

# 9430, 9530 and 9630 Scraper Tractors (S.N. 022000-) North American Edition L3



JOHN DEERE



## OPERATOR'S MANUAL

**9430, 9530 and 9630 Scraper Tractors  
(S.N. 022000—) North American Edition**

**OMRE325896 ISSUE L3 (ENGLISH)**

### CALIFORNIA

#### Proposition 65 Warning

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

If this product contains a gasoline engine:

### **WARNING**

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

The State of California requires the above two warnings.

**John Deere Waterloo Works**

North American Edition  
LITHO IN U.S.A.

# Introduction

## Foreword

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

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

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

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

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

File the identification numbers in a secure place off the machine.

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

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

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

This tractor is designed solely for use in customary agricultural or similar operations. Use in any other way is considered as contrary to the intended use. The manufacturer accepts no liability for damage or injury resulting from this misuse, and these risks must be borne solely by the user. Compliance with and strict adherence to the conditions of operation, service and repair as specified by the manufacturer also constitute essential elements for the intended use.

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.

### CALIFORNIA PROPOSITION 65 WARNING

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

**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.**

Continued on next page

OU1092A,00001B3-19-14AUG09-1/2

## Introduction



RXA0094188—UN—23MAY07

OU1092A,00001B3-19-14AUG09-2/2

### 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-19-08DEC23-1/1

## Trademarks

Trademarks	
AccuDepth™	Trademark of Deere and Company
ActiveSeat™	Trademark of Deere and Company
AutoLoad™	Trademark of Deere and Company
AutoPowr™	Trademark of Deere and Company
AutoPowr™/IVT™	Trademark of Deere and Company
AutoQuad II™	Trademark of Deere and Company
AutoQuad PLUS™	Trademark of Deere and Company
AutoTrac™	Trademark of Deere and Company
Avdel™	Trademark of Avdel UK Limited
ClimaTrak™	Trademark of Deere and Company
ComfortGard™	Trademark of Deere and Company
ComfortGard Deluxe™	Trademark of Deere and Company
CommandARM™	Trademark of Deere and Company
CommandCenter™	Trademark of Deere and Company
COOL-GARD™	Trademark of Deere and Company
COOL-GARD II™	Trademark of Deere and Company
CoolScan™	Trademark of Deere and Company
CoolScan PLUS™	Trademark of Deere and Company
Deere™	Trademark of Deere and Company
FieldCruise™	Trademark of Deere and Company
Field Doc™	Trademark of Deere and Company
Field Office™	Trademark of Deere and Company
GreenStar™	Trademark of Deere and Company
ILS™	Trademark of Deere and Company
Hy-Gard™	Trademark of Deere and Company
iTEC™	Trademark of Deere and Company
iTEC Pro™	Trademark of Deere and Company
IVT™	Trademark of Deere and Company
IVT Selector™	Trademark of Deere and Company
JDLINK™	Trademark of Deere and Company
JDOffice™	Trademark of Deere and Company
John Deere™	Trademark of Deere and Company
Oilscan™	Trademark of Deere and Company
Parallel Tracking™	Trademark of Deere and Company
Plus-50™	Trademark of Deere and Company
PowerTech™	Trademark of Deere and Company
PowerTech Plus™	Trademark of Deere and Company
PowerZero™	Trademark of Deere and Company
PowrQuad™	Trademark of Deere and Company
PowrQuad PLUS™	Trademark of Deere and Company
Row-Trak™	Trademark of Deere and Company
Service ADVISOR™	Trademark of Deere and Company
SERVICEGARD™	Trademark of Deere and Company
StarFire™	Trademark of Deere and Company
StarFire iTC™	Trademark of Deere and Company
StellarSupport™	Trademark of Deere and Company
TLS™	Trademark of Deere and Company
TouchSet™	Trademark of Deere and Company
Triple Link Suspension™	Trademark of Deere and Company
Vari-Cool™	Trademark of Deere and Company

RX33672,0000DEE-19-25MAY10-1/1

## Quick Reference Specifications

### CAPACITIES (Approximate):

**Fuel Tank** ..... 1325 L (350 gal)

### Cooling System:<sup>a</sup>

.. 9430-9530-9630 ..... 53 L (14 gal)

### Crankcase with Filter:

.. 9430 ..... 40 L (10.5 gal)

.. 9530-9630 ..... 56 L (14.8 gal)

### 18-Speed Powershift:

.. 9430 with 110 mm Axles ..... 170 L (45 gal)

.. 9530-9630 with Double Reduction Axles ..... 87 L (23 gal)

### Hydraulic System:

.. Standard ..... 103 L (27 gal)

.. High-Flow ..... 113.5 L (30 gal)

See Specifications Section for Additional Specifications

<sup>a</sup> Includes overflow tank capacity

RW29387.00000A2-19-29SEP10-1/1



# Contents

	Page		Page
<b>Safety</b>		<b>Safety Signs</b>	
Recognize Safety Information .....	05-1	Replace Damaged or Missing Safety Signs .....	10-1
Understand Signal Words .....	05-1	Safety Signs	
Follow Safety Instructions .....	05-1	Cab Corner Post .....	10-2
Prepare for Emergencies .....	05-2	Cab Corner Post .....	10-3
Wear Protective Clothing .....	05-2	Cab Corner Post .....	10-4
Protect Against Noise .....	05-2	Side Frame .....	10-5
Fire Prevention .....	05-3	Side Frame .....	10-6
Avoid Backover Accidents .....	05-3	Accumulators .....	10-7
Handle Fuel Safely—Avoid Fires .....	05-3		
Handle Starting Fluid Safely .....	05-4	<b>Controls and Instruments</b>	
Keep ROPS Installed Properly .....	05-4	Front Console .....	15-1
Use Foldable ROPS and Seat Belt Properly .....	05-4	Ignition Switch .....	15-1
Stay Clear of Rotating Drivelines .....	05-5	Shift Lever	
Use Steps and Handholds Correctly .....	05-5	18-Speed .....	15-2
Read Operator's Manuals for ISOBUS		Corner Post Display .....	15-2
Controllers .....	05-6	STOP, Service Alert and Information Indicators .....	15-3
Use Seat Belt Properly .....	05-6	Digital Indicators—Tachometer, Ground Speed,	
Operating the Tractor Safely .....	05-7	Transmission and Gauges .....	15-5
Limited Use in Forestry Operation .....	05-8	Right-Hand Console .....	15-6
Operating the Loader Tractor Safely .....	05-8	TouchSet Control Panel Controls And Indicators .....	15-7
Keep Riders Off Machine .....	05-8	CommandCenter .....	15-7
Instructional Seat .....	05-9	CommandARM Controls — Powershift	
Use Safety Lights and Devices .....	05-9	Transmission .....	15-8
Use a Safety Chain .....	05-9		
Transport Towed Equipment at Safe Speeds .....	05-10	<b>CommandCenter™</b>	
Use Caution on Slopes, Uneven Terrain, and		CommandCenter™ Panel .....	16-1
Rough Ground .....	05-10	Split-Screen	
Freeing a Mired Machine .....	05-11	Display .....	16-2
Avoid Contact with Agricultural Chemicals .....	05-11	Field Cruise Control .....	16-6
Handle Agricultural Chemicals Safely .....	05-12	Settings .....	16-7
Handling Batteries Safely .....	05-13	Setting Implement Selection .....	16-8
Avoid Heating Near Pressurized Fluid Lines .....	05-13	Setting Day Backlight, Night Backlight and	
Remove Paint Before Welding or Heating .....	05-14	Screen Contrast .....	16-10
Handle Electronic Components and Brackets		Selecting Units and Language .....	16-11
Safely .....	05-14	Setting Clock and Service Alarm Interval .....	16-12
Practice Safe Maintenance .....	05-15	Using Diagnostics, Codes and CAN Statistics .....	16-13
Avoid Hot Exhaust .....	05-15	Vehicle Speed Calibration (Manual) .....	16-14
Work In Ventilated Area .....	05-16	Vehicle Speed Calibration (Automatic) .....	16-15
Support Machine Properly .....	05-16	Reset % Wheel Slip .....	16-16
Prevent Machine Runaway .....	05-16		
Park Machine Safely .....	05-17	<b>Lights</b>	
Transport Tractor Safely .....	05-17	Road and Field Light Identification with	
Service Cooling System Safely .....	05-17	CommandCenter Indicators .....	20-1
Service Accumulator Systems Safely .....	05-18	Programming Field Lights and Egress Lighting .....	20-3
Service Tires Safely .....	05-18	Turn Signals, Horn, and High/Low Beam .....	20-4
Service Front-Wheel Drive Tractor Safely .....	05-18	Use Safety Lights and Devices .....	20-5
Tightening Wheel Retaining Bolts/Nuts .....	05-19	Hazard Lights .....	20-5
Avoid High-Pressure Fluids .....	05-19	Field Lights .....	20-6
Do Not Open High-Pressure Fuel System .....	05-19	Extremity Transport Warning Lights .....	20-7
Store Attachments Safely .....	05-20	Beacon Light .....	20-8
Decommissioning — Proper Recycling and		Seven-Terminal Outlet .....	20-9
Disposal of Fluids and Components .....	05-20		

Continued on next page

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Contents

	Page		Page
<b>Operator Station</b>		Setting Automatic Powershift Sensitivity .....	40-11
Seat .....	25-1	Brakes .....	40-11
Seat .....	25-2	Hydraulic Trailer Brakes .....	40-12
Adjusting CommandARM Position .....	25-3	Field Cruise and Foot Decelerator .....	40-12
Leather Heated Seat Switch .....	25-3	Differential Lock .....	40-14
Armrest Control .....	25-4	Back-Up Alarm .....	40-15
Steering Wheel .....	25-4		
Operating Cab Heat, Defrost and Air		<b>AutoTrac™</b>	
Conditioning— <b>Standard Equipment</b> .....	25-5	AutoTrac™ System Component Location .....	41-1
Using ClimaTrak™ (ATC) —(If Equipped) .....	25-7	AutoTrac Steering System .....	41-2
Windshield Wipers/Washer .....	25-8		
Windshield Wipers/Washer .....	25-8	<b>Scraper Information</b>	
Operating Radio With Or Without Compact Disc		Scraper Operation Cycle .....	42-1
Player .....	25-9		
Setting Alarm And Clock .....	25-10	<b>AutoLoad</b>	
Field Office .....	25-11	Guidelines .....	43-1
Beverage Cooler .....	25-11	Storing Set Points .....	43-3
Storage Drawer .....	25-11	Lower Set Point .....	43-4
Storage Tray .....	25-12	Ground Level Set Point .....	43-5
Pull-Down Sunshade .....	25-12	Change In Ground Level .....	43-6
Electric Mirror .....	25-13	Operator Settings .....	43-7
Configuring Tractor For GPS/Radar .....	25-14	Operator Settings .....	43-9
GreenStar™ System Connections .....	25-15	SCV Flow Time and Flow Rate Settings .....	43-10
AutoTrac Assisted Steering System—(If		Operation	
Equipped) .....	25-16	Controls .....	43-12
GreenStar™ System Display .....	25-17	Typical Dig Cycle For Tandem or Triple Scrapers .....	43-14
Implement Connector .....	25-18		
Accessory Electrical Outlets .....	25-19	<b>Implement Management System</b>	
Auxiliary Power Strip .....	25-20	Description and Display .....	45-1
Mobile Radio and Antenna .....	25-21	Implement management system (IMS)	
Monitor Mounts .....	25-22	Operation .....	45-2
		Learned Functions .....	45-4
<b>Break-In Period</b>		Functions	
Engine .....	30-1	Selective Control Valves (SCV) .....	45-5
Oil and Filters .....	30-1	Differential Lock .....	45-5
		Functions .....	45-6
<b>Operating the Engine</b>		Functions .....	45-7
Engine Operation .....	35-1	Functions .....	45-7
Engine Operation .....	35-1	Operation .....	45-8
Cold Weather Starting—Starting Fluid .....	35-2	Operation .....	45-8
Engine Operation .....	35-3	Operation .....	45-9
Auxiliary Heaters .....	35-3		
Engine Operation .....	35-4	<b>Hydraulics and Selective Control Valves</b>	
Cold Weather Starting .....	35-5	Standard Hydraulic Hoses	
Engine Coolant Heater .....	35-5	Connect and Disconnect .....	50-1
Battery Booster or Charger .....	35-5	Disconnecting Remote Hydraulic Hoses .....	50-2
		Hydraulic Hoses .....	50-3
<b>Operating the Tractor</b>		SCV Operation .....	50-4
Avoid Pesticides .....	40-1	SCV Operation .....	50-5
Clean Vehicle of Hazardous Pesticides .....	40-1	SCV Operation .....	50-6
Keep Riders Off Machine .....	40-1	SCV Operation .....	50-7
Emergency Exit .....	40-2	SCV Operation .....	50-8
Seat Belts .....	40-2	SCV Operation .....	50-9
Instructional Seat .....	40-3	SCV Operation .....	50-9
Hydraulic System Warm-Up .....	40-4	SCV Operation .....	50-9
High Flow .....	40-5	SCV Operation .....	50-10
Drive Train Protection .....	40-6	SCV Operation .....	50-10
Transmission Operation .....	40-6	SCV Operation .....	50-11
Transmission Operation .....	40-7	Operator Presence Sensor .....	50-11
Transmission Operation .....	40-8	SCV Operation	
Setting Transmission Startup Gear .....	40-9	TouchSet .....	50-12
Operating Automatic Powershift (APS) .....	40-10		

Continued on next page

	Page	Page
<b>Remote Hydraulic Connections</b>		
Hydraulic Component Identification .....	55-1	Scraper Ballast .....
Hydraulic Standard Components .....	55-2	Calculating Ballast .....
Power Beyond .....	55-2	Calculating Ballast .....
Power Beyond .....	55-3	Unballasted Tractor Weight Chart .....
Spray Pumps .....	55-4	Unballasted Tractor Weight Chart .....
Implement Connection Example 1 .....	55-5	Wheel Weights .....
Implement Connection Example 2 .....	55-6	Front Weight Frame .....
Implement Connection Example 3 .....	55-7	Quik-Tatch Weights .....
Implement Connection Example 4 .....	55-8	Implement and Scraper Size Guidelines .....
Implement Connection Example 5 .....	55-9	Wheel Slip .....
Implement Connection Example 6 .....	55-10	Liquid Ballast .....
High Flow Hydraulics .....	55-11	
Implement Connection Example 1 .....	55-12	<b>Wheels, Tires, and Treads</b>
Implement Connection Example 2 .....	55-13	Service Tires Safety .....
Implement Connection Example 3 .....	55-14	Tire Group Sizes .....
Implement Connection Example 4 .....	55-15	Guidelines .....
Implement Connections .....	55-16	Tire Inflation Pressures .....
Motor Seal Drain Filter .....	55-16	Tire Inflation Pressures .....
Hydraulic Implement Connections		Tire Inflation Pressures .....
Hydraulic Hose Tips .....	55-16	Recommended Pressures— <b>Group 48 — IF</b>
		<b>Tires</b> .....
<b>Drawbar</b>		Tire Combinations .....
Short Drawbar Support		Tire Combinations .....
Quick-Attach Drawbar .....	60-1	Tread Settings .....
Short Scraper Drawbar Conversion .....	60-2	Tread Settings .....
Long Drawbar Support Load Limitations— <b>If Equipped</b> .....	60-3	Wheel Adjustment .....
Drawbar .....	60-3	Wheel Torque Wrench Adapter .....
Selecting Standard Drawbar Position— <b>If Equipped</b> .....	60-4	Wheel Weight Holding Wrench .....
Adjusting Standard Drawbar Side-to-Side Movement— <b>If Equipped</b> .....	60-5	Wheel Tightening Stand— <b>DFRW219 or JDG10741</b> .....
Installing Clevis Assembly— <b>Category 4 Drawbar</b> .....	60-5	Wheel Adjustment
Drawbar		12-Bolt Wheel .....
Cat. 4 .....	60-5	10 or 12 Bolt Hubs .....
Installing Clevis Assembly— <b>Category 5 Drawbar</b> .....	60-6	Installing 76x50.00B32 Wheel and Tire Assembly— <b>Early Wheel Design</b> .....
Drawbar		Installing 76x50-32 Flotation Wheel and Tire Assembly— <b>Late Wheel Design</b> .....
Cat. 5 .....	60-6	Steering Stops .....
Using Correct Drawbar Pin— <b>Category 5 to 4</b> .....	60-7	
Tow Cable .....	60-8	<b>Transport</b>
		Road Transporting .....
<b>TouchSet Depth Control</b>		Towing Loads .....
Depth Control .....	70-1	Use Safety Lights and Devices .....
Attaching Implement and Control System .....	70-2	Road Transporting .....
Depth Control .....	70-3	Safety Chains .....
Depth Control .....	70-4	Carrier Transport .....
Enabling TouchSet Scraper Control System .....	70-4	Towing Tractor .....
Depth Control .....	70-5	Towing Tractor .....
Depth Control .....	70-5	Towing Tractor .....
<b>Performance Ballasting</b>		<b>Fuels, Lubricants, and Coolants</b>
Ballast Guidelines .....	75-1	Diesel Fuel .....
Ballast Guidelines .....	75-2	Lubricity of Diesel Fuel .....
Ballast Worksheet .....	75-2	Handling and Storing Diesel Fuel .....
Ballast Guidelines .....	75-3	Biodiesel Fuel .....
Power Hop .....	75-3	Testing Diesel Fuel .....
Calculating Ballast .....	75-4	Minimizing the Effect of Cold Weather on Diesel Engines .....
Calculating Ballast .....	75-4	Diesel Fuel .....
Calculating Ballast .....	75-5	Fuel Tank .....
Calculating Ballast .....	75-5	John Deere Break-In™ Plus Engine Oil .....
		Diesel Engine Oil — Tier 3 and Stage IIIA .....

Continued on next page

## Contents

	Page		Page
Engine Oil and Filter Service Intervals—9430 Tractors With Tier 3 and Stage III A Engines	90-9	Fuel Filter	110-4
Engine Oil and Filter Service Intervals—9530 and 9630 Tractors With Tier 3 and Stage III A Engines	90-10	Fuel Tank Sump	110-4
Oil Filters	90-10	Driveshafts	110-5
Diesel Engine Coolant (engine with wet sleeve cylinder liners)	90-11	Driveshafts	110-5
John Deere COOL-GARD™ II Coolant Extender	90-12	Driveshafts	110-6
Operating in Warm Temperature Climates	90-12	Tires and Wheel Bolts	110-6
Drain Intervals for Diesel Engine Coolant	90-12	Scraper Drawbar Bolts	110-7
Additional Information About Diesel Engine Coolants and John Deere COOL-GARD™ II Coolant Extender	90-13	Batteries	110-8
Testing Diesel Engine Coolant	90-14	Neutral Start System	110-9
Oilscan™ and CoolScan™	90-14	Transmission PARK System	110-10
Transmission/Axle and Hydraulic Oil	90-15	Manual Brakes	110-10
Transmission	90-15	Air Intake System	110-11
Multipurpose Extreme Pressure (EP) Grease	90-16	Cab Air Filter	110-12
Mixing of Lubricants	90-16	Radar Sensor	
Alternative and Synthetic Lubricants	90-16	Clean Radar	110-14
Lubricant Storage	90-16		
<b>Maintenance and Service Intervals</b>			
Service Intervals	95-1	<b>Lubrication and Maintenance—750 Hour Service</b>	
Service Intervals	95-1	Replace Transmission/Axle Oil Filters	115-1
Service Intervals	95-2	Hydraulic Oil and Filter	115-2
Hood	95-3	Hydraulic Reservoir Screen	115-3
Batteries	95-4	Reservoir Breather Filter	115-3
High-Pressure Washer	95-4	Coolant Condition	115-4
Compressed Air	95-4	Fuel Tank Vent	115-4
<b>Lubrication and Maintenance—Daily or 10 Hour Service</b>			
Engine Oil and Filter	100-1	<b>Lubrication and Maintenance—1500 Hour Service</b>	
Hydraulic Oil and Filter	100-1	Transmission/Axle Oil and Filter	120-1
Coolant Level	100-2	Change Transmission/Double Reduction Axle Oil	
Water Separator	100-2	18-Speed Powershft	120-4
Check Powershift Transmission/Axle Oil	100-3	Hydraulic Oil and Filter	120-8
Hinge Pins	100-4	Axle End Play	120-8
Steering Pin Bushings	100-5	<b>Lubrication and Maintenance—2000 Hour Service</b>	
Tires and Wheel Bolts	100-6	Draining, Flushing and Refilling	125-1
Tires and Wheel Bolts	100-6	<b>Lubrication and Maintenance—2500 Hour Service</b>	
Scraper Drawbar Bolts	100-7	Engine Valve Clearance	130-1
High Flow Hydraulic Accumulator	100-8	<b>Lubrication and Maintenance—Annual Service</b>	
High Flow Hydraulic Accumulator	100-8	Belt Tensioner	135-1
<b>Lubrication and Maintenance—Initial 100 Hour Service</b>			
Changing Engine Oil and Filter	105-1	Engine Air Filters	135-2
Tires and Wheel Bolts	105-1	Cab Air Filter	135-4
Replace Transmission/Axle Oil Filters	105-2	Seat Belts	135-5
Hydraulic Oil and Filter	105-3	Motor Seal Drain Filter	135-6
9430-9530-9630		<b>Lubrication and Maintenance—4500 Hour or Five Year Service</b>	
Fuel Filter	105-4	Transmission Drive Shaft Damper	140-1
<b>Lubrication and Maintenance—250 Hour Service</b>			
Check Powershift Transmission/Axle Oil	110-1	<b>General Maintenance and Inspection</b>	
Engine Oil and Filter	110-3	Service Accumulator Systems Safely	145-1
9430-9530-9630		Transmission Park Brake Pads	145-1
		Grille Screens, Radiator, and Oil Cooler	145-1
		Inspect and Clean Fuel Sump Screen	145-2
		Checking Weep Hole— <b>13.5 L Engine</b>	145-3
		Drive Belt Routings	145-4

Continued on next page

Contents

	Page		Page
VARI-COOL Fan Belt .....	145-4	Engine Control Unit (ECU) Diagnostic Trouble Codes .....	160-10
Powershft Transmission Calibration .....	145-9	(HV I) Diagnostic Codes .....	160-12
Air Conditioning System .....	145-12	Instrument Control Unit (ICU) Diagnostic Codes .....	160-13
Do Not Modify Fuel System .....	145-13	Powershift Transmission Control Unit (PTP) Diagnostic Trouble Codes .....	160-14
Bleed Fuel System .....	145-13	SCV CAN Controller (SCC) Diagnostic Trouble Codes .....	160-16
Water Separator .....	145-14	Deluxe Hydraulic Control Unit (SCU) Diagnostic Trouble Codes .....	160-18
Cleaning Optional Fuel Water Separator Filter Element (If Equipped) .....	145-15	Steering System Control Unit (SSU) Diagnostic Trouble Codes .....	160-21
<b>Maintenance—Electrical System</b>		SV Diagnostic Trouble Codes .....	160-22
Introduction to Electrical System Section .....	150-1	Setup Panel (SUP), Tractor Electronic Control Unit (TEC), and Tractor Electronic Interface (TEI) Diagnostic Trouble Codes .....	160-23
Fuses and Relays .....	150-1	Vehicle Load Center Control Unit (VLC) Diagnostic Trouble Codes .....	160-24
Fuses and Relays .....	150-2	<b>Storage</b>	
Side Console Load Center .....	150-4	Long-Term Storage .....	165-1
Welding Near Electronic Control Units .....	150-5	Long-Term Storage .....	165-1
Keep Electronic Control Unit Connectors Clean .....	150-5	Paint Finish Care .....	165-2
Handling Halogen Light Bulbs Safely .....	150-5	<b>Specifications</b>	
Handling HID Light Bulbs Safely .....	150-6	General Specifications .....	170-1
Front Lights .....	150-7	Overall Dimensions .....	170-3
Replacing Front Grille Flood Light Bulbs—Standard Lighting .....	150-8	Ground Speeds .....	170-4
Replacing Road Light Bulb .....	150-9	Identify Zinc-Flake Coated Fasteners .....	170-4
Head Lights .....	150-10	Metric Bolt and Cap Screw Torque Values .....	170-5
Front Lights .....	150-11	Unified Inch Bolt and Cap Screw Torque Values .....	170-6
Replacing Instrument and Display Illumination Light Bulb .....	150-11	Battery Warranty .....	170-7
Dome Light .....	150-12	<b>Identification Numbers</b>	
Hazard Lights .....	150-13	Serial Number Plates .....	175-1
Roof Flood Lights .....	150-14	Product Identification Number Identification Plate .....	175-1
Courtesy Light .....	150-14	Serial Number Plates .....	175-2
Fender Flood Lights .....	150-15	Serial Number Plates .....	175-2
Fender HID Lights .....	150-15	Serial Number Plates .....	175-2
Extremity Warning Lights .....	150-15	Keep Proof of Ownership .....	175-3
<b>Troubleshooting</b>		Keep Machines Secure .....	175-3
Engine .....	155-1	<b>Lubrication and Maintenance Records</b>	
Transmission .....	155-4	Service Records	
Hydraulic System .....	155-5	250 Hour .....	180-1
Brakes .....	155-6	500 Hour .....	180-1
Hitch .....	155-7	750 Hour .....	180-1
Selective Control Valves .....	155-8	1500 Hour .....	180-2
Electrical System .....	155-9	2000 Hour .....	180-2
Operator Enclosure .....	155-11	2500 Hour Service Records .....	180-2
<b>Diagnostic Trouble Codes</b>		Service Records	
Introduction To Diagnostic Trouble Codes .....	160-1	Annual .....	180-3
Armrest Control Unit (ACU) Diagnostic Trouble Codes .....	160-2	Two Year .....	180-3
Active Seat Control Unit (ASU) Diagnostic Trouble Codes .....	160-3	4500 Hour .....	180-3
Automatic Temperature Control Unit (ATC) Diagnostic Trouble Codes .....	160-3	<b>Glossary</b>	
Brake Control Unit (BRC) Diagnostic Trouble Codes .....	160-4	Glossary of Terms .....	185-1
Cab Control Unit (CAB) Diagnostic Trouble Codes .....	160-5		
Central Control Unit (CCU) Diagnostic Trouble Codes .....	160-7		
<b>Cab Load Center (CLC) Diagnostic Trouble Codes</b> .....	160-9		

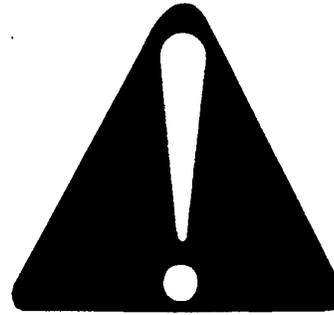


# Safety

## Recognize Safety Information

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

Follow recommended precautions and safe operating practices.



