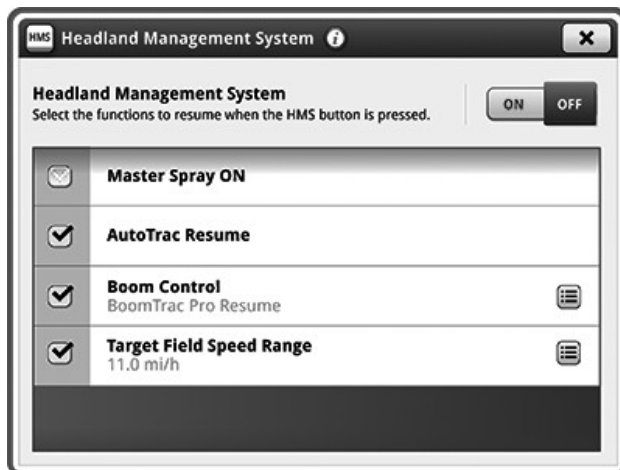


Select Speed Range

N120153—UN—08NOV16

Select Speed Range— select speed desired for field operation.

Headland Management System



Headland Management System

N121535—UN—08NOV16

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Main page shown is for example only. Your main page may differ depending on options or connected equipment.

NOTE: Selected speed is only achieved when multi-function lever is in the full forward position and engine is at high idle.

Selected speed is achieved when HMS button is pressed.

Shortcut Keys

Shortcut keys for this application can be added to the shortcut bar using Layout Manager. (See Layout Manager in the display Operator's Manual for more information.)



HMS ON/OFF

N120623—UN—08NOV16

HMS ON/OFF— quick access to turn HMS on and off.

NOTE: Different shortcut keys can be available for your application.

Procedure to Configure and Operate:

NOTE: HMS only controls selected features. You must operate other features manually. Systems selected for use with the HMS function may require setup using its system application before HMS is operated.



Checkmark

N118434—UN—22JAN20

1. Select systems to control with HMS.



ON/OFF

N119477—UN—09MAR16

2. Select toggle button to enable HMS.

3. Begin product application.

4. Disable desired functions manually when entering headland.



HMS Switch

N120155—UN—08NOV16

5. Press HMS switch on the multi-function lever when leaving headlands to resume all selected functions at preset settings.

PR79369,00001A6-19-22OCT25

Boom Control Mode

Boom Control Mode allows you to select either BoomTrac Pro resume or Return to Height resume for control when the Headland Management System (HMS) switch is pressed.

Select BoomTrac Pro Resume When:

- BoomTrac Pro is being used.
- Boom position manually changed in headlands.

BoomTrac Pro system is disabled by normal means. No automatic height control is provided once BoomTrac Pro system is disabled. You can manually adjust boom height in the headland using boom height switches on the multi-function lever. Spray boom returns to desired height when BoomTrac Pro is engaged again by pressing the HMS switch.

See BoomTrac Pro in Boom and Nozzles application for system setup.

Select Return to Height Resume When:

- Obstacles in headland require boom to be raised.
- Avoiding crop damage or contact with ground due to contour or headland.
- Desiring manual BoomTrac activation after moving boom to selected set height.

Spray boom can be raised using boom height switches on the multi-function lever. Activating center frame raise/lower switch automatically disables the BoomTrac Pro system if in use. Return to Height lowers the spray boom to the set height when HMS switch is pressed. BoomTrac Pro must be engaged manually using switch on the multi-function lever.

NOTE: Spray boom will only move to set height when current height is higher than set height.

See Return to Height in Boom and Nozzles application
for setup information.

PR79369,00001A7-19-22OCT25

Operators Station

Spreader Overview

NOTE: Underscored text identifies that additional information is available within this section or another section of this publication.

Spreader Overview outlines the controls and features found inside the cab. Knowledge of these items helps you to operate the machine correctly as well as enhancing your comfort and operating experience.

Items Accessible on the Spreader Overview Page:



Front Console

N151293—UN—17SEP20

Front Console— describes items located on the steering column in front of you.



Corner Post Display

H137356—UN—09JAN24

Corner Post Display— describes the status indicators on the display located on the front right-hand corner post.



CommandARM Console and Display

N152621—UN—17SEP20

CommandARM Console and Display— describes the

controls and features on the armrest attached to the right-hand side of the seat.



Multi-Function Lever

N151297—UN—17SEP20

Multi-Function Lever— describes the controls on the multi-function lever located on the CommandARM.



Navigation Bar

N152624—UN—17SEP20

Navigation Bar— describes the items located on the navigation bar below the display.



Left-Hand Cab Items

N152959—UN—25NOV20

Left-Hand Cab Items— describes items located on the left-hand side of the cab near the door and instructional seat.



Right-Hand Cab Items

N151294—UN—17SEP20

Right-Hand Cab Items— describes items located on the right-hand side of the cab near the window and fender well.



Overhead Items

N152623—UN—17SEP20

Overhead Items— describes items located in the cab headliner above you.



Seat Controls

N152622—UN—17SEP20

Seat Controls— describes operator's seat adjustment controls, instructional seat, and seat belts.

NCHYUSK,1755019812420-19-28OCT25

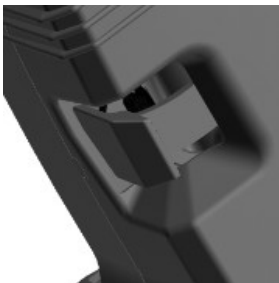
Front Console



Key Switch

H127222—UN—26SEP19

Key Switch— located on the right-hand side of the steering column.



Adjusting Steering Wheel

H127043—UN—26SEP19

Adjusting Steering Wheel— describes adjustments located on the steering column.



Operate Turn Signals, Horn, and High/Low Beam

H127048—UN—26SEP19

Operate Turn Signals, Horn, and High/Low Beam— located on the left-hand side of the steering column.



Operate Windshield Wiper/Washer

N152962—UN—25NOV20

Operate Windshield Wiper/Washer— located on the right-hand side of the steering column.



Clutch Pedal

N159835—UN—10JAN22

Clutch Pedal— press to disengage the transmission drive. Release slowly to begin machine movement.



Brake Pedal

N152625—UN—17SEP20

Brake Pedal— located at the bottom of the steering column.



Boom Fold/Unfold Pedal

N152695—UN—25NOV20

Boom Fold/Unfold Pedal— depressing and holding the pedal will change the function of the center boom raise/lower switch and boom tilt switches.



Vent

N152679—UN—25NOV20

Vent— adjust to change the direction of airflow in the cab. Push the cover to open or close the vent. Rotate the vent to direct the airflow.



Footrest

N152677—UN—25NOV20

Footrest— place your feet on the footrests as needed to decrease fatigue and improve comfort.

N0LMWLO.0000019-19-03SEP24

Corner Post Display

Top of Corner Post Display:



Left-Hand Turn Indicator

N120452—UN—28APR16

Left-Hand Turn Indicator— left-hand turn signal is active. Simultaneous operation of right-hand/left-hand turn indicators shows that your warning lights are activated.



Stop Operation (red)

N120448—UN—12MAY16

Stop Operation (red)— illuminates and requires the machine to be stopped at once and the problem corrected. Diagnostic trouble code is shown on the armrest display until the problem is resolved.



Operation Alert (yellow)

N120449—UN—12MAY16

Operator Alert (yellow)— illuminates and flashes when

a problem exists with the machine. Requires the machine to be stopped at earliest convenience. Diagnostic trouble code is shown on the armrest display.



Information Alert (blue)

N120447—UN—12MAY16

Information Alert (blue)— illuminates and flashes when diagnostic trouble code is active. Alerts you to be aware of a condition. When the alert is acknowledged, the screen message disappears and the alert turns OFF.



Right-Hand Turn Indicator

N120453—UN—28APR16

Right-Hand Turn Indicator— right-hand turn signal is active. Simultaneous operation of right-hand/ left-hand turn indicators shows that your warning lights are activated.



Red Brake Warning Indicator

N153031—UN—15OCT20

Red Brake Warning Indicator— indicates the following:

- Illuminates when a serious fault has been detected that affects brake system performance.

CAUTION: If the red brake warning indicator is illuminated, stop the machine immediately.

- Flashes when the park brake cannot engage.



High Beam Indicator

N120455—UN—28APR16

High Beam Indicator— illuminates when the high-beam lights are activated.



N153033—UN—15OCT20

Yellow Brake Warning Indicator

Yellow Brake Warning Indicator— illuminates when an electrical fault has been detected that affects the ability to detect additional faults.



pc29665—UN—21APR25

Engine Speed Indicator

Engine Speed Indicator— indicates the engine rpm speed.



pc29666—UN—21APR25

Vehicle Speed Indicator

Vehicle Speed Indicator— indicates the machine speed (km/h or mph).



N120487—UN—06DEC16

Starting Aid Indicator (if equipped)

Starting Aid Indicator (if equipped)— illuminates when the engine control unit (ECU) activates the starting aid on the engine.



N120450—UN—28APR16

High Exhaust System Temperature (HEST) Indicator

High Exhaust System Temperature (HEST) Indicator— illuminates when high exhaust temperatures occur. High temperatures occur when exhaust filter cleaning is being performed.



N120475—UN—06DEC16

Exhaust Filter Cleaning Indicator

Exhaust Filter Cleaning Indicator (Final Tier 4/Stage V)

— illuminates when exhaust filter system is actively performing exhaust filter cleaning. When indicator is illuminated and flashing, a parked cleaning is required.



N120477—UN—06DEC16

Transport Lock Indicator

Transport Lock Indicator— press the transport lock switch when transporting the machine on roadway. Indicator illuminates when selected.

Bottom of Corner Post Display:



pc29668—UN—21APR25

Gear Indicator

Gear Indicator— indicates the current gear, power mode, available gear, gear range, or return to neutral.



pc29667—UN—21APR25

Transmission Set Speed Indicator

Transmission Set Speed Indicator— indicates the transmission presets and set speeds.



N153037—UN—15OCT20

Headland Management System (HMS) Indicator

Headland Management System (HMS) Indicator— illuminates when the headland management system is engaged.



N120485—UN—06DEC16

Agitation Level Indicator

Agitation Level Indicator— illuminates when agitation is active and displays the amount that the valve is opened.



N120456—UN—16FEB16

Solution Pump Indicator

Solution Pump Indicator— illuminates when solution pump is active.



N152961—UN—25NOV20

Spray-Master ON Indicator

Spray-Master ON Indicator— illuminates when the Spray System Master switch is activated on the multi-function lever.



N120486—UN—06DEC16

Section Control Indicator

Section Control Indicator— illuminates when section control is enabled.



N153034—UN—15OCT20

Fan ON Indicator

Fan ON Indicator— illuminates when air boom fan is active.



N120480—UN—17FEB16

Dry Spreader Spinners Indicator

Dry Spreader Spinners Indicator— illuminates when spinners or air boom fan are active.



N120478—UN—06DEC16

Dry Spreader-Master ON Indicator

Dry Spreader-Master ON Indicator— illuminated when the spray system master switch is activated on the multi-function lever and dry spreader is installed.



N120476—UN—06DEC16

AutoTrac Indicator

AutoTrac Indicator— illuminated anytime AutoTrac is actively controlling the steering system.



N153038—UN—15OCT20

Steering Warning Indicator

Steering Warning Indicator— illuminates when a serious fault has been detected in the steering system.



pc29673—UN—03SEP25

Engine Temperature Indicator

Engine Temperature Indicator— indicates the engine temperature. Green area indicates normal operating temperature. Red indicates overheating condition.



pc29672—UN—03SEP25

Hydraulic Oil Temperature Indicator

Hydraulic Oil Temperature Indicator— indicates the hydraulic oil temperature. Green area indicates normal operating temperature. Red indicates an overheating condition.



Fuel Level Indicator

pc29674—UN—03SEP25

Fuel Level Indicator— indicates the amount of fuel remaining in the fuel tank.



Diesel Exhaust Fluid Level Indicator

pc29675—UN—03SEP25

Diesel Exhaust Fluid (DEF) Level Indicator— indicates how much fluid remains in the tank.

NCHYUSK, 1755106880882-19-28OCT25

CommandARM Console and Display

CommandARM Console and Display describes the controls and features on the armrest attached to the right-hand side of the seat.



Spraying Controls

N153030—UN—15OCT20

Spraying Controls—controls for the solution system or dry spreader when installed.



Engine and Ground Drive

N151286—UN—17SEP20

Engine and Ground Drive— controls for engine speed, park brake, and ground drive.



Console and Display

N166937—UN—22MAR24

Console and Display— select for adjustments to the console and display.



HVAC

H129101—UN—03MAR20

HVAC— select to adjust temperature, fan speed, and air flow mode inside of cab and view outside temperature.



Radio

H129099—UN—03MAR20

Radio— select to access radio presets that you can configure.



Phone

H129100—UN—03MAR20

Phone— describes the controls for Push-To-Talk (PTT) and end call.



Lights

H129098—UN—03MAR20

Lights— select to access light presets that you can configure.

as09261,1711132331286-19-22MAR24

Multi-Function Lever



Movements

N152958—UN—25NOV20

Movements— multi-function lever can be pushed forward to move the machine forward, pulled backward to move the machine in reverse, and placed in the middle position to put the machine in a neutral state.



Quick-Stop Switch

N152634—UN—25NOV20

Quick-Stop Switch— allows you to simultaneously shut OFF multiple systems in the case of an emergency.



IBS Reset

N152635—UN—25NOV20

Index Boom Sections (IBS) Reset— use to restart all shut-off sections that are enabled.



IBS Left

N152636—UN—25NOV20

IBS Left— use to sequentially shut off individual boom sections, starting at the right-hand end of boom and moving to the left.



IBS Right

N152637—UN—25NOV20

IBS Right— use to sequentially shut off individual boom sections, starting at the left-hand end of boom and moving to the right.



HMS

N152638—UN—25NOV20

Headland Management System (HMS)— allows you to configure how multiple machine systems function by pressing a single switch when leaving a headland.



Programmable Button F

N152639—UN—25NOV20

Programmable Button F— press to activate configured function. (See Controls Setup Application for more information.)



Center Boom Raise/Lower

N152641—UN—25NOV20

Center Boom Raise/Lower (Fold/Unfold)— push top of switch to raise the boom center section and bottom of switch to lower the boom center section when equipped with a liquid system. (See Boom Fold/Unfold Procedures for more information.)

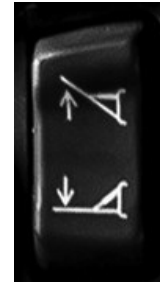


Programmable Button E

N152640—UN—25NOV20

Programmable Button E— press left or right side of

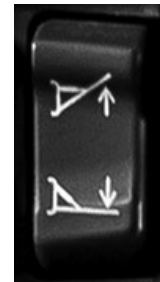
switch to activate configured function. (See Controls Setup Application for more information.)



Left-Hand Boom Tilt

N152642—UN—25NOV20

Left-Hand Boom Tilt— push the top of the switch to raise left-hand boom sections. Push the bottom of the switch to lower left-hand boom sections.



Right-Hand Boom Tilt

N152643—UN—25NOV20

Right-Hand Boom Tilt— push the top of the switch to raise right-hand boom sections. Push the bottom of the switch to lower right-hand boom sections.



Spray System Master

N152644—UN—25NOV20

Spray System Master— press to turn enabled boom sections ON and press again to turn OFF. Indicator light illuminates when spray system master is enabled.

NOTE: Spray System Master switch functions as the Spread System Master switch when the dry spreader is installed.



AutoTrac Resume

N152645—UN—25NOV20

AutoTrac Resume— allows you to activate the AutoTrac system.



BoomTrac Resume

N152646—UN—25NOV20

BoomTrac Resume— allows you to activate the BoomTrac system.



Programmable Buttons

N152648—UN—25NOV20

Programmable Buttons— depending on the machine options, the buttons are programmable to different functions. (See Controls Setup Application in Onscreen Help for more information.)



Speed Range Adjustment Wheel

N152647—UN—25NOV20

Speed Range Adjustment Wheel— rotate adjustment wheel to change target speed. Depress the adjustment wheel to toggle between Field 1 and Field 2 set speeds.

Depress the adjustment wheel to toggle between Field 1

and Field 2 set speeds. The maximum speed using Field 1 is limited to the maximum field speed. To reach transport speeds, use Field 2.

N0LMWLO,000001B-19-22OCT25

Navigation Bar



Navigation Bar

N152624—UN—17SEP20

Navigation Bar describes the items located on the navigation bar below the display.



Adjustment Dial

N152948—UN—25NOV20

Adjustment Dial— turn the Adjustment Dial to increase or decrease selected input field. The button located in the center of the adjustment wheel is called the Close Button. Pressing this button closes pages on the CommandCenter.



Home Page Scroll

N152938—UN—25NOV20

Home Page Scroll— press to scroll through custom Run Pages.



Tank System

N152699—UN—25NOV20

Tank System— press to open the Tank System Application.



Spray System

N152698—UN—25NOV20

Spray System— press to open the Spray System Application.



Auto Prime

N152940—UN—25NOV20

Auto Prime— press to open the Auto Prime Application.



Rinse System

N152941—UN—25NOV20

Rinse System— press to open the Rinse System Application.



Boom

N152942—UN—25NOV20

Boom— press to open the Boom & Nozzles Application.



Dry Application System

N152943—UN—25NOV20

Dry Application System— press to open the Dry Application System Application.



Video

N152939—UN—25NOV20

Video— press to open the Video Application.



Lights

N152944—UN—25NOV20

Lights— press to open Lights Application.



HVAC

N152945—UN—25NOV20

HVAC— press to open the HVAC Application.



Control Setup

N152946—UN—25NOV20

Control Setup— press to open the Control Setup Application.



Work Totals

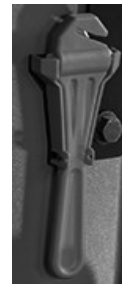
N152947—UN—25NOV20

Work Totals— press to open the Work Totals Application.

MM95366,000042A-19-22OCT25

Left-Hand Cab Items

Left-Hand Cab Items describes items located on the left-hand side of the cab near the door and instructional seat.

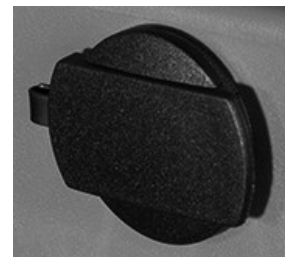


Emergency Exit

N152950—UN—25NOV20

Emergency Exit— allows you to exit the machine in case of emergency.

- Pull down to remove the emergency exit device.
- Use the hammer to break the window and exit cab if doors do not open.
- Use the knife in the handle to cut seat belts if they do not unbuckle.



Auxiliary Outlet

N152952—UN—25NOV20

Auxiliary Outlet— used when connecting accessories (12 V).



N152951—UN—25NOV20

120V Outlet (if equipped)

120V Outlet (if equipped)— used when connecting accessories (120 V).



N152953—UN—25NOV20

Phone Tray

Phone Tray— place your phone or other small items in this tray.



N152954—UN—25NOV20

Refrigerator (if equipped)

Refrigerator (if equipped)— provides a space to keep food or beverages cool throughout the day.

NOTE: Refrigerator operates only when the key switch is in the Run position and **MUST** remain plugged into the auxiliary outlet to keep food or beverages cold.



N152976—UN—25NOV20

Storage Area

Storage Area— use to store items. Located below the instructional seat.



N152977—UN—25NOV20

Book Storage

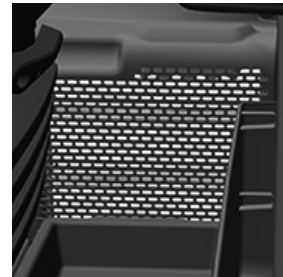
Book Storage— use to store books or papers. Located between the operator's seat and the instructional seat.



N152978—UN—25NOV20

Storage Tray

Storage Tray— use to store items. Located on the floor between the operator's seat and the instructional seat.



N152979—UN—25NOV20

Cab Recirculation Air Filter

Cab Recirculation Air Filter— filters the air recirculated by the HVAC system. For more information on how to replace the filter and the frequency of replacement, refer to your machine's Operator's Manual.

NOLMWLO.0000565-19-27MAY21

Right-Hand Cab Items



N124841—UN—22SEP16

Foot Throttle

Foot Throttle—press to increase engine speed. Release to decrease engine speed.



Auxiliary Outlet

N152629—UN—17SEP20

Auxiliary Outlet—used when connecting accessories (12 V).



USB Outlet

N152628—UN—17SEP20

USB Outlet—used for exporting information to a flash drive, loading prescriptions to display, and display programming.



USB-C Charging

RXA0188427—UN—10JAN23

USB-C Charging Ports—used to charge devices with USB-C cable. Provides charging capability of up to 3 A (18 watt) for the top port and up to 3 A (36 watt) for the bottom port.



Accessory Outlet

N152633—UN—25NOV20

Accessory Outlet (12 V)—used when connecting auxiliary equipment.

NOTE: Use auxiliary equipment installation instructions. Contact a John Deere dealer or other service provider. Outlet is protected by a 20 A fuse.



Load Center

N152966—UN—25NOV20

Load Center—lift the panel to access the load center.



Footrest (if equipped)

N152967—UN—25NOV20

Footrest (if equipped)—place foot on the footrest as needed to decrease fatigue and improve comfort.



ISOBUS Connector

N152632—UN—25NOV20

ISOBUS Connector—connect auxiliary equipment requiring ISOBUS connection.

IMPORTANT: Use only ISO 11783 compliant components. Other uses could damage machine electronic components.



N152970—UN—25NOV20

Storage Locations

Storage Locations—compartments and cup holders located along the right-hand side of the cab allow users to store items.



N152972—UN—25NOV20

Rear Window Pass-Through

Rear Window Pass-Through—allows users to route wiring harnesses outside the operator's station.



N152973—UN—25NOV20

Rear Window Latch

Rear Window Latch—rotate the handle to open the rear window.

ibhz6m2,1721282868598-19-09AUG25

Overhead Controls



NX638079—UN—25JUL24

Rear Cab Light Switch (if equipped)

Rear Cab Light Switch (if equipped)—turns ON/OFF the lights on the rear side of the cab.

- Press top of the switch to turn ON rear cab lights.
- Press bottom of the switch to turn OFF rear cab lights.

NOTE: Key switch must be in the run position.



N151225—UN—27MAY20

Mirror Heater Button (if equipped)

Mirror Heater Button (if equipped)—activates mirror heaters to remove ice and fog.

- Press top of the switch to activate mirror heat.
- Press bottom of the switch to deactivate mirror heat.

NOTE: Key switch must be in the run position.



N151224—UN—27MAY20

Mirror Control Buttons (if equipped)

Mirror Control Buttons (if equipped)—allow you to select and adjust either the right-hand or left-hand cab mirrors.

- Select mirror to adjust using the top switch.
- Selected mirror can be moved up, down, left, or right using the bottom control. Move the control in the direction you desire the mirror to move.

NOTE: Key switch must be in the run position.



N152963—UN—25NOV20

Storage Compartment

Storage Compartment—allows you to store small items or papers.

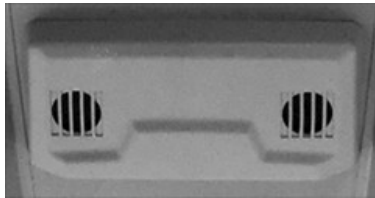


N152964—UN—25NOV20

Radio

Radio—allows you to make adjustments to the radio settings.

NOTE: For more information on the radio and radio controls, see your machine Operator's Manual or radio Operator's Manual. For information on the CommandARM radio controls, see Radio.



N151226—UN—27MAY20

Microphone

Microphone—allows you to communicate hands-free using a Bluetooth cell phone. (Bluetooth must be enabled.)

NOTE: Key switch must be in the run position.



N151227—UN—27MAY20

Dome Light

Dome Light—allows you to illuminate the interior of the cab.

- **Switch**—leave the switch in the center position (door) to set the dome light to illuminate when the door is opened. Press the switch toward the left (off) to set the dome light to remain off at all times. Press the switch to the right (on) to set the dome light to remain illuminated until switched off.
- **Buttons**—press the left-hand or right-hand light to toggle that light on or off.



E93025—UN—19JUN20

Coat Hook

Coat Hook—use to hang a coat out of the way. Located behind the seat above the rear window.



N152965—UN—25NOV20

Storage Compartment

Storage Compartment—allows you to store items inside.



N152678—UN—25NOV20

Sun Shade

Sun Shade—blocks sunlight from interfering with your vision. Pull the sun shade downward into the desired position. Push the sun shade upward completely to place it into the storage position.

NOTE: There is a sun shade for the front and right-hand side of the cab.



N152968—UN—25NOV20

Accessory Rail (if equipped)

Accessory Rail (if equipped)—allows you to securely attach accessories.

ibhz6m2,1721282868478-19-04AUG24

Seat Controls

Seat Controls describes operator's seat adjustment controls, instructional seat, and seat belts.



N152676—UN—25NOV20
ComfortCommand Operator's Seat (Premium Seat)

ComfortCommand Operator's Seat (Premium Seat)—describes the controls for the premium cloth seat.



N152622—UN—17SEP20
ComfortCommand Operator's Seat (Ultimate Seat)

ComfortCommand Operator's Seat (Ultimate Seat)—describes controls for the ultimate leather seat.



Seat Belt

N152675—UN—25NOV20

Seat Belts— provides information about the seat belts.



Instructional Seat

N152674—UN—25NOV20

Instructional Seat— provides information about the instructional seat.

N0LMWLO,000001C-19-22OCT25

Key Switch

CAUTION: Sound horn before starting engine to clear people away from the machine.

To avoid the possibility of personnel injury or death, start **ONLY** from the operator seat. Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuit is bypassed.



Key Switch

H127222—UN—26SEP19

Key switch is on the right-hand side of the steering column and has three positions:



Stop

H127127—UN—26SEP19

Stop— shuts off the engine and all accessory functions.



Run

H127128—UN—26SEP19

Run— allows all accessories to operate and the engine to run once it has been started.



Start

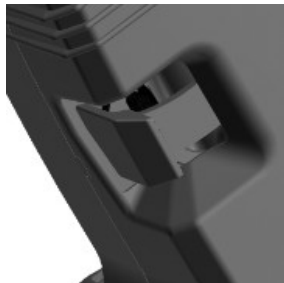
H127129—UN—26SEP19

Start— momentary switch position that automatically cranks the engine until the engine starts. Once the switch is released, it returns to the run position.

NOTE: It is not necessary to hold the key switch in the start position until the engine starts.

VM03385,0000088-19-27MAY21

Adjusting Steering Wheel



Tilt/Telescope

H127043—UN—26SEP19

Tilt/Telescope— pull lever away from the steering column to allow adjustments. Tilt and telescope the upper steering column to the desired position. Push lever toward the steering column to lock the position.



Memory

N152696—UN—25NOV20

Memory— grasp the steering wheel with both hands and push down on the foot pedal to permit free movement of the full steering column. Release the foot pedal to lock the column into the current position.

NOTE: For easy entry or exit, push down on the foot pedal and allow the column to raise completely.

VM03385,0000089-19-27MAY21

Operate Turn Signals, Horn and High/Low Beam

NOTE: For information on additional lighting controls found on the CommandARM, see the [Lights](#) page. For information on the lights application, see the [Lights Application](#) page.

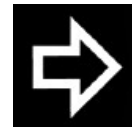


Turn Signals

H127048—UN—26SEP19

Turn Signals— push the lever up or down to the first detent and release for a momentary (lane change) signal which turns off automatically after four flashes. Push the lever up or down to the second detent for a continuous (full turn) signal.

NOTE: The continuous signal can be cancelled prior to completing a turn by moving the lever in either direction and releasing.



Right-Hand Turn

H127087—UN—26SEP19

Right-Hand Turn— push the lever up for a right-hand turn.



Left-Hand Turn

H127086—UN—26SEP19

Left-Hand Turn— push the lever down for a left-hand turn.



Horn

H127049—UN—26SEP19

Horn— push inward on the end of the lever to activate the horn.



Headlights

H127088—UN—26SEP19

Headlights— pull the lever toward you and release to flash the high-beam headlights (flash to pass). In road mode, push the lever forward to toggle between the high-beam and low-beam headlights.

NOTE: Road Lights mode on the CommandARM must be selected in order to toggle high-beam and low-beam headlights.

VM03385,000008B-19-22OCT25

Operate Windshield Wiper/Washer

NOTE: Fill washer reservoir with non-freezing solution to prevent damage to washer system in cold temperatures.



N152962—UN—25NOV20

Switch

Switch— rotate the knob to operate the wiper at desired speed. The arrow indicates the current setting.



H127093—UN—26SEP19

Front Wiper

Front Wiper— indicates controls for the front wiper.



H127299—UN—26SEP19

Speed

Speed— turn the knob to operate the wiper at various settings:

- Intermittent slow
- Intermittent fast
- Continuous slow
- Continuous fast



Off

H127091—UN—26SEP19

Off— select to turn off the wiper.



Windshield Washer

H127092—UN—26SEP19

Windshield Washer— push in on the button to operate the front windshield washer.



H127301—UN—26SEP19

Right-Hand Wiper Switch (if equipped)

Right-Hand Wiper Switch (if equipped)— move the lever to operate the wiper at desired speed.



Speed

H127302—UN—26SEP19

Speed— move the switch to operate the wiper at various settings:

- Intermittent
- Continuous



Off

H127091—UN—26SEP19

Off— select to turn off the wiper.



Right-Hand Windshield Washer

H127303—UN—26SEP19

Right-Hand Windshield Washer— select to operate the right-hand windshield wiper.

VM03385,000008C-19-27MAY21

ComfortCommand Operator's Seat (Premium Seat)



N152676—UN—25NOV20

ComfortCommand Operator's Seat (Premium Seat)

ComfortCommand Operator's Seat (Premium Seat) describes the controls for the premium cloth seat.



N152684—UN—25NOV20

Seat Bottom Depth/Angle Adjustment Control

Seat Bottom Depth/Angle Adjustment— push the control forward or backward to slide seat forward or rearward for the best working position. Push the front of the control upward or downward to raise or lower the angle of the seat bottom.



N152685—UN—25NOV20

Backrest Angle Adjustment Control

Backrest Angle Adjustment Control— adjusts the seat back angle. Press the top of the control forward to raise the angle of the seat back. Press the top of the control backward to lower the angle of the seat back.



N152681—UN—25NOV20

Seat Swivel Handle

Seat Swivel Handle— lift the handle to allow the seat to swivel. Push down on the handle to lock seat in position.



N152680—UN—25NOV20

Weight/Height Adjustment Switch

Weight/Height Adjustment Switch— press and hold the top or bottom of the switch to increase or decrease seat height.



H128690—UN—03MAR20

Lumbar In/Out Adjustment Control

Lumbar In/Out Adjustment Control— push plus (+) or minus (-) on the control to increase or decrease lumbar support.



H128692—UN—03MAR20

Lumbar Up/Down Adjustment Control

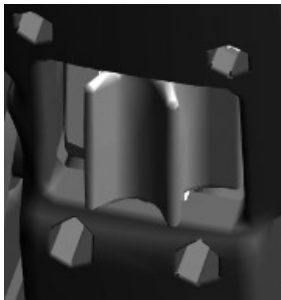
Lumbar Up/Down Adjustment Control— push up or down on the control to raise or lower lumbar position.



H128691—UN—03MAR20

Cushion Length Adjustment Control

Cushion Length Adjustment Control— push the top or bottom of the control to increase or decrease the seat cushion length.



H127122—UN—26SEP19

Armrest Angle Adjustment Knob

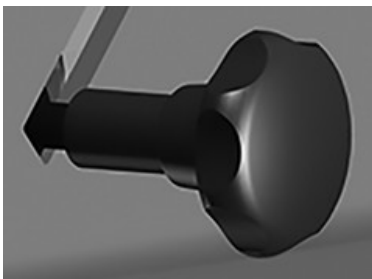
Armrest Angle Adjustment Knob— adjusts the left-hand armrest angle up or down. Rotate knob clockwise to decrease angle and counterclockwise to increase angle.



N152683—UN—25NOV20

Left-Hand Armrest Height Adjustment

Left-Hand Armrest Height Adjustment— loosen the nut to adjust the left-hand armrest. Tighten the nut to lock the height into the desired position.



H117047—UN—22JUL21

Right-Hand Armrest Height Adjustment

Right-Hand Armrest Height Adjustment— loosen knob and slide the armrest control console up/forward or down/back in slots on outer plate. Tighten knob.



N152694—UN—25NOV20

Lateral Isolation Adjustment Handle

Lateral Isolation Adjustment Handle— push the handle forward to release side-to-side movement. Pull the handle rearward to lock.



H127097—UN—26SEP19

Vertical Shock Dampener Control

Vertical Shock Dampener Control— limits amount of upward motion the seat suspension provides. Push control forward for a soft ride or pull handle rearward for a firm ride. Between these two positions is medium firmness.



H127098—UN—26SEP19

Fore/Aft Isolation Adjustment Handle

Fore/Aft Isolation Adjustment Handle— push control forward to lock forward or rearward movements. Push control rearward to allow forward or rearward movements.

MM95366,000042C-19-22OCT25

ComfortCommand Operator's Seat (Ultimate Seat)



N152622—UN—17SEP20

ComfortCommand Operator's Seat (Ultimate Seat)

ComfortCommand Operator's Seat (Ultimate Seat) describes controls for the ultimate leather seat.



N152684—UN—25NOV20

Seat Bottom Depth/Angle Adjustment Control

Seat Bottom Depth/Angle Adjustment Control— push the control forward or backward to slide seat forward or rearward for the best working position. Push the front of the control upward or downward to raise or lower the angle of the seat bottom.



N152685—UN—25NOV20

Backrest Angle Adjustment Control

Backrest Angle Adjustment Control— adjusts the seat back angle. Press the top of the control forward to raise the angle of the seat back. Press the top of the control backward to lower the angle of the seat back.



N152686—UN—25NOV20

Lumbar Adjustment Controls

Lumbar Adjustment Controls— press forward or back to increase or decrease lumbar support. Press up or down to raise or lower lumbar position.



N152681—UN—25NOV20

Seat Swivel Handle

Seat Swivel Handle— lift the handle to allow the seat to swivel. Push down on the handle to lock seat in position.



N152680—UN—25NOV20

Weight/Height Adjustment Switch

Weight/Height Adjustment Switch— press and hold the top or bottom of the switch to increase or decrease seat height.



N152689—UN—25NOV20

Ventilated/Heated Seat Control

Ventilated/Heated Seat Control— push the control left or right to select ventilated or heated seat.



N152688—UN—25NOV20

Ventilated/Heated Intensity Control

Ventilated/Heated Intensity Control— select off, low, or high intensity.



N152690—UN—25NOV20

Bolster Adjustment Control

Bolster Adjustment Control— push plus (+) or minus (-) on the control to adjust the amount of support from the backrest bolsters.



N152693—UN—25NOV20

Massage Intensity Control

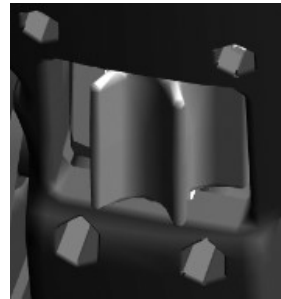
Massage Intensity Control— push the bottom or top of the control to choose between low or high massage intensity. Choose a massage pattern before choosing a massage intensity.



N152691—UN—25NOV20

Cushion Length Adjustment Control

Cushion Length Adjustment Control— push the top or bottom of the control to increase or decrease the seat cushion length.



H127122—UN—26SEP19

Armrest Angle Adjustment Knob

Armrest Angle Adjustment Knob— adjusts the left-hand armrest angle up or down. Rotate knob clockwise to decrease angle and counterclockwise to increase angle.



N152692—UN—25NOV20

Massage Pattern Control

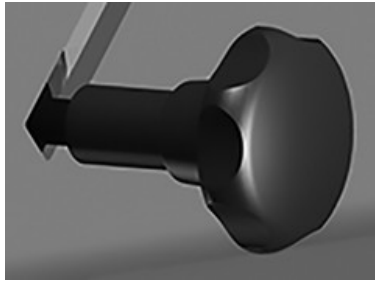
Massage Pattern Control— push the bottom or top of the control to choose between massage pattern one or two. Return the control to the center position to end the massage pattern. The massage pattern will end after about 10 minutes.



N152683—UN—25NOV20

Left-Hand Armrest Height Adjustment

Left-Hand Armrest Height Adjustment— loosen the nut to adjust the left-hand armrest. Tighten the nut to lock the height into the desired position.



H117047—UN—22JUL21

Right-Hand Armrest Height Adjustment

Right-Hand Armrest Height Adjustment— loosen knob and slide the armrest control console up/forward or down/back in slots on outer plate. Tighten knob.



N152682—UN—25NOV20

Vertical Shock Dampener Control

Vertical Shock Dampener Control— limits amount of upward motion the seat suspension provides. Press the plus (+) switch for a softer ride or push the minus (-) switch for a firmer ride.



N152687—UN—25NOV20

Attenuation Lockout Handle

Attenuation Lockout Handle— limits the amount of fore/aft or side-to-side movement of the seat.

N0LMWLO,0000567-19-22OCT25

Seat Belts



N152675—UN—25NOV20

Seat Belt

Seat belts are standard equipment on both operator and

instructional seats. Lap type seat belts have a push-button quick release and automatic belt retraction to allow unrestricted exiting and entering.

CAUTION: Inspect seat belts and mounting hardware on your machine at least once a year. If the seat belt system, including mounting hardware, buckle, belt, or retractor, shows any sign of damage such as cuts, fraying, extreme or unusual wear, discoloration or abrasion, the entire seat belt system should be replaced immediately. For your safety, replace the belt system only with replacement parts approved for your machine. Replacement parts can be obtained via regular spare part channels.

VM03385,0000091-19-09AUG25

Instructional Seat



N152674—UN—25NOV20

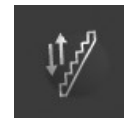
Instructional Seat

Seat back and seat bottom can be raised or lowered to desired operating position.

CAUTION: The instructional seat has been provided only for training operators or diagnosing machine problems. Keep all other riders off the machine and equipment. Always wear seat belts.

VM03385,0000092-19-27MAY21

Spreading Controls



N151287—UN—17SEP20

Ladder Up/Down

Ladder Up/Down— press to raise/lower the ladder.



Boom Latch

N142997—UN—20MAR19

Boom Latch— boom latch button only functions for air boom machines. Press to release the boom latches that hold the air booms in the cradle when latched. Press again to engage latches when they are released.

NOTE: The boom will slightly unfold when the latches release.



Boom Section Control Scroll Wheels

N151298—UN—17SEP20

Boom Section Control Scroll Wheels— rotate scroll wheels rearward to sequentially turn off spread sections from the left-hand and right-hand sides respectively. Rotate scroll wheels forward to sequentially turn sections ON from the left-hand and right-hand sides respectively.



Dial

N122771—UN—28APR16

Dial— is used to adjust settings.



Solution Pump

N120497—UN—02NOV16

Solution Pump— press to engage or disengage the solution pump, spinners, or air boom fan (if equipped). Indicator light illuminates when solution pump is engaged.



Agitation

N120490—UN—10NOV16

Agitation— press to engage or disengage agitation. Indicator light illuminates when agitation function is engaged.

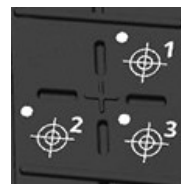
NOTE: Solution pump must first be engaged for agitation to occur.



Manual Rate

N124439—UN—22SEP16

Manual Rate— system operates using a fixed pressure or conveyor speed. No automatic rate control is used. Indicator light illuminates when manual rate is enabled.



Rate Selection

N124435—UN—18NOV16

Rate Selection— system operates using selected target rate. Rate is automatically controlled. Indicator lights illuminate when rate selections are enabled.

NOTE: Fence row nozzle will not operate if outer section on corresponding side is not enabled.



Left-Hand Fence Row Nozzle

N124836—UN—06DEC16

Left-Hand Fence Row Nozzle— press to enable or disable the left-hand fence row nozzle (if equipped). Indicator light illuminates when left-hand fence row nozzle is enabled.



Right-Hand Fence Row Nozzle

N124839—UN—06DEC16

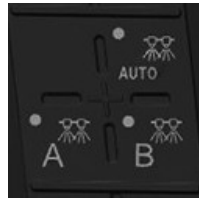
Right-Hand Fence Row Nozzle— press to enable or disable the right-hand fence row nozzle (if equipped). Indicator light illuminates when right-hand fence row nozzle is enabled.



Nozzle Pressure Control

N124844—UN—06DEC16

Nozzle Pressure Control— this button has no function.



Spread Mode

N127719—UN—06DEC16

Spread Mode— these buttons have no function.



Video

N124437—UN—22SEP16

Video— displays video from camera on-screen.



Programmable Shortcut Lock

N127730—UN—16DEC16

Programmable Shortcut Lock— locks shortcut switches on the multi-function lever to avoid accidental change. Indicator light illuminates when programmable shortcut lock is enabled.



Programmable Shortcut Lock

N152974—UN—25NOV20

Programmable Shortcut Lock— locks shortcut switches on the CommandARM to avoid accidental change. Indicator light illuminates when programmable shortcut lock is enabled.



Programmable Buttons

N152975—UN—25NOV20

Programmable Buttons— depending on the machine options, the buttons are programmable to different functions. Indicator lights illuminate when programmable buttons are enabled. (See Controls Setup Application for more information.)

N0LMWLO,000001E-19-22OCT25

Heating, Ventilation, and Air Conditioning (HVAC)



Fan Speed

N120890—UN—05MAY16

Fan Speed— press to change the in cab fan speed.



Air Flow Control

H117877—UN—29MAR16

Air Flow Control— press to select desired air flow direction.



Temperature Control

N121549—UN—12MAY16

Temperature Control— press to change the temperature of cab.

VM03385,0000094-19-27MAY21

Radio



Seek

N123514—UN—22SEP16

Seek— press to seek radio channel.



Volume Control

N124430—UN—22SEP16

Volume Control— press to change the audio volume.



Mute

H117918—UN—29MAR16

Mute— press to mute the microphone.

- Press to mute audio.
- Press to resume play of audio.

VM03385,0000095-19-27MAY21

NOTE: Pushing and holding the Engine Speed Increase switch or the Engine Speed Decrease switch increases or decreases engine speed at a predefined rate.



High Idle

N120670—UN—06DEC16

High Idle— press to achieve maximum engine speed.



Transport Lock Switch

N120615—UN—10NOV16

Transport Lock Switch— press when transporting the machine on roadway. Indicator illuminates when selected.

Engine and Ground Drive



Low Idle

N120669—UN—06DEC16

Low Idle— press to achieve minimum engine speed.



Engine Speed Increase

N120671—UN—06DEC16

Engine Speed Increase— press to increase engine speed.



Engine Speed Decrease

N120672—UN—06DEC16

Engine Speed Decrease— press to decrease engine speed.



Park Brake

N120664—UN—06DEC16

Park Brake— press to engage park brakes. Brakes do not automatically disengage when applied using this switch. Indicator light illuminates when park brake is enabled.



Wheel Slip Control

N120662—UN—06DEC16

Wheel Slip Control— feature is not available. This button has no function.



Secondary Brake

N151295—UN—17SEP20

Secondary Brake— press and hold to engage park brakes. Park brakes are released when switch is released.

MM95366,000042E-19-27MAY21



H127048—UN—26SEP19

High-Beam/Low-Beam Lever

NOTE: To switch between preset 1 and 2, toggle the high-beam/low-beam lever located on the left-hand side of the front console. Preset 1 is active when the lever is in the aft position. Preset 2 is active when the lever is in the forward position.

VM03385,0000097-19-27MAY21

Lights



H117884—UN—29MAR16

Beacon Lights

Beacon Lights— press to turn beacon lights ON/OFF.



H117885—UN—29MAR16

Hazard Light

Hazard Light— press to turn hazard lights ON/OFF.



H127045—UN—26SEP19

Parking Lights

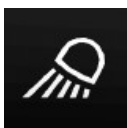
Parking Lights— press to turn on parking lights, press again to turn off. Indicator light is on when active.



H127046—UN—26SEP19

Road Lights

Road Lights— press button to turn road lights on. Press button again to turn off. Indicator light is on when active.

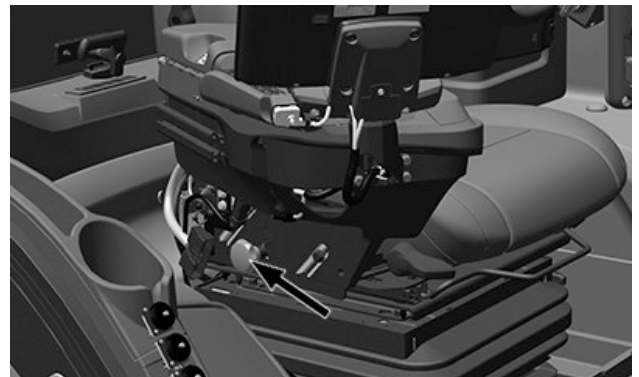


H127047—UN—26SEP19

Worklights

Worklights— press to turn on worklights, press again to turn off. Indicator light is on when active.

Console and Display



N166438—UN—08MAR24

Armrest Control Console

Armrest Control Console— loosen knobs and slide the armrest control console up/forward or down/back in slots on outer plate. Tighten knobs to lock the armrest into position.



H129095—UN—03MAR20

Display

Display— rotate display left/right to the desired operating position.



USB Charging

N152649—UN—25NOV20

USB Charging— allows you to charge mobile devices. These ports are located inside the console storage compartment. They are not connected to the radio or the display.



Auxiliary Outlet

N152673—UN—25NOV20

Auxiliary Outlet— used for powering devices (12 V). Located inside the console storage compartment.

as09261,1711378603599-19-03MAY24

Dial

Dial is used to adjust settings.



Dial

N122771—UN—28APR16

- Turn dial clockwise to increase setting.
- Turn dial counterclockwise to decrease setting.
- Press dial to close the overlay.

MM95366,0000433-19-13MAR19

Ladder

Ladder automatically raises when machine forward speed is above 0.8 km/h (0.5 mph) and automatically lowers when the machine is shut off or when the machine is in park and operator is out of the seat.

Ladder lowers automatically after leaving the seat for 0.5 seconds.

ibhz6m2,1721283687729-19-02AUG24

Seek



Seek

N123514—UN—22SEP16

Press to seek radio channel.

- AM/FM/WX/MW/LW: Press the switch (short press) to change preset.
- AM/FM/WX/MW/LW: Press the switch (long press) to SEEK.
- SiriusXM Satellite Radio: Press and hold the switch to change channel.
- CD/MP3: Press the switch to go to the beginning of the current track, to the previous track, or to the next track.

VM03385,000009A-19-22OCT25

Transport Lock Switch



Transport Lock Switch

N120615—UN—10NOV16

Press the Transport Lock switch when transporting the machine on roadway. Indicator illuminates when selected.

Transport Lock switch prevents the following functions:

- Spray system master switch
- Spinner/fan control
- Hydraulic boom movements (boom folding/unfolding, tilt raise/lower, latching/unlatching)

After transporting the machine on roadway and field operation is desired, press the Transport Lock switch, allowing indicator light to turn OFF and allowing the desired switch functions to operate again.

NOLMWLO,000001F-19-17JAN22

Quick Stop Switch



Quick Stop Switch

H117033—UN—15APR16

Quick Stop Switch allows you to shut OFF application system if an emergency.

CAUTION: When pressing the quick stop switch, you are responsible for pulling back on the multi-function lever to stop the machine.

It is always recommended to wear your seat belt to avoid serious injury.

The following systems stop when Quick Stop Switch is pressed:

- Solution pump
- Spray system master
- Spread system master (if equipped)
- Spinners (if equipped)
- Wet system valves

MM95366,0000434-19-19MAR19

AutoTrac Resume



AutoTrac Resume

N124834—UN—14NOV16

AutoTrac Resume Button allows you to activate system.

AutoTrac resume button also activates RowSense system. Refer to the AutoTrac Operator's Manual for further information.

System Requirements:

- Engine is running.
- Road transport disconnect OFF.

Press to engage system.

MM95366,0000435-19-22OCT25

Fuel Level Indicator



Fuel Level Indicator

pc29674—UN—03SEP25

Fuel Level Indicator indicates the amount of fuel remaining in the fuel tank.

- When the level reaches 10% of remaining fuel, fuel indicator flashes, alarm sounds, and low fuel message appears.

NCHYUSK,1755020989274-19-13AUG25

Exhaust Filter Cleaning Indicator



Exhaust Filter Cleaning Indicator

N120475—UN—06DEC16

Exhaust Filter Cleaning Indicator illuminates when exhaust filter system is actively performing exhaust filter cleaning. When indicator is illuminated and flashing, a parked cleaning is required.

IMPORTANT: Final Tier 4/Stage IV: Damage to exhaust cleaning components may occur if the engine is turned OFF while performing exhaust filter cleaning or shortly after cleaning is complete. Alarm sounds and a warning message appears on the display. Start the machine and follow messages on the display to allow the components to cool.

NCHYUSK,1755021003521-19-12AUG25

Diesel Exhaust Fluid (DEF) Level Indicator



pc29675—UN—03SEP25

Diesel Exhaust Fluid (DEF) Level Indicator

Diesel Exhaust Fluid (DEF) Level Indicator indicates how much fluid is left in the tank.

- When the level reaches 10%, level indicator flashes, alarm sounds, and low fluid message appears.
- When the level reaches 0%, level indicator illuminates and stops flashing, alarm sounds, and empty fluid message and engine power limited message appears.
- When loss of prime is reached, level indicator illuminates and stops flashing. Alarm sounds and empty fluid message, engine power limited message, and speed limited message appears. Stop engine warning indicator (Red) illuminates, engine is derated and machine functions are restricted.

NCHYUSK,1755021025793-19-13AUG25

Custom Installation

Custom CB or Business Band radio installation requires special tools and skills to tune antenna for lowest possible VSWR. Qualified professional should be employed or consulted before attempting installation. Contact a John Deere dealer or other service provider for recommendations. Following specifications are useful to installer.

Recommended Specifications for Radio Installation:

- Roof Antenna Mount: MNO type.
- Cable Specifications: Cable length approximately 3.6 m (11.8 ft.) from antenna mount to PL-259 radio connector. Use an RG-58/U cable with 50 ohms intrinsic impedance.
- Roof Ground Plane: Grounded large antenna counterpoise foil under green cab roof allows installation of either $\frac{1}{4}$ or $\frac{1}{2}$ wave antenna.
- CB Antenna: Normal CB antenna can be attached to an MNO antenna mount through use of an appropriate adapter. Special CB antenna already equipped with MNO base may alternatively be used.

CS12167,0000ADB-19-09AUG25

Installing Mobile Radio and Antenna

CAUTION: Under no circumstances should business band radio antenna be mounted to rear of cab or antenna cable be routed near harness for electrical system controllers or operator controls. Failure to follow these precautions could expose operator to radio frequency energy levels higher than recommended by American National Standards Institute (ANSI) and/or could cause undesirable performance of electronically controlled systems.

CAUTION: Prevent possible personal injury. Disconnect battery ground cable before any electrical repair.

NOTE: This machine is not equipped with Mobile Radio Mounting and Wiring Option from factory. Contact a John Deere dealer or other service provider for Business Band Radio and Antenna Installation Instructions.

Operate Radio

Radio Operation

Refer to the Radio Operator's Manual for the equipped radio for details on features and operation.

MM95366,00006CA-19-01MAR22

Break-In Period

Break-In Checks—First 100 Hours

The engine is ready for normal operation.

Check for leaks.

Operate engine at heavy loads without sustained maximum load.

Avoid idling the engine longer than five minutes.

Closely observe coolant temperature during operation.

Check air intake system hoses and clamps.

Daily or Every 10 Hours

IMPORTANT: John Deere Break-In Plus oil must be added if oil level is below the ADD mark on dipstick. DO NOT fill above the crosshatch pattern or the FULL mark.

- Check engine oil level frequently.
- Check coolant level frequently.
- Check hydraulic oil level.
- Check steering oil level.
- Inspect tires for damage and correct inflation.
- Tighten wheel bolts and axle mounting hardware **during the first week of operation.**

At 50 Hours

- Change planetary hub oil. (See Planetary Hub Oil in Fuels, Lubricants, and Coolants section for oil recommendation.)

At 100 Hours

IMPORTANT: Change the oil and filter between a minimum of 100 hours and a maximum of 500 hours if certain conditions are met during the initial operation of a new engine.

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).*
- *John Deere Break-In Plus or John Deere Plus-50 II is added to maintain oil level within the necessary operating range.*
- *Use of an approved John Deere oil filter.*
- Change engine oil and filter.
- Inspect machine for loose hardware.

BN55050,0000108-19-22OCT25

Prestart Checks

Check Engine Compartment for Accumulated Trash and Debris

Clean as necessary, especially around potential hot spots such as turbocharger, exhaust manifold, and muffler.

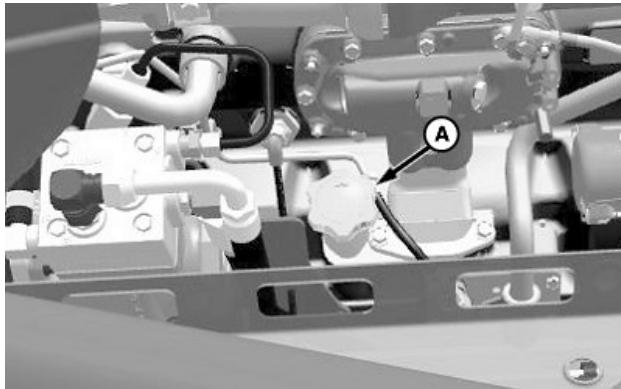
IMPORTANT: Never steam clean or pour cold water on an injection pump that is operating or hot. Pump could seize.

CS12167,00002CD-19-04JAN13

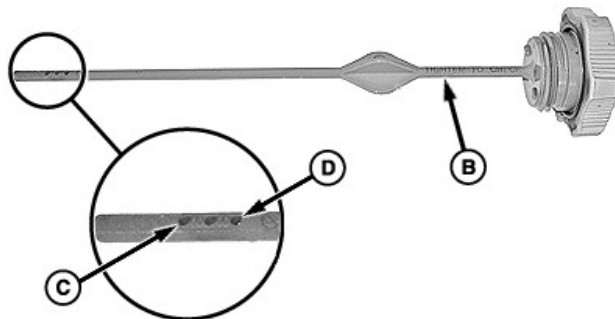
Check Engine Oil Level—Daily

1. Park machine on flat, level ground. Turn off the engine and remove key.

NOTE: Dipstick is attached to the fill cap.



N155022—UN—19APR21



N110836—UN—19MAR14

A—Fill Cap
B—Dipstick
C—ADD Hole
D—FULL Hole

2. Remove fill cap (A) and clean oil from dipstick (B).

IMPORTANT: Fill cap must be fully tightened to provide an accurate oil level reading.

3. Install fill cap, then remove and check the oil level on dipstick.

4. Oil level is adequate if the level is between the ADD hole (C) and the FULL hole (D).

IMPORTANT: Do not operate the engine with the oil level below the ADD mark on dipstick.

Do not overfill the oil level.

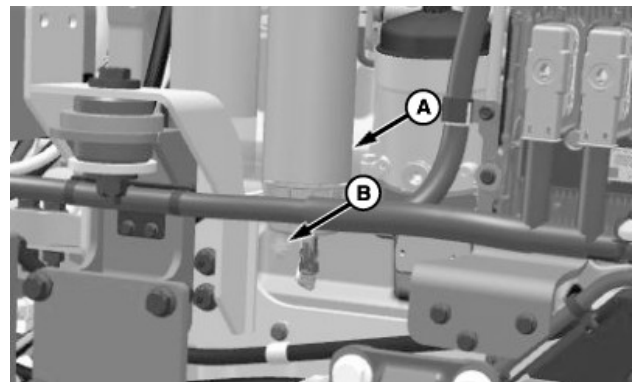
5. If the oil level is below the ADD hole, then add the required engine oil and recheck until the level is adequate. (See Diesel Engine Oil—Interim Tier 4, Final Tier 4, Stage IIIB and Stage IV in Fuels, Lubricants, and Coolants section of this manual.)

After a long storage period:

Check whether dirt or other foreign bodies have collected under the hood or cab. If so, remove them.

TB90758,00028D5-19-28JAN22

Drain Water Separator—Daily



N155023—UN—19APR21

Water Separator

A—Primary Filter
B—Drain Valve

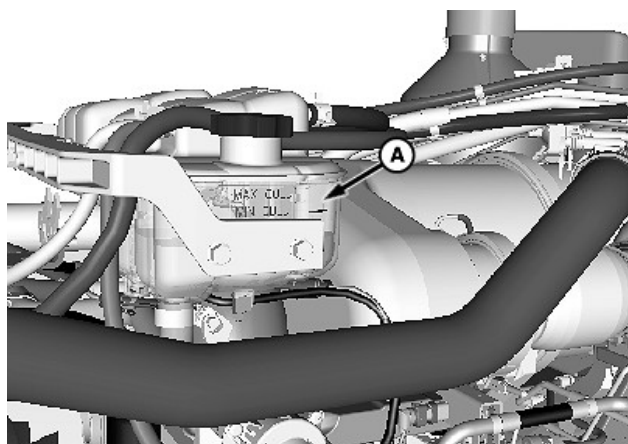
IMPORTANT: When draining water from fuel filters, the drain valve must be unthreaded completely. Also, the valve must drop down approximately 12 mm (0.5 in) to drain water properly from the filter.

Drain water and contaminants from the water separator bowl by opening the drain valve (B) on the primary filter (A).

IMPORTANT: Replace fuel filters if an excessive amount of water or sediment is present. (See Replacing Fuel Filters in the Engine and Drivetrain section.)

TB90758,00028D6-19-19APR21

Check Coolant Level—Daily



N119286—UN—27JUL15

A—Coolant Level

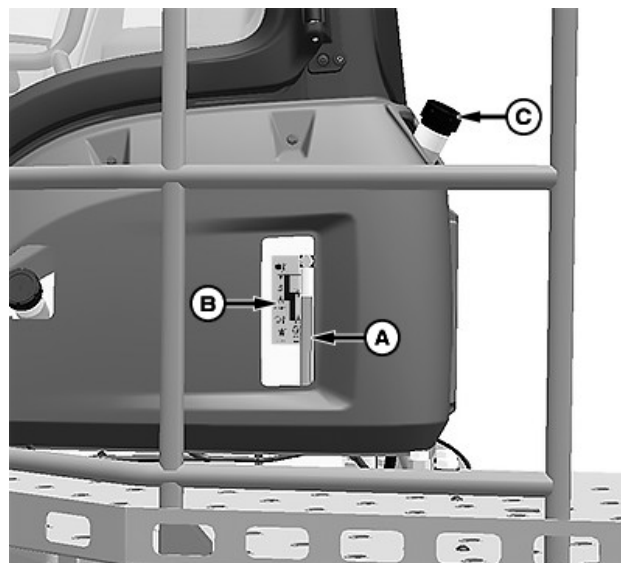
Check coolant level, using sight tube. Coolant level (A) should be between “HOT LEVEL” and “COLD LEVEL” marks on the overflow tank depending on engine temperature.

If coolant level is low, check for any signs of leakage and repair if necessary. Check all hose clamps for tightness. Add soft water and antifreeze mixture to the overflow tank, as specified in Diesel Engine Coolant (engines with wet sleeve cylinder liners) in the Fuels, Lubricants, and Coolants section to the overflow tank.

IMPORTANT: Add John Deere Cool-Gard II Coolant Extender as necessary to maintain proper additive levels. (See John Deere Cool-Gard II Coolant Extender in the Fuels And Lubricants section.)

TB90758,0001B63-19-22OCT25

Check Transmission Oil Level—Daily



N155507—UN—19MAY21

A—Sight Gauge

B—Decal

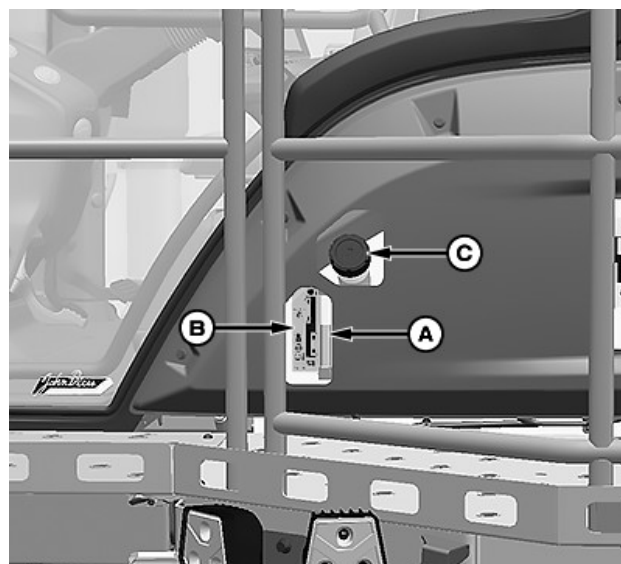
C—Filler Cap

Observe the oil level in sight gauge (A) with the machine on a level surface and the engine off. Decal (B) shows the proper oil level based on the current oil temperature. Verify that the oil level is within the proper range.

If the oil level is below the lower mark for the current temperature range, remove filler cap (C) and add hydraulic oil. (See Steering, Hydraulic and Transmission Oil in the Fuels, Lubricants, and Coolants section of the Operator's Manual.)

TB90758,0002985-19-26JUL21

Check Steering/Hydraulic Oil Level—Daily



N155508—UN—19MAY21

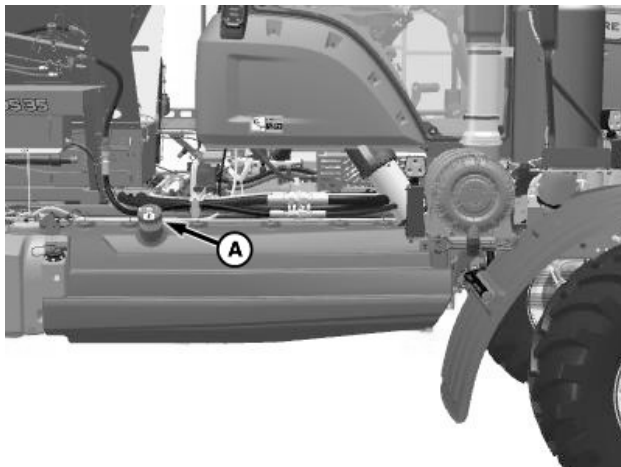
- A—Sight Gauge
- B—Decal
- C—Filler Cap

Observe the oil level in sight gauge (A) with the machine on a level surface and the engine off. Decal (B) shows the proper oil level based on the current oil temperature. Verify that the oil level is within the proper range.

If the oil level is below the lower mark for the current temperature range, remove filler cap (C) and add hydraulic oil. (See Steering and Hydraulic Oil in the Fuels, Lubricants, and Coolants section.)

TB90758,0002986-19-26JUL21

Fill Fuel Tank



N155426—UN—27APR21

A—Fuel Tank Cap

CAUTION: Shut off engine before filling fuel tank.

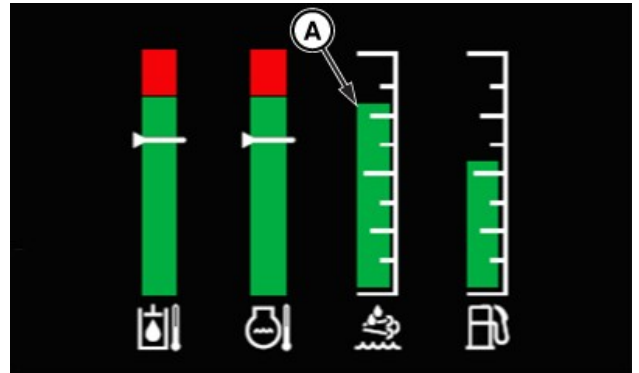
Avoid serious injury from falling. Do not stand on the fuel tank.

NOTE: Fuel tank capacity is 852 L (225 gal).

Remove fuel tank cap (A). Fill tank with proper grade of diesel fuel. (See Lubrication and Maintenance section for diesel fuel specifications.)

NCHYUSK,1755027351864-19-12AUG25

Fill Diesel Exhaust Fluid (DEF) Tank (Final Tier 4 and Stage V)



NX1396832—UN—17MAR25

A—Diesel Exhaust Fluid (DEF) Level Indicator

CAUTION: Avoid serious injury from falling. Do not stand on the fuel tank.

Avoid contact with eyes. If contacted, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference Materials Safety Data Sheet (MSDS) for additional information.

Do not ingest DEF. In the event DEF is ingested, contact a physician immediately. Reference Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: Use only distilled water to rinse components that are used to dispense 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.

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

Never put DEF in the diesel fuel tank, or diesel fuel in the DEF tank. If DEF is placed into the engine fuel tank or other fluid reservoir, do not operate engine until system is properly purged of DEF. Contact a John Deere dealer or other service provider immediately to determine how to clean and purge the system.

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

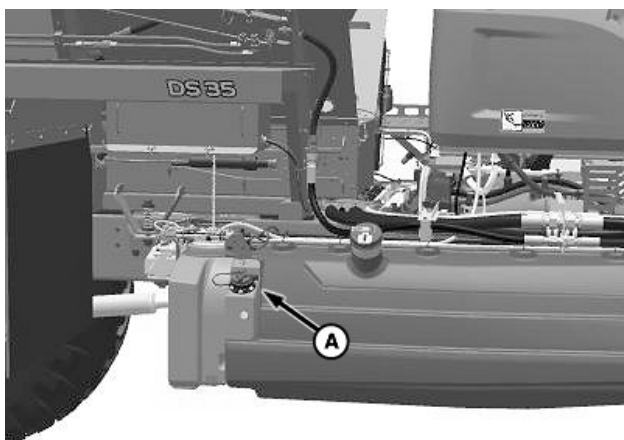
DEF tank capacity is 29.5 L (7.8 gal).

Fill tank every time machine is refueled. If this cannot be done, monitor diesel exhaust fluid (DEF) level indicator

(A) on corner post display and refill as necessary. To avoid drastic changes in machine performance, always keep DEF level above the topmost red mark on the fluid level indicator. (See Selective Catalytic Reduction (SCR) System Overview in Operate Machine section.)

To fill DEF tank:

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



A—DEF Tank Cap

N155427—UN—27APR21

2. Wipe DEF tank cap (A) and areas around filler neck to reduce chance of contaminating DEF.
3. Remove cap.
4. Using a funnel, carefully pour DEF into 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 the DEF tank, drain and rinse tank. (See Cleaning Diesel Exhaust Fluid (DEF) Tank in Engine and Drivetrain section.)

NCHYUSK,1755027561667-19-12AUG25

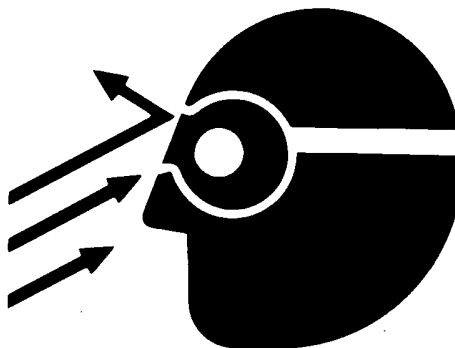
Inspect Tires—Daily

See Check Tires for Damage and Proper Inflation Pressure—Daily in the Wheels and Tires section for proper inflation pressures, loads, and specifications.

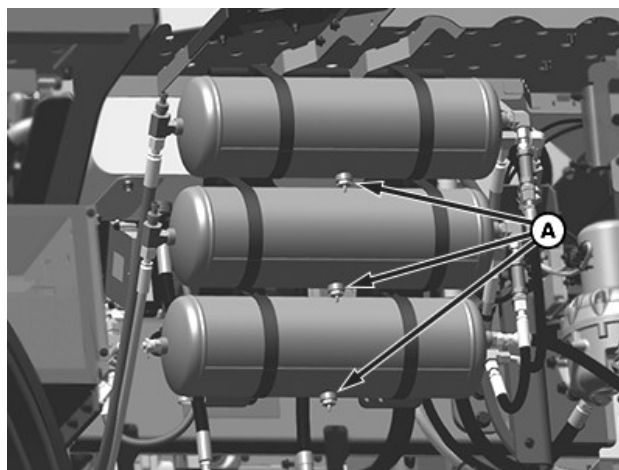
ibhz6m2,1721298481907-19-02AUG24

Drain Moisture from Onboard Air Tank—Daily

CAUTION: Unloader valve and tank exhaust are at a high pressure. Wear the proper protective equipment, including eye and hand protection, when servicing or relieving pressure through valves.



TS266—UN—23AUG88



N159829—UN—06JAN22

A—Valve (3 used)

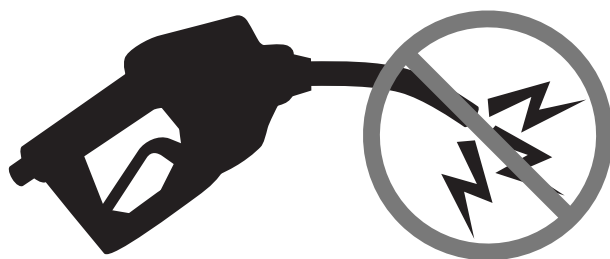
Push or pull valves (A) and drain moisture from onboard air tanks daily. Use a suitable tool (not hands) for this task.

NOLMWLO,000000F-19-06JAN22

Avoid Static Electricity Risk When Refueling



RG22142—UN—17MAR14



RG21992—UN—21AUG13

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

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

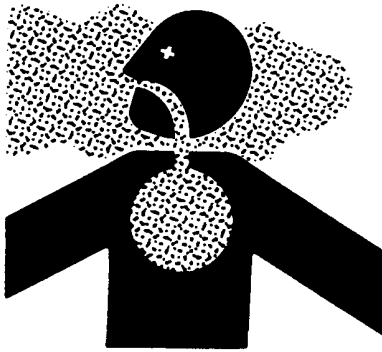
Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion.

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

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

Operate Machine

Avoid Contact with Agricultural Chemicals



TS220—UN—15APR13



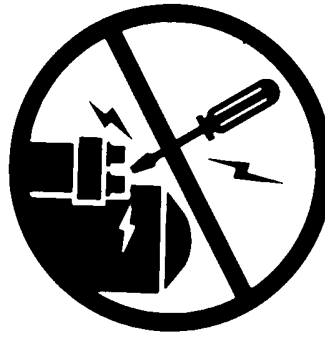
TS272—UN—23AUG88

CAUTION: This enclosed cab does not protect against inhaling vapor, aerosol or dust.

1. When operating in an environment where pesticides are present, wear a long-sleeved shirt, long-legged pants, shoes, and socks.
2. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.
3. Wear personal protective equipment as required by the pesticide use instructions when leaving the enclosed cab:
 - into a treated area
 - to work with contaminated application equipment such as nozzles which must be cleaned, changed or redirected
 - to become involved with mixing and loading activities
4. Before 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.
5. Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.

DX,CABS1-19-25MAR09

Prevent Machine Runaway



TS177—UN—11JAN89

CAUTION: Runaway machine can cause serious injury or death to you or others.

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

NEVER start engine while standing on ground. Start engine only from the operator's seat, with multi-function lever in "park."

BN55050,0000012-19-08JUN18

Machine Informational Decals

Tire Decals



N118706—UN—18JUN15

A—Tire Pressure Decal
B—Wheel Hardware Torque Decal

Decal A:

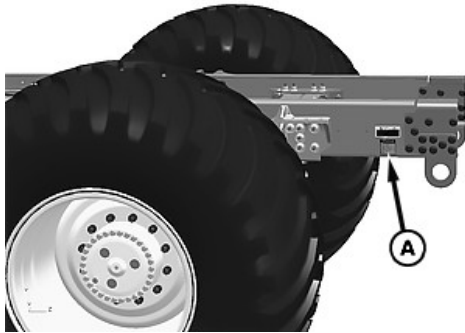
IMPORTANT: Maintain proper inflation pressure to prolong tire life.