T81389—UN—28JUN13

DX,ALERT-19-03OCT22-1/1

## Understand Signal Words

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

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

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

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs



TS187—19—30SEP88

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-19-05OCT16-1/1

## Follow Safety Instructions

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

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

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

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



TS201—UN—15APR13

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

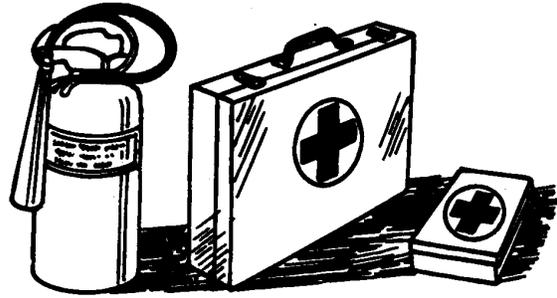
DX,READ-19-01AUG22-1/1

### Prepare for Emergencies

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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



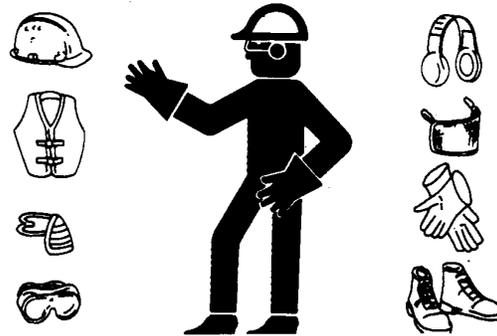
TS291—UN—15APR13

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

### Wear Protective Clothing

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

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



TS206—UN—15APR13

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

### Protect Against Noise

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

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

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



TS207—UN—23AUG88

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

### Fire Prevention

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

- Birds and other animals may build nests or bring other flammable materials into the engine compartment or onto the exhaust system. The tractor should be inspected and cleaned prior to the first use each day.
- A build up of grass, crop material and other debris may occur during normal operation. This is especially true when operating in very dry conditions or conditions where airborne crop material or crop dust is present. Any such build up must be removed to ensure proper machine function and to reduce the risk of fire. The tractor must be inspected and cleaned periodically throughout the day.
- Regular and thorough cleaning of the tractor combined

with other routine maintenance procedures listed in the Operator's Manual greatly reduce the risk of fire and the chance of costly downtime.

- Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.
- Check fuel lines, tank, cap, and fittings frequently for damage, cracks or leaks. Replace if necessary.

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

DX,WW,TRACTOR,FIRE,PREVENTION-19-12OCT11-1/1

### Avoid Backover Accidents

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

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



PC10857XW—UN—15APR13

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

### Handle Fuel Safely—Avoid Fires

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

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

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

Use only an approved fuel container for transporting flammable liquids.

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

Do not store fuel container where there is an open flame,



TS202—UN—23AUG88

spark, or pilot light such as within a water heater or other appliance.

DX,FIRE1-19-12OCT11-1/1

### Handle Starting Fluid Safely

Starting fluid is highly flammable.

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

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

Do not incinerate or puncture a starting fluid container.

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



TS1356—UN—18MAR92

DX,FIRE3-19-14MAR14-1/1

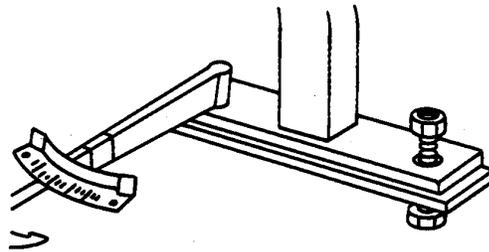
### Keep ROPS Installed Properly

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

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

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

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



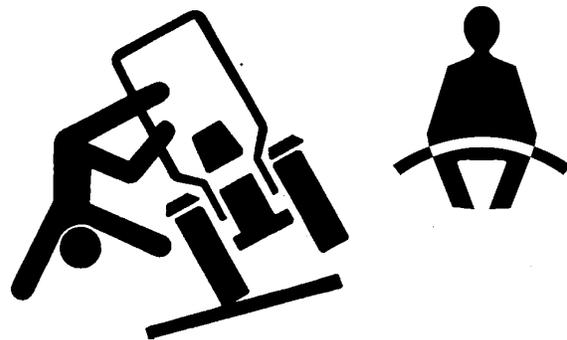
TS212—UN—23AUG88

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

### Use Foldable ROPS and Seat Belt Properly

Avoid crushing injury or death during rollover.

- If this machine is equipped with a foldable rollover protective structure (ROPS), keep the ROPS in the fully extended and locked position. USE a seat belt when you operate with a ROPS in the fully extended position.
  - Hold the latch and pull the seat belt across the body.
  - Insert the latch into the buckle. Listen for a click.
  - Tug on the seat belt to make sure that the belt is securely fastened.
  - Snug the seat belt across the hips.
- If this machine is operated with the ROPS folded (for example, to enter a low building), drive with extreme caution. DO NOT USE a seat belt with the ROPS folded.
- Return the ROPS to the raised, fully extended position



as soon as the machine is operated under normal conditions.

TS1729—UN—24MAY13

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

### Stay Clear of Rotating Drivelines

Entanglement in rotating driveline can cause serious injury or death.

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

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

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

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

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

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

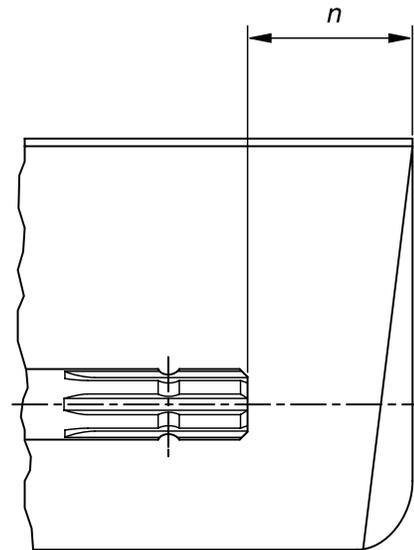
Do not raise implements high enough to damage the tractor master shield or guard of primary implement PTO driveshaft. Detach the PTO driveline shaft if it is necessary to increase implement height. (See Attching/Detaching PTO Driveline)

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

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



TS1644—UN—22AUG95



H96219—UN—29APR10

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

### Use Steps and Handholds Correctly

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

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



T133468—UN—15APR13

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

## Read Operator's Manuals for ISOBUS Controllers

In addition to GreenStar™ Applications, this display can be used as a display device for any ISOBUS Controller that meets ISO 11783 standard. This includes capability to control ISOBUS implements. When used in this manner, information and control functions placed on the display are provided by the ISOBUS Controller and are the responsibility of the ISOBUS Controller manufacturer.

*GreenStar is a trademark of Deere & Company*

Some of these functions could pose a hazard to either the operator or a bystander. Read the Operator's Manual provided by the ISOBUS Controller manufacturer and observe all safety messages in manual and on ISOBUS Controller product prior to use.

**NOTE:** ISOBUS refers to the ISO Standard 11783

DX,WW,ISOBUS-19-15JUL15-1/1

## Use Seat Belt Properly

Avoid crushing injury or death during rollover.

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

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

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

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or



TS1729-UN-24MAY13

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

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

## Operating the Tractor Safely

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

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

### Driving Concerns

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

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

### Heated and Ventilated Operator's Seat

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

### Towing Loads

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

### Parking and Leaving the Tractor

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

### Common Accidents

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

The most common accidents involving tractors are:

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

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

### Limited Use in Forestry Operation

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

These are applications where normal operation does not

present a risk of falling or penetrating objects. Any forestry applications beyond these applications, such as forwarding and loading, requires fitment of application-specific components including Falling Object Protective Structure (FOPS) and/or Operative Protective Structures (OPS). Contact John Deere dealer for special components.

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

### Operating the Loader Tractor Safely

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

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

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

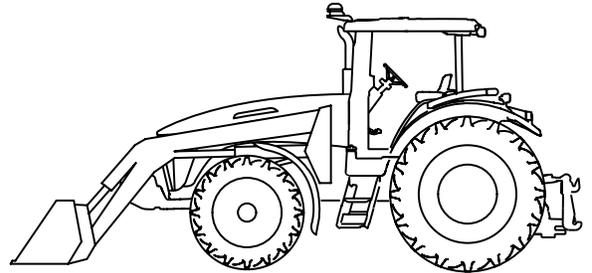
Never allow anyone to walk or work under a raised loader.

Do not use loader as a work platform.

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

Lower loader to ground before leaving operators station.

The Rollover Protective Structure (ROPS) or cab roof, if equipped, may not provide sufficient protection from load



TS1692—UN—09NOV09

falling onto the operators station. To prevent loads from falling onto the operators station, always use appropriate implements for specific applications (that is, manure forks, round bale forks, round bale grippers, and clampers).

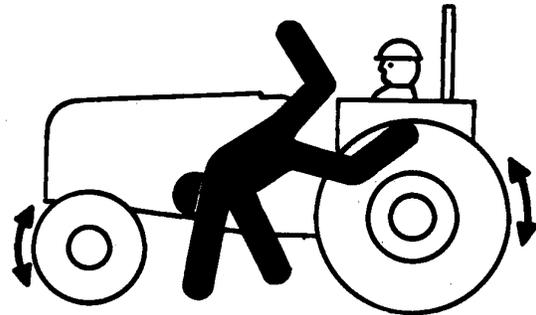
Ballast tractor in accordance to Ballast Recommendations in PREPARE TRACTOR section.

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

### Keep Riders Off Machine

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

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



TS290—UN—23AUG88

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

### Instructional Seat

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



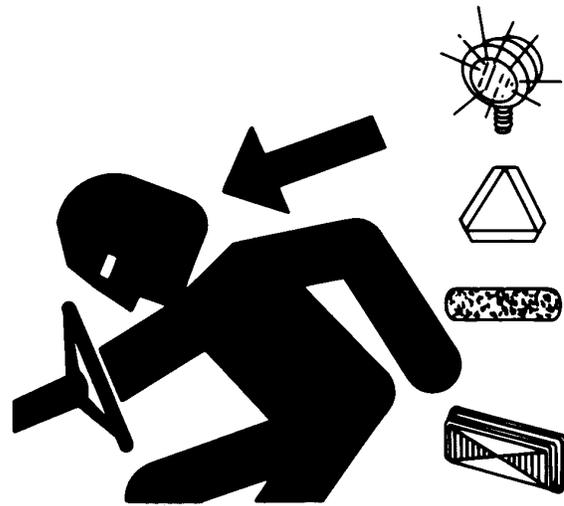
TS1730—UN—24MAY13

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

### Use Safety Lights and Devices

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

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



TS951—UN—12APR90

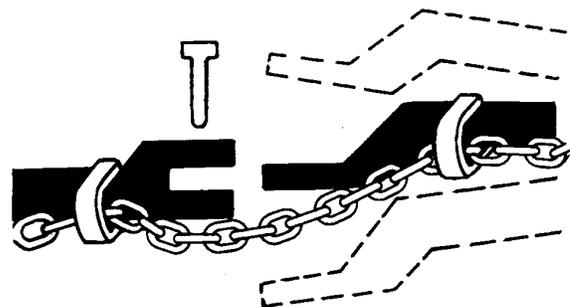
DX,FLASH-19-07JUL99-1/1

### Use a Safety Chain

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

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

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



TS217—UN—23AUG88

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

## Transport Towed Equipment at Safe Speeds

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

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

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

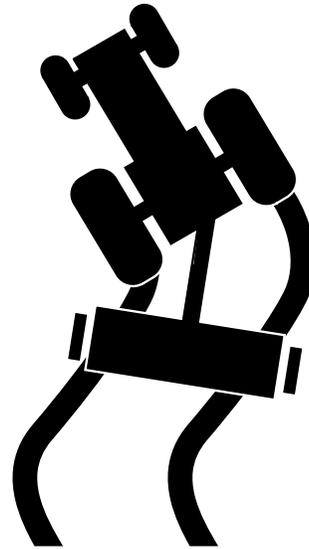
Implements shall be equipped with brakes if the maximum fully loaded weight is greater than 1500 kg (3307 lbs) and greater than 1.5 times the weight of the towing unit.

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

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

**Implements with brakes:**

- If the manufacturer does not specify a maximum transport speed, do not tow at speeds greater than 40 km/h (25 mph).



TSS1686—UN—27SEP06

- When transporting at speeds up to 40 km/h (25 mph) the fully loaded implement must weigh less than 4.5 times the towing unit weight.
- When transporting at speeds between 40—50 km/h (25—31 mph) the fully loaded implement must weigh less than 3.0 times the towing unit weight.

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

DX,TOW1-19-28FEB17-1/1

## Use Caution on Slopes, Uneven Terrain, and Rough Ground

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

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

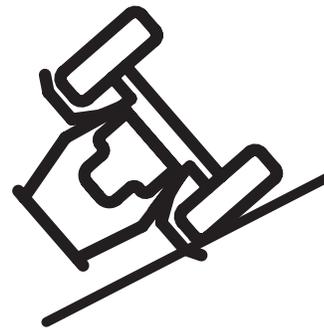
Danger of overturn increases greatly with narrow tread setting, at high speed.

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

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

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

Never drive near the edge of a gully, drop-off, ditch, steep embankment, or a body of water. The machine could



RXA0103437—UN—01JUL09

suddenly roll over if a wheel goes over the edge or the ground caves in

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

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

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

DX,WW,SLOPE-19-28FEB17-1/1

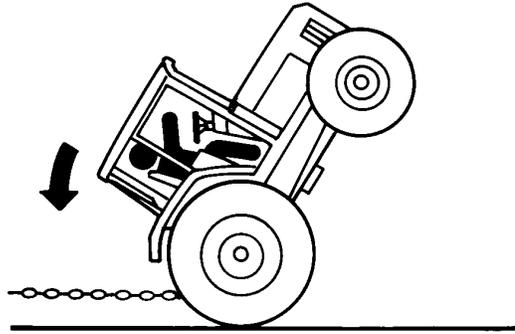
### Freeing a Mired Machine

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

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

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

Always hitch to the drawbar of the towing unit. Do not hitch to the front pushbar attachment point. Before moving, clear the area of people. Apply power smoothly to take up the slack: a sudden pull could snap any towing device causing it to whip or recoil dangerously.



TS1645—UN—15SEP95

TS263—UN—23AUG88

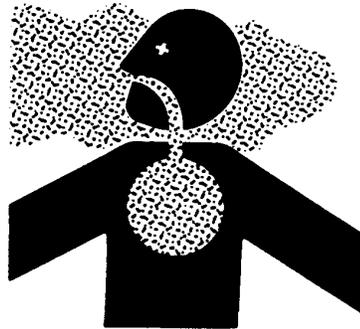
DX,MIRED-19-07JUL99-1/1

### Avoid Contact with Agricultural Chemicals

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

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

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



TS220—UN—15APR13

TS272—UN—23AUG88

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

## Handle Agricultural Chemicals Safely

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

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

Reduce risk of exposure and injury:

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



A34471

chemicals to unmarked containers or to containers used for food or drink.

- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.

DX,WW,CHEM01-19-24AUG10-1/1

TS220—UN—15APR13

A34471—UN—11OCT88

## Handling Batteries Safely

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

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

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

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

### Avoid hazards by:

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

### If acid is spilled on skin or in eyes:

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

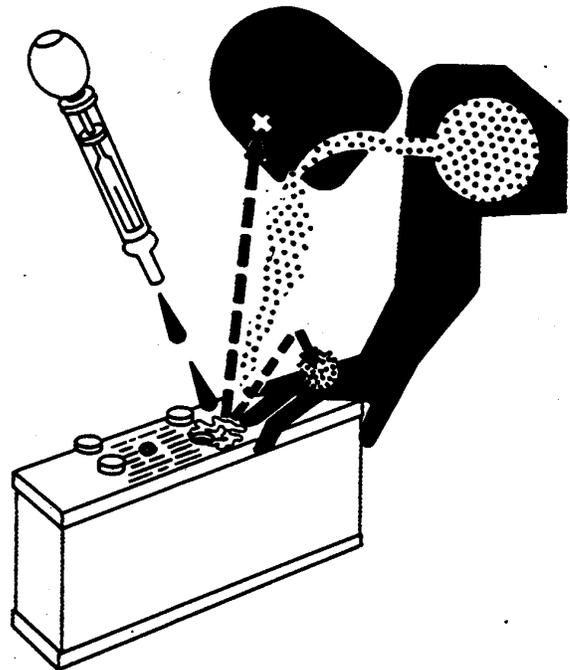
### If acid is swallowed:

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

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



TS204—UN—15APR13



TS203—UN—23AUG88

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

## Avoid Heating Near Pressurized Fluid Lines

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



TS953—UN—15MAY90

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

### Remove Paint Before Welding or Heating

Avoid potentially toxic fumes and dust.

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

Remove paint before heating:

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

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



TS220—UN—15APR13

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

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02-1/1

### Handle Electronic Components and Brackets Safely

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

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

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



TS249—UN—23AUG88

DX,WW,RECEIVER-19-24AUG10-1/1

### Practice Safe Maintenance

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

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

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

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

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

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

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



TS218—UN—23AUG88

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

### Avoid Hot Exhaust

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

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



RG17488—UN—21AUG09

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

### Work In Ventilated Area

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

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



TS220—UN—15APR13

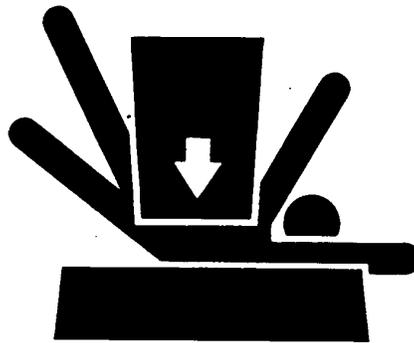
DX,AIR-19-17FEB99-1/1

### Support Machine Properly

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

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

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



TS229—UN—23AUG88

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

### Prevent Machine Runaway

Avoid possible injury or death from machinery runaway.

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

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



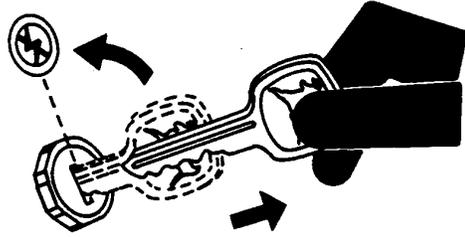
TS177—UN—11JAN89

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

### Park Machine Safely

Before working on the machine:

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



TS230—UN—24MAY89

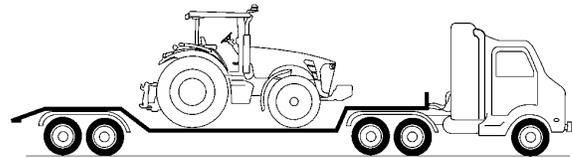
DX,PARK-19-04JUN90-1/1

### Transport Tractor Safely

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

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

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



RXA0103709—UN—01JUL09

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

### Service Cooling System Safely

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

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



TS281—UN—15APR13

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

### Service Accumulator Systems Safely

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

Relieve pressure from the pressurized system before removing accumulator.

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

Accumulators cannot be repaired.



TS281—UN—15APR13

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

### Service Tires Safely

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

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

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

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

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



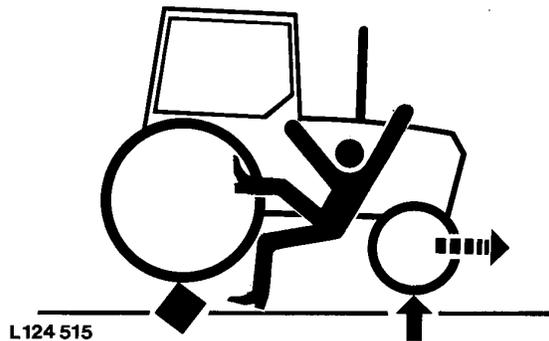
RXA0103438—UN—11JUN09

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

DX,WW,RIMS-19-28FEB17-1/1

### Service Front-Wheel Drive Tractor Safely

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



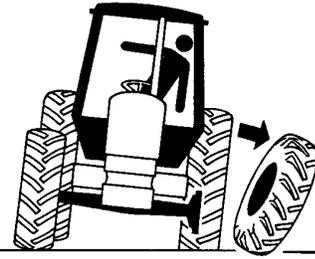
L124 515

L124515—UN—06AUG94

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

### Tightening Wheel Retaining Bolts/Nuts

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



L124 516

L124516—UN—03JAN95

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

### Avoid High-Pressure Fluids

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

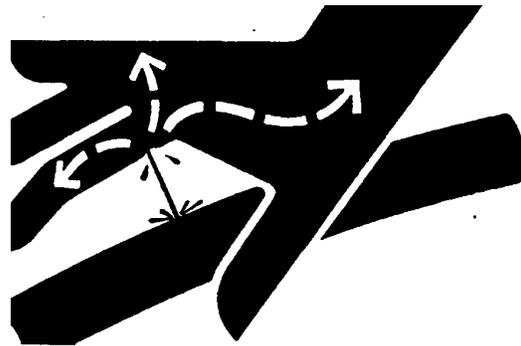
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

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

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

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with



X9811—UN—23AUG88

this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

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

### Do Not Open High-Pressure Fuel System

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

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



TS1343—UN—18MAR92

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

### Store Attachments Safely

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

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



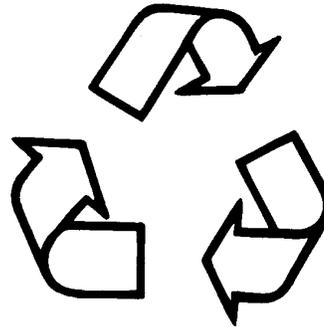
TS219—UN—23AUG88

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

### Decommissioning — Proper Recycling and Disposal of Fluids and Components

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

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



TS 1133—UN—15APR13

- filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.
- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
  - Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
  - Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX.DRAIN-19-01JUN15-1/1

# Safety Signs

## Replace Damaged or Missing Safety Signs

**IMPORTANT:** Install new safety signs if old signs are damaged, lost or can not be read. Install a new safety sign when replacing any part that previously had a safety sign.

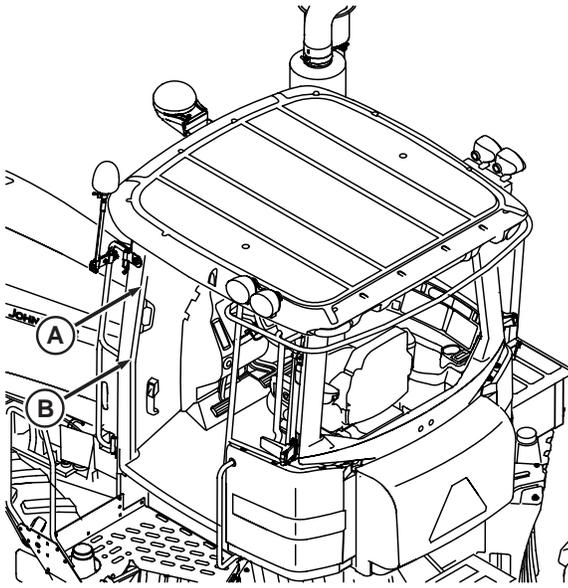
Keep safety signs clean and in good condition. Replacement signs are available from your John Deere dealer.



TS231—19—07OCT88

RW29387,0000225-19-02JUL10-1/1

**Safety Signs— Left Cab Corner Post**



RXA0086638—UN—28FEB07

**⚠ WARNING**

**AVOID CRUSHING:**  
\* Do not jump if machine tips.

**USE SEAT BELT**

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

**⚠ IMPORTANT**

1. After starting engine, operate engine at approximately 1200 rpm (no load) for one or two minutes. If temperature is below freezing point, operate engine for two to four minutes (no load).
2. Should engine stall while under load, restart immediately to prevent excessive heat build up.
3. Before stopping hot engine, operate at slow idle for one to two minutes to cool engine and turbocharger.
4. After prolonged idle periods, see Operator's Manual for starting instructions.

**IMPORTANT**

Drive train and tire life can be extended by avoiding high loads at travel speeds below 4.4 mph (7.1 km/h).

**⚠ CAUTION**

This Instructional seat has been provided only for training operators or diagnosing machine problems.

Keep all other riders off the tractor and equipment.

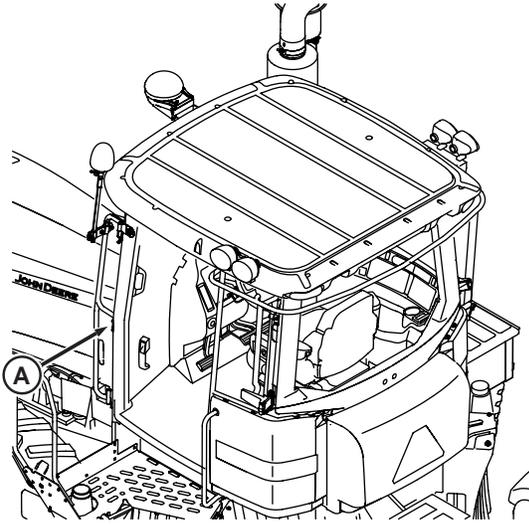
Always wear your seat belt.

RXA0098877—19—14AUG08

**A, B and C (If equipped with instructional seat.) — Warning-Use Seat Belt**

RW29387,0000425-19-25AUG09-1/1

**Safety Signs— Left Cab Corner Post**



RXA0098928—UN—20AUG08

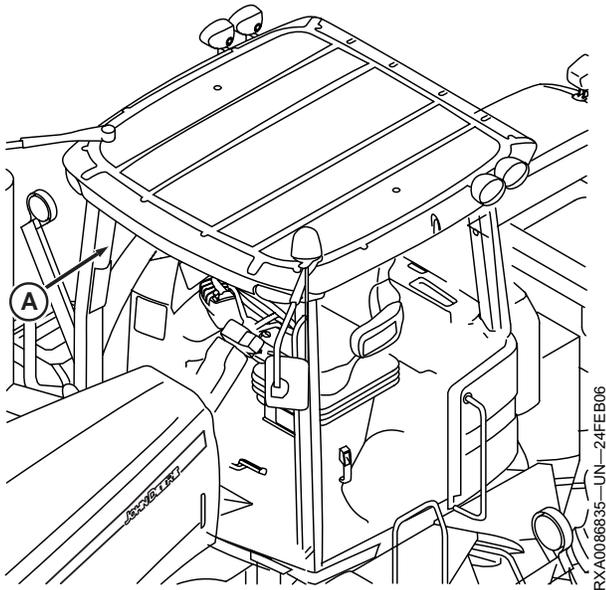


RXA0087635—19—08MAR06

*A— Warning-Operate At Safe Speeds*

RW29387,0000050-19-08SEP08-1/1

**Safety Signs— Right Cab Corner Post**

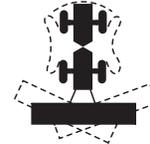


**⚠ WARNING**

To maintain operator protection and ROPS certification:  
 Damaged ROPS must be replaced, not repaired or revised.  
 Any alteration to the ROPS must be approved by the manufacturer.

**⚠ CAUTION**

1. Before operating this tractor, read the Operator's Manual for complete operating instructions and safety information.
2. Keep all shields in place.
3. Be sure everyone is clear of tractor and attached equipment before starting engine or moving steering wheel, because tractor and equipment move as pictured.



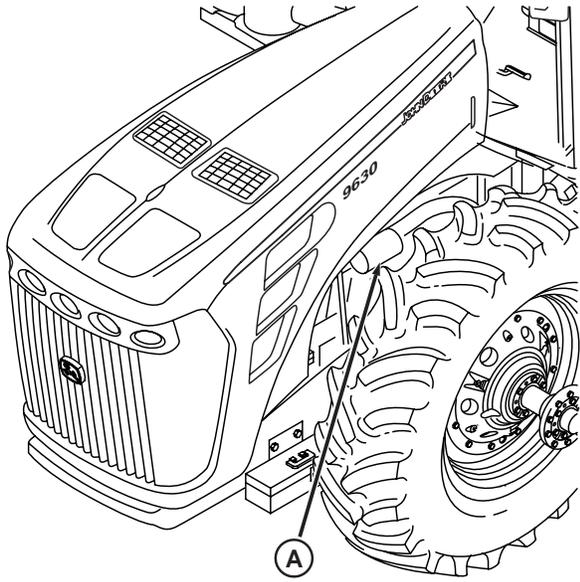
4. Install lock-pin or lock-bars on tractor hinge before:
  - a. operating stationary PTO equipment.
  - b. performing service work near center of tractor.
  - c. lifting tractor or transporting on another vehicle
 Be sure lock-pin or lock-bars are removed from hinge area before operating tractor.
5. Keep all riders off tractor and equipment.
6. Keep hands, feet and clothing away from power-driven parts
7. Reduce speed when turning or applying individual brakes or operating around hazards, on rough ground or steep slopes.
8. Be especially careful when using single wheels. Danger of an overturn increases greatly with narrow tread (2m [80 inches] or less) and high speed.  
 For hillside operation, use only dual wheels, front and rear. Avoid sharp uphill turns.
9. Use flashing warning lights on highway unless prohibited by law.
10. Stop engine, lower implement to ground and shift to "PARK" or set hand-brake securely before dismounting.  
 Wait for all movement to stop before servicing machinery.
11. Remove key if leaving tractor unattended.

**A— Warning-ROPS**

RXA0086827—19—01MAR06

RW29387,000044A-19-03MAR06-1/1

**Safety Signs— Engine**



RXA0086839—UN—06JUL07

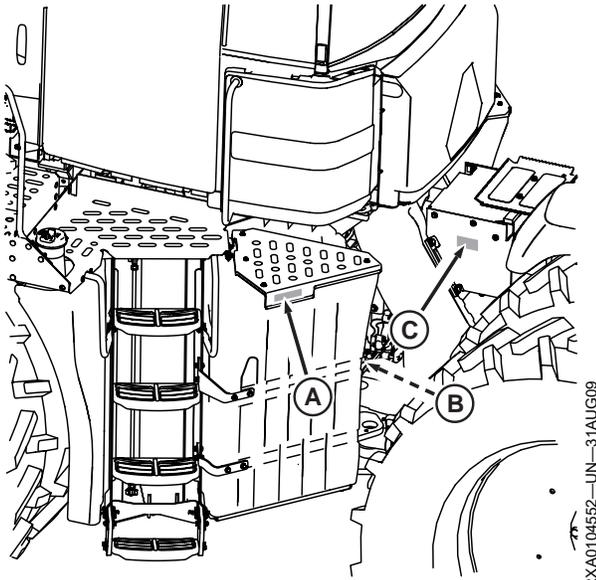


A— Danger-Start Only From Seat

RXA00868077—19—01JUL03

RW29387,0000459-19-01MAR06-1/1

**Safety Signs— Side Frame**



Safety Sign Locations—Both Sides of Frame



**⚠ WARNING**  
 Crushing injury may result in hinge area if machine is turned.  
 Make sure people are clear of machine before starting engine or moving steering wheel.  
 Attach steering lockouts before performing service near center of machine or transporting on a truck.

RXA0090949—19—03OCT06

A— Warning-Hinge Pinch Location (Located on both sides of frame)

**⚠ WARNING**

- Contains spring under load.
- Prevent injury from sudden release by removing capscrews evenly.

RXA0086833—19—01MAR06

B— Warning-Spring Under Load



**⚠ DANGER**  
 Entanglement in rotating driveline can cause serious injury or death.  
 Keep all shields in place.  
 Avoid contact with rotating parts.

RXA0086832—19—01MAR06

C— Danger-Rotating Driveline (If equipped with PTO) (Located on both sides of frame)

RW29387,000044B-19-02SEP09-1/1

**Accumulators**

RXA0106913—19—12MAY10

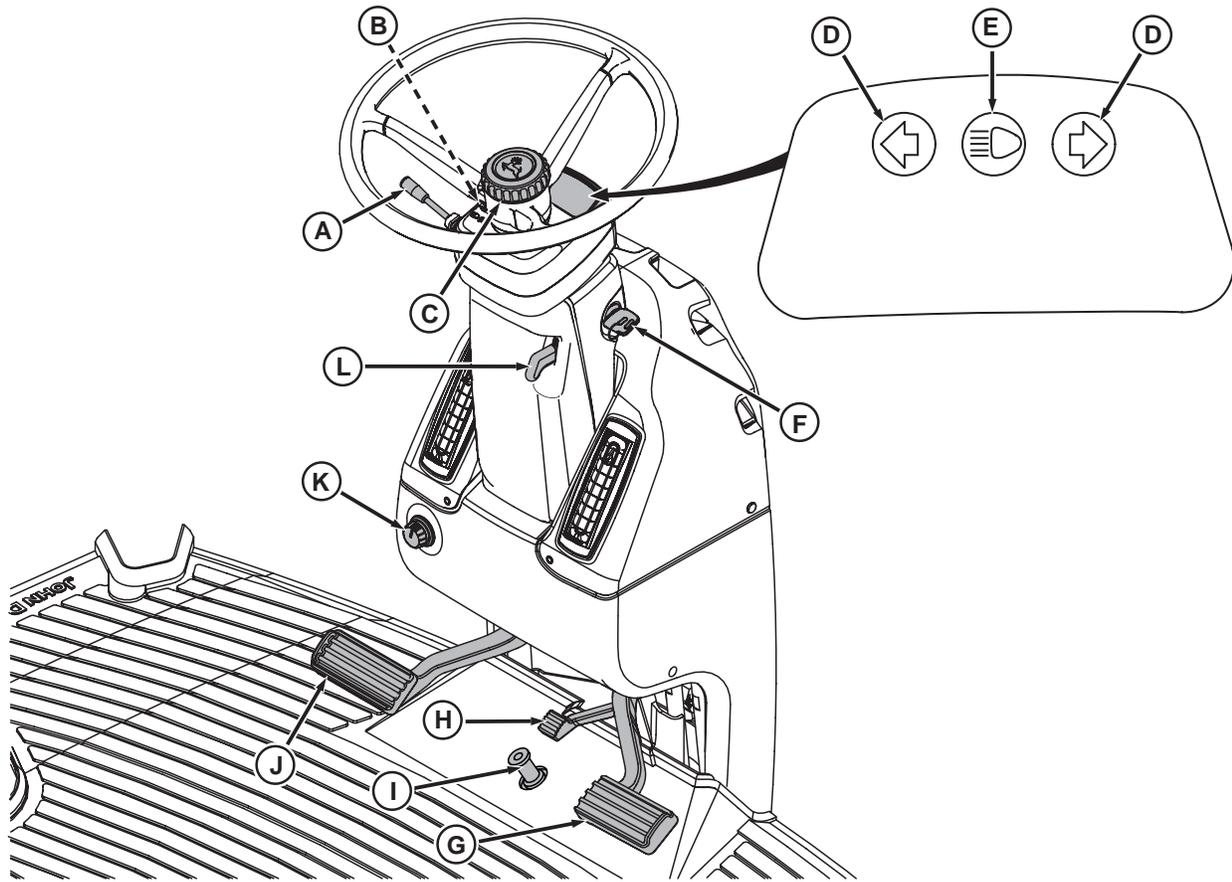


*A— Caution-Decal for Accumulators*

RW29387.0000428-19-26AUG10-1/1

# Controls and Instruments

## Front Console



A—Turn Signal Lever, Dimmer Switch, Horn, Flash-to Pass  
B—Starting Aid Switch

C—Steering Wheel Telescope Release  
D—Turn Signal Indicators  
E—High Beam Indicator

F—Key Switch  
G—Brake Pedal  
H—Steering Column Tilt Release  
I—Differential Lock (If Equipped)

J—Clutch Pedal  
K—Air Flow Direction Control (Standard)  
L—Steering Wheel Tilt Release

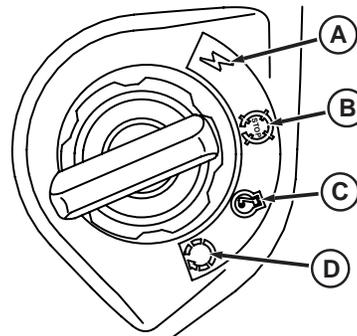
RW29387,000042E-19-31OCT07-1/1

RXA0088175—UN—12JUN06

## Key Switch

A—Accessories  
B—Off

C—Run  
D—Start

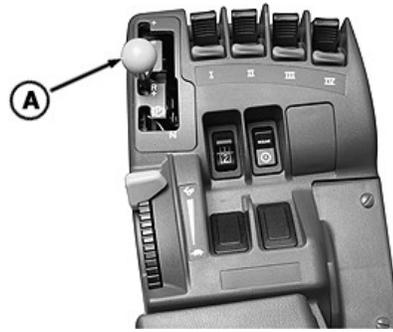


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RXA0089050—UN—16MAY06

### Shift Lever—18-Speed Powershift

A—Gearshift Lever



CommandARM

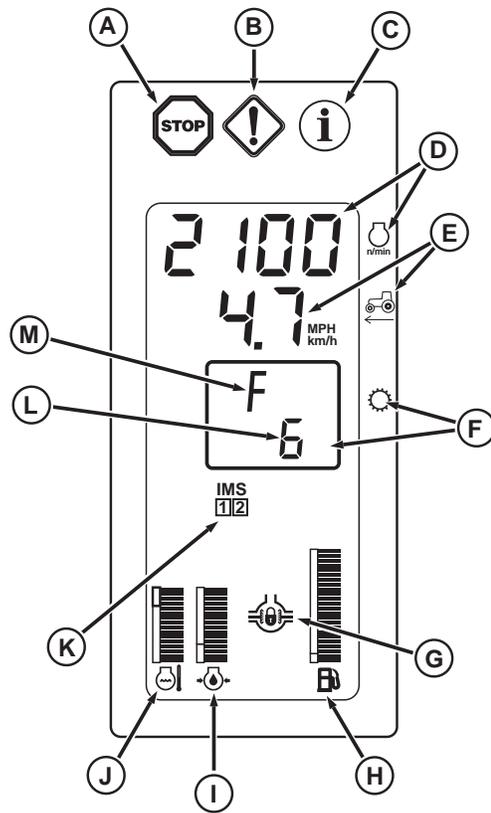
RXA0091361—UN—02NOV06

OU1092A,00001B5-19-02NOV06-1/1

### Corner Post Display

NOTE: Operation indicators (G and K) activate when function is engaged.

- |                               |                                      |
|-------------------------------|--------------------------------------|
| A—STOP Indicator              | H—Fuel Level Gauge                   |
| B—Service Alert Indicator     | I—Engine Oil Pressure Gauge          |
| C—Information Indicator       | J—Coolant Temperature Gauge          |
| D—Tachometer                  | K—IMS ON/OFF and Sequence Indicators |
| E—Vehicle Speed               | L—Gear                               |
| F—Transmission Indicator      | M—Travel Direction Indicator         |
| G—Differential Lock Indicator |                                      |



RXA0091363—UN—02NOV06

OU1092A,00001B6-19-02NOV06-1/1

### STOP, Service Alert and Information Indicators

**NOTE:** All STOP, Service Alert, and Information Indicators are accompanied by an informative message, diagnostic trouble code, and/or fault description shown on the CommandCenter display.

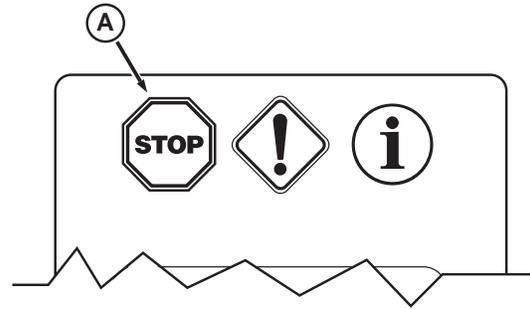
**STOP Indicator (A):** Light flashes and alarm sounds continuously to alert operator that a serious malfunction has occurred, which requires immediate attention or the tractor will be damaged.

Immediately stop operations, reduce engine speed to idle, then shut down engine and turn key "ON" to observe CommandCenter display for problem identification. In the example to the right, "Transmission oil temperature high" (B) identifies the problem. It may be necessary to access the stored codes, see Using Diagnostics, Stored Codes and CAN Statistics. Correct problem before restarting.

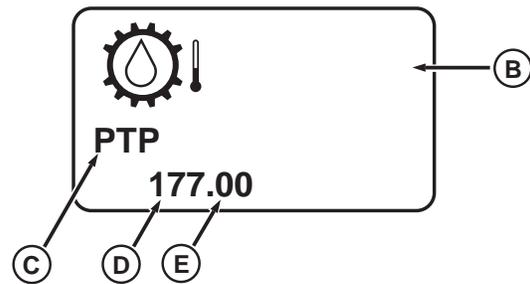
When controller detects a malfunction or condition "out of range", a diagnostic trouble code containing the controller (C) followed by an industry standard number is displayed. Numbers to the left of the decimal indicate the malfunction (D) and numbers to the right of decimal indicate the condition (E).

Reference the diagnostic trouble code list in this manual for possible actions an operator can take. If situation cannot be corrected, record and give this information to your John Deere dealer to diagnose the problem.

If a code is **not** in the Operator's Manual Diagnostic Trouble Code Section, contact your local John Deere dealer.



STOP Indicator



STOP Message

- A—STOP Indicator
- B—Transmission Oil Temperature High
- C—Controller
- D—Malfunction
- E—Condition

RXA0079331—UN—28FEB05

RXA0096588—UN—12NOV07

Continued on next page

RW29387,00006C-19-09NOV07-1/2

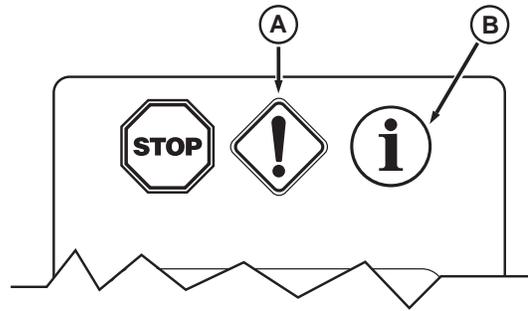
**Service Alert Indicator (A):** Light flashes and alarm sounds five times to inform operator that a performance or operational problem has been detected, which needs to be resolved as soon as possible. Continued operations can cause a Service Alert to escalate into a STOP indicator. If appropriate corrective action is not taken soon (serviced, repaired, operated in a different manner), a significant reduction in performance will occur, resulting in machine damage.

**Information (INFO) Indicator (B):** Light comes on continuously and alarm sounds for two seconds, telling operator that a fault condition has been detected. Tractor operations can continue without damage; however, performance of some functions may be degraded. Operating in a different manner may correct the out of range condition and clear INFO indicator.

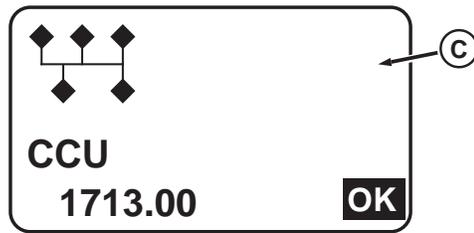
Some Service Alerts and Information Indicators can be "acknowledged" and display cleared by pressing the Select Switch on the CommandCenter. The display will return to a normal mode. This will allow tractor function to continue however the diagnostic trouble code may reappear at a later time if the condition still exists.

When either a Service Alert or Information Indicator is displayed it is suggested the tractor be placed in PARK and engine shut off. Restart engine to verify active diagnostic trouble code will reappear before contacting your John Deere dealer. The code condition will be verified when tractor is restarted.