NOTE: See Check Tires for Damage and Proper Inflation Pressure—Daily in Wheels and Tires section for additional information.

Decal B:

IMPORTANT: Tighten each nut to 531 N·m (392 lb·ft). Retighten after 1 hour and daily until torque is maintained. Repeat operation each time nuts are loosened. Check torque every 100 hours of operation thereafter.

Do Not Tow Decal



N155504—UN—19MAY21

A—Do Not Tow Decal

Decal A:

IMPORTANT

DO NOT TOW AT TIE-DOWN RINGS.
SEVERE DAMAGE TO SUSPENSION WILL OCCUR.
SEE OPERATOR'S MANUAL.

For proper towing procedure using the front retrieval points, see Towing Machine in the Chassis section.

Engine Start/Idle Decal



N159830—UN—06JAN22

A—Engine Start/Idle Decal

Decal A:

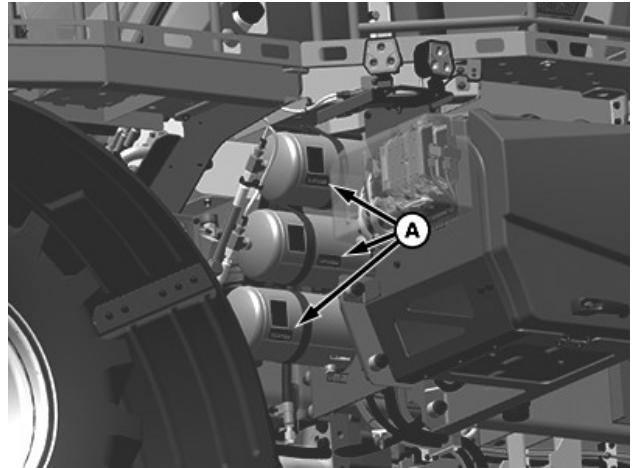
IMPORTANT:

1. After starting engine, operate engine at approximately 1200 rpm (no load) for 1 to 2 minutes. If temperature is below freezing point, operate engine for 2 to 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. After prolonged idle periods, see Operator's Manual for starting instructions.

Drain Air Tank Decal



N159831—UN—06JAN22

A—Drain Air Tank Decal (3 used)

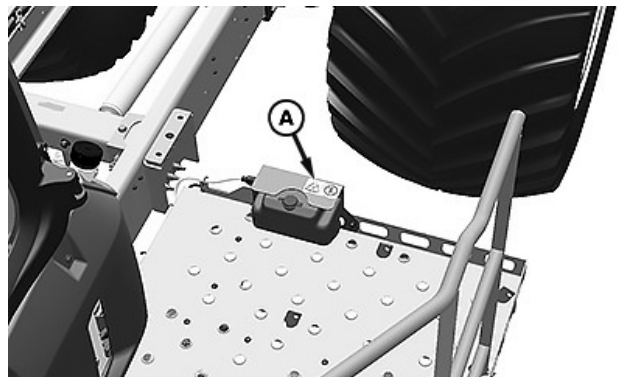
Decal A:

IMPORTANT

DRAIN MOISTURE FROM AIR TANK DAILY

For the proper air tank draining procedure, see Drain Moisture from Onboard Air Tank—Daily in the Prestart Checks and the Lubrication and Maintenance sections.

No Step Decal

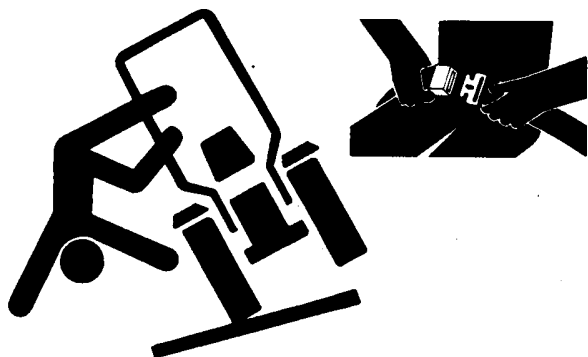


N155506—UN—19MAY21

A—No Step Decal

NOLMWLO.0000010-19-28JAN22

Use Seat Belts



TS205—UN—23AUG88



N155430—UN—27APR21

Optional Instructional Seat Shown

A—Seat Belt (2 used)

CAUTION: Minimize chance of injury from accident. Use seat belt (A) when operating machine.

Instructional seat is provided only for training operators or diagnosing machine problems. Keep all other riders off nutrient applicator and equipment. Always wear your seat belt.

Inspect seat belts (A) and mounting hardware annually (see Annual Service section of this Operator's Manual).

TB90758,0002988-19-26JUL21

Operate the Engine

Restarting Stalled Engine:

Restart a stalled engine IMMEDIATELY to prevent excessive heat buildup and possible turbocharger damage.

Stopping the Engine:

IMPORTANT: Do not disconnect the battery on machines equipped with Final Tier 4 engines until the Light Emitting Diode (LED) on the battery box has turned off. The LED indicates that the diesel exhaust fluid (DEF) system purge is complete. If adequate time is not allowed for the lines to be purged, any DEF remaining in the lines can crystallize and plug the lines. In freezing weather, DEF freezes and can possibly burst the lines.

- Stop the machine and press the low idle engine set speed switch.
- Put the multi-function lever in the PARK position.
- Turn the key switch to the OFF position and remove the key.

CAUTION: Remove the key from the key switch to help prevent accidents.

BN55050,0000339-19-09APR19

Cold-Weather Starting—9.0 L Engine with Starting Aid

CAUTION: Starting fluid is flammable. While using this product, do not smoke and make sure to extinguish all flames. Turn off all pilot lights, stoves, heaters, electrical motors, and other sources of ignition while using this product and/or if vapors are still present.

Machines equipped with cold-weather starting aid from the factory utilize an automatic starting aid injection system. System will automatically inject starting aid as needed based on fuel and engine coolant temperatures. Manually spraying starting fluid into air intake screens is not recommended or required.

If Engine Fails to Start:

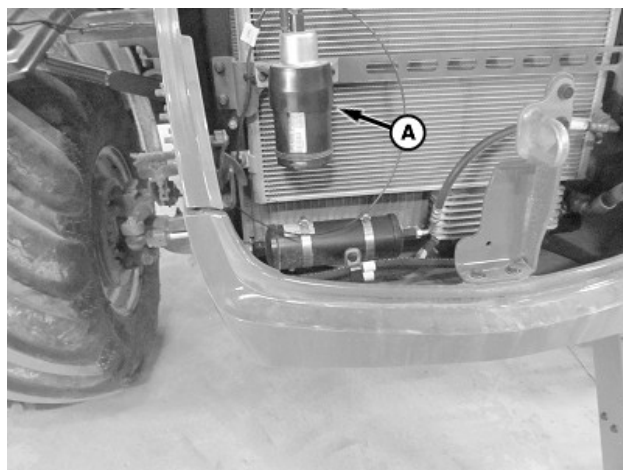
- Check quantity and quality of fuel.
- Verify that starter fluid canister has fluid.
- Check electrical system.
- If engine fails to start after three attempts, it may be necessary to consult a John Deere dealer or other service provider.

To replace starting aid canister, see Change Starting Fluid Canister in this section.

TB90758,0002989-19-09AUG25

Change Starting Fluid Canister

CAUTION: Do not use starting fluid near fire, sparks, or flames. Read caution information on the container. Protect the container against damage. Do not carry starting fluid canisters inside cab.



N155669—UN—14JUL21

A—Starting Fluid Canister

1. Open hood to access the canister (A).
2. Remove safety cap and plastic spray nozzle from the new canister.

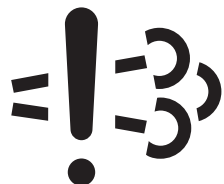
IMPORTANT: To avoid drawing dust into engine, always keep a starting fluid can in position, or clean the bottom of canister and install it bottom-side-up.

3. Loosen the canister and remove the old can.
4. Install new can and tighten the canister.

TB90758,000298A-19-26JUL21

Required Machine Stop Warning

Machine Stop Mandate Occurs



RG22491—UN—21AUG13

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

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



RG22492—UN—21AUG13

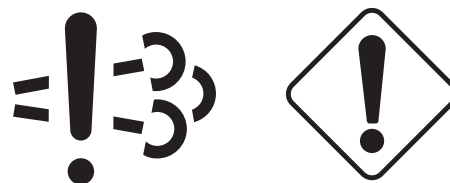
Warning Indicator illuminates when a condition exists which requires operator action.



RG22493—UN—21AUG13

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

Emission System Fault Has Occurred



RG26361—UN—04SEP14

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

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



RG26972—UN—26MAR15

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

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

- Contact service provider.

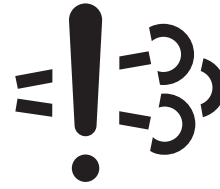


RG226972—UN—26MAR15

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

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

DX,MACHSTOPWARN,AG-19-02OCT15



RG22491—UN—21AUG13

Engine Emissions System Malfunction Indicator



RG22492—UN—21AUG13

Warning Indicator



RG22493—UN—21AUG13

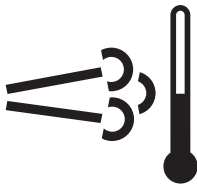
Engine Stop Indicator

Aftertreatment Indicators Overview



RG22487—UN—21AUG13

Diesel Exhaust Fluid Indicator



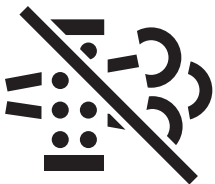
RG22488—UN—21AUG13

Engine Emissions Temperature Indicator



RG22489—UN—21AUG13

Exhaust Filter Indicator



RG22490—UN—21AUG13

Auto Cleaning Disabled Indicator

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 contact a John Deere dealer or other service provider.

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, contact a John Deere dealer or other service provider.

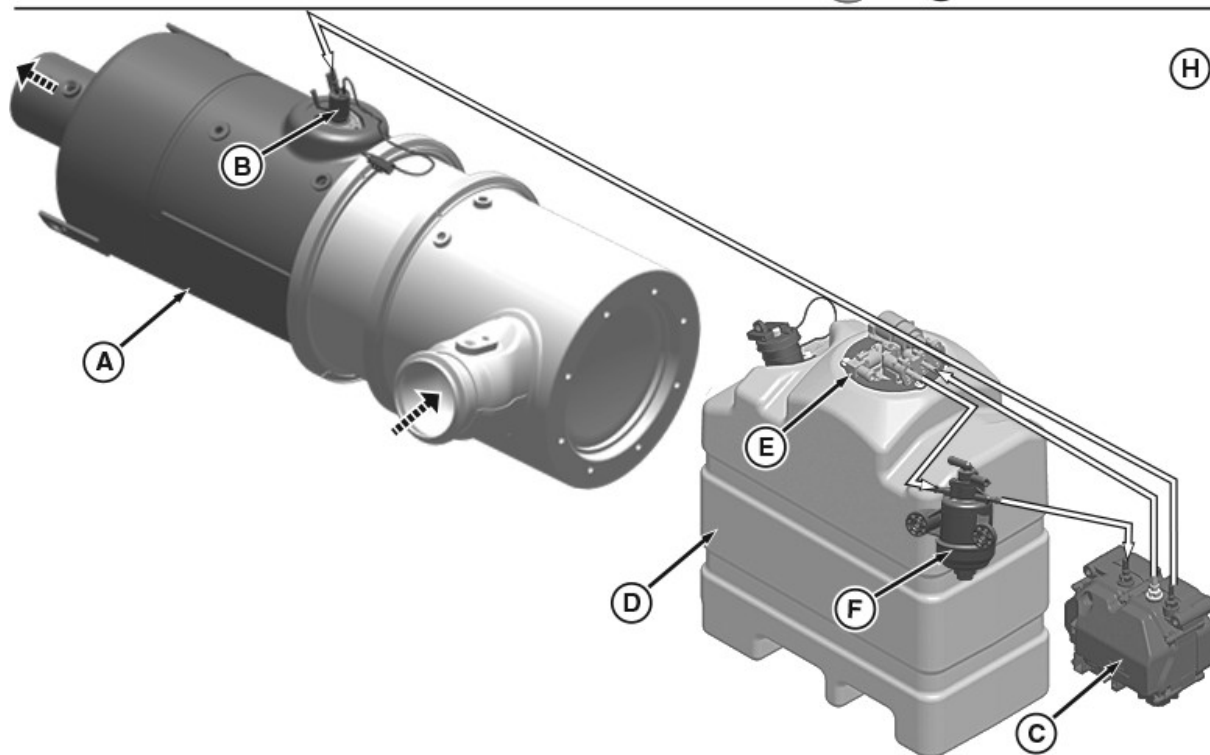
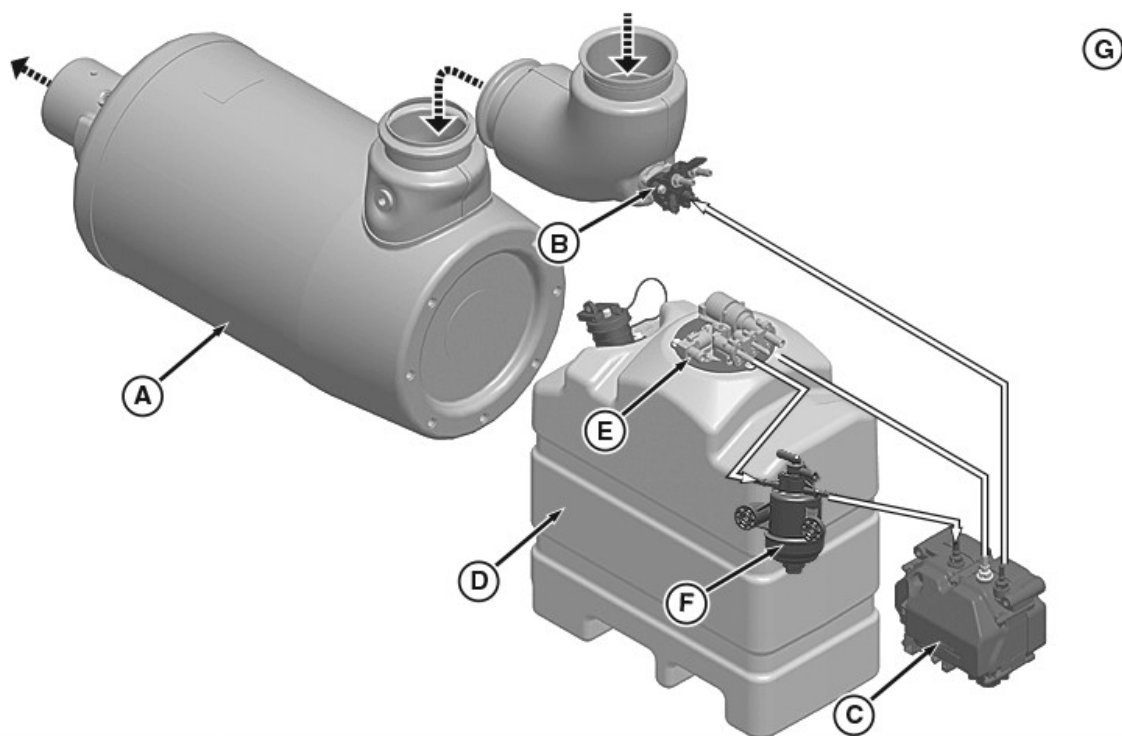
The auto cleaning disabled indicator illuminates when the operator has engaged the request to disable the auto exhaust filter cleaning function. This icon remains illuminated until the operator re-engages automatic exhaust filter cleaning from the diagnostic gauge. Disabling auto mode is not recommended 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 contact a John Deere dealer or other service provider.

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 contact a John Deere dealer or other service provider.

DX,AFTRTREAT,INDCATRS-19-02SEP25

Selective Catalytic Reduction (SCR) System Overview



SCR System

RG22427A—UN—07JAN20

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

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.

TB90758,000298B-19-28JAN22

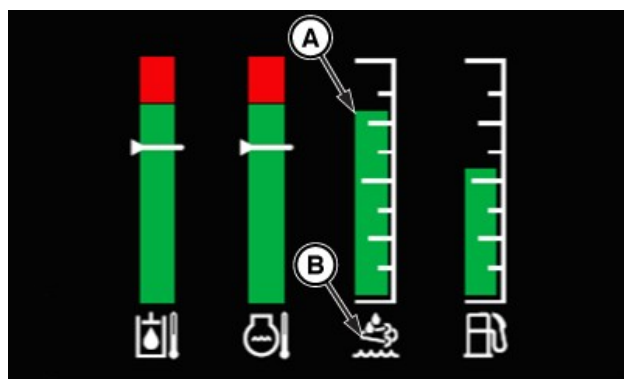
Selective Catalytic Reduction (SCR) System (Final Tier 4 and Stage V Engines)

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 or to operate the vehicle with no DEF.

Using incorrect or unapproved aftertreatment components can damage the vehicle's aftertreatment system and reduce ability of the aftertreatment system to function correctly. Never interchange aftertreatment components between Interim Tier 4/Stage III B and Final Tier 4/Stage V equipped vehicles.

NOTE: SCR system monitors quality of DEF flowing through it. If a fluid other than DEF at correct urea concentration is detected, system displays a diagnostic trouble code and engine derates to 50% power.

SCR system supplies DEF to the engine aftertreatment system. DEF works in conjunction with machine aftertreatment components to reduce emissions. See Fuel, Lubricants, and Coolants section in this manual for specifications and information about DEF.



NX1396835—UN—18MAR25

A—DEF Level Gauge
B—DEF Icon

Machine electronic systems monitor DEF level to assure proper performance. DEF level gauge (A) on the corner post display shows current DEF level. Refilling DEF tank every time machine is refueled is recommended. See Fill Diesel Exhaust Fluid (DEF) Tank (Final Tier 4/Stage V) in Prestaring Checks section of this manual.

DEF level and operation changes:

Normal Operation—When DEF level is within normal operation range, DEF icon (B) is on and the machine operates normally. Always maintain fill within this range for uninterrupted performance.

Low DEF Level 1—When the level reaches 10%, the level indicator flashes, alarm sounds, and the low fluid message appears.

Low DEF Level 2—When the level reaches 0%, level indicator illuminates and stops flashing, alarm sounds, and empty fluid message and engine power limited message appears.

DEF Tank Empty—When loss of prime is reached, level indicator illuminates and stops flashing. Alarm sounds and empty fluid message, engine power limited message, and speed limited message appears. Stop

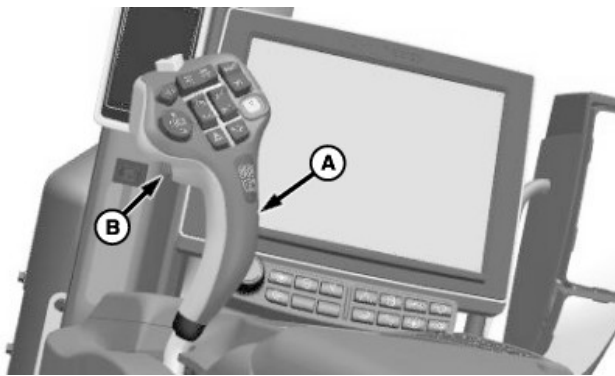
engine warning indicator (Red) illuminates, engine is derated and machine functions are restricted.

DEF freezes at -11°C (12°F) and will not flow to the SCR system. Machine systems sense low temperature and allow engine to start, even with no DEF flow. Engine coolant is used to thaw fluid in the DEF tank when engine is running. If system senses that DEF has thawed and SCR system is operating normally within 60 to 90 minutes, machine operates normally. If DEF flow is not sensed within 60 to 90 minutes, FAIL TO THAW DTC is displayed. Machine is allowed to operate normally for 4 hours after DTC is displayed. If DEF flow is not sufficient after 4 hours, engine power will be reduced to 50% until DEF flow is achieved. Freezing and thawing of DEF does not degrade it.

If desired, locking DEF tank cap and strainer/screen kits can be obtained via regular spart part channels.

NCHYUSK,1755028527632-19-22AUG25

Transmission Controls Identification



N155027—UN—23APR21

A—Multi-Function Lever
B—Speed Range Adjustment Switch

Set speeds are maximum ground speeds in each speed band. The multi-function lever (A) must be pushed to the end of the slot to achieve set speeds. Speed range adjustment switch (B) on the multi-function lever rotates to adjust set speeds (see Adjust Set Speeds in this section).

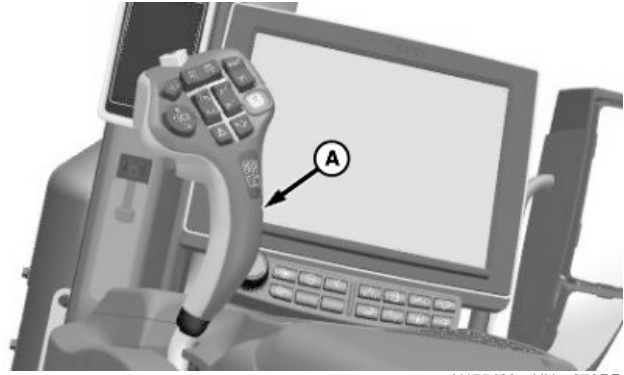
TB90758,000298C-19-22OCT25

Adjust Set Speeds

CAUTION: Avoid unexpected rapid acceleration. Check and adjust the set speeds before putting in motion.

NOTE: See Set Speeds in the Transmission section for more information.

Turn the key switch to the RUN position.



N155428—UN—27APR21

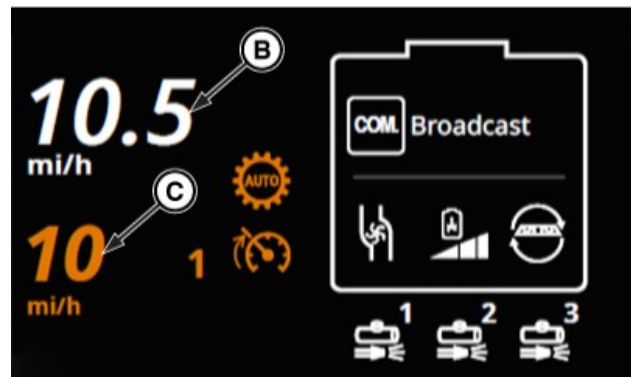
A—Multi-Function Lever

Move the multi-function lever (A) to the PARK position.



N166440—UN—08MAR24

A—Speed Range Adjustment Switch



NX684950—UN—19AUG25

Corner Post Display

B—Vehicle Speed Indicator
C—Target Speed

Rotate the speed range adjustment switch (A). Forward and reverse set speeds scroll on the corner post display, pausing at each for 2 seconds.

Adjust each speed when displayed by rotating the speed range adjustment switch clockwise to increase set speed value or counterclockwise to decrease it.

On the corner post display, set speed displays in orange and ground speed displays in white letters. Set speed can be adjusted while the machine is moving by rotating the speed range adjustment switch. Increasing the set

speed value increases ground speed. Decreasing the set speed value decreases ground speed. New set speed shows on display.

Select a set speed approximately 3.2 km/h (2 mph) higher than desired working speed to obtain maximum productivity where precise forward speed is **not** critical.

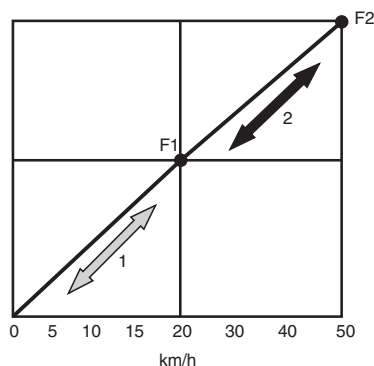
Maximum ground speed is attained at high idle when the multi-function lever is in the fully forward position of the slot.

NCHYUSK,1755028053931-19-22AUG25

Set Speeds—Guidelines and Examples

Value of Set Speed 1 is always at least 10% less than value of Set Speed 2. This ensures a smooth transition between speed bands and is illustrated in following examples.

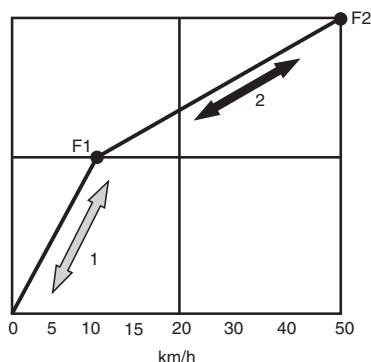
NOTE: F1 refers to Forward mode for Set Speed in the speed band 1. F2 refers to Forward mode for Set Speed in the speed band 2.



N143545—UN—19MAR19

Example 1

Example 1: Maximum Forward Set Speeds are selected for each speed band.



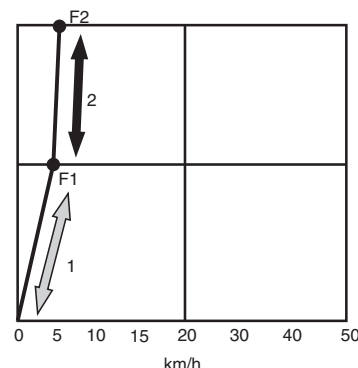
N143546—UN—19MAR19

Example 2

Example 2: Value of Set Speed 1 is reduced to 10 km/h (6 mph). Set Speed 2 value is not changed, but lower

portion of the speed band 2 has automatically decreased to meet top end of the speed band 1.

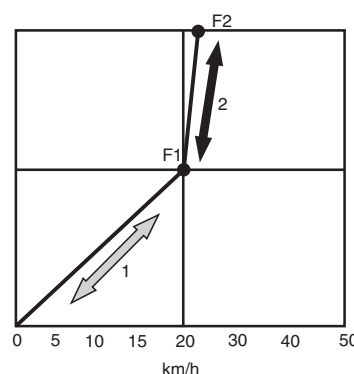
NOTE: Actual set speed increases or decreases at least 10% of the adjusted speed band and ranges up to 12.5%. In examples 3 and 4, 10% is used, but it can differ by 2.5% of speeds shown.



N143547—UN—19MAR19

Example 3

Example 3: Set Speed 2 is reduced to 5 km/h (3 mph). Set Speed 1 automatically decreases to 4.5—4.3 km/h (2.8—2.7 mph), 10—12.5% below new value of Set Speed 2.



N143548—UN—19MAR19

Example 4

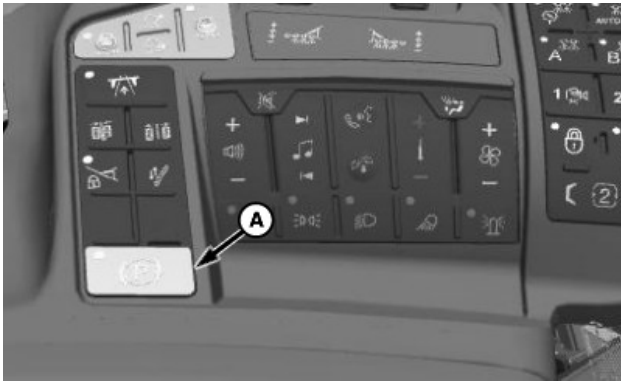
Example 4: Set Speed 1 is increased to 20 km/h (12.4 mph), which is higher than value of Set Speed 2. Set Speed 2 automatically increases to 22—22.5 km/h (13.7—14.0 mph), 10—12.5% above new value of Set Speed 1.

CS12167,00008A5-19-22OCT25

Put Machine in Motion

CAUTION: Avoid injury due to sudden or unexpected acceleration. Be aware of set speeds before putting in motion.

NOTE: Machine cannot be put in gear unless the operator is seated. Information indicator lights and a corresponding message appear on the CommandCenter display when FORWARD, REVERSE, or PARK positions are selected and the operator is **not** in the seat.



A—Park Brake Switch

N155026—UN—22APR21

The park brake switch (A) on the CommandARM defaults to ON at each key cycle and must be turned off before the multi-function lever can be moved from the PARK position.

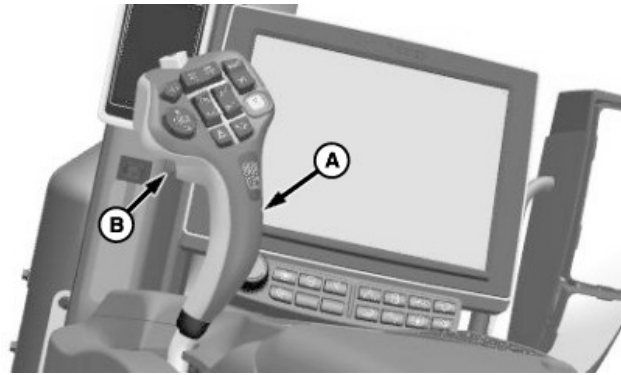
- To initiate motion with the operator seated, move the multi-function lever from PARK position to either FORWARD or REVERSE position.

NOTE: Cold conditions can affect transmission performance:

- Engine speed is limited to 1500 rpm if transmission oil temperature is less than -5°C (23°F).
- Wheel speed is limited to 5 km/h (3 mph) if transmission oil temperature is less than -15°C (5°F).

NOTE: Using the clutch to put machine in motion is not necessary.

NOTE: If there is a failure with the seat switch, the machine can still be put into motion by cycling (depress/release) clutch pedal or brake pedal.



N155027—UN—23APR21

A—Multi-Function Lever
B—Speed Range Adjustment Switch

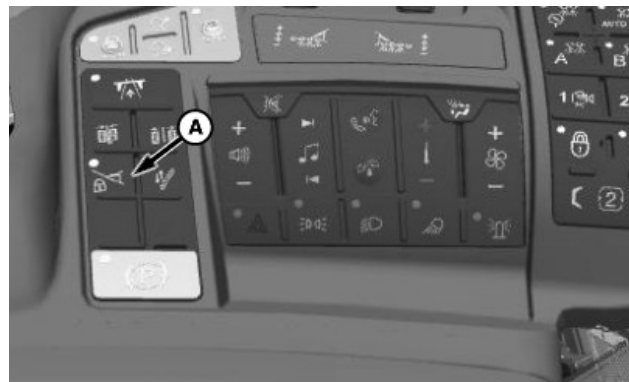
Move the multi-function lever (A) into FORWARD or REVERSE position.

Use the multi-function lever and the speed range adjustment switch (B) to obtain the desired speed.

TB90758,000298E-19-22OCT25

Field Operation

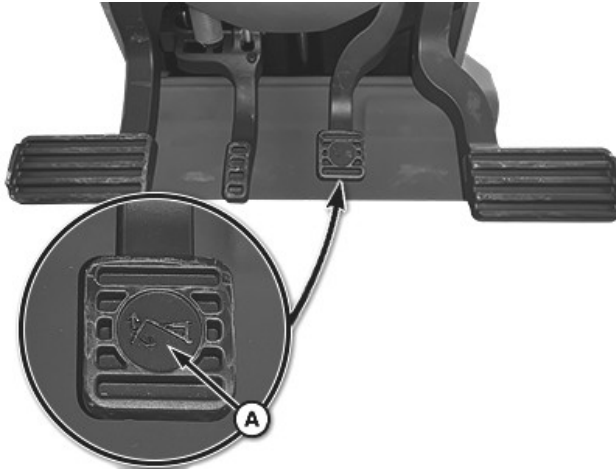
CAUTION: Ensure that the area is clear of bystanders before turning on the machine.



N155432—UN—29APR21

A—Boom Lock Switch

1. Release the boom locks by pressing the boom lock switch (A).



N159836—UN—11JAN22



N159837—UN—11JAN22

- A—Boom Fold Mode Pedal
- B—Boom Fold Switch
- C—Boom Unfold Switch

2. Unfold the boom by pressing and holding the boom fold mode pedal (A), then press and hold the boom fold switch (B) or the boom unfold switch (C) on machines equipped with an air boom system.



N155671—UN—14JUL21

- A—Boom Tilt Switch

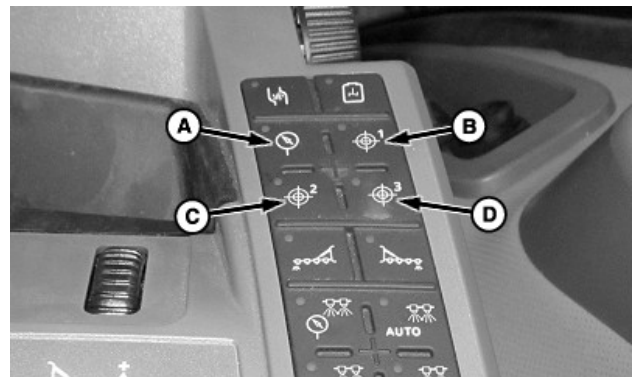
3. Adjust the boom to a level position using the boom tilt switches (A).
4. Set up the display for the particular application being used. (See Dry Application System Application section for proper setup procedure.)
5. Verify that the machine is loaded with product.



N143238—UN—26FEB19

- A—Hydraulic Enable Switch

6. Enable the machine hydraulics by pressing the hydraulic enable switch (A).

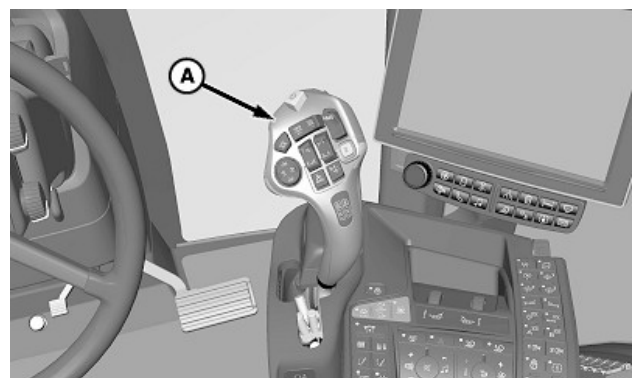


N143240—UN—26FEB19

- A—Manual Rate Selection Switch
- B—Preset Rate 1 Selection Switch
- C—Preset Rate 2 Selection Switch
- D—Preset Rate 3 Selection Switch

7. Press the desired rate selection switch (A—D).

NOTE: Rate selected is displayed on the screen.



N143549—UN—18MAR19



N143556—UN—18MAR19

A—Multi-Function Lever
B—Boom Section Enable Switch

8. Push the multi-function lever (A) forward slowly to start forward motion.
9. On machines equipped with an air boom, select the desired on-off positions for each section by using the boom section enable switches (B).



N155672—UN—14JUL21

A—Spread System Master Switch
B—Indicator

10. Press the spread system master switch (A) to begin application.

NOTE: Indicator (B) is illuminated when the spread system master switch is activated.

11. At the row end, press the spread system master switch to stop application. All other switches can remain in the preset positions.

NOTE: Application system start-up is not immediate. To overcome delayed response, press the spread system master switch while moving forward to begin application just before product is required.

12. When aligned with the next row, press the spread system master switch to resume application.

N0LMWLO.0000013-19-31JAN22

Downhill Operation in Slippery Conditions

Select Manual performance mode using the Transmission application. (See Performance Mode in the Transmission section for more information.)

CAUTION: Avoid possible injury from losing control of the machine while operating on a downhill slope. Spreader wheels can lock and skid on slippery downhill slopes. Observe the following precautions:

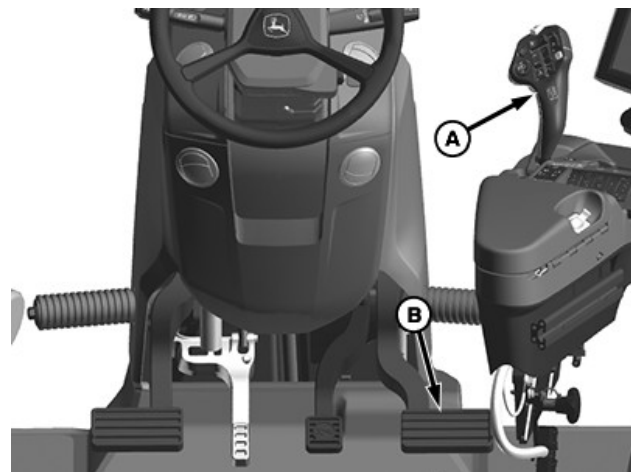
- Adjust the set speed value to a safe downhill operating speed.
- Do not make major speed reductions with the multi-function lever.

TB90758.0002990-19-26JUL21

Reduce Travel Speed

CAUTION: To avoid possible serious injury or death to you or others, always use the seat belt properly.

IMPORTANT: Premature brake wear and damage can occur if braking is accomplished using the brake pedal instead of the multi-function lever. Always pull the multi-function lever back before using the brake pedal.



N159834—UN—07JAN22

A—Multi-Function Lever
B—Brake Pedal

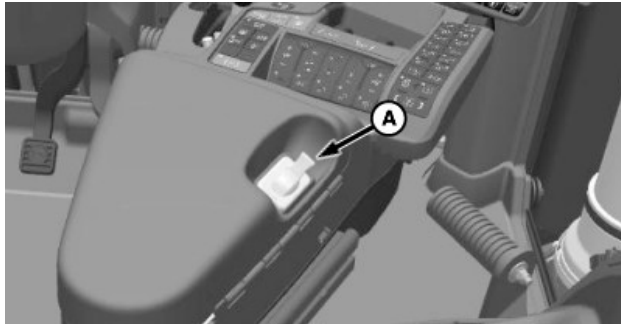
1. To slow the machine, pull back on the multi-function lever (A) for primary braking.

NOTE: Braking occurs from the transmission.

2. For more aggressive (faster) braking, press down on the brake pedal (B) after the multi-function lever has been pulled back. Be prepared for a rapid decrease

in speed. Service braking stops the machine very quickly.

NOTE: Braking now occurs from the brakes.



A—Secondary Brake Switch

N155433—UN—29APR21

3. In the event that the primary (transmission) and service (brake pedal) systems are not operating correctly, press and hold the secondary brake switch (A).

NOLMWLO,0000014-19-07JAN22

Stopping and Parking Machine

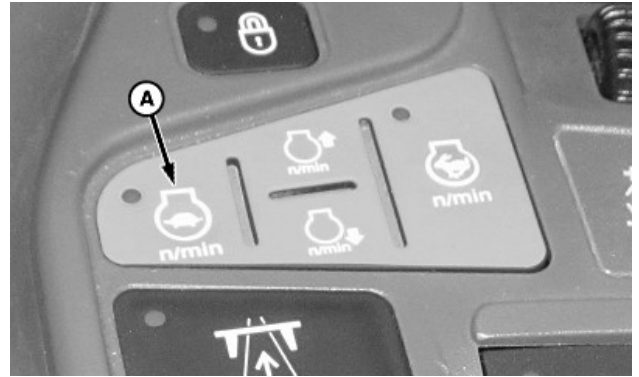


A—Multi-Function Lever

N155431—UN—27APR21

CAUTION: Always place the multi-function lever (A) in the PARK position before dismounting.

1. To slow and stop the machine, slowly return the multi-function lever to the PARK position. Press down on the brake pedal if a quicker stop is necessary.



N143239—UN—26FEB19

A—Low Idle Switch

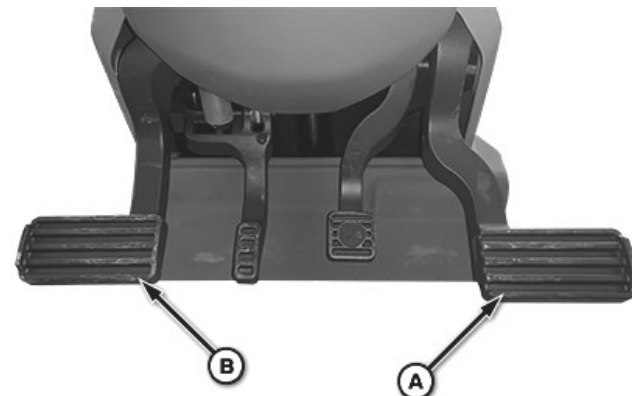
2. Press the low idle switch (A) to reduce engine speed to low idle.
3. Shut off the engine and remove the key.

TB90758,00028E8-19-22OCT25

Come Home Mode

Come home mode allows the operator to bypass diagnostic trouble codes (DTCs) or other issues preventing the machine from operating normally. This mode allows the operator to get the machine home.

1. Turn the key switch to the OFF position.
2. Wait for the display to shut down.
3. Remove the come home mode fuse and retain it. (See Replace Cab Load Center Fuses in the Electrical System Service section of this manual.)
4. Start the engine within 3 seconds of turning the key to the RUN position.
5. Transmission Come Home Mode Active displays on the CommandCenter display.



N159842—UN—12JAN22

A—Brake Pedal
B—Clutch Pedal

6. Step on the brake pedal (A) momentarily.
7. Depress the clutch pedal (B).

8. Select the FORWARD or REVERSE direction.

NOTE: Diagnostic trouble codes limiting motion continue to limit motion in come home mode. If a DTC defaults the machine to NEUTRAL, the park brake will still release and the machine can be towed. (See Towing Machine in the Chassis section for more information.) If a DTC defaults the machine to PARK, the park brake will not release until the DTC is cleared. Contact a John Deere dealer or other service provider for assistance.

9. Release the clutch pedal to put the machine into motion.
10. When the destination is reached, put the transmission shift lever in the PARK position.
11. Turn the key switch to the OFF position.
12. Replace the come home mode fuse.

N0LMWLO.0000017-19-22OCT25

Mechanical Delay and Look-Ahead Times

For proper conveyor function on machines equipped with dry spinner spreaders, the mechanical delay times and look-ahead times must be set to specific values. When the conveyor is set up correctly, pressing the Master ON button should result in an audible beep from the CommandCenter display when the conveyor begins to move.

IMPORTANT: The mechanical delay times in the Equipment Manager application must be set first before setting the look-ahead times.

Set Equipment Manager Mechanical Delay Times



Menu Button

H113668—UN—22OCT15

1. Select the Menu button on the CommandCenter display.



Application Tab

N150617—UN—24APR20

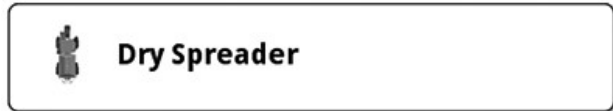
2. Select the Applications tab.



Equipment Manager Application

PC20410—UN—22MAY15

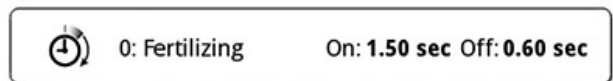
3. Select the Equipment Manager application.



Dry Spreader

N160431—UN—20JAN22

4. Select Dry Spreader on the Equipment Manager screen.



Fertilizing Input Box

N161085—UN—01MAR22

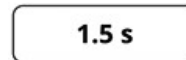


Bin 1 Input Box

N160432—UN—21JAN22

NOTE: The mechanical delay input box or boxes may be named either Fertilizing or Bin.

5. Select the Fertilizing or Bin 1 input box next to Mechanical Delay.



Mechanical Delay On Input Box

N160433—UN—20JAN22

6. Select the Mechanical Delay On input box.
7. Using the number pad, input the specified time.

Specification

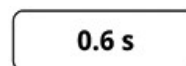
Mechanical Delay On—Time. 1.50 s



OK Button

N118151—UN—16FEB16

8. After inputting the specified time, select the OK button.



Mechanical Delay Off Input Box

N160434—UN—20JAN22

9. Select the Mechanical Delay Off input box.
10. Using the number pad, input the specified time.

Specification

Mechanical Delay Off—Time. 0.60 s



OK Button

N118151—UN—16FEB16

11. After inputting the specified time, select the OK button.



OK Button

N118151—UN—16FEB16

12. Select the OK button on the Mechanical Delay screen.
13. Repeat the procedure to set the mechanical delay on and off times for any remaining bins using the same values that were previously specified.



Save Button

N118093—UN—16FEB16

14. When the mechanical delay times have been set for all bins, select the Save button on the Machine Profile screen.



Close Button

N118396—UN—17FEB16

15. Select the Close button to return to the Menu screen.

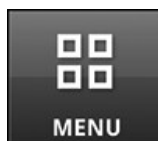


Close Button

N118396—UN—17FEB16

16. Select the Close button to return to the Home screen.

Set Look-Ahead Times



Menu Button

H113668—UN—22OCT15

1. Select the Menu button on the CommandCenter display.



Applications Tab

N150617—UN—24APR20

2. Select the Applications tab.



ISOBUS VT Application

PC16682—UN—18MAR13

3. Select the ISOBUS VT application.



VT Viewer Menu Button

T8T8795—UN—22JAN20

4. On the ISOBUS VT page, press the VT Viewer Menu button.



N160980—UN—22FEB22

A—Fertilizer Button

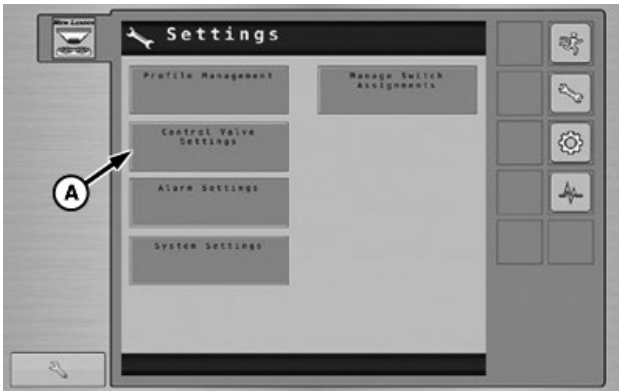
5. On the Connected ISOBUS Implements page, select the Fertilizer button (A) featuring Ag Leader Technology, Inc.



Settings Button

N141983—UN—26FEB19

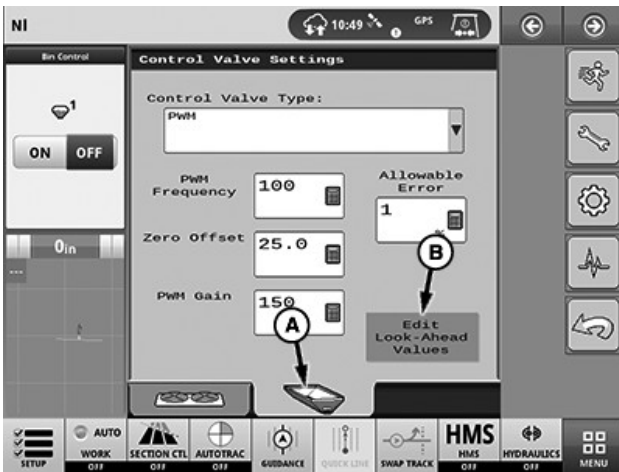
6. Press the Settings button to navigate to the Settings page.



N142012—UN—19FEB19

A—Control Valve Settings Button

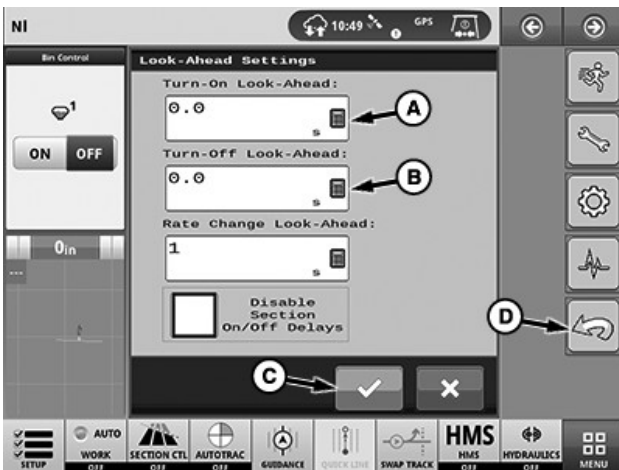
7. Press the Control Valve Settings button (A).



N160435—UN—20JAN22

A—Bin Tab
B—Edit Look-Ahead Values Button

8. Select the Bin tab (A).
9. Select the Edit Look-Ahead Values button (B).



N160436—UN—20JAN22

A—Turn-On Look-Ahead Input Box
B—Turn-Off Look-Ahead Input Box
C—Accept Entry Button
D—Return to Previous Screen Button

10. Select the Turn-On Look-Ahead input box (A).
11. Using the keypad, input the specified time.

Specification

Turn-On Look-Ahead
Time—Time. 0.0 s

12. Select the Turn-Off Look-Ahead input box (B).
13. Using the keypad, input the specified time.

Specification

Turn-Off Look-Ahead
Time—Time. 0.0 s

14. Once turn-on and turn-off look-ahead times have been set, select the Accept Entry button (C).
15. Select the Return to Previous Screen button (D).
16. Repeat the procedure to set the look-ahead times for any remaining bins using the same values that were previously specified.



Close Button

N118396—UN—17FEB16

17. Select the Close button to return to the Menu screen.



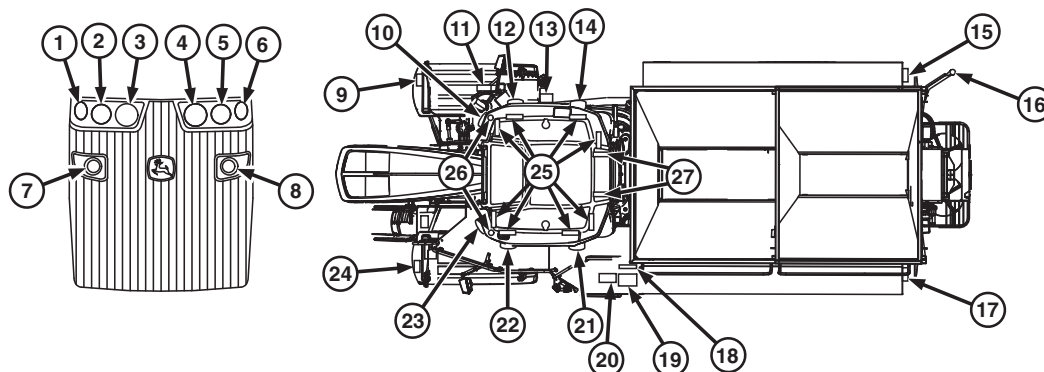
Close Button

N118396—UN—17FEB16

18. Select the Close button to return to the Home screen.

AZ06166,0000827-19-22OCT25

Light Identification and Operation Table



NX638080—UN—25JUL24

- 1—Right-Hand Outer Hood Worklight
- 2—Right-Hand High Beam
- 3—Right-Hand Inner Hood Worklight (if equipped)
- 4—Left-Hand Front (LF) Inner Hood Worklight (if equipped)
- 5—Left-Hand High Beam
- 6—Left-Hand Outer Hood Worklight
- 7—Right-Hand Low Beam
- 8—Left-Hand Low Beam
- 9—Right-Hand Front Warn/Turn Light
- 10—Right-Hand Front (RF) Cab Worlight
- 11—Right-Hand Platform Worklight 1
- 12—Right-Hand Front (RF) Side Cab Worklight
- 13—Right-Hand Platform Worklight 2
- 14—Right-Hand Rear (RR) Side Cab Worklight

- 15—Right-Hand Rear (RR) Brake/Warn/Turn/Tail Light
- 16—Beacon Light
- 17—Left-Hand Rear (LR) Brake/Warn/Turn/Tail Light
- 18—Convenience Light (if equipped)
- 19—Left-Hand Platform Worklight 2
- 20—Left-Hand Platform Worklight 1
- 21—Left-Hand Rear (LR) Side Cab Worklight
- 22—Left-Hand Front (LF) Side Cab Worklight
- 23—Left-Hand Front (FR) Cab Worklight
- 24—Left-Hand Front Warn/Turn Light
- 25—Convenience Light (if equipped)
- 26—Beacon Light (2 used)
- 27—Rear Cab Lights (2 used) (if equipped)

NOTE: See the Lights section in this manual for information on the programmable lighting.

Headlight Switch	Warning Light Switch	Turn-Signal Switch	Left-Hand Tail Light	Right-Hand Tail Light	Left-Hand Warning Light (front and rear)	Right-Hand Warning Light (front and rear)
Off	Off	Off	Off	Off	Off	Off
Off	Off/On	On L	Off	Off	88	On
Off	Off/On	On R	Off	Off	On	88
Off	On	Off	Off	Off	61	61
Park	Off	Off	On	On	Off	Off
Park	Off/On	On L	On	On	88	On
Park	Off/On	On R	On	On	On	88
Park	On	Off	On	On	61	61
Road	Off	Off	On	On	61	61
Road	Off/On	On L	On	On	88	On
Road	Off/On	On R	On	On	On	88
Road	On	Off	On	On	61	61
Field	Off	Off	On	On	Off	Off
Field	Off/On	On L	On	On	88	On
Field	Off/On	On R	On	On	On	88
Field	On	Off	On	On	61	61

Light Switch Position	Off	Off	Park	Park	Road	Road	Field	Field
Dimmer Switch Position	Low	High	Low	High	Low	High	Low	High
RR Tail Light	Off	Off	On	On	On	On	On	On

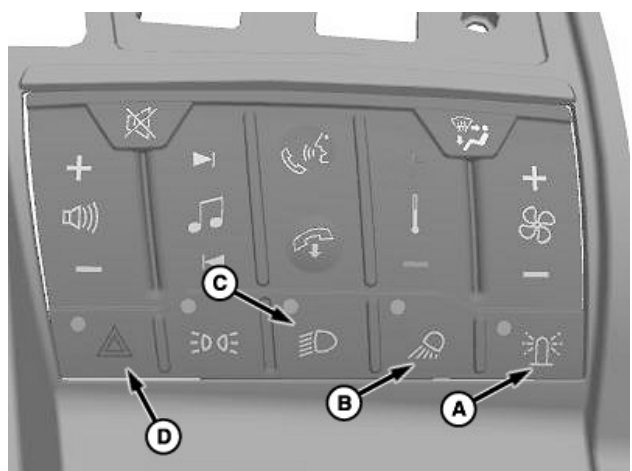
Operate Machine

Light Switch Position	Off	Off	Park	Park	Road	Road	Field	Field
LR Tail Light	Off	Off	On	On	On	On	On	On
RF Warn/Turn Light	Off	Off	Off	Off	Off	Off	Off	Off
LF Warn/Turn Light	Off	Off	Off	Off	Off	Off	Off	Off
RR Warn/Turn Light	Off	Off	Off	Off	Off	Off	Off	Off
LR Warn/Turn Light	Off	Off	Off	Off	Off	Off	Off	Off
RF Outer Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
RF Inner Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
LF Outer Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
LF Inner Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
Right-Hand High Beam	Off	Off ^a	Off	Off ^a	Off	On	Field 1 Programmable	Field 2 Programmable
Left-Hand High Beam	Off	Off ^a	Off	Off ^a	Off	On	Field 1 Programmable	Field 2 Programmable
Right-Hand Low Beam	Off	Off	Off	Off	On	Off	Field 1 Programmable	Field 2 Programmable
Left-Hand Low Beam	Off	Off	Off	Off	On	Off	Field 1 Programmable	Field 2 Programmable
RF Outer Cab Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
RF Inner Cab Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
LF Inner Cab Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
LF Outer Cab Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
LR Outer Cab Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
RR Outer Cab Worklight	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
Right-Hand Platform Light	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
Left-Hand Platform Light	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
Left Boom Worklight (if equipped)	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable
Right Boom Worklight (if equipped)	Off	Off	Off	Off	Off	Off	Field 1 Programmable	Field 2 Programmable

^aFlash to pass, light goes on momentarily.

ibhz6m2,1721711700488-19-26JUL24

CommandARM Light Switches



N155674—UN—14JUL21

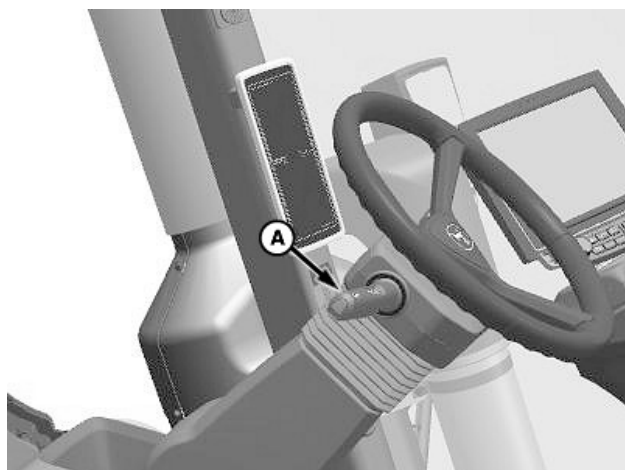
CommandARM Switches

- A—Beacon Light Switch
- B—Worklight Switch
- C—Headlight Switch
- D—Hazard Light Switch

NOTE: Worklights must be adjusted using the Light application on the display.

Operator can control the beacon lights (A), worklights (B), headlights (C), and hazard lights (D) from the CommandARM rather than from the display screens. When the lights are on, an LED light is lit up. When the lights are off, the LED light is dark.

TB90758,0002992-19-22OCT25



N156273—UN—16JUL21

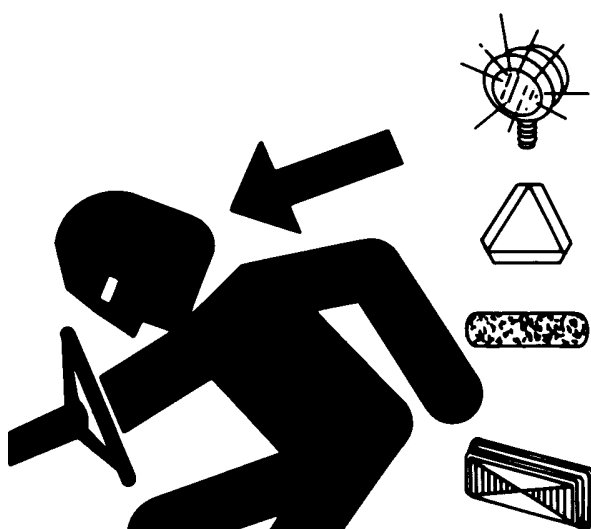
A—Turn-Signal Lever

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

Use headlights and turn signals day and night. Follow the 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. Contact a John Deere dealer or other service provider.

NOTE: When turn signal is activated, a short audible chirping sound is heard.

Operate Turn Signals and High/Low Beam



TS951—UN—12APR90

Turn Signals:

Push turn-signal lever (A) up for right turn, or pull lever down for left turn. Audible chirping sound starts. Return lever to center position after completing turn. Chirping sound stops when lever is returned to the center position.

High/Low Beam:

Push lever (A) forward to activate high-beam headlights; high-beam indicator comes on. Pull lever into center position to operate low beam. Pull lever rearward and release to momentarily activate high-beam headlights.

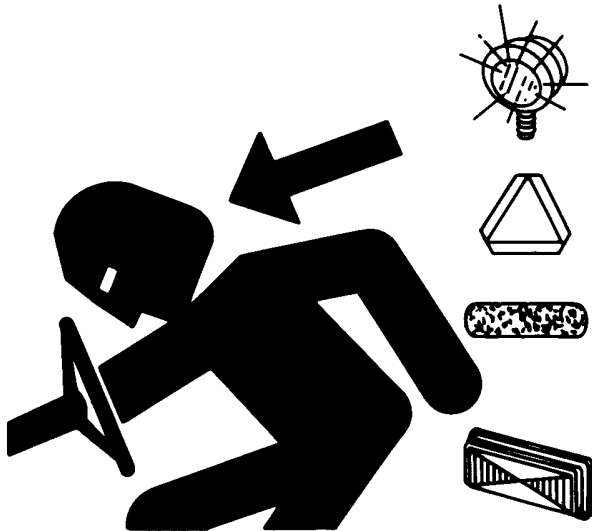
Dim headlights to low beam for oncoming vehicles.

TB90758,0002993-19-09AUG25

Safety Lights and Devices

CAUTION: Avoid injury or death caused by collision with another vehicle, always operate flashing lights when traveling on highway or public roads, except where prohibited by law.

Always use road lights and transport warning lights when operating machine on road or highway day or night. Extremity Transport Lights alert other vehicles of your extended width. Use flashing warning lights and turn signals day and night. Follow the local laws and regulations for equipment lighting and marking.



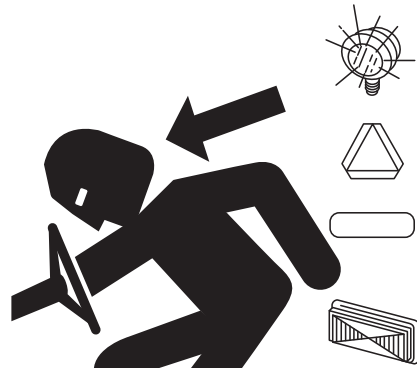
TS951—UN—12APR90

While operating machine on public roadways or highways, day or night:

- Turn on the flashing warning lights, except where prohibited by law.
- Turn on headlights by selecting the Road Lights Position of the light switch.
- Dim headlights for oncoming vehicles.
- Frequently check for traffic approaching from rear.
- Always use turn signals when turning.
- DO NOT use the Field Light Position of the light switch. Extremely bright lights may blind or confuse other drivers.
- Make sure Slow Moving Vehicle (SMV) emblem is installed and visible.
- Make sure that all lighting and marking devices are functional and clean.
- Comply with all traffic regulations.
- Promptly replace or repair damaged or lost lighting devices. Implement lighting kit is available via regular spare part channels.

OUO6435,0002D71-19-09AUG25

Hazard Lights and Extremity Warning Lights



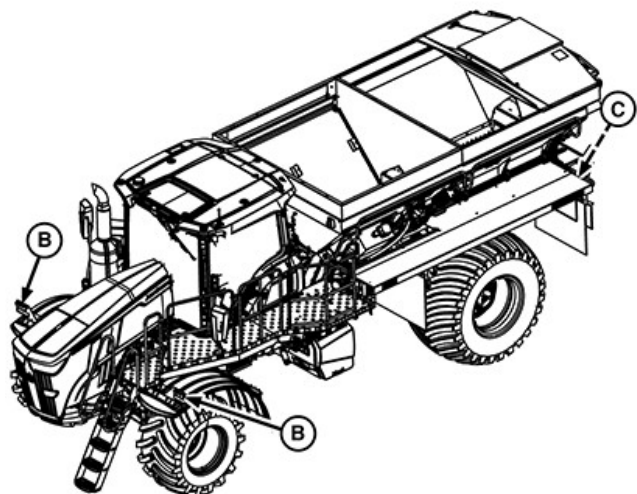
RXA0086584—UN—09FEB06

CAUTION: To prevent possible personal injury, always operate flashing lights when traveling on a highway or public road, except where prohibited by law.

Extremity warning lights are needed when machine width exceeds 3.7 m (12 ft). Always use headlights and transport warning lights when operating machine on road or highway during day and night. Extremity transport warning lights alert other vehicles of your extended width. Use flashing warning lights and turn signals day and night. Follow the local laws and regulations for the equipment lighting and marking.



N155442—UN—28JUN21



N160101—UN—13JAN22

- A—Hazard Light Switch
B—Front Fender Indicator Lights (equipped with amber lens)
C—Rear Warning Lights

Push the hazard light switch (A) to activate front fender indicator lights (B) and rear warning lights (C).

NOTE: Depending on region and installed equipment, lights may not all be available as indicator lights when the hazard light switch is activated.

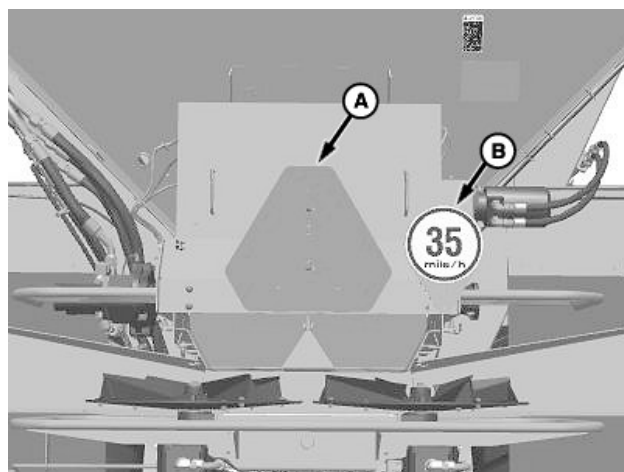
Extremity warning lights operate with the hazard light switch ON.

Adjust extremity warning lights to be no more than 400 mm (16 in) from the widest point of machine.

NOLMWLO,0000016-19-31JAN22

Understand Implement of Husbandry Roadway Regulations

CAUTION: The primary purpose of this machine is for field operation. Operate machine on roadway safely by driving slowly and exercising caution to avoid collisions.



N156268—UN—12AUG21

- A—SMV Emblem
B—Speed Identification Symbol

This machine has a maximum travel speed capability of 75 km/h (46.6 mph), and it is equipped with a slow-moving vehicle (SMV) emblem (A). Before roadway operation, ensure that you understand your state or province's regulations for roadway transport of agricultural equipment. Your state or province may have regulations that would require removal or covering of the slow-moving vehicle identification emblem if operated on a roadway above a specific speed. Contact your local roadway transport authorities if you have any questions or concerns regarding applicable regulations.

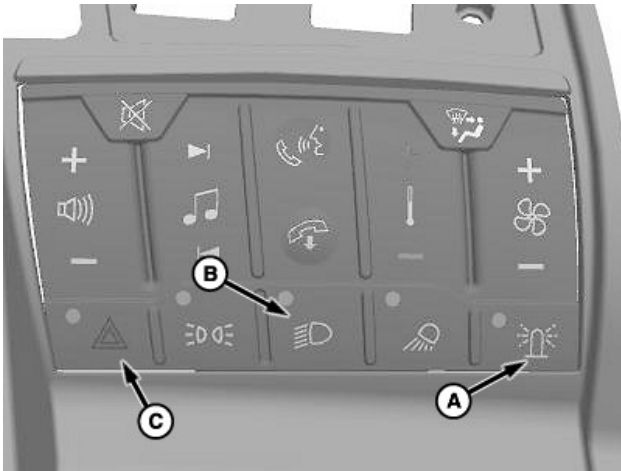
TB90758,0002995-19-26JUL21

Transport Machine

CAUTION: DO NOT exceed maximum transport speed of the machine or you may lose control of the machine, causing serious injury or death to you or others.

NOTE: When using an universal receiver, it is recommended to remove the StarFire receiver when transporting the machine. Follow all local laws to meet height requirements.

1. Verify that the slow moving vehicle (SMV) emblem is installed on the rear of the machine.
2. Start the engine.



N156255—UN—14JUL21

- A—Beacon Light Switch
B—Headlight Switch
C—Hazard Light Switch

3. Press the headlight switch (B).
4. Press the hazard light switch (C).
5. Press the beacon light switch (A) (if equipped).
6. Check that the amber warning lights are flashing and that all lights are clean and visible.

IMPORTANT: If equipped with an air boom system, the machine may be damaged if transported with booms not lowered onto boom cradles.

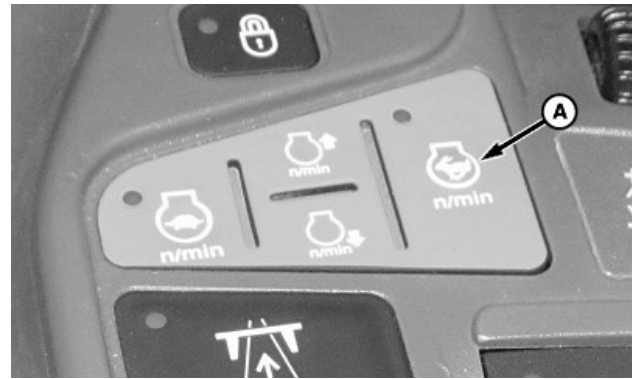
7. Fold the booms into transport position (if equipped).



N155658—UN—29JUN21

- A—Transport Lock Switch

8. Press the transport lock switch (A) to put the machine in transport mode.



N143241—UN—26FEB19

- A—High Idle Switch

9. Press the high idle switch (A) to achieve maximum engine set speed.
10. Select the appropriate set speed.

CAUTION: When transporting machine downhill at transport speeds, machine will try to hold the set speed until engine begins to overspeed. At this time, the vehicle speed could increase beyond set speed. Before starting down a hill, select a set speed that is appropriate for the load on the machine and the steepness and length of the slope.

IMPORTANT: Do not exceed the tire weight load ratings printed in this manual. Weigh the machine and verify maximum transport weight and speed from this manual before loading, and do not exceed published weights.

Refer to Wheels and Tires section of this manual for proper tire inflation recommendations. See Safety Signs section in this manual for guidelines on transporting the machine.

11. Push the multi-function lever slowly forward to start forward travel. Continue pushing the lever forward to increase ground speed.
12. To reverse direction of travel, move the multi-function lever to the PARK position. Verify that the machine comes to a complete stop, then move the multi-function lever to the reverse position to back up the machine. Reverse speed available is proportional to the distance the lever is moved.

ibhz6m2,1721711843130-19-07AUG24

US EPA Qualified Emergency Use — SCR Derate Override Option

NOTE: This is a US EPA only option.

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

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

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

Emergency SCR Derate Override enables a Selective Catalyst Reduction (SCR) equipped application to operate without emissions-related derates for a specified period of time during qualified emergency situations. A qualified emergency situation is one in which the condition of an engine's emission controls poses a significant direct or indirect risk to human life. An example of a direct risk is an emission control condition that inhibits the performance of an engine being used to rescue a person from a life-threatening situation. An example of an indirect risk is an emission control condition that inhibits the performance of an engine being used to provide electrical power to a data center that routes "911" emergency response telecommunications.

Emergency SCR Derate Override Activation / Reporting

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

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

- Contact name, mail and email addresses, and telephone number for responsible company or entity
- Description of the emergency situation, the location of the engine during the emergency, and the contact information for an official who can verify the emergency situation (such as a county sheriff, fire marshal, or hospital administrator)

- Reason for the Emergency SCR Derate Override activation during the emergency situation, such as the lack of diesel exhaust fluid, or the failure of an emission-related sensor when the engine was needed to respond to an emergency situation
- Engine's serial number
- Description of the extent and duration of the engine operation while the Emergency SCR Derate Override was active, including a statement describing whether or not the Override was manually deactivated after the emergency situation ended

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

LEGAL Notification

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

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

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

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

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

Electrical System Service

Basic Electrical Component Handling / Precautions For Vehicles Equipped With Computer Controlled Systems

Electrical Precautions To Take:

Never disconnect the batteries while the key switch is running. Why: This can cause electrical voltage spikes that can damage electronic components.

Do not connect jumper cables while the key switch is on. Why: This can cause electrical voltage spikes that can damage electronic components.

Disconnect batteries prior to recharging (if possible). Why: Electrical loads in the system can slow the recharging process. Battery chargers can cause electrical voltage spikes that can damage electronic components.

Never jump start the machine with a voltage higher than the machine is designed to operate on. Why: This can damage electronic components.

Do not connect or disconnect electrical connectors while the key switch is on or the machine is running. Why: This can cause computer system errors from interrupting a computer program while it is running and electrical voltage spikes that are produced can damage electronic components.

Do not apply power or ground to any component as a test unless specifically instructed to do so. Why: Connecting the wrong voltage to the wrong point of an electronic system can cause electronic component failures.

When welding on the machine, make sure to connect ground lead to the parts being welded. For maximum protection, disconnect all electronic controller connectors before welding. Why: High currents associated with welding can damage wiring harnesses that are involved in the ground path. Welding can also cause electrical voltage spikes that can damage electronic components.

Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90 degree angle.

EC82471,00000D9-19-27FEB20

Disconnect Battery (Final Tier 4 and Stage V Engines)

IMPORTANT: Do not disconnect battery on machines equipped with Final Tier 4/Stage V engines until Light Emitting Diode (LED) on the battery box has turned off. This indicates the diesel exhaust fluid (DEF) system purge is complete. If adequate time is not allowed for lines to be purged, any DEF remaining in lines can crystallize and plug lines. In freezing weather, DEF will freeze and possibly burst lines.

BN55050,0000255-19-23MAY18

Welding Near Electronic Control Units



TS953—UN—15MAY90

IMPORTANT: Do not jump-start engines with arc welding equipment. Currents and voltages are too high and may cause permanent damage.

1. Disconnect the negative (-) battery cable(s).
2. Disconnect the positive (+) battery cable(s).
3. Connect the positive and negative cables together. Do not attach to vehicle frame.
4. Clear or move any wiring harness sections away from welding area.
5. Connect welder ground close to welding point and away from control units.
6. After welding, reverse Steps 1—5.

DX,WW,ECU02-19-14AUG09

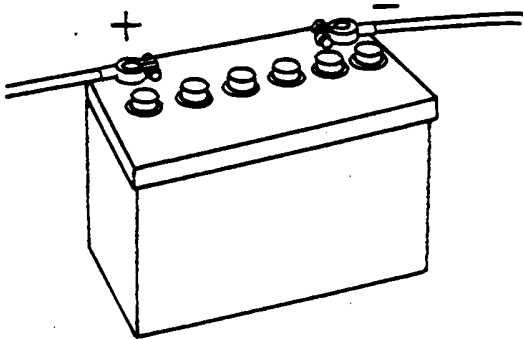
Keep Electronic Control Unit Connectors Clean

IMPORTANT: Do not open control unit and do not clean with a high-pressure spray. Moisture, dirt, and other contaminants may cause permanent damage.

1. Keep terminals clean and free of foreign debris. Moisture, dirt, and other contaminants may cause the terminals to erode over time and not make a good electrical connection.
2. If a connector is not in use, put on the proper dust cap or an appropriate seal to protect it from foreign debris and moisture.
3. Control units are not repairable.
4. Since control units are the components LEAST likely to fail, isolate failure before replacing by completing a diagnostic procedure.
5. The wiring harness terminals and connectors for electronic control units are repairable.

DX,WW,ECU04-19-11JUN09

Servicing Batteries



N36877—UN—07OCT88

CAUTION: Batteries can explode causing serious injury or death to you or others. Do not attempt to service batteries unless you have the proper equipment and experience to perform the job. Have it done by a John Deere dealer or other service provider.

Use John Deere batteries or an equivalent with a rating of at least 925 cold cranking amps at -18°C (0°F).

Proper battery maintenance is vital to dependable service. Keep battery water level even with bottom of cell filler neck and never below the top of cell plates. Do not add water in freezing weather unless engine is run 2 or 3 hours to mix electrolyte.

Keep batteries clean. Keep all connections clean and tight. Remove any corrosion, and wash terminals with solution of baking soda and water. Coat with grease prior to attaching cables.

Keep batteries fully charged, especially during cold weather.

IMPORTANT: BATTERY IS NEGATIVE GROUNDED. Always connect starter cable to positive (+) terminal of battery and battery ground cable to negative (-) terminal of battery. Reversed polarity in battery or alternator can result in permanent damage to electrical system.

EC82471,00000DC-19-24JUL25

Preventing Battery Damage

Be sure alternator connections are correct before cables are connected to battery.

Carefully observe polarity when attaching booster battery.

Do not operate the engine with alternator or battery disconnected.

Do not short across battery or alternator terminals, or allow battery positive (+) cable or alternator wire to become grounded.

Do not polarize the alternator.

Disconnect battery cables before using an electric welder on the machine.

Store batteries below 27°C (80°F) for maximum shelf life. Check voltage after storage, and recharge as needed, as recommended by battery manufacturer.

Do not store batteries in discharged state, or stack batteries on top of each other.

EC82471,00000DD-19-27FEB20

Operate a Booster Battery or Charger



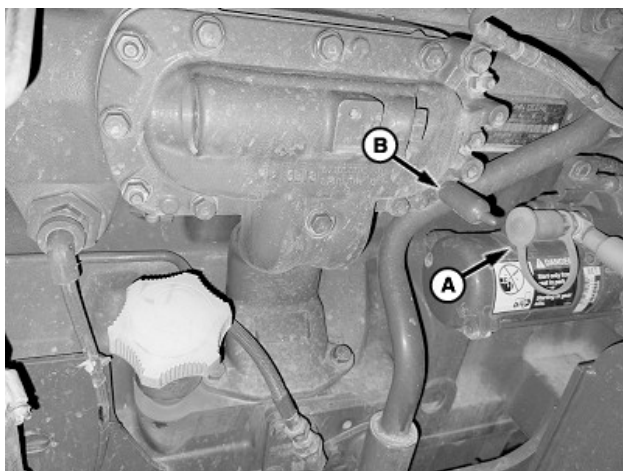
TS204—UN—15APR13

CAUTION: Gas given off by batteries is explosive. Keep sparks and flames away from batteries. Make last connection and first disconnection at a point away from booster batteries.

CAUTION: Be sure that polarity is correct before making connections. Reversed polarity damages electrical system or can cause an explosion of a battery.

If a booster battery is used, two or more batteries cannot be used in a series. They must be parallel. Be sure that polarity is correct before making connections. Reversed polarity damages electrical system or can cause an explosion of a battery.

Booster Battery



N156256—UN—14JUL21

A—Positive Terminal
B—Ground Terminal

1. Attach one cable (red) to the remote positive terminal (A) of the starter and positive terminal of the booster battery.
2. Attach the second (black) battery cable to negative terminal of the booster battery. Attach other end to the ground terminal (B) or ground stud on engine, if supplied.
3. Remove cable from the negative terminal first when disconnecting. Then disconnect the positive terminal.

Battery Charger

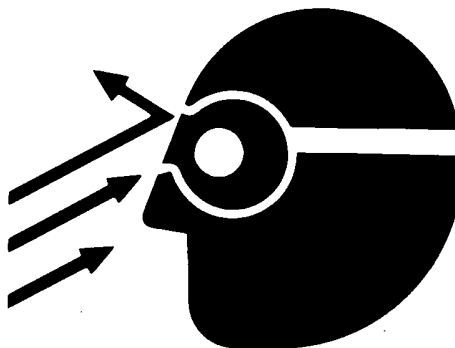
1. Attach the positive charger lead to the remote positive terminal (A) with the charger in OFF position. Attach the negative charger lead to the ground terminal (B).

IMPORTANT: Set battery charger at the nominal 12 V and no more than 16 V maximum.

2. Switch charger to ON and charge battery according to charger manufacturer's instructions.
3. Switch charger to OFF. Remove negative charger lead first, then positive lead.

TB90758,0002961-19-13JAN22

Safety Rules when Replacing Halogen Bulbs



TS266—UN—23AUG88



H59774—UN—30AUG99

A—Halogen Bulb

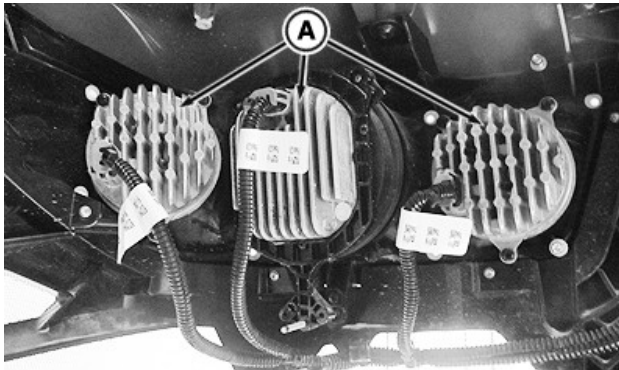
CAUTION: Halogen bulbs (A) contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. To avoid possible injury:

- Turn light switch OFF and allow the bulb to cool before changing bulbs. Leave switch OFF until the bulb change is complete.
- Wear eye protection when changing bulb.
- Handle bulb by its base. Wear protective gloves or avoid touching light bulb surface.
- Use a clean cloth and alcohol to remove any fingerprints from the glass bulb before installing. Skin oil deposited on bulb causes overheating and premature failure.
- Do not drop or scratch bulb.
- Keep moisture away from bulb.
- Do not operate the bulb outside of enclosure. The bulb has a high internal pressure and, if cracked or broken, it could explode and cause injury.
- Place used bulb in the new bulb carton and dispose of properly. Keep out of reach of children.

AYCXTDG,0000041-19-14JAN22

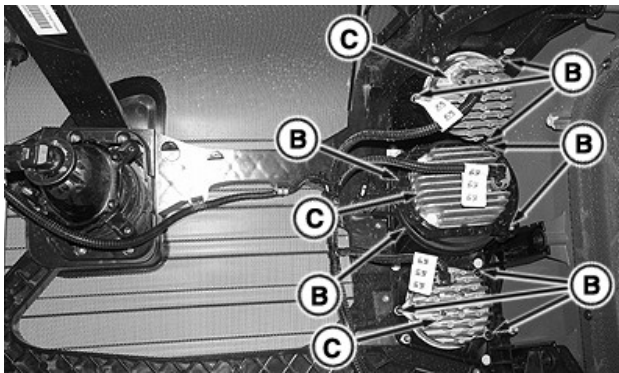
Replace Front LED Light Assembly

1. Raise the hood.



RXA0134245—UN—31JUL13

Right-Hand Side Shown



RXA0134248—UN—31JUL13

- A—Harness Connector (3 used)
- B—Screw (10 used)
- C—Light Assembly (3 used)

2. Disconnect the harness connector (A).
3. Remove screws (B) and light assembly (C).
4. Replace light assemblys.
5. Install new light assemblys in the reverse order of removal.
6. Close and secure hood.

TB90758,0002999-19-24JAN22

Replace Roof Worklights



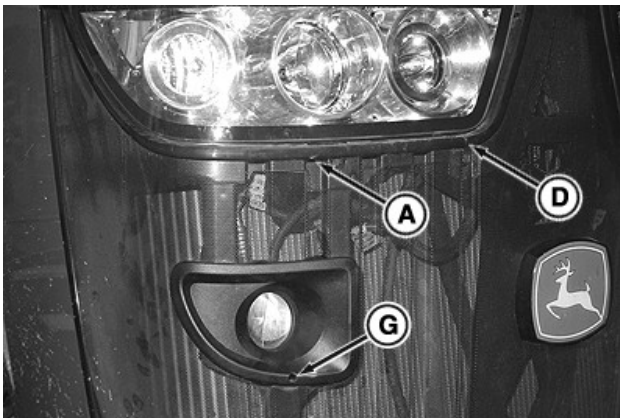
RXA0172759—UN—03DEC19

A—Slot

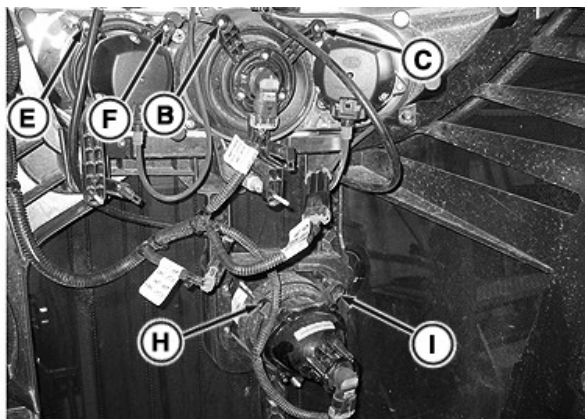
1. Using a flathead screwdriver, gently pry out and remove the light assembly at slot (A).
2. Disconnect the harness connectors.
3. Remove and replace the LED assembly.
4. Reassemble in the reverse order of removal.

AYCXTDG.000003E-19-24JAN22

Adjust Front Grille Lights



RXA0106698—UN—26FEB10



RXA0106696—UN—26FEB10

- A—High-Beam Lowering Adjustment Screw
B—High-Beam Tilt Up and Out Adjustment Screw
C—High-Beam Tilt Up and In Adjustment Screw

- D—Center Spot Lowering Adjustment Screw
E—Center Spot Tilt Up and Out Adjustment Screw
F—Center Spot Center Spot Tilt Up and In Screw
G—Low-Beam Lowering Adjustment Screw
H—Low-Beam Tilt Up and Out Adjustment Screw
I—Low-Beam Tilt Up and In Adjustment Screw

To adjust front grille lights, use the following steps as needed.

For High-Beam Headlights:

1. To lower the high-beam aim, turn the high-beam adjustment screw (A) clockwise.

To raise and tilt out high-beam, turn the high-beam adjustment screw (B) clockwise.

To raise and tilt in high-beam, turn the high-beam adjustment screw (C) clockwise.

For Center Spotlight:

2. To lower the center spotlight, turn the center spot adjustment screw (D) clockwise.

To raise and tilt out center spot beam, turn the center spot beam adjustment screw (E) clockwise.

To raise and tilt in center spot beam, turn the center spot beam adjustment screw (F) clockwise.

For Low-Beam Headlights:

3. To lower low-beam headlights aim, turn the low-beam adjustment screw (G) clockwise.

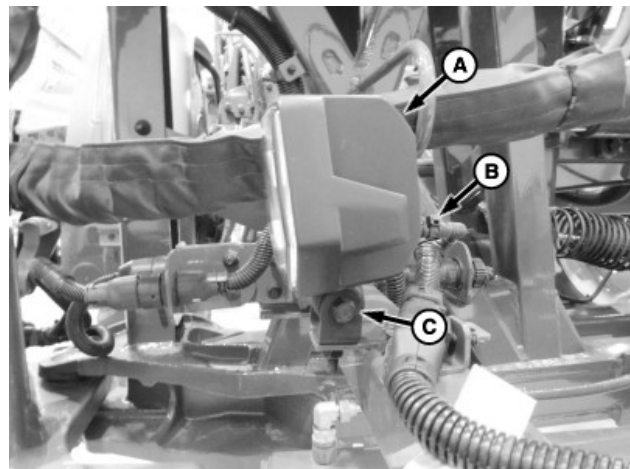
To raise and tilt out low-beam headlights, turn the low-beam adjustment screw (H) clockwise.

To raise and tilt in low-beam headlights, turn the low-beam adjustment screw (I) clockwise.

4. Repeat for the opposite side of sprayer.

TB90758.000299C-19-24JAN22

Replace Worklight LED Assembly



N153293—UN—03MAR21

- A—LED Assembly
B—Harness Connector

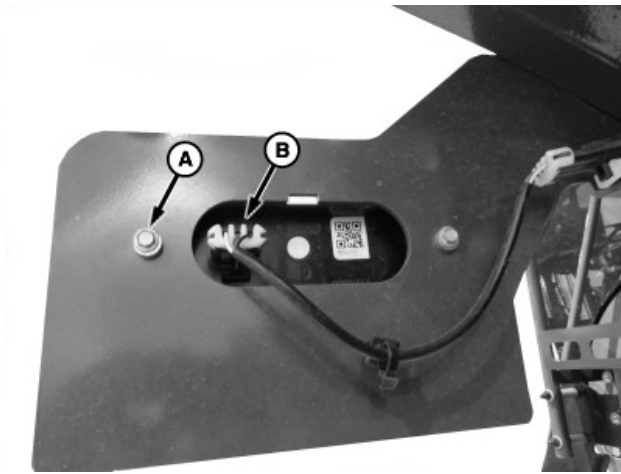
C—Cap Screw

1. Disconnect the harness connector (B).
2. Remove and retain cap screw (C).
3. Remove and replace the LED assembly (A).
4. Install in reverse order.

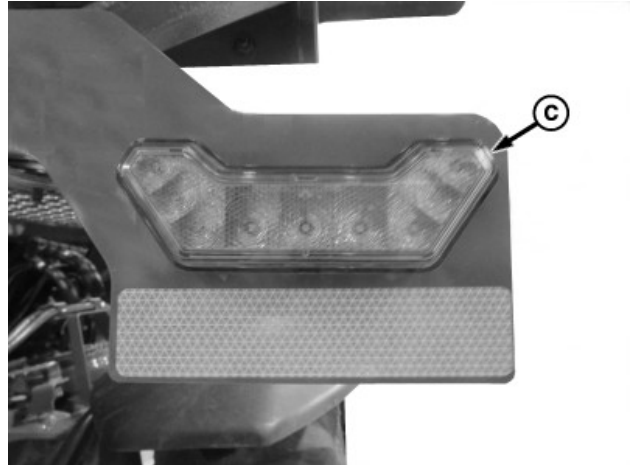
AYCXTDG.000003D-19-13JAN22

Replace Front (Amber) Lights (LED)

NOTE: Right-hand side is shown. The left-hand side is similar.



N153295—UN—03MAR21



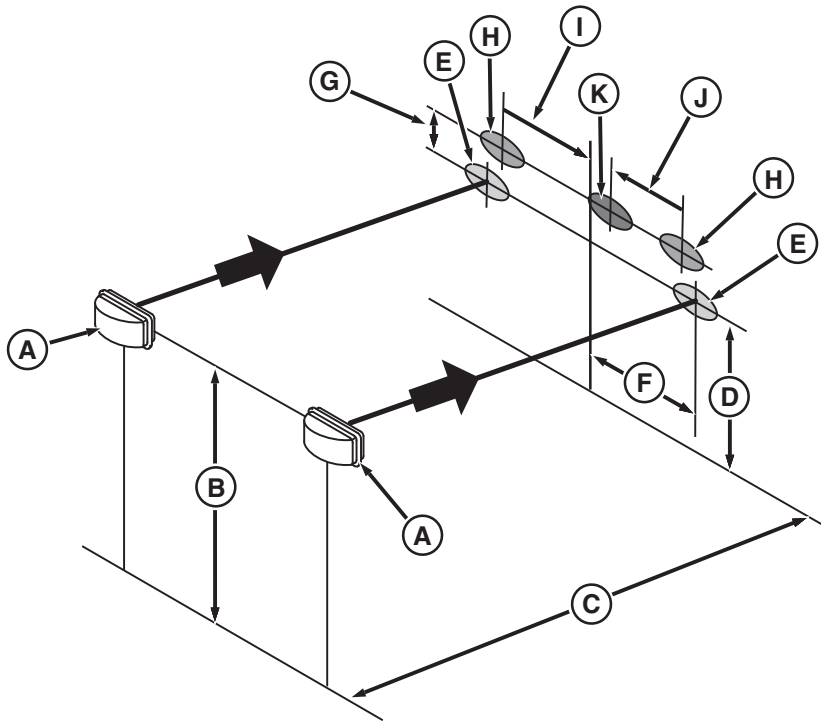
N153294—UN—03MAR21

A—Cap Screw (2 used)
B—Harness Connector
C—LED Light Assembly

1. Disconnect the harness connector (B).
2. Remove and retain cap screws (A).
3. Remove the LED light assembly (C).
4. Replace the light assembly and install in the reverse order of removal.

TB90758.00029A2-19-13JAN22

Aim Head Lights



RXA0107269—UN—03JUN10

A—Low Beam Road Lights
 B—Distance, Center of Low Beam Road Lights To Ground
 C—Distance, 7.5 m (25 ft)
 D—Horizontal Line on Wall
 E—Center of Low Beam Road Light
 F—Distance, 914 mm (36 in)
 G—Distance, 355 mm (14 in) (Center of Low Beam Road Light Beam To Center of High Beam)

H—Center of Road Lights High Beam
 I—Distance, 787 mm (31 in) (Road Light High Beam Center To Machine Center Line)
 J—Distance, 635 mm (25 in) (Road Light High Beam Center To Front Inner Flood Beam Center)
 K—Front Inner Hood Beam Center

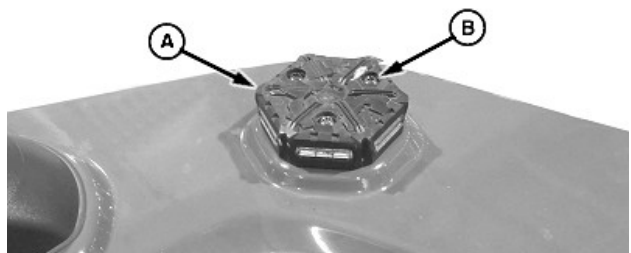
1. Park machine on a level surface with the low beam road lights (A) 7.5 m (25 ft) (C) from a vertical wall. Turn on the low beam road lights.
2. Measure the distance (B) from center of the low beam road lights to the ground.
3. Mark a horizontal line on the wall at the same height as center of the low beam road lights.
4. On the wall, mark each low beam road light beam center, then determine vertical center line between the low beam road light's beam.
5. On the wall, mark vertical center line.
6. Distance between the low beam road light's beam center and center line should be 914 mm (36 in) (F).
7. Turn on the high beam road lights.
8. Adjust high beam road lights so edge of bright area (H) is **at least** one tenth of distance (B) **above** center of the low beam road lights spot (E).
9. On the wall, mark each high beam road light beam

center (H), then determine vertical center line between the high beam road light's beam.

10. Distance between the high beam road light's beam center and center line should be 787 mm (31 in) (I).
11. Make sure that front inner hood lights are programmed on, then turn on field lights.
12. Distance between the high beam road light's beam center (K) and inner hood light center line should be 635 mm (25 in) (J).

TB90758,0001B72-19-11AUG16

Replace Beacon Light



Cab Rooftop

N154058—UN—09FEB21

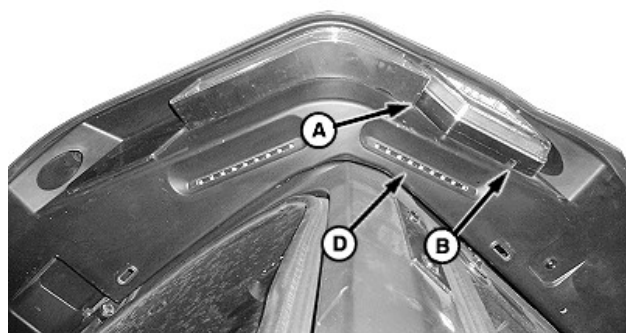


N154059—UN—09FEB21

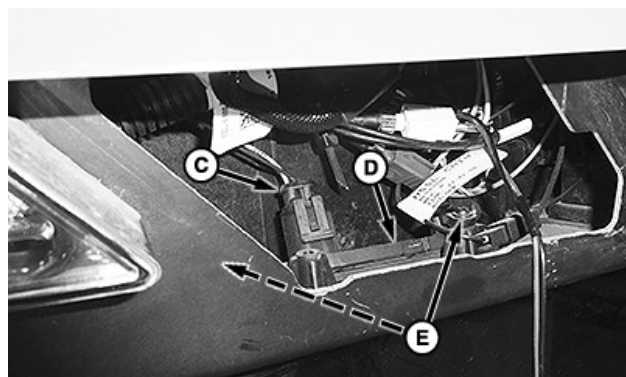
A—Beacon Light
B—TORX Head Cap Screw (3 used)
C—Harness Connector

1. Remove TORX head cap screws (B).
2. Disconnect the harness connector (C) and remove beacon light (A).
3. Replace beacon light as necessary and install in the reverse order of removal.

AYCXTDG,000003B-19-22OCT25



N160271—UN—13JAN22



N160135—UN—07JAN22

A—Cab Light
B—Location
C—Harness Connector
D—Courtesy Service Light Strip
E—TORX Head Screw (2 used)

1. Using a screwdriver, gently pry at location (B) to remove the cab light (A).
2. Disconnect the harness connector (C).
3. Remove TORX head screws (E).
4. Remove the courtesy service light strip (D).
5. Replace the light strip and install in the reverse order of removal.

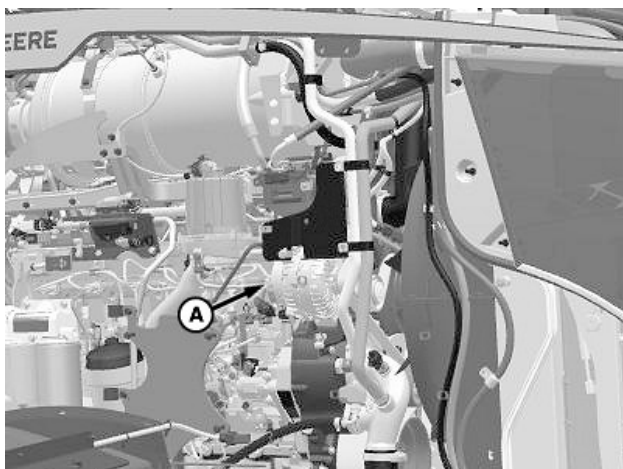
AYCXTDG,000003C-19-22OCT25

Replace Courtesy Service Light Strip

NOTE: There are eight courtesy service light strips located above each cab post on the outside of the cab roof.

Procedure for replacing one courtesy service light strip is shown. Remove the cab light above the courtesy light strip being replaced.

Safeguard Alternator and Regulator

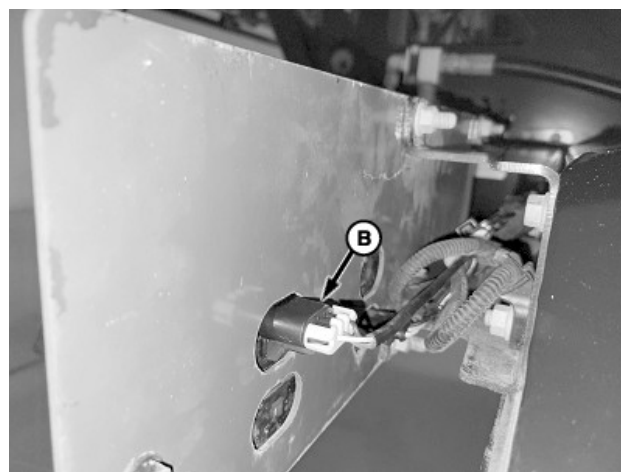


N156257—UN—14JUL21

A—Alternator

- Always disconnect the battery ground strap when working with the alternator (A) or regulator.
- Never attempt to polarize alternator to the regulator.
- Never ground the alternator field terminal or field circuit.
- Never connect or disconnect alternator or regulator wires with battery connected or alternator operating.

TB90758,0002962-19-13JAN22



N156259—UN—15JUL21

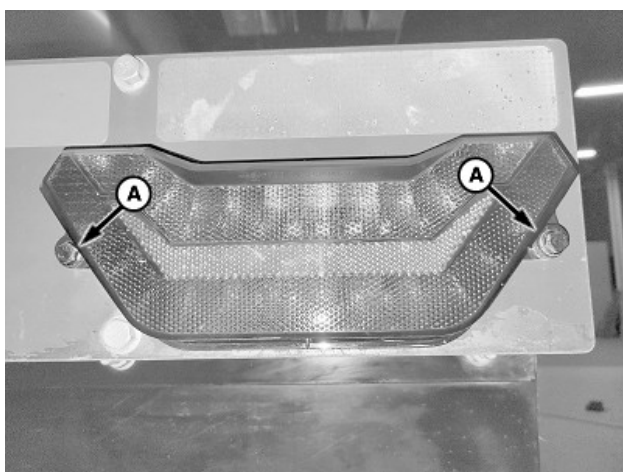
A—Screw (2 used)

B—Connector

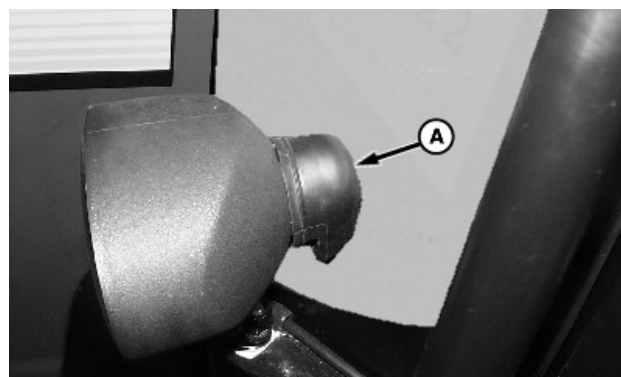
1. Remove two screws (A) and lens.
2. Disconnect the connector (B) to remove.
3. Install the replacement lens assembly.

TB90758,0002964-19-24JAN22

Replace Warning, Tail Light, and Turn-Signal Lights



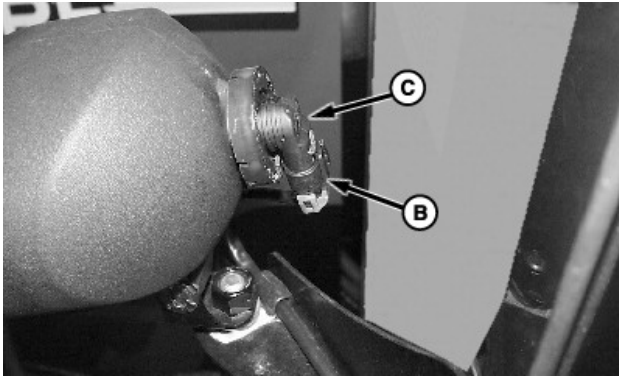
N156258—UN—15JUL21



N60070—UN—01AUG02

Replace Worklight Halogen Bulbs

NOTE: For important safety information regarding halogen bulbs, see *Safety Rules when Replacing Halogen Bulbs* in this section before performing this procedure.



N60697—UN—01AUG02

A—Boot
B—Harness Connector
C—Bulb Assembly

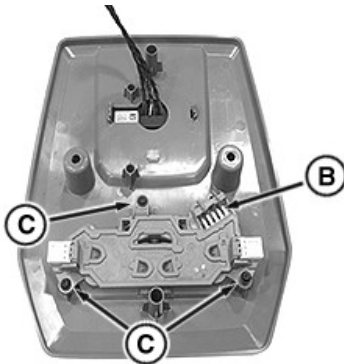
1. Remove rubber boot (A) if equipped.
2. Disconnect the harness connector (B) from bulb assembly (C).
3. Rotate the bulb assembly counterclockwise by approximately 1/4 of a turn and remove.
4. Install the replacement bulb in the reverse order of removal.

AYCXTDG,0000040-19-14JAN22

Replace Cab Dome Light



RXA0172763—UN—03DEC19



RXA0172764—UN—05DEC19

A—Screw (2 used)
B—Harness Connector
C—Screw (3 used)

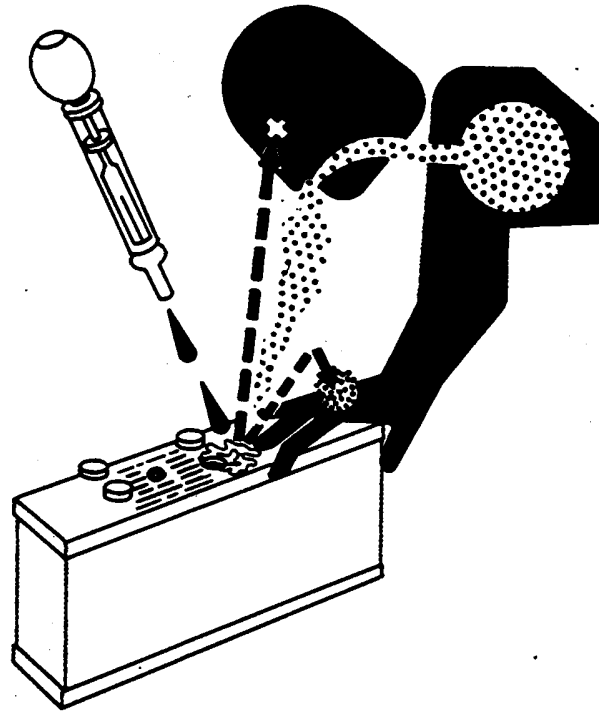
1. Remove screws (A).
2. Disconnect the harness connector (B).
3. Remove the screws (C) that retain the light assembly.
4. Remove and replace with a new light assembly.
5. Reassemble in the reverse order.

TB90758,0002909-19-13JAN22

Handling Batteries Safely



TS204—UN—15APR13



TS203—UN—23AUG88

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

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

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

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

Avoid hazards by:

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

If acid is spilled on skin or in eyes:

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

If acid is swallowed:

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

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

DX,WW,BATTERIES-19-02DEC10

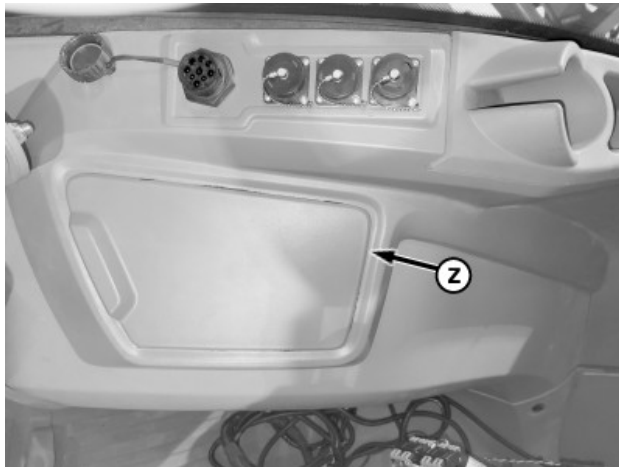
Fuse Identification

IMPORTANT: Do not replace the original fuse with a higher rated fuse or machine damage may occur. If the original size fuse does not carry electrical load and continues to blow, have the electrical system checked by a John Deere dealer or other service provider.

Fuse Rating	Color
3 A	Purple
5 A	Brown
10 A	Red
15 A	Blue
20 A	Yellow
25 A	Clear
30 A	Green

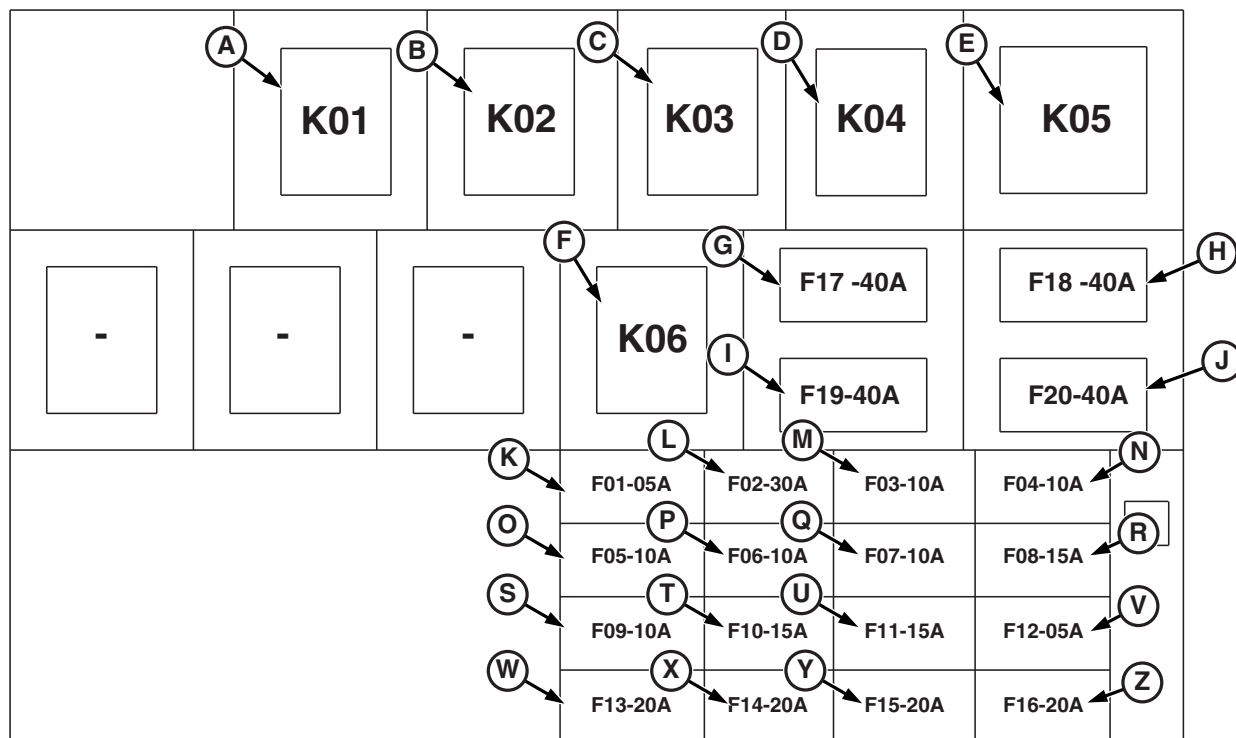
TB90758,00027E0-19-24JUL25

Replace Cab Load Center Fuses



N153288—UN—24FEB21

Cover



NX1397376—UN—20MAR25

A—K03—Auxiliary Power Relay
 B—K04—Amplifier, Mirror Relay
 C—F18—ActiveSeat Fuse (40 A)
 D—F20—Spare Fuse (40 A)
 E—F04—Lighter Fuse (10 A)
 F—F08—ARMC Fuse (15 A)
 G—F12—PDU Fuse (5 A)
 H—F16—Amplifier, Mirror Fuse (20 A)
 I—F11—GPS Fuse (15 A)
 J—F15—Auxiliary Unswitched Power Fuse (20 A)
 K—F03—ATC Fuse (10 A)
 L—F07—Auxiliary Switched Power Fuse (10 A)
 M—F06—Seat Top 3 Fuse (10 A)

N—F02—Seat Top 1 Fuse (30 A)
 O—F14—Seat Switch Fuse (20 A)
 P—F10—Server Fuse (15 A)
 Q—F13—Seat Top 2 Fuse (20 A)
 R—F09—Come-Home Fuse (10 A)
 S—F05—Radio Fuse (10 A)
 T—F01—Minipod Fuse (5 A)
 U—F19—Blower Fuse (40 A)
 V—F17—Inverter Fuse (40 A)
 W—K05—Blower Relay
 X—K01—Seat Relay
 Y—K02—Seat Relay
 Z—Cover

1. Cab load center is found in the right-hand cab side console. To access the load center, remove the cover (Z).

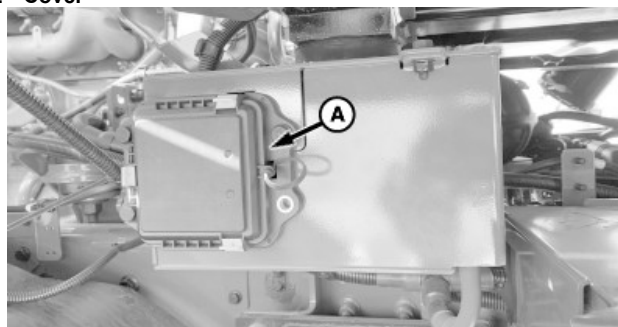
2. Replace fuses with like fuses.

NCHYUSK,1757357665606-19-28OCT25

Mid-Chassis Load Center

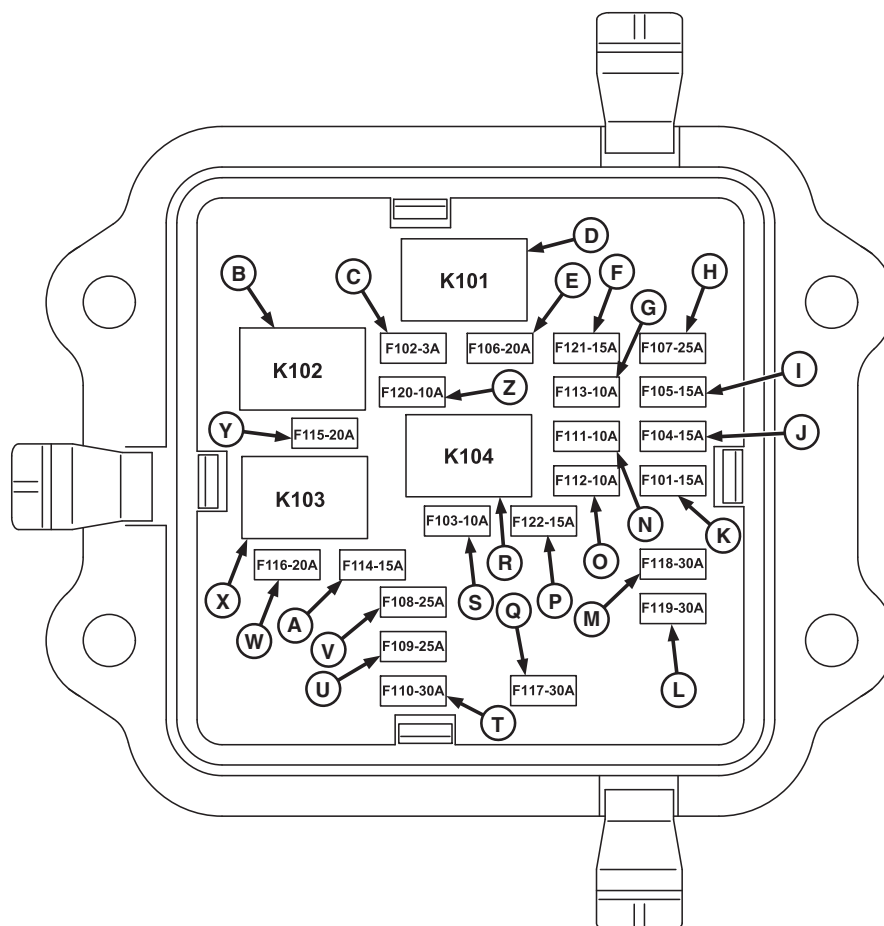
NOTE: Mid-chassis load center (A) is under the cab on the left-hand side of the chassis.

On the description list, "K" is for relay and "F" is for fuse.



A—Mid-Chassis Load Center

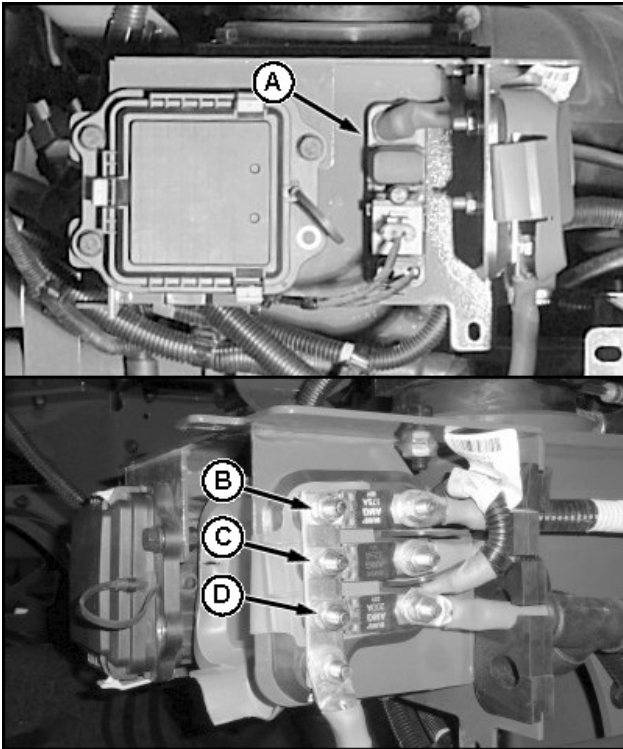
N156278—UN—12AUG21



Mid-Chassis Load Center

N156277—UN—10AUG21

A—F114—Not Used	N—F111—PODC B+ Fuse (10 A)
B—K102—Section Valve Left Relay	O—F112—Spray Rate Control (SRC) Unit B+ Fuse (10 A)
C—F102—CAN Fuse (3 A)	P—F122—Cold Start Fuse (15 A)
D—K101—Drive Control Unit (DCU) Power Relay	Q—F117—Direct Injection High-Volume Pump 1 Fuse (30 A)
E—F106—Drive Control Unit (DCU) Fuse (20 A)	R—K104—Cold Start Relay
F—F121—Spare Fuse (15 A)	S—F103—MTG Fuse (10 A)
G—F113—Boom Height Control (BHC) Unit B+ Fuse (10 A)	T—F110—Auxiliary Power Fuse (30 A)
H—F107—Engine Control Unit (ECU) Aftertreatment Fuse (25 A)	U—F109—Engine Control Unit (ECU) Engine Control Fuse (25 A)
I—F105—Foamer Fuse (15 A)	V—F108—Engine Control Unit (ECU) Application Fuse (25 A)
J—F104—Fuel Transport Pump Fuse (15 A)	W—F116—Section Valve Right (20 A)
K—F101—ATX Fuse (15 A)	X—K103—Section Valve Right Relay
L—F119—Direct Injection Low-Volume Pump Fuse (30 A)	Y—F115—Section Valve Left Fuse (20 A)
M—F118—Direct Injection High-Volume Pump 2 Fuse (30 A)	Z—F120—LCC B+ Fuse (10 A)



N201001—UN—07AUG24

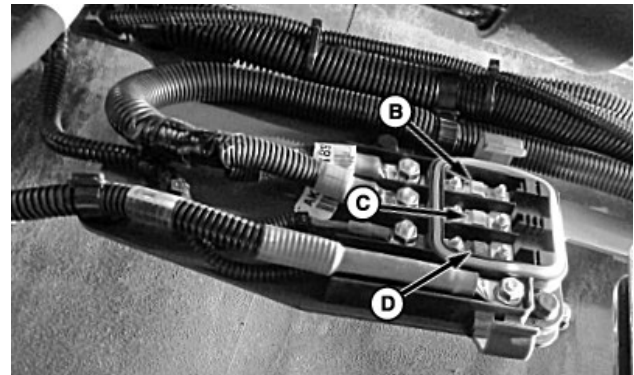
Cover Removed

- A—K101—Start Relay (60 A)
- B—F203—System Fuse (175 A)
- C—F201—OSDC Fuse (125 A)
- D—F202—Alternator Fuse (200 A)

TB90758,00029AD-19-07AUG24



N153923—UN—28AUG21



N153924—UN—28AUG21

- A—Fuse Cover
- B—F301—CABC B+ Fuse (40 A)
- C—F302—REAR Fuse B+ (40 A)
- D—F303—Boom Height Control (BHC), Spray Rate Control (SRC), and (BAC) Fuse (70 A)

1. Remove the fuse cover (A).
2. Replace or test fuses (B, C, and D) as needed.

OUC6092,0000FCA-19-09AUG25

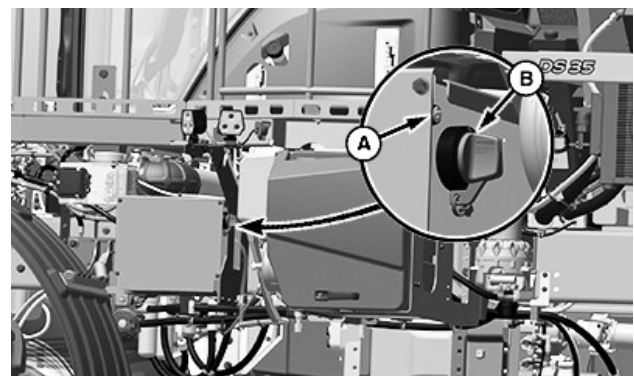
Replace Power Distribution Mid-Chassis Fuses

IMPORTANT: Do not attempt to disassemble a fuse unless instructed by a John Deere dealer or other service provider. Ensure both negative (-) and positive (+) battery connections are disconnected from both batteries before fuse inspection or replacement.

NOTE: Power distribution mid-chassis fuses are behind the storage box on the left-hand side of the chassis.

Battery Disconnect Switch

IMPORTANT: Do not disconnect battery on machines equipped with Final Tier 4 engines until light emitting diode (LED) (A) has turned off. The LED turning off indicates that the diesel exhaust fluid (DEF) system purge is complete.



N160164—UN—11JAN22

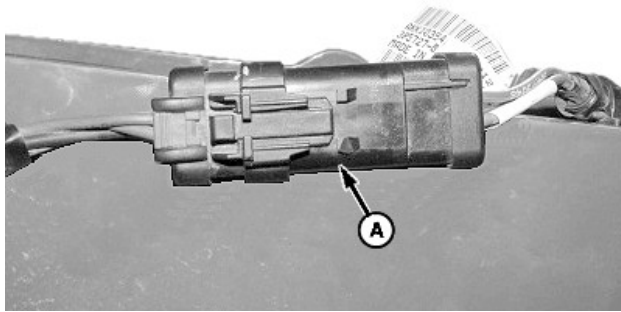
A—Light Emitting Diode (LED)

B—Handle

Rotate the battery disconnect switch handle (B) clockwise, as shown, to turn machine electrical system ON. Rotate handle counterclockwise to turn system OFF.

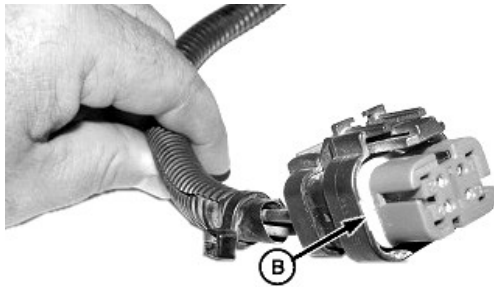
AYCXTDG,000003F-19-14JAN22

Electrical Connector Service



N105924—UN—20AUG13

Tyco Ampseal Connector



N105925—UN—20AUG13

- A—Tyco Ampseal Connector**
B—Connector Seal

The seal on Tyco Ampseal connectors (A) must be lubricated before connecting the connector after disassembly for troubleshooting, repair, or component replacement.

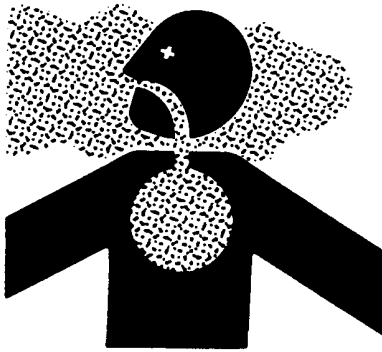
Apply dielectric grease to connector seal (B).

**Recommended Dielectric Grease—John Deere
AT66865 Dielectric Grease**

CS12167,00003F1-19-20AUG13

Cab and Air Conditioning

Avoid Exposure to Chemicals



TS220—UN—15APR13



TS272—UN—23AUG88

CAUTION: Exposure to chemicals, including pesticides, can cause injury or death.

DO NOT rely only on this cab, cab pressure indicator, or cab air filters to protect against chemical exposure.

To reduce risk of chemical exposure:

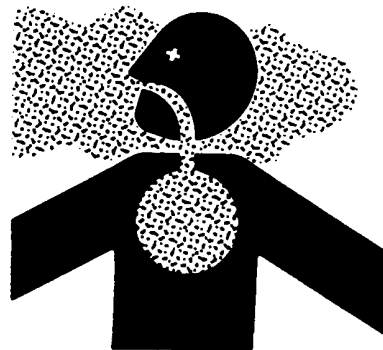
- Wear personal protective equipment in accordance with chemical manufacturer's label.
- Allow only trained, certified applicators to apply chemicals.
- Always close the windows and doors during application.
- Verify that John Deere activated carbon filters, or appropriate substitutes, are installed at all times (see Check and Replace Cab Air Filter in this section).
- Keep chemicals out of the cab.
- Clean or remove contaminated shoes or clothing before entering the cab.
- Keep cab interior clean.
- Read and follow all instructions in:
 - Manufacturer's label for each chemical applied.
 - U.S. Environmental Protection Agency (EPA) Worker Protection Standard for Agricultural Pesticides.
 - State or regional guidelines for worker safety and health.

- Operator's Manual for this machine.

- Numerous requirements must be met, including but not limited to EPA regulations.
- Even while inside cab, always wear long sleeves, long pants, shoes, and socks when applying chemicals, including pesticides.
- If necessary to leave cab when chemicals, including pesticides, are present, always use personal protective equipment recommended by chemical manufacturer.
- Before reentering cab, remove personal protective equipment used to handle chemicals, including pesticides, and store equipment in accordance with EPA guidelines to prevent contaminating cab.

TB90758,0002966-19-25JAN22

Avoid Contact with Agricultural Chemicals - Cab Category 1, 2, 3, and 4 According to EN 15695-1



TS220—UN—15APR13



TS272—UN—23AUG88

CAUTION: Read the information and be aware about the machine cab category stated on the label placed inside the cab.

Category 1 cabs do not provide a specified level of protection against hazardous substances.

Europe Only – tractors or other machines fitted with this cab shall not be used under conditions requiring protection against hazardous substances.

Category 2 cabs provide protection against dust.

Europe Only – tractors or other machines fitted with this cab shall not be used under conditions requiring protection against aerosols and vapors.

Category 3 cabs provide protection against dust and aerosols.

Europe Only – tractors or other machines fitted with this cab shall not be used under conditions requiring protection against vapors.

Category 4 cabs provide protection against dust, aerosols, and vapors.

If utilizing a cab with a rating less than Category 4 under conditions requiring protection, the operator must follow the chemical manufacturer's label instructions to protect against dust, aerosols, and vapors when the cab does not provide protection.

Follow the product label provided by the chemical manufacturer for proper use of personal protective equipment.

Follow operational and service instructions for cab and recommended filter replacement intervals.

NOTE: EN 15695-1 is a European Union regulation that defines cab requirements. If this machine is used outside of the European Union, consult national, regional, and local regulations.

1. If the pesticide-use instructions require respiratory protection and do not specify the cab category according to EN 15695-1, and the filter according to EN 15695-2, wear an appropriate respirator inside the cab.
2. When operating in an environment where pesticides are present, wear a long-sleeved shirt, long-legged pants, shoes, and socks.
3. Wear personal protective equipment as required by the pesticide-use instructions when leaving the enclosed cab:
 - To enter a treated area.
 - To work with contaminated application equipment, such as nozzles, which must be cleaned, changed, or redirected.
 - To become involved with mixing and loading activities.
4. Before reentering the cab, remove protective equipment and store outside the cab. If the machine is equipped with a protective clothing locker, store protective equipment in the used side of the locker.
5. To prevent soil or other contaminated particles from

entering the cab, clean shoes or boots before entering.

6. Never store chemical containers inside the cab.
7. Always close the windows and doors during spraying to generate an overpressure inside the cab, preventing polluted air from entering the cab.

TB90758,0002967-19-25JAN22

Clean Cab Windows and Service Wiper

- Use landing on left-hand side of machine to clean front, left-hand, and rear cab windows. Use appropriate cleaning tools to reach front and rear glass from landing if necessary.

IMPORTANT: Do not manually move wiper arm. Doing so could cause damage to the wiper mechanism.

- Use landing for replacing and servicing windshield wiper.

⚠ CAUTION: Avoid serious injury from falling. Do not stand on fuel tank.

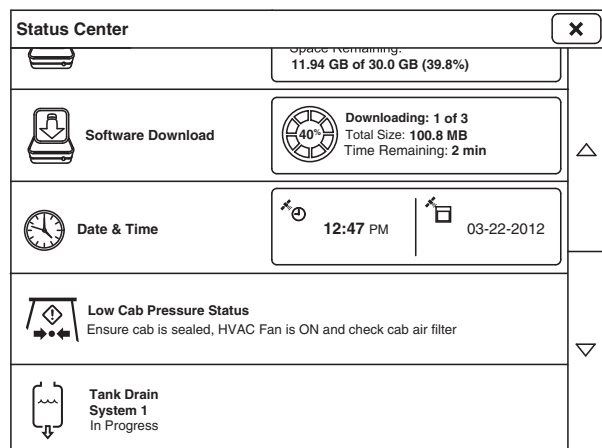
- Use a commercial ladder to access the right-hand window for cleaning. If necessary, use a suitable tool with extension.

TB90758,0002968-19-25JAN22

Cab Pressure Indicator

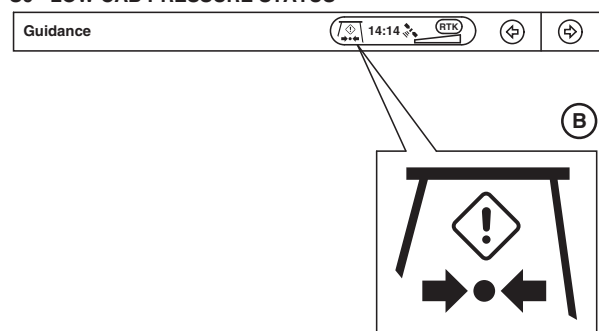
⚠ CAUTION: Exposure to chemicals, including pesticides, can cause injury or death. Wear personal protective equipment in accordance with the chemical manufacturer's label.

DO NOT rely only on this cab, cab pressure indicator, or cab air filters to protect against chemical exposure.



N154902—UN—30MAR21

S6 - LOW CAB PRESSURE STATUS



N154903—UN—30MAR21

A—Machine Display
B—Cab Pressure Icon

Cab air pressure is indicated in the status screens of machine display (A). If cab pressure is low, the cab pressure icon (B) will appear in the machine status bar.

Air pressure indicator icon assists in identifying air flow through the fresh air filter and potential leaks in cab seals. If the cab pressure icon appears in the status bar while the door and windows are closed and the blower is ON, refer to Troubleshooting section of this manual.

TB90758,0002969-19-26JUL21

filters, or appropriate substitutes, are installed at all times.

TB90758,000280C-19-25MAR21

Check and Replace Cab Air Filter

CAUTION: The use of activated carbon filters in the air-ventilation system of the operator's cab does not protect against damage to your health caused by toxic chemicals. Before working with chemicals, review and comply with the warning and handling instructions of the manufacturer for the chemicals used and take the recommended actions to protect yourself and the environment against damage. Chemicals must be stored and transported only in properly closed containers that are specified for the purpose. Do not store or transport these containers inside the operator's cab. For detailed instructions, refer to the documentation provided by the manufacturer.

IMPORTANT: Activated carbon filters must be replaced after 500 operating hours or after one year (whichever comes first). Heavy-duty operation can require shorter service intervals. Therefore, check the condition of the filter elements regularly. Activated carbon filters must NOT be cleaned (for example, with compressed air). Instead, they must be replaced by new filter elements immediately when the filtering effect decreases. Dispose of used filters in accordance with regional regulations.

Recirculation Air Filter

IMPORTANT: DO NOT clean filter. Replace filter at the service interval or when performance indicates.

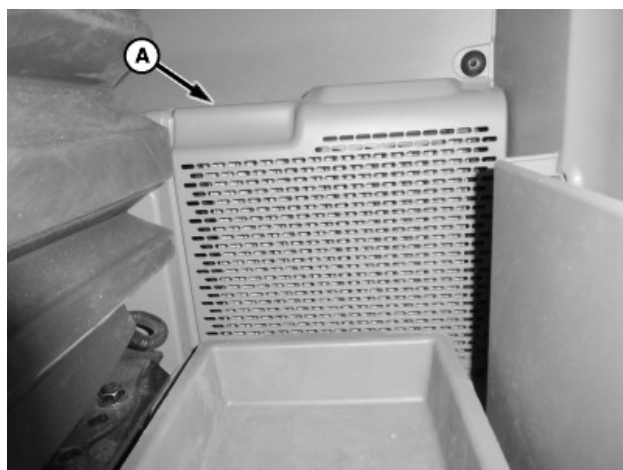
NOTE: Use John Deere activated carbon air filter or appropriate substitute. Contact a John Deere dealer or other service provider.

Cab Air Filters

CAUTION: Exposure to chemicals, including pesticides, can cause injury or death. Wear personal protective equipment in accordance with chemical manufacturer's label.

DO NOT rely only on this cab, cab pressure indicator, or cab air filters to protect against chemical exposure.

Cab air filters reduce amounts of dust and contaminants in cab. Make sure that John Deere activated carbon



N154895—UN—15MAR21

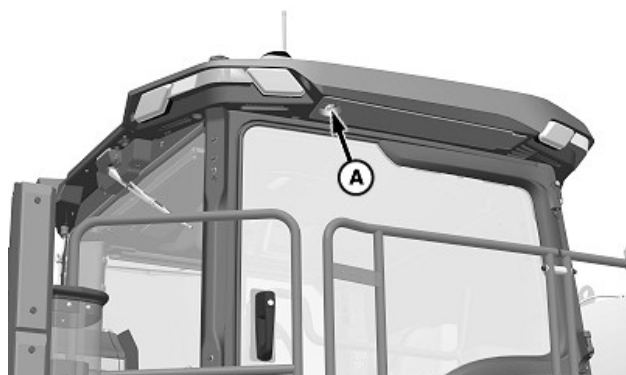


N154898—UN—16MAR21

- A—Filter Cover**
B—Frame
C—Filter Element

1. Remove filter cover (A) from rear left-hand side of cab.
2. Remove frame (B) and filter element (C).
3. Inspect filter for holes, seal damage, and other damage. Replace filter if any damage is detected. In dusty conditions, this service can be required more often.
4. Install filter, frame, and filter cover.

Cab Fresh Air Filter



N153852—UN—25JAN21



N153882—UN—25JAN21

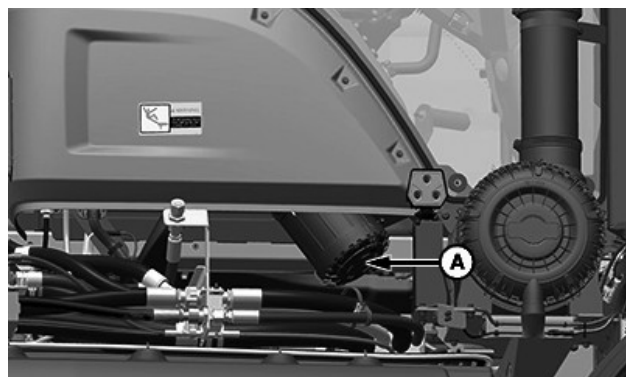
- A—Filter Housing**
B—Air Filter

NOTE: The fresh air filter is only present on machines not equipped with a Cat 4 filter.

1. Turn handle on the filter housing (A), under the left-hand side of the cab.
2. Verify that air filter (B) is installed.
3. Install the filter housing cover.

Cat 4 Filters

NOTE: Cat 4 filter has a one-year replacement interval.



N160493—UN—21JAN22

1. Remove cover (A).
2. Install replacement Cat 4 filter (B).
3. Replace cover.
4. Record date and engine hours on chart.

[illegible]

TB90758,000296B-19-09AUG25

X9811—UN—23AUG88

CAUTION: Escaping refrigerant under pressure can penetrate eyes and skin, causing serious injury to you or others. Do not attempt to repair or service refrigerant system. (Contact a John Deere dealer or other service provider.)

IMPORTANT: R-134a refrigerant must be used. This requires special equipment and procedures. (Contact a John Deere dealer or other service provider.)

NOTE: Some oil seepage from the compressor shaft seal on the lower front is normal.

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

If air conditioner clutch slips after machine has been in storage, compressor may be stuck. Stop engine and turn key switch to OFF position. Remove clutch cover. Rotate clutch hub back and forth to free compressor.

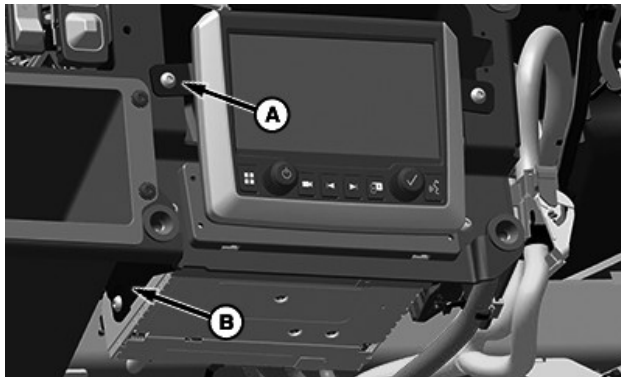
Run engine at 2000 rpm. Turn on the air conditioner and set the fan to high speed. (See HVAC section.)

If cooling is intermittent, clean grille, side screens, radiator, and condenser. If the problem persists, contact a John Deere dealer or other service provider to have the evaporator core cleaned.

Inspect cab body filters for restriction. Replace filters if any damage or blockage is detected. (See Check And Replace Cab Air Filter in this section.) If the problem is not solved, contact a John Deere dealer or other service provider.

TB90758.000296C-19-09AUG25

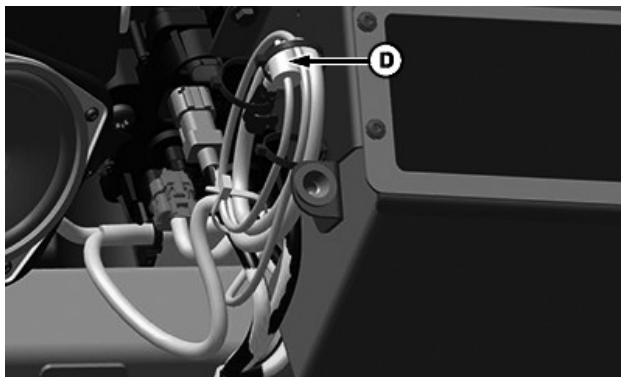
Installing Mobile Radio and Antenna



N160161—UN—06JAN22
Radio Brackets—Headliner Removed to Show Location



N160162—UN—06JAN22
Radio Power/Ground Cable behind Rear Corner Post Cover



N160163—UN—06JAN22
Antenna Coaxial Cable Coiled near Storage Compartment
—Headliner Removed to Show Location

- A—Upper Radio Bracket
- B—Lower Radio Bracket
- C—Radio Power/Ground Cable
- D—Antenna Coaxial Cable

CAUTION: Under no circumstances should business band radio antenna be mounted to rear of cab or antenna cable be routed near harness for electrical system controllers or operator controls. Failure to follow these precautions could expose operator to radio frequency energy levels higher than recommended by American National Standards Institute (ANSI) and/or could cause undesirable performance of electronically controlled systems.

CAUTION: Prevent possible personal injury. Disconnect battery ground cable before any electrical repair.

NOTE: Only machines equipped with mobile radio mounting and wiring option from factory have business band bracket behind headliner and antenna cables behind right rear corner post cover. Contact a John Deere dealer or other service provider for business band radio and antenna Installation Instructions.

Custom Installation

Custom CB or business band radio installation requires special tools and skills to tune antenna for lowest possible VSWR. Qualified professional should be employed or consulted before attempting installation. Contact a John Deere dealer or other service provider for recommendations. The following specifications are useful to installer.

Specifications for Factory-Installed Radio Installation Kit

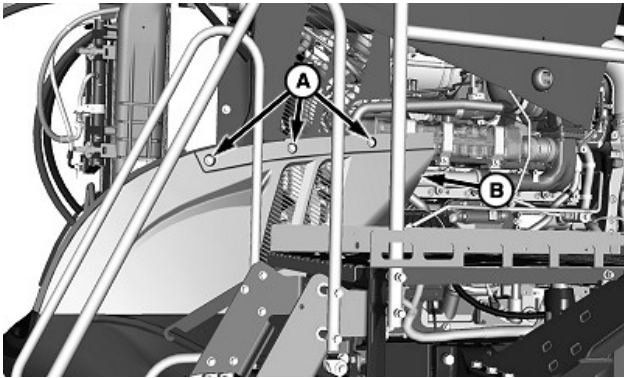
- Roof Antenna Mount: MNO type.
- Cable Specifications: Cable length is 3.6 m (11.8 ft.) from antenna mount to PL-259 radio connector. RG-58/U cable has 50 ohms intrinsic impedance.
- Roof Ground Plane: Grounded large antenna counterpoise foil under green cab roof allows installation of either $\frac{1}{4}$ or $\frac{1}{2}$ wave antenna.
- CB Antenna: Normal CB antenna can be attached to factory-installed MNO antenna mount through use of an appropriate adapter. Special CB antenna already equipped with MNO base may alternatively be used.

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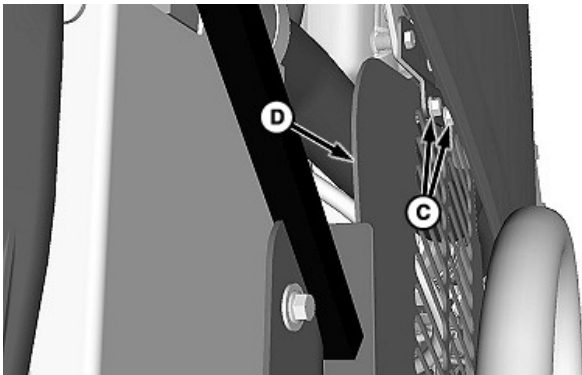
Engine and Drivetrain

Replace Fan Belt

NOTE: Fan drive belt is equipped with an automatic tensioner that does not require adjustment.



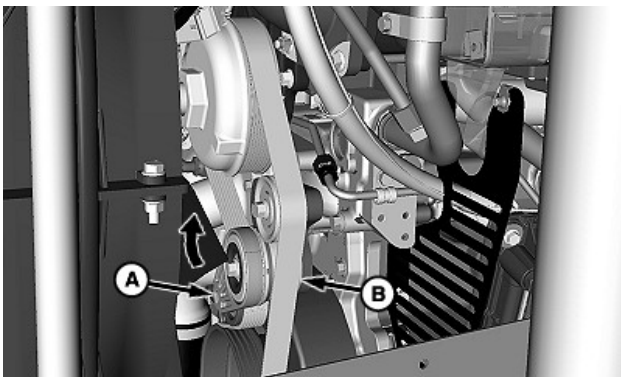
N103028—UN—10APR13



N103029—UN—10APR13

A—Cap Screw (3 used)
B—Left-Hand Engine Side Shield
C—Cap Screw (2 used)
D—Fan Shield

1. Raise hood.
2. Remove cap screws (A) and left-hand engine side shield (B).
3. Remove cap screws (C) and fan shield (D).

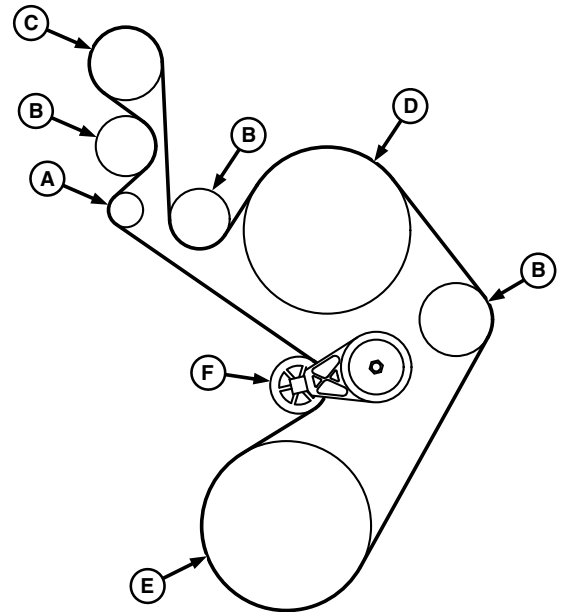


N103030—UN—10APR13

A—Tensioner
B—Belt

4. Install 13 mm (1/2 in) breaker bar in tensioner (A).
5. Rotate tensioner clockwise to release belt tension.

6. Remove belt from pulleys and carefully release the tensioner.



N121325—UN—25JAN16

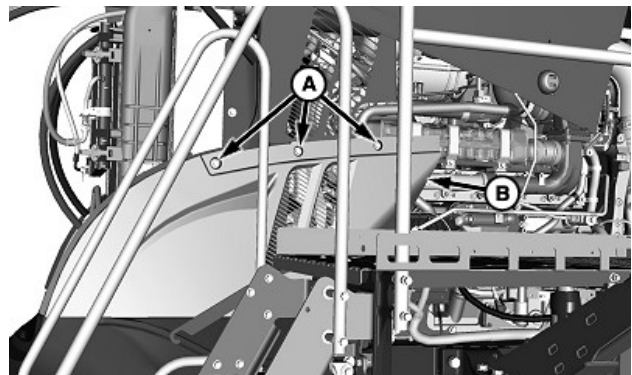
Fan Belt Routing

A—Alternator Pulley
B—Idler Pulley (3 used)
C—AC Compressor Pulley
D—Fan Pulley
E—Drive Pulley
F—Tensioner Pulley

7. Replace belt and route as shown.
8. Install fan shield and left-hand engine side shield.

PR79369.0000786-19-31JAN22

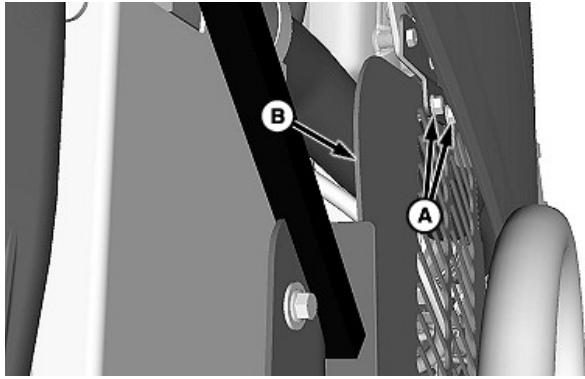
Inspect Fan Belt Tensioner



N103028—UN—10APR13

A—Cap Screw (2 used)
B—Left-Hand Engine Side Shield

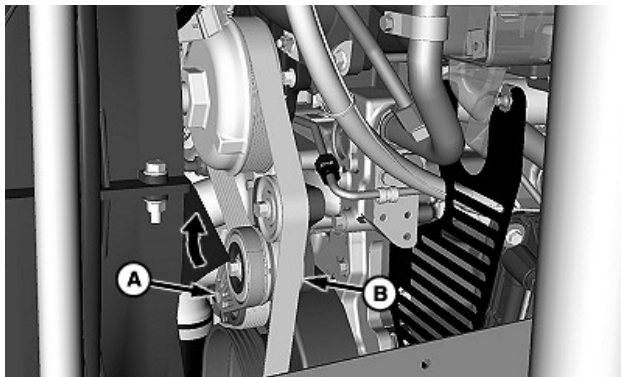
1. Raise hood.
2. Remove cap screws (A) and left-hand engine side shield (B).