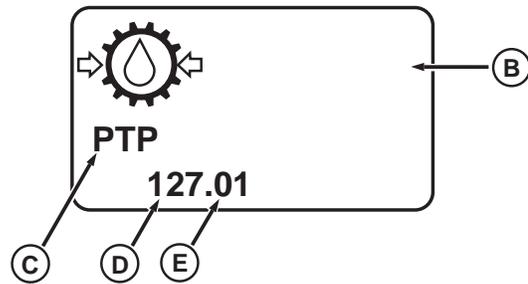
- A—Service Alert Indicator
- B—Information Indicator
- C—Identification System
- D—Transmission System
- E—Condition



Service Alert And Information Indicators



Service Alert Message



Information Message

RXA0079330—UN—28FEB05

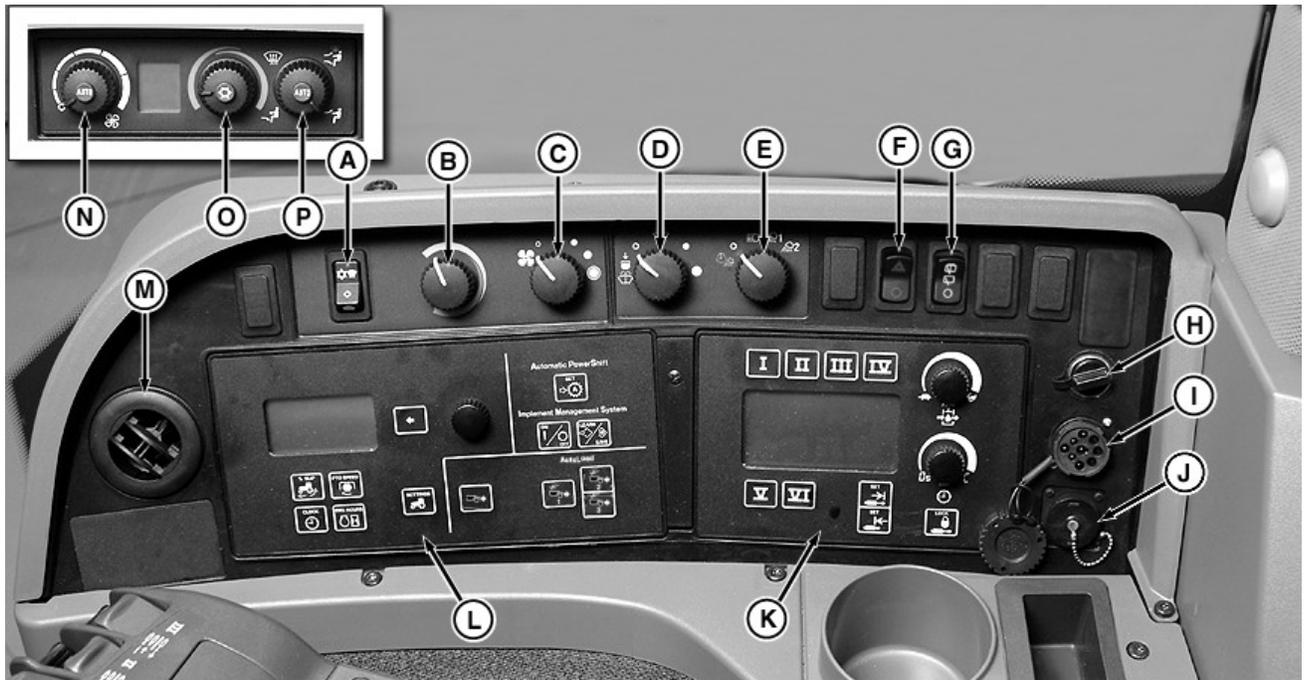
RXA0082311—UN—18JUL05

RXA0079349—UN—09AUG05

RW29387,000006C-19-09NOV07-2/2



**Right-Hand Console**



RXA0091371—UN—02NOV06

*Right-Hand Console*

- |   |   |   |   |
|---|---|---|---|
| <p>A—Compressor Switch * (If Equipped)<br/>                 B—Temperature Control Knob * (If Equipped)<br/>                 C—Blower Motor Control Switch * (If Equipped)</p> | <p>D—Front Wiper Switch<br/>                 E—Light Switch<br/>                 F—Hazard Light Switch<br/>                 G—Rear Wiper Switch (If Equipped)<br/>                 H—Power Plug</p> | <p>I—Diagnostic Connector<br/>                 J—Convenience Outlet<br/>                 K—TouchSet Control Panel<br/>                 L—CommandCenter™<br/>                 M—Air Vent</p> | <p>N—Blower Motor Control * (If Equipped)<br/>                 O—Temperature Control * (If Equipped)<br/>                 P—Air Flow Mode Control * (If Equipped)</p> |
|---|---|---|---|

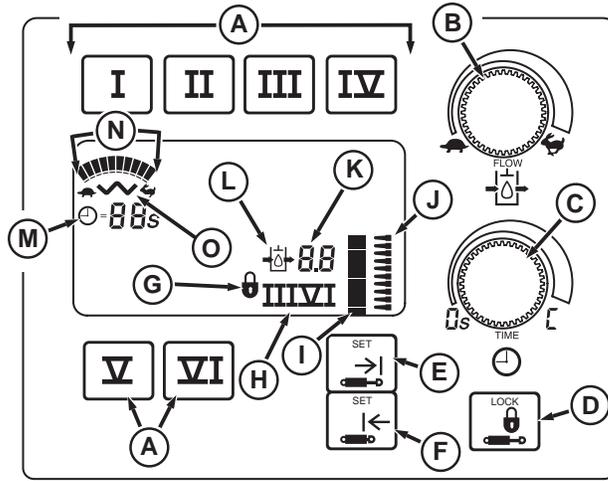
\* Tractors will have either a standard heating air

conditioning unit, controls (A—C) or ClimaTrak controls (N—P).

*CommandCenter is a trademark of Deere & Company*

OU1092A,00001B8-19-20JUN07-1/1

**TouchSet Control Panel Controls And Indicators**



TouchSet Control Panel

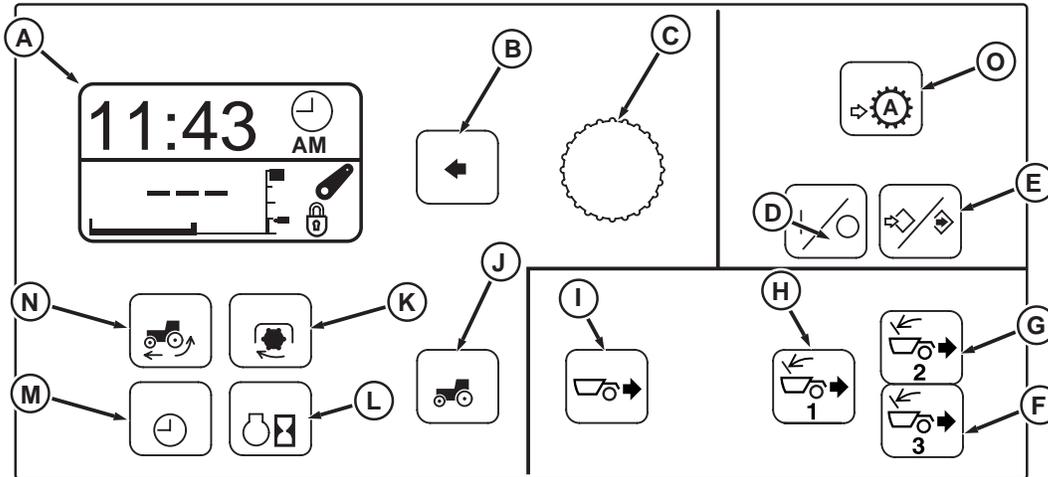
- |                                      |   |  |                            |
|--------------------------------------|---|--|----------------------------|
| A—SCV Selector Switches <sup>1</sup> | E—Raise Position Set Switch<br>(TouchSet Depth Control) | H—SCV Indicator  | K—Flow Rate Indicator      |
| B—Flow Rate Adjustment Knob          | F—Lower Position Set Switch<br>(TouchSet Depth Control) | I—Set-Point Indicator (TouchSet<br>Depth Control)        | L—Hydraulic Flow Indicator |
| C—Time Adjustment Knob               | G—Lock Indicator  | J—Position Pointer Indicator<br>(TouchSet Depth Control) | M—Time Indicator           |
| D—Lock Switch                        |   |  | N—Flow Indicator           |
|                                      |   |  | O—Float Indicator          |

<sup>1</sup> The fifth and sixth SCV is field installed only.

RW29387,0000070-19-24OCT07-1/1

RXA0068056—UN—10AUG05

**CommandCenter**



CommandCenter Panel

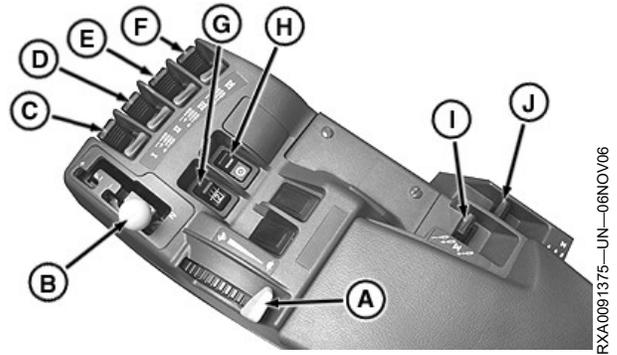
- |                         |  |                          |  |
|-------------------------|--|--------------------------|--|
| A—Split Screen Display  | F—Not Used                               | I—Average Draft Setting  | N—Percent Slip Switch                  |
| B—Select Switch         | G—Rear Scraper Initial Draft<br>Setting  | J—Tractor Setting Switch | O—Automatic Powershift Switch<br>(APS) |
| C—Command Dial          | H—Front Scraper Initial Draft<br>Setting | K—Not Used               |  |
| D—IMS ON/OFF Switch     |  | L—Engine Hours Switch    |  |
| E—IMS Learn/Save Switch |  | M—Clock Switch           |  |

OU1092A,00001B9-19-20JUN07-1/1

RXA0091376—UN—02NOV06

### CommandARM Controls — Powershift Transmission

- |                                     |   |
|-------------------------------------|---|
| A—Engine Speed Control/<br>Throttle | F—SCV IV Lever                          |
| B—Shift Lever                       | G—IMS Sequence Switch                   |
| C—SCV I Lever                       | H—Automatic Powershift<br>Resume Switch |
| D—SCV II Lever                      | I—SCV V Lever (If Equipped)             |
| E—SCV III Lever                     | J—SCV VI Lever (If Equipped)            |

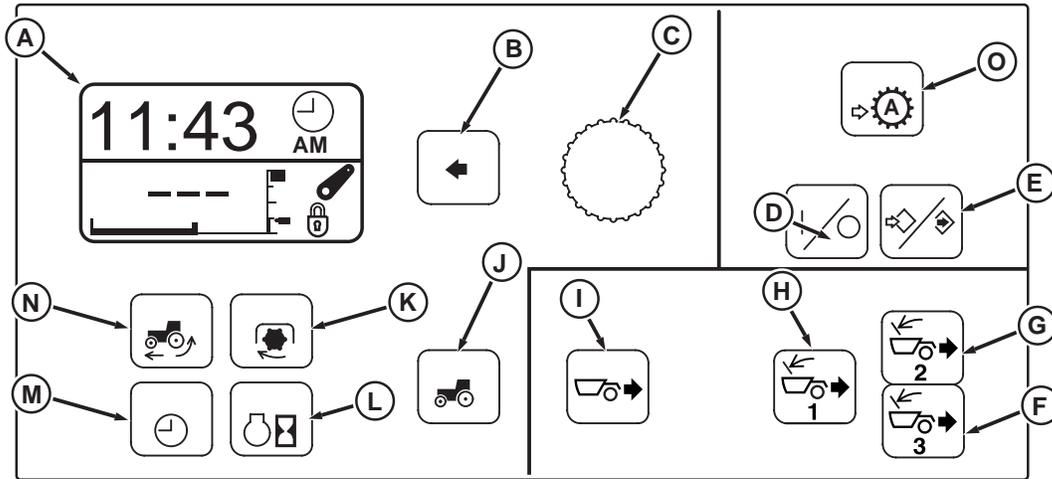


Right-Hand CommandARM

OU1092A,00001BA-19-25APR08-1/1

# CommandCenter™

## CommandCenter™ Panel



FXA0091376—UN—02NOV06

A—Split Screen Display  
 B—Select Switch  
 C—Command Dial  
 D—IMS On/Off Switch  
 E—IMS Learn/Save Switch

F—Not Used  
 G—Rear Scraper Initial Draft Setting  
 H—Front Scraper Initial Draft Setting

I—Average Draft Setting  
 J—Tractor Setting Switch  
 K—Not Used  
 L—Engine Hours Switch  
 M—Clock Switch

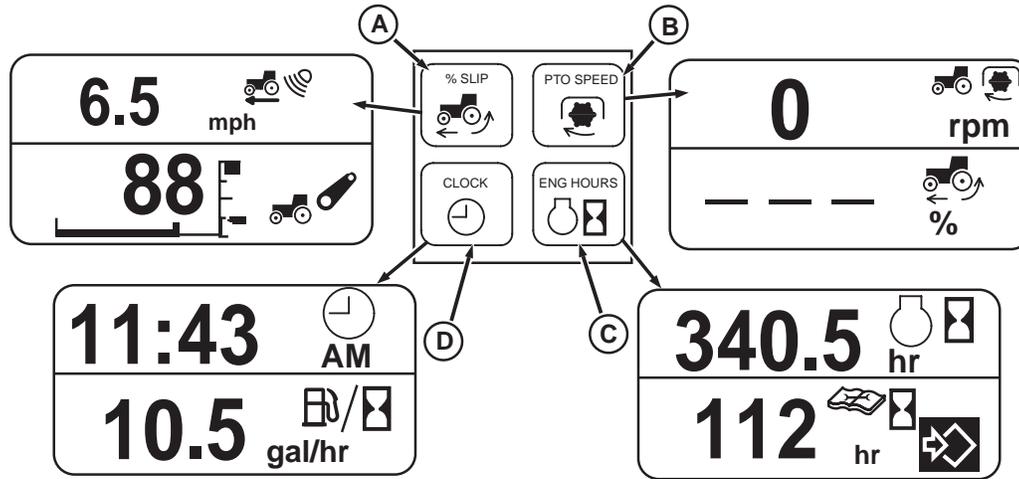
N—Percent Slip Switch  
 O—Automatic Powershift Switch (APS)

The CommandCenter display is the central information system for the tractor providing both text and graphical information. The CommandCenter displays operational performance, settings, diagnostics, and alarm information relevant to the tractor system. In addition, the

CommandCenter allows modification of specific tractor settings such as transmission control. Control of the display and data input is accomplished through membrane switches and the Command Dial.

OU1092A,00001BB-19-20JUN07-1/1

### Split-Screen Display



RXA0096286—UN—11OCT07

**A—% SLIP Switch**

**B—Not Used**

**C—ENG HOURS Switch**

**D—CLOCK Switch**

The display is divided into two screens to allow alternative information to be displayed. Information in the top screen is selected by selecting one of the four function switches (A-D) located below the display. Once an option is selected this information remains on the top screen until another option is selected.

#### CommandCenter Split Screen - Selectable Bottom-Half Display

A bottom display option can be associated with a top display option for quick access to the option. By setting up screen associations, the same top and bottom half screens will display together whenever the selected switch is pressed. Four screen associations can be set up; one for each of the four option switches.

#### CommandCenter Split Screen - Constant Top-Half Display

##### A—% SLIP:

Displays current wheel slippage as a percent of calculated wheel speed compared to the true ground speed. Tractor must be equipped with a radar. If true ground speed is not available, "---" will be displayed.

*NOTE: If display reads something other than zero when traveling on a hard surface where there should be no wheel slip, push and hold touch pad (A) to reset.*

To set up screen associations, bring up the desired top-half display by pressing the option switch. Rotate Command Dial until the desired bottom-half display appears. Setup is done automatically.

The bottom half of the display is selected by turning the Command Dial. Display options are specific to tractor configuration.

*NOTE: To change between metric and U. S. measurements, see Selecting Units and Language in this section.*

##### B—Not Used

**C—ENGINE HOURS:** Displays total accumulated engine hours.

#### Information that can be displayed includes:

**D—CLOCK:** Displays current time in hours and minutes. Clock can be set to display in 12-hour or 24 hour format.

RW29387,000003B-19-07NOV07-1/23

**Clock** - Displays current time in hours and minutes. Clock can be set to display in 12-hour or 24 hour format through tractor settings.

RXA0085000—UN—17NOV05



Continued on next page

RW29387,000003B-19-07NOV07-2/23

**True Ground Speed** - (Optional, requires radar) Ground speed as measured by the radar.

RXA0085001—UN—15NOV05

6.5  mph

RW29387,000003B-19-07NOV07-3/23

**Wheel (Ground) Speed** - Ground speed as measured at the axle.

RXA0085002—UN—15NOV05

7.1  mph

RW29387,000003B-19-07NOV07-4/23

**% Slip** - (Requires Radar) Displays current wheel slippage as a percent of ground speed compared to the true ground speed. If true ground speed is not available, "---" will be displayed.

RXA0085003—UN—15NOV05

12  %

RW29387,000003B-19-07NOV07-5/23

**Engine Speed** - Speed of the engine in RPM.

RXA0085004—UN—15NOV05

2130  rpm

RW29387,000003B-19-07NOV07-6/23

**Time Since Service** - Hours since the last service interval. Reset interval by pressing the Select Switch once to enter edit mode and once to save the 0 value.

RXA0085005—UN—16NOV05

112  hr

RW29387,000003B-19-07NOV07-7/23

**Engine Hours** - Hours accumulated while engine running.

RXA0085006—UN—16NOV05

173.2  hr

Continued on next page

RW29387,000003B-19-07NOV07-8/23

**Engine Coolant Temp** - Temperature of the engine coolant in °C or °F. RXA0085007—UN—16NOV05



RW29387,000003B-19-07NOV07-9/23

**Engine Oil Pressure** - Pressure of engine oil in bar or psi. RXA0085008—UN—16NOV05



RW29387,000003B-19-07NOV07-10/23

**System Volts** - Battery system voltage. RXA0085009—UN—16NOV05



RW29387,000003B-19-07NOV07-11/23

**Transmission/Axle Oil Temperature** - The temperature of transmission/axle oil displayed in degrees °C or degrees °F. RXA0094604—UN—20JUN07



RW29387,000003B-19-07NOV07-12/23

**APS Gear Setting** - Displays the initial maximum Automatic Powershift Switch (APS) gear setting. RXA0094605—UN—20JUN07



RW29387,000003B-19-07NOV07-13/23

**Implement Width** - Displays the implement width as set by operator. Press Select Switch to enter setup and rotate Command Dial until desired width is shown. Press the Select Switch a second time to save. RXA0085013—UN—16NOV05



Continued on next page

RW29387,000003B-19-07NOV07-14/23

**Area Per Hour** - Area covered per hour. Based on implement width and distance traveled over time. This value may be reset by clearing the Area Accumulated counter.

RXA0085014—UN—16NOV05



RW29387,000003B-19-07NOV07-15/23

**Fuel Used Per Time** - Liters or gallons consumed per hour.

RXA0085015—UN—16NOV05



RW29387,000003B-19-07NOV07-16/23

**Fuel Used Per Area** - Liters consumed per hectare or gallons consumed per acre. The amount of fuel used is accumulated over time based on the last area counter reset. Fuel/area can be reset by zeroing out the area accumulated and distance counters. Area accumulation is determined by the implement width and engagement (arrow) position. The area counter is enabled when the arrow is in the down position.

RXA0085016—UN—16NOV05



RW29387,000003B-19-07NOV07-17/23

**Distance Counter**- Accumulated distance the tractor has traveled displayed in meters or feet. Arrow must be in the down position to enable the counter. Reset the value by pressing the Select Switch twice.

RXA0085017—UN—16NOV05



RW29387,000003B-19-07NOV07-18/23

**Total Area Covered** - Total area covered by the tractor displayed in hectares or acres. The value is based on implement width and distance traveled. Value can be reset by zeroing out the area counter. This display will allow manual control of counter. Pressing the Select Switch will start the counters (down arrow) or stop the counters (up arrow).

RXA0085018—UN—16NOV05



RW29387,000003B-19-07NOV07-19/23

**Area Covered** - Total area covered by the tractor displayed in hectares or acres. Based on implement width and distance traveled. Counter is only active when arrow is in the down position. May be reset by pressing the Select Switch twice.

RXA0085019—UN—16NOV05



Continued on next page

RW29387,000003B-19-07NOV07-20/23

**Time to Empty** - The time to empty calculation provides an estimated time until the fuel tank level reaches the low fuel point (approximately 3% of the measurable fuel remaining).

RXA0085020—UN—16NOV05



RW29387,000003B-19-07NOV07-21/23

**Hydraulic Oil Temperature** - The temperature of the hydraulic oil displayed in degrees °C or degrees °F.

RXA0085021—UN—16NOV05



RW29387,000003B-19-07NOV07-22/23

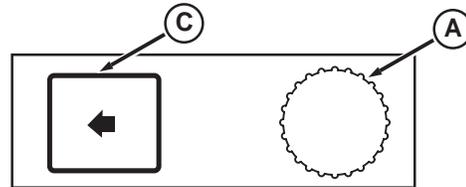
**Field Cruise** - The Field Cruise display allows the operator to set an upper engine RPM level. Pressing the Select Switch enters the edit mode and will allow the user to change the engine RPM using the Command Dial.

RXA0085022—UN—16NOV05



RW29387,000003B-19-07NOV07-23/23

### Field Cruise Control



RXA0068149—UN—22JUN03

**A—Command Dial**

**B—Field Cruise Screen**

**C—Select Switch**

Rotate Command Dial (A) to bring Field Cruise Screen (B) to bottom-half display.

Press Select Switch (C), rotate Command Dial to raise or lower engine rpm setting as needed, and press Select Switch again. Engine speed can be adjusted from 1100—2150 rpm. Changes to rpm setting take place immediately.

Field Cruise utilizes a constant speed governor curve, providing instant response to varying loads. **Use of Field**

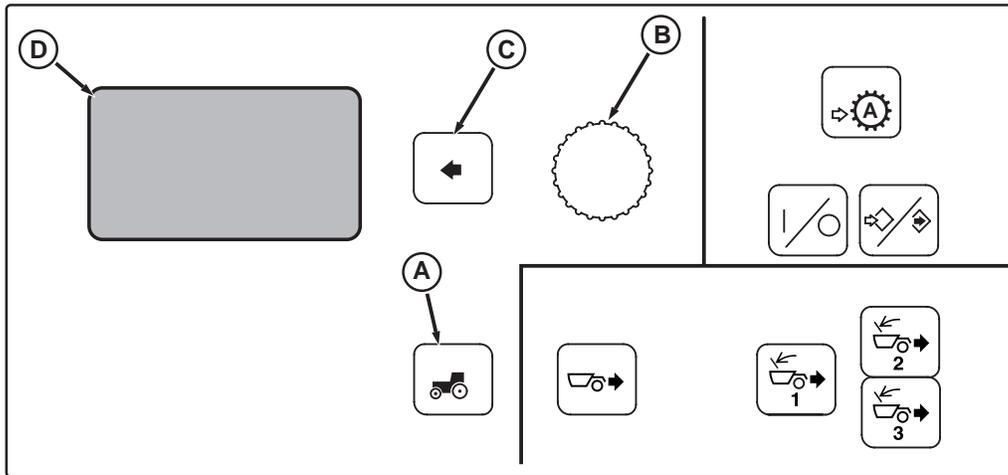
**Cruise will remove availability of power bulge and as such is not recommended for heavy tillage applications.**

Use field cruise control when controlled ground speed is desired (spraying, fertilizer spreading, seed drilling, etc.).

Limiting engine speed in light load situations may improve fuel economy.

RW29387,000004F-19-29OCT07-1/1

## CommandCenter—Settings



**A—Tractor Settings Switch**

**B—Command Dial**

**C—Select Switch**

**D—Display**

Not all languages are displayed on CommandCenter. See "Selecting Units and Language" in this section for more information on languages that can be displayed

The Tractor Settings Switch will allow the operator to modify various tractor settings listed below. Not all of the menu setting options are available on every tractor. If an option is not installed on the tractor, then no configuration will be available in tractor settings.

Press Vehicle Settings Switch (A) to view menu. Rotate Command Dial (B) to scroll through menu items. Press Select Switch (C) when desired item is highlighted in Display (D). To return to a previous screen, rotate the Command Dial (B) to highlight BACK, and press Select Switch (C).

### Menu items on Display (D)

**English**—Translation (if applies)

**Implement Sel**—Implement Sel

**Transmission**—Transmission

**Decel Switch**—Decel Switch

**Speed Cal**—Speed Cal

**Scraper Model**—Scraper Model

**Day Backlight**—Day Backlight

**Night Backlight**—Night Backlight

**Display Contrast**—Display Contrast

**Units**—Units

**Language**—Language

**Clock Set**—Clock Set

**Diagnostics**—Diagnostics

**Service Interval**—Service Interval

**Back**—Back

**Transmission** - For detailed information on transmission settings, see Setting Powershift Options Section For Shift Set Speeds, and Forward and Reverse Start Gears.

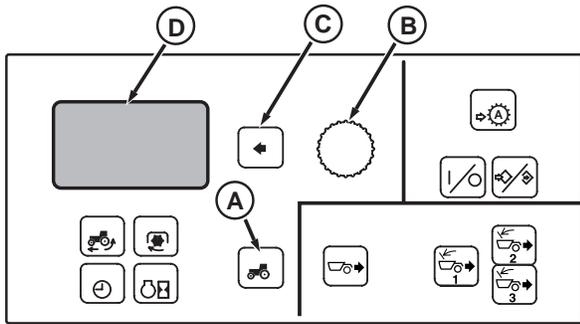
**Decel Switch** - For information on setting Decel Switch, see Setting Decelerator in Operating The Tractor Section.

**Scraper Model** - For information on setting Scraper Model, see Setting Scraper Model in AutoLoad Section.

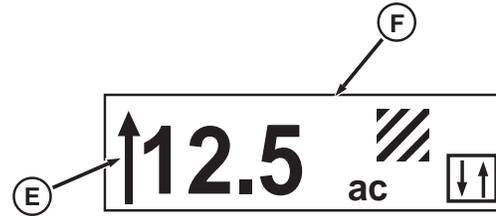
RXA0091377—UN—02NOV06

OU1092A,00001BC-19-21JUN07-1/1

### Setting Implement Selection



RXA0091378—UN—02NOV06



RXA0084481—UN—26OCT05

A—Settings Switch  
B—Command Dial

C—Select Switch  
D—Display

E—Position Arrow  
F—Total Area Covered Display

Press Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) to highlight Implement Sel and press Select Switch (C).

#### Menu Items on Display (D) Implement Select Code

**English**—Translation (if applies)

**Manual**—Manual

**Auto Seek (Default)**—Auto Seek (Default)

**RPTO**—Not Used

**Impl Switch** —Impl Switch

**SCV I-IV**—SCV I-IV

Using Command Dial, scroll through available selections until desired setting (code) is highlighted and press Select Switch.