N128886—UN—01MAR17

A—Cap Screw (2 used)
B—Fan Shield

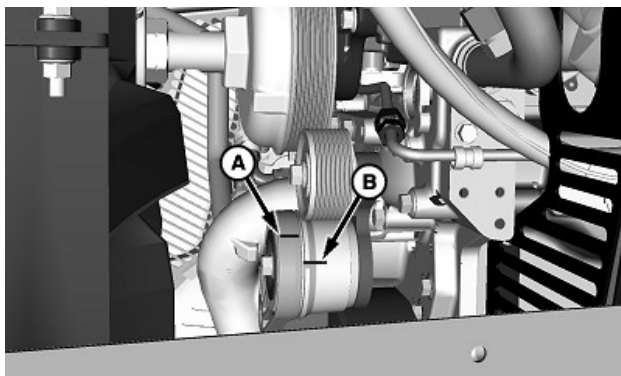
3. Remove cap screws (A) and fan shield (B).



N103030—UN—10APR13

A—Tensioner
B—Belt

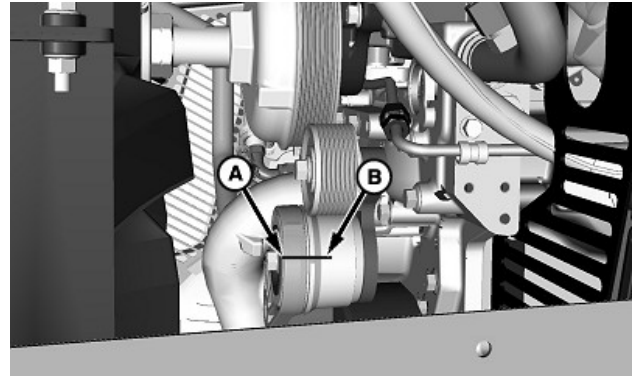
4. Install 13 mm (1/2 in) breaker bar in tensioner (A).
5. Rotate tensioner clockwise to release belt tension.
6. Remove belt (B) from pulleys and carefully release the tensioner.



N103031—UN—10APR13

A—Mark on Tensioner
B—Mark on Bracket

7. Place mark on the tensioner arm at (A).
8. Measure 21 mm (13/16 in) from mark (A) and put a mark (B) on mounting bracket.



N103032—UN—10APR13

Aligned Marks

A—Mark on Tensioner
B—Mark on Bracket

9. Rotate tension arm with torque wrench until marks (A and B) align. If torque wrench measurement is not within specification, replace tensioner mechanism. (Contact a John Deere dealer or other service provider.)

Specification

Tension Arm—Torque. 18—23 N·m
(159—204 lb·in)

10. Install belt and side shield.

11. Lower hood.

PR79369,0000787-19-09AUG25

Do Not Modify Fuel System

IMPORTANT: Increasing horsepower, or altering any aspect of fuel and air delivery on emissions certified engines beyond the factory rating, will cause emission levels beyond what is approved by United States Environmental Protection Agency (EPA). Violations of EPA regulations may result in substantial fines to persons or companies committing such violations.

John Deere dealers are in violation of their dealer agreement if found to be altering power levels of John Deere equipment. A John Deere dealer that is found to have altered power may be subject to legal action.

Machine warranty is void if power level is changed from factory specifications.

Do not attempt to service injection pump or fuel injectors yourself. Special training and special tools are required. Contact a John Deere dealer.



N122807—UN—21APR16

Never steam clean or spray water on a warm injection pump. This could cause damage to pump parts.

PR79369,0000788-19-17NOV25

Do Not Open High-Pressure Fuel System



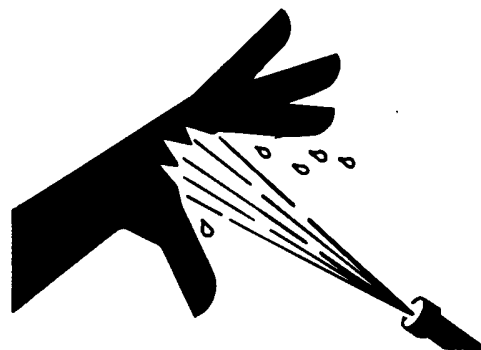
TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. Only technicians familiar with this type of system should perform repairs. 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.

DX,WW,HPCR1-19-07JAN03

⚠ CAUTION: High-pressure fluid remaining in fuel lines can cause serious injury. Only technicians familiar with this type of system should perform repairs. Before disconnecting 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, wait a minimum of 15 minutes after engine is stopped.

IMPORTANT: Do not attempt to pressurize the fuel tank with compressed air or any other means. Fuel tank and surrounding structural damage could result.



TS1343—UN—18MAR92

Engine must be allowed to sit for at least 15 minutes before beginning work on fuel system. This allows fuel system to bleed off internal high pressure.

PR79369,0000789-19-31JAN22

Relieve Fuel System Pressure

⚠ CAUTION: Escaping diesel fuel under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve pressure. Before applying pressure to the system, be sure ALL connections are tight and lines, pipes, and hoses are not damaged. Keep hands and body away from pinholes and nozzles that eject fluid under pressure. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

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.

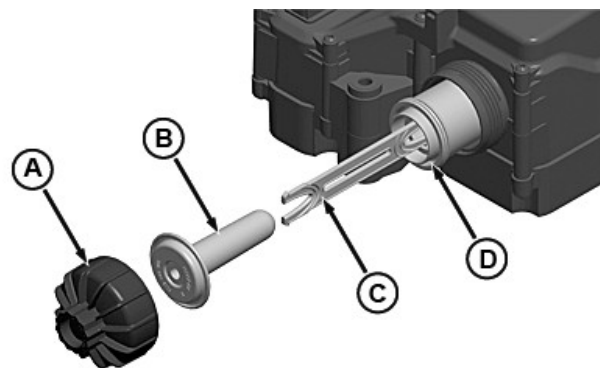
4. **Early version:** Change DEF dosing unit filter and DEF tank header suction screen.

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

Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter



RG22534—UN—21MAR13

DEF Dosing Unit Filter

- A—DEF Dosing Unit Filter Cover
- B—DEF Dosing Unit Filter Equalizing Element
- C—DEF Dosing Unit Filter Tool (supplied with new filter)
- D—DEF Dosing Unit Filter

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

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

Spilled DEF, if left to dry or if only wiped away with a cloth, leaves a white residue. Improperly cleaned DEF spill can interfere with diagnosis of Selective Catalytic Reduction (SCR) system leakage problems.

NOTE: 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.

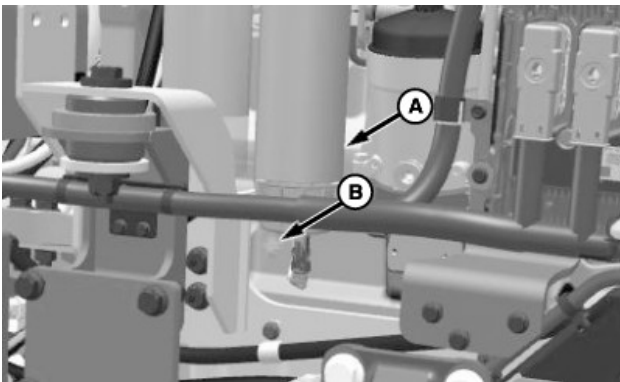
4. Pull DEF dosing unit filter tool and DEF dosing unit filter from DEF dosing unit. Discard DEF dosing unit filter and DEF dosing unit filter tool.
5. Clean DEF dosing unit threads and mating surfaces with distilled water.
6. Lubricate DEF filter O-rings with clean DEF. Carefully insert DEF dosing unit 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

Drain Water Separator—Daily



Water Separator

N155023—UN—19APR21

- A—Primary Filter
B—Drain Valve

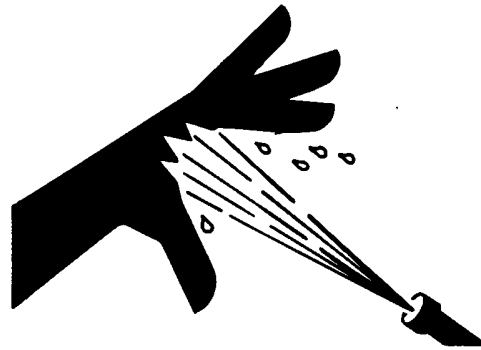
IMPORTANT: When draining water from fuel filters, the drain valve must be unthreaded completely. Also, the valve must drop down approximately 12 mm (0.5 in) to drain water properly from the filter.

Drain water and contaminants from the water separator bowl by opening the drain valve (B) on the primary filter (A).

IMPORTANT: Replace fuel filters if an excessive amount of water or sediment is present. (See Replacing Fuel Filters in the Engine and Drivetrain section.)

TB90758,000296E-19-26JUL21

Replace Fuel Filters—500 Hours



TS1343—UN—18MAR92

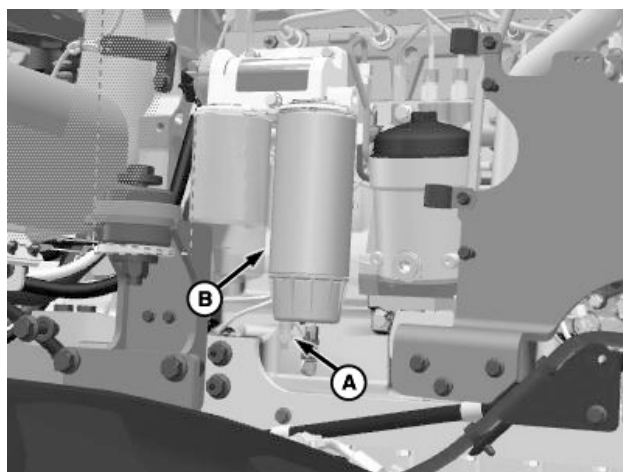
CAUTION: High-pressure fluid remaining in fuel lines can cause serious injury. Only technicians familiar with this type of system should perform repairs. Before disconnecting fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with high-pressure common rail (HPCR) fuel system, wait a minimum of 15 minutes after engine is stopped.

1. Thoroughly clean the exterior of the filter elements and filter mounting areas.

CAUTION: Fuel in filters may be under pressure. Open valve (A) on bottom of the water separator bowl to relieve pressure before removing the filter.

NOTE: Use a suitable container to catch fuel when draining or removing fuel filters.

NOTE: Fuel/water separator is part of fuel filter assembly.



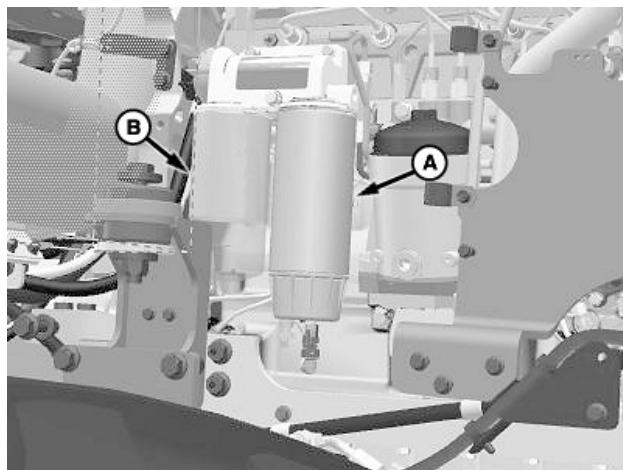
N155667—UN—14JUL21

A—Drain Valve
B—Primary Fuel Filter

2. Open drain valve (A) to remove water and contaminants from the primary fuel filter (B). Catch contents in a suitable container.

IMPORTANT: Always replace both filters at the same time.

NOTE: Additional fuel drains from filter housings.



N156260—UN—15JUL21

A—Primary Fuel Filter
B—Secondary Fuel Filter

3. Rotate primary fuel filter (A) counterclockwise to remove it from housing.
4. Rotate secondary fuel filter (B) counterclockwise to remove it from housing.

IMPORTANT: DO NOT pre-fill either fuel filter with fuel.

5. Lubricate filter seals with diesel fuel and install filters.
6. Bleed fuel system. (See Bleed Fuel System in this section.)

PR79369,000078A-19-19JAN22

Bleed Fuel System

1. Turn key switch to RUN position to start electric fuel pump and bleed air from fuel system.
2. Allow pump to run for 60 seconds before starting machine.
3. Start engine and run at 1200 rpm for 2 minutes.

PR79369,000078B-19-19JAN22

Service Air Cleaner

When caution statement appears on bottom of the monitor screen, caution indicator glows and alarm sounds. Replace PRIMARY filter element.

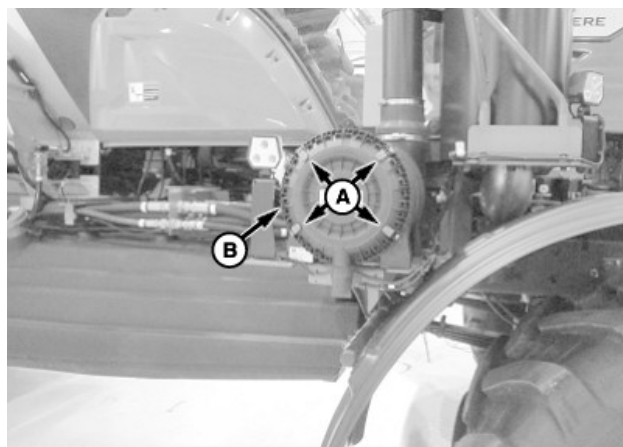
Remove the smaller SECONDARY element only when it must be replaced. Replace secondary element every second primary element change or when visibly dirty. **DO NOT ATTEMPT TO CLEAN SECONDARY ELEMENT.**

DP99999,0000BDC-19-31MAY16

Replace Engine Air Cleaner Elements

CAUTION: Avoid serious injury from falling. Do not stand on the fuel tank when replacing air filters.

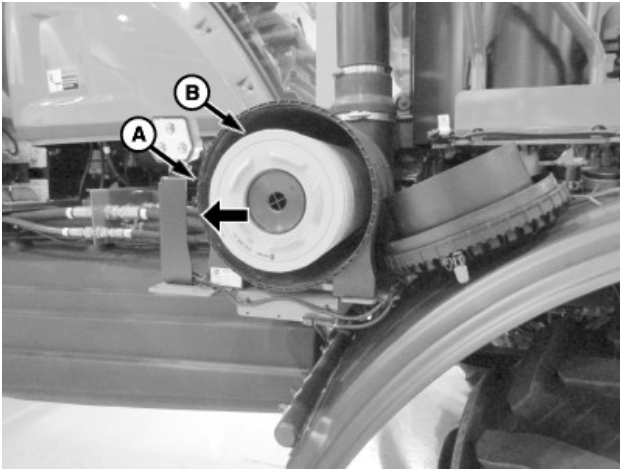
NOTE: Use a commercial ladder to access air filters.



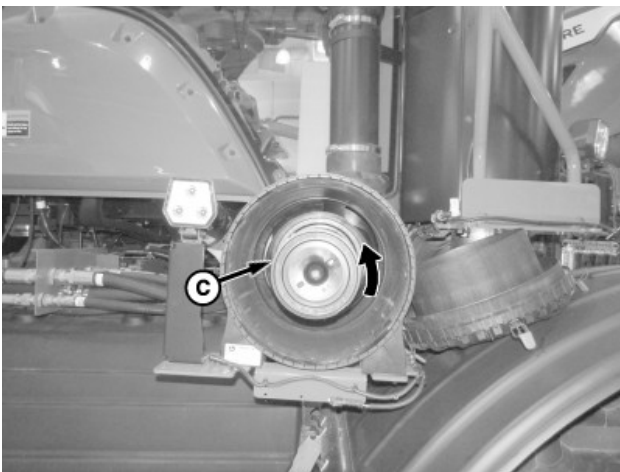
N156522—UN—17AUG21

A—Latch (4 used)
B—Filter Cover

1. Release latches (A) and remove filter cover (B).



N156523—UN—17AUG21



N156524—UN—17AUG21

A—Primary Filter
B—Filter Canister
C—Secondary Filter

2. Pull primary filter (A) from the filter canister (B).
3. Clean dirt from inside cover and canister.

IMPORTANT: Do not attempt to clean filters.

Replace secondary filter (C) every second primary filter change.

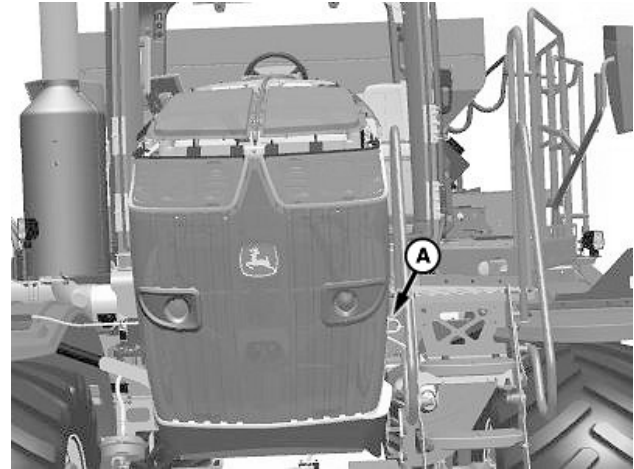
Install new secondary filter immediately to prevent dust from entering the air intake system.

4. Rotate secondary filter counterclockwise to remove.
5. Replace filters and reinstall the cover.

TB90758,0002970-19-12AUG21

Clean Cooling Package

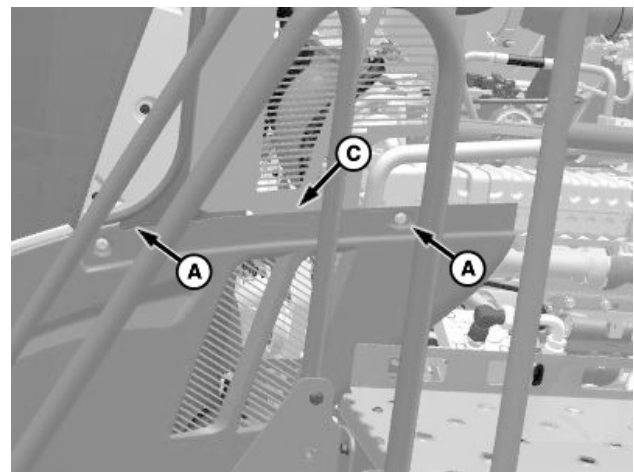
1. Stop engine and remove key.



N156262—UN—15JUL21

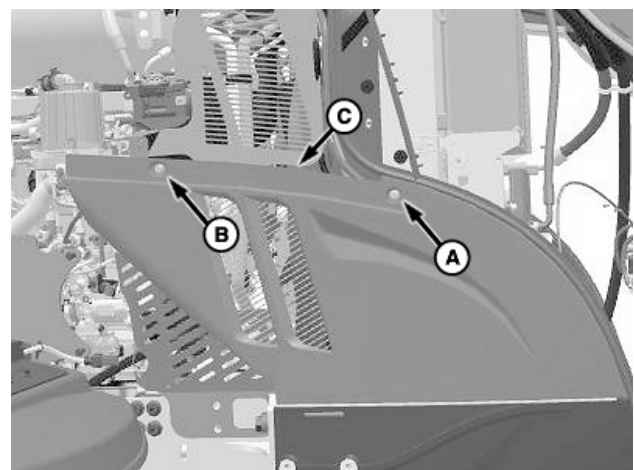
A—Latch Handle

2. Pull latch handle (A) to raise hood.



N156263—UN—15JUL21

Left-Hand Side Shield

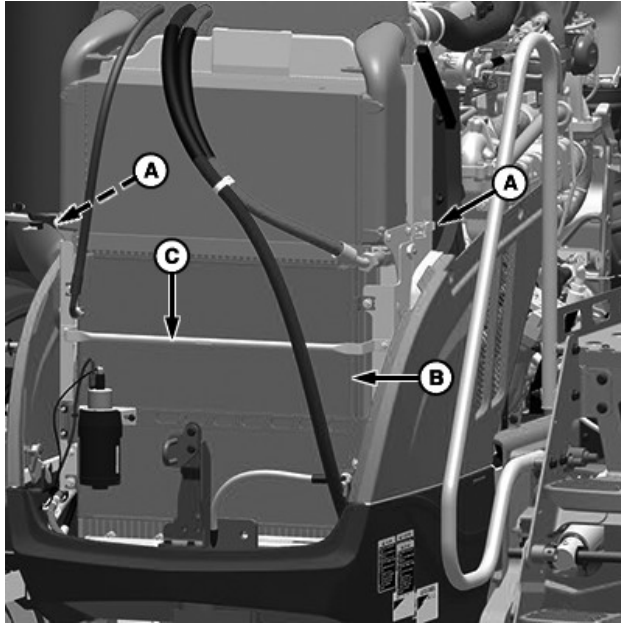


N156264—UN—15JUL21

Right-Hand Side Shield

A—Cap Screw (4 used)
B—Cap Screw and Nut
C—Side Shield (2 used)

3. Remove and retain cap screws (A), cap screw and nut (B), and side shields (C).



N160186—UN—07JAN22

A—Cooler Assembly Latch (2 used)
B—Air Conditioner Condenser
C—Handle

4. Release cooler assembly latches (A).

⚠ CAUTION: Reduce compressed air to 210 kPa (2 bar) (30 psi) or less when using for cleaning purposes. Clear area of bystanders, guard against flying debris, and wear personnel protection equipment, including eye protection. A filter-type respirator is also advised to avoid inhalation of harmful particles.

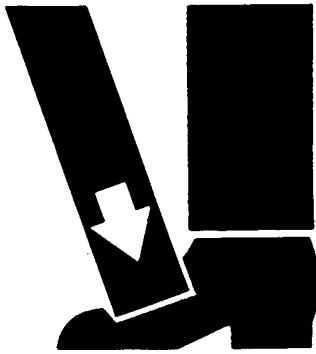
NOTE: Using an air hose, clean radiator and cooler units by blowing out any foreign material from back to front.

5. Swing air conditioner condenser (B) away from coolers and clean with compressed air or water.
6. Pull out on handle (C) to position the coolers for cleaning.
7. Clean coolers and radiator using compressed air or water.
8. Return all parts to original positions after cleaning and retain them properly.

PR79369,0000774-19-07JAN22

Wheels and Tires

Use Proper Lifting Equipment



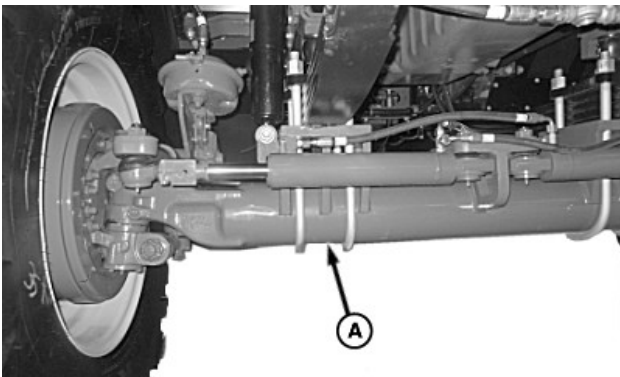
TS226—UN—23AUG88

Lifting heavy components incorrectly can cause severe injury or machine damage.

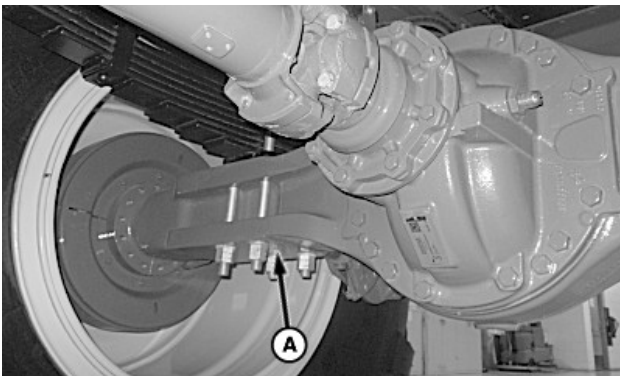
Follow recommended procedure for removal and installation of components in the manual.

EC82471,0000109-19-27FEB20

Machine Jacking Locations



N124938—UN—09AUG16



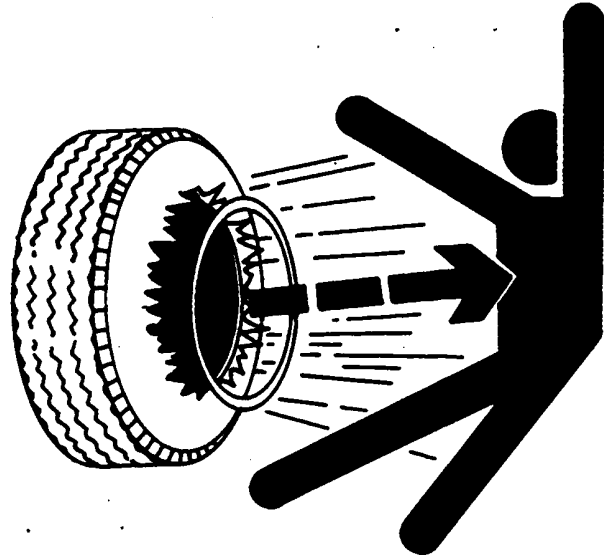
N124939—UN—09AUG16

A—Jacking Location

Lift machines at jacking locations (A) under the axles, between the leaf spring U-bolts.

OOU6092,0000B6B-19-16FEB17

Check Tires for Damage and Proper Inflation Pressure—Daily



TS211—UN—15APR13

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 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 an extension hose with enough length to allow you to stand to one side. Do NOT stand over or in front of the tire assembly. Use a safety cage if available.

Check wheels for missing bolts and nuts, reduced tire pressure, cuts, bubbles, or rim damage.

Protect tires from exposure to petroleum products and chemicals, as well as from direct sunlight during storage.

Try to avoid rocks and sharp objects; drive carefully.

Traveling at high speeds while carrying heavy loads increases tire wear and reduces tire life.

Wheels and Tires

Alliance VF 750/50R26 ^a					
Position	Front Axle				
Group	41				
Load Index	169				
Speed Rating	D				
Tread Depth	R-1				
Section Width mm (in)	759 (29.9)				
Overall Diameter mm (in)	1412 (55.6)				
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)				
	10 (6)	15 (9)	20 (12)	65 (40)	70 (43)
	Tire Load, kg (lb) ^b				
80 (0.8) (12)	3290 (7250)	3075 (6780)			3045 (6710)
100 (1.0) (15)	3700 (8160)	3450 (7610)			3140 (6920)
120 (1.2) (17)	4150 (9150)	3875 (8540)			3530 (7780)
160 (1.6) (23)	5090 (11 220)	4750 (10 470)			4320 (9520)
200 (2.0) (29)	5680 (12 520)	5300 (11 680)			4820 (10 630)
240 (2.4) (35)	6210 (13 690)	5800 (12 790)			5280 (11 640)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Trelleborg VF850/45R26 ^a			
Position	Front Axle		
Group	41		
Load Index	172		
Speed Rating	E		
Tread Depth	R-1		
Section Width mm (in)	891 (35.1)		
Overall Diameter mm (in)	1456 (57.3)		
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)		
	65 (40)		70 (43)
	Tire Load, kg (lb) ^b		
100 (1.0) (15)	3855 (8498)		3510 (7738)
120 (1.2) (17)	4335 (9557)		3945 (8697)
140 (1.4) (20)	4820 (10 626)		4385 (9667)
160 (1.6) (23)	5300 (11 684)		4825 (10 637)
180 (1.8) (26)	5605 (12 356)		5105 (11 255)
200 (2.0) (29)	5885 (12 974)		5355 (11 806)
220 (2.2) (32)	6135 (13 525)		5580 (12 302)
240 (2.4) (35)	6300 (13 889)		5800 (12 787)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Michelin VF 750/50R26 CFO ^a	
Position	Front Axle
Group	41
Load Index	170
Speed Rating	E
Tread Depth	R-1

Wheels and Tires

Michelin VF 750/50R26 CFO ^a				
Section Width mm (in)	749 (29.5)			
Overall Diameter mm (in)	1405 (55.3)			
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)			
	15 (10)	30 (20)	65 (40)	70 (43)
	Tire Load, kg (lb) ^b			
120 (1.2) (17)	5193 (11 450)	4355 (9600)	3875 (8545)	3526 (7775)
140 (1.4) (20)	5795 (12 775)	4860 (10 715)	4315 (9515)	3925 (8655)
170 (1.7) (25)	6540 (14 420)	5485 (12 090)	4890 (10 780)	4450 (9810)
200 (2.0) (29)	6970 (15 370)	5850 (12 900)	5300 (11 685)	4823 (10 630)
230 (2.3) (33)	7410 (16 340)	6215 (13 700)	5675 (12 510)	5165 (11 385)
260 (2.6) (38)	8000 (17 640)	6710 (14 795)	6050 (13 340)	5505 (12 135)
290 (2.9) (42)	8585 (18 930)	7200 (15 875)	6400 (14 110)	5800 (12 785)
320 (3.2) (46)	8990 (19 820)	7540 (16 620)	6700 (14 770)	6000 (13 225)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Alliance VF 1050/50R32 ^a				
Position	Rear Axle			
Group	46			
Load Index	198			
Speed Rating	D			
Tread Depth	R-1			
Section Width mm (in)	1060 (41.7)			
Overall Diameter mm (in)	1860 (73.3)			
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)			
	10 (6)	15 (9)	20 (12)	65 (40)
	Tire Load, kg (lb) ^b			
80 (0.8) (12)	6060 (13 360)	5660 (12 480)		
120 (1.2) (17)	7800 (17 200)	7280 (16 050)		
150 (1.5) (22)	9100 (20 060)	8490 (18 720)		
200 (2.0) (29)	10 590 (23 350)	9880 (21 780)		
250 (2.5) (36)	10 810 (23 830)	11 020 (24 300)		
300 (3.0) (44)	13 000 (28 660)	12 130 (26 740)		
330 (3.3) (48)	13 830 (30 490)	12 910 (28 460)		
360 (3.6) (52)	14 140 (31 170)	13 200 (29 100)		

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Trelleborg VF1050/50R32 ^a	
Position	Rear Axle
Group	46
Load Index	198
Speed Rating	D
Tread Depth	R-1
Section Width mm (in)	1034 (40.7)
Overall Diameter mm (in)	1859 (73.2)

Wheels and Tires

Trelleborg VF1050/50R32 ^a		
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)	
	65 (40)	75 (46)
	Tire Load, kg (lb) ^b	
100 (1.0) (15)	6500 (14 330)	5915 (13 040)
120 (1.2) (18)	7335 (16 170)	6675 (14 715)
160 (1.6) (23)	9000 (19 840)	8190 (18 055)
200 (2.0) (29)	10 000 (22 050)	9100 (20 065)
240 (2.4) (35)	10 600 (23 370)	9645 (21 265)
280 (2.8) (41)	11 800 (26 015)	10 740 (23 675)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Michelin VF 1000/55R32 CFO ^a				
Position	Rear Axle			
Group	46			
Load Index	193			
Speed Rating	E			
Tread Depth	R-1			
Section Width mm (in)	1042 (41.0)			
Overall Diameter mm (in)	1877 (73.9)			
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)			
	15 (10)	30 (20)	65 (40)	70 (43)
	Tire Load, kg (lb) ^b			
120 (1.2) (17)	9765 (21 530)	8190 (18 055)	7300 (16 095)	6650 (14 660)
140 (1.4) (20)	10 890 (24 010)	9135 (20 140)	7775 (17 140)	7075 (15 595)
170 (1.7) (25)	12 305 (27 130)	10 320 (22 750)	8690 (19 160)	7900 (17 415)
200 (2.0) (29)	13 175 (29 045)	11 050 (24 360)	10 000 (22 045)	9100 (20 060)
230 (2.3) (33)	14 050 (30 975)	11 780 (25 970)	10 675 (23 535)	9700 (21 385)
260 (2.6) (38)	14 920 (32 890)	12 515 (27 590)	11 350 (25 020)	10 325 (22 760)
290 (2.9) (42)	15 850 (34 945)	13 295 (29 310)	12 065 (26 600)	10 990 (24 230)
320 (3.2) (46)	16 895 (37 245)	14 170 (31 240)	12 850 (28 330)	11 700 (25 795)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

NCHYUSK,1755028984069-19-04SEP25

Tighten Wheel Hardware



N118304—UN—29MAY15

A—Wheel Mounting Nuts

Check torque on wheel hardware. Tighten wheel mounting nuts (A) in a crisscross pattern to specification.

Specification

Wheel Mounting Nuts—Torque
(dry). 531 N·m
(392 lb·ft)

IMPORTANT: Damage to the planetary hub and wheel can occur if the correct mounting nut torque is not maintained. Tighten nuts in a crisscross pattern to specification. Tighten wheel mounting nuts after first 1 hour of use and every 10 hours thereafter until correct torque is maintained. Check torque on wheel nuts after every 100 hours of use.

PR79369,0000799-19-19JAN22

Replacement Tire Specifications

Tire Size example: 750/50R26 151 D R-1

- “750” - Tire Section Width in Millimeters
- “50” - Aspect Ratio of Tire (equal to the tire section height divided by the tire section width)
- “R” - Radial Construction
- “26” - Nominal Rim Diameter in Inches
- “151” - Load Index Rating - Carrying Capacity Code

- “D” - Speed Symbol (determines the maximum speed allowed at the rated load).
- “R-1 or R-1 W” - Regular Tread or Wet Traction Tread

IMPORTANT: Replacement tires must be of the same size and must have equivalent load index rating as shown in chart.

800R Front Axle Replacement Tire Specifications			
Tire Size ^{a b}	Suggested Load Index ^{c d}	Speed Symbol ^e	Tire Section Width mm (in)
750/50R26	151 minimum	D minimum	750 (29.5)

^aIt is required that the correct rim offset dimensions are met when selecting the appropriately sized rim for the tire.

^bIncludes standard tire, IF version, VF version, or LSW version.

^cFully loaded condition may exceed recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^dWheels are designed for the maximum foreseeable-use loading for the vehicle configuration as ordered from John Deere. If a tire is installed with a Load Index higher than the minimum listed, the wheel may not support the maximum load for that tire. Contact a John Deere dealer or other service provider for more information.

^eD-rated tires (65 km/h [40 mph]) can be used at E-rated speeds (70 km/h [43 mph]) by reducing the 65 km/h (40 mph) load by 9%.

800R Rear Axle Replacement Tire Specifications			
Tire Size ^{a b}	Suggested Load Index ^{c d}	Speed Symbol ^e	Tire Section Width mm (in)
1000/55R32	182 minimum	D minimum	1000 (39.4)
1050/50R32	182 minimum	D minimum	1050 (41.3)

^aIt is required that the correct rim offset dimensions are met when selecting the appropriately sized rim for the tire.

^bIncludes standard tire, IF version, VF version, or LSW version.

^cFully loaded condition may exceed recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^dWheels are designed for the maximum foreseeable-use loading for the vehicle configuration as ordered from John Deere. If a tire is installed with a Load Index higher than the minimum listed, the wheel may not support the maximum load for that tire. Contact a John Deere dealer or other service provider for more information.

^eD-rated tires (65 km/h [40 mph]) can be used at E-rated speeds (70 km/h [43 mph]) by reducing the 65 km/h (40 mph) load by 9%.

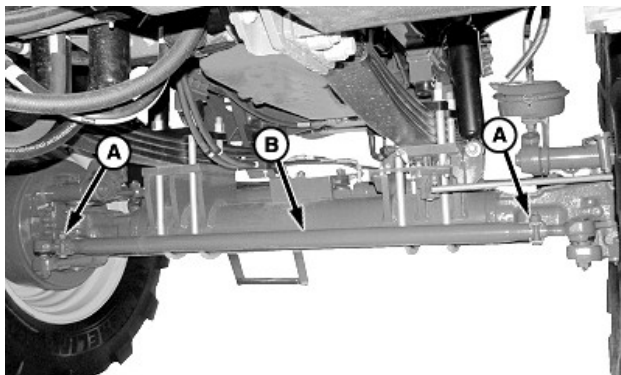
PR79369,0000775-19-09AUG25

Check Front Axle Toe-In—Annually

Refer to procedure in the Lubrication and Maintenance section.

izdg2d7,1725379168094-19-03SEP24

Adjust Front Axle Toe-In



N132806—UN—19SEP17

A—Clamp (2 used)
B—Cross-Tube

1. Loosen clamps (A) retaining tie rod cross-tube (B) to tie rod ends on the rear of axle.
2. Rotate tie rod cross-tube as necessary to adjust the toe-in. Lengthen tube to increase the toe-in. Shorten tube to decrease the toe-in.
3. Recheck toe-in. Repeat procedure until toe-in is within specification.
4. Tighten clamp on each side of machine.

PR79369,000079B-19-19JAN22

Discarded Tires

It is illegal to burn discarded tires. Tires cannot be used to start piles of trees and buildings on fire. Tires cannot be used to fill ravines, washes, streams, etc.

Discarded tires can be disposed of in a permitted landfill. These tires must first be processed (shredded or

quartered) before being taken to a landfill. Call your landfill for requirements.

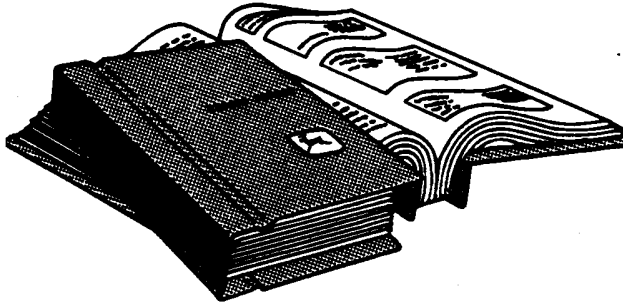
Discarded tires also may be recycled if a recycling plant is nearby.

Tires may be used for stream bank stabilization. Contact the DNR for guidance.

PR79369,000079C-19-19JAN22

Chassis

Additional Service Information

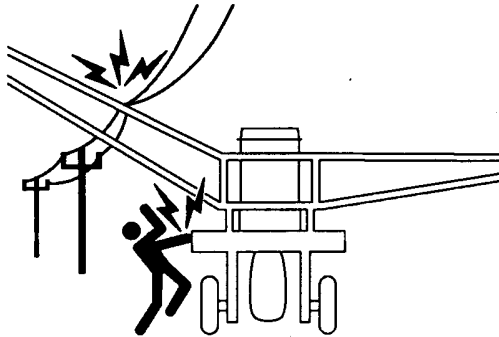


RW408—UN—13DEC88

This is not a detailed service manual. It contains only information needed for operation and routine maintenance. If you want more detailed service information, see the John Deere Service Literature Available page in this manual for publication ordering information.

NXK8,M6720,D1-19-26MAR04

Transport and Operate Safely



N44191—UN—27APR92

Keep away from overhead power lines. Serious injury or death to you or others can result should machine contact electrical wires. Know the transport height, boom operating height, and boom folding height of your machine.

Perform a complete assessment of the field before performing any spraying operations to decide the best working method and boom folding/unfolding operations.

Stop slowly to avoid “nose diving.”

Keep SMV emblem and reflectors clean and in place.

Do not exceed maximum transport speed specified in the operator manual.

Reduce speeds for icy, wet, graveled, or soft roadway surfaces.

Check and follow local regulations for equipment size, lighting, and marking before driving on public roadways.

CS12167,000089D-19-11AUG16

Arm and Disarm Rear Combination Spring Brake Chamber

CAUTION: Never operate the machine with brakes disarmed.

Disarm the brakes when:

- Towing the machine
- Removing the piggyback assembly from the service brake chamber
- Replacing the service brake diaphragm
- If it is necessary to move the machine to safety

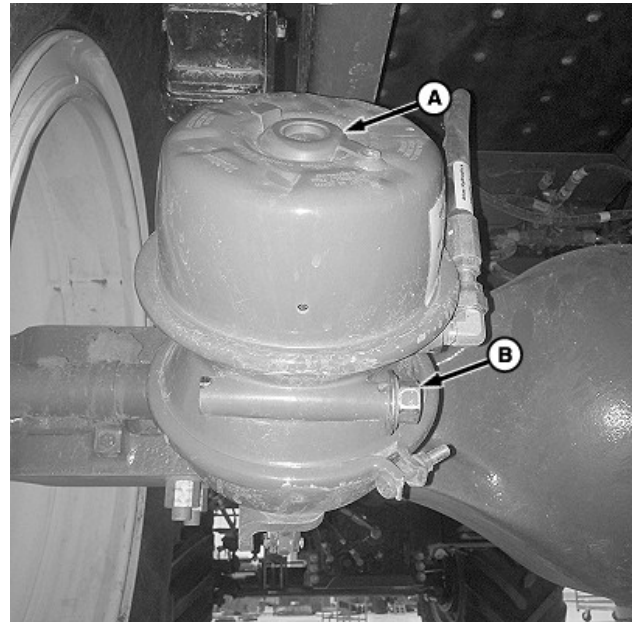
Disarm Combination Spring Brake Chamber (Release Foundation Brake, If Deployed)

CAUTION: Avoid severe injury, death, or damage to machine. The combination spring brake chamber contains a powerful compression spring.

IMPORTANT: Do not disarm the spring if there are signs of damage to the brake chamber. Replace the brake chamber assembly. Contact a John Deere dealer or other service provider.

IMPORTANT: Block the wheels, front and back, to avoid machine roll away.

NOTE: The front axle brakes are service brakes only and do not require disarming.

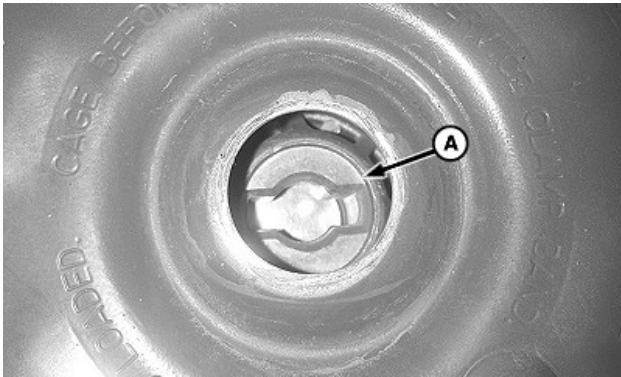


N123786—UN—28JUN16

A—Drain Plug
B—Release Tool Assembly

1. Remove the dust plug (A) from the center of the spring brake chamber.

- Remove the release tool assembly (B) from the side pocket of the center body of the brake chamber.

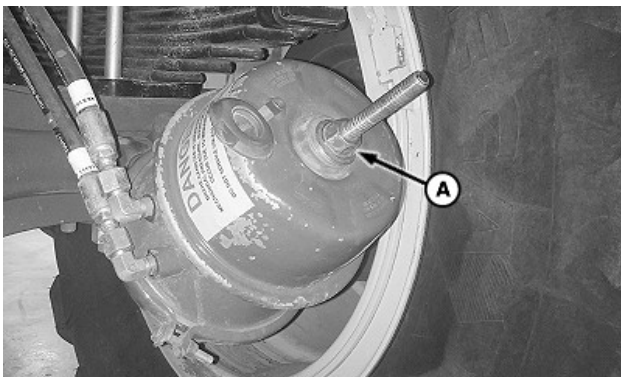


N127995—UN—10MAR17

A—Key Hole

- Insert the release tool through the key hole (A) into the spring piston.
- Turn the release tool 1/4 turn, clockwise.
- Pull on the release tool to ensure that it is engaged with the spring piston.

IMPORTANT: Do not use impact tools to disarm the brake spring.



N127996—UN—10MAR17

Brake Spring Shown in Disarmed Position

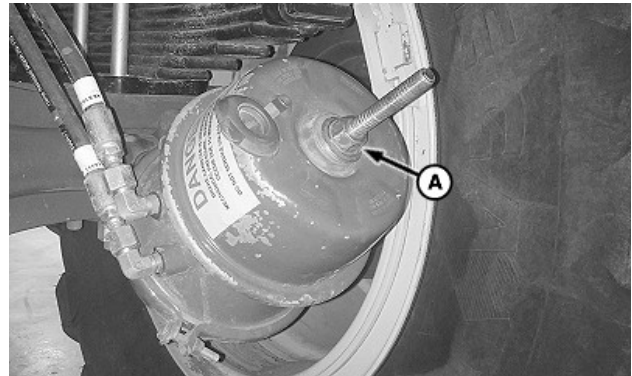
A—Nut

- Install washer and nut (A) onto the release tool and finger tighten until they contact the brake chamber.
- Continue tightening the nut by wrench and verify that the push rod is retracting. Avoid overtightening the release tool and tighten the nut to specification.

Specification

Release Tool Nut—Disarming	
Brake—Torque	48 N·m (35 lb·ft)

**Arm Combination Spring Brake Chamber
(Engage Foundation Brake)**

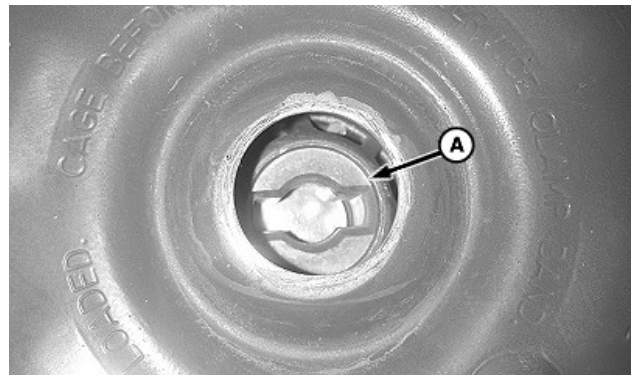


N123891—UN—06JUL16

Brake Spring Shown in Disarmed Position

A—Nut

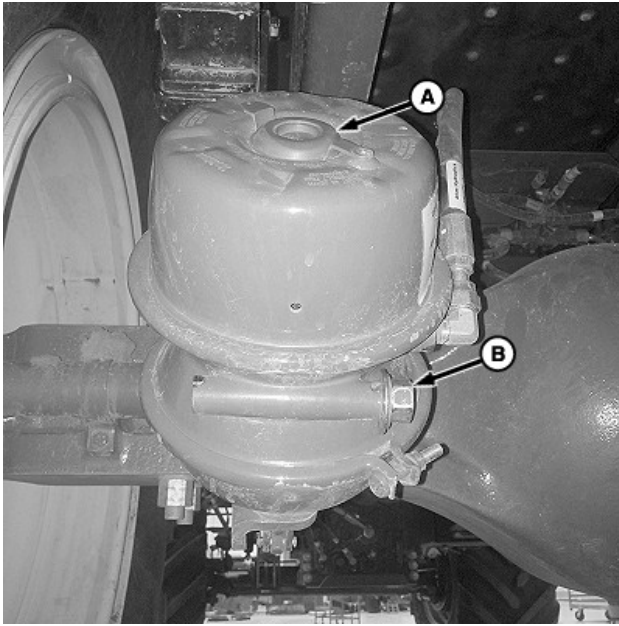
- Remove nut (A) using a hand wrench or apply 6.6—8 bar (100—120 psi) to the brake and spin off the nut.



N127995—UN—10MAR17

A—Key Hole

- Push the release tool IN, turn counterclockwise 1/4 turn, and remove the tool from the brake key hole (A).



N123786—UN—28JUN16

A—Dust Plug
B—Release Tool Assembly

3. Install the release tool assembly (B) in the tool storage pocket as shown. Tighten the nut to specification.

Specification

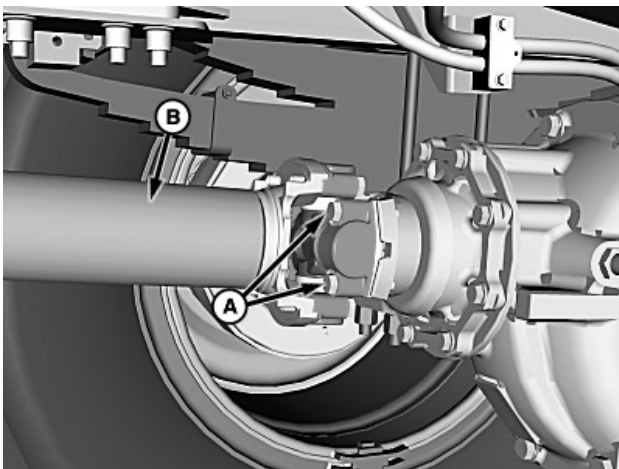
Release Tool Nut—
Storage—Torque. 9 N·m
(80 lb·in)

4. Install the dust plug (A).

CS12167,00009D7-19-17NOV25

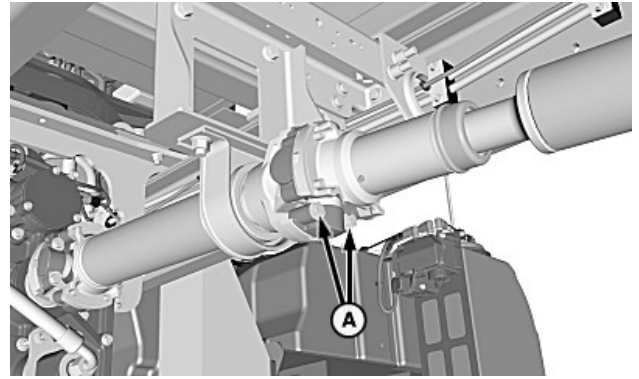
Towing Machine

Towing with Front Wheels on a Carrier



N118704—UN—15JUN15

Rear End of Shaft

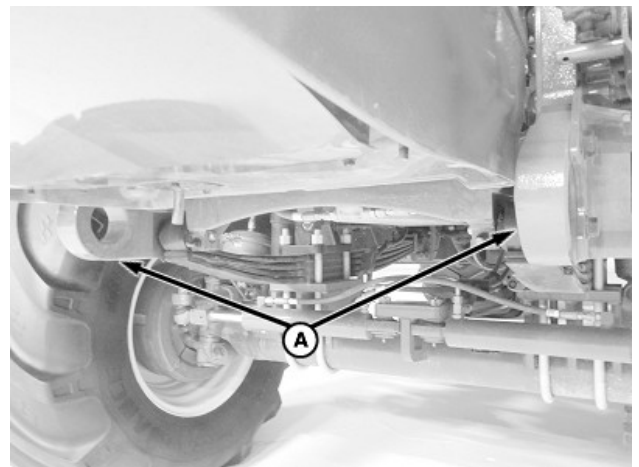


N118703—UN—15JUN15

Front End of Shaft

A—Cap Screw (8 used)
B—Driveshaft

1. Remove cap screws (A) from the driveshaft yoke.
2. Collapse driveshaft (B) to remove from the machine.
3. Disarm the rear combination spring brake chamber. (See Arm and Disarm Rear Combination Spring Brake Chamber in this section.)



N156266—UN—16JUL21

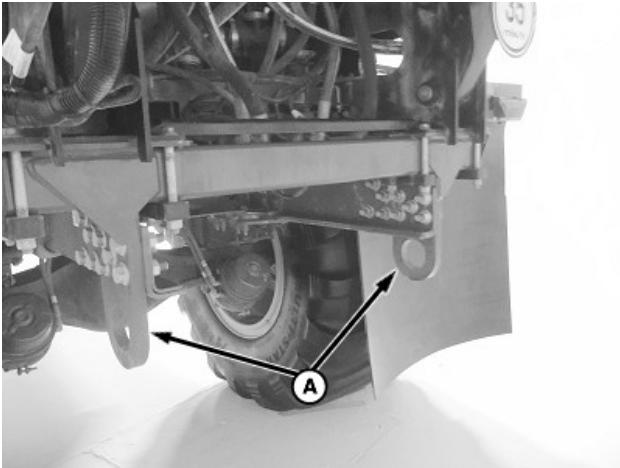
Front Tow Locations

A—Towing Location (2 used)

4. Attach tow vehicle to the machine using properly rated chains or straps at locations (A).

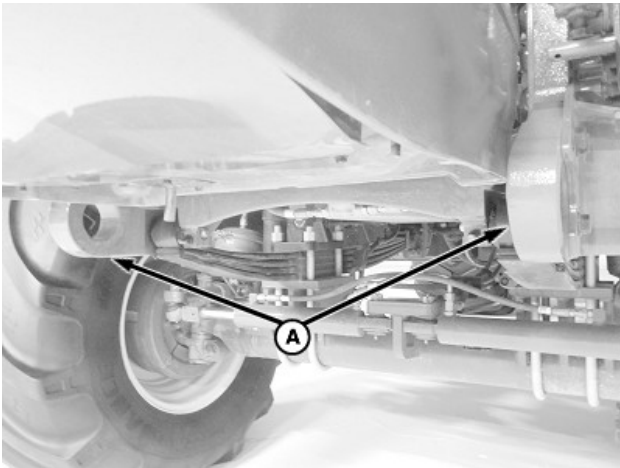
TB90758,0002977-19-26JUL21

Transporting on Flat-Bed Carrier



Front of Machine

N156265—UN—15JUL21



Rear of Machine

N156266—UN—16JUL21

A—Tie-Down Loop (4 used)

CAUTION: To avoid an accident or injury, securely chain the machine to the carrier. Attach chain **ONLY** to components indicated. **DRIVE CAREFULLY.**

1. Engage PARK position.

NOTE: If park brake has been disengaged, engage park brake. (See *Towing Machine* in this section.)

2. Attach chain to tie-down loops (A) and secure to the carrier.

TB90758,0002972-19-27JAN22

Transport Machine Using Trailer

CAUTION: Avoid collisions. Before transporting on a public roadway check and follow local regulations regarding size limits, the use of lights, flags, signs, pilot vehicles, and other requirements for transporting loads using trailer.

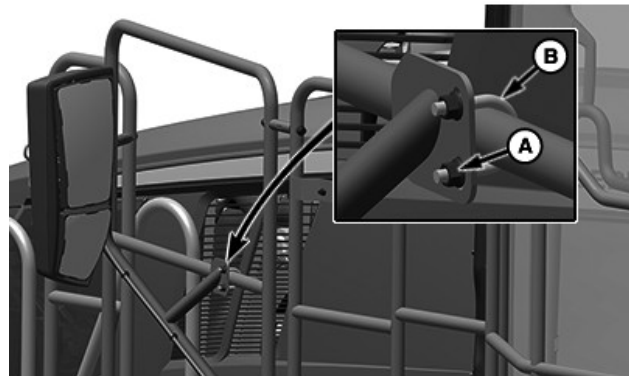
Remove left-hand mirror from machine and store it safely in cab to prevent damage during transportation.

CS12167,000077F-19-07APR15

Prepare Machine for Transport on Semi-Tractor Trailer

IMPORTANT: If the mirrors are not removed, damage can occur during transport.

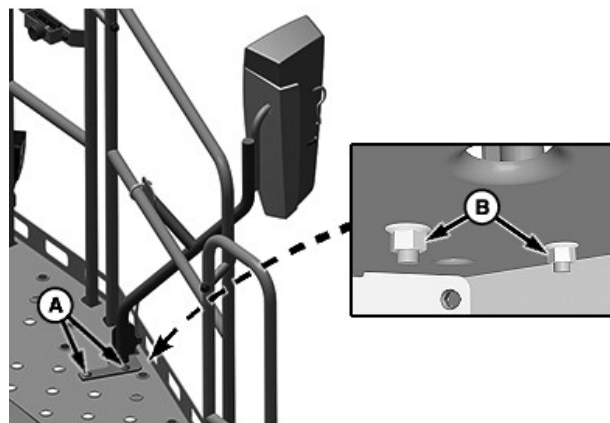
Verify that the mirrors are installed before the machine returns to operation.



N160102—UN—11JAN22

A—Lock Nut (2 used)
B—U-Bolt

1. Remove and retain lock nuts (A), washers, and U-bolt (B).



N160103—UN—11JAN22



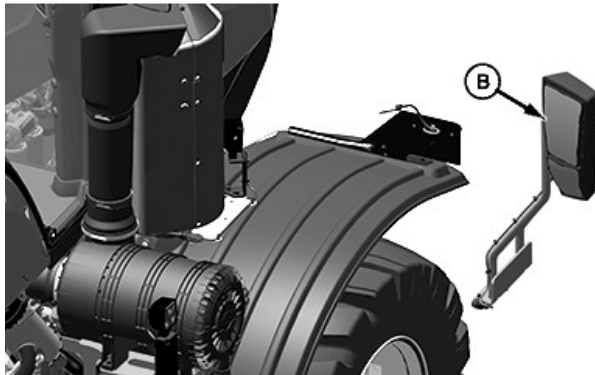
N160104—UN—11JAN22

A—Bolt (2 used)
B—Lock Nut (2 used)
C—Left-Hand Rearview Mirror Assembly

2. Remove and retain bolts (A), lock nuts (B), and the left-hand rearview mirror assembly (C).



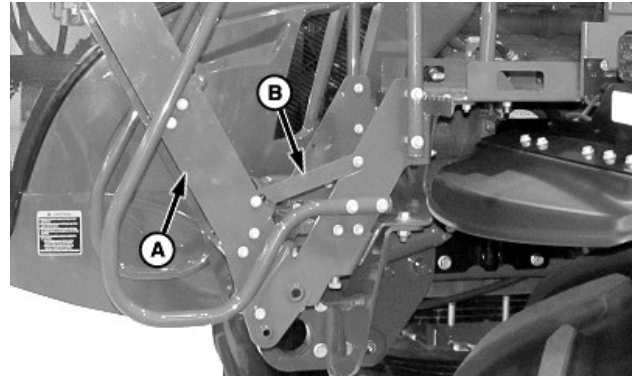
N160105—UN—12JAN22



N160106—UN—12JAN22

A—Cap Screw (3 used)
B—Right-Hand Rearview Mirror Assembly

3. Remove and retain cap screws (A) and the right-hand rearview mirror assembly (B).
4. Drive the machine onto the trailer or truck.

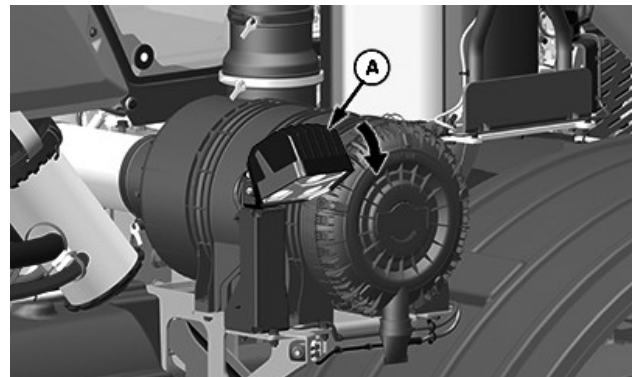


N132808—UN—19SEP17

A—Ladder
B—Strap

5. Get down from machine and raise the lower portion of the ladder (A) into the transport position. Retain with a hook strap (B) as shown.

Prepare Machine Equipped with LS20 for Transport on Semi-Tractor Trailer



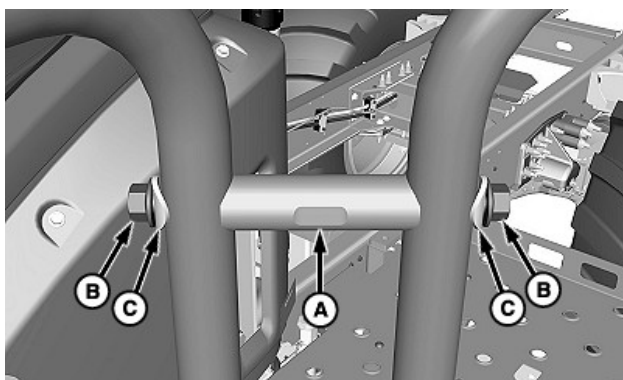
N160272—UN—13JAN22

A—Worklight

1. Raise the booms out of the boom cradles.
2. Tilt the worklight (A) forward as shown.



N160107—UN—12JAN22



N147612—UN—25NOV19

A—Block Clamp (3 used)
B—Cap Screw (6 used)
C—Washer (6 used)

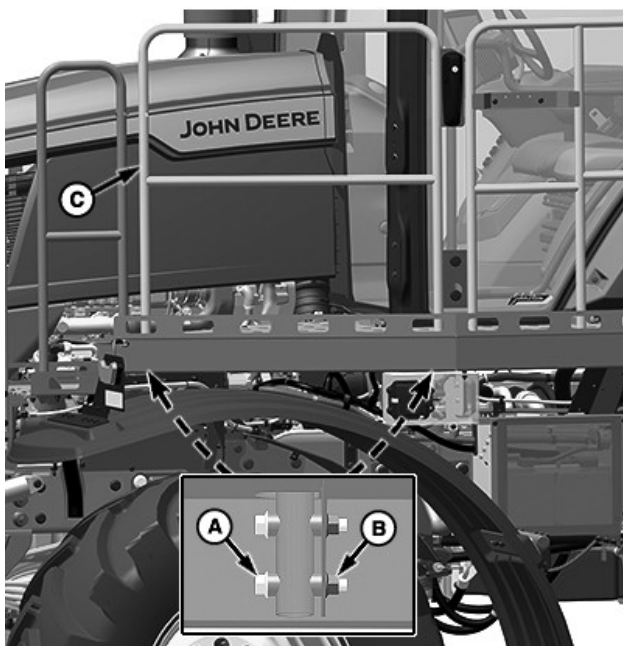
3. Locate the block clamps (A) between the handrails as shown.
4. Remove and retain cap screws (B), washers (C), and the block clamps.



N160109—UN—12JAN22

A—Cap Screw (6 used)
B—Lock Nut (6 used)
C—Middle Handrail Section

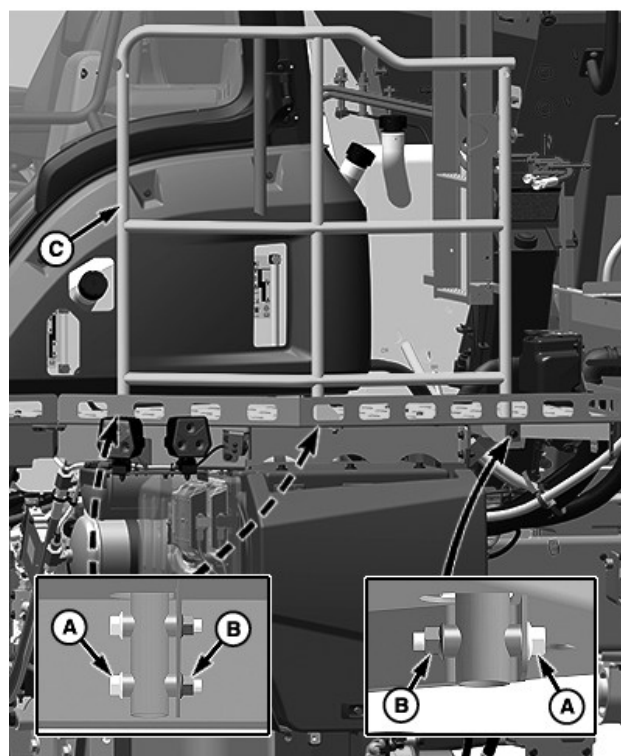
7. Remove and retain cap screws (A) and lock nuts (B) from the middle handrail section (C) as shown.
8. Remove the middle handrail section.



N160108—UN—12JAN22

A—Cap Screw (4 used)
B—Lock Nut (4 used)
C—Front Handrail Section

5. Remove and retain cap screws (A) and lock nuts (B) from the front handrail section (C) as shown.
6. Remove the front handrail section.

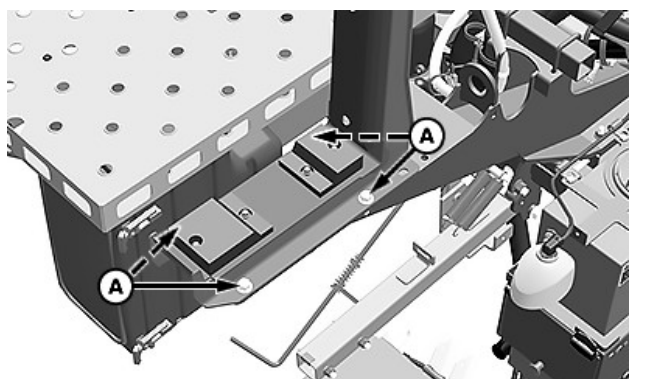


N160110—UN—12JAN22

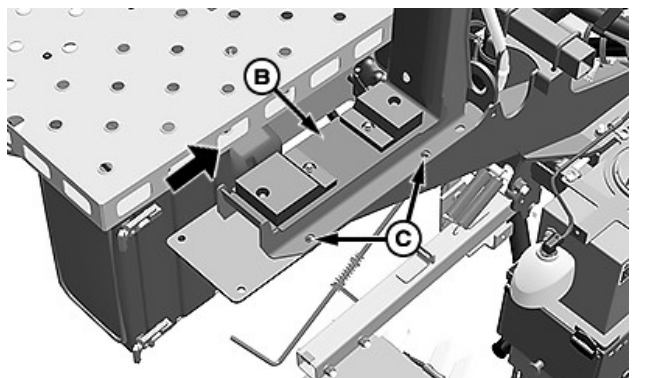
A—Cap Screw (5 used)
B—Lock Nut (5 used)
C—Rear Handrail Section

9. Remove and retain cap screws (A) and lock nuts (B) from the rear handrail section (C) as shown.

10. Remove the rear handrail section.



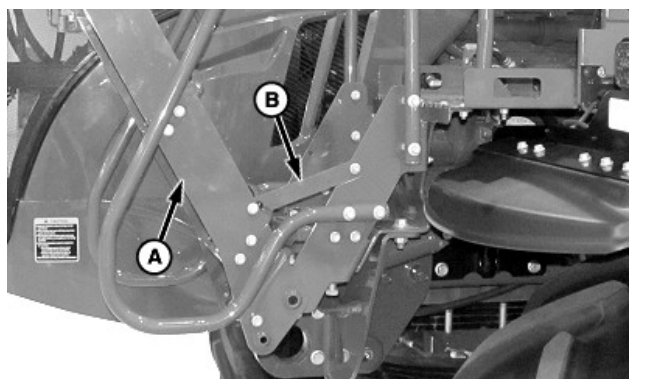
N154242—UN—10FEB21



N154243—UN—10FEB21

- A—Cap Screw and Nut (4 used)
- B—Boom Cradle
- C—Mounting Hole (4 used)

11. Remove the cap screws and nuts (A).
12. Slide the boom cradle (B) inward until the mounting holes (C) line up with the transport position holes in the cradle support as shown.
13. Install the previously removed cap screws and nuts.
14. Repeat the procedure for the boom cradle on the other side of the machine.
15. Slowly lower the booms into the boom cradles.
16. Drive the machine onto the trailer or truck.



N132808—UN—19SEP17

- A—Ladder
- B—Strap

17. Get down from machine and raise the lower portion of the ladder (A) into the transport position. Retain with a hook strap (B) as shown.

MM95366,0000692-19-17JAN22

Checking Engine Compartment for Accumulated Trash and Debris

Clean as necessary, especially around potential hot spots such as turbocharger, exhaust manifold, and muffler.

IMPORTANT: Never steam clean or pour cold water on an injection pump that is operating or hot. Pump could seize.

AG,OUO1011,782-19-26MAR04

Fuels, Lubricants, and Coolants

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 shall comply with all existing emissions regulations for the area in which the engine operates. DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

Materials such as copper, lead, zinc, tin, brass and bronze should be avoided in fuel handling, distribution and storage equipment as these metals can catalyze fuel oxidation reactions which can lead to fuel system deposits and plugged fuel filters.

E-Diesel fuel

DO NOT use E-Diesel (Diesel fuel and ethanol blend). Use of E-Diesel fuel in any John Deere machine may void the machine warranty.

 **CAUTION: Avoid severe injury or death due to the fire and explosion risk from using E-Diesel fuel.**

Sulfur Content for Interim Tier 4, Final Tier 4, Stage III 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.

DX,FUEL1-19-28AUG25

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

¹ See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2,EXT for more information on Engine Oil and Filter Service Intervals.

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 B30 (30% biodiesel). Further increase in lubricity is limited for biodiesel blends greater than B30.

DX,FUEL5-19-28AUG25

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.

DX,FUEL4-19-01MAR25

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

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 gasoil, 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 B30 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 5% reduction in fuel economy when using B30.

Biodiesel concentrations above B30 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 equivalents, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B30, and are recommended when using lower biodiesel blends.

John Deere Engines Without Exhaust Filter

Biodiesel blends up to B30 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 B30.

These John Deere engines can operate on biodiesel

blends above B30 (up to 100% biodiesel). Operate at levels above B30 ONLY if the biodiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on biodiesel blends above B30 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 equivalents, 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 shall 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 B30 shall be used within 90 days of the date of biodiesel manufacture. Biodiesel blends above B30 shall be used within 45 days from the date of biodiesel manufacture.

When using biodiesel blends up to B30, the following shall 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 shall also be considered if using biodiesel blends above B30:

- Possible coking or blocked injector nozzles, resulting in power loss and engine misfire if John Deere fuel additives and conditioners or equivalent containing detergent/dispersants are not used
- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures
- Possible compatibility issues with other materials (including copper, lead, zinc, tin, brass, and bronze) used in fuel handling, distribution, and storage equipment
- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to biodiesel
- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system
- Because biodiesel blends above B30 contain more ash, using blends above B30 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,FUEL7-19-11SEP25

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 or other service provider for diesel fuel analysis.

DX,FUEL6-19-01MAR25

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 or other service provider for additional information and local availability of cold-weather aids.

Use Winter Grade Fuel

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

Cloud point is the temperature at which wax begins to form in the fuel. This wax causes fuel filters to plug.

Pour point is the lowest temperature at which movement of the fuel is observed.

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

Air Intake Heater

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

Coolant Heater

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

Seasonal Viscosity Oil and Proper Coolant Concentration

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

Diesel Fuel Cold Flow Additive

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

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

Biodiesel

When operating with biodiesel blends, wax formation can occur at warmer temperatures. Begin using John

Deere Fuel-Protect Diesel Fuel Conditioner (winter formula) or equivalent at 5°C (41°F) to treat biodiesel fuels during the cold-weather season. Use B5 or lower blends at temperatures below 0°C (32°F). Use only winter grade petroleum diesel fuel at temperatures below -10°C (14°F).

Winterfronts

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

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

Radiator Shutters

If equipped with a thermostatically controlled radiator shutter system, this system should be regulated in such a way that the shutters are completely open by the time the coolant reaches 93°C (200°F) to prevent excessive intake manifold temperatures. Manually controlled systems are not recommended.

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

DX,FUEL10-19-28AUG25

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 Pre-Mix	Freeze Protection Limit
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:

- 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 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.²

IMPORTANT: Do not use cooling system sealing additives or antifreeze that contains sealing additives.

Do not mix ethylene glycol and propylene glycol base coolants.

Do not use coolants that contain nitrites.

DX,COOL3(T)-19-04APR22

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 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

² Coolant analysis may extend the service interval of other "Coolants" to a maximum not to exceed the interval of Cool-Gard II coolants. Coolant analysis means taking a series of coolant samples at 1000 hour increments beyond the normal service interval until either the data indicate the end of useful coolant life or the maximum service interval of Cool-Gard II is reached.

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(T)-19-11APR22

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

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.

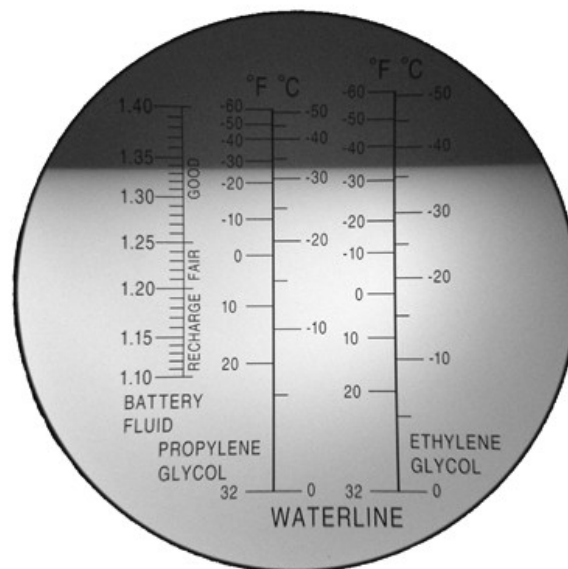
DX,COOL19-19-13JAN18

Testing Coolant Freeze Point



TS1732—UN—04SEP13

SERVICEGARD Part Number 75240



TS1733—UN—04SEP13

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

The use of a handheld coolant refractometer is the quickest, easiest, and most accurate method to determine the coolant freeze point. This method is more

accurate than a test strip or a float-type hydrometer, which can produce poor results.

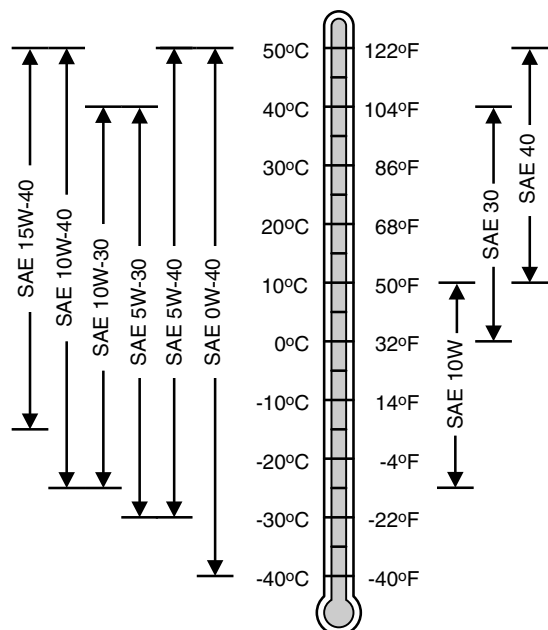
Coolant refractometer (part number 75240) is available from your John Deere dealer through the SERVICEGARD special tool program. Coolant refractometers are also available from commercial sources. This tool provides a solution for accurate freeze point determination in the field.

To use this tool:

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

DX,COOL,TEST(T)-19-01MAR25

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



TS1743—UN—25APR19

Oil Viscosities for Air Temperature Ranges

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.

Use an 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.

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

DX,ENOIL14(T)-19-05APR22

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 the selection of the proper oil and filter service interval. Contact your John Deere dealer or other

service provider for more information about 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.

IMPORTANT: Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm) is REQUIRED.

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 operation at high altitude decreases oil change intervals. See Diesel Engine Oil Service Interval for Operation at High Altitude for additional information.

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(T)-19-02MAR25

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 an engine overhaul, fill the engine with John Deere Break-In Plus Engine Oil.

If John Deere Break-In Plus Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following:

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

If one of these oils is used during the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and a maximum of 250 hours.

IMPORTANT: Do not use any other engine oils during the initial break-in of a new or rebuilt engine.

John Deere Break-In Plus Engine Oil can be used for 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(T)-19-05APR22

Diesel Engine Oil Service Interval for Operation at High Altitude

To avoid excessive oil degradation and potential engine damage, reduce oil and filter service intervals to 50% of the original recommended values when operating engines at altitudes above **1675 m (5500 ft)**.

Oil analysis may allow longer service intervals.

Use only approved oil types.

Example of Original Hours	Corresponding High Altitude Hours
125	60
150	75
175	85
200	100
250	125
275	135
300	150
350	175
375	185
400	200

Example of Original Hours	Corresponding High Altitude Hours
500	250

DX,ENOIL,SERV,HIALT-19-11NOV14

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 from John Deere in a variety of package sizes to suit your operational needs.

If John Deere Diesel Exhaust Fluid is not available, use DEF that is certified by the American Petroleum Institute (API) Diesel Exhaust Fluid Certification Program or by the AdBlue Diesel Exhaust Fluid Certification Program. Look for the API certification symbol or the AdBlue name on the container.



RG30211—UN—08MAR18

In some cases, DEF is referred to by one or more of these names:

- Urea
- Aqueous Urea Solution 32
- AUS 32
- AdBlue
- NOx Reduction Agent
- Catalyst Solution

DX,DEF(T)-19-01MAR25

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 shall 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-19-28AUG25

Refilling Diesel Exhaust Fluid (DEF) Tank



TS1731—UN—23AUG13

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

Do not ingest DEF. In the event DEF is ingested, contact a physician immediately. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: Use only distilled water to rinse components that are used to deliver DEF. Tap water can contaminate DEF. If distilled water is not available, rinse with clean tap water, then thoroughly rinse with ample amounts of DEF.

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

If DEF is filled into engine fuel tank or other fluid compartment, do not operate engine until system is properly purged of DEF. Contact your John Deere dealer or other service provider to drain and clean 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, drain tank, flush with distilled water and refill with new or good DEF. See Testing Diesel Exhaust Fluid (DEF).

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 shall maintain appropriate DEF levels at all times. Check the DEF level daily and refill the tank as needed. The filling port is identified by a blue colored cap embossed with the following DEF symbol.

DX,DEF,REFILL-19-28AUG25

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 shall 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 tools are available from your John Deere through the SERVICEGARD special tool program:

- 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-19-28AUG25

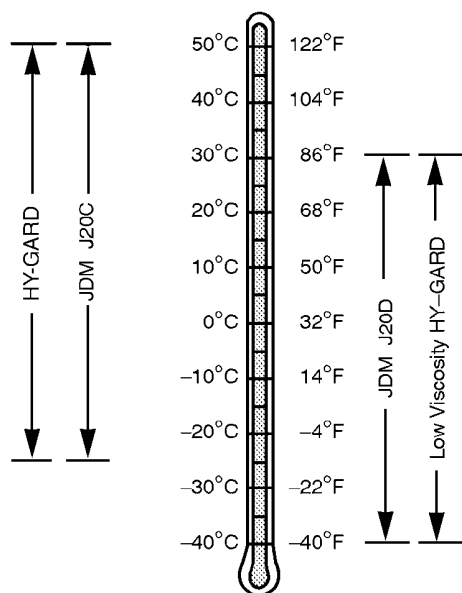
Disposal of Diesel Exhaust Fluid (DEF)

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

Steering, Hydraulic and Transmission Oil



ZX1030848—UN—15SEP02

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

Steering Reservoir Capacity

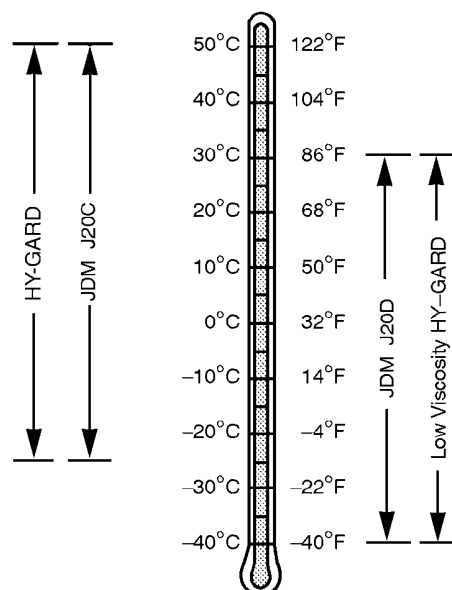
- 27 L (7.1 gal)

Transmission Reservoir Capacity

- 76 L (20 gal)

DP99999,0000BD9-19-22OCT25

Pump Drive Gear Case Oil



ZX1030848—UN—15SEP02

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:

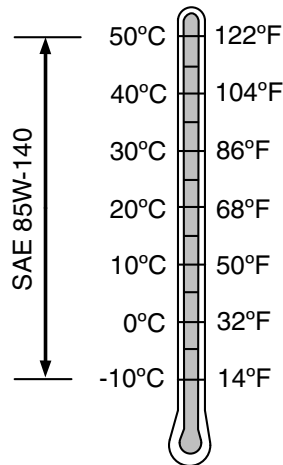
- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

Pump Drive Gear Case Capacity

- 2.5 L (2.6 qt)

DP99999,0000BDA-19-22OCT25

Front Axle Bearing Oil



N64582—UN—18NOV13

All front axle is filled with 85W-140 gear lube from the factory. If oil needs to be added before the initial hub oil change, use 85W-140.

The following oils are preferred for the front axle:

- John Deere GL5 85W-140 Gear Lube

Front Axle Capacity

- 0.5 L (0.5 qt)

OUC6092,0000B52-19-22OCT25

Rear Hub Capacity

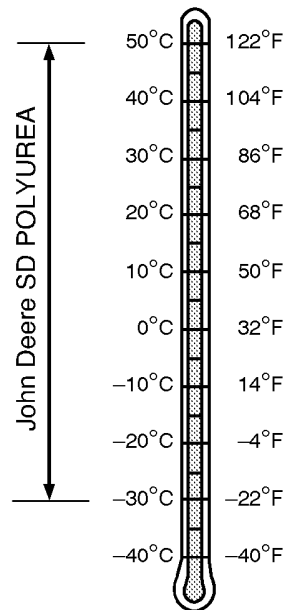
- 3.8 L (4 qt)

Rear Differential Capacity

- 18.9 L (20 qt)

OUC6092,0000B51-19-22OCT25

Grease



N62572—UN—02MAY03

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

The following grease is preferred:

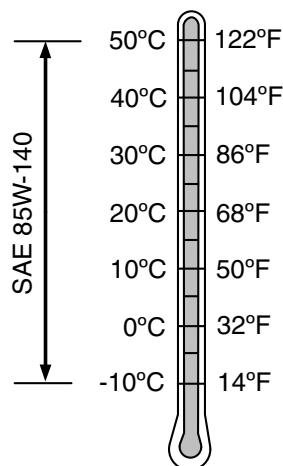
- John Deere SD Polyurea Grease ONLY

Part Number TY6341.

IMPORTANT: Some types of grease thickener are not compatible with others. Consult your grease supplier before mixing different types of grease.

OUC6092,0001157-19-06MAR08

Rear Axle Oil



N64582—UN—18NOV13

All rear axle hubs and differentials are filled with 85W-140 gear lube from the factory. If oil needs to be added before the 50 hour initial hub oil change, use 85W-140

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

The following oils are preferred for all hubs:

- John Deere GL5 85W-140 Gear Lube

Suspension and Steering Grease

IMPORTANT: Use of other greases in the suspension system is not recommended. Use of other greases can result in premature wear of the suspension components.

Use **ONLY** TY6341 John Deere SD Polyurea Grease.

TB90758,0002911-19-26JUL21

Oil Filters

Filtration of oils is critically important for proper operation and lubrication. John Deere brand oil filters have been designed and produced specifically for John Deere applications.

John Deere filters adhere to engineering specifications for quality of the filter media, filter efficiency rating, strength of the bond between the filter media and the element end cap, fatigue life of the canister (if applicable), and pressure capability of the filter seal. Non-John Deere branded oil filters might not meet these key John Deere specifications.

Always change oil filters regularly as specified in this manual.

DX,FILT1-19-11APR11

Fuel Filters

The importance of fuel filtration cannot be overemphasized with modern fuel systems. The combination of increasingly restrictive emission regulations and more efficient engines requires fuel system to operate at much higher pressures. Higher pressures can only be achieved using fuel injection components with very close tolerances. These close manufacturing tolerances have significantly reduced capacities for debris and water.

John Deere brand fuel filters have been designed and produced specifically for John Deere engines.

To protect the engine from debris and water, always change engine fuel filters as specified in this manual.

DX,FILT2-19-14APR11

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

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.

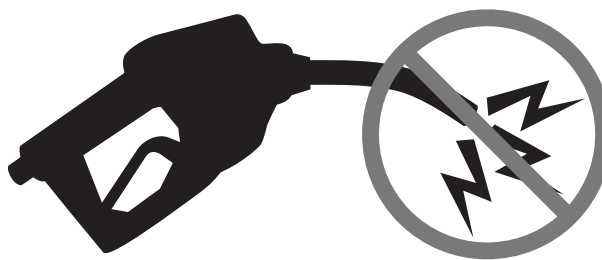
Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

DX,LUBMIX-19-18MAR96

Avoid Static Electricity Risk When Refueling



RG22142—UN—17MAR14



RG21992—UN—21AUG13

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

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

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

Therefore, it is important to ensure that the entire system used to refuel your machine (fuel supply tank, transfer pump, transfer hose, nozzle, and others) is properly grounded and bonded. Consult with your fuel or fuel system supplier to ensure that the delivery

system is in compliance with fueling standards for proper grounding and bonding practices.

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

Lubrication and Maintenance

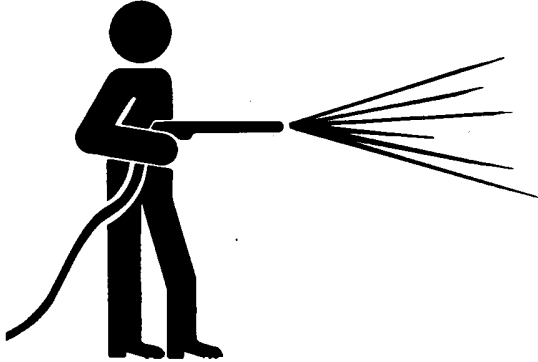
Lubrication Symbols



Lubricate with John Deere SD Polyurea Grease.
Lubricate at hourly intervals indicated on the symbols.
Part Number TY6341.

TB90758,0002912-19-15JUN21

Clean Vehicle of Hazardous Chemicals, Including Pesticides



T6642EJ—UN—18OCT88

CAUTION: During application of hazardous chemicals, including pesticides, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous chemical.

When exposed to hazardous chemicals, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

1. Sweep or vacuum the floor of cab.
2. Clean headliners and inside cowlings of cab.

IMPORTANT: Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90 degree angle.

3. Wash entire exterior of vehicle.
4. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

EC82471,0000125-19-27FEB20

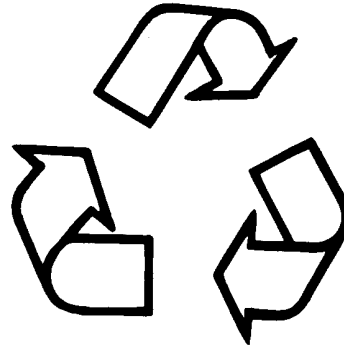
Prevent Hydraulic System Contamination

IMPORTANT: Cleanliness is important when working on the hydraulic system. Prevent contamination by assembling the cylinders, hoses, couplers, and valves in a clean area of the shop.

Leave protective caps on the fluid openings until ready to make the connection. When charging the system, use clean oil, free of abrasive materials. Keep couplers clean. Abrasive particles, like sand or metal fragments, can damage seals, barrels, and pistons, causing internal leakage.

OUC6435,0002DB9-19-26MAY16

Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

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

- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as fertilizers and pesticides. Handle and dispose of these components appropriately.
- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.

- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid); filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.
- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN-19-01JUN15

Service and Operate Chemical Sprayers Safely



TS272—UN—23AUG88



TS220—UN—15APR13

Chemicals used in agricultural sprayers 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. (See 'Handle agricultural chemicals safely' found in the Safety Section.)
- Fill, flush, calibrate, and decontaminate sprayer in an area where runoff will not reach ponds, lakes or streams, livestock areas, or gardens, or near other people.
- Keep children away from the chemicals, chemical solutions, and rinsates.
- If spray or chemical concentrate contacts skin, hands, or face, wash immediately with soap and water.
If spray or chemical concentrate gets into eyes, flush immediately with water.
- If nozzle clogs or system malfunctions, stop engine and relieve spray pressure from system.
- Do not place nozzle tips or other components to the mouth to clear obstructions. Keep spare tips on hand for replacement.
- Minimize risk of spray drift.
 - Use large nozzle tips operated at lower pressures
 - Do not operate solution delivery system at pressures exceeding 345kPa (3.5 bar) (50 psi).
 - Do not spray when winds exceed 16 km/h (10 mph).
 - Do not spray when wind is blowing towards a nearby sensitive crop, garden, or populated area.
- Properly dispose of unused chemicals, flushing solution, and empty chemical containers.
- Decontaminate equipment used in mixing, transferring, and applying chemicals after use.

DX,WW,CHEM02-19-05APR04

Service Intervals

SERVICE	INTERVAL						
** Perform at initial break-in • Required service interval *** Perform after initial interval	1 h	Daily	As Required	50 h	100 h	250 h	500 h
Tighten wheel hardware	**	**					
Check axle mounting hardware torque	**	**					
Change front axle bearing oil				**			
Change rear axle oil					**		
Change planetary hub oil					**		
Change engine oil and filter ^{ab}					**	**	**
Check engine oil level		•					
Check coolant level		•					
Check hydraulic oil level		•					
Check steering oil level		•					
Drain water separator		•					
Drain moisture from the on-board air tank		•					
Check tires for damage and proper inflation pressure		•					
Clean screens and cooling package			•				
Check and replace cab air filters			•				
Replace engine air filters			•				
Clean fuel tank vent filter			•				
Clean diesel exhaust fluid (DEF) tank vent filter			•				
Clean diesel exhaust fluid (DEF) tank			•				
Replace diesel particulate filter (DPF)			•				
Inspect and replace fan belt			•				
Add coolant conditioner			•				
Fill windshield washer reservoir			•				
Lubricate front spindle housing					•		
Lubricate steering cylinder ball joints					•		
Lubricate suspension assemblies					•		
Lubricate pump drive gear case bearing seal					•		
Tighten wheel hardware					•		
Check axle mounting hardware torque					•		
Change engine oil and filter ^c						•	•
Service batteries						•	
Replace fuel filters							•
Replace transmission oil filters							•
Replace cab air filters							•
Inspect driveshaft U-joints							***

^aThe engine oil and filter service interval may be extended to 500 hours if certain conditions are met. See Change Engine Oil and Filter— After First 100 Hours in this section for more information.

^bIf operating at altitudes above 1675 m (5500 ft), oil and filter service intervals are shortened. See Diesel Engine Oil Service Interval for Operation at High Altitude in the Fuels, Lubricants, and Coolants section.

^cThe engine oil and filter service interval may be extended to 500 hours if certain conditions are met. See Change Engine Oil and Filter—250 Hours in this section for more information.

SERVICE										
	1 Year	750 h	1000 h	1500 h	2000 h	3000 h	4500 h / 3 years	5000 h	6 Years	6000 h
• Required service interval										
Replace cab air filters	•									
Inspect seat belts	•									
Replace air compressor air dryer cartridge	•									
Clean engine vent tube	•									

SERVICE										
• Required service interval	1 Year	750 h	1000 h	1500 h	2000 h	3000 h	4500 h / 3 years	5000 h	6 Years	6000 h
Clean pump drive gear case breather	•									
Clean rear axle breather	•									
Inspect service brake components	•									
Inspect axle components	•									
Inspect transmission isolators	•									
Check front axle toe-in	•									
Change front axle bearing oil	•									
Lubricate ladder cylinder	•									
Service air intake system	•	•								
Test coolant	•	•								
Change planetary hub oil	•			•						
Check engine speeds		•								
Replace hydraulic oil filters			•							
Replace hydraulic oil reservoir filler cap			•							
Replace transmission oil reservoir filler cap			•							
Change hydraulic oil			•							
Change transmission oil			•							
Change pump drive gear case oil			•							
Change rear axle oil			•							
Check fan belt tensioner				•						
Replace diesel exhaust fluid (DEF) tank header suction screen				•						
Inspect axle bearings and replace grease					•					
Adjust engine valve clearance ^a					•					
Inspect driveshaft U-joints						•				
Replace crankshaft vibration damper ^a								•		
Drain, flush, and refill engine cooling system*									•	•
* SCHEDULED coolant change interval 5 years or 5000 hours if John Deere Cool-Gard is used.										
* SCHEDULED coolant change interval 6 years or 6000 hours if John Deere Cool-Gard II is used.										

^aContact a John Deere dealer or other service provider for service.

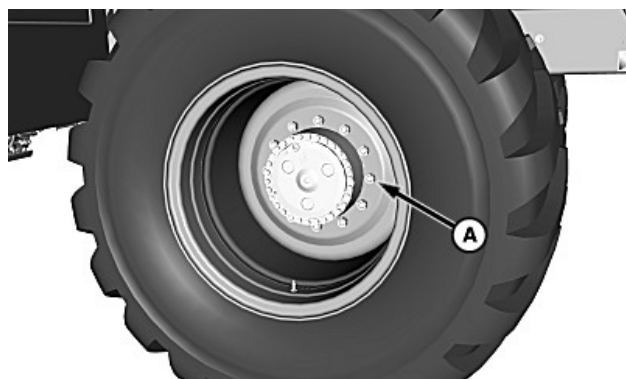
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Tighten Wheel Hardware—After First Hour



Front Wheel

N118303—UN—29MAY15



Rear Wheel

N118304—UN—29MAY15

A—Wheel Hardware

Tighten wheel hardware (A) in a crisscross pattern to specification after the first hour of use and every 10 hours thereafter until correct torque is maintained.

Check wheel hardware torque after every 100 hours of use..

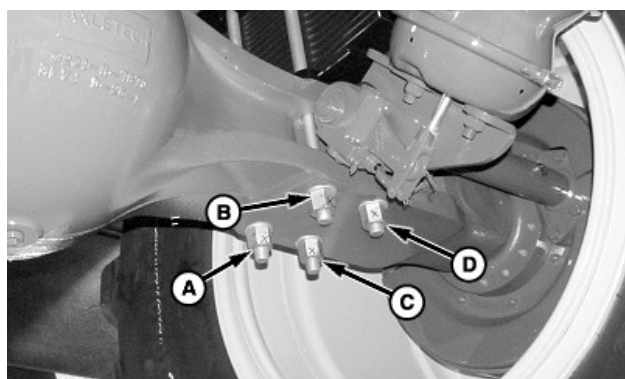
Specification

Wheel Hardware—Torque (Dry). 531 N·m
(392 lb·ft)

IMPORTANT: Damage to the planetary hub and wheel can occur if the correct mounting nut torque is not maintained. Tighten nuts in a crisscross pattern to specification. Tighten wheel mounting nuts after first 1 hour of use and every 10 hours thereafter until correct torque is maintained. Check wheel hardware torque after every 100 hours of use.

CS12167,0000AEC-19-13SEP17

Check Axle Mounting Hardware Torque—After First Hour



N129167—UN—05APR17

Torque Sequence

A—Inner Front U-Bolt Nut
B—Inner Rear U-Bolt Nut
C—Outer Front U-Bolt Nut
D—Outer Rear U-Bolt Nut

IMPORTANT: If the correct mounting nut torque is not maintained, damage to the axle, U-bolts, leaf spring assembly, and/or drivetrain may occur.

1. While the machine is initially laden, tighten the axle mounting hardware following the torque sequence shown. Begin the torque sequence with the inner front U-bolt nut (A), followed by U-bolts nuts (B—D). Tighten to specification.

Specification

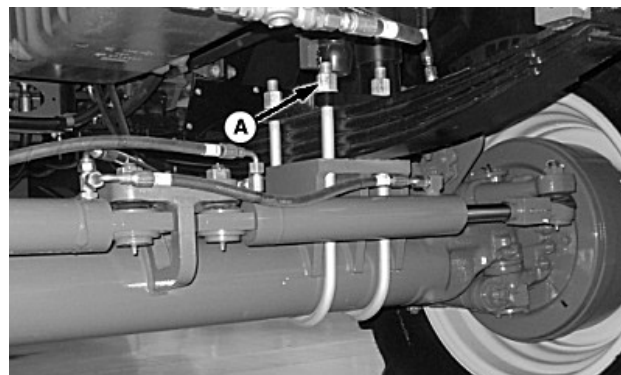
Front Axle U-Bolt Nut—Dry
Torque. 522 N·m
(385 lb·ft)

Specification

Rear Axle U-Bolt Nut—Dry
Torque. 800 N·m
(590 lb·ft)

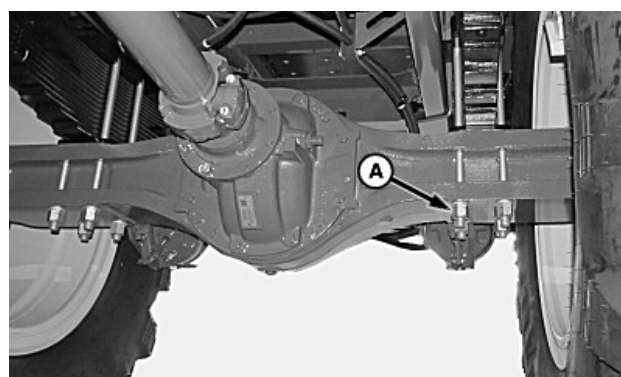
2. Repeat the torque sequence on each axle until the U-bolts stabilize and the torque specification is maintained.

NOTE: It is recommended to torque the U-bolts with the machine laden.



N123361—UN—02AUG16

Front Axle



N123362—UN—02AUG16

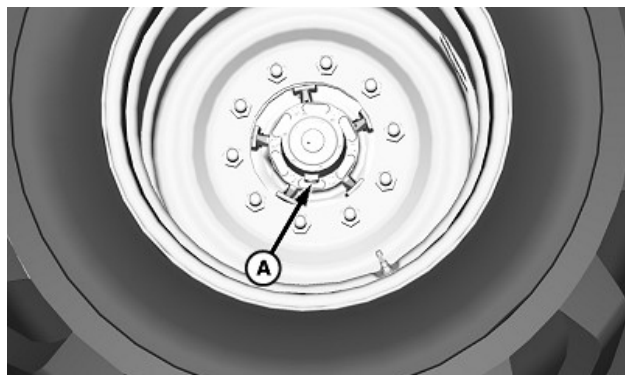
Rear Axle

A—Nut (8 used per axle)

3. Check the torque on the front and rear axle U-bolt mounting nuts (A) after the first hour of use and every 10 hours thereafter until torque is maintained. Repeat the torque sequence on each axle until the U-bolts stabilize and the torque specification is maintained.
4. Check the axle U-bolt torque after every 100 hours of use. Repeat the torque sequence on each axle until the U-bolts stabilize and the torque specification is maintained.

OUC6092,0000E49-19-03APR20

Change Front Axle Bearing Oil—After First 50 Hours



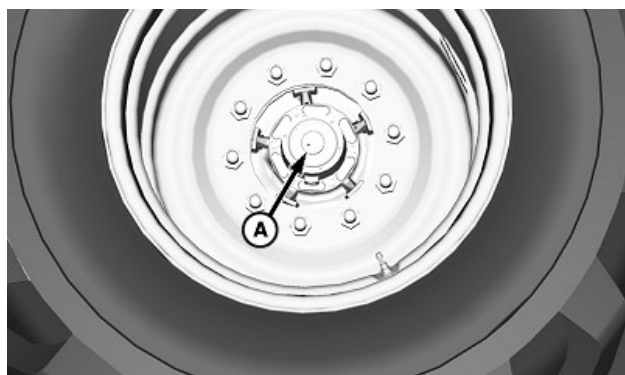
N129173—UN—05APR17

A—Drain Plug

1. Position drain plug (A) downward as shown.

NOTE: Oil capacity is approximately 0.5 L (0.5 qt).

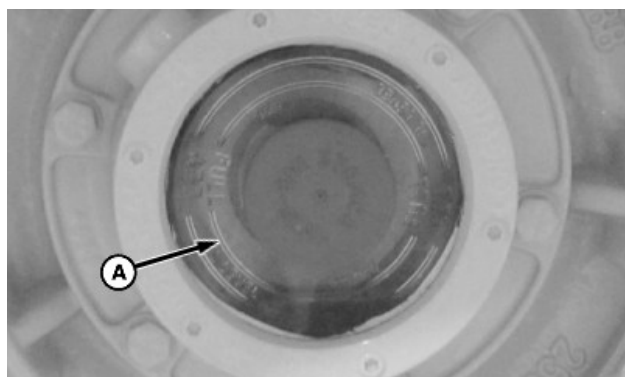
2. Remove drain plug and drain oil into a suitable container.



N129174—UN—05APR17

A—Fill Cap

3. Remove fill cap (A) from the end of the axle.



N129175—UN—05APR17

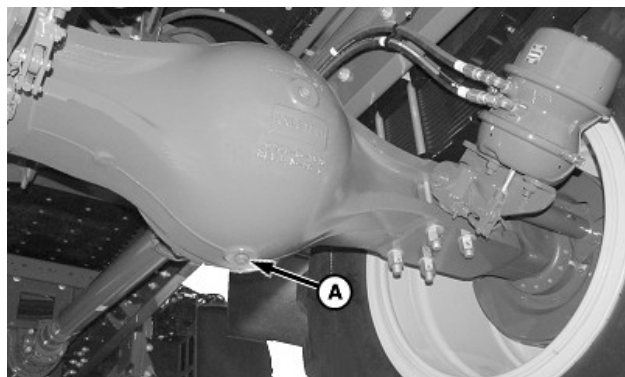
A—Full Mark

4. Fill axle with GL5 85W-140 gear lube until oil level reaches the full mark (A).
5. Install fill cap.

NOTE: Monitor for leaks and correct oil level after moving machine following changing the oil.

CS12167,00009FE-19-03APR17

Change Rear Axle Oil—After First 100 Hours

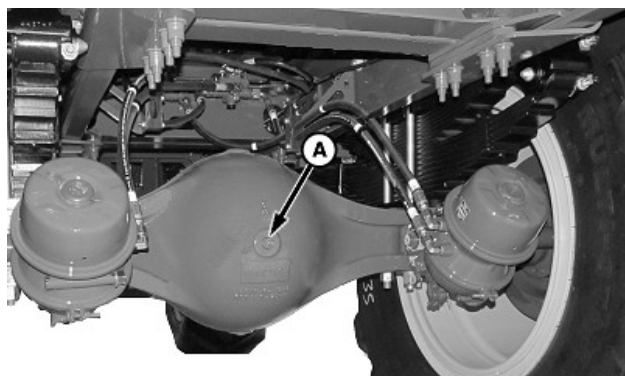


N129172—UN—05APR17

A—Drain Plug

NOTE: Approximately 18.9 L (20 qt) of John Deere GL5 85W-140 Gear Lube.

1. Remove drain plug (A) and drain oil into a suitable container.
2. Install previously removed drain plug.



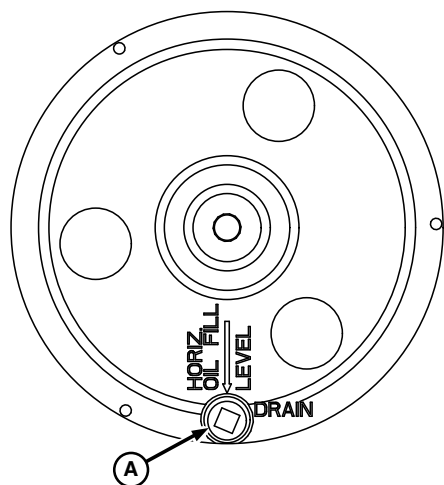
N129165—UN—15MAR17

A—Fill Plug

3. Remove the fill plug (A).
4. Fill rear axle with oil. Proper fill level is achieved when oil is level with the bottom of the fill plug hole.

CS12167,00009FD-19-03APR17

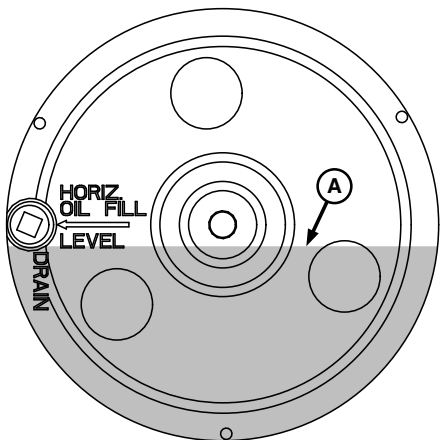
Change Planetary Hub Oil—After First 100 Hours



N118311—UN—28MAY15

A—Hub Oil Drain/Fill Hole

1. Park machine on a flat, level surface.
2. Maneuver machine forward or backward until drain/fill hole (A) is at bottom of hub.
3. Remove drain plug and drain oil into a suitable container.
4. When oil has completely drained, maneuver spreader so that words OIL FILL LEVEL cast into the wheel hub are horizontal.



N128890—UN—28FEB17

A—Oil Level

5. Fill hub to the oil level (A). (See Planetary Hub Oil in Fuels, Lubricants, and Coolants section for refill capacity and recommended oil.)
6. Apply pipe sealant with Teflon, or equivalent, to threads of drain/fill plug.
7. Install drain/fill plug. Tighten to specification.

Specification

Plug—Torque. 70 N·m
(52 lb·ft)

OUO6435,0002DBA-19-22OCT25

Change Engine Oil and Filter—After First 100 Hours

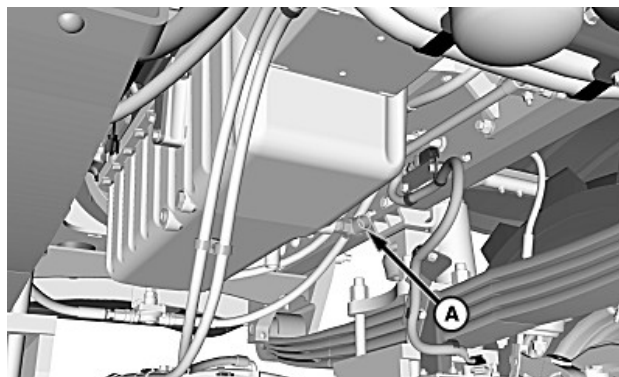
NOTE: The initial break-in service interval of a new or rebuilt wet sleeve engine with Break-In Plus engine oil must be at least 100 hours. This interval is required to ensure that surface mating of the rings and liners has had an opportunity to occur. The 100-hour minimum applies to all new or rebuilt engines. The 500-hour maximum service interval is the same as the service interval recommendations listed in Engine Oil and Filter Service Intervals—Final Tier 4 Engines in the Fuels, Lubricants, and Coolants section of this Operator's Manual.

The 500-hour extended interval for oil and filter change is only allowed if all of the following conditions are met:

- Diesel fuel used has sulfur content less than 15 mg/kg (15 ppm).
- John Deere Break-In Plus or John Deere Plus-50 II is added to maintain oil level within the necessary operating range.
- An approved John Deere oil filter is used.

1. Operate engine to warm oil. Stop engine.

NOTE: Engine crankcase and filter hold 35 L (37 qt).



N118302—UN—29MAY15

A—Crankcase Drain Plug

2. Place suitable container below the drain plug (A) to catch oil. Remove crankcase drain plug.
3. Replace plug after oil has drained.



N156267—UN—16JUL21

A—Oil Filter Cover
B—Plug

4. Using a 32-mm wrench, unscrew oil filter cover (A) and lift. Allow oil filter to drain into crankcase.

NOTE: Do not remove the plug (B) on the base of the oil filter housing. Oil automatically drains back into crankcase when filter is removed.



N136011—UN—05MAR18

Remove Filter from Cover

A—Filter

5. While holding cover, strike the filter (A) against a solid surface to remove. Discard the used filter.
6. Remove old O-ring and replace with new O-ring provided with new filter element.
7. Press new filter into cover until it snaps into place.
8. Insert cover and filter into the oil filter housing, then tighten cover to specification.

Specification

Oil Filter Cover—Torque. 40 N·m
(30 lb·ft)

9. Fill crankcase with seasonal viscosity grade oil.

(See Diesel Engine Oil in the Fuels, Lubricants, and Coolants section.)¹²

Specification

Crankcase with Filter—Capacity. 35 L
(37 qt)

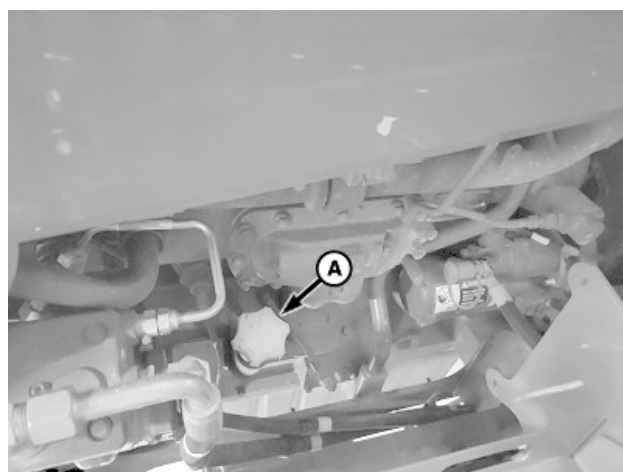
10. Start/Run engine until oil is warm. Check for leaks.
11. Stop engine. Check oil level and add oil to middle of crosshatch.

NCHYUSK,1755030528224-19-28OCT25

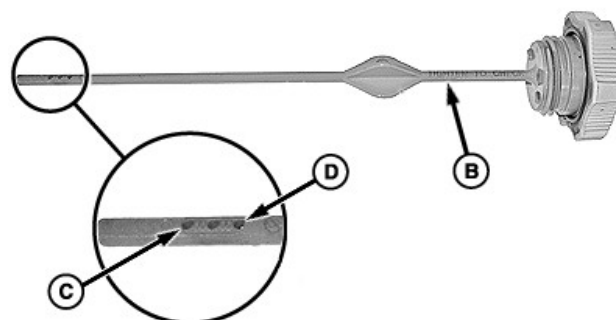
Check Engine Oil Level—Daily

1. Park machine on level ground. Stop engine and remove key.

NOTE: Dipstick is attached to the filler cap.



N155444—UN—15JUL21



N110836—UN—19MAR14

A—Filler Cap
B—Dipstick
C—ADD Hole
D—FULL Hole

¹ If certain conditions are met, the oil and filter service interval can be extended to 500 hours. See Engine Oil and Filter Service Intervals in the Fuels, Lubricants, and Coolants section of this manual.

² If operating at altitudes above 1675 m (5500 ft), oil and filter service intervals are shortened. See Diesel Engine Oil Service Intervals for Operation at High Altitude in the Fuels, Lubricants, and Coolants section of this manual.

2. Remove filler cap (A) and clean oil from dipstick (B).

IMPORTANT: Filler cap must be fully tightened to provide an accurate oil level reading.

3. Install filler cap, then remove and check oil level on dipstick.
4. Oil level is adequate if level is between the ADD hole (C) and the FULL hole (D).

IMPORTANT: Do not operate engine with the oil level below the ADD mark on dipstick.

Do not overfill oil level.

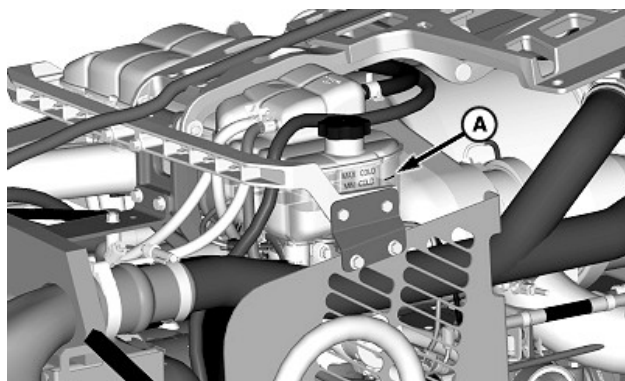
5. If oil level is below the ADD hole, then warm engine oil and add until level is mid-crosshatch. (See Diesel Engine Oil—Interim Tier 4, Final Tier 4, Stage IIIB and Stage IV in Fuels, Lubricants, and Coolants section of this manual.)

After a long storage period:

Check whether dirt or other foreign bodies have collected under the hood or cab. If so, remove them.

NCHYUSK,1755030826355-19-12AUG25

Check Coolant Level—Daily



N128444—UN—20FEB17

A—Coolant Level

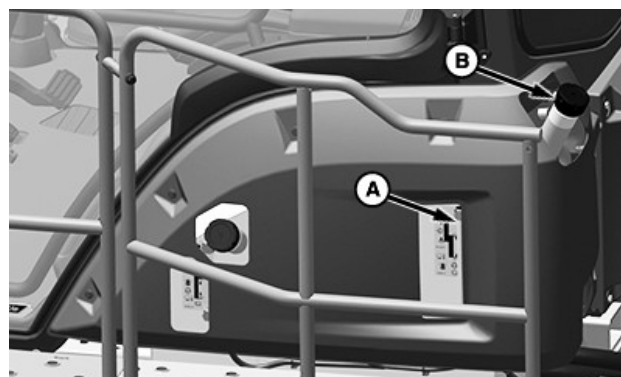
Check coolant level, using sight tube. Maintain the coolant level (A) between “MIN COLD” and “MAX COLD” marks on the overflow tank depending on engine temperature.

If coolant level is low, check for any signs of leakage and repair if necessary. Check all hose clamps for tightness. Add soft water and antifreeze mixture to overflow tank as specified. (See Diesel Engine Coolant (engines with wet sleeve cylinder liners) in the Fuels, Lubricants, and Coolants section.)

IMPORTANT: Add John Deere Cool-Gard II Coolant Extender as necessary to maintain proper additive levels. (See John Deere Cool-Gard II Coolant Extender in the Fuels, Lubricants, and Coolants section.)

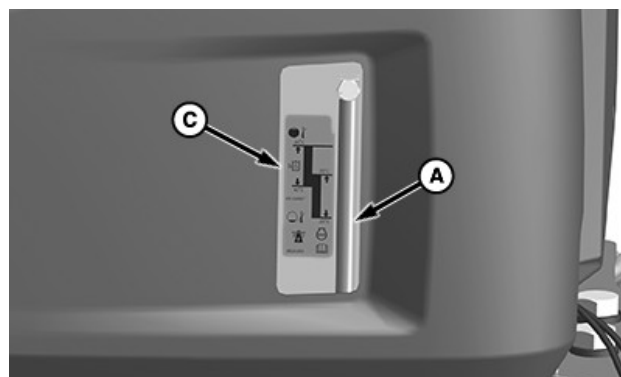
DP99999,0000BE0-19-22OCT25

Check Transmission Oil Level—Daily



N160302—UN—14JAN22

Hydraulic Oil Sight Gauge



N160304—UN—14JAN22

Oil Level Decal

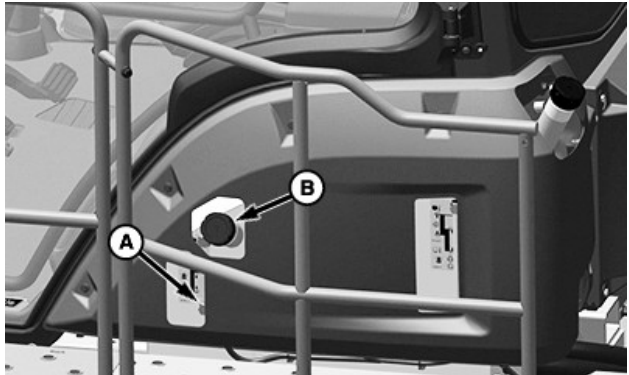
A—Sight Gauge
B—Filler Cap
C—Decal

Observe oil level in sight gauge (A) with the machine on a level surface and engine off. Decal (C) shows the proper oil level based on current oil temperature. Verify that oil level is within the proper range.

If oil level is below the lower mark for the current temperature range, remove filler cap (B) and add hydraulic oil. (See Steering, Hydraulic and Transmission Oil in the Fuels, Lubricants, and Coolants section of the chassis Operator's Manual.)

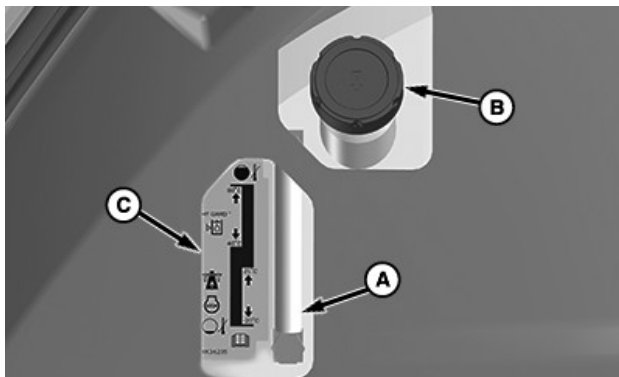
AYCXTDG,0000049-19-19JAN22

Check Steering/Hydraulic Oil Level—Daily



N160303—UN—14JAN22

Steering Oil Sight Gauge



N160305—UN—14JAN22

Oil Level Decal

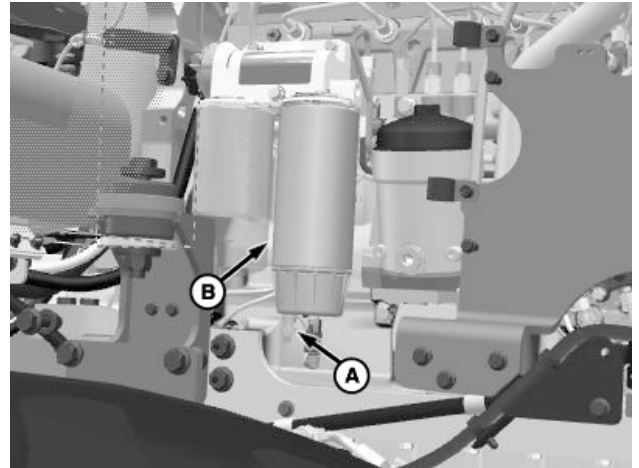
- A—Sight Gauge
- B—Filler Cap
- C—Decal

Observe oil level in sight gauge (A) with the machine on a level surface and engine off. Decal (C) shows the proper oil level based on current oil temperature. Verify that oil level is within the proper range.

If oil level is below the lower mark for the current temperature range, remove filler cap (B) and add hydraulic oil. (See Steering and Hydraulic Oil in the Fuels, Lubricants, and Coolants section.)

AYCXTDG,000004A-19-14JAN22

Drain Water Separator—Daily



N155667—UN—14JUL21

Water Separator

- A—Drain Valve
- B—Primary Filter

IMPORTANT: When draining water from fuel filters, the drain valve must be unthreaded completely. Also, the valve must drop down approximately 12 mm (0.5 in) to drain water properly from the filter.

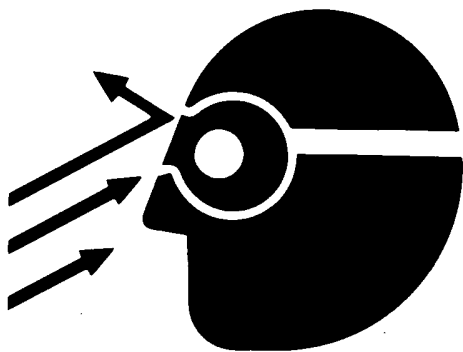
Drain water and contaminants from the water separator bowl by opening the drain valve (A) on the primary filter (B).

IMPORTANT: Replace fuel filters if an excessive amount of water or sediment is present. (See Replacing Fuel Filters in the Engine and Drivetrain section.)

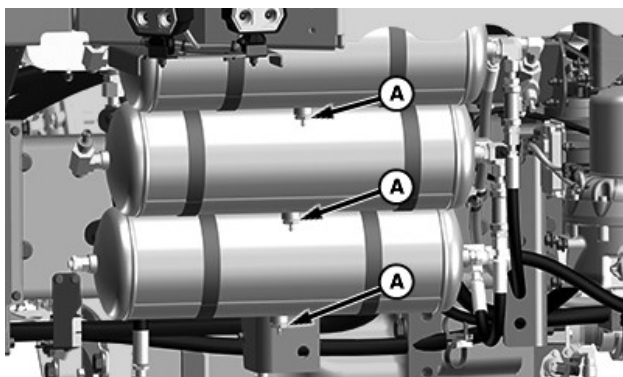
TB90758,0002975-19-26JUL21

Drain Moisture from Onboard Air Tank—Daily

CAUTION: Unloader valve and tank exhaust are at high pressure. Wear proper protective equipment, including eye and hand protection, when servicing or relieving pressure through valves.



TS266—UN—23AUG88



N160299—UN—14JAN22

A—Valve (3 used)

NOTE: Storage box is not shown for visual clarity.

Push or pull valves (A) and drain moisture from onboard air tanks daily. Use a suitable tool (not hands) for this task.

TB90758,0002976-19-14JAN22

Inspect Tires—Daily

See Check Tires for Damage and Proper Inflation Pressure—Daily in the Wheels and Tires section for proper inflation pressures, loads, and specifications.

ibhz6m2,1721298481907-19-02AUG24

Check and Replace Cab Air Filters—As Required



N160298—UN—14JAN22

A—Decal

Cab air filters **MUST** be replaced every 500 hours or every year, whichever comes first. Check filters regularly. Replace filters sooner if they become restricted or if manufacturer recommends. When replaced, record date and engine hours on decal (A). Decal is located on left-hand side rear cab glass.

(See Check and Replace Cab Air Filters in Cab and Air Conditioning section for replacement procedure.)

TB90758,00029B1-19-19JAN22

Replace Engine Air Filters—As Required

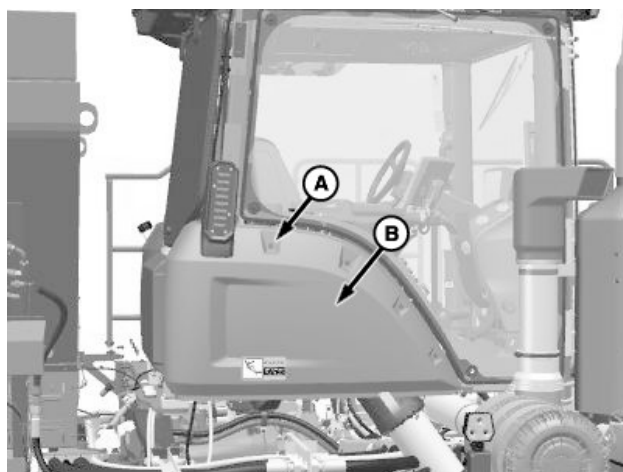
(See Replace Engine Air Cleaner Elements in Engine and Drive Train section for procedure.)

DP99999,0000BDD-19-28JAN16

Clean Fuel Tank Vent Filter—As Required

CAUTION: Avoid serious injury from falling. Do not stand on the fuel tank when replacing air filters.

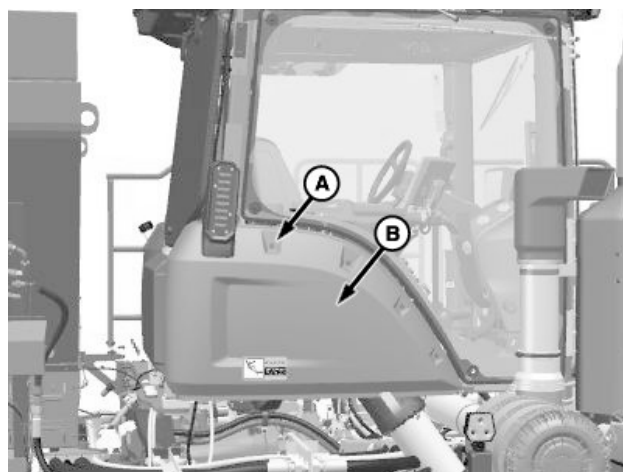
NOTE: Use a commercial ladder to access fuel tank vent filter.



N156269—UN—16JUL21

A—Cap Screw (6 used)
B—Access Panel

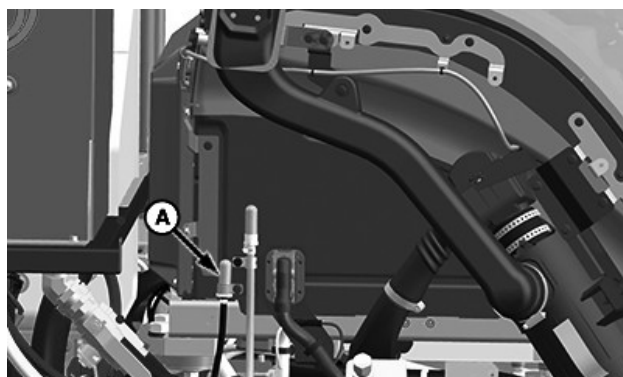
1. Remove and retain cap screws (A).
2. Remove access panel (B).



N156269—UN—16JUL21

A—Cap Screw (6 used)
B—Access Panel

1. Remove and retain cap screws (A).
2. Remove access panel (B).

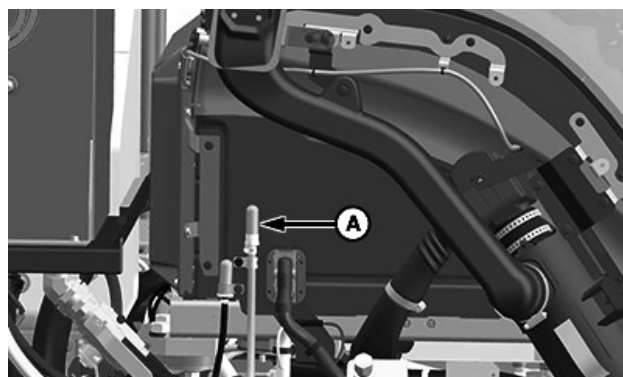


N160187—UN—10JAN22

A—Fuel Tank Vent Filter

3. Remove fuel tank vent filter (A) and clean in soapy detergent solution.
4. Blow dry with compressed air and reinstall.

TB90758,0002978-19-19JAN22



N160188—UN—10JAN22

A—DEF Tank Vent Filter

3. Remove DEF tank vent filter (A) and clean in soapy detergent solution.
4. Blow dry with compressed air and reinstall.

TB90758,0002979-19-19JAN22

Clean Diesel Exhaust Fluid (DEF) Tank Vent Filter—As Required

CAUTION: Avoid serious injury from falling. Do not stand on the fuel tank when replacing air filters.

NOTE: Use a commercial ladder to access DEF tank vent filter.

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

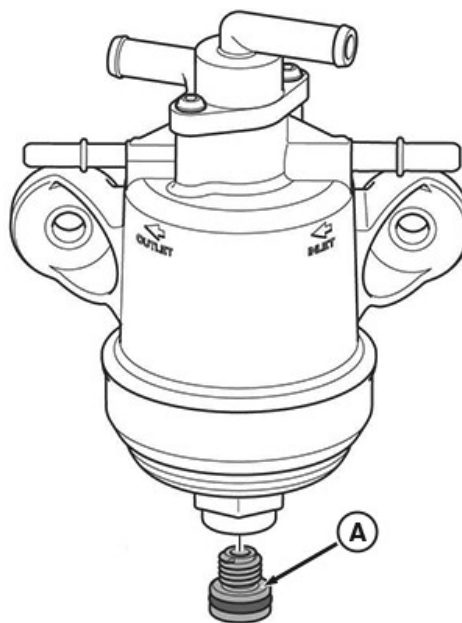
Change Diesel Exhaust Fluid (DEF) In-Line Filter—Three Years or 8500 Hours

CAUTION: Avoid possible personal injury. If DEF makes contact with your eyes, 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.

IMPORTANT: Avoid corrosion of vehicle parts or surfaces. 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, will leave a white residue. Improperly cleaned DEF spill may 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 in-line DEF 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.



DEF Fluid Removal

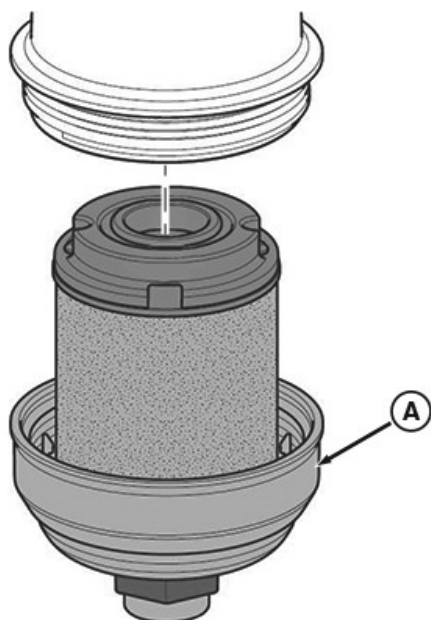
RG30728—UN—08AUG18

A—Drain Plug with O-Ring

1. Remove drain plug with O-ring (A) and discard.

NOTE: Container must be DEF compatible and hold at least 300 mL (0.32 qt).

2. Drain DEF into a proper container.



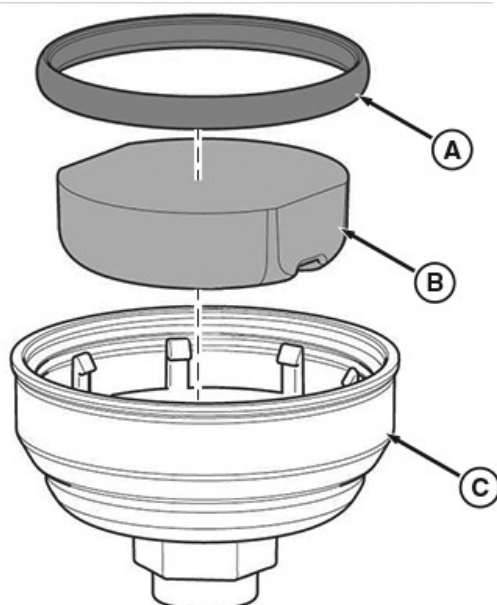
RG30727—UN—08AUG18

Filter Removal

A—Filter Housing

3. Rotate filter housing (A) counterclockwise and pull down.
4. Remove and discard filter from housing (A).

NOTE: If necessary, tap filter to loosen from filter housing (A).



RG30726—UN—08AUG18

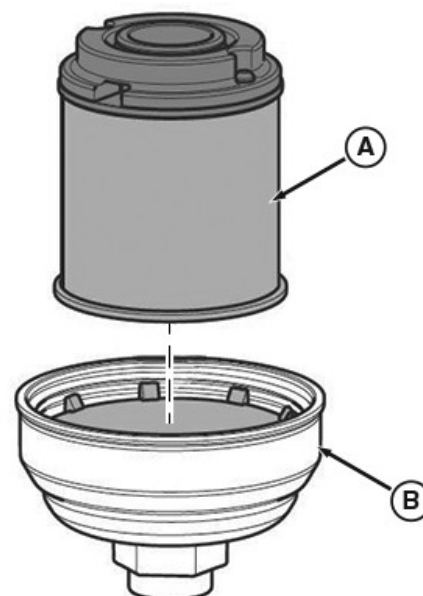
Filter Housing Components

A—O-Ring
B—Foam Compensation Element
C—Filter Housing

5. Remove and discard O-ring (A) and foam compensation element (B).

NOTE: Filter housing should be cleaned with clean DEF before installing new components to remove any sediment debris or contamination.

6. Install new O-ring (A) and foam compensation element (B) into filter housing (C).

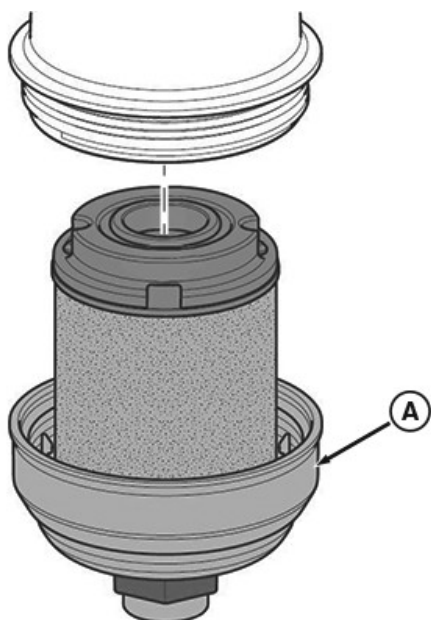


RG30725—UN—08AUG18

Filter Housing and Components Installation

A—Filter
B—Filter Housing

7. Install new filter (A) into filter housing (B).



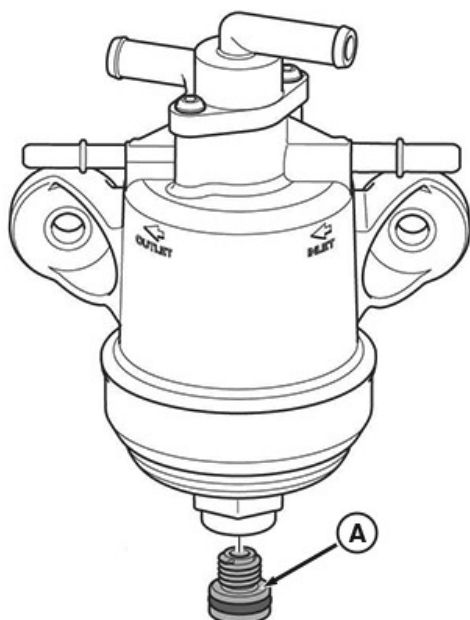
RG30727—UN—08AUG18
In-Line DEF Filter Housing Installation

A—Filter Housing

8. Install filter housing (A) with O-ring, foam compensation element, and filter element.
9. Rotate filter housing (A) clockwise and tighten to specification.

Specification

In-Line DEF Filter
Housing—Torque. 25 N·m
(221 lb·in)



RG30728—UN—08AUG18
In-Line DEF Filter Drain Plug

A—Drain Plug with O-Ring

10. Install new drain plug with O-ring (A). Tighten to specification.

Specification

In-Line DEF Filter Drain
Plug—Torque. 4 N·m
(35 lb·in)

TB90758,0002983-19-25JAN22

Replace Diesel Particulate Filter (DPF)—As Required

When the exhaust filter and warning light indicators are alerted on display, you have 250 hours to replace your Diesel Particulate Filter (DPF).

Contact a John Deere dealer or other service provider to replace your diesel particulate filter.

DP99999,0000BF8-19-09AUG25

Exhaust Filter / Diesel Particulate Filter (DPF) Ash Handling and Disposal

CAUTION: Under federal, state, and/or local laws or regulations, Diesel Particulate Filter ash may be classified as a hazardous waste. Hazardous wastes must be disposed of in accordance with all applicable federal, state, and local laws or regulations governing hazardous waste disposal. Only a qualified service provider should remove ash from the DPF. Personal protective equipment and clothing, maintained in a sanitary and reliable condition, should be used when handling and cleaning a DPF. Contact a John Deere dealer or other service provider for assistance.

DP99999,0000BF9-19-09AUG25

Exhaust Filter Disposal

CAUTION: Proper management of an Exhaust Filter that has reached the end of its useful life is required, since the ash or catalyst material in the device may be classified as hazardous waste under federal, state, and/or local laws or regulations. Used Exhaust Filters, which include the Diesel Particulate Filter, may be exchanged at regular spare part channels.

DP99999,0000BFA-19-17NOV25

Inspect and Replace Fan Belt—As Required

Inspect engine fan belt periodically for wear. Replace as necessary. (See Replace Fan Belt in the Engine and

Drive Train section for procedure and belt routing diagram.)

DP99999,0000BDF-19-28JAN16

Add Coolant Conditioner—As Required

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

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

Coolant Test Strips

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

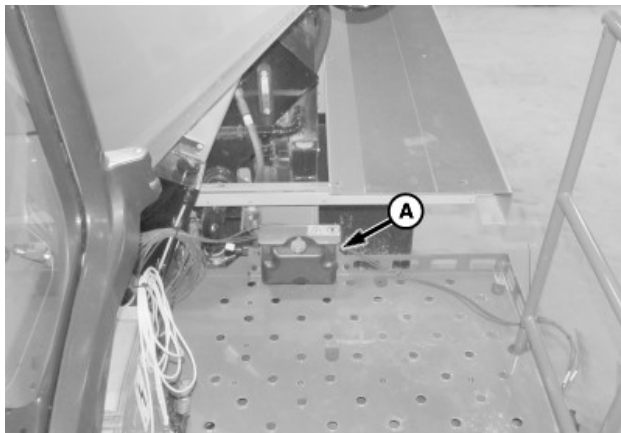
Compare the results to the supplemental coolant additive (SCA) chart to determine the amount of inhibiting additives in your coolant and whether more John Deere Coolant Conditioner should be added.

COOLSCAN

For a more thorough evaluation of your coolant, perform a CoolScan analysis. See a John Deere dealer or other service provider for information about CoolScan.

EC82471,0000148-19-25JUL25

Fill Windshield Washer Reservoir—As Required



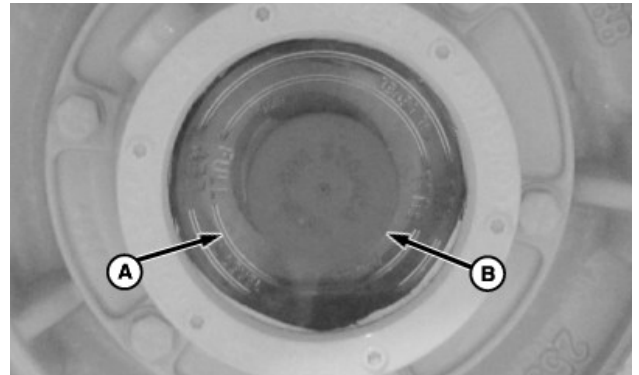
N155440—UN—24JUN21

A—Windshield Washer Reservoir

Fill windshield washer reservoir (A) with non-freezing washer fluid to prevent damage to washer system in cold temperatures.

TB90758,000297A-19-26JUL21

Visually Inspect Front Axle Oil-Lubricated Wheel Bearings—100 Hours



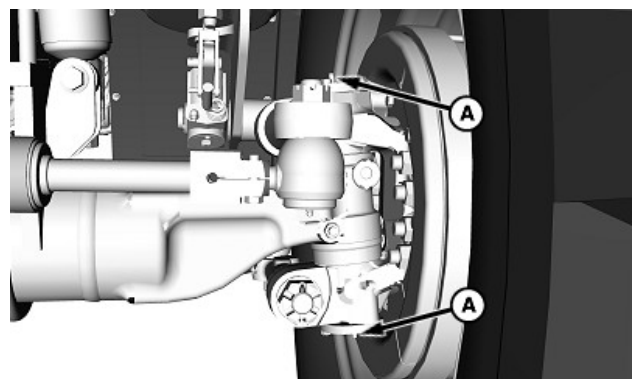
N122101—UN—29MAR16

1. Check oil level on the cap.
2. If the oil level is not at the “Full” level (A) on the cap, remove the fill plug (B).
3. Add the specified oil until oil is at the “Full” level. See Fuel Lubricants and coolants section for oil specifications.

CS12167,00009F8-19-29MAR17

Lubricate Front Spindle Housing—100 Hours

IMPORTANT: Use only John Deere SD polyurea grease for lubricating suspension and steering components. Use of other greases in the suspension system is not recommended. Use of other greases can result in premature wear of the suspension components.



N118306—UN—29MAY15

A—Grease Fitting (4 used)

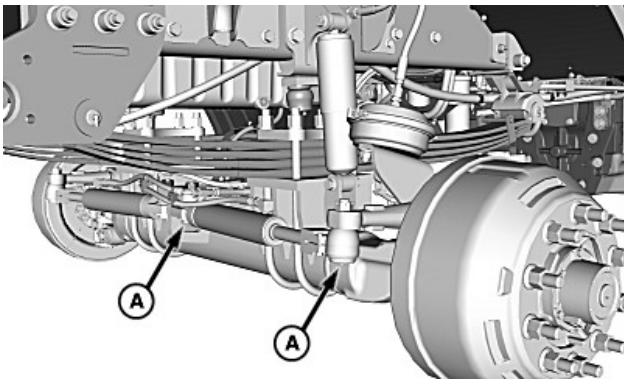
Lubricate spindle housing grease fittings (A) using John Deere SD polyurea grease every 100 hours.

NOTE: Two grease fittings are on each front spindle housing.

TB90758,0002913-19-26JUL21

Lubricate Steering Cylinder Ball Joints—100 Hours

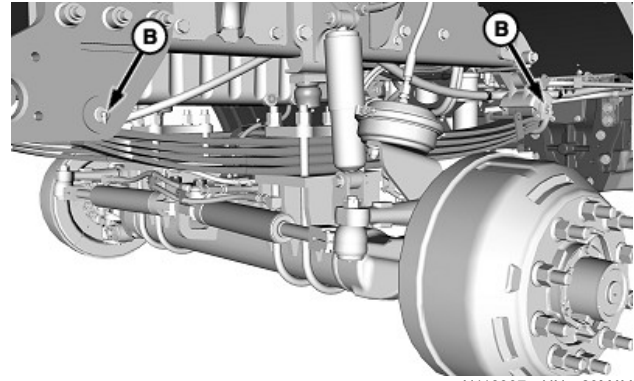
IMPORTANT: Use only John Deere SD polyurea grease for lubricating suspension and steering components. Use of other greases in the suspension system is not recommended. Use of other greases can result in premature wear of the suspension components.



A—Steering Cylinder Ball Joint (2 used)

Lubricate steering cylinder ball joints (A) using John Deere SD polyurea grease every 100 hours.

TB90758,0002914-19-26JUL21



Front Suspension

N118307—UN—29MAY15

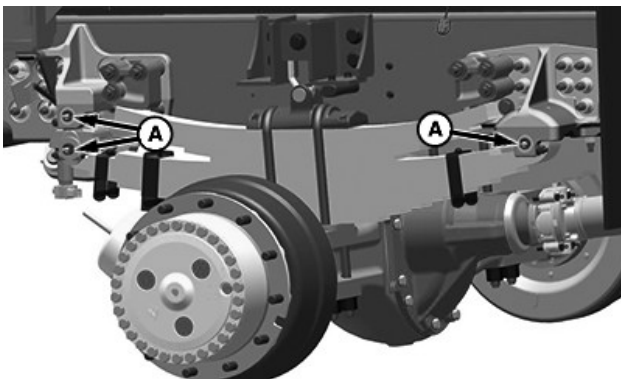
A—Grease Fitting (6 used)
B—Grease Fittings (4 used)

IMPORTANT: Use of other greases in the suspension system is not recommended. Use of other greases can result in premature wear of the suspension components.

Lubricate front and rear suspension assemblies with ONLY John Deere SD polyurea grease. Use five pumps of grease at each of the grease fittings (A and B).

TB90758,0002915-19-19JAN22

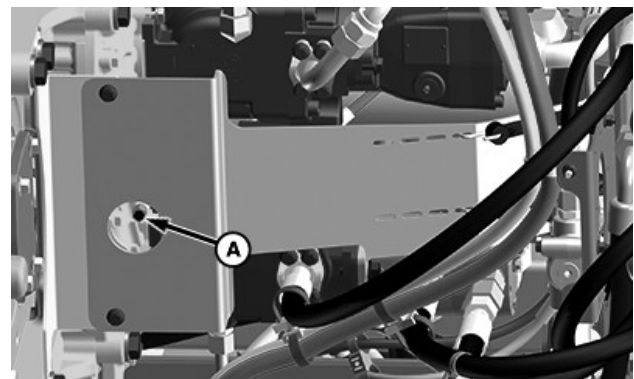
Lubricate Suspension Assemblies—100 Hours



Rear Suspension

N160189—UN—10JAN22

Lubricate Pump Drive Gear Case Bearing Seal—100 Hours



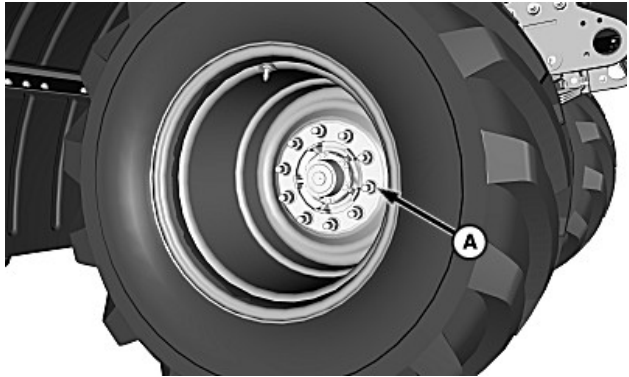
N160350—UN—18JAN22

A—Fitting

Lubricate pump drive gear case bearing seal using John Deere SD polyurea grease at fitting (A) every 100 hours.