Implement Select Function	Device or System
Manual	Select Switch
Auto Seek (Default)	First Reporting Device or System
Impl Switch	Implement Switch
RPTO	Not Used
SCV I-IV	Selective Control Valve I—IV

Implement Selection Display

**IMPLEMENT SEL:** This function identifies the input source that will determine when the CommandCenter is measuring performance related information, such as Area-per-Hour, Fuel-per-area, Distance Counter, and Area Covered. The

source could be any implement, the implement switch, the rear hitch switch or PTO switch, any EH SCV control or can be set to manual mode. The position arrow (E) indicates if implement is raised (arrow up) or lowered (arrow down). Measurements are being recorded only when the position arrow is down and stop recording when arrow is up.

*NOTE: SCV functions will only appear if tractor is equipped with TouchSet hydraulic controls.*

When EH SCV 1, 2, 3, or 4 is selected, measurement recording will take place when chosen system is engaged. Measuring will turn off when chosen system is disengaged.

In Manual mode, the implement position arrow and corresponding measuring is controlled by the Select Switch. Total Area Covered Display (F) must be selected on the CommandCenter for manual mode to function. Once the implement is lowered, press Select Switch (C) to point position arrow down and start accumulating measurements. Then when the implement is raised, press the Select Switch (C) again to reverse arrow position and stop measuring.

When Auto Seek is selected, the first detected "engaged" signal seen by the controller causes the implement arrow to point down and start accumulating measurements (distance and area). The function of the first detected device will highlight on the screen and change back to Auto Seek when that device is disengaged. "AS" is shown at the end of the function to indicate that the highlighted function is engaged via the auto seek function.

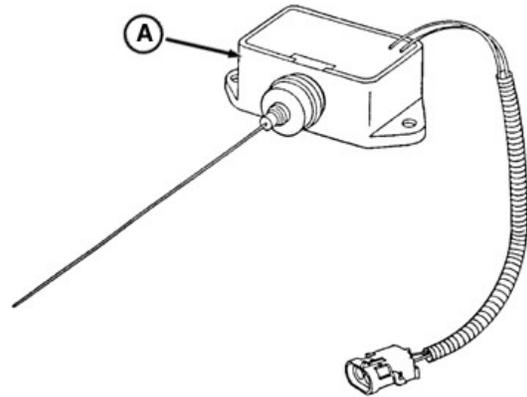
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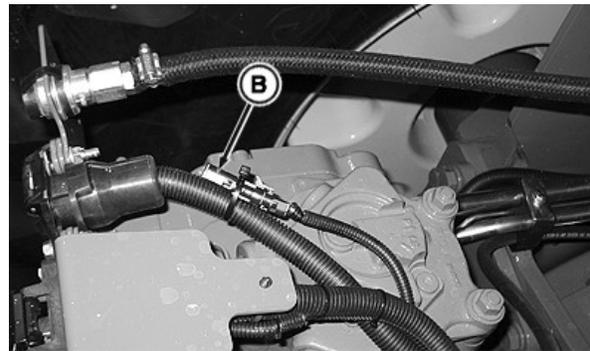
Implement mounted implement switch (A) needs to be introduced to the controller when first used, so its feedback signal will be recognized.

Attach the implement switch harness connector to tractor harness connector (B) above SCV stack.

At first time use, highlight Implement Switch setting, lower implement and press Select Switch to point position arrow down and start accumulating measurements; then when the implement is raised, the position arrow will reverse and measuring stop automatically. Once the Implement Switch is introduced to the system (Implement Switch highlighted, implement lowered, Select Switch pressed), it will function automatically the same as other systems.



RXA00084482—UN—10OCT05

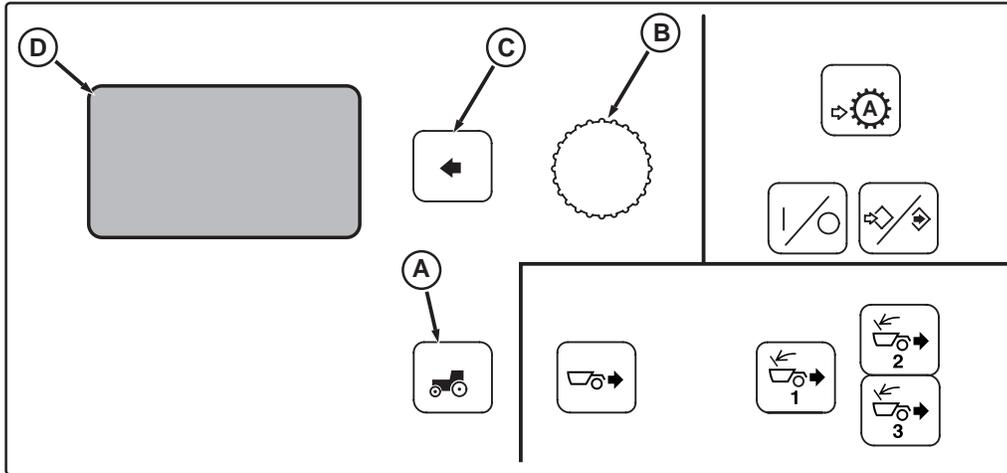


RXA0100862—UN—04MAR09

Tractor Implement Switch Connector

OU1092A.00001BD-19-12MAR09-2/2

### Setting Day Backlight, Night Backlight and Screen Contrast



Press Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) to scroll through menu items. Press Select Switch (C) when desired item is highlighted.

#### Menu Items on Display (D)

- English**—Translation (if applies)
- Day Backlight**—Day Backlight
- Night Backlight**—Night Backlight
- Contrast Adjust**—Contrast Adjust

Using Command Dial, raise or lower setting to achieve desired screen appearance and press Select Switch.

Setting	Range
Day Backlight	0 (Dim)—10 (Bright)
Night Backlight	0 (Dim)—10 (Bright)
Contrast Adjust	0 (Min.)—12 (Max.)

**Day Backlight (E):** Used to adjust brightness of CommandCenter and corner post displays, when light switch is off.

**Night Backlight (E):** Used to adjust brightness of CommandCenter corner post displays and switches, when light switch is on.



Day/Night Backlight Adjust



Contrast Adjust

- A—Settings Switch
- B—Command Dial
- C—Select Switch

- D—Display
- E—Day/Night Backlight Adjust Display
- F—Contrast Adjust Display

**Contrast Adjust (F):** Used to adjust contrast of CommandCenter and corner post displays.

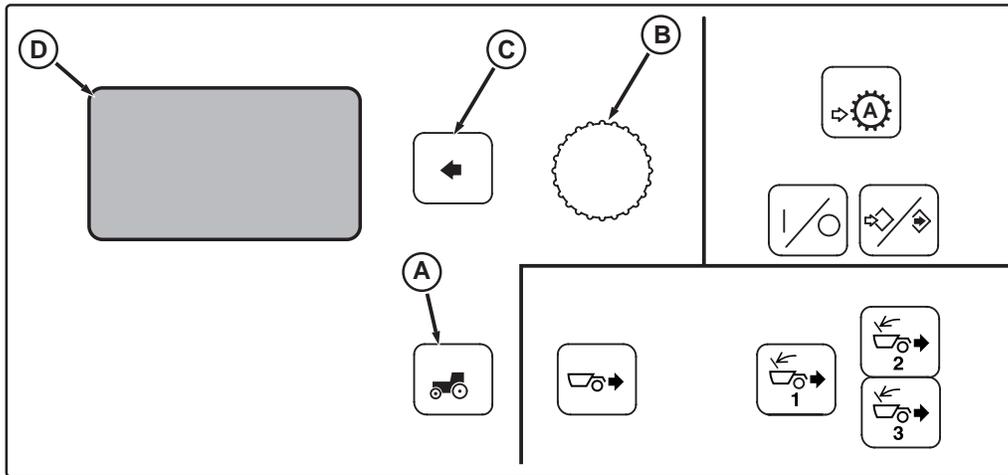
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RXA0085045—UN—06FEB06

RXA0085046—UN—06FEB06

## Selecting Units and Language



**A—Settings Switch**

**B—Command Dial**

**C—Select Switch**

**D—Display**

Press Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) until desired item is highlighted and press Select Switch (C).

### Menu Items on Display (D)

**English**—Translation (if applies)  
**English**—English  
**German**—German  
**Spanish**—Spanish  
**French**—French  
**Italian**—Italian  
**Portuguese**—Portuguese  
**Dutch**—Dutch  
**Swedish**—Swedish  
**Hungarian**—Hungarian

**Danish**—Danish

**Polish**—Polish

Using Command Dial, change setting and press Select Switch.

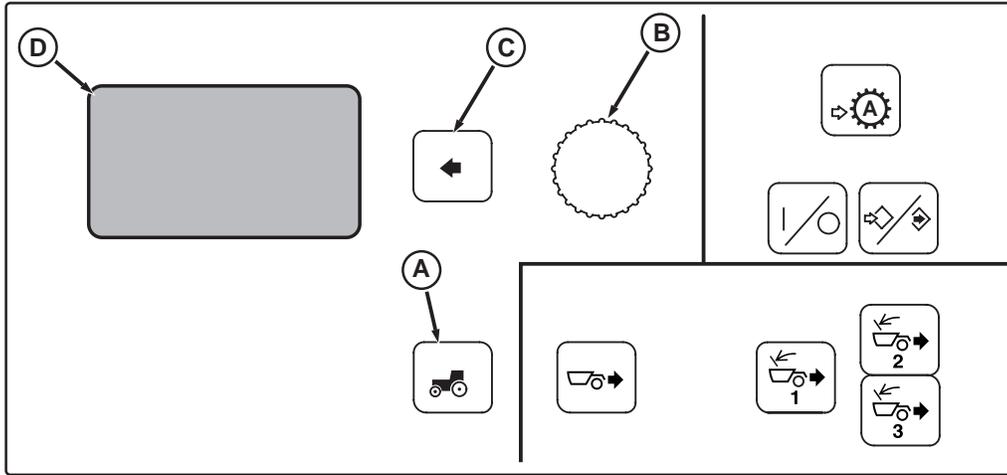
**Units:** Displays CommandCenter and corner post measurements in either U.S. or Metric units.

**Language:** Languages listed are a standard language listing. Your tractor may have a slightly different language depending on regional area. Not all languages can be provided. Should other languages be required contact your John Deere dealer for language availability and details for updating your CommandCenter software.

RXA0091377—UN—02NOV06

OU1092A,00001BF-19-02NOV06-1/1

### Setting Clock and Service Alarm Interval



Press vehicle Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) to highlight desired menu item and press Select Switch (C).

#### Menu Items on Display (D)

- English**—Translation (if applies)
- Set Time**—Set Time
- Change Format**—Change Format
- Back**—Back
- Service Interval**—Service Interval

Menu Items on Display (D)	Explanation
Set Time	Select Set Time and use Command Dial to reset display to current time (E). Press Select Switch to enter setting in memory.
Change Format	Used to switch clock display from 12-hour to 24-hour format. In 24-hour format, AM and PM do not display.
Back	Returns to previous screen



Clock Adjust Display



Service Alarm Adjust Display

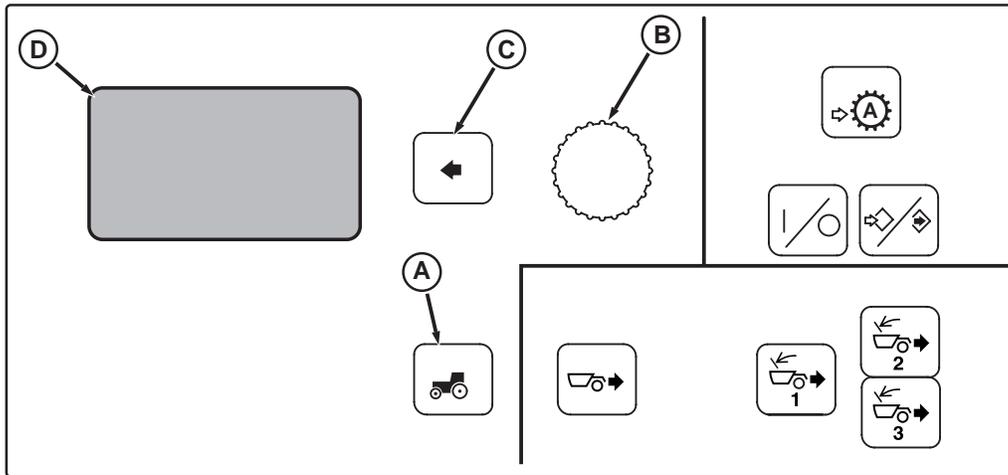
- A**—Vehicle Settings Switch
- B**—Command Dial
- C**—Select Switch
- D**—Display
- E**—Time Display
- F**—Service Alarm Display

**Service Interval:** Alarm interval is adjustable between 0 and 1000 hours, in 10-hour increments. When hours of operation reaches setting, service alarm will sound with a corresponding message appearing on the CommandCenter display (F).

After service is performed, Hours-Since-Service display should be reset to zero.

*NOTE: The Service Interval default is 100 hours.*

## Using Diagnostics, Codes and CAN Statistics



RXA0091377—UN—02NOV06

A—Settings Switch

B—Command Dial

C—Select Switch

D—Display

Press Setting Switch (A) to view menu items on Display (D).  
 Rotate Command Dial (B) to scroll through menu items.  
 Press Select Switch (C) when desired item is highlighted.

### Menu Items on Display (D)

**English**—Translation (if applies)

**Diagnostics**—Diagnostics

**Codes**—Codes

**CAN Statistics**—CAN Statistics

**IMPORTANT: Controllers and CAN Statistics are not normally used by the operator. Diagnostic codes and CAN statistics are used by service technicians to isolate, identify and resolve problems or malfunctions. Do not clear diagnostic codes from memory; this should only be done by a qualified, factory trained John Deere service technician.**

**Codes:** If any codes are stored, "Retrieving. . ." will appear, followed by the last displayed code. Use Command Dial to scroll through codes. If no codes are stored, no codes are displayed. A listing of possible error and solutions codes is provided in back of operator manual.

OU1092A,000021E-19-22NOV06-1/1

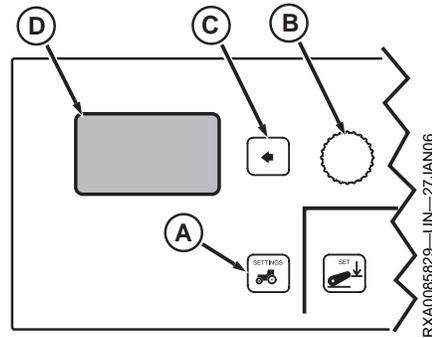
### Vehicle Speed Calibration (Manual)

**NOTE:** The Vehicle Speed Calibration (Manual) procedure is not to be used with John Deere Dual Beam Radar.

Automatic vehicle calibration is used with John Deere Dual Beam radar or GPS signal device. See VEHICLE SPEED CALIBRATION (AUTOMATIC) in this Section.

On tractors equipped with no radar or single beam radar, a change in tire size or loading of tractor can affect wheel and ground speed which requires recalibration.

This procedure will compute tire rolling circumference value and radar proportion constant for the wheel and ground speed displays.



A—Settings Switch  
B—Command Dial  
C—Select Switch  
D—Display

1. Install implement and ballast tractor as required for configuration.
2. On a hard level dry surface, mark out a 400 ft. (122 m.) course. Place easily visible markers at the start and end of the course.
3. Drive tractor up to, but do not cross, course start line.
4. Press vehicle Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) to highlight Speed Cal and press Select Switch (C).

5. Display will read:

**400 ft (122 m)**  
**Automatic**  
**Back**

6. Highlight **400 ft (122 m)**, then press Select Switch.

**When Select Switch is pressed, CommandCenter will display alternating messages shown in Display 1 and Display 2.**

<b>Display 1</b>	<b>Display 2</b>
Speed Cal	Speed Cal
400 ft (122 m)	400 ft (122 m)
start	start
Enter Course,	Press Select
Driving 2 mph	At Marker

7. Set tractor speed to 3.2 km/h (2 mph) and press Select Switch as tractor crosses start line.

**When Select Switch is pressed, CommandCenter will display alternating messages shown in Display 1 and Display 2.**

<b>Display 1</b>	<b>Display 2</b>
Speed Cal	Speed Cal
400 ft (122 m)	400 ft (122 m) end
end	Press Select
Exit Course,	At Marker
Driving 2 mph	

8. Drive entire course length at 3.2 km/h (2 mph) and press Select Switch when crossing the course end marker.

**NOTE:** Most common reason failed message is received is because tractor speed falls below **3.2 km/h (2 mph)**. Increase speed in 1.6 km/h (1 mph) increment, not to exceed 9.6 km/h (6 mph) and attempt procedure again. It may be necessary to consult your John Deere dealer for assistance if calibration is not successful.

**When Select Switch is pressed, CommandCenter will display:**

<b>If Calibration is Successful</b>	<b>If Calibration is Unsuccessful</b>
Speed Cal	Speed Cal
Calibration	Calibration
Successful	Failed

9. If failed message is received, perform procedure again.

RW29387,000005B-19-08SEP08-1/1

### Vehicle Speed Calibration (Automatic)

**NOTE:** Automatic calibration is used with John Deere Dual Beam radar. This procedure will enter a value in the radar sensor speed configuration address for the John Deere Dual Beam radar or GPS signal device requiring a configuration factor of 57.42.

Do not use Manual (400ft/122m) calibration for Dual Beam Radar.

**Tractors not equipped with radar, but wanting to use a GPS signal require two controller addresses to be changed. Contact your John Deere dealer for assistance.**

1. Press vehicle Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) to highlight Speed Cal and press Select Switch (C).

2. Display will read:

**400 ft (122 m)**  
**Automatic**  
**Back**

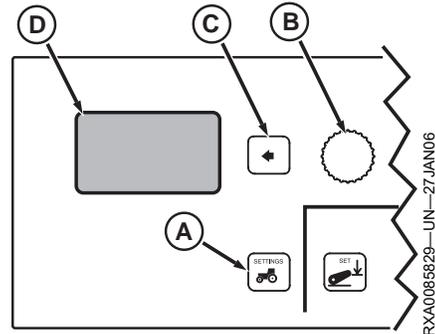
3. Highlight **Automatic**, then press Select Switch.

**When Select Switch is pressed, CommandCenter will display:**

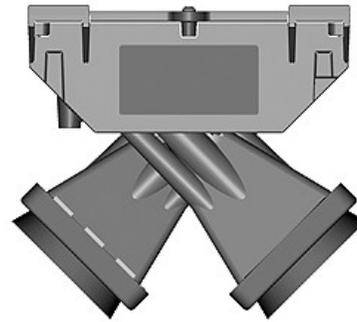
If Calibration is Successful	If Calibration is Unsuccessful
Speed Cal Calibration Successful	Speed Cal Calibration Failed

**NOTE:**

- If failed message is received, it may be necessary to consult your John Deere dealer for assistance.



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Dual Beam Radar Sensor

- A—Settings Switch
- B—Command Dial
- C—Select Switch
- D—Display

- If calibration is successful, perform Reset % Wheel Slip procedure if required. See RESET % WHEEL SLIP procedure.

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### Reset % Wheel Slip

**NOTE:** Radar or other true ground speed device must be installed and calibrated prior to resetting wheel slip. The procedure will compute and enter the rolling circumference based on radar or other true ground speed device installed on the vehicle.

*It is recommended to have an implement connected to the tractor but not engaged in the ground (no load).*

Reset % wheel slip value if:

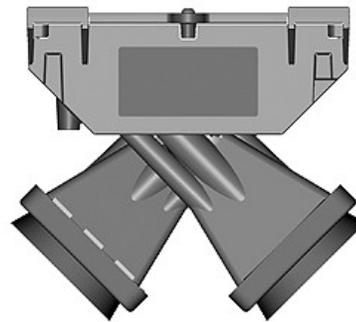
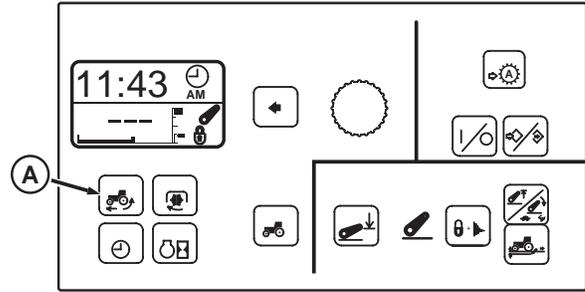
- Wheel speed and radar speed are not equal when slip is not present
- Wheel slip is displayed where slip should not be present
- Tire size was changed

1. Reset % slip value by driving tractor on a hard level surface at a constant speed of 8 km/h (5 mph).
2. Press and hold % Slip Switch (A) for a minimum of 3 seconds to zero out slip.

**CommandCenter will display:**

If Calibration is Successful	If Calibration is Unsuccessful
Calibration Successful	Calibration Failed

**NOTE:** Most common reason failed message occurs is because the radar or other true ground speed device is not calibrated properly. See *Vehicle Speed Calibration (Automatic)* for dual beam radar or *Vehicle Speed Calibration (Manual)* for single beam radar.



Dual Beam Radar Sensor

A—% Slip Switch

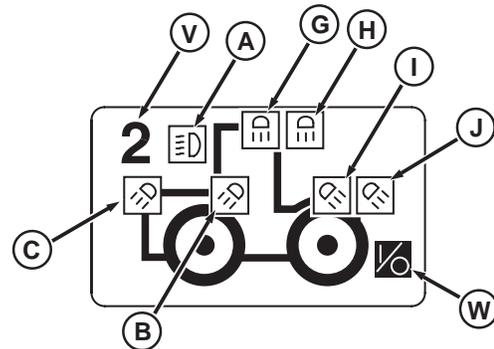
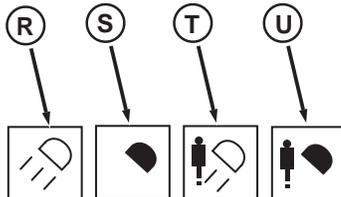
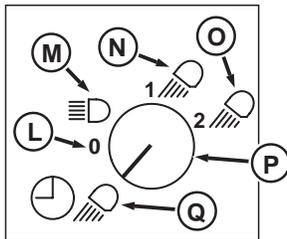
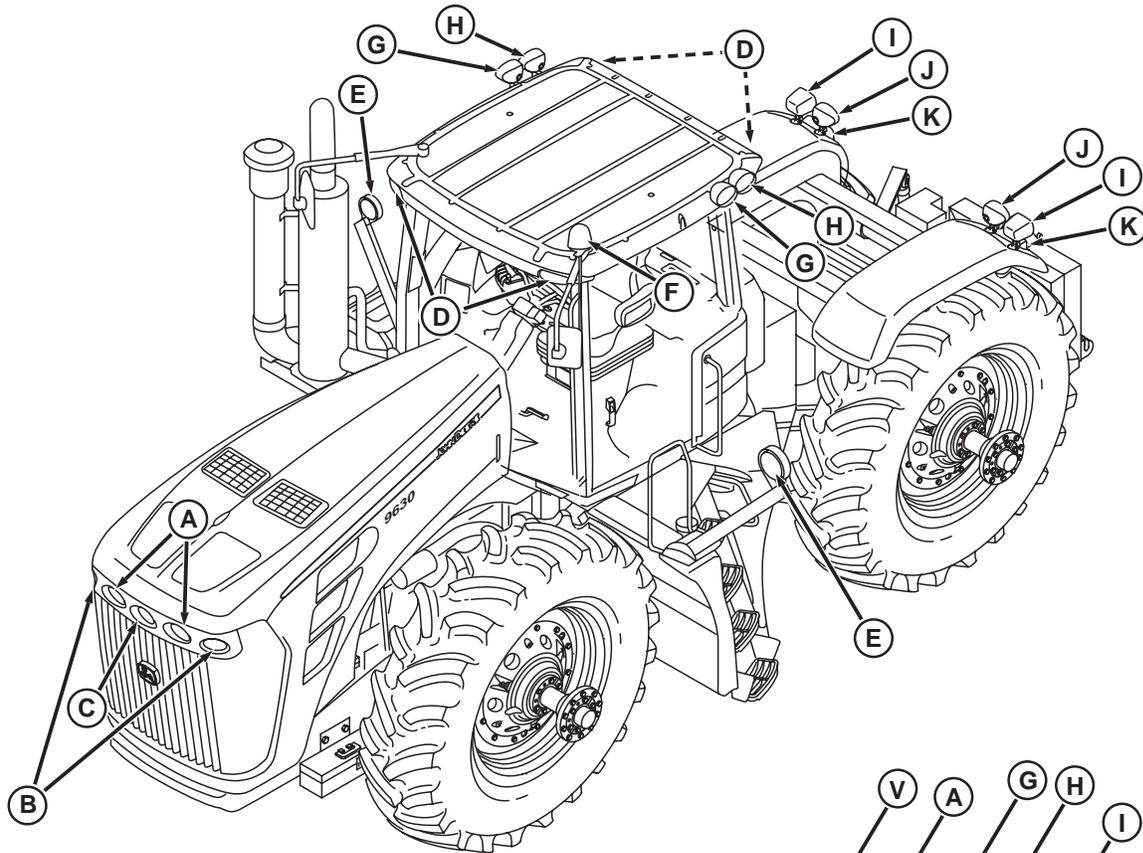
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# Lights

## Road and Field Light Identification with CommandCenter Indicators



- A—Road Lights, Front Inner, High/Low Beam
- B—Field Lights, Front Outer (Standard or HID-Xenon)
- C—Center Spot Light (Halogen or HID-Xenon)(Optional)
- D—Amber Hazard Lights, Front and Rear Roof
- E—Extremity Transport Lights
- F—Beacon Light-If Equipped

- G—Field Lights, Cab Side Forward Roof
- H—Field Lights, Cab Side Rear Roof
- I—Field Lights, Rear Fender Outside (Halogen or HID-Xenon)
- J—Field Lights, Rear Fender Inside (Halogen)
- K—Red Brake/Tail Lights

- L—Light Switch, OFF Position
- M—Road Light Position Indicator
- N—Field Position 1
- O—Field Position 2
- P—Light Switch
- Q—Delayed Shutdown Position (If Equipped)
- R—Light Programmed ON
- S—Light Programmed Off

- T—Light Programmed On, Faulted
- U—Light Programmed Off, Faulted
- V—Indicator, Field Light Position
- W—Programmable Indicator, ON/OFF

**CAUTION:** Avoid injury caused by accidental collision with another vehicle. Always comply with traffic regulations when driving tractor on a road. Dim headlights to low-beam for oncoming vehicles. Avoid using Field Lights which could blind or confuse other drivers.

operates regardless of key position. With optional Egress lighting, switch has five positions; the same four as standard switch, plus delayed shut-down position (Q).