TB90758,0002916-19-18JAN22

Tighten Wheel Hardware—100 Hours



Front Wheel

N118303—UN—29MAY15



Rear Wheel

N118304—UN—29MAY15

A—Wheel Hardware

Tighten wheel hardware (A) in a crisscross pattern to specification.

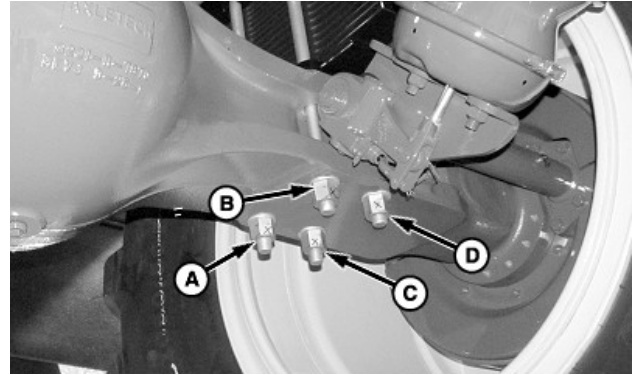
Specification

Wheel Hardware—Torque (Dry).	531 N·m (392 lb·ft)

IMPORTANT: Damage to the planetary hub and wheel can occur if the correct wheel hardware torque is not maintained. Tighten wheel hardware in a crisscross pattern to specification. Anytime wheel hardware is loosened, tighten wheel mounting nuts after first 1 hour of use and every 10 hours thereafter until correct torque is maintained. Thereafter, check wheel hardware torque after every 100 hours of use.

CS12167,0000AED-19-13SEP17

Check Axle Mounting Hardware Torque—100 Hours



Torque Sequence

N129167—UN—05APR17

- A—Inner Front U-Bolt Nut
- B—Inner Rear U-Bolt Nut
- C—Outer Front U-Bolt Nut
- D—Outer Rear U-Bolt Nut

IMPORTANT: If the correct mounting nut torque is not maintained, damage to the axle, U-bolts, leaf spring assembly, and/or drivetrain may occur.

NOTE: It is recommended to torque the U-bolts with the machine laden

1. Tighten the axle mounting hardware following the torque sequence shown. Begin with the inner front U-bolt nut (A), followed by U-bolt nuts (B—D). Tighten to specification.

Specification

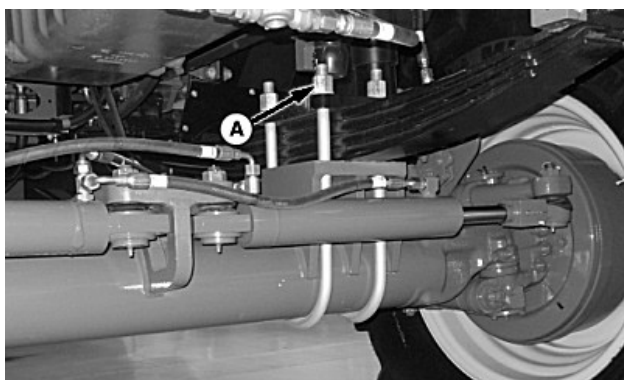
Front Axle U-Bolt Nut—Dry	
Torque.	522 N·m (385 lb·ft)

Specification

Rear Axle U-Bolt Nut—Dry	
Torque.	800 N·m (590 lb·ft)

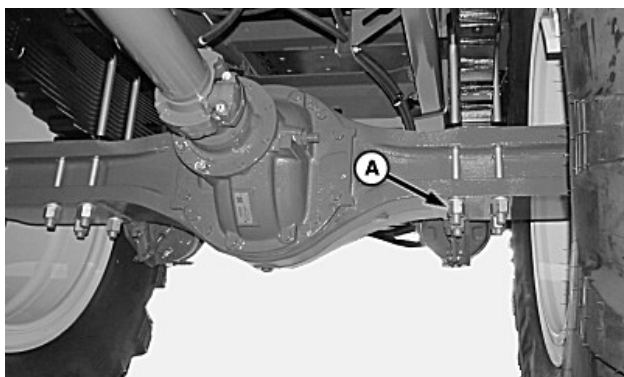
2. Repeat the torque sequence on each axle until the U-bolts stabilize and the torque specification is maintained.

NOTE: It is recommended to torque the U-bolts with the machine laden.



N123361—UN—02AUG16

Front Axle



N123362—UN—02AUG16

Rear Axle

A—Nut (8 used per axle)

3. Check the torque on the front and rear axle U-bolt mounting nuts (A) after every 100 hours of use. Repeat the torque sequence on each axle until the U-bolts stabilize and the torque specification is maintained.

OUC6092,0000E73-19-24MAR20

Inspect Automatic Brake Adjuster—100 Hours

IMPORTANT: Excessive power stroke or tight running brakes are a good indication that there is a problem with:

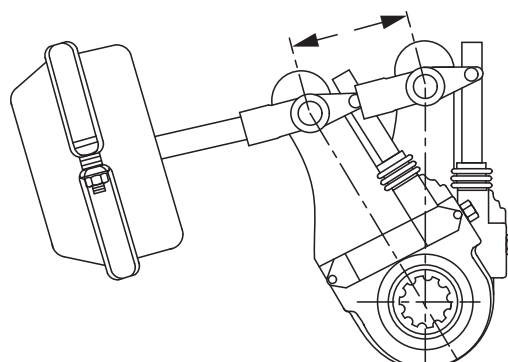
- The foundation brake components
- The automatic brake adjuster installation
- The automatic brake adjuster

The only way to check for proper automatic brake adjuster (ABA) adjustment is to check the power stroke. If the power stroke is within specification, the ABA is working properly and no other testing is necessary.

Check the Power Stroke



N123886—UN—05JUL16



N123776—UN—27JUN16

CAUTION: Ensure that the wheels remain blocked, front and back, to avoid machine roll away.

NOTE: Get assistance from another person.

1. Park machine on flat, level surface and block the wheels.
2. Start the engine and allow air pressure to build in system until it is fully charged.
3. Measure the distance from the center of the large clevis pin to the bottom of the brake chamber while the brake is released (clevis pin is closest to the brake chamber).
4. Apply the brakes using approximately 90 lb of pressure and measure the same distance (clevis pin is furthest away from the brake chamber).
 - The power stroke difference between the two distances must be less than the maximum specification.

Specification

Maximum Front Wheel Braking	
Power Stroke	
Measurement—Distance.	51 mm (2 in)
Maximum Rear Wheel Braking	
Power Stroke	
Measurement—Distance.	57 mm (2.25 in)

IMPORTANT: If the power stroke is greater than maximum specification, check the following:

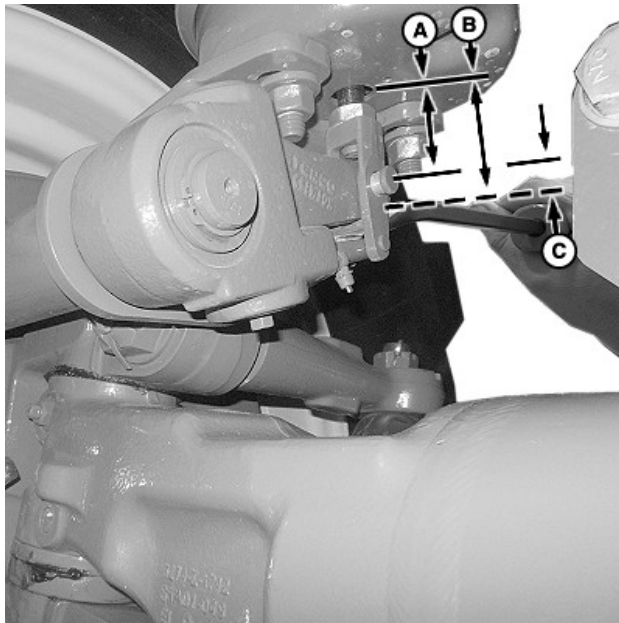
- Free Stroke
- Back Torque

Check the Free Stroke

IMPORTANT: Do not set the free stroke shorter than 9.5 mm (0.375 in). If the free stroke is shorter than specified, the brake linings can drag on the drum and damage braking components.

The “free stroke” is not the full power stroke movement of the brake push rod. The free stroke represents the “slack” from brakes released-to-engaged.

IMPORTANT: The free stroke test only applies if the power stroke is more than the maximum specification.



N123772—UN—01JUL16

Shown in Brakes Released Position

- A—Distance (brake fully released)
B—Distance (brake linings making contact)
C—Specified Range (3/8—5/8 in)

1. Measure the distance (A) from the center of the large clevis pin to the bottom of the brake chamber while the brake is released.
2. Simulate light braking using a suitable pry tool as shown, move until brake linings make contact on the drum, and measure the same distance (B).
 - The free stroke difference between the two distances must be within specified range (C).

Specification

Automatic Brake Adjuster Free

Stroke—Distance. 9.5—15.8 mm
(0.375—0.625 in)

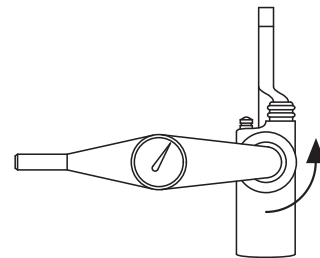
IMPORTANT: If the free stroke distance is greater than specified range, check the foundation brake components. Repair or replace parts as necessary.

Check the Back Torque

IMPORTANT: This procedure should only be used if:

- The foundation brake system has no deficiencies
- The push rod movement is greater than specified in the power stroke test

IMPORTANT: Do not turn the adjusting hex more than 5 clicks while recording readings.



N123303—UN—27JUN16

Using a torque wrench, turn the adjusting hex counterclockwise very slowly. The back torque will increase to a peak value, then return to zero as the clutch teeth are disengaged.

- If the back torque is **less than** 13.55 N·m (120 lb·in) and the power stroke is beyond specified limits, the automatic brake adjuster must be replaced.
- If the back torque is **more than** 45 N·m (400 lb·in), the automatic brake adjuster must be replaced.

Readjust the free stroke to specification if the ABA is determined to be in good working condition.

Specification

Automatic Brake Adjuster Free

Stroke—Distance. 9.5—15.8 mm
(0.375—0.625 in)

AYCXTDG,0000055-19-25JAN22

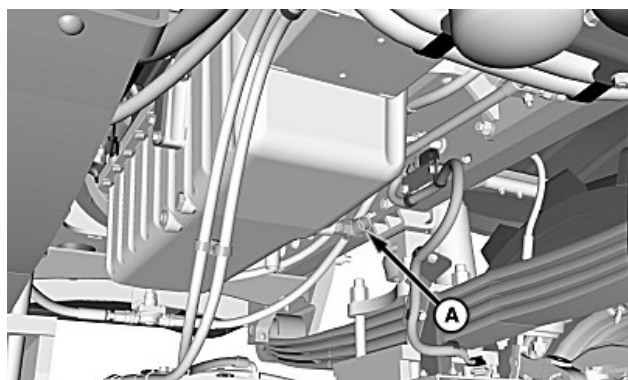
Change Engine Oil and Filter—250 Hours

NOTE: The 500-hour extended interval for oil and filter change is only allowed if all of the following conditions are met:

- Diesel fuel used has sulfur content less than 15 mg/kg (15 ppm).
- John Deere Break-In Plus or John Deere Plus-50 II is added to maintain oil level within the necessary operating range.
- An approved John Deere oil filter is used.

1. Operate engine to warm oil. Stop engine.

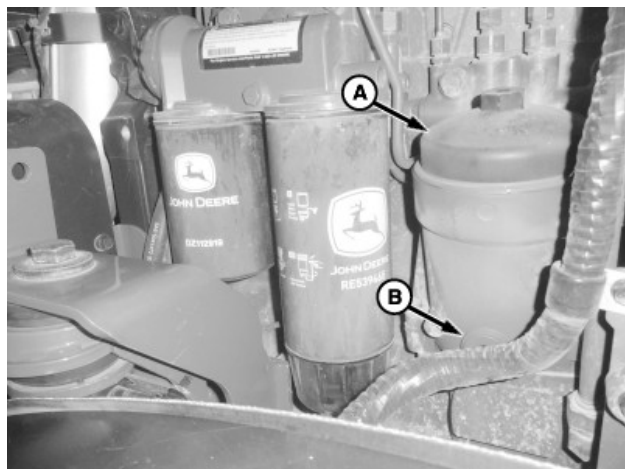
NOTE: Engine crankcase and filter hold 35 L (37 qt).



N118302—UN—29MAY15

A—Crankcase Drain Plug

2. Place suitable container below the drain plug (A) to catch oil. Remove crankcase drain plug.
3. Replace plug after oil has drained.



N156267—UN—16JUL21

A—Oil Filter Cover
B—Plug

4. Using a 32-mm wrench, unscrew oil filter cover (A) and lift. Allow oil filter to drain into crankcase.

NOTE: Do not remove the plug (B) on the base of the oil filter housing. Oil automatically drains back into crankcase when filter is removed.



N136011—UN—05MAR18

Remove Filter from Cover

A—Filter

5. While holding cover, strike filter (A) against a solid surface to remove. Discard the used filter.
6. Remove old O-ring and replace with new O-ring provided with new filter element.
7. Press new filter into cover until it snaps into place.
8. Insert cover and filter into the oil filter housing, then tighten cover to specification.

Specification

Oil Filter Cover—Torque. 40 N·m
(30 lb·ft)

9. Fill crankcase with seasonal viscosity grade oil. (See Diesel Engine Oil in the Fuels, Lubricants, and Coolants section.)³⁴

Specification

Crankcase with Filter—Capacity. 35 L
(37 qt)

10. Start/Run engine until oil is warm. Check for leaks.
11. Stop engine. Check oil level and add oil to middle of crosshatch.

NCHYUSK,1755031750219-19-28OCT25

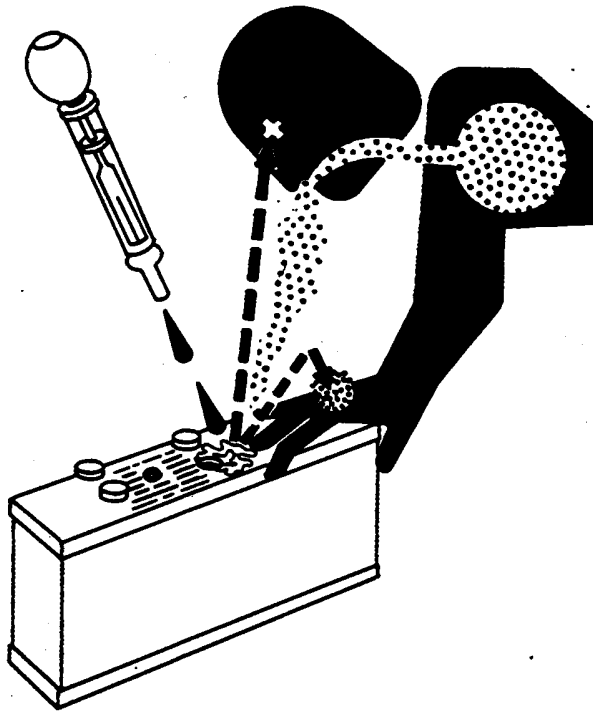
³ If certain conditions are met, the oil and filter service interval can be extended to 500 hours. See Engine Oil and Filter Service Intervals in the Fuels, Lubricants, and Coolants section of this manual.

⁴ If operating at altitudes above 1675 m (5500 ft), oil and filter service intervals are shortened. See Diesel Engine Oil Service Interval for Operation at High Altitude in the Fuels, Lubricants, and Coolants section of this manual.

Service Batteries—250 Hours



TS204—UN—15APR13



TS203—UN—23AUG88

CAUTION: 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 it last.

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.

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.**

1. Keep all connections clean and tight. Remove corrosion, and wash terminals with a solution of baking soda and water.
2. Check the specific gravity of the electrolyte in each battery cell. Charge battery if reading is below 1.215.

IMPORTANT: Do not add water in freezing weather unless machine operates at least 30 minutes.

3. Check level of electrolyte in each cell. If low, fill to bottom of filler necks with CLEAN, SOFT water. DO NOT OVERFILL.
4. Coat terminals with small amount of grease and replace terminal shields.

NX,4700,N14-19-13NOV08

Replace Fuel Filters—500 Hours



TS1343—UN—18MAR92

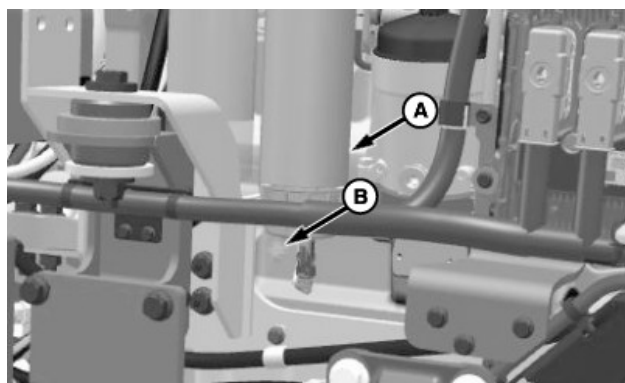
CAUTION: High-pressure fluid remaining in fuel lines can cause serious injury. Only technicians familiar with this type of system should perform repairs. Before disconnecting fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with high-pressure common rail (HPCR) fuel system, wait a minimum of 15 minutes after engine is stopped.

1. Thoroughly clean the exterior of the filter elements and filter mounting areas.

CAUTION: Fuel in filters may be under pressure. Open the valve on bottom of the water separator bowl to relieve pressure before removing the filter.

NOTE: Use a suitable container to catch fuel when draining or removing fuel filters.

NOTE: Fuel/water separator is part of fuel filter assembly.



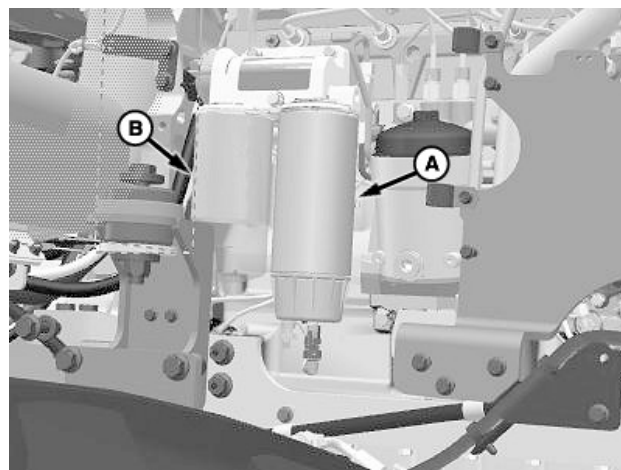
N155023—UN—19APR21

A—Primary Fuel Filter
B—Drain Valve

2. Open drain valve (B) to remove water and contaminants from the primary fuel filter (A). Catch contents in a suitable container.

IMPORTANT: Always replace both filters at the same time.

NOTE: Additional fuel drains from filter housings.



N156260—UN—15JUL21

A—Primary Fuel Filter
B—Secondary Fuel Filter

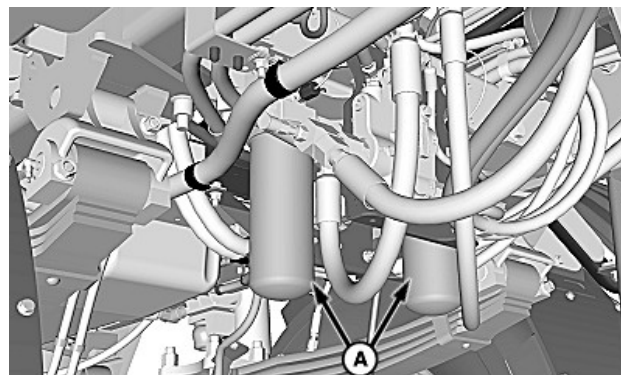
3. Rotate primary fuel filter (A) counterclockwise to remove it from housing.
4. Rotate secondary fuel filter (B) counterclockwise to remove it from housing.

IMPORTANT: DO NOT pre-fill either fuel filter with fuel.

5. Lubricate filter seals with diesel fuel and install filters.
6. Bleed fuel system. (See procedure in Operator's Manual.)

TB90758,000297C-19-19JAN22

Replace Transmission Oil Filters—500 Hours



N118563—UN—01JUN15

A—Hydraulic Filter (2 used)

1. Remove hydraulic filters (A).

2. Lubricate new filter packing with John Deere Hy-Gard oil.
3. Install and hand tighten filter elements.
4. Check oil level and add as required.

OUC6092,0000E48-19-22OCT25

Inspect Driveshaft U-Joints—500 Hours After Initial Interval

Inspect driveshaft U-joints every 500 Hours after the initial interval.

OUC6435,0002DB1-19-12AUG16

Check and Replace Cab Air Filters—500 Hours or Annually



N160298—UN—14JAN22

A—Decal

Cab air filters **MUST** be replaced every 500 hours or every year, whichever comes first. Check filters regularly. Replace filters sooner if they become restricted or if the manufacturer recommends. When replaced, record date and engine hours on decal (A). Decal is located on left-hand side rear cab glass.

(See Check and Replace Cab Air Filters in Cab and Air Conditioning section for procedure.)

TB90758,00029B2-19-14JAN22

Inspect Seat Belts—Annually



N155430—UN—27APR21

A—Seat Belt (2 used)

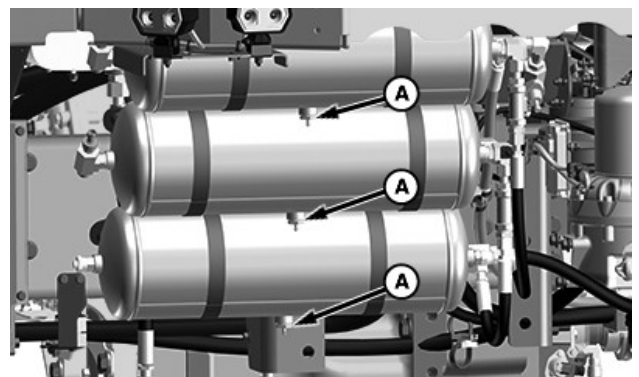
Inspect seat belts (A) and mounting hardware on your operator's seat and instructional seat (if equipped) at least once a year. If the seat belt system, including the mounting hardware, buckle, belt, or retractor, shows any sign of damage such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion, the entire seat belt system should be replaced immediately. For your safety, replace the belt system only with replacement parts approved for your machine. Contact a John Deere dealer or other service provider.

TB90758,000297D-19-09AUG25

Replace Air Drier Cartridge—Annually

CAUTION: The onboard air system is charged at 689—896 kPa (6.89—8.96 bar) (100—130 psi). To avoid injury to yourself or others, wear safety goggles and gloves, and be sure that others are clear of the area before relieving onboard air system pressure.

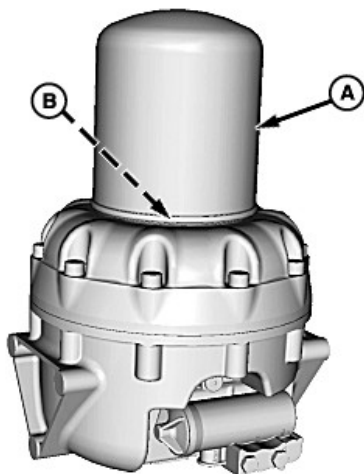
NOTE: Storage box is not shown for visual clarity.



N160299—UN—14JAN22

A—Drain Valve (3 used)

1. Relieve air system pressure by opening valves (A).



A—Cartridge
B—O-Ring

N128894—UN—09MAR17

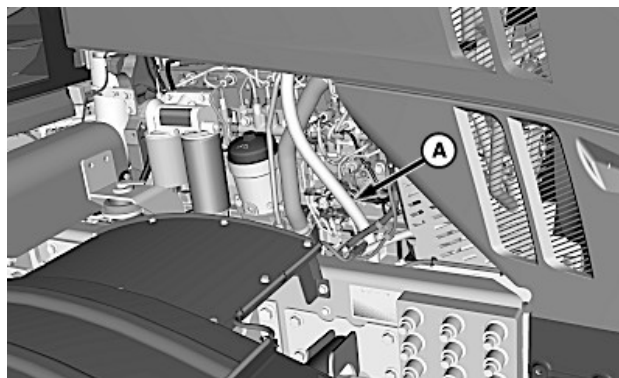
2. Using a strap wrench, turn the desiccant cartridge (A) counterclockwise. Remove and discard.

NOTE: If there is excessive oil present in the desiccant filter, compressor may require servicing.

3. Remove and discard O-ring (B) from adapter plate stud.
4. Clean the top surface of the adapter plate and threaded stud.
5. Apply a light coat of grease (supplied with the new cartridge) to O-ring. Install O-ring on the adapter plate.
6. Apply a generous coat of grease to the new desiccant cartridge gasket surface.
7. Thread new cartridge into adapter plate by turning clockwise until gasket contacts adapter plate. Tighten cartridge with an additional 1/2 turn. **DO NOT OVERTIGHTEN.**

TB90758,000297E-19-14JAN22

Clean Engine Vent Tube—Annually



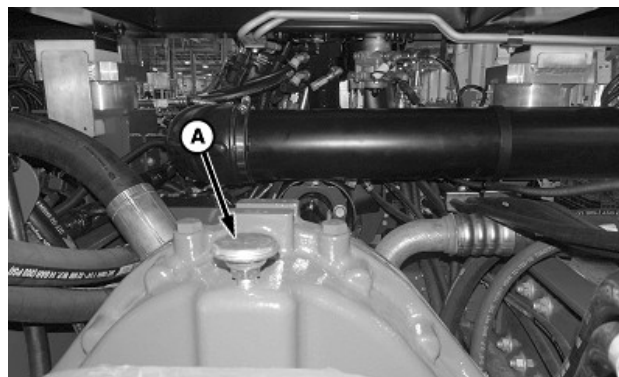
N118560—UN—29MAY15

A—Vent Tube

Clean dirt and trash from the engine vent tube (A).

OOU6435,0002D17-19-31MAY16

Clean Pump Drive Gearcase Breather—Annually



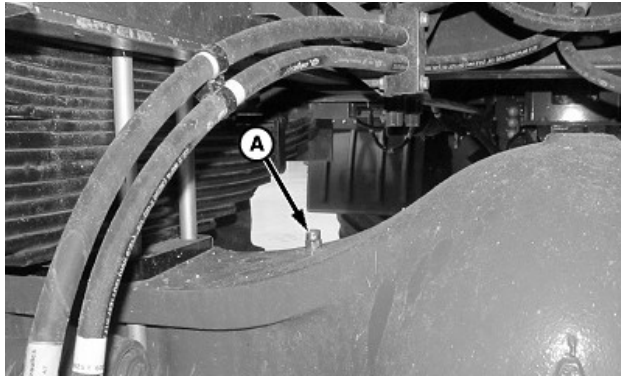
N129171—UN—05APR17

A—Breather

1. Remove breather (A) from the pump drive gear case.
2. Clean breather. If breather cannot be cleaned, then replace the breather.
3. Apply compressed air to the breather. If air does not pass through the breather, then replace the breather.
4. Install breather to pump drive gear case.

PR79369,0000776-19-19JAN22

Clean Rear Axle Breather—Annually



N129169—UN—05APR17

A—Rear Axle Breather

1. Remove rear axle breather (A) from the axle housing
2. Clean breather. If breather cannot be cleaned then replace the breather.
3. Apply compressed air to the breather. If air does not pass through the breather then replace the breather.
4. Install breather to rear axle and tighten to specification.

Specification

Rear Axle Breather—Torque. 27 N·m
20 lb·ft

CS12167,00009FC-19-30MAR17

Inspect Service Brake Components—Annually

Brake Lining Check

Remove inspection covers, examine linings for damage and wear, and replace worn shoes with the same type lining. When new shoes are to be fitted, the following procedures are also required:

- Examine camshaft for wear - replace when necessary.
- Check bearings for wear – replace grease.
- Checking bearings clearance – adjust when necessary.

Adjustable Lever

- Parking brake OFF.
- Operate brake lever and ensure that travel is between 5°-7°. Greater than this, the brake must be adjusted.
- Raise the axle leaving the hub free to rotate.

Rotate wheel hub, push in locking cover, and adjust hexagonal screw until brake shoes come into contact with the drum, back-off adjustment screw till the hub

rotates freely. Lock adjustment screw (ensure that locking cover is fully extended).

If it is not possible to raise the axle, operate the brake lever and adjust to reduce the free movement. After adjustment, verify (pushing it by hand) that the lever's travel is between 5° and 7°.

IMPORTANT: Brake shoes must not rub against the drum. Hub must be free to rotate. The external connection for the brake lever must be taut, without causing interference on the brake shoes and drum.

OOU6435,0002D18-19-15AUG16

Inspect Axle Components—Annually

General Axle Inspection

IMPORTANT: Do NOT under any circumstances, repair a bent axle beam, or carry out welding repairs.

Inspect the axle beam for signs of wear, damage, and deformities. If any evidence is detected, an axle replacement is required. Overloaded and/or bent axles must be replaced immediately.

Inspect the following for signs of wear and damage:

- External camshaft supports
- Brake actuating cylinder supports
- Brake support welds
- Suspension supports and components

A defect in any of the listed elements could cause or lead to the possible loss of control of the machine. Verify the correct alignment of the axle with the machine frame. Incorrect alignment of the axle with the machine frame could lead to abnormal wear of the tires and/or possible machine control loss.

IMPORTANT: Failure to carry out periodic inspection of the axle condition and its components could result in a sudden failure of the axle, leading to possible control loss.

Bearing Inspection

CAUTION: In addition to the normal maintenance safety caution, ensure that the raised axle is mechanically supported.

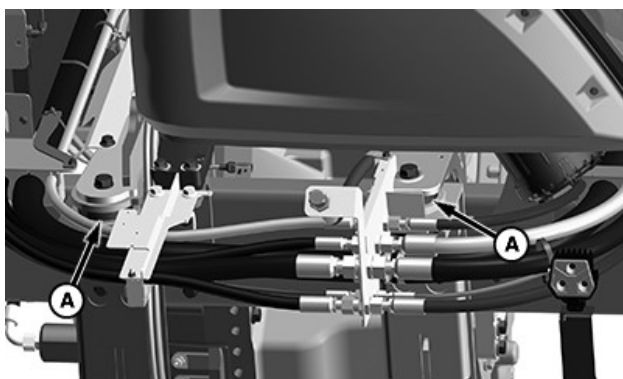
- Parking brake OFF.
- Lift the axle until the hub is free to rotate.
- Dismantle the hub and clean it carefully, both internally and externally, removing any residue of old grease.

- Wash the dismantled bearings with a suitable solvent, rotating them slowly, and then dry them.
- Carefully check the surfaces of the rollers and of the hub bearing races, look for any signs of wear, scoring or other signs of damage.
- Replace the bearings on any sign of wear.

IMPORTANT: Bearing replacement must always include both the internal cone and the hub bearing races.

OJ06435,0002DAF-19-20FEB17

Inspect Transmission Isolators—Annually



N160348—UN—19JAN22

A—Isolator (4 used)

Inspect four transmission isolators (A) for loose, damaged, or missing bushings. There are two isolators at the front of the transmission and two at the rear.

TB90758,0002997-19-18JAN22

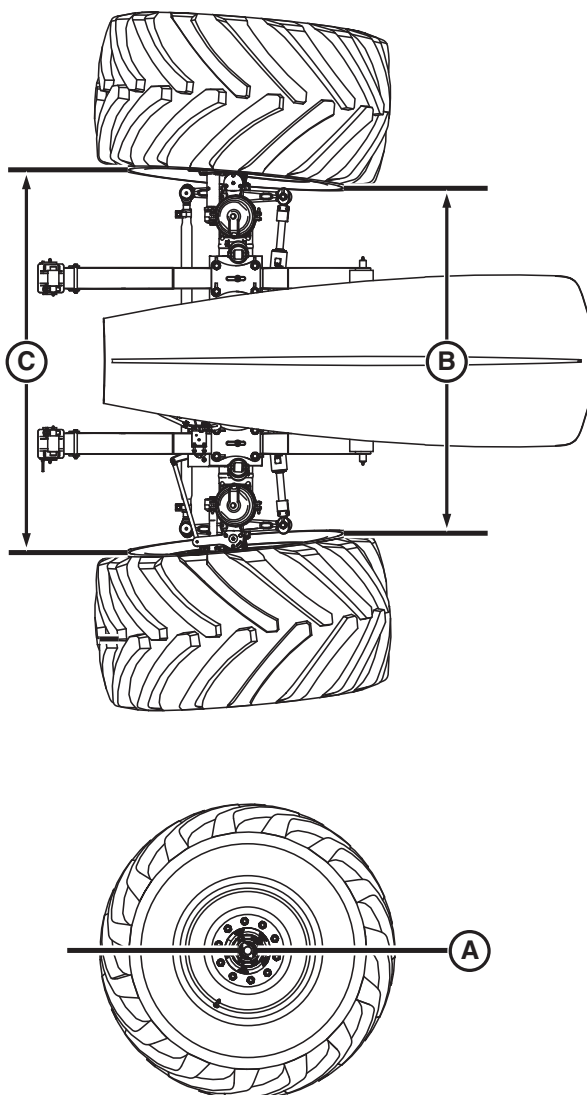
Check Front Axle Toe-In—Annually

NOTE: Check toe-in on hard, level surface.

1. Verify that front tires have same air pressure.

NOTE: Engaging AutoTrac on a Straight Trac may assist in getting the tires centered. Verify by measuring the extend/retract on both sides of the steering cylinders.

2. Position wheels for straight ahead travel.
3. Operate machine in reverse and forward a minimum of two tire revolutions, approximately 15 m (50 ft), to remove wind-up in suspension and linkage.



N201000—UN—08AUG24

A—Centerline
B—Front Spacing Dimension
C—Rear Spacing Dimension

4. Mark the front of each rim at the hub and axle centerline level (A).
5. Measure and record distance (B) between marks.
6. Drive machine in reverse approximately 2 m (6.5 ft) until marks on the rims are at rear of the hub and axle centerline level.
7. Measure and record distance (C) between marks.
8. Subtract front spacing dimension (B) from rear spacing dimension (C) to obtain toe-in dimension.
9. Verify that toe-in dimension is within specification. If not, adjust the toe-in. (See Adjust Front Axle Toe-In in the Wheels and Tires section.)

Specification

Front Wheels—Toe-In. 0.79—3.2 mm
(0.03—0.125 in)

DP99999,0000BD7-19-22OCT25

Change Front Axle Wheel Bearing Oil—Annually



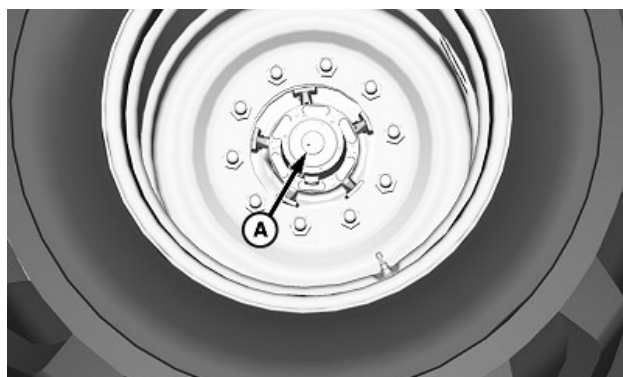
N129173—UN—05APR17

A—Drain Plug

1. Position drain plug (A) downward as shown.

NOTE: Oil capacity is approximately 0.5 L (0.5 qt).

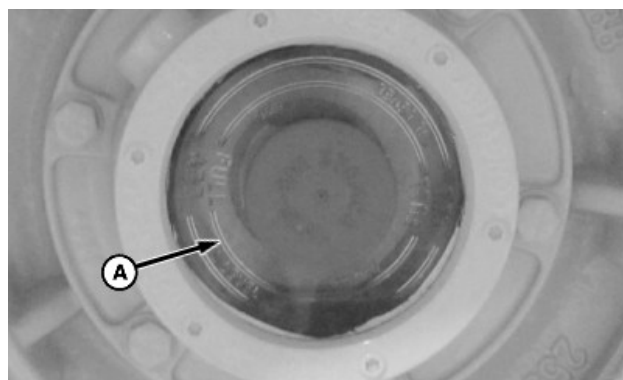
2. Remove drain plug and drain oil into a suitable container.



N129174—UN—05APR17

A—Fill Cap

3. Remove fill cap (A) from the end of the axle.



N129175—UN—05APR17

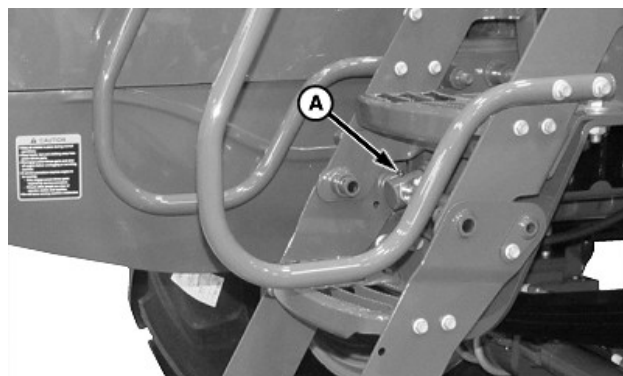
A—Full Mark

4. Fill axle with GL5 85W-140 gear lube until oil level reaches the full mark (A).
5. Install fill cap.

NOTE: Monitor for leaks and correct oil level after moving machine following changing the oil.

CS12167,00009F9-19-03APR17

Lubricate Ladder Cylinder—Annually



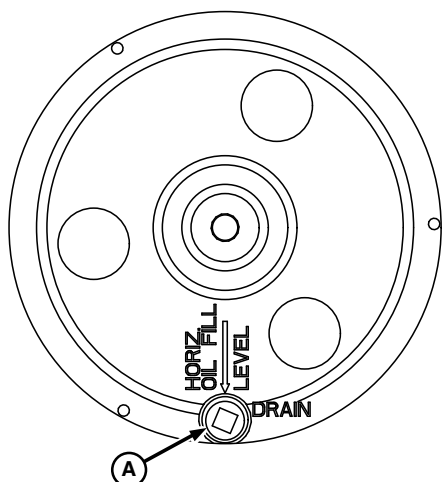
N129168—UN—05APR17

A—Ladder Cylinder

Lubricate the ladder cylinder (A) annually using John Deere SD polyurea grease.

TB90758,0002917-19-26JUL21

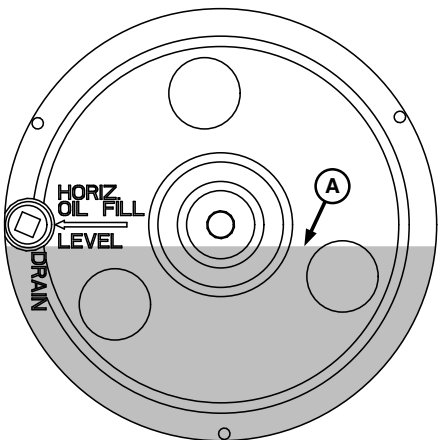
Change Planetary Hub Oil—1500 Hours or Annually



N118311—UN—28MAY15

A—Hub Oil Drain/Fill Hole

1. Park machine on a flat, level surface.
2. Maneuver machine forward or backward until drain/fill hole (A) is at bottom of hub.
3. Remove drain plug and drain oil into a suitable container.
4. When oil has completely drained, maneuver machine so that words OIL FILL LEVEL cast into the wheel hub are horizontal.



N128890—UN—28FEB17

A—Oil Level

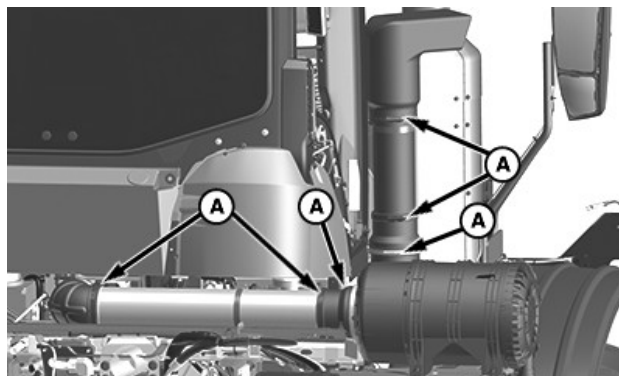
5. Fill hub to the oil level (A). (See Planetary Hub Oil in Fuels, Lubricants, and Coolants section for refill capacity and recommended oil.)
6. Apply pipe sealant with Teflon, or equivalent, to threads of drain/fill plug.
7. Install drain/fill plug. Tighten to specification.

Specification

Plug—Torque. 70 N·m
(52 lb·ft)

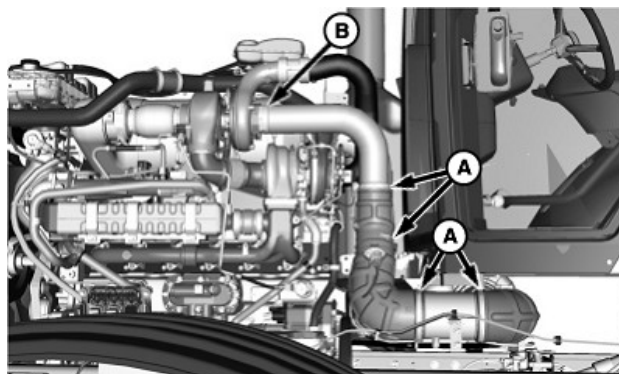
CS12167,00009FA-19-22OCT25

Service Air Intake System—750 Hours or Annually



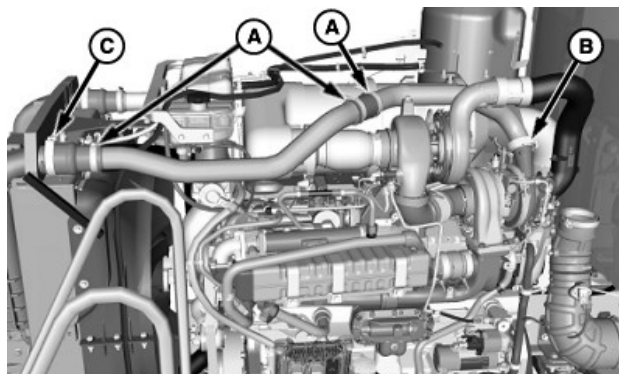
N160297—UN—14JAN22

Air Cleaner Connections



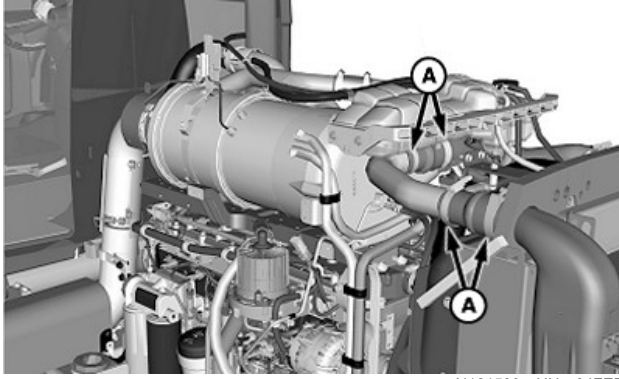
N121503—UN—04FEB16

Turbocharger Inlet Hose



N121504—UN—04FEB16

Charge Air Cooler Supply Hose



N121589—UN—04FEB16

Charge Air Cooler Outlet Hose

- A—Clamp, Band, Constant Tension (16 used)
 B—Clamp, V-Band (2 used)
 C—Clamp, Spring

Check all air intake system pipes and connections to make sure that they are not damaged and have no air leaks.

Check hose clamps (A-C) at all connections to make sure that they are tight.

AYCXTDG,0000042-19-19JAN22

Test Coolant—750 Hours or Annually

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

Test the coolant solution at intervals of 12 months or 750 hours and whenever excessive coolant is lost through leaks or overheating.

Coolant Test Strips

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

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

COOLSCAN

For a more thorough evaluation of your coolant, perform a CoolScan analysis. See a John Deere dealer or other service provider for information about CoolScan.

EC82471,0000165-19-25JUL25

Check Engine Speeds—750 Hours

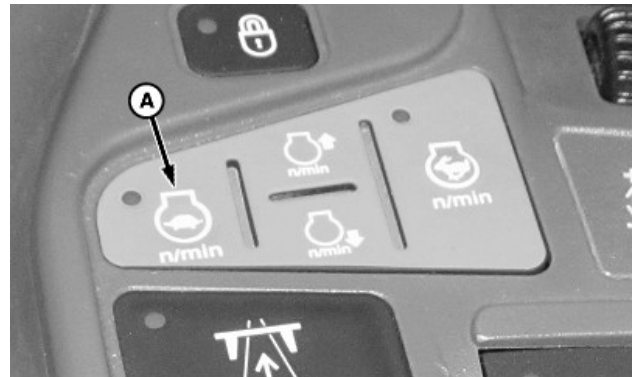
1. Start the engine and allow it to run until it reaches normal operating temperature.



N156270—UN—16JUL21

A—Multi-Function Lever

2. Verify that the multi-function lever (A) is in the PARK position.



N143239—UN—26FEB19

A—Low Idle Switch

3. Press the low idle switch (A) to set the engine to low idle.
4. Observe the engine rpm on the corner post display.
5. Verify that the low idle speed is within specification.

Specification

Low Idle Engine Speed—Speed. 850—950 rpm



N143241—UN—26FEB19

A—High Idle Switch

6. Press the high idle switch (A) to set the engine to high idle.
7. Verify that the high idle speed is within specification.

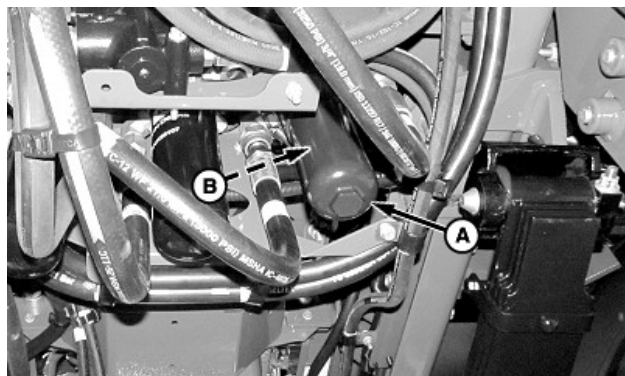
Specification

High Idle Engine Speed—Speed 2150—2250 rpm

If either low idle speed or high idle speed is not within specification, contact a John Deere dealer or other service provider.

TB90758,000297F-19-09AUG25

Replace Steering/Hydraulic Oil Filter—1000 Hours



N128895—UN—01MAR17

A—Filter Canister
B—Filter Cartridge

1. Remove filter canister (A).
2. Remove and discard filter cartridge (B).
3. Remove and replace all sealing O-rings. Lubricate O-rings with John Deere Hy-Gard oil.
4. Install new filter cartridge and filter canister.
5. Tighten filter canister.
6. Check oil level and add as required.

OJ06435,0002D1E-19-22OCT25

Replace Transmission Reservoir Filler Cap—1000 Hours

IMPORTANT: Filler cap contains transmission reservoir breather filter and should be replaced when transmission oil is changed.



N160291—UN—14JAN22

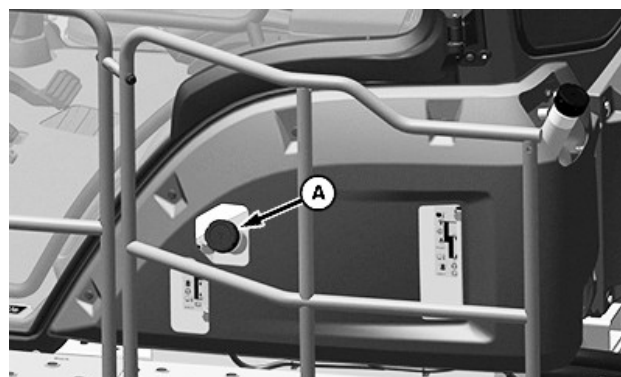
A—Filler Cap

1. Remove transmission reservoir filler cap (A). Compress tether chain ring to remove from the neck flange.
2. Wipe off dirt and oil from top of filler neck with clean rag.
3. Compress new tether ring so it fits in neck, and place horizontally under the neck flange.
4. Insert chain in filler neck.
5. Install cap.

AYCXTDG,0000043-19-25JAN22

Replace Steering/Hydraulic Reservoir Filler Cap—1000 Hours

IMPORTANT: Filler cap contains reservoir breather filter and should be replaced when steering/hydraulic oil is changed.



N160292—UN—14JAN22

A—Filler Cap

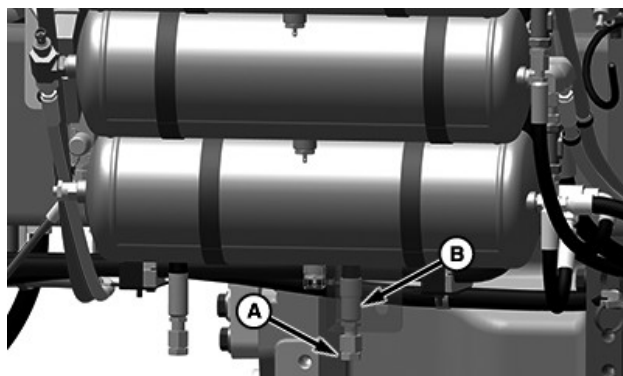
1. Remove steering/hydraulic reservoir filler cap (A). Compress tether chain ring to remove from the neck flange.
2. Wipe off dirt and oil from top of filler neck with clean rag.
3. Compress new tether ring so it fits in neck, and place horizontally under the neck flange.

4. Insert chain in filler neck.
5. Install cap.

AYCXTDG,0000044-19-14JAN22

Change Transmission Oil—1000 Hours

NOTE: Approximately 98 L (26 gal) of John Deere Hy-Gard oil is required to fill transmission reservoir.



A—Drain Plug
B—Drain Hose

N160347—UN—19JAN22

1. Park machine on a flat, level surface.
2. Remove drain plug (A) from the reservoir drain hose (B) and drain oil into a suitable container.
3. Install drain plug in the drain hose.

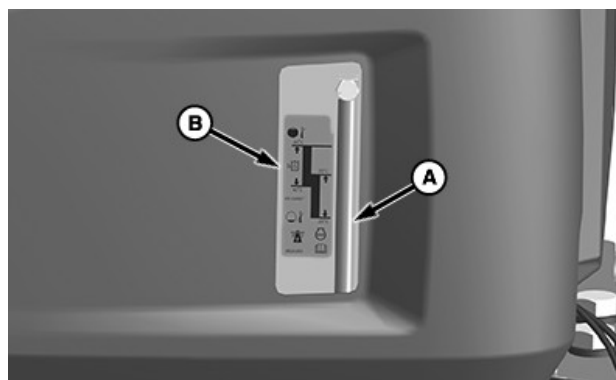


A—Filler Cap

N160291—UN—14JAN22

IMPORTANT: Filler cap (A) contains transmission reservoir breather filter. Replace filler cap whenever transmission oil is changed.

4. Remove filler cap (A).



N160293—UN—14JAN22

Oil Level Decal

A—Sight Gauge
B—Decal

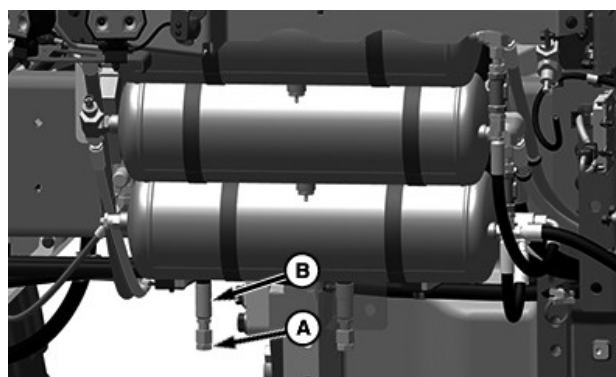
5. Fill reservoir with specified transmission oil until oil is visible in sight gauge (A) at the proper level.

NOTE: Decal (B) shows the proper oil level for the current oil temperature.

AYCXTDG,0000045-19-22OCT25

Change Steering/Hydraulic Oil—1000 Hours

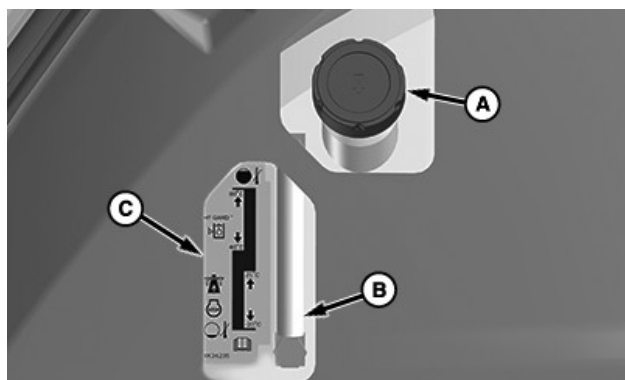
NOTE: Approximately 98 L (26 gal) of John Deere Hy-Gard oil is required to fill steering/hydraulic reservoir.



N160346—UN—19JAN22

A—Drain Plug
B—Drain Hose

1. Park machine on a flat, level surface.
2. Remove drain plug (A) from the reservoir drain hose (B) and drain oil into a suitable container.
3. Install drain plug in the drain hose.



N160294—UN—14JAN22

Sight Gauge and Oil Level Decal

A—Filler Cap
B—Sight Gauge
C—Decal

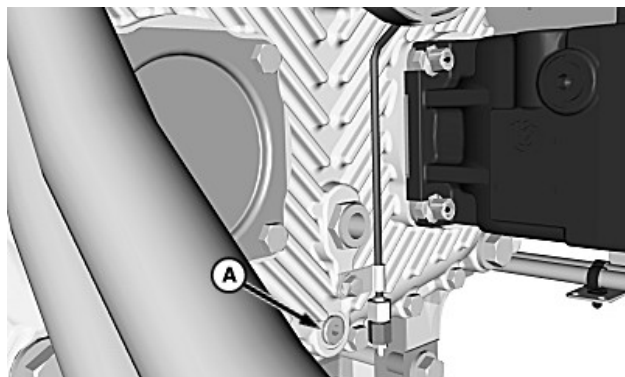
IMPORTANT: Filler cap (A) contains reservoir breather filter. Replace filler cap whenever steering/hydraulic oil is changed.

4. Remove filler cap (A).
5. Fill reservoir with specified steering/hydraulic oil until oil is visible in sight gauge (B) at the proper level.

NOTE: Decal (C) shows the proper oil level for the current oil temperature.

AYCXTDG,0000046-19-22OCT25

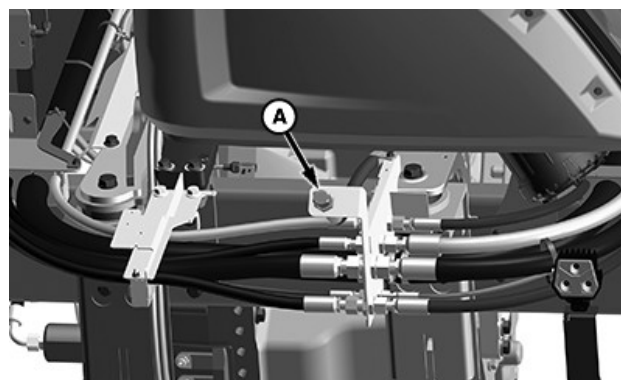
Change Pump Drive Gear Case Oil—1000 Hours



N128897—UN—01MAR17

A—Drain Plug

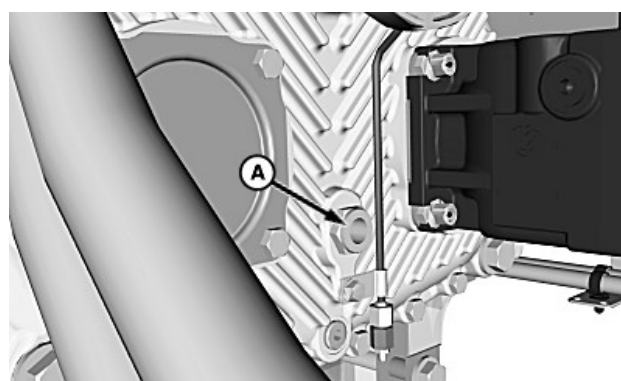
1. Park machine on a flat, level surface.
2. Remove drain plug (A) and drain gear case oil into a suitable container.
3. Reinstall plug.



N160349—UN—18JAN22

A—Fill Port

4. Remove plug from the fill port (A).



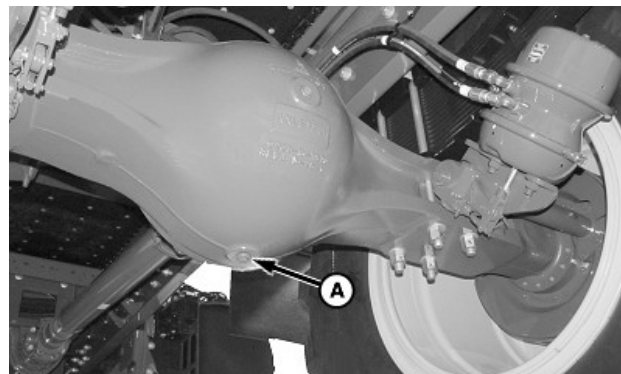
N128899—UN—01MAR17

A—Sight Gauge

5. Fill gear case through the fill port with John Deere Hy-Gard oil until oil level is visible in sight gauge (A). (See Pump Drive Gear Case Oil in Fuels, Lubricants, and Coolants section.)
6. Reinstall plug in the fill port.

AYCXTDG,0000047-19-22OCT25

Change Rear Axle Oil—1000 Hours

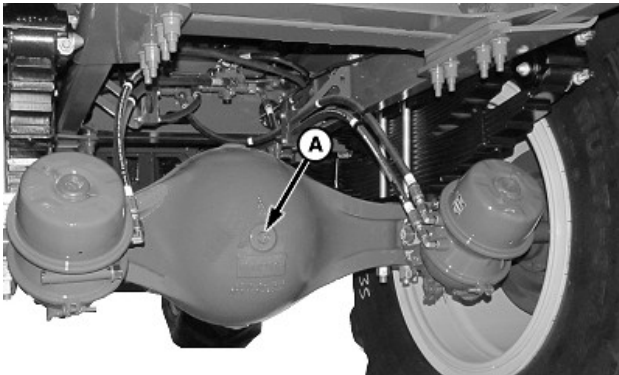


N129172—UN—05APR17

A—Drain Plug

NOTE: Approximately 18.9 L (20 qt) of John Deere GL5 85W-140 Gear Lube.

1. Remove drain plug (A) and drain oil into a suitable container.
2. Install previously removed drain plug.



N129165—UN—15MAR17

A—Fill Plug

3. Remove the fill plug (A).
4. Fill rear axle with oil. Proper fill level is achieved when oil is level with the bottom of the fill plug hole.

CS12167,00009D5-19-03APR17

Check Fan Belt Tensioner—1500 Hours

Check fan belt tensioner for proper operation. See Inspect Fan Belt Tensioner in Engine and Drivetrain section for procedure.

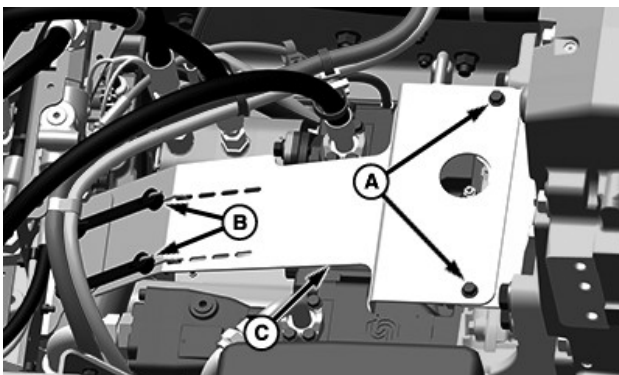
CS12167,00003B7-19-25JUN13

Adjust Engine Valve Clearance—2000 Hours

Valve clearance must be adjusted every 2000 hours. Have a John Deere dealer or other service provider adjust engine valve clearance.

CS12167,00008B5-19-09AUG25

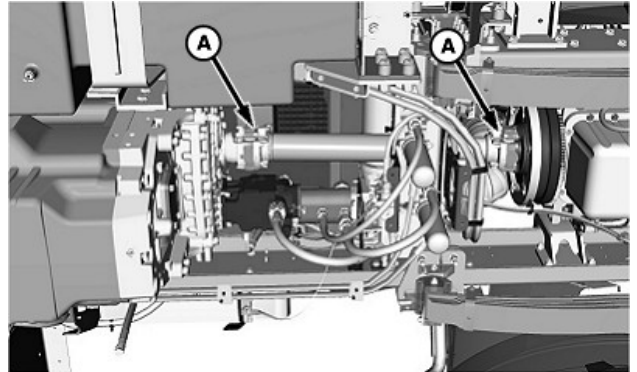
Inspect Driveshaft U-Joints—3000 Hours and Every 500 Hours Thereafter



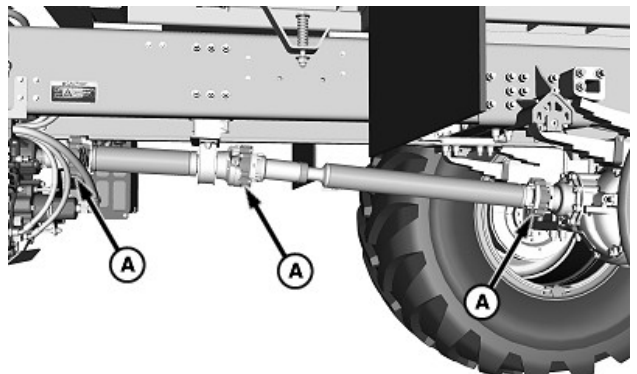
N160296—UN—19JAN22

- A—Cap Screw (2 used)
B—Strap (2 used)
C—Driveshaft Shield

1. Remove cap screws (A), straps (B), and driveshaft shield (C).



N128901—UN—01MAR17



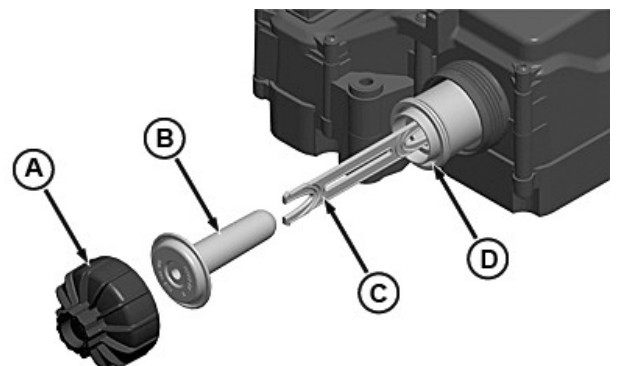
N128977—UN—01MAR17

A—U-Joint Assemblies (5 used)

2. Visually inspect for missing retaining rings and premature wear of U-joint assemblies (A). Check driveshafts for play in vertical, horizontal, and radial directions. If any of these conditions exist, contact a John Deere dealer or other service provider.

AYCXTDG,0000048-19-09AUG25

Change Diesel Exhaust Fluid (DEF) Dosing Unit Filter



RG22534—UN—21MAR13

DEF Dosing Unit Filter

- A—DEF Dosing Unit Filter Cover
 B—DEF Dosing Unit Filter Equalizing Element
 C—DEF Dosing Unit Filter Tool (supplied with new filter)
 D—DEF Dosing Unit Filter

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

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

Spilled DEF, if left to dry or if only wiped away with a cloth, leaves a white residue. Improperly cleaned DEF spill can interfere with diagnosis of Selective Catalytic Reduction (SCR) system leakage problems.

NOTE: 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.

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

Replace Engine Crankshaft Damper—5000 Hours or Five Years

IMPORTANT: The vibration damper assembly is not repairable and should be replaced every 5 years or 5000 hours, whichever occurs first.

Have a John Deere dealer or other service provider inspect the engine crankshaft damper.

OJ06092,0000D0D-19-09AUG25

Drain, Flush, and Refill Cooling System—5000 Hours or Five Years

Cooling system must be drained, flushed, and refilled every 5000 hours or 5 years. Have a John Deere dealer or other service provider drain, flush, and refill the cooling system.

TB90758,00028C9-19-30JUL25

AutoTrac

AutoTrac Setup

Operate Guidance Systems Safely

Read and understand Operate Guidance Systems Safely in the Safety section.

AutoTrac System

General Information

IMPORTANT:

AutoTrac system relies on Global Positioning System (GPS) operated by the United States government, which is solely responsible for its accuracy and maintenance. System is subject to changes that could affect accuracy and performance of all GPS equipment.

Operator must maintain responsibility for the machine and must turn at end of each track. This system does not turn at the end of a track unless equipped with iTEC Pro.

AutoTrac basic system is an assistance tool to mechanical markers. Operator must evaluate overall system accuracy to determine specific field operations where assisted steering is used. This evaluation is necessary because accuracy required for various field operations differs depending on farming operation. Because AutoTrac uses StarFire differential correction network along with GPS, slight shifts in position may occur over time.

AutoTrac Accuracy— Overall AutoTrac system accuracy is dependent upon many variables. Equation looks like:

AutoTrac System Accuracy = Signal accuracy + Vehicle Setup + Implement Setup + Field/Soil Conditions.

It is important to remember:

- Receiver has to go through a warm-up period after starting.
- Vehicle is set up properly (for example: ballasted according to the vehicle operator's manual).
- Understand how field/soil conditions affect system (loose soil requires more steering than firm soil, but firm soil can cause uneven draft loads).

Status Pie:

IMPORTANT: Although AutoTrac system can be activated when correction signal is confirmed, system accuracy may continue to increase after powering up system.

AutoTrac SF1 activation operates on SF1 signal only.

NOTE: Status pie and steer icon are not displayed if SSU or AutoTrac License is not detected.

AutoTrac icon has four stages as shown in **AutoTrac Status Pie**

1.



Installed

PC16645—UN—26FEB13

Installed

Steering control unit and all other hardware necessary for use are installed.

- Steering control unit is detected.
- AutoTrac License is detected.

2.



Configured

PC16646—UN—26FEB13

Configured

Tracking Mode has been determined, and a valid Track 0 has been established. Correct StarFire signal level for AutoTrac License is selected. The following machine conditions must be met:

- Guidance system turned ON.
- Guidance Track 0 defined.
- StarFire signal is present.
- Steering control unit has no active faults.
- Speed is in range.
- TCM message is available and valid.
- Machine in proper operating gear.

3.



Enabled

PC16647—UN—26FEB13

Enabled

AutoTrac on-off button has been pressed. All conditions are met for AutoTrac to operate and system is ready to be activated.

- Select STEER on-off button to turn “Steer On”.

4.



Activated

PC16648—UN—26FEB13

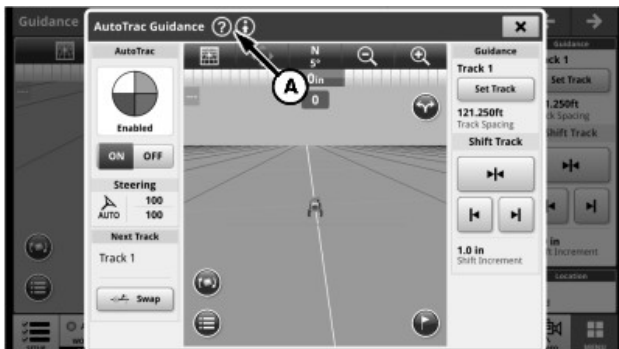
Activated

Resume switch has been pressed and AutoTrac is steering the machine.

- Press Resume switch to activate AutoTrac.

Last Exit Code: Indicates why AutoTrac is deactivated or does not activate. Exit codes show up in a new window shade at top of page.

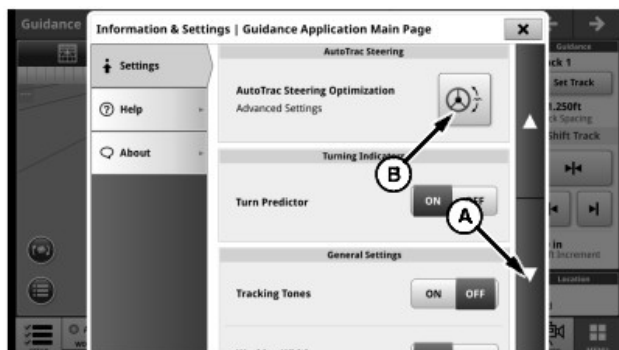
Identify Tire Type



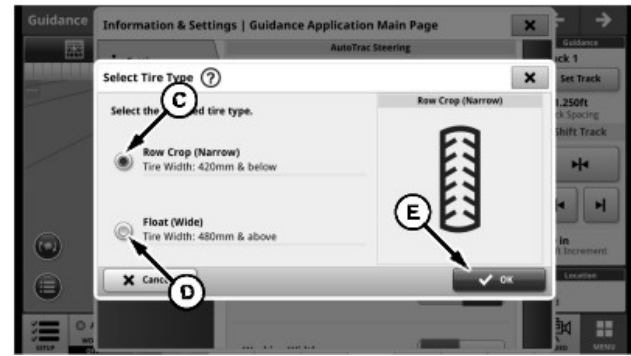
N167383—UN—30APR24

A—Information and Settings Softkey

1. Select the information and settings softkey (A).



N167385—UN—30APR24



N167384—UN—30APR24

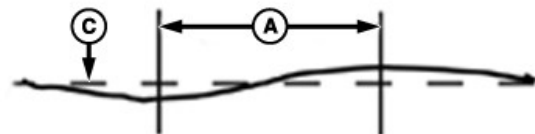
- A—Page Down Softkey
- B—AutoTrac Steering Optimization Softkey
- C—Row Crop (Narrow)
- D—Float (Wide)
- E—OK Softkey

2. Use the page down softkey (A) to scroll down.
3. Select the AutoTrac Steering Optimization softkey (B).
4. Select Row Crop (Narrow) (C) or Float (Wide) (D).
5. Select OK softkey (E).

Steering Sensitivity

Steering sensitivity adjusts aggressiveness of the AutoTrac steering system. A high steering sensitivity setting is more aggressive. This setting allows system to handle tough manual steering conditions, such as integral implements with a heavy draft load. A low steering sensitivity setting is less aggressive, and allows system to handle lighter draft loads and higher speeds.

Enter a number from 50 through 200. Default value is 70. Value may change based on steering control unit:



PC17128—UN—18JUN13



PC17129—UN—18JUN13

- A—10 Second Interval
- B—1 Second Interval
- C—Track Error Pattern

- Too Low: If steering sensitivity is too low, a slow wandering track error pattern can be observed on display. This track error pattern (C) takes

approximately 10 seconds (A) to go from side to side. If excessive track error is occurring, increase steering sensitivity by small increments until desired accuracy is achieved.

- **Too High:** Setting steering sensitivity to the highest level does not result in maximum tracking accuracy. If steering sensitivity is too high, excessive front wheel motion is observed which reduces accuracy and causes unnecessary front axle component wear. At extreme high levels, machine motion becomes large enough to cause steering sensitivity to be momentarily changed to default level. Wheel motion determines steering aggressiveness. If aggressiveness is too high, then an interval of approximately 1 second (B) occurs from side to side. If excessive wheel motion is observed, lower steering sensitivity by small increments until desired performance is achieved.

NOTE: It is normal to see a momentary track error when encountering a large rut, furrow, or implement load change. Proper steering sensitivity adjustment helps minimize track error.

Use Help Center Onscreen Help for more information about steering sensitivity.

NCHYUSK,1755035036347-19-12AUG25



N155449—UN—27APR21

A—AutoTrac Resume Button

2. Press the AutoTrac resume button (A) on the multi-function lever. To activate the system, the following conditions must be met:
 - Machine heading within 80° of the desired track if speed is less than 17.7 km/h (11 mph)
 - Machine heading within 45° of the desired track if speed is higher than 17.7 km/h (11 mph)
 - Off track error within 40% of the track spacing
 - Boom unfolded if operating above 24 km/h (15 mph)
 - Operator in seat

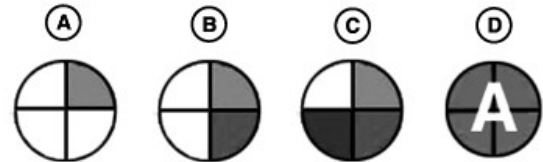
Operate AutoTrac

CAUTION: While AutoTrac is active, the operator is responsible for steering at the end of the path and collision avoidance.

The system automatically steers the machine. To avoid injury, verify that no bystanders are in the vicinity before calibration.

Always turn off (disable) AutoTrac system before entering a roadway. Do not attempt to turn on (activate) AutoTrac system while transporting on a roadway.

1. Press the steer on-off button on the display to toggle between enable/disable AutoTrac. To enable the system, the following conditions must be met:
 - AutoTrac control unit has been detected.
 - Tracking has been set up.
 - Tracking is ON.
 - Control unit is in normal operating mode.

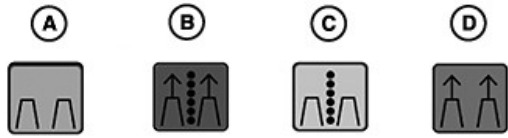


N128433—UN—09FEB17

A—AutoTrac Installed Indicator
B—AutoTrac Configured Indicator
C—AutoTrac Enabled Indicator
D—AutoTrac Activated Indicator

3. Check the AutoTrac status indicator. Status indicator shows the stage that AutoTrac is in:
 - Stage 1—**Installed (A)**—AutoTrac control unit and all other hardware necessary for use are installed.
 - Stage 2—**Configured (B)**—Valid AutoTrac License, Tracking Mode has been determined and a valid Track 0 has been established. Correct GPS signal level for AutoTrac License is selected. Vehicle conditions are met.
 - Stage 3—**Enabled (C)**—Auto on-off button has been pressed and “Steer On” is displayed.
 - Stage 4—**Activated (D)**—Resume button on the

multi-function lever has been pressed and AutoTrac is steering the machine.



A—System Installed Icon
B—System Active Icon
C—Lost GPS Icon
D—Lost Row Sensor Signal Icon

N128434—UN—09FEB17

When operating RowSense, an icon appears to indicate that the row sensor is available. Each icon indicates what is happening on the machine at that moment.

The guidance status icon changes from white to colored (green) animated form when row sensor is controlling machine, as follows:

- **System Installed (A)** (gray background)
- **System Active (B)**, operating with both row sensor and GPS (green background)
- **Lost GPS (C)**, operating with the row sensor data only (yellow background)
- **Lost Row Sensor Signal (D)**, operating with GPS only (orange background)

NOTE: Guidance accuracy is diminished when operating with icon status C or D.

The row sensor guides the machine whenever it can determine a row position. The operator knows that the row sensor is guiding machine by the AutoTrac icon changing to green and showing motion.

Field Operation

The following describes the basic operating process when operating in a field:

1. Align the machine parallel with well-defined crop rows.
2. Perform a calibration check.
 - If the calibration is successful, proceed with procedure.
 - If the calibration is not successful, verify that rows are well-defined and perform the calibration procedure.
3. Begin spray application.

4. Create an accurate guidance line using AutoTrac. (See Getting Started Using Rowsense in the AutoTrac Vision and Rowsense section.) This line is utilized if the sensor signal is lost.
5. Complete a turn at headlands. **DO NOT** engage AutoTrac Vision or AutoTrac RowSense until the machine has left the headland.
6. Continue spray operation. Proceed as follows if the following conditions occur:
 - When entering new pass:
 - a. Engage AutoTrac RowSense once both front wheels are fully parallel with the crop row and both paddles are engaging crop.
 - b. Engage AutoTrac Vision once the machine and camera are pointing parallel to the crop row after leaving headlands.
 - If the row is not detected by sensors:
 - a. GPS guidance resumes control.
 - b. GPS guidance may result in crop damage if the guidance line does not follow rows.
 - c. Sensors resume control when the row is detected again.
 - If system performance is not satisfactory:
 - a. See the Troubleshooting section for solutions to symptoms.

Deactivate AutoTrac

CAUTION: Always turn off (disable) AutoTrac system before entering a roadway. To disable AutoTrac from the display, press the steer on-off button until **STEER OFF** is displayed.

AutoTrac system can be made INACTIVE by the following methods:

- Press the steer on-off button to select between ON-OFF.
- Turn the steering wheel more than 30°.
- Engage the transport lock.
- Decrease ground speed to less than 0.5 km/h (0.3 mph) for longer than 30 seconds.
- Operator is not seated for more than 7 seconds.
- Track number is changed.

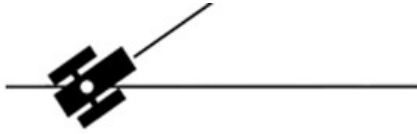
NCHYUSK,1755035073956-19-12AUG25

Steering Optimization

Monitor Performance

Monitor performance shows heading error and tracking error. It is designed to aid in tuning of Advanced AutoTrac Settings. Heading error indicates relationship of machine direction relative to the current track.

Tracking error displays the lateral error or offset relative to the current track.

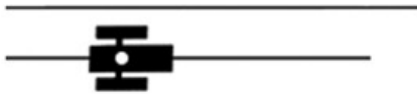


PC16972—UN—22MAY13

Heading Error Meter

Heading Error indicates relationship of machine direction relative to the current track. Heading Error should be within +/- 1 degree.

Adjust as needed if they are outside of this range.



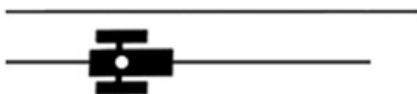
PC16969—UN—22MAY13

Tracking Error Meter

Tracking Error displays machine lateral error or offset relative to the current track. Arched bar graph value updates minimum and maximum Heading Error changes live during last 10 seconds.

NOTE: Steering Controller values are based on steering controls of machine.

Forward Steering Adjustments



PC16969—UN—22MAY13

Tracking Error



PC16971—UN—22MAY13

Forward High Setting Icon



PC16970—UN—22MAY13

Forward Low Setting Icon

Line Sensitivity Tracking

Determines how aggressively AutoTrac responds to off-track (lateral) error.

- Higher settings: Result in more aggressive response to machine off-track error.
- Lower settings: Result in less aggressive response to machine off-track error.

- Range: 50–200



PC16976—UN—22MAY13

High Heading Lead



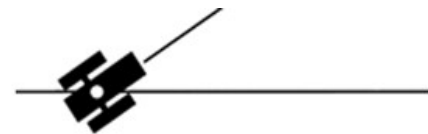
PC16977—UN—22MAY13

Low Heading Lead

Heading Lead

Determines impact of yaw rate (machine rate of turn) on tracking performance. Heading lead acts as a look-ahead parameter and can be used to minimize over steering. Large adjustments may result in poor performance.

- Higher settings: Result in more aggressive response to yaw rate.
- Lower settings: Result in less aggressive response to yaw rate.
- Range: 50–130



PC16972—UN—22MAY13

Heading Error



PC16974—UN—22MAY13

High Line Sensitivity Heading



PC16973—UN—22MAY13

Low Line Sensitivity Heading

Line Sensitivity Heading

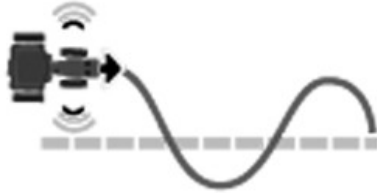
Determines how aggressively AutoTrac responds to Heading Errors.

- Higher settings: Result in more aggressive response to machine heading error.

- Lower settings: Result in less aggressive response to machine heading error.
- Range: 50–200



PC16980—UN—22MAY13

High Steering Response Rate

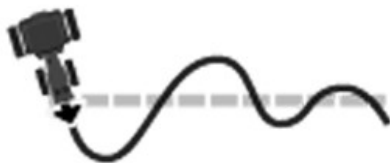
PC16979—UN—22MAY13

Low Steering Response Rate

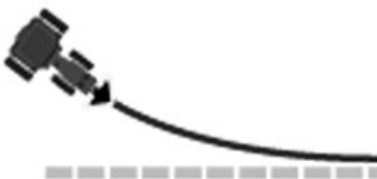
Steering Response Rate

Adjusts rate of machine steering to maintain tracking performance. Increasing steering responsiveness generally results in better tracking performance.

- Higher settings: Result in better tracking performance, but may also cause increased wheel motion or jittery behavior.
- Lower settings: Result in decreased wheel motion, but may also result in worse tracking performance.
- Range: 50–200



PC16983—UN—22MAY13

High Acquire Sensitivity

PC16982—UN—22MAY13

Low Acquire Sensitivity

Acquire Sensitivity

Determines how aggressively machine acquires track. This setting only affects performance while acquiring track.

- Higher settings: Result in an aggressive line acquisition.

- Lower settings: Result in a smoother line acquisition.
- Range: 50–200



PC16986—UN—22MAY13

High Curve Sensitivity

PC16985—UN—22MAY13

Low Curve Sensitivity

Curve Sensitivity

Determines how aggressively AutoTrac responds to a curve in track. This setting affects performance in curve track guidance only.

- Higher settings: Turn machine in a smaller radius (tighter) around curve.
- Lower settings: Turn machine in a larger radius around curve.
- Range: 50–200

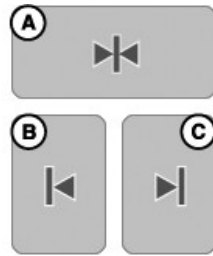
NCHYUSK,1755035108690-19-12AUG25

Row Entry Modes

- **Manual Steer:** When AutoTrac resume button is pressed the system automatically switches to sensor guidance whenever crop is detected. The system switches to Global Positioning System (GPS) only guidance whenever crop is not detected. This mode is used when GPS guidance was not used during planting or rows are not straight.
- **GPS Steer:** When AutoTrac resume button is pressed the system begins in GPS only guidance. When AutoTrac resume button is pressed a second time, the system utilizes sensor guidance when possible. When crop is not detected or sensor guidance cannot be achieved, the system automatically switches to GPS only guidance. Use this entry mode **ONLY** when rows were GPS planted.

NCHYUSK,1755035139730-19-12AUG25

Shift Track



PC16665—UN—18MAR13

A—Shift Track Center
B—Shift Track Left
C—Shift Track Right

Shift Track adjusts position of machine left, center, or right of the set track. Use Shift Track to compensate for the global positioning system (GPS) drift.

Shift Track adjusts track 0 and all guidance lines associated with the track. Guidance lines are shifted right or left to the pre-specified distance. An operator can also center a guidance line on machine.

To center line on current machine location, select Shift Track Center (A). To move line to left, select Shift Track Left (B). To move line to right, select Shift Track Right (C).

NOTE: Shift track master defaults to ON.

Shift Track is disabled while adaptive curves recording is active.

The maximum shift increment value allowed with AutoTrac active is 30 cm (12 in). With AutoTrac inactive, operator is allowed to shift up to 914 cm (360 in).

NOTE: Drift is inherent to any satellite-based, differentially corrected GPS system.

When using SF1 differential correction (or when using RTK Quick Survey Mode), the track may drift over time or at power cycles. Shift Track can be used to compensate for GPS drift.

Shift Track is not recommended with Adaptive Curves. Shift is based on the current heading on the track, not the geometry of the entire track. Shift Track can cause some portions of the track to shift closer or further away from the desired shift. Shift Track does not compensate for inherent GPS drift when using Adaptive Curves.

The Shift Track Center button is disabled with AB Curves. Use left and right shift buttons to move and regenerate the AB Curve tracks.

Total shifts are visible when editing a straight track or circle track guidance line only. Clear shifts are eligible for all tracks.

NCHYUSK,1755035176752-19-12AUG25

AutoTrac Turn Automation



PC28762—UN—25AUG22

AutoTrac Turn Automation

The AutoTrac Turn Automation application automates end turns in equipped machines. This automation allows the operator to focus on other tasks instead of coordinating end turns.

It is recommended to use the default settings when initially setting up AutoTrac Turn Automation. The default settings provide a starting point that performs well with many machine and implement configurations. With some configurations, it may be necessary to adjust the AutoTrac Turn Automation advanced settings to fine-tune performance. For example, if a tractor is made wider by adding triple tires or the turn radius is affected by adjusting steering stops, then the Maximum Turn Radius and Maximum Turn Angle values may need adjustment.

Navigate to AutoTrac Turn Automation

1. Select Menu.
2. Select Applications tab.
3. Select AutoTrac Turn Automation application.

Mapping

AutoTrac Turn Automation map module displays information about upcoming turns, such as distance to the turn and direction of the turn. Use the Onscreen Help for more information about the Mapping application.

AutoTrac Turn Automation Compatibility

AutoTrac Turn Automation is compatible with the following displays and receivers:

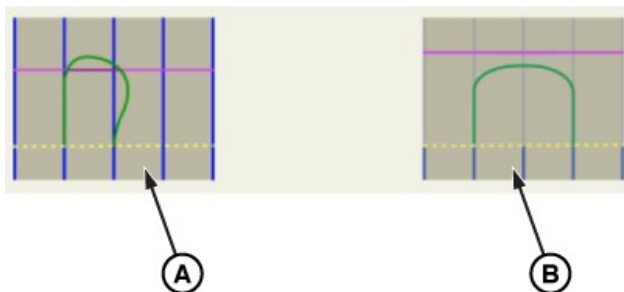
NOTE: Update software to the latest version.

- 4600 CommandCenter Display
- 4640 Universal Display
- G5 CommandCenter Display
- G5 Universal Display
- StarFire 3000 Receiver
- StarFire 6000 Receiver
- StarFire 7000 Receiver
- StarFire 7500 Receiver

AutoTrac Turn Automation is not compatible with the following displays:

- 4200 CommandCenter
- 4600 CommandCenter version 1 processor
- 4240 Universal Display
- Original GreenStar Display
- GreenStar 2 1800 Display
- GreenStar 2 2600 Display
- GreenStar 3 2630 Display when used with a 4600 CommandCenter or a 4640 Universal Display

Skip Turn Recommendation



PC613045—UN—20FEB24
Skip Turn Recommendation

A—No Skip
B—Skip Turn

AutoTrac Turn Automation suggests to skip a turn as needed when track spacing is less than machine minimum turn diameter. This feature is implemented only when U-Type turns are selected.

Select OK on the Skip Turn Recommendation message to accept the skip turn. Close the message or select Cancel to dismiss the recommendation and continue without performing a skip turn.

NOTE: The selections are retained during cold and warm boot cycles.

NOTE: Recommendation shall re-appear when changing fields and track spacing is less than turn diameter.

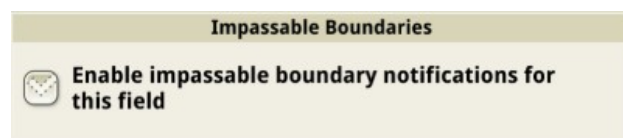
Intelligent Turn Sizing

When the track spacing is equal to or larger than machine's minimum turn diameter, the application will plan an efficient U-turn.

When the track spacing is less than machine's minimum turn diameter, the turn shape will be a light bulb shape which takes more space to complete.

NOTE: If Skip turn is accepted, the application disregards the intelligent turn sizing feature.

Impassable Boundaries



PC661533—UN—30JAN25

Impassable Boundaries

Impassable boundaries warning can be disabled by selecting the checkbox in AutoTrac Turn Automation Advanced Settings. The checkbox sets to default state (warning enabled) in the following conditions:

- Change of field
- Operator is out of seat
- Key cycle

NCHYUSK,1755035207495-19-12AUG25

Sprayer AutoTrac Turn Automation Requirements for Operation

Sprayer AutoTrac Turn Automation is available on following display types with Automation 4.0 or G5 Advanced License:

- 4640 Universal Display
- 4600 CommandCenter Display
- G5/ G5^{Plus} Universal Display
- G5/G5^{Plus} CommandCenter Display

Following track types are supported with Sprayer AutoTrac Turn Automation:

- Straight track
- AutoPath (rows)
- AutoPath (boundaries)

NOTE: During headland entry and field exit, the system shall set the Out of Crop flag to true at the headland intersection with the center of the front axle of the machine.

During headland exit and field entry, the system shall set the Out of Crop flag to false at the headland intersection with the center of the front axle of the machine.

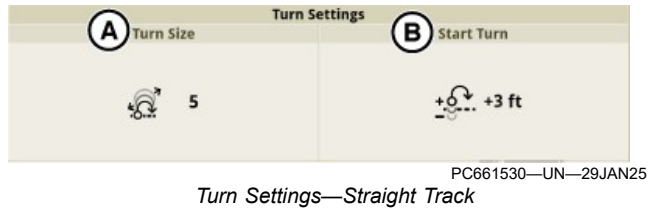
Following functionalities are not available in Sprayer AutoTrac Turn Automation:

- Speed Control
- Sequence Setup
- Speed settings for in-field and turn speed
- AB Curves, Adaptive Curves, and Circles

Sprayer AutoTrac Turn Automation Settings

NOTE: When enabled, Sprayer AutoTrac Turn Automation moves to Ready state without speed control settings or sequence setup.

Turn Settings—Straight Track



Turn Settings—Straight Track

Turn Size (A): Adjust the shape of the turn path. A smaller number will result in a smaller turn, and vice versa.

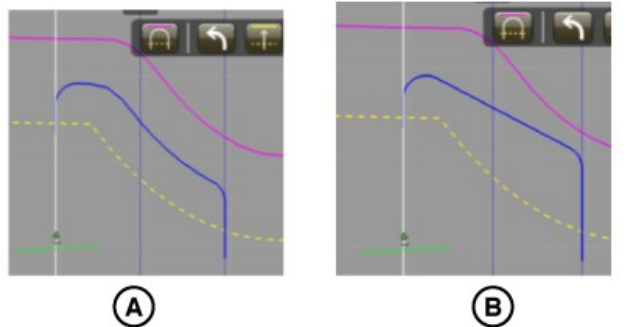
Start Turn (B): Adjust the turn path to begin before or after crossing the headland boundary.

Follow The Headland



Follow The Headland

Follow the Headland is an advanced setting only available when using the Straight Track guidance mode.



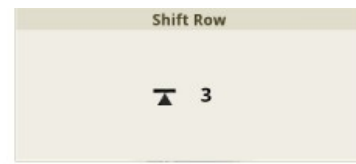
Follow The Headland

A—Follow The Headland ON
B—Follow The Headland OFF

When enabled, the machine follows the curvature of the headland where curves are present. When disabled, the machine follows the shortest (straight) path across the headland and does not follow the curvature if present. Follow the Headland is ON by default. The toggle selection is maintained across key cycles.

NOTE: Follow the Headland is only available when using the Straight Track guidance mode.

Turn Settings—AutoPath (Rows)



Shift Row

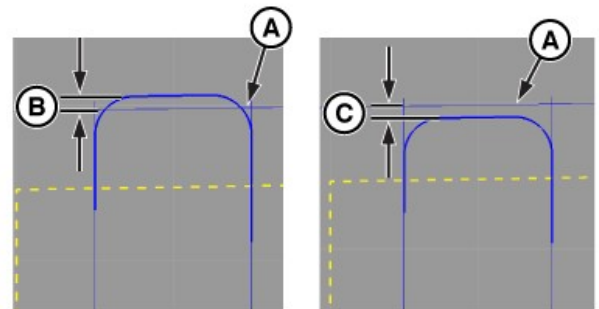
When using AutoPath (rows), the Shift Row setting moves the specified row(s) from current AutoPath headland pass. Shift Row allows to choose the direction of shift (in or out) and the number of rows to move.

Turn Settings—AutoPath (Boundaries)



Start Turn Offset

Start Turn Offset is the location where the machine begins its automated turn in relation to the AutoPath boundary track.



Start Turn Offset

A—AutoPath Boundary Track
B—Positive Offset
C—Negative Offset

A positive offset (B) means the machine makes the turn after the AutoPath boundary track (A). A negative offset (C) means the turn is made before the AutoPath boundary track (A).

Start Turn Offset value range is +100 to -100 and is adjusted in increments of 0.3 m (1 ft).

Sprayer AutoTrac Turn Automation Compatibility

John Deere Self-Propelled Sprayer	Model
400R	408R, 410R, and 412R
600R	612R and 616R

John Deere Self-Propelled Sprayer	Model
Hagie	ST12S, ST16S, and ST20s (model year 2022 and newer)

John Deere Floater	Model
800R	800R

Turn Patterns

Sprayer AutoTrac Turn Automation supports U-turns only.

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Troubleshooting

Engine

Symptom	Problem	Solution
Engine hard to start, will not start.	Fuel tank empty.	Add fuel and bleed fuel system.
	Water, dirt, or air in the fuel system.	Drain, flush, fill, and bleed fuel system.
	Improper type or old fuel.	Consult fuel chart and use the proper type of fuel for operating conditions.
	Plugged fuel filters.	Replace filter elements and bleed system.
	Plugged fuel tank strainer.	Drain fuel tank, remove, and clean tank strainer.
	Low battery output.	Check battery voltage. Clean battery. Charge if necessary.
	Excessive resistance in the starting circuit.	Clean and tighten all connections on battery and starter.
	Multi-function lever not in Park position.	Move multi-function lever to Park position.
	Safety switch not activated.	Move multi-function lever to Park position. Inspect switch.
	Solenoid disconnected.	Check wiring.
	Fuel pump primer lever position.	Place lever in down position.
	Faulty injection pump solenoid.	Replace solenoid.
	Crankcase oil of too heavy viscosity.	Drain and fill crankcase with John Deere Plus-50 II oil of proper viscosity and quality.
	Low compression.	Contact a John Deere dealer or other service provider.
	Sticking valves.	Contact a John Deere dealer or other service provider.
Engine knocks.	Dirty or faulty injectors.	Contact a John Deere dealer or other service provider.
	Cold weather.	Use cold weather starting aids.
	Clogged air intake.	Service air filters. Check air intake for restrictions.
	Air in the fuel system.	Clean and bleed fuel system.
	Low coolant temperature.	Incorrect or defective thermostat.

Troubleshooting

Symptom	Problem	Solution
	Insufficient oil.	Add oil of proper viscosity and quality.
	Injection nozzle valve sticking.	Contact a John Deere dealer or other service provider.
	Injection pump out of time.	Contact a John Deere dealer or other service provider.
	Loose or failed main bearing or connecting rod bearing, worn pistons, and cylinders.	Contact a John Deere dealer or other service provider.
Engine runs irregularly or stalls frequently.	Low fuel level.	Add fuel and check system.
	Clogged fuel filters.	Replace filter element and bleed system.
	Plugged fuel tank strainer.	Drain fuel tank, remove, and clean tank strainer.
	Water, dirt, or air in the fuel system.	Drain, flush, fill, and bleed system. Tighten fuel connections.
	Low coolant temperature.	Run engine until sufficiently warm; also check thermostat.
	Solenoid wire is loose.	Check wiring.
	Dirty or faulty injectors.	Contact a John Deere dealer or other service provider.
	Injection pump out of time.	Contact a John Deere dealer or other service provider.
	Injection pump speed advance.	Contact a John Deere dealer or other service provider.
	Bent push rods or sticky valves.	Contact a John Deere dealer or other service provider.
Lack of power.	Fuel tank vent obstructed.	Clean vent in solvent, then blow dry.
	Engine overload.	Reduce load.
	Intake air restrictions.	Service air cleaner. Check air intake for restrictions.
	Improper speed range selected.	Use proper speed range.
	Clogged fuel filters.	Replace filter element and bleed system.

Symptom	Problem	Solution
	Plugged fuel tank strainer.	Drain fuel tank, remove, and clean tank strainer.
	Contamination in the fuel tank.	Clean out fuel tank and clean fuel strainer.
	Unsatisfactory fuel.	Use fresh fuel of the proper type.
	Overheated engine.	See Engine Overheats in this section.
	Improper thermostat.	Change to proper thermostat.
	High altitude operation.	Engine loses horsepower with increase in altitude. Use the proper type of fuel for high altitude.
	Dirty or faulty injectors.	Contact a John Deere dealer or other service provider.
	Injection pump out of time.	Contact a John Deere dealer or other service provider.
	Automatic advance not working.	Contact a John Deere dealer or other service provider.
	Improper valve clearance.	Contact a John Deere dealer or other service provider.
	Turbocharger not functioning.	Contact a John Deere dealer or other service provider.
	Restricted fuel line.	Clean or replace fuel line.
	Engine overloaded.	Reduce load.
Engine overheats.	Loose or defective fan belt.	Replace belt.
	Low coolant level.	Fill radiator with coolant to the proper level. Check hoses and radiator for leaks or loose connections.
	Dirty cooling system radiator core, air conditioner condenser, or engine side screens.	Remove all foreign matter from exterior or radiator core, air conditioner condenser, and screens. Steam clean if necessary.
	Cooling system internally restricted.	Drain and flush cooling system.
	Defective thermostat, pressure cap, switch, or gauge.	Remove and check.
	Low engine oil level.	Check oil level. Add as necessary.
	Wrong oil viscosity.	Change to proper oil viscosity.

Troubleshooting

Symptom	Problem	Solution
	Engine timed too late.	Contact a John Deere dealer or other service provider.
	Defective thermostats.	Replace thermostats.
	Leaking head gasket.	Contact a John Deere dealer or other service provider.
Engine temperature below normal.	Defective thermostat, gauge, or sender unit.	Remove and check.
Low oil pressure.	Low oil level.	Check crankcase oil level on dipstick and add oil if necessary.
	Improper type of oil.	Drain and fill crankcase with John Deere Plus-50 oil of proper viscosity and quality.
Engine uses too much oil.	Oil leaks or engine overheating.	Check for leaks in lines and around gaskets and drain plugs.
	Restricted air intake system.	Check air cleaner and swab out air intake.
	Too low viscosity crankcase oil.	Drain and fill crankcase with oil of proper viscosity and quality.
	Excessive engine speed.	Contact a John Deere dealer or other service provider.
	High oil pressure.	Contact a John Deere dealer or other service provider.
	Scored pistons, stuck rings, or worn valve guides.	Contact a John Deere dealer or other service provider.
	Internal parts worn.	Contact a John Deere dealer or other service provider.
Engine uses too much fuel.	Improper type of fuel.	Use proper type fuel for operating conditions. (See Fuels And Lubricants section.)
	Engine overloaded.	Reduce load.
	Clogged or dirty air cleaner.	Service air cleaner.
	Dirty or faulty injectors.	Contact a John Deere dealer or other service provider.
	Engine out of time.	Contact a John Deere dealer or other service provider.

Symptom	Problem	Solution
Engine emits black or gray exhaust smoke.	Defective turbocharger.	Contact a John Deere dealer or other service provider.
	Improper fuel type.	Use the proper type of fuel for operating conditions.
	Engine overloaded.	Reduce load.
	Clogged or dirty air cleaner.	Check air cleaner for restrictions. Be sure that filter element is clean.
	Dirty or faulty injectors.	Contact a John Deere dealer or other service provider.
	Air in the fuel system.	Bleed fuel system. Check all connections and fuel tank level.
	Defective muffler.	Check the muffler for possible damage which might create back pressure. Clean muffler.
Engine emits white exhaust smoke.	Engine out of time.	Make sure that injection pump is timed properly. (Contact a John Deere dealer or other service provider.)
	Cold engine.	Warm engine to the normal operating temperatures.
	Clogged or dirty air cleaner.	Service air cleaner.
	Improper type of fuel.	Low octane fuel causes misfiring. Use only fuel which has recommended cetane or octane number.
	Injection nozzles dirty.	Contact a John Deere dealer or other service provider.
	Thermostat defective or too cold.	Remove and check thermostat.
	Turbocharger not functioning.	Contact a John Deere dealer or other service provider.
Battery will not charge.	Engine out of time.	Make sure that injection pump is timed properly. (Contact a John Deere dealer or other service provider.)
	Loose or corroded connections.	Clean and tighten battery connections.
	Loose alternator belt.	Replace belt.
	Defective battery.	Check voltage and/or specific gravity and electrolyte level.

Troubleshooting

Symptom	Problem	Solution
	Alternator not functioning properly.	Contact a John Deere dealer or other service provider.
Starter cranks slowly or will not crank.	Loose or corroded harness or battery connections.	Clean and tighten loose connections.
	Low battery output.	Use voltmeter to check state of the battery.
	Safety switch not activated.	Move multi-function lever to Park position.
	Starter solenoid defective.	Repair or replace, if necessary.

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Transmission

Symptom	Problem	Solution
Hydraulic oil overheats.	Low oil supply.	Fill system with correct oil.
	Transmission external vent leaks.	Replace vent.
	Excessive oil supply.	Remove oil as needed.
	Oil cooler air passages clogged.	Clean oil coolers.
	Clogged hydraulic oil filter.	Replace filter.
	Clogged scavenge pump screen.	Clean screen.
	Scavenge pump worn.	Replace pump.
	Leaky scavenge pump seals.	Replace seals.
	Leaky PTO outlet shaft seal.	Replace seal.
Transmission warning displays.	Diagnostic trouble code has been stored.	Access PTI codes in the CommandCenter display. See Diagnostic Trouble Codes section.
Low transmission oil pressure.	Low oil supply.	Fill system with correct oil.
	Clogged reservoir strainers.	Clean strainers.
	Clogged hydraulic oil filter.	Replace filter.
Transmission shifts slowly and machine steers hard.	Cold oil.	Run machine to warm up oil.
IVT /AutoPowr transmission starts out too fast or too slow.	No problem.	Startup gear can be changed through the CommandCenter settings. See Adjusting Set Speeds.

Symptom	Problem	Solution
		If a problem persists, contact a John Deere dealer or other service provider.

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Hydraulic System

Symptom	Problem	Solution
Entire hydraulic system fails to function.	Low oil supply.	Check sight glass and fill system with correct oil.
	Clogged hydraulic filters.	Replace both hydraulic filters.
	Clogged charge pump suction screen.	Clean screen.
	High-pressure internal leak.	Contact a John Deere dealer or other service provider.
Hydraulic oil overheats.	Low or high oil supply.	Fill system to the correct level.
	Oil cooler air passages clogged.	Clean oil cooler and condenser in front cooling module.
	Internal hydraulic leak.	Contact a John Deere dealer or other service provider.
	Clogged transmission oil filter element.	Replace filter elements.
	Clogged scavenge pump screen.	Clean screen.
	Leaky scavenge pump seals.	Replace seals.
	Worn scavenge pump.	Replace pump.
	Leaky PTO outlet shaft seal.	Replace seal.

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Suspension System

Symptom	Problem	Solution
Suspension system gives a rough ride.	Tire inflation incorrectly set.	Check tire inflation (see Check Tires for Damage and Correct Inflation Pressure in the Wheels and Tires section).
	Proper greasing intervals have not been followed or wrong type of lubrication has been used.	Follow correct lubrication intervals and lubrication procedures (see Lubrication and Maintenance section).

Troubleshooting

Symptom	Problem	Solution
Excessive grease leakage on the suspension.	Over greased.	Lubricate correctly. (See Lubricate Suspension Assemblies—Daily in the Lubrication and Maintenance section.)
Excessive play in suspension or steering components.	Main suspension spindles or bushings are worn.	Contact a John Deere dealer or other service provider.

OUO6435,0002D31-19-09AUG25

Operator's Cab

Symptom	Problem	Solution
Drafts.	Poor air distribution.	Adjust directional air louvers. Set pressurizer blower switch to MED or LOW.
Inadequate air flow.	Clogged air filters.	Replace filters.
	Clogged air inlet screen.	Clean screen.
	Evaporator core air flow is restricted.	Clean evaporator and housing with compressed air.
	Defective blower fan switch.	Contact a John Deere dealer or other service provider.
	Loose wire connection.	Tighten wire.
Water leaking or dripping from evaporator core compartment.	Faulty blower fan motor.	Contact a John Deere dealer or other service provider.
	Drain tubes plugged (AC).	Clean drain tubes.
Pressurizer fan, windshield wiper, or compressor will not run.	Loose hose clamp.	Tighten clamp.
	Faulty wiring or loose connections.	Repair or replace wiring.
	Defective switch.	Contact a John Deere dealer or other service provider.
	Defective motor.	Contact a John Deere dealer or other service provider.
Strange odors inside the operator's cab.	Dirty air filters.	Replace filters.
	Drain tubes plugged.	Clean drain tubes.
	Evaporator condenser pan dirty.	Clean pan and outlet with compressed air.

Troubleshooting

Symptom	Problem	Solution
	Tobacco smoke and tar on evaporator exterior.	Replace filters and clean the exterior of evaporator. (Contact a John Deere dealer or other service provider).
Partial frosting and sweating of lines combined with poor cooling.	Compressor belt slipping.	Replace belt.
	Loss of refrigerant.	Contact a John Deere dealer or other service provider.
	Restricted or clogged line.	Contact a John Deere dealer or other service provider.
	Expansion valve malfunctioning.	Contact a John Deere dealer or other service provider.
Ice flecks blowing from evaporator.	Shut off air conditioner.	Contact a John Deere dealer or other service provider.
Failure to cool.	Insufficient blower speed.	Increase blower speed.
	Dirty air filters.	Replace filters.
	Debris on the radiator screen.	Clean screen.
	Loose compressor drive belt.	Replace belt.
	Dirty air screen.	Clean screen.
	Lint or dirt on condenser fins.	Blow out condenser fins with compressed air.
	Heater hoses installed backwards.	Install heater hoses correctly. (Contact a John Deere dealer or other service provider.)
	Condenser is overheating.	Clean condenser screens, cores, and fins of condenser and radiator.
	Outside temperature too low. (Below 70°F (21°C)).	Wait until day gets warmer. If there is a malfunction in system, contact a John Deere dealer or other service provider.
	Loose wiring connector.	Tighten connection.
	Compressor clutch not engaging.	Check wiring. (Contact a John Deere dealer or other service provider.)
	Refrigerant is lost or extremely low (may have burned thermal fuse or low pressure switch disengages system).	Contact a John Deere dealer or other service provider.
	Defective temperature control switch.	Contact a John Deere dealer or other service provider.

Troubleshooting

Symptom	Problem	Solution
	Restriction in the refrigerant system. (High-pressure switch disengages system).	Contact a John Deere dealer or other service provider.
	Expansion valve not functioning.	Contact a John Deere dealer or other service provider.
	Burned out clutch field or faulty field.	Contact a John Deere dealer or other service provider.
	Severe restriction in the high side.	Contact a John Deere dealer or other service provider.
	Clogged line strainer.	Contact a John Deere dealer or other service provider.
Cab pressure indicator reading at the low end of indicator.	Cab blower switch turned off.	Turn switch on.
	Door or window not latched.	Latch door or window.
	Restricted air filter.	Replace with John Deere activated carbon cab air filter or appropriate substitute. (See Check and Replace Cab Air Filters in Cab and Air Conditioning section.)
	Damaged door or window seals.	Replace damaged seals.
	Loss of the seal around control linkage, lines, wires, and so on.	Seal any openings.
	Problem cannot be identified and corrected.	Contact a John Deere dealer or other service provider.
Cab pressure indicator reading at high end of indicator.	Damaged seal or pleated filter media on the air filter.	Replace with John Deere activated carbon cab air filter or appropriate substitute. (See Check and Replace Cab Air Filters in Cab and Air Conditioning section.)
	Missing or incorrect air filter.	Replace with John Deere activated carbon cab air filter or appropriate substitute. (See Check and Replace Cab Air Filters in Cab and Air Conditioning section.)
	Air filter not seated properly.	Reseat or replace with John Deere activated carbon cab air filter or appropriate substitute. (See Check and Replace Cab Air Filters in Cab and Air Conditioning section.)

Symptom	Problem	Solution
	Problem cannot be identified and corrected.	Contact a John Deere dealer or other service provider.

DP99999,0000BE8-19-22OCT25

Premium Radio Troubleshooting

Symptom	Problem	Solution
"NO CD" displayed.	CD will not play.	No CD has been loaded in the player.
"CD ERROR" displayed.	No playable files on media.	Change media.
"DEV ERR" displayed.	No playable files on media.	Change media.
Bad sound quality, skipping, difficulty in finding tracks, and/or difficulty in loading or ejecting.	CD-R may be affected by a CD-R's quality, the method of recording, the quality of the music that has been recorded or the way the CD-R has been handled.	Play CD you know is good to see if error corrects itself. If an error occurs repeatedly, or if an error cannot be corrected, contact a John Deere dealer or other service provider. If radio displays an error message, write it down and provide it to them when reporting problem.
"BLOCKED" displayed.	No audio in any source.	Verify that radio is installed in the correct vehicle. Run engine for at least 5 minutes. Restart radio to resolve.
Radio display blank with radio on.	Display in DIM-OFF mode.	Change to DIM-ON mode in radio SETUP mode.

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Storage

Avoid Exposure To Chemicals



TS220—UN—15APR13



TS272—UN—23AUG88

CAUTION: Exposure to chemicals, including pesticides, can cause injury or death.

DO NOT RELY ONLY ON THIS CAB, CAB PRESSURE INDICATOR, OR CAB AIR FILTERS TO PROTECT AGAINST CHEMICAL EXPOSURE.

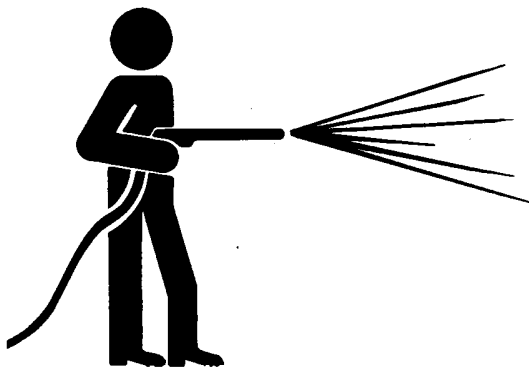
To reduce risk of chemical exposure:

- Wear PERSONAL PROTECTIVE EQUIPMENT in accordance with chemical manufacturer's label
- Allow only trained, certified applicators to apply chemicals
- Always close the windows and doors during application
- Verify that John Deere activated carbon filters, or appropriate substitutes, are installed at all times (see Checking and Replacing Cab Air Filters in the Cab and Air Conditioning section)
- Keep chemicals out of the cab
- Clean or remove contaminated shoes or clothing before entering the cab
- Keep cab interior clean
- Read and follow all instructions in:
 - Manufacturer's label for each chemical applied
 - U.S. Environmental Protection Agency (EPA) Worker Protection Standard for Agricultural Pesticides

- State or regional guidelines for worker safety and health
- Operator's Manual for this machine
- Numerous requirements must be met, including but not limited to EPA regulations
- Even while inside cab, always wear long sleeves, long pants, shoes, and socks when applying chemicals, including pesticides
- If necessary to leave cab when chemicals, including pesticides, are present, always use personal protective equipment recommended by chemical manufacturer
- Before reentering cab, remove personal protective equipment used to handle chemicals, including pesticides, and store equipment in accordance with EPA guidelines to prevent contaminating cab

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Clean Vehicle of Hazardous Chemicals, Including Pesticides



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CAUTION: During application of hazardous chemicals, including pesticides, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of the hazardous chemical.

When exposed to hazardous chemicals, clean exterior and interior of vehicle daily to keep it free of the accumulation of visible dirt and contamination.

IMPORTANT: Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90° angle.

1. Wash entire exterior of the vehicle.
2. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

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Recommended Cleaners and Coatings

IMPORTANT: As with any chemical product, always read and follow directions.

Use John Deere SorayMaster cleaning agents, equipment coating, and winterizer fluid for best results. These chemicals are available via regular spare part channels:

- PM434QT Incide-Out Spray Tank Cleaner
- PM433QT Erase Spray System Cleaner
- N305634 and TY26555 Sprayer Winterizer Fluid
- TY22032 and TY27529 Fluid Film

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Clean Solution System

⚠ CAUTION: Spray system can contain hazardous material that can cause serious injury or death to you or others. Wear protective clothing, eyewear, and gloves. Use the rinse system in an area where people, animals, vegetation, water supply, and so on, cannot be contaminated.

NOTE: Perform a solution system cleaning every 25 hours of operation, especially when spraying suspended solutions.

1. Load the solution tank with 1514 L (400 gal) of fresh water.
2. Remove tips from all nozzles (BOTH cam-locks and turrets), including fence row nozzles if equipped.
3. Remove **both** solution strainers from their housings.
4. Reinstall the strainer housings without the strainers.
5. Soak the strainers in a container with a mixture of water and Incide-Out Spray Tank Cleaner (PM434QT) or Erase Spray System Cleaner (PM433QT). Follow the mixing instructions on the product label.
6. Open all manual valves (flow restriction valve/dual flowmeter valve).
7. Operate the eductor rinse and flush with fresh water for approximately 10 minutes.
8. Allow agitation to run for approximately 15 minutes with fresh water.
9. After flushing the entire wet system, spray the contents of the solution tank through the boom (BOTH cam-locks and turrets, **even if not used**).
10. Load the rinse tank with fresh water.

IMPORTANT: DO NOT spray the rinsate out of the boom at the end of this cycle.

11. Complete a minimum of one rinse cycle.
12. Mix the correct amount of Incide-Out Spray Tank Cleaner (PM434QT) or Erase Spray System Cleaner (PM433QT) with water. Follow the mixing instructions on the product label.
13. Using the eductor hopper, load the tank cleaner mixture into the system. **DO NOT** pour into the top of the tank.
14. Ensure that the eductor hopper rinse is operating to verify that the eductor hopper is clean and decontaminated.
15. Operate the eductor hopper rinse for approximately 10 minutes.
16. Spray a small amount of the solution tank contents out of the boom to allow the cleaning fluid to reach the nozzles, including fence row nozzles if equipped.

IMPORTANT: If the temperature will fall below 0°C (32°F), take the proper precautions to avoid freezing, but DO NOT add winterizer fluid to the tank mixture. If no option is available to allow an overnight soak, let the machine soak as long as possible, then proceed with the necessary steps.

17. Allow the machine to sit overnight with rinsate solution in the tank, lines, and boom before completing the following steps:
 - a. Complete a minimum of two more rinse cycles. **DO NOT** spray out the rinsate.
 - b. On the CommandCenter display, navigate to the main run page and ensure that the Spray Off pressure is set to 414 kPa (4.1 bar) (60 psi).
 - c. Turn **both** solution pumps ON.
 - d. Turn agitation ON and allow to run for approximately 10 minutes, then turn agitation OFF.

NOTE: Setting the manual target pressure to 690 kPa (6.9 bar) (100 psi) aids in the cleaning process.

- e. Spray the rinsate out of the boom, cycling the individual boom section shutoff valves at least once.
- f. Using the sprayer pump, fill the solution tank with clean water.
- g. Turn the eductor hopper valve ON.
- h. Turn the eductor hopper rinse valve ON and allow the eductor to rinse with clean water for approximately 10 minutes.
- i. Turn agitation ON and allow to run for approximately 10 minutes.

- j. Spray the entire content of the solution tank out of the boom.
- k. Inspect the tank and solution system for chemical discoloration, odor, and buildup of chemical deposits. **If necessary, repeat all of the previous steps.**

18. If the temperature is near freezing, perform the following steps:

NOTE: John Deere Winterizer Fluid is available in 9.46 L (2.5 gal) jugs (N305634) or 208.2 L (55 gal) drums (TY26555).

- a. Add 104.1 L (27.5 gal) of John Deere Winterizer Fluid to the solution tank using the eductor.
- b. Spray a small amount of the winterizer fluid out of the nozzles to ensure that all solution lines are filled.

NOTE: Be cautious of fluid leaving the rinse tank.

- c. Open the rinse tank fill valve and leave open.

NOTE: Retain the clamp and O-ring for reinstallation or empty the solution from the eductor hopper.

- d. Remove the clamp from the bottom of the eductor hopper.

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To add SprayMaster Winterizer Fluid to the machine spray system, do the following:

1. Perform a winterizing procedure on the spray system. (See Prepare Machine for Cold-Weather Storage - Winterizing in this section.)
2. Leave a note in the cab detailing what was done for winter protection so that the next person to use the machine will know what kind of preparation is needed for field operation.
3. Relieve the spray boom pressure. (See Pressure Relief in the Liquid System section of the LS20 Liquid System Application manual.)

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Prepare Machine for Cold-Weather Storage – Winterizing

NOTE: The following procedure is for winterizing a machine that has already been through the chemical cleaning process and only contains water in its solution system.

1. Verify that the fuel tank is filled with winter grade diesel fuel or treat the tank with a diesel winterizer according to product label instructions.

IMPORTANT: Long-term storage of the vehicle (over six months) is not recommended. If long-term storage is necessary, periodic testing of diesel exhaust fluid (DEF) is recommended to ensure that urea concentration does not fall out of specification.

2. Diesel exhaust fluid (DEF) has a limited shelf life, but it can be stored in the vehicle for as long as six months, depending upon storage conditions. (See Storing Diesel Exhaust Fluid [DEF] in the Fuels, Lubricants, and Coolants section). Drain the DEF tank if necessary. (See Cleaning Diesel Exhaust Fluid [DEF] Tank in the Engine and Drivetrain section.)
3. Drain the hand washing tank.
4. Drain the rinse tank.
5. Operate the eductor function and transfer any eductor hopper water to the solution tank.
6. Empty the solution tank water by opening the solution tank drain valve to let the water escape.
7. Empty the rinse tank water by using the boom only rinse function and spraying out the rinse tank water until spray pressure at the boom weakens.

Ship Machine During Cold-Weather Months

IMPORTANT: On the Final Tier 4/Stage V engine equipped machines, do not disconnect battery until LED indicator at the battery shutoff is off. Selective catalyst reduction system automatically purges lines of diesel exhaust fluid (DEF) during this time, immediately after machine is stopped. If adequate time is not allowed for lines to be purged, any DEF remaining in lines can crystallize and plug lines. In freezing weather, DEF freezes and can burst lines.

Water freezing in tanks and lines can damage the machine. When shipping the machine in months when there is a chance of freezing, make sure that the machine can withstand the lowest possible temperatures it will be subjected to.

For machines equipped with the LS20 Liquid Application System, avoid damage to the spray system by emptying all solution tanks and lines, then add SprayMaster Winterizer Fluid.

IMPORTANT: Using John Deere Sprayer Winterizer Fluid is recommended for field use to protect the sprayer plumbing during storage. If an RV antifreeze is used, it must be a propylene glycol type rated for at least 8°C (15°F) below the lowest expected ambient temperature the machine is subjected to during storage. To prevent damage to the seals and hoses, do not use other cheaper methanol, ethanol, or isopropanol type fluids.

8. Fill the rinse tank with 190 L (50 gal) of winterizer fluid or RV antifreeze. John Deere Winterizer Fluid is available in 9.46 L (2.5 gal) jugs (N305634) or 208 L (55 gal) drums (TY26555).
9. Perform a system rinse. (See Rinse System [Solution System] in the Rinse System section of the LS20 Liquid System Application manual.) The following systems are rinsed:
 - Eductor
 - Agitation
 - Bypass
 - Solution Tank
 - Boom

NOTE: When rinsing the eductor, the operator must manually open the eductor rinse and sump valves when the display shows that portion of the rinse cycle.

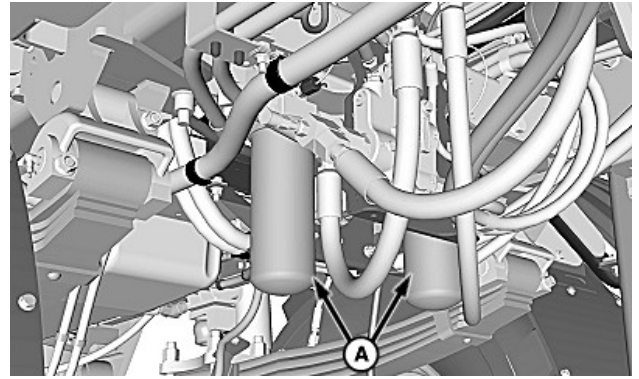
The boom is rinsed when the rinse solution is sprayed off at the end of the procedure.

10. After the rinse procedure is complete, unfold the boom and spray the rinse solution in a safe location where contamination cannot occur.
11. Verify that the high flow valve is in the OPEN position.
12. Close all nozzle turrets other than the ones on each end of every spray pipe.
13. Spray the winterizer fluid in the solution tank out of the open turrets using the Nozzle Flow Check procedure until winterizer fluid comes out. (See Nozzle Flow Check Procedure in the Calibrations section of the LS20 Liquid System Application manual.)
14. Spray the winterizer fluid using the boom only rinse function until a pump dry warning is displayed.

AYCXTDG,000004D-19-17JAN22

Prepare Machine for Storage

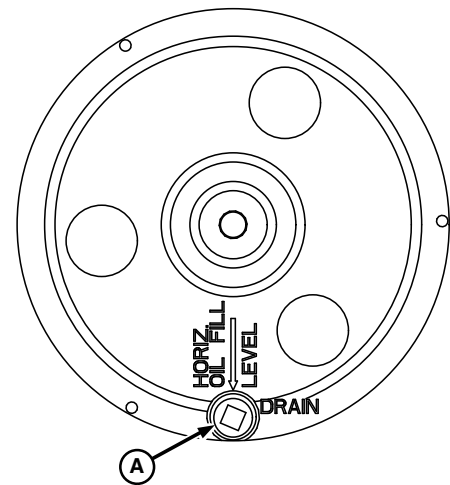
1. Clean the machine thoroughly, inside and out. (See Clean Vehicle Of Hazardous Chemicals, Including Pesticides in this section.)



N118563—UN—01JUN15

A—Transmission and Hydraulic Filter (2 used)

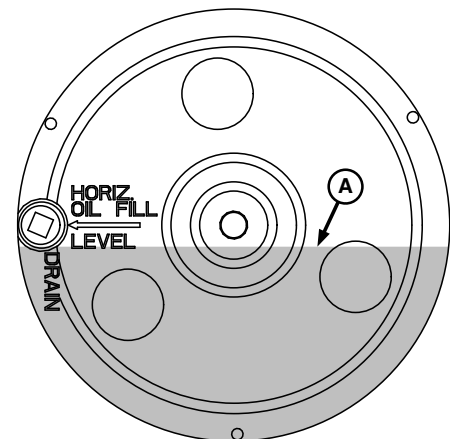
2. Replace the transmission and hydraulic filters (A).



N118311—UN—28MAY15

A—Drain Plug

3. Remove drain plug (A) and drain the planetary hubs. (See Change Planetary Hub Oil in the Lubrication and Maintenance section.)



N128890—UN—28FEB17

A—Oil Level

4. Fill the planetary hub oil to the proper level (A).

5. Lubricate all grease fittings. Apply grease to the exposed area of the hydraulic cylinder rods.
6. If equipped, lubricate the spreader box. (See the Lubrication and Maintenance section in the necessary machine Operator's Manual.)
7. For machines equipped with the LS20 Liquid Application System, perform the following steps:
 - a. Clean and flush the solution system. (See Clean Solution System in this section.)
 - b. Perform daily level checks, lubrication, and bolt/linkage inspections. (See the Lubrication and Maintenance section in the LS20 Liquid System Application Operator's Manual.)
 - c. Perform a winterizing procedure if the machine is stored in cold temperatures. (See Prepare Machine for Cold-Weather Storage – Winterizing in this section.)
 - d. Remove and clean the nozzle tips and screens. Store the tips and screens off the machine in a dry place.
8. Paint as necessary to prevent rust.
9. Treat exposed surfaces with Fluid Film (TY22032 or TY27529) for prevention of corrosion and rust.

CAUTION: DO NOT use gasoline for washing. Gasoline is highly flammable. Gasoline can ignite if exposed to sparks or open flame, causing a fire that can cause serious injury or death to you or others.

10. Wash the engine using a safe solvent.
11. Remove, clean, and install the engine air cleaner elements.
12. With the engine warm, drain oil from the crankcase. Replace the oil filter and fill the crankcase to the proper level.
13. Drain and flush the cooling system (engine block and radiator).

NOTE: For warm-weather climates: If antifreeze has not been, and will not be, added in the engine, be sure to remove the plug to drain the engine oil cooler. Add clean soft water with John Deere Summer Engine Coolant Conditioner, or equivalent, in place of antifreeze.

14. Fill the cooling system with antifreeze to the proper level. Use antifreeze that does not contain stop-leak additives.
15. Operate the engine at a low idle for a few minutes, circulating the coolant and crankcase oil.

IMPORTANT: On a Final Tier 4/Stage V engine equipped machine, do not disconnect the battery until the LED indicator at the battery shutoff is off. Selective catalytic reduction system automatically purges lines of diesel exhaust fluid (DEF) immediately after the machine is stopped. If adequate time is not allowed for lines to be purged, any DEF remaining in lines can crystallize and plug the lines. In freezing weather, DEF freezes and can burst lines.

16. Disconnect the negative (-) battery cables and secure them away from the battery terminal.

IMPORTANT: Long-term storage of the vehicle (over six months) is not recommended. If long-term storage is necessary, periodic testing of diesel exhaust fluid (DEF) is recommended to ensure that urea concentration does not fall out of specification.

17. Diesel exhaust fluid (DEF) has a limited shelf life, but it can be stored in the vehicle for as long as six months, depending upon storage conditions. (See Storing Diesel Exhaust Fluid [DEF] in the Fuels, Lubricants, and Coolants section). Drain the DEF tank if necessary. (See Cleaning Diesel Exhaust Fluid [DEF] Tank in the Engine and Drivetrain section.)
18. Seal the following openings with tape and/or plastic bags:
 - Exhaust pipe
 - Air cleaner intake
 - Engine dipstick tube
 - Engine oil fill tube
 - Crankcase breather tube

NOTE: Instructions for lifting the machine can be found in the Wheels and Tires section.

19. Lift each corner of the machine and support with a suitable stand to remove weight from the tires. Do not deflate tires.
20. Leave a note in the cab detailing what was done for winter protection so that the next person to use the machine will know what kind of preparation is needed for field operation.

AYCXTDG,000004E-19-22OCT25

Remove Machine from Storage

NOTE: When removing the spreader from storage after the machine has sat for a time, gear oil may be found leaking out of the planetary drive hub inside rim. A puddle of oil may also be found on the rims. The gear reduction hubs have a mechanical seal between the spindle and hub. It is normal for oil to leak out of these seals when a machine has been in storage.

Instructions for lifting the machine can be found in the Wheels and Tires section.

1. Lift each corner of the machine and remove the stands.
2. Remove the sealing tape and plastic bags from openings.
3. Check the engine oil level. If low, check for leaks. Add oil as required.
4. Check the coolant level. If low, check for leaks. Add coolant as required.
5. Clean the negative (-) battery terminals and cables.
6. Connect the cables to the battery and tighten the clamps.
7. Fill the fuel tank with proper grade diesel fuel.
8. Check the diesel exhaust fluid (DEF) and fill the tank.
 - a. If the DEF tank has not been drained, test the urea concentration. (See Testing Diesel Exhaust Fluid [DEF] in the Fuels, Lubricants, and Coolants section.) If the concentration is not within specifications, drain and replace with new or known good DEF.
 - b. If the DEF tank has been drained, fill the tank. (See Cleaning Diesel Exhaust Fluid [DEF] Tank in the Engine and Drivetrain section.)
9. Clean the engine compartment and machine thoroughly, inside and out.
10. Check the oil level in the hydraulic reservoir. If low, check for leaks. Add oil as required.
11. Check the tire inflation pressure. Add air as necessary.
12. Lubricate all grease fittings.
13. Install the monitor if previously removed. Check that programming is correct.
14. Start the engine and warm to operating temperature. Check for leaks.
15. If equipped, lubricate the spreader box. (See the Lubrication and Maintenance section in the relevant machine Operator's Manual.)
16. For machines equipped with the LS20 Liquid Application System, perform the following steps:
 - a. Lubricate all grease fittings. (See the Lubrication and Maintenance section in the LS20 Operator's Manual.)
 - b. Drain winterizer fluid from the liquid system and flush the system thoroughly.
 - c. Add clean water to the solution tank and operate the system to check for leaks before installing nozzle tips and screens.
 - d. Inspect the nozzle tips, making sure that they are all the same size. Install tips and screens.
 - e. Perform a boom air bleed procedure. (See Recommendations for Eliminating Air from Solution System in the Wet System section of the LS20 Liquid System Application Operator's Manual.)
 - f. Operate the liquid system and observe spray patterns. Adjust or replace tips as necessary.
 - g. Manually cycle all of the boom functions two or three times to lubricate the components thoroughly.
 - h. Test the NORAC system and functions according to the manufacturer's Operator's Manual.
17. Review the Operator's Manual for operating adjustments and safety information.
18. Check the fire extinguisher gauge (if equipped) for the proper charge.
19. Check the air conditioning refrigerant charge. Have the system charged if necessary.

AYCXTDG,000004F-19-22OCT25

IMPORTANT: When first starting the engine after removing from storage, run the machine at low idle for 4 minutes. Turn on the air conditioning system during this time to prevent compressor seal failure.

Specifications

Machine Specifications

ENGINE	
Type	Diesel
Manufacturer	John Deere
Model	PowerTech PSS 9.0 L
Number of Cylinders	In-Line 6
Bore and Stroke	118 x 136 mm (4.66 x 5.35 in)
Displacement	9.0 L (549 in³)
Horsepower ^a	271 kW (364 hp)
Compression Ratio	16.0:1
Firing Order	1-5-3-6-2-4
Type of Fuel	No. 1-D, 2-D, or B2 Diesel
Fuel System	High-Pressure Common Rail (HPCR)
Air Cleaner	Dry-Type Dual Element
ENGINE SPEEDS	
Slow Idle	900 rpm
Fast Idle (No Load)	2200 rpm

^aMaximum factory-observed engine power (net less fan) at 2250 engine rpm.

ENGINE COOLING SYSTEM	
Type	Pressurized
Pressure	69 kPa (0.7 bar) (10 psi)
Thermostat	Two, Heavy-Duty 180°

ENGINE LUBRICATION	
Oil Filter	Full Flow
Type	Top Load Element
Protection	Bypass Valve

BRAKES	
Front and Rear Dynamic Pneumatic Brakes	
Rear Pneumatic Park and Secondary Brakes, IVT Park Brakes	

TRANSMISSION	
Type	John Deere IVT/AutoPowr

IMPORTANT: Installing tires that do not meet original equipment's tire specifications may cause a machine malfunction. Consult a John Deere dealer, other service provider, or tire supplier for guidance. Use of substandard tires or larger than recommended tires voids the warranty and may decrease stability, affect steering, result in a premature tire failure, or cause other durability or safety issues.

GROUND SPEED (Rated Engine Speed at 2250 rpm—No Load)	
Forward Speed (Field)	0—48 km/h (0—30 mph)
Forward Speed (Transport)	0—75 km/h (0—46.6 mph)
Reverse Speed	0—20 km/h (0—12.5 mph)

Specifications

Alliance VF 750/50R26 ^a					
Position	Front Axle				
Group	41				
Load Index	169				
Speed Rating	D				
Tread Depth	R-1				
Section Width mm (in)	759 (29.9)				
Overall Diameter mm (in)	1412 (55.6)				
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)				
	10 (6)	15 (9)	20 (12)	65 (40)	70 (43)
	Tire Load, kg (lb) ^b				
	80 (0.8) (12)	3290 (7250)	3075 (6780)	3045 (6710)	
	100 (1.0) (15)	3700 (8160)	3450 (7610)	3140 (6920)	
	120 (1.2) (17)	4150 (9150)	3875 (8540)	3530 (7780)	
	160 (1.6) (23)	5090 (11 220)	4750 (10 470)	4320 (9520)	
	200 (2.0) (29)	5680 (12 520)	5300 (11 680)	4820 (10 630)	
	240 (2.4) (35)	6210 (13 690)	5800 (12 790)	5280 (11 640)	

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Trelleborg VF850/45R26 ^a		
Position	Front Axle	
Group	41	
Load Index	172	
Speed Rating	E	
Tread Depth	R-1	
Section Width mm (in)	891 (35.1)	
Overall Diameter mm (in)	1456 (57.3)	
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)	
	65 (40)	70 (43)
	Tire Load, kg (lb) ^b	
100 (1.0) (15)	3855 (8498)	3510 (7738)
120 (1.2) (18)	4335 (9557)	3945 (8697)
140 (1.4) (20)	4820 (10 626)	4385 (9667)
160 (1.6) (23)	5300 (11 684)	4825 (10 637)
180 (1.8) (26)	5605 (12 356)	5105 (11 255)
200 (2.0) (29)	5885 (12 974)	5355 (11 806)
220 (2.2) (32)	6135 (13 525)	5580 (12 302)
240 (2.4) (35)	6300 (13 889)	5800 (12 787)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Michelin VF 750/50R26 CFO ^a					
Position	Front Axle				
Group	41				
Load Index	170				
Speed Rating	E				
Tread Depth	R-1				

Specifications

Michelin VF 750/50R26 CFO ^a				
Section Width mm (in)	749 (29.5)			
Overall Diameter mm (in)	1405 (55.3)			
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)			
	15 (10)	30 (20)	65 (40)	70 (43)
	Tire Load, kg (lb) ^b			
120 (1.2) (17)	5193 (11 450)	4355 (9600)	3875 (8545)	3526 (7775)
140 (1.4) (20)	5795 (12 775)	4860 (10 715)	4315 (9515)	3925 (8655)
170 (1.7) (25)	6540 (14 420)	5485 (12 090)	4890 (10 780)	4450 (9810)
200 (2.0) (29)	6970 (15 370)	5850 (12 900)	5300 (11 685)	4823 (10 630)
230 (2.3) (33)	7410 (16 340)	6215 (13 700)	5675 (12 510)	5165 (11 385)
260 (2.6) (38)	8000 (17 640)	6710 (14 795)	6050 (13 340)	5505 (12 135)
290 (2.9) (42)	8585 (18 930)	7200 (15 875)	6400 (14 110)	5800 (12 785)
320 (3.2) (46)	8990 (19 820)	7540 (16 620)	6700 (14 770)	6000 (13 225)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Alliance VF 1050/50R32 ^a				
Position	Rear Axle			
Group	46			
Load Index	198			
Speed Rating	D			
Tread Depth	R-1			
Section Width mm (in)	1060 (41.7)			
Overall Diameter mm (in)	1860 (73.3)			
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)			
	10 (6)	15 (9)	20 (12)	65 (40)
	Tire Load, kg (lb) ^b			
80 (0.8) (12)	6060 (13 360)	5660 (12 480)		
120 (1.2) (17)	7800 (17 200)	7280 (16 050)		
150 (1.5) (22)	9100 (20 060)	8490 (18 720)		
200 (2.0) (29)	10 590 (23 350)	9880 (21 780)		
250 (2.5) (36)	10 810 (23 830)	11 020 (24 300)		
300 (3.0) (44)	13 000 (28 660)	12 130 (26 740)		
330 (3.3) (48)	13 830 (30 490)	12 910 (28 460)		
360 (3.6) (52)	14 140 (31 170)	13 200 (29 100)		

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Trelleborg VF1050/50R32 ^a	
Position	Rear Axle
Group	46
Load Index	198
Speed Rating	D
Tread Depth	R-1
Section Width mm (in)	1034 (40.7)
Overall Diameter mm (in)	1859 (73.2)

Specifications

Trelleborg VF1050/50R32 ^a		
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)	
	65 (40)	75 (46)
	Tire Load, kg (lb) ^b	
100 (1.0) (15)	6500 (14 330)	5915 (13 040)
120 (1.2) (18)	7335 (16 170)	6675 (14 715)
160 (1.6) (23)	9000 (19 840)	8190 (18 055)
200 (2.0) (29)	10 000 (22 050)	9100 (20 065)
240 (2.4) (35)	10 600 (23 370)	9645 (21 265)
280 (2.8) (41)	11 800 (26 015)	10 740 (23 675)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

Michelin VF 1000/55R32 CFO ^a				
Position	Rear Axle			
Group	46			
Load Index	193			
Speed Rating	E			
Tread Depth	R-1			
Section Width mm (in)	1042 (41.0)			
Overall Diameter mm (in)	1877 (73.9)			
Inflation Pressure kPa (bar) (psi)	Speed, km/h (mph)			
	15 (10)	30 (20)	65 (40)	70 (43)
	Tire Load, kg (lb) ^b			
120 (1.2) (17)	9765 (21 530)	8190 (18 055)	7300 (16 095)	6650 (14 660)
140 (1.4) (20)	10 890 (24 010)	9135 (20 140)	7775 (17 140)	7075 (15 595)
170 (1.7) (25)	12 305 (27 130)	10 320 (22 750)	8690 (19 160)	7900 (17 415)
200 (2.0) (29)	13 175 (29 045)	11 050 (24 360)	10 000 (22 045)	9100 (20 060)
230 (2.3) (33)	14 050 (30 975)	11 780 (25 970)	10 675 (23 535)	9700 (21 385)
260 (2.6) (38)	14 920 (32 890)	12 515 (27 590)	11 350 (25 020)	10 325 (22 760)
290 (2.9) (42)	15 850 (34 945)	13 295 (29 310)	12 065 (26 600)	10 990 (24 230)
320 (3.2) (46)	16 895 (37 245)	14 170 (31 240)	12 850 (28 330)	11 700 (25 795)

^aFully loaded condition may exceed the recommended load or speed for the tires. Weigh the machine to understand exact tire loads and inflation pressure.

^bIf tire loads are unknown, inflate tires to the maximum allowable pressure for the respective tire, as published in this table.

ELECTRICAL SYSTEM	
Battery Voltage	12 Volts
Battery Terminal Grounded	Negative
Alternator	200 Amps, Voltage Regulated

Specifications

HYDRAULIC SYSTEM	
Type	"Load Sensing" Pressure and Flow Compensated Closed Center
Pump	Axial Piston Type
Hydraulic Pump Specifications	
Model and Configuration	Pump Configuration
DS35 G4 Single Bin Configuration DS35 G4.5 EDGE Single Bin Configuration DS35 G5 Single Bin Configuration	90 cc, 23 500 kPa (235 bar) (3408 psi)
DS35 G4 MultiApplier or MultiBin Configurations DS35 G4.5 EDGE MultiApplier or MultiBin Configurations DS35 G5 MultiApplier or MultiBin Configurations AB30 MultiApplier or MultiApplier with Granular Bin Configurations LS20 Wet System or Bareback Configurations	90 cc, 23 500 kPa (235 bar) (3408 psi) 38 cc, 20 995 kPa (210 bar) (3045 psi)
DS35 G4.5 EDGE HP Lime Single Bin or MultiApplier Configurations (Standard Conveyor Belt over Chain Only)	90 cc, 23 500 kPa (235 bar) (3408 psi) 38 cc, 23 994 kPa (240 bar) (3480 psi)

STEERING SYSTEM	
Type	Hydrostatic
Relief Pressure	18 961 kPa (190 bar) (2750 psi)
Control	Steering Control Valve
Operation	Two Double-Acting Cylinders
Turning Radius	10.5 m (34.5 ft)

CAPACITIES	
Item	Specification
Fuel Tank	852 L (225 gal)
Diesel Exhaust Fluid Tank	29.5 L (7.8 gal)
Cooling System with Heater	38 L (10 gal)
Crankcase (Including Filter)	35 L (37 qt)
800R Chassis Hydraulic System	146 L (38.6 gal)
Hydraulic Reservoir	76 L (20 gal)
Steering Reservoir	27 L (7.1 gal)
Pump Drive Gear Case	2.5 L (2.6 qt)
Rear Differential	18.9 L (20 qt)
Final Drives—Each	3.8 L (4 qt)
Front Axle Hubs—Each	0.5 L (0.5 qt)

WEIGHT (EMPTY)		
Chassis without Implement		Specification
Front Weight		6480 kg (14 286 lb)
Rear Weight		4890 kg (10 781 lb)
Total Weight		11 370 kg (25 067 lb)
Implement Type ^a		Specification
DS35 G4	HP	2268 kg (5000 lb)
	MultiApplier	2858 kg (6300 lb)
	MultiBin	3062 kg (6750 lb)
DS35 G4.5 EDGE	Single Bin	2270 kg (5004 lb)
	MultiApplier	2720 kg (5997 lb)
	MultiBin	2900 kg (6393 lb)
DS35 G5	Single Bin	2400 kg (5291 lb)
	MultiApplier	2900 kg (6393 lb)
	MultiBin	3175 kg (7000 lb)

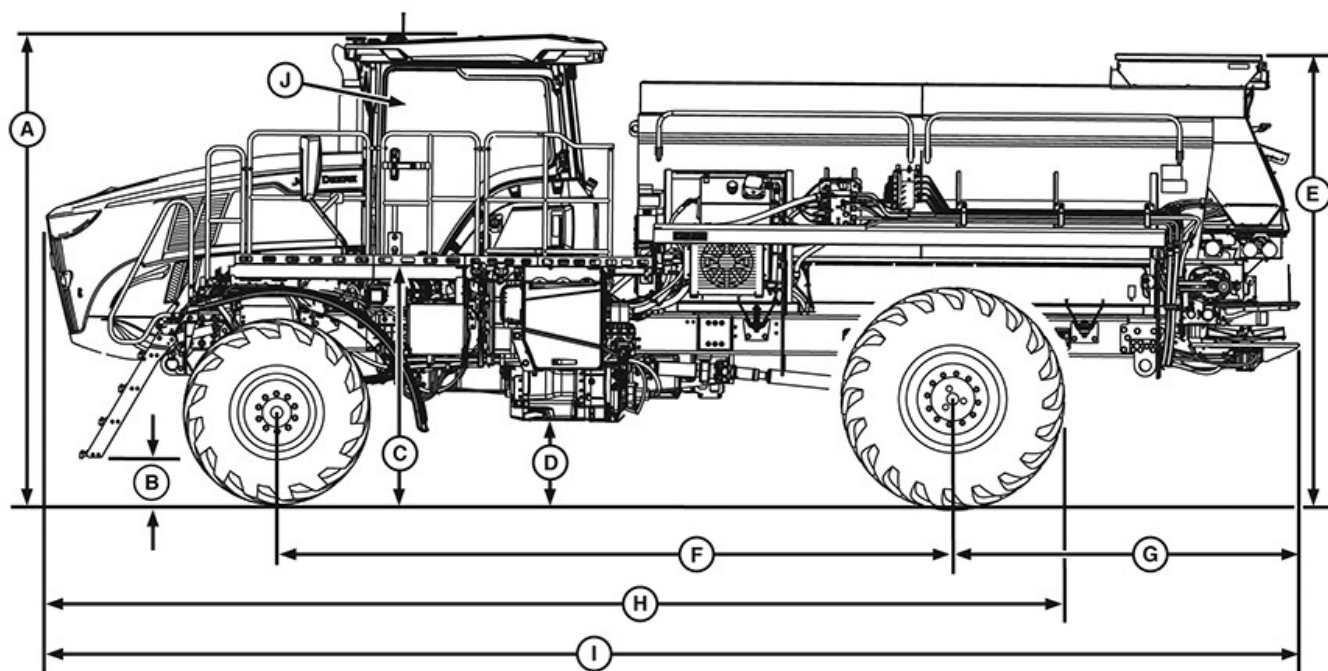
Specifications

WEIGHT (EMPTY)		
AB30	Dual Bin	4630 kg (10 207 lb)
	Dual Bin and Micronutrient Bin	4900 kg (10 803 lb)
LS20 Liquid System		4600 kg (10 141 lb)
^a Implement only		

OPERATOR'S CAB (STANDARD)	
Type	Air Conditioned with Air Suspension Seat
Dome Light Bulb	Mfg. Type 93 (RE47095)
Sentry Light Bulb	(RE64231)
Air Filters	John Deere Activated Carbon Cab Air Filters
AIR CONDITIONER	
Make (Compressor)	Denso
Refrigerant	R-134a
Freon Charge	1.8 kg (4 lb)

NCHYUSK,1755032054986-19-17NOV25

Machine Dimensions

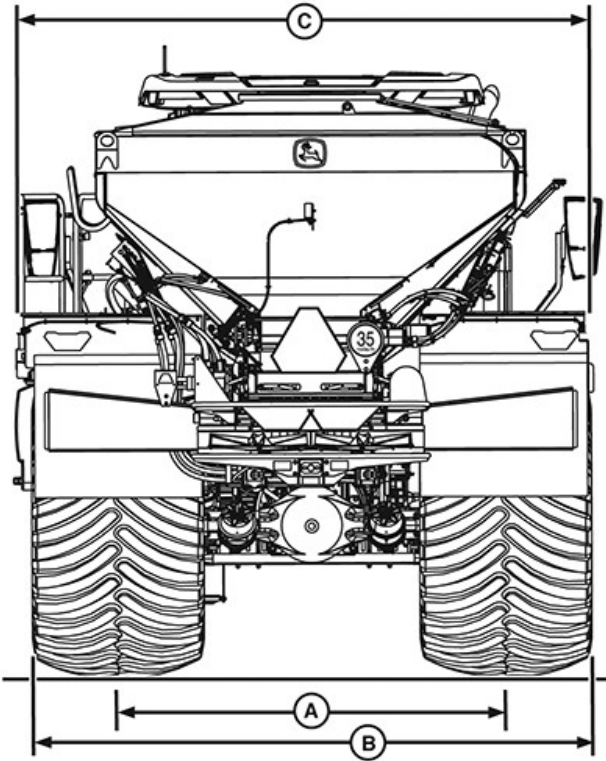


N160100—UN—13JAN22

A—Height, 3531 mm (11 ft 7 in) to Cab Roof; 3683 mm (12 ft 1 in) with Receiver
 B—280 mm (11 in)
 C—1802 mm (70.9 in)
 D—726 mm (30 in)
 E—3062 mm (120.6 in)

F—Wheelbase, 5080 mm (16 ft 8 in)
 G—2595 mm (182.2 in)
 H—7771 mm (305.9 in)
 I—Length, 8534 mm (28 ft)
 J—Door Opening, 534 mm (21 in)

Specifications

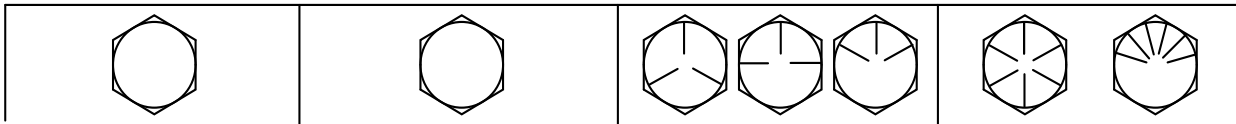


N160273—UN—13JAN22

A—2385 mm (93.9 in)
B—3531 mm (139 in)
C—Drybox: 3581 mm (141 in)
AB: 3658 mm (144 in)

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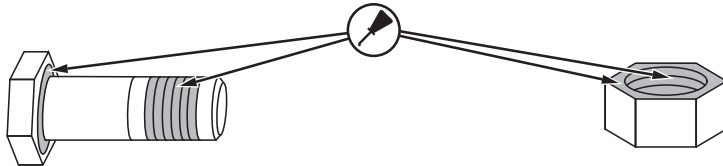
Unified Inch Bolt and Screw Torque Values



TS1671—UN—01MAY03

Bolt or Screw Size	SAE Grade 1 ^a				SAE Grade 2 ^b				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
1/4	3.1	27.3	3.2	28.4	5.1	45.5	5.3	47.3	7.9	70.2	8.3	73.1	11.2	99.2	11.6	103
													N·m	lb·ft	N·m	lb·ft
5/16	6.1	54.1	6.5	57.7	10.2	90.2	10.9	96.2	15.7	139	16.8	149	22.2	16.4	23.7	17.5
									N·m	lb·ft	N·m	lb·ft				
3/8	10.5	93.6	11.5	102	17.6	156	19.2	170	27.3	20.1	29.7	21.9	38.5	28.4	41.9	30.9
					N·m	lb·ft	N·m	lb·ft								
7/16	16.7	148	18.4	163	27.8	20.5	30.6	22.6	43	31.7	47.3	34.9	60.6	44.7	66.8	49.3
	N·m	lb·ft	N·m	lb·ft												
1/2	25.9	19.1	28.2	20.8	43.1	31.8	47	34.7	66.6	49.1	72.8	53.7	94	69.3	103	75.8
9/16	36.7	27.1	40.5	29.9	61.1	45.1	67.5	49.8	94.6	69.8	104	77	134	98.5	148	109
5/8	51	37.6	55.9	41.2	85	62.7	93.1	68.7	131	96.9	144	106	186	137	203	150
3/4	89.5	66	98	72.3	149	110	164	121	230	170	252	186	325	240	357	263
7/8	144	106	157	116	144	106	157	116	370	273	405	299	522	385	572	422
1	216	159	236	174	216	159	236	174	556	410	609	449	785	579	860	634
1-1/8	305	225	335	247	305	225	335	247	685	505	751	554	1110	819	1218	898
1-1/4	427	315	469	346	427	315	469	346	957	706	1051	775	1552	1145	1703	1256

Specifications

Bolt or Screw Size	SAE Grade 1 ^a				SAE Grade 2 ^b				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d	
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

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(T)-19-09MAY22

Metric Bolt and Screw Torque Values

TS1742—UN—31MAY18

Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497

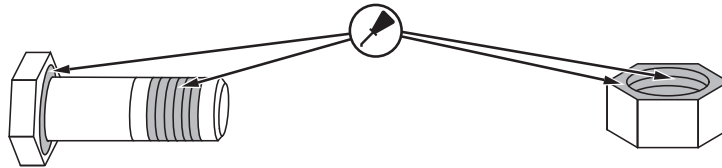
Specifications

Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b	
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(T)-19-09MAY22

Face Seal Fittings Assembly and Installation—All Pressure Applications

Face Seal O-Ring to Stud End Installation

1. Inspect the fitting surfaces. They must be free of dirt and/or defects.
2. Inspect the O-ring. It must be free of damage and/or defects.
3. Lubricate O-rings using system oil, and install into groove.
4. Push O-ring into groove so O-ring is not displaced during assembly.
5. Index angle fittings and tighten by hand pressing joint together to insure O-ring remains in place.
6. Tighten fitting or nut to torque value shown on the chart per dash size stamped on the fitting. DO NOT allow hoses to twist when tightening fittings.