### O (OFF) Position (L):

Turns all lights off.

Standard Light Switch has four positions (L—O) and

RXA0088458—UN—28SEP06

Continued on next page

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*NOTE: Refer to PROGRAMMING FIELD LIGHTS for lighting set-up information. Programmable lighting display is at the lower right-hand corner of the previous picture. Programmable lights are A, B, C, G, H, I and J and Programmable lighting status is displayed as shown in R— U.*

**Programmable Lights (A — J)**

As shown lights are ON (R), OFF (S), ON-Faulted (T) or OFF-Faulted (U). See PROGRAMMING FIELD LIGHTS for operating information.

**Road Position (M):**

Turns on high/low beam Road Lights (A), red tail lights (K), flashing front and rear roof hazard lights (D) and extremity warning lights (E).

**Field Positions 1 (N) and 2 (O):**

Turns on clear-lens lighting (A, B, C, G, H, I and J) programmed for each Field position.

**Automatic Battery Protection Feature**

To prevent battery discharge if headlights or field lights are left on accidentally after shutting off engine. Electrical system will automatically start the following sequence:

- After 30 minutes have elapsed, lights will turn on and off 5 times
- After 5th time, lights will turn back on and stay lit for about 60 seconds
- After 60 seconds, lights will go off and stay off to prevent complete battery discharge

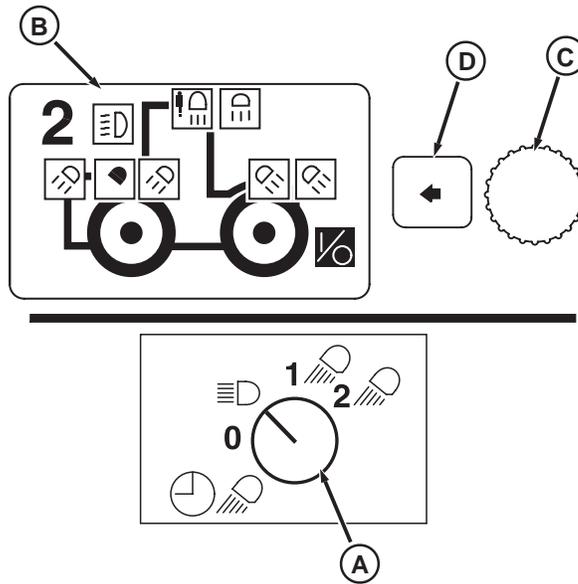
**Using Delayed Egress Lighting (If Equipped)**

Momentarily turn light switch (P) to delayed shut down position (Q) to activate delayed egress lighting. Cancel egress lighting by momentarily turning switch clockwise to Road position and then OFF.

Programmed lighting will remain ON for 90 seconds, then shut off automatically. Each additional time switch is turned counterclockwise adds 30 seconds to time the lights remain ON up to 3 minutes maximum.

RW29387,0000430-19-08MAR07-2/2

## Programming Field Lights and Egress Lighting



Programming Field Lights and Egress Lighting

**A—Light Switch**

**B—CommandCenter Display, Field Lights or Egress Lighting**

**C—Command Dial  
D—Select Switch**

Operation of all clear-lens lighting (Field Lights and Egress Lighting) is programmable using the light switch and CommandCenter. See ROAD AND FIELD LIGHT IDENTIFICATION AND COMMANDCENTER INDICATORS for further information on lights and display indicators.

Light display shows for 10 seconds whenever light switch is changed to a programmable setting. If no changes are made, display returns to last screen shown. Light indicators change from black-to-white when programmed ON.

Turn light switch knob (A) to desired position and observe CommandCenter display (B); black lights are OFF, white lights are ON.

### **O (OFF) Position:**

In the OFF position, all clear-lens lighting is programmed OFF (all black indicators).

### **Road Position:**

Road position is not programmable.

### **Field 1 and Field 2 Positions:**

To program Field Lights, rotate Light Switch to field position and observe CommandCenter display. All clear-lens lights are selectable when programming Field 1 or 2 positions.

Rotate Command dial (C) to highlight desired light, then press SELECT switch (D) to turn light ON (white indicator) or OFF (black indicator). Changes to ON/OFF settings take place immediately.

Normally one field light position is programmed to operate only certain lights, such as rear facing field lights. Moving dimmer switch to high beam will give a second option to program lights such as all rear facing lights and side mounted roof lights. The other field position is used to operate all clear-lens lighting and again moving the dimmer switch will allow for a fourth option for programmable lighting.

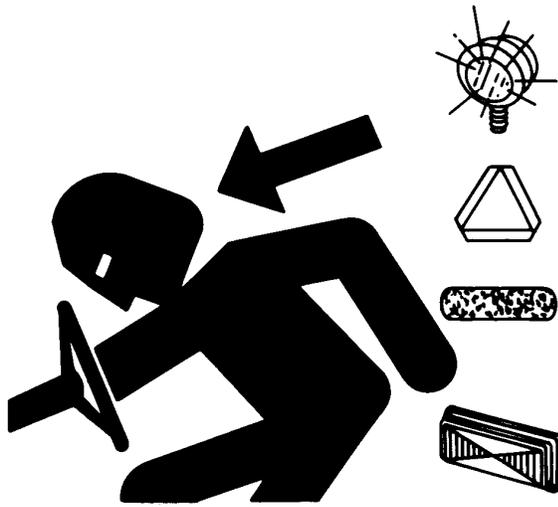
### **Egress (Delayed Shutdown) Position if equipped:**

Programming egress lighting is the same as field lighting with all lights selectable. Only operator selected lights will come ON when switch knob is moved to Egress (Delayed Shutdown) position.

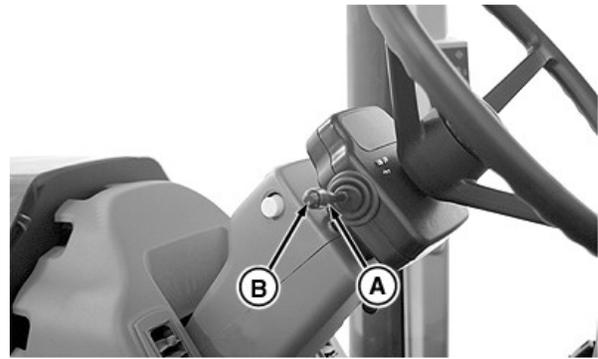
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### Operating Turn Signals and High/Low Beam



TS951—UN—12APR90



RXA0096504—UN—06NOV07

A—Turn Signal Lever

B—Horn

*NOTE: When turn signal is activated, a short audible chirping sound will be heard.*

#### Turn Signals:

Push Turn Signal Lever (A) up for a right turn, or pull down for a left turn. Return lever to center position after completing turn.

#### High/Low Beam:

**⚠ CAUTION: Avoid injury caused by accidental collision with another vehicle. Always comply with traffic regulations when driving tractor on a road. Dim headlights to low-beam for oncoming vehicles.**

Push Turn Signal Lever (A) forward to activate high beam headlights; high beam indicator will come on. Pull Turn Signal Lever into center position to operate low beam. Pull Turn Signal Lever toward you and release will momentarily activate high beams.

Dim headlights for oncoming vehicles.

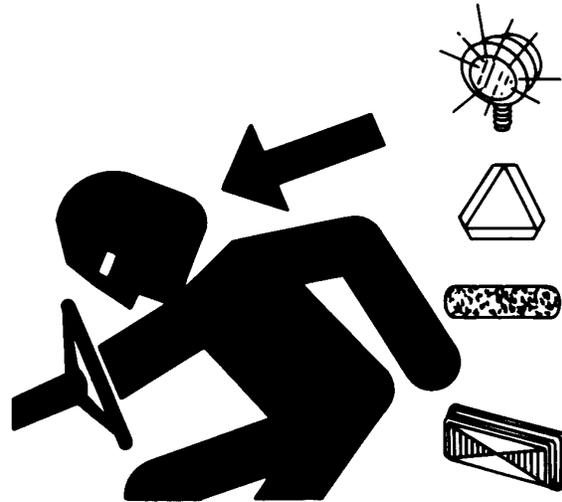
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### Use Safety Lights and Devices

Avoid injury or death caused by collision with another vehicle.

While operating tractor on a public roadway or highway day or night:

- Turn on flashing warning lights except where prohibited by law.
- Use headlights.
- Dim headlights for oncoming vehicles.
- Frequently check for traffic approaching from the rear.
- Always use turn signals.
- **DO NOT** use rear facing floodlights which may blind or confuse other drivers.
- Make sure a Slow Moving Vehicle (SMV) emblem is installed and visible.
- Make sure all lighting and marking devices are functional and clean.
- Comply with all traffic regulations.



TSS651—UN—12APR90

- Promptly replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere Dealer.

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### Operating Hazard Lights

**⚠ CAUTION:** To prevent possible personal injury, always operate flashing warning lights when traveling on a highway or public roads except where prohibited by law.

RW29387,000022B-19-25OCT06-1/2

Push top of switch (A) to activate flashing amber hazard lights.

Turn signals operate as hazard lights regardless of key position.

**A—Hazard Light Switch**



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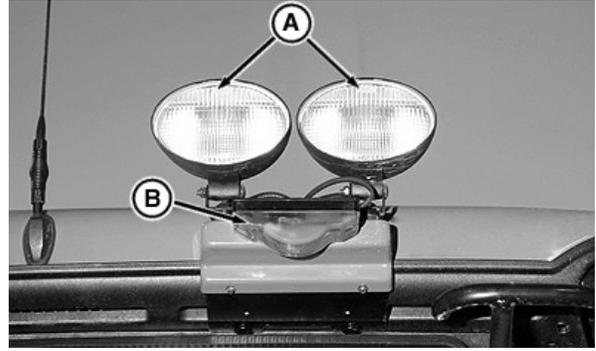
### Roof Mounted Field Lights and Entry Light—If Equipped

Roof mounted field lights (A) are available from your John Deere Dealer. These field lights operate when light switch is in position # 2 (C) depending on programming. See Programming Field Light in this section.

Entry light (B) illuminates steps when door is opened.

A—Field Lights  
B—Entry Light

C—Light Switch



RXA0090721—UN—08SEP06



RXA0091270—UN—25OCT06

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## Extremity Transport Warning Lights

**⚠ CAUTION:** Extremity transport warning lights are needed when tractor width exceeds 3.7 m (12 ft). Always use road lights and transport warning lights when operating tractor on a road or highway at night OR during the day. Extremity warning lights alert other vehicles of your extended tractor width.

**IMPORTANT:** To avoid damage, extremity warning lights can be retracted for single tire operation, for operation in tall brush, or when parking vehicle in storage building.

Extremity transport warning lights operate with hazard light switch "ON" (A) or light switch (B) in "road" position .

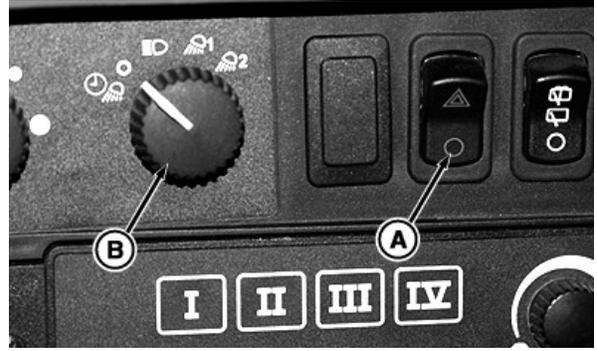
Adjust warning lights to a position (C) no more than 400 mm (16 in.) from widest point of tractor.

When turn signal is activated, transport warning light on turning side flashes faster, while opposite side glows solid.

**NOTE:** Mounting point for each extremity lamp's bracket is a different distance from centerline of tractor. An industry lighting standard specifies that hazard lamps are to be mounted within 400 mm (16 inches) of outside edge of tractor. Therefore the angle of right hand and left hand arms may be different which results in the lights being at different heights. Extremity light arms may appear to be at different angles but do comply with industry standards.

A—Hazard Switch  
B—Light Switch

C—Warning Light Adjustment



Left-Hand Bracket



Right-Hand Bracket

RW29387,000022D-19-08SEP08-1/1

### Operating Rotary Beacon Light—If Equipped

Push switch (A) to activate the rotary beacon light assembly (B).

The switch indicator light appears when beacon light is on.

When beacon light is not used:

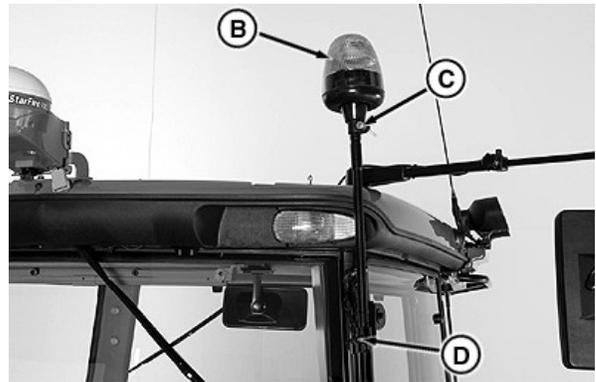
- Loosen nut (C) and remove light assembly (B)
- Install rubber protective cap on connector
- Loosen bracket nut (D), invert beacon support, and tighten nut

A —Beacon Light Switch  
B—Light Assembly

C—Nut  
D—Bracket Nut



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RXA0082899—UN—17AUG05

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### Using Seven-Terminal Outlet

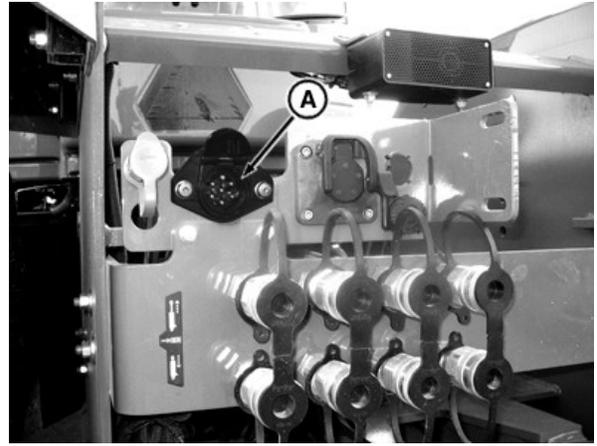
Outlet (A) is used to connect lights, turn signals, and remote electrical equipment on trailers or implements. Always use auxiliary light on towed implement when tractor rear signals and other lights are obscured.

**NOTE:** Matching plug is available through your John Deere Dealer.

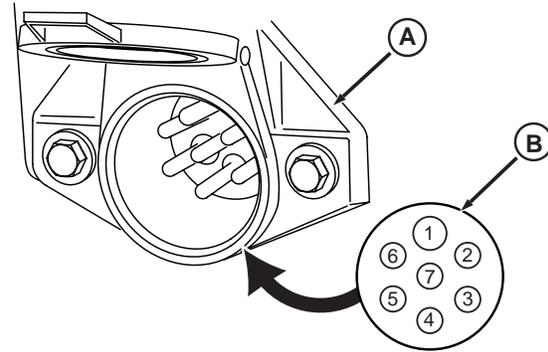
Terminal Number (B)	Function
1	Ground
2	Flood Light
3	Left Turn Signal
4	Brake Lights
5	Right Turn Signal
6	Tail Light
7	Accessory

A—Seven-Terminal Outlet

B—Terminal Numbers



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RXA0085739—UN—06JAN06

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# Operator Station

## Adjusting Air Suspension Seat

### Lumbar Support Adjustment

Rotate lever (A) to any of five positions.

### Weight and Height Adjustment

Turn key to ON position. Press lower portion of switch (D) to lower or upper portion to raise the seat to adjust for individual weight and height.

### Armrest Height Adjustment

Press button (E) or turn handle (F) to adjust armrest height.

### Armrest Angle

Turn knob (F) to adjust armrest angle.

### Backrest Angle

Pull up handle (G) and lean on backrest to recline seat to desired angle.

### Seat Swivel

Lift up on handle (H) to detent position to allow seat to swivel. Push down on handle to lock seat in position.

### Fore-Aft Seat Position

Pull up on handle (I) to allow the seat to slide forward or backward.

### Damping

Handle (J) infinitely adjusts suspension shock. Moving lever to farthest down position provides the firmest ride; farthest up position provides softest ride.

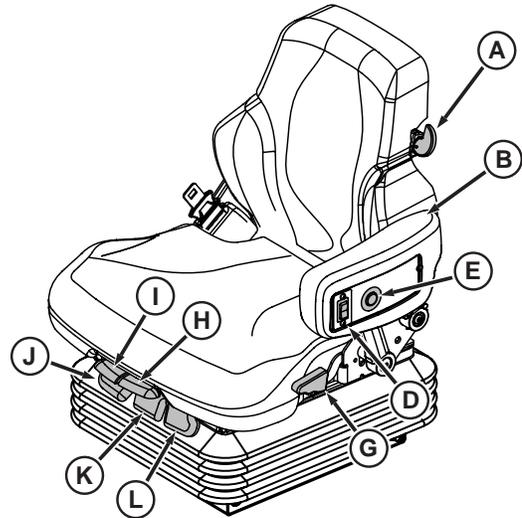
### Sideways Movement Lock

Push down on handle (K) to allow seat to move sideways. Pull up on handle to lock seat in position.

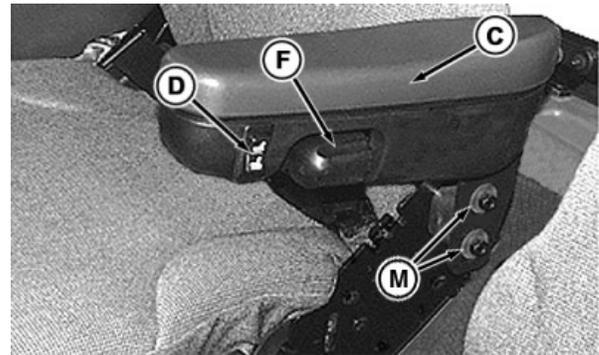
### Fore-Aft Movement Lock

Push down on handle (L) to allow seat to move fore and aft. Pull up to prevent fore-aft movement.

<sup>1</sup> Flip-Up armrest only



Seat with Fold-Down Armrest



Seat with Flip-up Armrest—Used with Instructional Seat

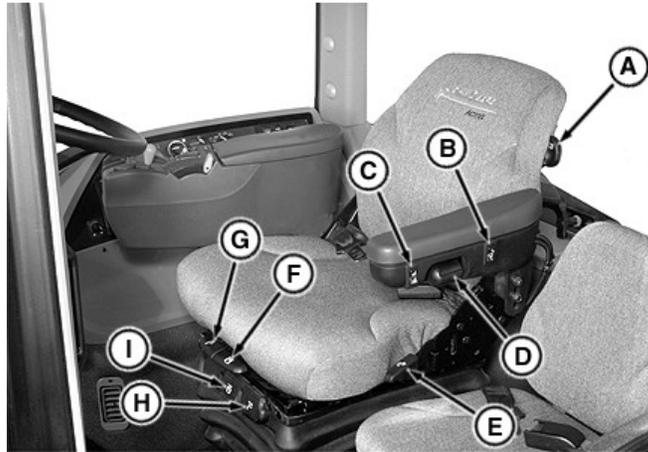
- |                          |  |
|--------------------------|--|
| A—Lumbar Support         | H—Seat Swivel                            |
| B—Fold-Down Armrest      | I—Fore-Aft Adjustment                    |
| C—Flip-Up Armrest        | J—Suspension Shock Damping               |
| D—Seat Height Adjustment | K—Lateral Movement Lock                  |
| E—Armrest Adjustment     | L—Fore-Aft Movement Lock                 |
| F—Armrest Adjustment     | M—Armrest Height Adjustment <sup>1</sup> |
| G—Backrest Angle         |  |

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## Adjusting Active Seat—If Equipped



A—Lumbar Support  
B—Ride Firmness Control  
C—Seat Height

D—Armrest Height  
E—Backrest Angle  
F—Seat Swivel

G—Fore-Aft Adjustment  
H—Fore-Aft Movement Lock  
I—Sideways Movement Lock

**NOTE:** Before operating tractor, adjust active seat to your height and weight. This will allow you to get the most from **ride zone protection**. Active seat has a built-in buffer at the high and low end of vertical seat travel, resulting in a much smoother ride.

### Lumbar Support Adjustment

Rotate lever (A) to any of five positions.

### Ride Firmness Control

Ride firmness switch (B) provides three different levels of seat suspension performance. Press upper portion "+" of switch for the firmest ride or lower portion "—" for the softest ride.

### Ride Zone Protection

The seat is ride zone protected. The seat will automatically adjust back into the protected zone when operator adjusts the seat height position at or near the vertical seat travel limits.

### Height Adjustment

**NOTE:** Compressor continues to operate until air system is optimized for the given seat height and operator weight. For best seat performance, position seat slightly lower than usual.

Turn key switch to ON position. Press lower portion of

switch (C) to lower the seat. Press upper portion of switch to raise the seat.

### Armrest Height Adjustment

Turn handle (D) to adjust armrest height.

### Backrest Angle

Pull up handle (E) and lean on backrest to recline seat to desired angle.

### Seat Swivel

Lift up on handle (F) to detent position to allow seat to swivel. Push down on handle to lock seat in position.

### Fore-Aft Seat Position

Pull up on handle (G) to allow the seat to slide forward or backward.

**NOTE:** Fore-Aft and Lateral Movement locks should remain in the UNLOCKED position for maximum performance.

### Fore-Aft Movement Lock

Pull up on handle (H) to allow seat to move fore and aft. Push down to prevent fore-aft movement.

### Sideways Movement Lock

Push down on handle (I) to allow seat to move sideways. Pull up on handle to lock seat in position.

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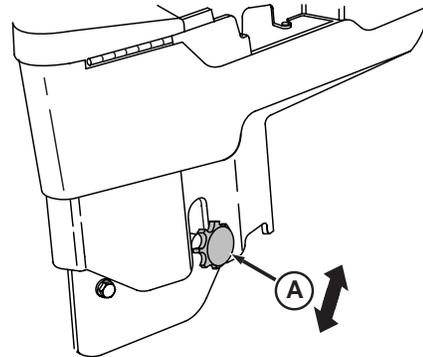
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### Adjusting CommandARM Position

**⚠ CAUTION:** Be careful when raising or lowering CommandARM console. Fingers could get pinched between mounting plates.

1. Support console and loosen knob (A).
2. Move console/armrest to desired position:
  - Raise console/armrest—Forward and up
  - Lower console/armrest—Rearward and down
3. Tighten knob (A).

A—Armrest Control Knob



Right-Hand Side Shown

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RXA0068760—UN—27AUG03

### Heated Leather Seat—If Equipped

*NOTE: Heater will automatically turn off after 1 hour of use and can be turned on again manually, as needed.*

The heated leather seat provides three levels of heat intensity for increased comfort during cold days. Heat intensity is controlled by a LED momentary switch located in the left armrest.

#### Heated Leather Seat

- Controlled by LED indicator switch on left armrest.
- Equipped with timer and will automatically shut off after one hour.
- Can be restarted with LED indicator switch as required.
- Operation only when ignition key turned on or turned to accessories.

#### LED Indicator Switch (A) —3 Heat Levels

- Depress switch once for high heat level.
- Depress switch two times for medium heat level.
- Depress switch three times for low heat level.
- Depress switch four times to turn heater off.

#### LED Diagnostics Blink Pattern

- LED On longer than Off—Heating wire failure.
- LED Off longer than On—Temperature sensor failure.

#### Care Of Seat

Clean seat with mild soap and warm water or an automotive leather cleaning solution. Use automotive leather conditioner for conditioning. Conditioning should be done



Heated Leather Seat



LED Indicator Switch

A—LED Indicator Switch

every 6 months if tractor is stored outside. If stored inside conditioning interval can be extended to 12 months.

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RXA0077640—UN—28SEP04

RXA0077642—UN—28SEP04

## Operator Presence Sensor

SERVICE ALERT indicator will flash for 5 seconds with an audible warning horn if operator leaves seat when transmission lever is in NEUTRAL. After 5 seconds, INFORMATION indicator will light up.

To cancel SERVICE ALERT indicator and warning horn, operator has to be in seat and move transmission lever into a forward or reverse gear.

Hydraulic and SERVICE ALERT indicators will flash for 5 seconds with an audible warning horn if operator leaves seat with SCV in detented flow. After 5 seconds, INFORMATION indicator will light, and hydraulic indicator light will stop flashing.

**NOTE:** SCV does not disengage while operator is absent from the seat.

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## Adjusting Steering Wheel

### Telescope

Rotate knob (A) counterclockwise to extend or retract the steering wheel. Rotate knob clockwise to lock.

### Tilt

Pull up on lever (B) and move the steering column to the desired position. Release lever to lock.

### Exit Position

Push down on pedal (C) to permit steering column to automatically move up, out of operator's way for easy entry or exit.

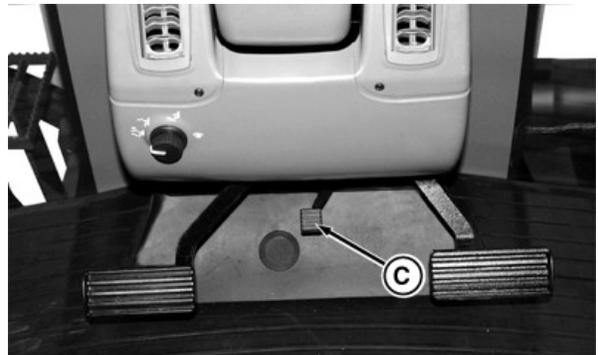
Push down on pedal and pull down on steering wheel to return steering column back to previous setting.

A—Telescoping Knob  
B—Tilt Lever

C—Column Pedal



RXA0090643—UN—05SEP06



RXA0056230—UN—14AUG01

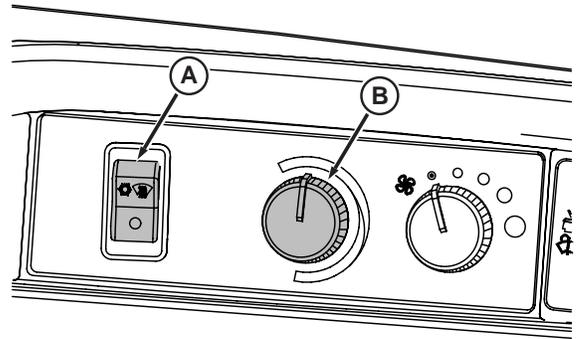
RW29387,0000235-19-24MAR09-1/1

### Operating Cab Heat, Defrost and Air Conditioning—Standard Equipment

Push air conditioning switch (A) ON for cab cooling or defrosting. Leave switch OFF for heat.

Turn temperature control knob (B) to red zone for heating or blue zone for cooling.

- A—Air Conditioning Switch      B—Temperature Control Knob



RXA0068239—UN—27AUG03

RW29387,00004CF-19-24MAR09-1/4

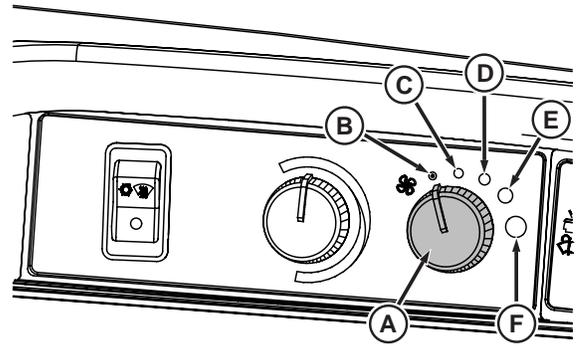
**IMPORTANT:** Compressor requires lubrication to maintain sealing function to retain refrigerant. Start engine and run air conditioner once a month during seasonal storage time to let compressor circulate lubricant throughout system and recharge batteries.

**IMPORTANT:** If system is not cooling properly, turn air conditioning switch off to avoid possible compressor damage.

*NOTE:* Purge position is used for rapid cab cool down.

Turn fan speed control knob (A) to desired setting (B—F).

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

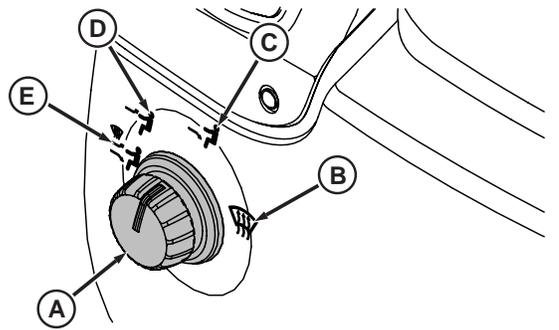


RXA0069152—UN—27AUG03

RW29387,00004CF-19-24MAR09-2/4

Turn air flow direction knob (A) for desired outlet (B—E).

- |                           |                      |
|---------------------------|----------------------|
| A—Air Flow Direction Knob | D—Front Console Vent |
| B—Windshield              | E—All                |
| C—Floor                   |                      |



RXA0069153—UN—27AUG03

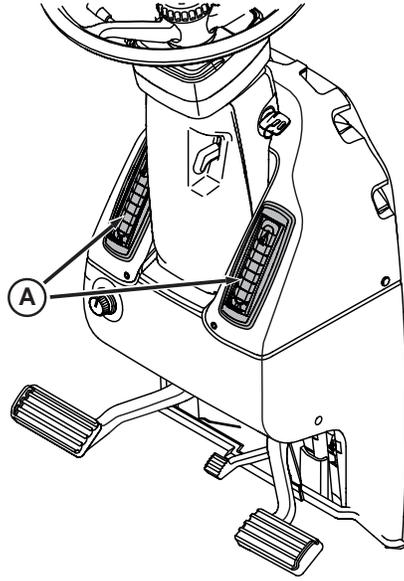
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RW29387,00004CF-19-24MAR09-3/4

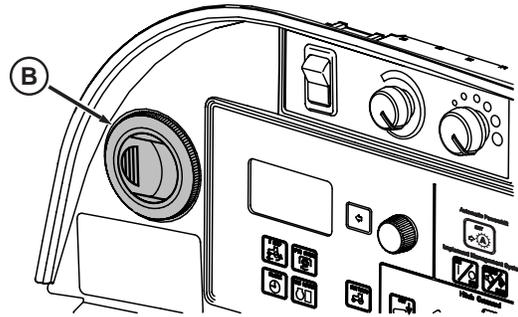
Operator Station

Louvers (A and B) in the front and side consoles are used to direct air flow to the windows for defrosting or at the operator for heating and cooling.

**A—Front Console Louvers**      **B—Side Console Louver**



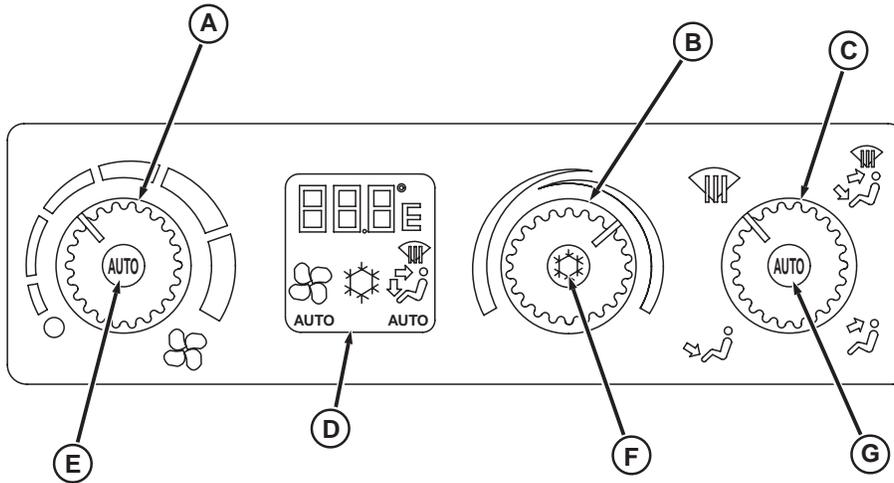
RXA0083188—UN—12AUG05



RXA0090197—UN—03AUG06

RW29387,00004CF-19-24MAR09-4/4

**Using ClimaTrak™ (ATC) —(If Equipped)**



**A—Blower Speed Control**  
**B—Temperature Set Control**  
**C—Air Flow Mode Control**

**D—LCD**  
**E—AUTO Blower Control Mode**

**F—Economy Mode ON/OFF Switch**  
**G—AUTO Air Flow Mode**

**System Control and Display Panel**

There are three controls and a LCD window on the right side console for ClimaTrak (ATC) system.

1. Blower Speed Control (A) with AUTO switch (E)
2. Temperature Set Control (B) with Economy switch (F)
3. Four position mode control (C) with AUTO switch (G)
  - Defog/Windshield
  - Dash
  - Defog/Dash/Floor
  - Floor

Ambient air temperature is displayed on the LCD (D). Upon adjustment of the temperature control knob and at tractor start up, the temperature set point (desired temperature) is displayed for 10 seconds. Ambient air temperature (obtained from sensor outside of cab at air inlet) is adjusted using a correction factor to minimize the effect of vehicle heat.

When the system is in automatic blower mode, a fan symbol and the word "AUTO" is displayed. When the A/C clutch may be engaged (not in economy mode), the snowflake symbol is displayed. Air flow mode is indicated

*ClimaTrak is a trademark of Deere & Company*

by an arrow pointing toward the feet, toward the chest, and a defog symbol. The word "AUTO" appears below the man when the system is in automatic air flow mode.

AUTO Air Flow mode selection is infinitely variable between defog, floor and floor/dash.

- Dash — Air is directed to cowl louvers.
- Floor — Air is directed to floor when defog is not needed.
- Defog — Air is directed to windshield to remove fogging problem.
- Defog/Dash/Floor — Variable settings to direct air flow as needed.

**IMPORTANT: Compressor requires lubrication to maintain sealing function to retain refrigerant. Start engine and run air conditioner once a month during seasonal storage time to let compressor circulate lubricant throughout system and recharge batteries.**

**IMPORTANT: If system is not cooling properly, turn air conditioning switch off to avoid possible compressor damage.**

RXA0060923—UN—04OCT02

RW29387,000023A-19-24MAR09-1/1

### Operating Windshield Wiper and Washer

Rotate knob (A) to activate four wiper positions:

- Off
- Intermittent
- Slow
- Fast

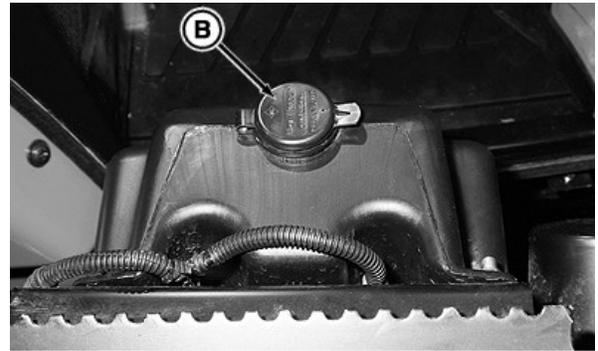
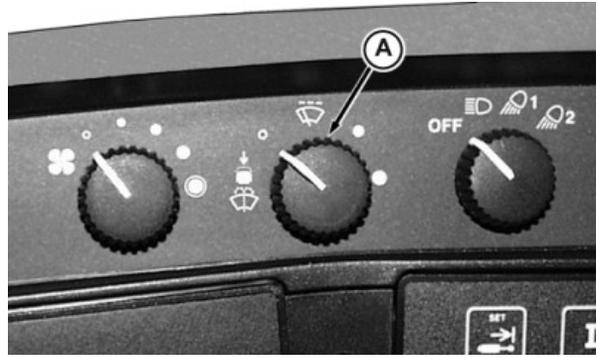
Push knob in to operate optional windshield washer.

Fill washer reservoir (B) with non-freezing windshield washer solvent.

*NOTE: Windshield washer nozzles can be adjusted by inserting a small pin into nozzle opening and rotating to desired position.*

**A**—Windshield Wiper Knob

**B**—Windshield Washer Reservoir



RW29387,000023C-19-05NOV07-1/1

### Operating Rear Windshield Wiper and Washer —If Equipped

Wiper/washer switch (A) has three positions:

- Off
- On
- Wash

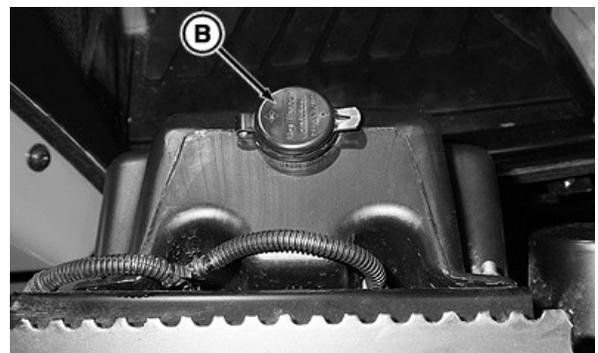
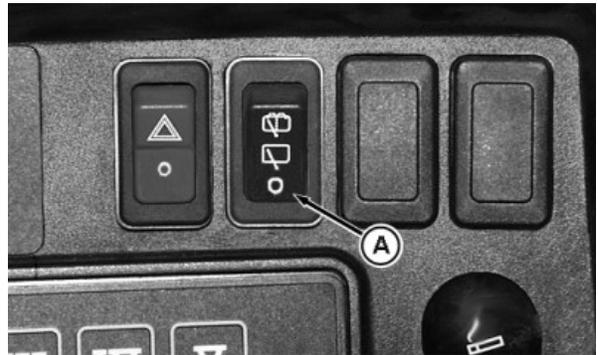
Push switch in to operate optional windshield washer.

Fill reservoir (B) with non-freezing windshield washer fluid. Reservoir is located on left frame, near cab platform.

*NOTE: Windshield washer nozzles can be adjusted by inserting a small pin into nozzle opening and rotate to desired position.*

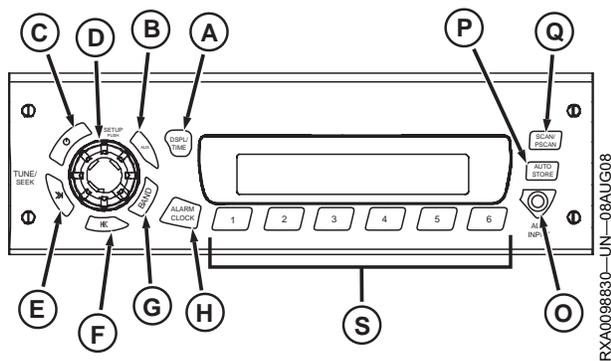
**A**—Wiper/Washer Switch

**B**—Washer Fluid Reservoir

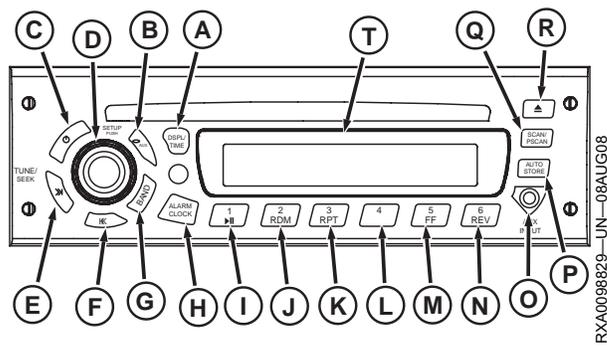


RW29387,00004D6-19-24MAR09-1/1

## Operating Radio With Or Without Compact Disc Player



Radio



Radio With Compact Disk

A—DISPLAY/TIME  
B—AUX  
C—ON/OFF  
D—SETUP  
E—Tune/Seek (+)

F—Tune/Seek (-)  
G—BAND  
H—ALARM CLOCK  
I—Pause/Play CD  
J—2 RDM

K—3 RPT  
L—Preset Stations  
M—5 FF  
N—6 REV  
O—AUX INPUT

P—AUTO STORE  
Q—SCAN/PSCAN  
R—Eject/CD Button  
S—Preset Stations (1—6)  
T—CD Slot

### Radio can be operated in any one of three modes;

1. Radio ON with tractor running.
2. Radio ON with tractor not running, but tractor ignition ON.
3. With tractor ignition OFF press radio power button, radio will play up to one hour, then shut off automatically.

### Operating Radio

Press On/Off (C) to turn radio on or off.

### Display change option to dwell on time or station frequency:

1. Press and hold DISPL/TIME (A) button for 3 seconds.
2. Observe slow flash on display.
3. Press selected preset station (S) or button #4 (L) for radios with compact disc.
4. Wait a three to five seconds, then toggle to dwell on time or station frequency.

Press BAND (G) to switch between AM, FM1, FM2, FM3 or WX (Weather) bands.

Press AUX (B) to play an external device like your iPod or MP3 player that is connected via auxiliary input jack on front of receiver.

Press SETUP (D) to adjust volume, bass, treble, fade, and balance by pressing and releasing SETUP button repeatedly until desired function appears on display. Rotate knob for adjustment. control volume/adjusts bass, treble, balance, fade, seek sensitivity, dim and speakers. Adjust brightness of display by pressing SETUP until "DIM" appears on display. Rotate knob to adjust.

**NOTE:** Quickly pressing the TUNE/SEEK causes radio to "tune" or search for the next higher or lower frequency and radio will stop on that frequency even if no station is there. Holding TUNE/SEEK button longer than half a second initiates the "seek" function. The "seek" function stops at the next higher/lower frequency with a strong radio signal and will stop at that station.

Press TUNE/SEEK (E or F) quickly to go to the next higher/lower frequency respectively. To switch to a radio station on the next higher/lower frequency, press TUNE/SEEK (E or F) respectively and hold briefly.

Press ALARM CLOCK (H) to enter alarm set mode.

Press AUX INPUT (O) for external audio devices.

Press AUTO STORE (P) to preset strongest stations.

Pressing SCAN/PSCAN (Q) quickly or "Scanning" results in locating next station. Pressing SCAN/PSCAN and holding more than half a second or "P-Scanning" results in locating next preset station. Scanning/P-Scanning will continue until SCAN/PSCAN is pressed again.

### Storing Preset Stations (S) or button #4 (L) for radios with compact disc:

1. Select FM1, FM2, FM3, AM or WX.
2. Tune to desired station.
3. Press and hold one of the six preset buttons (T) or button #4 (L) for radios with compact disc to store the selected station.
4. Repeat procedure for remaining preset buttons.

Press AUTO STORE (P) until "AUTO" and the "AS" icon appear to automatically store the six strongest stations of a selected band. Press AUTO again to restore original presets.

### Playing Preset Stations:

Press appropriate button 1-6.

**For radios with a CD player only:**

- Press Pause/Play (I) to pause CD. Repeat to play CD.
- Press RDM (J) to play CD tracks randomly.

- Pre RPT (K) to repeat same CD track until cancelled.
- Press Preset Stations (L) buttons 1-6.
- Press FF (M) to fast forward CD track.
- Press REV (N) to fast reverse CD track.
- Press Eject (R) to eject CD.

OURX935,0000458-19-08SEP09-2/2

**Setting Alarm And Clock**

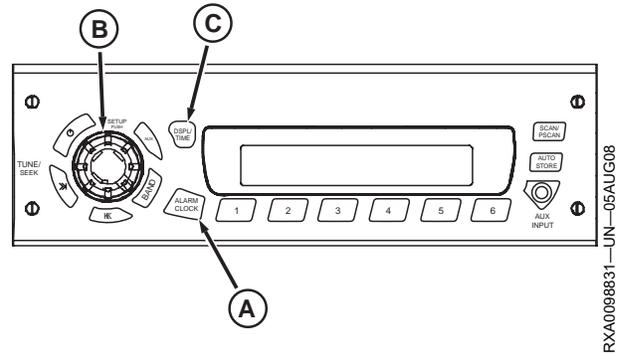
**Setting The Alarm**

1. With radio on, press and hold ALARM CLOCK (A) button until you see the "ALARM" icon and SET. The hour digits for alarm time will begin to flash.
2. Rotate SETUP (B) knob to change the hour. Rotate the knob clockwise to increase and counterclockwise to decrease the hour.
3. Press ALARM CLOCK button again until minutes digits flash.
4. Rotate SETUP knob to change minutes. Rotate the knob clockwise to increase and counterclockwise to decrease minutes.
5. Press ALARM CLOCK again until SET TONE appears on display.
6. Press ALARM button again until VOL appears on display. Press button again and you will hear alarm tone. Rotate SETUP knob clockwise to increase and counterclockwise to decrease volume.
7. Press ALARM CLOCK button again to finish and return display to normal operation. Alarm icon will appear on display to indicate that alarm is active.

*NOTE: If you do not press any button or rotate knob for 5 seconds during alarm set process, alarm clock setup will be cancelled and radio will return to normal operation, keeping whatever setting changes have been made.*

**Setting Clock**

1. Switch ignition to ON position.
2. Press and hold DSPL/TM SET (A) button until the "hours" and "minutes" digits flash and you hear a beep.
3. Press DSPL/TM SET (A) button again until "hours" digits flash.
4. Rotate SETUP (B) knob to change the hour. Rotate the knob clockwise to increase and counterclockwise to decrease the hour.
5. Press DSPL/TM SET button again until "minutes" digits flash.



Radio

**A—ALARM CLOCK**  
**B—SETUP**

**C—DSPL/TM SET**

6. Rotate SETUP knob to change minutes. Rotate the knob clockwise to increase and counterclockwise to decrease minutes.
7. Press DSPL/TM SET button again to complete time set procedure. Display will return to default display.

**Change display clock function to 12 or 24 hour mode.**

The 12 hour mode distinguishes between AM and PM and 24 hour mode operates as military time.

1. To change mode press and hold the "DSPL/TM SET" button until clock display digits begin to flash (approximately 2 seconds).
2. To change from 12 to 24 hour time format, press and release the number "5" preset station button. If pressed a second time, it will toggle back from 24 to 12 hour mode.
3. Wait 5 seconds without pushing any radio buttons for clock to return to regular operation.

OURX935,000045B-19-08SEP09-1/1

### Using Field Office—*If Equipped*

**IMPORTANT:** The field office is not intended to carry heavy objects or to be used as a seat.

Field office provides storage and electrical power source for on board electronic equipment. Lift pad (A) to access field office.