Face Seal Adjustable Stud End O-Ring Installation

1. Back off lock nut and washer to full exposed turned down section of the fitting.
2. Install a thimble over the fitting threads to protect the O-ring from nicks.

3. Slide the O-ring over the thimble into the turned down section of the fitting.

4. Remove thimble.

Face Seal Straight Stud End O-Ring Installation

1. Install a thimble over the fitting threads to protect the O-ring from nicks.
2. Slide the O-ring over the thimble into the turned down section of the fitting.
3. Remove thimble.

Fitting Installation

1. Install fitting by hand until snug.
2. Position adjustable fittings by unscrewing the fitting no more than one turn.
3. Apply assembly torque per table.

Assembly Torque

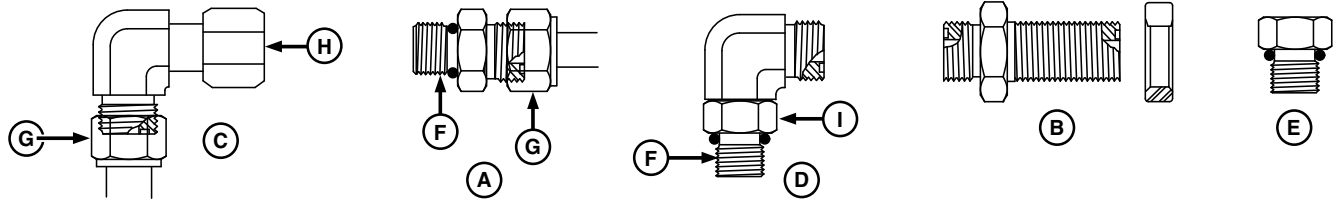
1. Use one wrench to hold the connector body and one wrench to tighten nut.
2. For a hydraulic hose, it may be necessary to use three wrenches to prevent twist; one on the

Specifications

connector body, one on the nut, and one on the body of the hose fitting.

OUO6092,000098D-19-24MAY22

Metric Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures



N79757—UN—13FEB08

A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut
C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow
E—Port Plug

F—Stud End
G—Tube Nut
H—Swivel Nut
I—Lock Nut

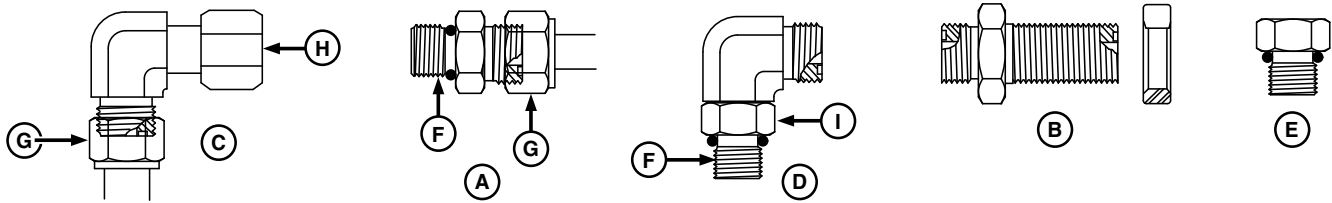
Metric Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressure-Below 27.6 MPA (4,000 PSI)																
Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut				Bulkhead Jam Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A					
Metric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/ Swivel Nut Torque		Jam Nut Hex Size	Jam Nut Torque		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque		Alumi- num or Brass Tor- que ^C
	mm	Da- sh Siz- e	in.	mm	in.	mm	N·m	lb-ft	mm	N·m	lb-ft	mm	mm	mm	N·m	lb-ft
	N·m	lb-ft														
4	-2	0.1- 25	3.18	—	—	—	—	—	—	—	M8 X 1	12	12	8	6	5 4
5	-3	0.1- 88	4.76	—	—	—	—	—	—	—	M10 X 1	14	14	15	11	10 7
6	-4	0.2- 50	6.35	9/16-18	17	24	18	22	32	24	M12 X 1.5	17	17	25	18	17 12
8	-5	0.3- 12	7.92	—	—	—	—	—	—	—	M14 X 1.5	19	19	40	30	27 20
10	-6	0.3- 75	9.53	11/16-16	22	37	27	27	42	31	M16 X 1.5	22	22	45	33	30 22
12	-8	0.5- 00	12.7- 0	13/16-16	24	50	37	30	93	69	M18 X 1.5	24	24	50	37	33 25
16	-10	0.6- 25	15.8- 8	1-14	30	69	51	36	118	87	M22 X 1.5	27	27	69	51	46 34
20	-12	0.7- 50	19.0- 5	1-3/16-12	36	102	75	41	175	129	M27 X 2	32	32	10- 0	74	67 49
22	-14	0.8- 75	22.2- 3	1-3/16-12	36	102	75	41	175	129	M30 X 2	36	36	13- 0	96	87 64
25	-16	1.0- 00	25.4- 0	1-7/16-12	41	142	105	46	247	182	M33 X 2	41	41	16- 0	118	1- 07 79
28	—	—	—	—	—	—	—	—	—	—	M38 x 2	46	46	17- 6	130	1- 17 87
32	-20	1.2- 50	31.7- 5	1-11/16-12	50	190	140	50	328	242	M42 X 2	50	50	21- 0	155	1- 40 1- 03
38	-24	1.5- 00	38.1- 0	2-12	60	217	160	60	374	276	M48 X 2	55	55	26- 0	192	1- 73 1- 28

Specifications

50	-32	2.0-00	50.8-0	—	—	—	—	—	—	—	M60 X 2	65	65	31-5	232	2-10	1-55
^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.																	
^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.																	
^C These torques were established using steel plated connectors in aluminum and brass.																	

OUO1073.0002303-19-25FEB08

Metric Face Seal and O-Ring Stud End Fitting Torque Chart—High-Pressure Applications



N79757—UN—13FEB08

A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut
C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow
E—Port Plug

F—Stud End
G—Tube Nut
H—Swivel Nut
I—Lock Nut

Metric Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure: Above 27580 kPa (275.8 bar) (4000 psi), Working Pressure: 41370 kPa (413.7 bar) (6,000 psi)															
Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut				Bulkhead Lock Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A				
Metric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/ Swivel Nut Torque		Lock Nut Hex Size	Lock Nut Torque		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque	
mm	Dash Size	in	mm	in	mm	N·m	lb·ft	mm	N·m	lb·ft	mm	mm	mm	N·m	lb·ft
4	-2	0.12-5	3.18	—	—	—	—	—	—	—	M8 X 1	12	12	8	6
5	-3	0.18-8	4.76	—	—	—	—	—	—	—	M10 X 1	14	14	15	11
6	-4	0.25-0	6.35	9/16-18	17	24	18	22	32	24	M12 X 1.5	17	17	35	26
8	-5	0.31-2	7.92	—	—	—	—	—	—	—	M14 X 1.5	19	19	45	33
10	-6	0.37-5	9.53	11/16-16	22	37	27	27	42	31	M16 X 1.5	22	22	55	41
12	-8	0.50-0	12.70	13/16-16	24	63	46	30	93	69	M18 X 1.5	24	24	70	52
16	-10	0.62-5	15.88	1-14	30	103	76	36	118	87	M22 X 1.5	27	27	100	74
20	-12	0.75-0	19.05	1-3/16-12	36	152	112	41	175	129	M27 X 2	32	32	170	125
22	-14	0.87-5	22.23	1-3/16-12	36	152	112	41	175	129	M30 X 2	36	36	215	159
25	-16	1.00-0	25.40	1-7/16-12	41	214	158	46	247	182	M33 X 2	41	41	260	192
28	—	—	—	—	—	—	—	—	—	—	M38 x 2	46	46	320	236
32	-20	1.25-0	31.75	1-11/16-12	—	286	211	50	328	242	M42 X 2	50	50	360	266

Specifications

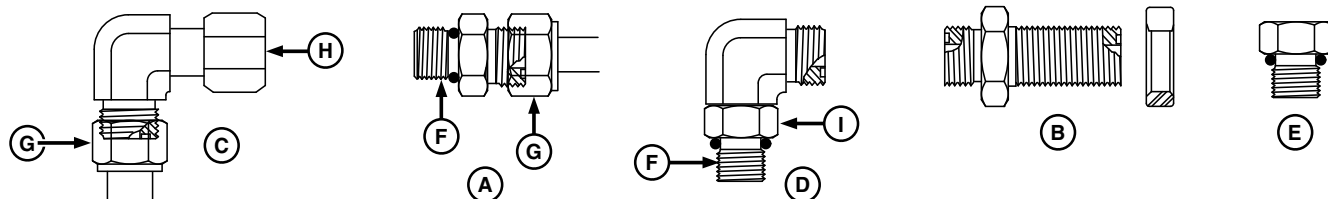
38	-24	1.50-0	38.10	2-12	—	326	240	60	374	276	M48 X 2	55	55	420	310

^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

OUO1073,00022E2-19-10SEP21

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures



N79757—UN—13FEB08

A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut
C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow
E—Port Plug

F—Stud End
G—Tube Nut
H—Swivel Nut
I—Lock Nut

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressure-Below 27.6 MPA (4,000 PSI)															
Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut			Bulkhead Jam Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A					
Metric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/ Swivel Nut Torque	Jam Nut Hex Size	Jam Nut Tor- que		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque	Alumi- um or Brass Tor- que ^C	
mm	Das- h Size	in.	mm	in.	in.	N·m	lb-ft			N·m	lb-ft	in.	in.	in.	
N·m	lb-ft	N·m	lb-ft												
5	-3	0.188	4.78	—	—	—	—	—	—	3/8-24	5/8	9/16	12	9	8 6
6	-4	0.250	6.35	9/16-18	11/16	2-4	18	13/16	3-2	7/16-20	5/8	5/8	16	1-2	11 8
8	-5	0.312	7.92	—	—	—	—	—	—	1/2-20	3/4	11/16	24	1-8	16 1-2
10	-6	0.375	9.53	11/16-16	13/16	3-7	27	1	4-2	9/16-18	3/4	3/4	37	2-7	25 1-8
12	-8	0.500	12.70	13/16-16	15/16	5-0	37	1-1/8	9-3	3/4-16	7/8	15/16	50	3-7	33 2-5
16	-10	0.625	15.88	1-14	1-1/8	6-9	51	1-5/16	1-1-8	7/8-14	1-1/16	1-1/16	69	5-1	46 3-4
20	-12	0.750	19.05	1-3/16-12	1-3/8	1-0-2	75	1-1/2	1-7-5	1-1/16-12	1-1/4	1-3/8	1-02	7-5	68 5-0
22	-14	0.875	22.23	1-3/16-12	—	1-0-2	75	—	1-7-5	1-3/16-12	1-3/8	1-1/2	1-22	9-0	81 6-0
25	-16	1.000	25.40	1-7/16-12	1-5/8	1-4-2	10-5	1-3/4	2-4-7	1-5/16-12	1-1/2	1-5/8	1-42	1-0-5	95 7-0
32	-20	1.25	31.75	1-11/16-12	1-7/8	1-9-0	14-0	2	3-2-8	1-5/8-12	1-3/4	1-7/8	1-90	1-4-0	1-27 9-3

Specifications

38	-24	1.50	38.10	2-12	2-1/4	2-1-7	16-0	2-3/8	3-7-4	2-7-6	1-7/8-12	2-1/8	2-1/8	2-17	1-6-0	1-45	1-0-7
50.8	-32	2.000	50.80	—	—	—	—	—	—	—	2-1/2-12	2-3/4	2-3/4	3-11	2-2-9	2-07	1-5-3

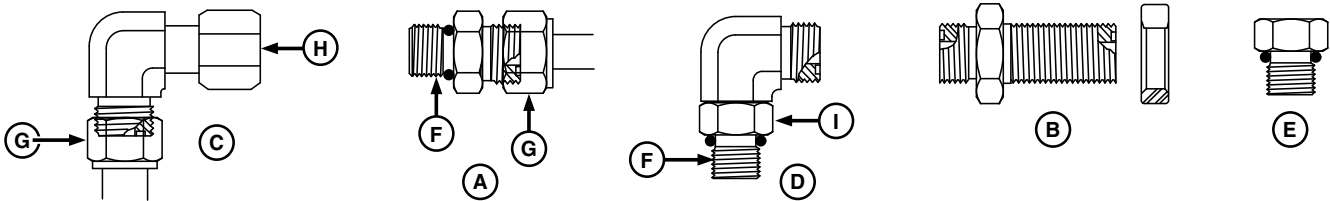
^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

^C These torques were established using steel plated connectors in aluminum and brass.

OUO1073.0002304-19-25FEB08

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure Applications



N79757—UN—13FEB08

A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut
C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow
E—Port Plug

F—Stud End
G—Tube Nut
H—Swivel Nut
I—Lock Nut

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—High-Pressure: Above Below 27580 kPa (275.8 bar) (4000 psi), Working Pressure: 41370 kPa (413.7 bar) (6,000 psi)															
Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut				Bulkhead Lock Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A				
Met- ric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/ Swivel Nut Torque		Lock Nut Hex Size	Lock Nut Torque		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque	
mm	Da- sh Siz- e	in	mm	in	in	N·m	lb·ft		N·m	lb·ft	in	in	in	N·m	lb·ft
5	-3	0.18-8	4.78	—	—	—	—	—	—	—	3/8-24	5/8	9/16	18	13
6	-4	0.25-0	6.35	9/16-18	11/16	24	18	13/16	32	24	7/16-20	5/8	5/8	24	18
8	-5	0.31-2	7.92	—	—	—	—	—	—	—	1/2-20	3/4	11/16	30	22
10	-6	0.37-5	9.53	11/16-16	13/16	37	27	1	42	31	9/16-18	3/4	3/4	37	27
12	-8	0.50-0	12.70	13/16-16	15/16	63	46	1-1/8	93	69	3/4-16	7/8	15/16	75	55
16	-10	0.62-5	15.88	1-14	1-1/8	103	76	1-5/16	118	87	7/8-14	1-1/16	1-1/16	103	76
20	-12	0.75-0	19.05	1-3/16-12	1-3/8	152	112	1-1/2	175	129	1-1/16-12	1-1/4	1-3/8	177	131
22	-14	0.87-5	22.23	1-3/16-12	—	152	112	—	175	129	1-3/16-12	1-3/8	1-1/2	231	170
25	-16	1.00-0	25.40	1-7/16-12	1-5/8	214	158	1-3/4	247	182	1-5/16-12	1-1/2	1-5/8	270	199
32	-20	1.25	31.75	1-11/16-12	1-7/8	286	211	2	328	242	1-5/8-12	1-3/4	1-7/8	286	211

Specifications

38	-24	1.50	38.10	2-12	2-1/4	326	240	2-3/8	374	276	1-7/8-12	2-1/8	2-1/8	326	240
^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.															
^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.															

OUO1073,00022E0-19-10SEP21

Four Bolt Flange Fittings Assembly and Installation—All Pressure Applications

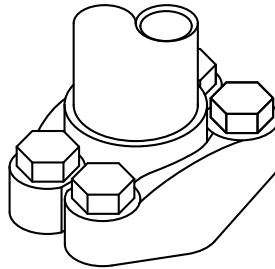
1. Inspect the sealing surfaces for nicks or scratches, roughness or out-of-flat condition. Scratches cause leaks. Roughness causes seal wear. Out-of-flat causes seal extrusion. If these defects cannot be polished out, replace the component.
2. Install the correct O-ring (and back-up washer if required) into the groove using petroleum jelly to hold it in place.
3. For split flange; loosely assemble split flange halves, being sure that the split is centrally located and perpendicular to the port. Hand tighten cap screws to hold parts in place. Do not pinch O-ring.

4. For single piece flange; put hydraulic line in the center of the flange and install four cap screws. With the flange centrally located on the port, hand tighten cap screws to hold it in place. Do not pinch O-ring.
5. For both single piece flange and split flange, be sure the components are properly positioned and cap screws are hand tight. Tighten one cap screw, then tighten the diagonally opposite cap screw. Tighten the two remaining cap screws. Tighten all cap screws within the specified limits shown in the chart.

DO NOT use air wrenches. DO NOT tighten one cap screw fully before tightening the others. DO NOT overtighten.

OUO6435,000189F-19-20AUG02

SAE Four Bolt Flange Cap Screw Torque Values—Standard Pressure Applications



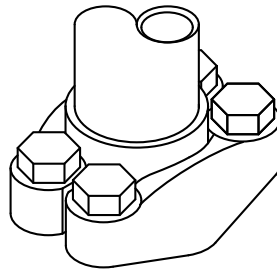
H70423—UN—30NOV01

SAE Four Bolt Flange Cap Screw Torque Values—27,600 KPA (4,000 PSI) Pressure Applications					
Nominal Flange Size	Screw Size ^{ab}	Torque			
		Newton Meters		Foot Pounds	
		Min	Max	Min	Max
1/2	5/16-18 UNC	20	31	15	23
3/4	3/8-16 UNC	28	54	21	40
1	3/8-16 UNC	37	54	27	40
1-1/4	7/16-14 UNC	47	85	35	63
1-1/2	1/2-13 UNC	62	131	46	97
2	1/2-13 UNC	73	131	54	97
2-1/2	1/2-13 UNC	107	131	79	97
3	5/8-11 UNC	187	264	138	195
3-1/2	5/8-11 UNC	158	264	117	195
4	5/8-11 UNC	158	264	117	195
5	5/8-11 UNC	158	264	117	195

^aJDM A17D, SAE Grade 5 or better cap screws with plated hardware.

^b1.5.1.2 Lock washers are permissible but not recommended.

SAE Four Bolt Flange Cap Screw Torque Values—High Pressure Applications



H70423—UN—30NOV01

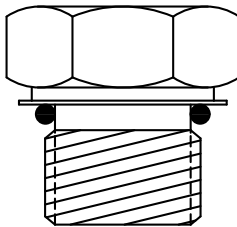
SAE Four Bolt Flange Cap Screw Torque Values—41,400 KPA (6,000 PSI) Pressure Applications					
Nominal Flange Size	Screw Size ^{ab}	Torque			
		Newton Meters		Foot Pounds	
		Min	Max	Min	Max
1/2	5/16-18 UNC	20	31	15	23
3/4	3/8-16 UNC	34	54	25	40
1	7/16-14 UNC	57	85	42	63
1-1/4	1/2-13 UNC	85	131	63	63
1-1/2	5/8-11 UNC	159	264	117	195
2	3/4-10 UNC	271	468	200	345

^aJDM A17D, SAE Grade 5 or better cap screws with plated hardware.

^b1.5.1.2 Lock washers are permissible but not recommended.

OUO6435,000154C-19-17JUN04

External Hexagon Port Plug Torque Chart



M20 x 1.5	60 N·m (44.2 lb·ft)
M22 x 1.5	85 N·m (62.7 lb·ft)
M27 x 2	135 N·m (99.6 lb·ft)
M30 x 2	165 N·m (121.7 lb·ft)
M33 x 2	235 N·m (173.3 lb·ft)
M38 x 2	245 N·m (180.7 lb·ft)
M42 x 2	260 N·m (191.8 lb·ft)
M48 x 2	290 N·m (213.9 lb·ft)
M60 x 2	330 N·m (243.4 lb·ft)

^aPort to JDS-G173.1; stud end to JDS-G173.3.

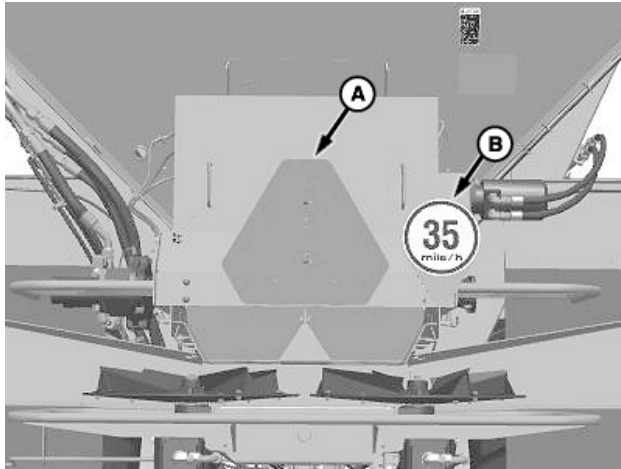
OUO6435,00017FB-19-06JAN17

H70356—UN—30NOV01

Port or Stud End Thread Size ^a	Torque +15%/-20%
M8 x 1	10 N·m (89 lb·in)
M10 x 1	17 N·m (150 lb·in)
M12 x 1.5	28 N·m (20.6 lb·ft)
M14 x 1.5	39 N·m (28.7 lb·ft)
M16 x 1.5	48 N·m (35.4 lb·ft)
M18 x 1.5	60 N·m (44.2 lb·ft)

Understand Implement of Husbandry Roadway Regulations

⚠ CAUTION: The primary purpose of this machine is for field operation. Operate machine on roadway safely by driving slowly and exercising caution to avoid collisions.



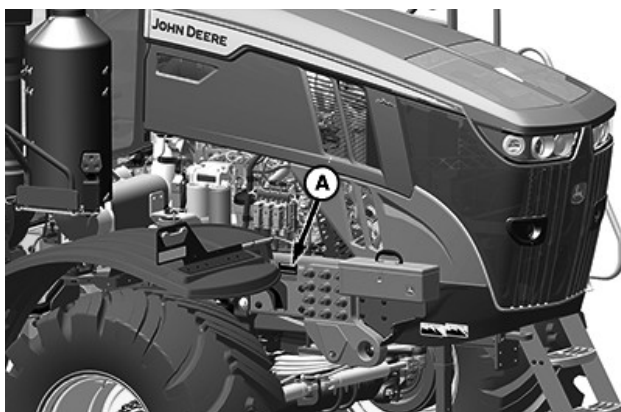
N156268—UN—12AUG21

- A—SMV Emblem**
B—Speed Identification Symbol

This machine has a maximum travel speed capability of 75 km/h (46.6 mph), and it is equipped with a slow moving vehicle emblem (A). Before roadway operation, ensure that you understand your state or province's regulations for roadway transport of agricultural equipment. Your state or province may have regulations which would require removal or covering of the slow moving vehicle identification emblem if operated on a roadway above a specific speed. Contact your local roadway transport authorities if you have any questions or concerns regarding applicable regulations.

TB90758,0002984-19-19JUL21

Identification Numbers



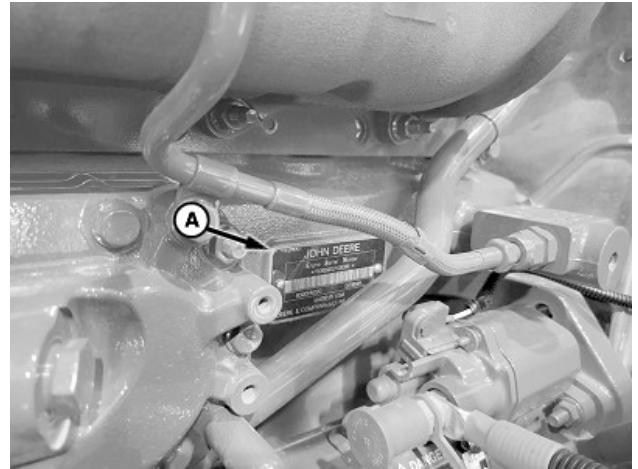
N160274—UN—17JAN22

- A—Product Identification Number**

Copy these pages to record component serial numbers. Serial numbers help when acquiring service parts.

The product identification number (A) is on the right-hand side of the frame, near the front tire.

Product Identification Number _____



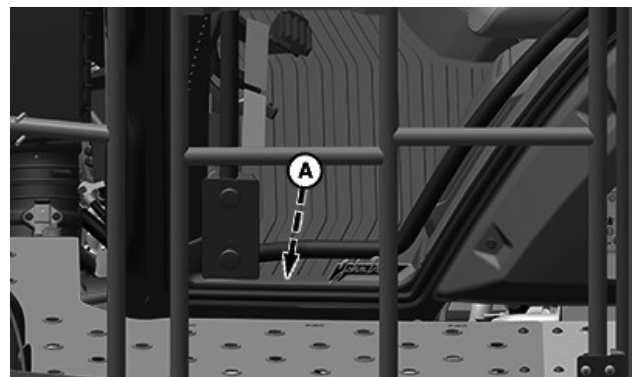
N156526—UN—17AUG21

9.0 L Engine

- A—Engine Serial Number**

The engine serial number (A) is on the left-hand side of the engine block.

Engine Serial Number _____

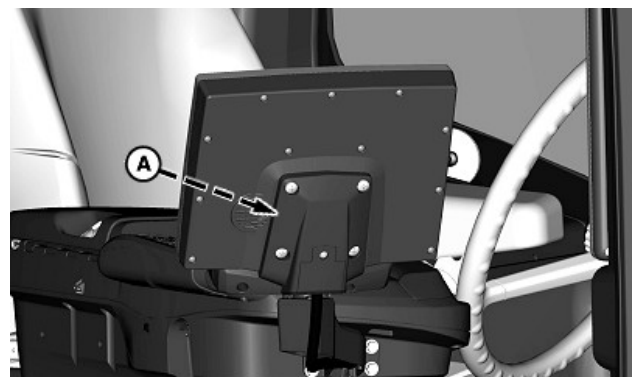


N160275—UN—17JAN22

- A—Cab Serial Number**

The cab serial number (A) is located near the door and under the floor mat.

Cab Serial Number _____



N128443—UN—20FEB17

- A—Monitor Serial Number**

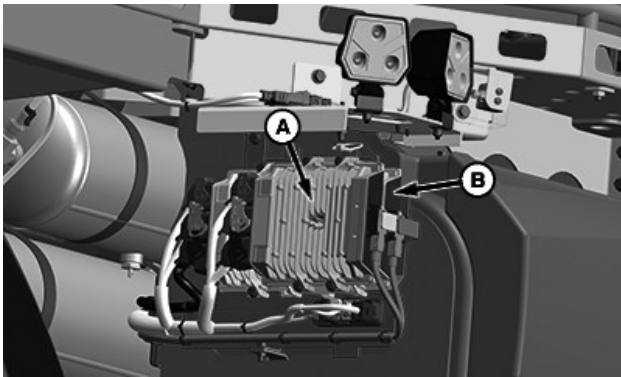
The monitor serial number (A) is on the back of the monitor.

Monitor Serial Number

NOTE: Serial number information for Steering System Control Unit, Chassis Control Unit, Engine Control Unit, and Boom Control Unit can be retrieved from the CommandCenter display.

The AutoTrac steering control unit and the controller are located near the battery disconnect.

Steering System Control Unit Serial Number



N160279—UN—19JAN22

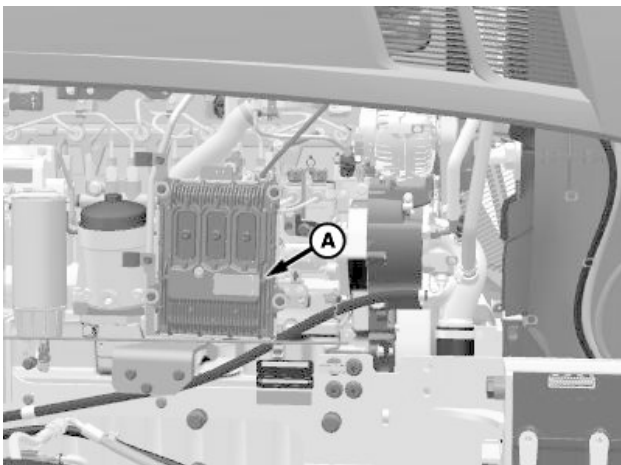
Chassis Control Units

A—Cab Control Unit (CAB)
B—Rear2 Control Unit (REAR2)

The cab control unit (A) and Rear2 control unit (B) serial numbers are on the units, which are mounted on the left-hand side storage box assembly.

Cab Control Unit Serial Number

Rear2 Control Unit Serial Number



N156527—UN—24AUG21

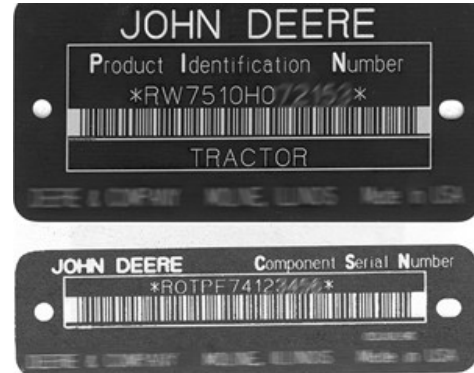
A—Engine Control Unit

The engine control unit (A) serial number is on the unit attached to the right side of the engine.

Engine Control Unit Serial Number

TB90758,00029B3-19-22OCT25

Keep Proof of Ownership



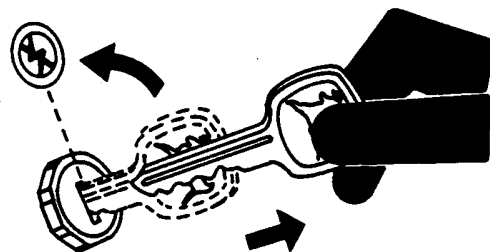
TS1680—UN—09DEC03

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

DX,SECURE1-19-18NOV03

Keep Machines Secure



TS230—UN—24MAY89

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.

DX, SECURE2-19-18NOV03

Limited Battery Warranty

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

To Secure Warranty Service

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

Replacement

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

This Warranty Does Not Cover

Breakage of the container, cover, or terminals.

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

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

Limitation of Implied Warranties and Purchaser's Remedies

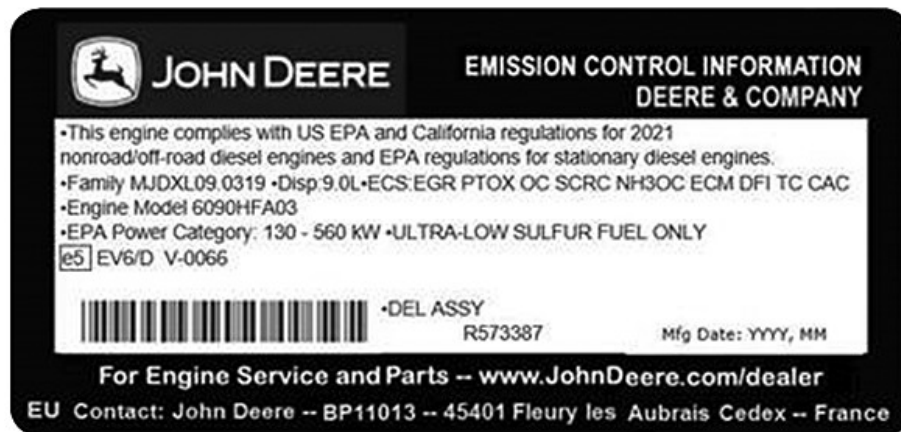
To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations or promises as to the quality, performance or freedom from defect of the products covered by this warranty. IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE,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

No Dealer Warranty

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

DX, BATWAR, NA-19-09MAY25

Emissions Control System Certification Label



Engine Emissions Label

RG33429—UN—04FEB21

⚠ 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

CARB Non-Road Emissions Control Warranty Statement—Compression Ignition

Emissions Control Warranty Statement 2025 through 2027



JOHN DEERE

DXLOGOV1—UN—28APR09

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the “Emission Control Information” label located on the engine. If the engine is operated in the United States or Canada and the engine label states: “This engine complies with US EPA regulations for nonroad and stationary diesel engines”, or “This engine complies with US EPA regulations for stationary emergency diesel engines”, refer to the “U.S. and Canada Emission Control Warranty Statement.” If the engine is operated in California, and the engine label states: “This engine complies with US EPA and California regulations for nonroad/off-road diesel engines” also refer to the “California Emissions Control Warranty Statement.”

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty in 2025 through 2027 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State’s stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB and is free from defects in materials and workmanship which would cause the failure of a warranted part to be identical in all material respects to the part as described in John Deere’s application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first for all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

EMISSIONS WARRANTY EXCLUSIONS:

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

JOHN DEERE'S WARRANTY RESPONSIBILITY:

Where a warrantable condition exists, John Deere will repair or replace, as it elects, your off-road diesel engine at no cost to you, including diagnosis, parts and 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.

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 in 2025 through 2027 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.

rg595770—UN—07DEC23

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 and 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	Emission control labels	Advanced Oxides of Nitrogen (NOx Controls)
Intake manifold	Particulate Controls	NOx absorbers and catalysts
Turbocharger	Any device used to capture particulate emissions	SCR systems and urea containers / dispensing systems
Charge air cooler	Any device used in the regeneration of the capturing system	Miscellaneous Items used in Above Systems
Fuel Metering System	Enclosures and manifold	Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware
Fuel injection system	Smoke Puff Limiters	
Exhaust Gas Recirculation	Positive Crankcase Ventilation (PCV) System	
EGR valve	PCV valve	
Catalyst or Thermal Reactor Systems	Oil filler cap	
Catalytic converter		
Exhaust manifold		

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.

rg595771—UN—07DEC23
DX,EMISSIONS,CARB-19-05NOV25

EPA Non-road Emissions Control Warranty Statement—Compression Ignition



JOHN DEERE

DXLOGOV1—UN—28APR09

U.S. AND CANADA EMISSION CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the "Emissions Control Information" label located on the engine. If the engine is operated in the United States or Canada and the Emissions Control information label states: "This engine complies with US EPA regulations for nonroad and stationary diesel engines", or "This engine conforms to US EPA nonroad compression-ignition regulations", refer to the "U.S. and Canada Emission Control Warranty Statement." If the engine is operated in California, and the label states: "This engine complies with US EPA and CARB regulations for nonroad diesel engines", or "This engine conforms to US EPA and California nonroad compression-ignition emission regulations", also refer to the "California Emission Control Warranty Statement."

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emissions-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

JOHN DEERE'S WARRANTY RESPONSIBILITY

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine including all parts of its emission-control system was designed, built and equipped so as to conform at the time of the sale with Section 213 of the Clean Air Act and is free from defects in materials and workmanship which would cause the engine to fail to conform with applicable US EPA regulations for a period of five years from the date the engine is placed into service or 3,000 hours of operation, whichever first occurs.

Where a warrantable condition exists, John Deere will repair or replace, as it elects, any part or component with a defect in materials or workmanship that would increase the engine's emissions of any regulated pollutant within the stated warranty period at no cost to you, including expenses related to diagnosing and repairing or replacing emission-related parts. Warranty coverage is subject to the limitations and exclusions set forth herein. Emission-related components include engine parts developed to control emissions related to the following:

Air-Induction System	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)



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.

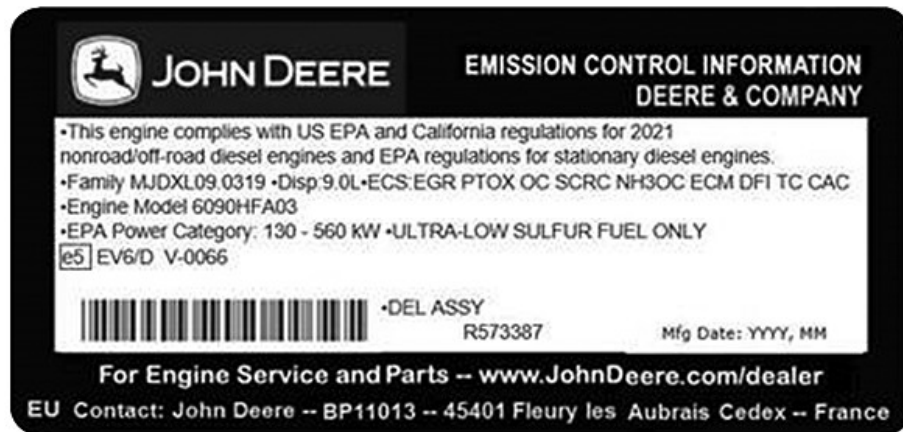
To the extent permitted by law John Deere is not liable for damage to other engine components caused by a failure of an emission-related part, unless otherwise covered by standard warranty.

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)

TS1721—UN—15JUL13
DX,EMISSIONS,EPA-19-12DEC12

Carbon Dioxide Emissions (CO₂)



SAMPLE - Engine Emissions Label

RG33429—UN—04FEB21

To identify the carbon dioxide (CO₂) output, locate the engine emissions label. Find the appropriate family on the emissions label and reference the chart.

and shall not imply or express any guarantee of the performance of a particular engine.

DX,EMISSIONS,CO2-19-23JUN23

NOTE: The first letter of the family number is not utilized for family identification on the chart.

Emissions Label Family	CO ₂ Result
_JDXL02.9323	952 g/kW-hr
_JDXL02.9327	784 g/kW-hr
_JDXL04.5337	819 g/kW-hr
_JDXL04.5338	682 g/kW-hr
_JDXL04.5304	1004 g/kW-hr
_JDXN04.5174	792 g/kW-hr
_JDXL06.8324	720 g/kW-hr
_JDXL06.8328	683 g/kW-hr
_JDXL06.8336	701 g/kW-hr
_JDXN06.8175	771 g/kW-hr
_JDXL09.0319	646 g/kW-hr
_JDXL09.0325	695 g/kW-hr
_JDXL09.0329	657 g/kW-hr
_JDXL09.0333	650 g/kW-hr
_JDXL13.5326	684 g/kW-hr
_JDXL13.6320	651 g/kW-hr
_JDXL13.5340	632 g/kW-hr
_JDXL18.0341	683 g/kW-hr
_JDXL18.0342	687 g/kW-hr
F28	870 g/kW-hr
F32	710 g/kW-hr
F33	677 g/kW-hr

This CO₂ measurement results from testing over a fixed test cycle under laboratory conditions a(n) (parent) engine representative of the engine type (engine family)

Index

A

Access calibrations and procedures.....	25-A-1
Access controls setup.....	25-H-1
Access dry application system.....	25-B-1
Access engine.....	25-C-1
Access headland management system.....	25-I-1
Access HVAC.....	25-D-1
Access lights.....	25-E-1
Access transmission.....	25-G-1
Activating AutoTrac.....	90-1
Adjusting steering wheel.....	30-16
Aftertreatment indicators overview.....	50-5
Aftertreatment system	
Emergency SCR derate override.....	50-23
Aim Head lights.....	55-7
Air	
Intake.....	85-29
Air cleaner	
Service.....	65-6
Air conditioner	
Service.....	60-5
Air conditioning.....	25-D-3
Air drier cartridge, replace.....	85-24
Air filters, cab, check and replace.....	85-11, 85-24
Air flow mode.....	25-D-2
Air intake system.....	85-29
Alarm	
Bin low level.....	25-B-11
Product density.....	25-B-11
Target rate.....	25-B-11
Alert.....	25-2
Information.....	25-2
Service.....	25-2
Stop.....	25-2
Alternator.....	55-9
Antenna, mobile radio	
Installing.....	30-29, 60-6
Application assignments.....	25-H-6
Application rate	
Edit.....	25-B-2
Applications	
Calibrations.....	25-A-1
Controls setup.....	25-H-1
Dry application system.....	25-B-1
Headland management system.....	25-I-1
HVAC.....	25-D-1
Lights.....	25-E-1
Transmission.....	25-G-1
Video.....	25-F-3
Applications on display.....	25-1
Armrest control console	
Positioning.....	30-26
Auto exhaust filter cleaning.....	25-C-3
Automatic brake adjuster	
Check	
Inspect.....	85-19

Automatic slack adjuster	
Check	
Inspect.....	85-19
AutoTrac.....	90-1
Row entry modes.....	90-6
Setup.....	90-1
Steering	
Sensitivity.....	90-2
Tire	
Type.....	90-2
AutoTrac	
License.....	90-1
Status Pie.....	90-1
AutoTrac calibration procedure.....	25-A-11
AutoTrac resume.....	30-28
AutoTrac valve calibration procedure.....	25-A-7
AutoTrac wheel angle sensor calibration procedure ..	25-A-7
Auxiliary outlet	
Armrest control console.....	30-26
Avoid static electricity risk when fueling ...	05-15, 45-5, 80-13
Axle	
Inspect axle components-annually.....	85-26
Axle mounting hardware	
Check torque.....	85-5, 85-18

B

Batteries	
Basic electrical component handling precautions for vehicles equipped with computer controlled systems.....	55-1
Preventing battery damage.....	55-2
Service.....	55-2
Batteries, service.....	85-22
Battery	
Charge.....	55-2
Warranty.....	105-18
Battery	
Operate booster battery.....	55-2
Battery Handling, Safety	
Safety, Battery Handling.....	05-7, 55-11
Battery, disconnect switch.....	55-15
Beacon light	
Replace.....	55-8
Belt	
Check belt tensioner.....	85-34
Belts	
Fan belt routing diagram.....	65-1
Inspect belt tensioner.....	65-1
Replace fan belt.....	65-1
Replace fan belt as required.....	85-15
Service drive belts safely.....	05-8
Bin and product alarms.....	25-B-11
Bin chaining.....	25-B-6
Bin counter reset.....	25-B-5

Cab air filters	60-3
Cab pressure indicator	60-2
Cab windows	
Clean	60-2
Calibrations	
Access	25-A-1
AutoTrac calibration procedure	25-A-11
AutoTrac valve calibration procedure	25-A-7
AutoTrac wheel angle sensor calibration procedure	25-A-7
Calibrations overview	25-A-1
Conveyor feed rate calibration	25-A-2
Conveyor feed rate calibration procedure	25-A-3
Fan maintenance mode	25-A-10, 25-A-11
Icons displayed	25-A-5
Machine calibration	
AutoTrac	25-A-11
AutoTrac valve	25-A-7
AutoTrac wheel angle sensor	25-A-6
multi-function lever	25-A-8
Meter rollers	25-A-2, 25-A-3
Multi-function lever calibration procedure	25-A-9
Rate control selection	25-A-6
Reset calibrations	
machine calibrations	25-A-10
spreader calibrations	25-A-12
Speed sensors	25-A-9
Speed sensors calibration procedure	25-A-9
Spinner calibration	25-A-1

C

Spinner calibration procedure.....	25-A-2
Spreader check.....	25-A-4
Spreader check procedure.....	25-A-4
Calibrations overview.....	25-A-1
Carbon Dioxide Emissions.....	105-24
Chain oiler.....	25-B-9
Charging	
USB	
Armrest control console.....	30-26
Check axle mounting hardware torque.....	85-5, 85-18
Clean	
Solution system.....	100-2
Clean vehicle of hazardous chemicals, including pesticides.....	100-1
Clutch pedal.....	30-2
Cold-weather starting	
Engine	
With starting aid.....	50-3
Combination spring brake chamber	
Arm and disarm.....	75-1
Cage and Uncage.....	75-1
Come home mode.....	50-14
ComfortCommand operator's seat (premium seat)	30-18
ComfortCommand operator's seat (ultimate seat)	30-20
CommandARM.....	25-H-4
CommandARM - controls setup.....	25-H-3
CommandARM console and display.....	30-6
Console and display.....	30-6
Engine and ground drive.....	30-6
HVAC.....	30-6
Lights.....	30-6
Phone.....	30-6
Radio.....	30-6
Spraying controls.....	30-6
CommandCenter	
Camera.....	25-F-1
Remote Viewer.....	25-F-2
Video display capability.....	25-F-1
Video Display Capability.....	25-F-1
Video Display Settings.....	25-F-2
CommandCenter display	
Alerts and Messages.....	25-2
Calibrations application	
Access.....	25-A-1
AutoTrac calibration procedure.....	25-A-11
AutoTrac valve calibration procedure.....	25-A-7
AutoTrac wheel angle sensor calibration procedure.....	25-A-7
Calibrations overview.....	25-A-1
Conveyor feed rate calibration.....	25-A-2
Conveyor feed rate calibration procedure..	25-A-3
Fan maintenance mode.....	25-A-10, 25-A-11
Icons displayed.....	25-A-5

Machine calibration		Headland management system.....	25-I-1
AutoTrac.....	25-A-11	Help center	25-1
AutoTrac valve	25-A-7	HVAC application	
AutoTrac wheel angle sensor.....	25-A-6	Access HVAC.....	25-D-1
multi-function lever	25-A-8	Air conditioning	25-D-3
Multi-function lever calibration procedure ..	25-A-9	Air flow mode	25-D-2
Rate control selection.....	25-A-6	Fan speed.....	25-D-3
Reset calibrations		Heating, ventilation, and air conditioning (HVAC)	
machine calibrations	25-A-10	main page.....	25-D-1
spreader calibrations.....	25-A-12	Set temperature	25-D-2
Speed sensors.....	25-A-9	Lights application	
Speed sensors calibration procedures.....	25-A-9	Access.....	25-E-1
Spinner calibration	25-A-1	Main page.....	25-E-1
Spinner calibration procedure.....	25-A-2	Performance mode.....	25-G-2
Spreader check.....	25-A-4	Worklights controls	25-E-3
Spreader check procedure	25-A-4	Worklights preset 1.....	25-E-2
Controls setup application		Worklights preset 2.....	25-E-2
Access.....	25-H-1	Transmission application	
Application assignments.....	25-H-6	Access.....	25-G-1
CommandARM	25-H-4	Brake pressure	25-G-5
CommandARM - controls setup	25-H-3	Max speed reverse.....	25-G-4
Create dual position assignments.....	25-H-5	Maximum speed forward	25-G-3
Create single position assignments	25-H-4	Set speeds	25-G-2
Function assignments.....	25-H-6	Transmission main page	25-G-1
Multi-function lever	25-H-2	CommandCenter display applications.....	25-1
Multi-function lever - controls setup.....	25-H-2	Compressed air, using for cleaning	05-10
Overview	25-H-1	Connector	
Dry application system application		Electrical	55-16
Access.....	25-B-1	Console and display.....	30-26
Advanced settings.....	25-B-14	Contextual help	25-1
Bin and product alarms.....	25-B-11	Controls setup	
Bin chaining.....	25-B-6	Access.....	25-H-1
Bin counter reset	25-B-5	Application assignments.....	25-H-6
Bin covers	25-B-7	CommandARM.....	25-H-4
Bin details	25-B-3	CommandARM - controls setup	25-H-3
Bin purge	25-B-8	Controls setup overview	25-H-1
Chain oiler.....	25-B-9	Create dual position assignments	25-H-5
Edit rate presets.....	25-B-2	Create single position assignments	25-H-4
Edit spinner preset	25-B-13	Function assignments.....	25-H-6
Main page.....	25-B-1	Multi-function lever	25-H-2
Prime controls	25-B-5	Multi-function lever - controls setup	25-H-2
Product density alarm.....	25-B-11	Controls setup overview	25-H-1
Rate control/display speed	25-B-14	Conveyor feed rate calibration	25-A-2
Select spinner preaset	25-B-12	Conveyor feed rate calibration procedure	25-A-3
Target rate alarm	25-B-11	Conveyor start and stop timing	50-15
Engine application		Coolant	
Access engine	25-C-1	Add coolant and conditioner as required	85-16
Auto exhaust filter cleaning	25-C-3	Diesel engine	
Disable auto exhaust filter cleaning.....	25-C-5	Engine with wet sleeve cylinder liners.....	80-4
Engine main page.....	25-C-1	John deere COOL-GARD II coolant extender	80-5
Engine power	25-C-2	Mixing with concentrate, water quality	80-6
Exhaust filter system overview	25-C-2	Testing freeze point	80-6
Parked filter cleaning	25-C-3	Warm temperature climates	80-6
Headland management system application		Coolant	
Access	25-I-1	testing.....	85-30
Boom control mode	25-I-2		

Coolant level	
Check daily	45-2, 85-9
Cooling system	
Drain, flush, and refill	85-35
Corner post display	30-3
Diesel exhaust fluid level indicator	30-3
Exhaust filter cleaning indicator	30-3
Fuel level indicator	30-3
Create dual position assignments	25-H-5
Create single position assignments	25-H-4

D

Decals	
Informational	50-1
DEF	
Disposal	80-11
Dosing unit filter, change	65-4, 85-34
In-line filter, change	85-13
Storing	80-9
Tank, cleaning	65-3, 85-12
Tank, refilling	80-10
Testing	80-10
Use in SCR equipped engines	80-9
DEF dosing unit filter	
Change	65-4, 85-34
DEF in-line filter	
Change	85-13
DEF tank	
Cleaning	65-3, 85-12
Fill	45-3
Diesel engine oil	
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V	80-7
Service interval for operation at high altitude ..	80-8
Diesel engines, cold weather effect	80-3
diesel exhaust fluid (DEF) tank vent filter	
Clean	85-12
Diesel exhaust fluid level indicator	30-29
Diesel fuel	80-1
Supplemental additives	80-2
Diesel fuel, testing	80-3
Diesel particulate filter	
Ash handling and disposal	85-15
Replace	85-15
Dimensions	
Machine	105-6
Disable auto exhaust filter cleaning	25-C-5
Disconnecting Battery	
Purging DEF Lines	
DEF, Purging Lines	55-1
Display	
Extended monitor	25-F-2
Help center	25-1
Rotating	30-26
Display Applications	25-1
Display speed	25-B-14

Drive shaft U-joints, inspect	85-34
Driveshaft, inspection	85-24
Driving machine	
On road	50-22
Dry application system	
Access	25-B-1
Advanced settings	25-B-14
Bin and product alarms	25-B-11
Bin chaining	25-B-6
Bin counter reset	25-B-5
Bin covers	25-B-7
Bin details	25-B-3
Bin purge	25-B-8
Chain oiler	25-B-9
Edit rate presets	25-B-2
Edit spinner preset	25-B-13
Main page	25-B-1
Prime controls	25-B-5
Product density alarm	25-B-11
Rate control/display speed	25-B-14
Run page modules	25-B-1
Select spinner preset	25-B-12
Shortcut keys	25-B-1
Target rate alarm	25-B-11

E

Edit rate presets	25-B-2
Edit spinner preset	25-B-13
Effect of cold weather on diesel engines	80-3
Electrical system	
Halogen bulb safety rules	55-3
Emission system	
Certification label	105-18
Emissions	
Required language	
EPA	2
Emissions Performance	
Tampering	2
Engine	
Auto exhaust filter cleaning	25-C-3
Change starting fluid canister	50-4
Cold weather starting	
Change starting fluid canister	50-4
Cold-weather starting	
With starting aid	50-3
Crankshaft damper	85-35
Engine power	25-C-2
Exhaust filter system overview	25-C-2
Idle speeds	85-30
Oil level, check	45-1, 85-8
Parked filter cleaning	25-C-3
Replace diesel particulate filter (DPF)	85-15
Run page modules	25-C-1
Engine	
Operating	50-3

Engine air cleaner	
Replace elements	65-6
Engine air cleaner elements	
Replace	65-6
Engine air filters, replace	85-11
Engine and ground drive.....	30-25
Engine application	
Access engine	25-C-1
Disable auto exhaust filter cleaning	25-C-5
Engine main page	25-C-1
Engine compartment	
Checking.....	45-1, 75-7
Engine coolant	
Level	85-9
Engine oil	
Break-In	
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V	80-8
Diesel	
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V	80-7
Service interval for operation at high altitude	80-8
Engine Oil	
Change	85-21
Engine oil and filter service intervals	
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V	80-7
0.12 L/kW or greater oil pan	80-7
Operation at high altitude.....	80-8
Engine oil level	
Check daily.....	45-1, 85-8
Engine oil, changing	
After first 100 hours	85-7
Engine power	25-C-2
Engine valve clearance, adjust	85-34
Engine vent tube, clean.....	85-25
Exhaust Filter	
Ash Handling and Disposal	85-15
Disposal	85-15
Exhaust filter cleaning indicator.....	30-28
Exhaust Filter Disposal	85-15
Exhaust filter system overview.....	25-C-2
Exhaust Filter, Safety	
Safety, Exhaust Filter	05-9
Extended monitor.....	25-F-2

F

Fan Belt	
Replace	65-1
Fan belt tensioner	
Inspect	65-1
Fan maintenance mode.....	25-A-10, 25-A-11
Fan speed	25-D-3
Field operation	50-11
Fill DEF tank	45-3

Filter	
Hydraulic oil	85-31
Steering oil	85-31
Filter, engine oil	
Changing after first 100 hours	85-7
Filter, oil	
Change	85-21
Filters	
Check and replace cab air filter	60-3
Replace diesel particulate filter (DPF)	85-15
Replace engine air cleaner elements	65-6
Replacing fuel filters.....	65-5, 85-23
Transmission oil	85-23
Filters, air, cab	60-3
Filters, Oil	
Oil Filters	80-13
Footrest	30-2
Front axle bearing	
Oil level	85-16
Oil specifications.....	80-12
Front axle bearing oil	
Change after first 50 hours.....	85-6
Front axle toe-in	
Adjust	70-6
Check	70-6, 85-27
Front axle wheel bearing	
Oil, change	85-28
Front console.....	30-2
Boom fold/unfold pedal	30-2
Brake pedal	30-2
Clutch pedal.....	30-2
Footrest.....	30-2
Vent	30-2
Front grille lights	
Adjust	55-5
Fuel	
Biodiesel	80-2
Diesel	80-1
Fill tank	45-3
Handling and storing	80-2
Lubricity.....	80-1
Fuel Filters	
Filters, Fuel.....	80-13
Fuel level indicator	30-28
Fuel system	
Bleed.....	65-6
Do not modify.....	65-2
Relieve pressure.....	65-3
Replacing fuel filters.....	65-5, 85-23
Fuel tank	
Fill	45-3
Fuel Tank Vent Filter	
Clean.....	85-11
Function assignments	25-H-6
Fuse identification	55-12

Fuses		IVT/AutoPowr	
Cab.....	55-12	Set speeds, guidelines and examples	50-10
		Stopping machine	50-14
G			
Grease		K	
Recommendation.....	80-12	Key switch	30-15
Guidance		L	
Settings		Ladder.....	30-27
Shift track.....	90-7	Ladder cylinder	
Steering Optimization	90-4	Lubricate.....	85-28
H			
Hardware torque values		Left-hand cab items	30-10
Metric	105-8	Lifting machine	
Unified inch.....	105-7	Use proper lifting equipment	70-1
Head lights		Lifting points.....	70-1
Aim	55-7	Light operation table.....	50-18
Headland management system		Lights.....	25-E-1, 30-26
Access	25-I-1	Access	25-E-1
Boom control mode	25-I-2	Adjust front grille lights.....	55-5
Headland management system.....	25-I-1	Aim head lights	55-7
Shortcut keys	25-I-1	Courtesy service	55-8
Heating, ventilation, and air conditioning	30-24	Extremity warning lights	50-21
Heating, ventilation, and air conditioning (HVAC) main		Fill Station	55-9
page.....	25-D-1	Front LED Light Assembly	
Help center	25-1	Replace.....	55-4
High/low beam, operating.....	50-20	Hazard lights	50-21
HVAC		Identification.....	50-18
Access HVAC	25-D-1	Light identification	55-11
Air conditioning	25-D-3	Light operation table	50-18
Air flow mode	25-D-2	Main page	25-E-1
Fan speed	25-D-3	Replacing	
Heating, ventilation, and air conditioning (HVAC)		Halogen bulb safety rules	55-3
main page.....	25-D-1	Right region buttons.....	50-20
Set temperature	25-D-2	Roof worklights	
Hydraulic oil		Replace.....	55-5
Check level daily	45-2, 85-10	Safety lights and devices	50-20
Hydraulic filter		Tail light.....	55-9
Replace	85-31	Turn signal lights	55-9
Hydraulic oil		Warning light	55-9
Change every 1000 hours.....	85-32	Worklights controls	25-E-3
Hydraulic reservoir cap		Worklights preset 1.....	25-E-2
replace	85-31	Worklights preset 2.....	25-E-2
Hydraulic system contamination	85-1	Lights	
I			
Icons displayed	25-A-5	Performance mode	25-G-2
Identification numbers.....	105-16	Lights, worklights (LED).....	55-5
Indicator, cab pressure.....	60-2	Load center fuses	
Indicators overview	50-5	Cab.....	55-12
Inspect		Load center, mid-chassis	55-13
Front axle wheel bearings.....	85-16	Look-ahead and mechanical delay times	50-15
Instructional seat.....	30-22	Lubricant	
IVT/AutoPowr		Mixing	80-13
Put machine in motion	50-10	Lubricant Storage	
		Storage, Lubricant.....	80-13
		Lubricate ladder cylinder.....	85-28

Lubrication	
Pump drive gearcase bearing seal	85-17
Suspension assemblies	85-17
Lubrication and maintenance	
As required	
Cleaning DEF tank	65-3, 85-12
Pump drive gear case oil, change	85-33
Lubricity of diesel fuel	80-1
Lug nuts	
Tighten, after every 100 hours	85-18
Lug nuts	
Tighten, after first hour	85-4

M

Machine calibration	
AutoTrac	25-A-11
AutoTrac valve	25-A-7
AutoTrac wheel angle sensor	25-A-6
multi-function lever	25-A-8
Machine runaway	
Prevent	50-1
Machine specifications	105-1
Machine stop warning, required	50-4
Main page	
Dry application system	25-B-1
Heating, ventilation, and air conditioning (HVAC) ..	25-D-1
Lights	25-E-1
Transmission	25-G-1
Max speed reverse	25-G-4
Maximum speed forward	25-G-3
Mechanical delay and look-ahead times	50-15
Message	25-2
Metric bolt and screw torque values	105-8
Metric O-Ring Torque Chart	
Torque Chart O-Ring Metric	105-10
Mixing lubricants	80-13
Multi-function lever	25-H-2, 30-7
Multi-function lever - controls setup	25-H-2
Multi-function lever calibration procedure	25-A-9

N

Navigation bar	30-9
Nuts, lug	
Tighten, after every 100 hours	85-18
Tighten, after first hour	85-4

O

Oil	
Engine	
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V	80-7
Hydraulic	80-11
Rear axle hub and differential	80-12
Steering	80-11

Transmission	80-11
Oil cooler	
Clean radiator and oil cooler/condensor	65-7
Oil, change	
Front axle wheel bearing	85-28
Oil, engine, changing	
After first 100 hours	85-7
Oil, front axle bearing	85-16
Oil, hydraulic	
Check level daily	45-2, 85-9
Oil, planetary hub	
Change 1500 hours	85-29
Change after first 100 hours	85-7
Change annually	85-29
Oil, rear axle	85-33
Oil, steering	
Check level daily	45-2, 85-10
Onscreen Help	
Access help center	25-1
Onscreen Help Navigation	25-1
Operate	
Downhill in slippery conditions	50-13
In the field	50-11
Operate AutoTrac	90-3
Operate machine	75-1
Operate turn signals, horn and high/low beam ..	30-16
Operate windshield wiper/washer	30-17
Operating instructions	
AutoTrac	90-3
Outlet	
Auxiliary	
Armrest control console	30-26
Overhead controls	30-13

P

Parked filter cleaning	25-C-3
Pedal	
Boom fold/unfold	30-2
Brake	30-2
Clutch	30-2
Performance mode	25-G-2
Planetary hub oil	
Change 1500 hours	85-29
Change after first 100 hours	85-7
Change annually	85-29
Prime controls	25-B-5
Product density alarm	25-B-11
Pump drive gear case	
Change oil	85-33
Pump drive gearcase bearing seal	
Lubricate	85-17
Pump drive gearcase breather	
Clean	85-25

Q		
Qualified emergency use		
SCR derate override option	50-23	
R		
Radiator		
Clean radiator and oil cooler/condensor	65-7	
Radio	30-24	
Radio operation	35-1	
Radio, mobile radio		
Installing	30-29, 60-6	
Radio, Premium		
Troubleshooting	95-11	
Rate control selection	25-A-6	
Rate control/display speed	25-B-14	
Rate presets		
Edit	25-B-2	
Rear axle		
Change oil	85-33	
Rear axle breather		
Clean	85-26	
Rear axle oil		
Change after first 100 hours	85-6	
Refueling, avoid static electricity risk	05-15, 45-5, 80-13	
Regulator	55-9	
Replace		
Courtesy service lights	55-8	
Power distribution mid-chassis fuses	55-15	
Replace, front amber lights (LED)	55-6	
Replacement tire		
Specifications	70-6	
Required machine stop warning	50-4	
Reset calibrations		
machine calibrations	25-A-10	
spreader calibrations	25-A-12	
Right-hand cab items	30-11	
Road operation	50-22	
Row entry modes		
AutoTrac setup	90-6	
S		
Safety		
Halogen bulb safety rules	55-3	
Operator ability	05-11	
Protect against noise	05-2	
Safe maintenance, practice	05-3	
Safety features	15-1	
Safety warning	25-2	
Safety, Avoid High-Pressure Fluids		
Avoid High-Pressure Fluids	05-4	
Safety, Handle Fuel Safely, Avoid Fires		
Avoid Fires, Handle Fuel Safely	05-15	
Safety, Steps and Handholds		
Use Steps and Handholds Correctly	05-13	
SCR		
System overview	50-7	
Seat belt	30-22	
Seat belt, inspect	85-24	
Seat belts, use	50-3	
Seat controls		
ComfortCommand operator's seat (premium seat) ..	30-15	
ComfortCommand operator's seat (ultimate seat) ..	30-15	
Instructional seat	30-15	
Seat belts	30-15	
Seek	30-27	
Select spinner preset	25-B-12	
Service		
As required		
Cleaning DEF tank	65-3, 85-12	
Electrical connector	55-16	
Service		
Intervals	85-3	
Service Information	75-1	
Service Intervals	85-3	
Service-Electrical		
Replace cab dome light	55-11	
Replace roof worklight	55-5	
Service, Lubrication and Maintenance	85-1	
Set conveyor start and stop times	50-15	
Set mechanical delay and look-ahead times	50-15	
Set speeds	25-G-2	
Adjustment	50-9	
Set temperature	25-D-2	
Setup		
AutoTrac	90-1	
Setup		
AutoTrac	90-1	
Shift track	90-7	
Signal words, understand	05-1	
Slack adjuster, automatic		
Check		
Inspect	85-19	
Solution system		
Clean	100-2	
Spanish Safety Signs and Operator's Manual ...	05-1	
Speed		
HVAC		
Fan speed	25-D-3	
Speed sensors	25-A-9	
Speed sensors calibration procedure	25-A-9	
Speed source		
Display	25-B-14	
Rate control	25-B-14	
Spindle housing, lubricate	85-16	
Spinner calibration	25-A-1	
Spinner calibration procedure	25-A-2	
Sprayer cleaners		
Cleaners and coatings	100-2	

Spreader check	25-A-4
Spreader check procedures	25-A-4
Spreader overview	30-1
CommandARM console and display	30-1
Corner post display	30-1
Front console	30-1
Navigation bar	30-1
Overhead controls	30-1
Right-hand cab items	30-1
Seat controls	30-1
Spreading controls	30-22
Spring brake chamber	
Arm and disarm	75-1
Cage and uncage	75-1
Status Pie	
AutoTrac	90-1
Steering	
Sensitivity	90-2
Steering cylinder ball joints, lubricate	85-17
Steering filter	
Replace	85-31
Steering oil	
Change every 1000 hours	85-32
Check level daily	45-2, 85-10
Steering reservoir fill cap	
Replace	85-31
Storage	
Removing machine from storage	100-6
Ship machine during cold weather months	100-3
Winterizing machine	100-3
Storage, prepare machine	100-4
Storing fuel	80-2
Suspension and steering grease	80-12
Suspension assemblies	
Lubricate daily	85-17
Switch	
Battery disconnect	55-15

T

Tank, air	
Drain	45-4, 85-10
Tank, DEF	
Fill	45-3
Target rate alarm	25-B-11
Temperature	
HVAC	
Set temperature	25-D-2
Testing diesel fuel	80-3
Timing conveyor start and stop	50-15
Tire	
Type	90-2
Tires	
Discarded, disposing of	70-6
Tires, check for damage and proper inflation pressure	70-1
Tires, inspect daily	45-4, 85-11

Torque chart	
External hexagon plug	105-15
Four bolt flange	
SAE	
High pressure	105-15
Standard pressure	105-14
Torque charts	
Metric	105-8
Unified inch	105-7
Towing	
Machine	75-3
Towing machine	
Disarm rear spring brake chamber	75-1
Transmission	25-G-1
Access	25-G-1
Adjust set speeds	50-9
AutoPowr	
Controls	50-9
Brake pressure	25-G-5
Downhill operation in slippery conditions	50-13
Inspect isolators--annually	85-27
IVT/AutoPowr	
Put machine in motion	50-10
IVT/AutoPowr	
Set speeds, guidelines and examples	50-10
Stopping machine	50-14
Main page	25-G-1
Max speed reverse	25-G-4
Maximum speed forward	25-G-3
Set speeds	25-G-2
Transmission filter	
Replace	85-23
Transmission oil	
Change every 1000 hours	85-32
Check level daily	45-2, 85-9
Transmission reservoir fill cap	
Replace	85-31
Transport lock switch	30-27
Transport machine	50-22, 75-1
Transport machine using trailer	75-4
Transport on semi-tractor trailer,	
Prepare machine	75-4
Troubleshooting	
Engine	95-1
Hydraulic System	95-7
Operators Cab	95-8
Premium radio	95-11
Suspension System	95-7
Transmission	95-6
Turn signal, operating	50-20

U

U-bolts	
Check torque	85-5, 85-18
Unified inch bolt and screw torque values	105-7

USB charging
Armrest control console..... 30-26

V

Vent
Front console 30-2
Vent, diesel exhaust fluid (DEF) tank 85-12
Vent, fuel tank..... 85-11
Video 25-F-3
Triggers 25-F-3

W

Warning
Safety warning 25-2
Warning decal
Air dryer 10-1
Axle load..... 10-3
Battery box 10-7
Bypass start..... 10-1
Chemical exposure..... 10-3
Do not ride 10-4
Drive shaft..... 10-6
Exhaust heat 10-6
Falling..... 10-7
Seat belt 10-2
Warning Decal
Jacking instructions 10-5
Shields 10-4
Warranty
Non-road emissions control warranty statement--
compression ignition
CARB 105-19
EPA 105-22
Water separator
Drain 45-1, 65-5, 85-10
Wheel hardware, tighten..... 70-5, 85-18
Window shade message..... 25-2
Windshield washer reservoir
Fill 85-16
Wiper
Service..... 60-2
Worklights controls 25-E-3
Worklights preset 1 25-E-2
Worklights preset 2..... 25-E-2