A—Field Office Pad



RW29387—UN—23OCT99

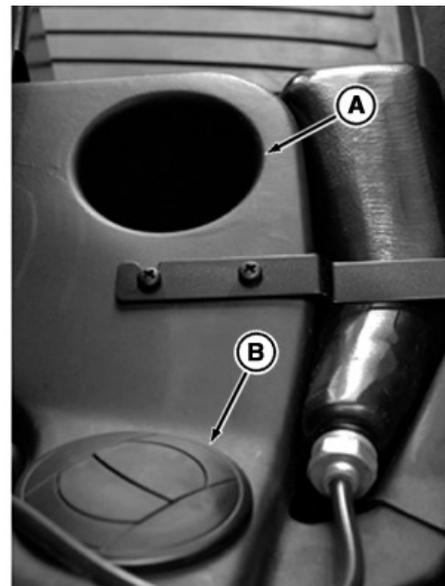
RW29387.0000244-19-06DEC05-1/1

### Beverage Cooler

Beverage cooler (A) is located in the air conditioning duct (B) located on the right-hand side of the seat.

A—Beverage Cooler

B—Air Conditioning Duct



RXA0090946—UN—12OCT06

RW29387.0000245-19-05OCT06-1/1

### Storage Drawer

Storage drawer (A) located underneath the seat provides an out-of-the way storage for tools, gloves and safety equipment.

A—Storage Drawer



RXA0073432—UN—09FEB04

RW29387.0000246-19-24MAR09-1/1

## Storage Tray

Storage tray (A) located left of the seat provides an out-of-the way area for gloves, tools and safety equipment.

**A—Storage Tray**



RXA0091149—UN—17OCT06

RW29387,000043B-19-24MAR09-1/1

## Pull-Down Sunshade—If Equipped

Pull-Down Sunshade (A) reduces glare when operating in bright sunlight. The pull-down sunshade allows operator flexibility in amount of window coverage.

**A—Pull-Down Sunshade**



RXA0073434—UN—09FEB04

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### Using Electric Rear View Mirror—*If Equipped*

Push switch (A) in the direction desired to adjust left or right outside rear view mirror (B).

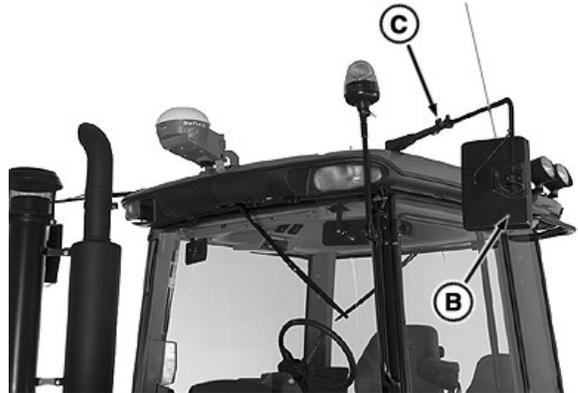
Loosen knob (C) to adjust distance of the mirror from cab.

A—Switch  
B—Mirror

C—Knob



RXA0063060—UN—17AUG05



RXA0084066—UN—19SEP05

RW29387.0000248-19-06DEC05-1/1

## Configuring Tractor For GPS/Radar

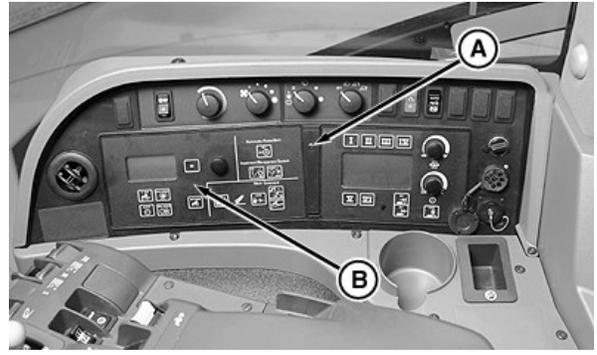
**Tractors equipped with radar** must be re-configured when switching to GPS receiver as the true ground speed input signal. To configure tractor:

1. Remove screw (A) and CommandCenter (B).
2. Inside right-hand console locate one wire lead marked "GPS" and one marked "Radar".
3. Remove radar plug (C) from wiring connector (E).
4. Remove GPS plug (D) from dust cap (F).
5. Install GPS plug into connector and radar plug into dust cap.
6. Install CommandCenter with previously removed screw.

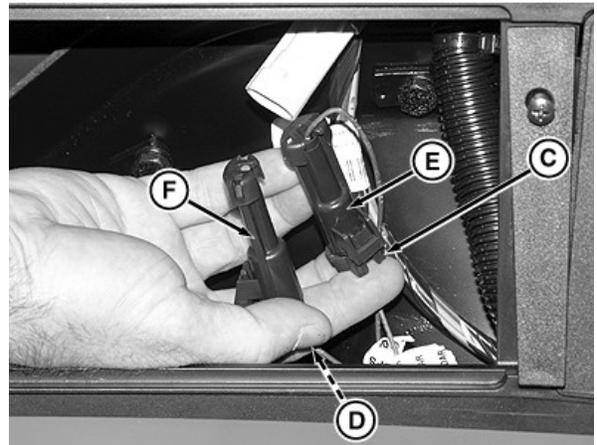
**Tractors not equipped with radar**, but wanting to add a GPS signal require two controller addresses to be changed. Contact your John Deere dealer for assistance.

A—Screw  
B—CommandCenter  
C—Radar Plug

D—GPS Plug  
E—Connector  
F—Dust Cap



Remove CommandCenter panel



Connect GPS

OURX935,00001D1-19-24MAR09-1/1

RXA0082000—UN—08JUL05

RXA0082002—UN—08JUL05

### GreenStar™ System Connections

Connect GreenStar Display (G) to bracket (E).

*NOTE: Brackets (C), (D), (E) and (F) can be adjusted to provide desired position for GreenStar Display Monitor.*

Install harness from display to bulk head connector (A).

*NOTE: See your John Deere dealer for wiring harnesses needed to connect to GSD4, GSD2100 and DSD2600 displays.*

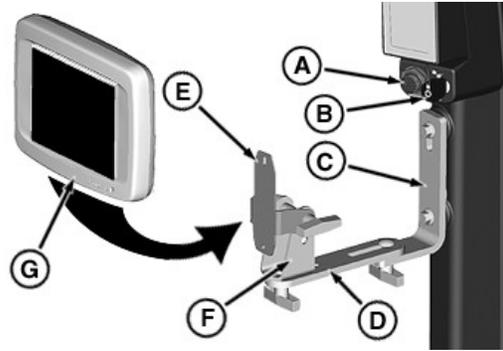
Connect StarFire connector (H) to StarFire receiver (I).

*NOTE: See your John Deere dealer for wiring harnesses needed to connect to StarFire receiver.*

Connect implement to tractor nine pin connector (K) at the rear of tractor.

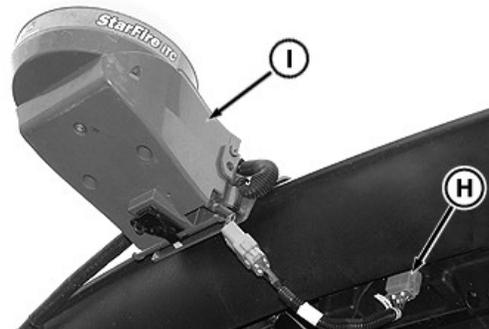
Push release (L) and pull handle (J) to open implement connector.

- |  |                                     |
|--|-------------------------------------|
| A—Bulk Head Connector for GSD4, GSD2100 and GSD2600 Displays | G—GreenStar Display (GSD2100 Shown) |
| B—True Ground Speed Connector                                | H—StarFire Receiver Connector       |
| C—Bracket  | I—StarFire Receiver                 |
| D—Bracket  | J—Handle                            |
| E—Bracket  | K—Implement Connector               |
| F—Bracket  | L—Release                           |



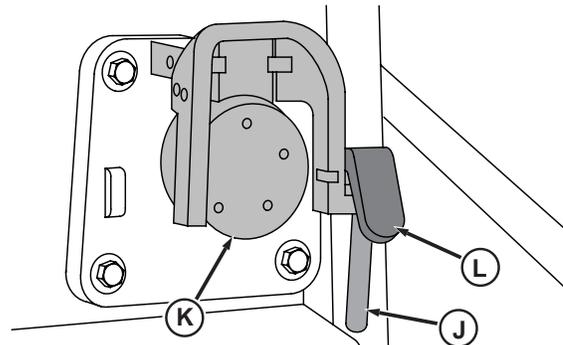
GreenStar Connections

RXA0086023—UN—20JAN06



Implement Connector

RXA0090480—UN—01DEC06

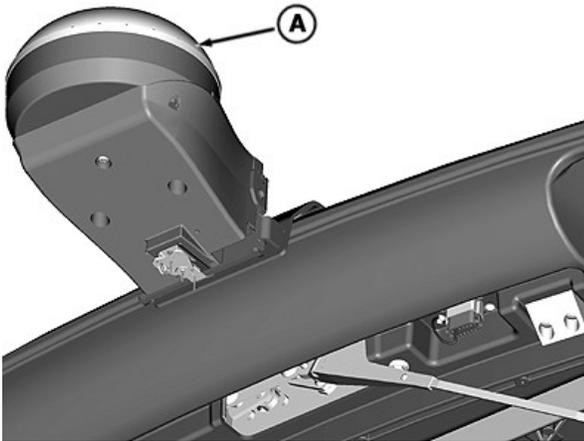


9 Pin Connector on Back of Tractor

RXA0086024—UN—20JAN06

RW29387,00004D3-19-24MAR09-1/1

**AutoTrac Assisted Steering System—(If Equipped)**



StarFire Receiver

RXA0084309—UN—26SEP05



GSD4 Display / Mobile Processor

RXA0084304—UN—26SEP05

**IMPORTANT: AutoTrac is NOT approved for scraper applications. AutoTrac can be installed on scraper tractors for use in agricultural applications.**

Refer to AutoTrac Operator's Manual for detailed instructions.

- AutoTrac system utilizes StarFire position receiver (A) and GreenStar display (B), (C) or (D) to assist operator in steering tractor.
- AutoTrac steers the vehicle on operator-defined paths through the field. Operator must turn vehicle at the end of each pass and to go around any field obstacles. Steering control is obtained by simply turning steering wheel.

A—Position Receiver  
B—GSD4 Display / Mobile Processor

C—GSD 2100 Display  
D—GSD 2600 Display



GSD 2100 Display

RXA0084308—UN—26SEP05



GSD 2600 Display

RXA0084306—UN—26SEP05

RW29387,00004D4-19-24MAR09-1/1

## GreenStar™ System Display

**IMPORTANT:** It is important to follow proper use guidelines with the GSD2600 touch screen. Under no circumstance should you contact the touch screen with an object harder or sharper than a fingertip (pen, pencil point, or any metal objects). Heavy pressure can also damage underlying components and void the touch screen warranty. Light amounts of pressure, if exerted continuously, can degrade touch screen reliability. The GSD2600 should be stored near room temperature during the off season with no items contacting the touchscreen surface.

The 2600 GreenStar™ display (A) is primarily used as an operator interface for AutoTrac™ and field applications. The display's primary navigational point is the touchscreen which allows the operator to input information by touching the screen. Its primary purpose is to display field productivity information. It has the capability to simultaneously display information from multiple point locations.

The 2600 GreenStar™ can be used in conjunction with other Ag Management Solution products such as GreenStar Guidance Parallel Tracking and AutoTrac Assisted Steering Systems and Field Doc. Setup and operation information for these programs can be found in their respective operator manuals.

The 2600 display has an integrated performance monitor

*GreenStar is a trademark of Deere & Company*  
*AutoTrac is a trademark of Deere & Company*



GSD 2600 Display

### A—GSD 2600 Display

that can be used to record area and other data based on implement width and ground speed.

From time to time, John Deere AMS publishes software updates to the GS2 system over the internet at [www.StellarSupport.com](http://www.StellarSupport.com). Each display also comes with a GS2 Live Update CD. Live Update can be installed on an internet connected PC and alert the user when updates to the display are available. It will then walk the user through the downloading process. The download can be stored on a data card, and inserted into the display to complete the update.

RXA0098810—UN—30JUL08

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### Using Implement Connector

Push release lever (A), open connector and insert implement connector (C). Connector latch (B) will be in raised position.

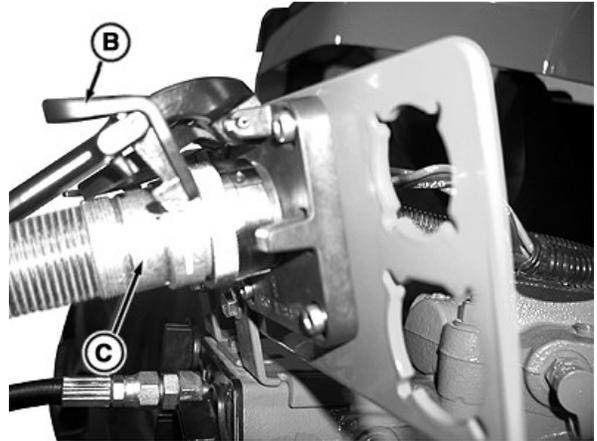
Lower latch until lever (D) is in latched position. This will prevent implement harness from being pulled out of connector.

A—Lever  
B—Latch

C—Implement Connector  
D—Lever



RXA0073943—UN—12MAR04



RXA0073947—UN—12MAR04



RXA0073945—UN—12MAR04

RW29387,000024A-19-24MAR09-1/1

### Using Electrical Outlets

**IMPORTANT: Diagnostic outlet (A) is only to be used by your John Deere Dealer. Other uses could damage the tractor's electronic components.**

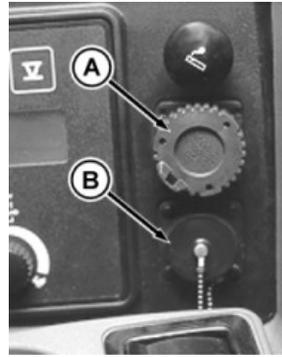
The 12-volt outlet (B) is used when connecting auxiliary equipment. An additional electrical outlet (C) is installed on left corner of the field office.

Pin (D) provides key switched power, pin (E) provides battery power (hot) and pin (F) is ground. Use auxiliary equipment installation instructions or see your John Deere Dealer.

*NOTE: Each outlet is protected by a 30-amp fuse.*

Remove storage tray of field office and locate wiring for additional cigarette-lighter type, 12-volt power sources. See your John Deere Dealer for parts.

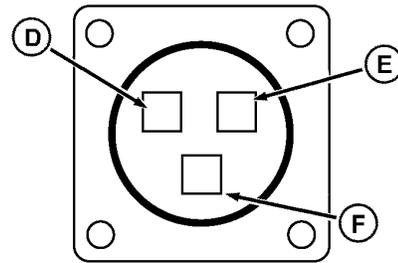
- |                             |                          |
|-----------------------------|--------------------------|
| A—Diagnostic Outlet         | D—Switched Power Circuit |
| B—Accessory Outlet          | E—Battery Circuit        |
| C—Optional Accessory Outlet | F—Ground                 |



RW26671—UN—25OCT99



RW26645—UN—21OCT99



RW26646—UN—21OCT99



RW56051—UN—21AUG96

RW29387,000024D-19-24MAR09-1/1

## Using Auxiliary Power Strip

**IMPORTANT: Power strip is not a surge suppressor. Electrical equipment with program memory requires protection from damage of electrical surges and spikes.**

The power strip (A) provides six outlets, of 12-volt power with grounds. This power is 30 amp switched and 30 amp unswitched. The connectors can be used when connecting auxiliary equipment.

Adapters plug directly into power strip as unswitched power. To change to switched power on cigarette lighter adapter or standard adapter (with three wires), remove small tab at end of slot on plug and rotate plug 180°.

*NOTE: The small white dot on adapter plug face next to the cap hinge indicates circuit is **unswitched**. If dot is opposite cap hinge, circuit is **switched**.*

Adapters are available from your John Deere Dealer for the following: cigarette lighter adapters, 3-way convenience adapters, and standard adapters.

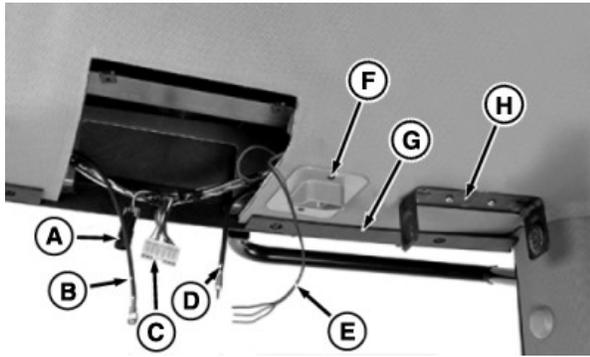
**A—Auxiliary Power Strip**



RXAC086509—UN—07FEB06

RW29387,000024E-19-24MAR09-1/1

### Installing Mobile Radio and Antenna



Mobile Radio/Antenna (Deluxe Cab)

RXA0078745—UN—27JAN05



Mobile Radio/Antenna (Deluxe Cab)

RW26640—UN—13OCT99

- A—Rotary Beacon Connector
- B—Mobile Radio Antenna
- C—AM/FM Connector
- D—AM/FM Antenna

- E—Mobile Radio Power Leads
- F—Console Light
- G—Roof Trim
- H—Mobile Radio Bracket

**CAUTION:** Under no circumstances should mobile 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.

**IMPORTANT:** Avoid possible interference of tractor electronics by keeping radio, power and antenna cables close to the cab roof.

**CAUTION:** Prevent possible personal injury. Disconnect battery ground cable before any electrical repair.

*NOTE:* Only tractors ordered mobile radio ready from factory have mounting plate, antenna cable, and antenna included. For tractors not ordered mobile radio ready, see your John Deere dealer. For tractors that are mobile radio ready, follow installation steps below.

Remove existing entertainment radio bezel to gain access to power leads (E) and antenna cable (B).

Power leads are pre-installed, locate red wire #272 for switch operation. Should radio operation require battery power at all times, use red wire #262. Black wire is mobile radio ground.

Connect antenna cable to radio. Remove rain cap on outer roof and attach non-ground plane type antenna to the mount. Antenna mount is 1-1/8 in. - 24 thread. The cable connector for radio is a PL259 type. Adapters are available through radio equipment suppliers.

*NOTE:* Antenna should be trimmed to appropriate variable standing wave ratio (VSWR). A professional installer is recommended.

Install the radio bezel after the mobile radio cable and wires are routed.

RW29387,00004D5-19-24MAR09-1/1

## Using Monitor Mounts

Monitor mounting points are used to connect implement monitors to the cab.

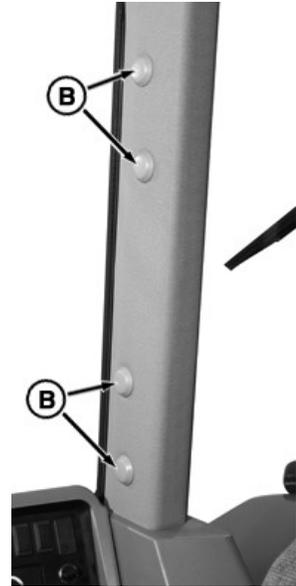
### Mounting Locations

- A—Corner Post Display
- B—Rear Cab Post
- C—Side Console



RXA0090652—UN—31AUG06

Corner Post



RXA0090654—UN—31AUG06

Rear Cab Post



RXA0090650—UN—31AUG06

Side Console

RW29387,0000251-19-30AUG06-1/1

# Break-In Period

## Break-In Check—First 100 Hours

*NOTE: The initial break-in service interval of a new or rebuilt wet sleeve engine with Break-In Plus must go at least 100 hours to assure the 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 maximum service interval is the same as the service interval recommendations listed in Engine Oil and Filter Service Intervals (Fuels, Lubricants and Coolant Section of this Operator's Manual) for your engine. To confirm the engine type with which your tractor is equipped, see Identification Numbers – Record Engine Number in this Operator's Manual. Then, use your tractor's model number and engine type to select proper Engine Oil and Filter Service Intervals specifications.*

*For subsequent oil changes, see Engine Oil and Filter Service Intervals for your engine located in the Fuels, Lubricants, and Coolant Section of this Operator's Manual.*

Engine is ready for normal operation.

During the **first 100 HOURS** observe the following:

**IMPORTANT: John Deere Break-in 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.**

- Tighten wheel and axle bolts after 3 hours and after 10 hours of operation, or every 2 hours under severe conditions. Continue to tighten to specified torque daily during the first week of operation. (See Wheels, Tires, and Treads Section.)
- Perform daily or 10 hour service. (See Maintenance and Service Intervals Section.)
- Check engine oil level and coolant level more frequently.
- Avoid prolonged periods of engine idling or sustained maximum load operation. If engine will idle longer than 5 minutes, stop engine.
- Watch coolant temperature closely.
- Check engine air intake system hoses and hose clamps for tightness.
- Check for leaks.

RX32825.00001CB-19-05JAN11-1/1

## Break-In Check—After First 100 Hours

**IMPORTANT: Refill with John Deere Break-in Oil for an additional 100 hours, if tractor is used under light load conditions during first 100 hours.**

- Change engine oil and filter
- Change fuel pre-filter

- Change transmission/axle filters
- Change hydraulic oil filter
- Inspect and clean hydraulic oil reservoir screen

*NOTE: Reset service hours to zero after service.*

RW29387.0000253-19-07OCT08-1/1

# Operating the Engine

## Engine Fuel System and Power Rating

### Fuel System

**IMPORTANT:** Modification or alteration of the injection system will terminate the warranty to the purchaser.

Do not attempt to service injection system. Special training and special tools are required. See your John Deere Dealer.

### Engine Certification/Power Rating

The kW (hp) rating on the engine emissions certification label specifies the gross engine kW (hp), which is flywheel power without fan. In most applications this will not be the same rating as the advertised tractor kW (hp) rating.

RW29387,0000254-19-06DEC05-1/1

## Starting the Engine

### ⚠ CAUTION:

Avoid the possibility of personal injury or death:

- Be sure everyone is clear of tractor and attached equipment.
- Start engine **ONLY** from the operator seat.
- Do not start engine by shorting across starter terminals. Tractor may start in gear if normal circuitry is bypassed.
- Engine starting with shift lever in gear indicates a malfunction of the starting circuit. Repairs should be made immediately by your John Deere Dealer.

Make sure:

- Transmission shift lever is in PARK position (18-Speed Powershift Transmission)
- Range lever is in PARK and gear shift lever is in NEUTRAL position (24 Speed Transmission)
- SCV levers are in NEUTRAL position
- PTO is disengaged
- Hand throttle is in low idle position
- Depress brake and clutch pedals.
- Sound horn

**IMPORTANT:** Avoid starter damage. Do not operate starter more than 30 seconds. Wait at least two minutes before trying again.



A—Ignition Key Switch

*NOTE:* Use of starter fluid is recommended when starting tractor at or below  $-6^{\circ}\text{C}$  ( $21^{\circ}\text{F}$ ).

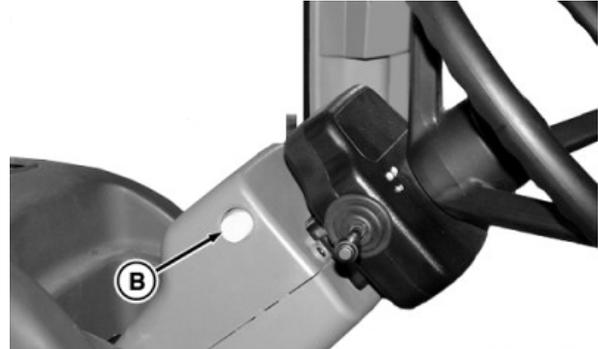
Turn ignition key (A) to engage starter. Release key when engine starts.

*NOTE:* Engine speed will be limited in extreme cold until engine operating temperature is reached.

On-board electronics may require slightly longer cranking times during engine startup.

RW29387,0000255-19-22MAY07-1/1

### Cold Weather Starting—Starting Fluid



A—Ignition Key Switch

B—Ether Switch

**CAUTION:** Avoid personal injury and damage to the engine. Inject fluid only while engine is turning. Follow safety information on the container. Do not carry starting fluid cans inside cab.

**CAUTION:** Starting fluid is extremely flammable. While using this product do not smoke and extinguish all flames. Turn off all pilot lights, stoves, heaters, electrical motors and other sources of ignition while using this product and/or vapors are still present. Avoid contact of aerosol with battery terminals, solenoid, or other electrical/electronic components. Do not overuse this product. Keep cap on container and store in cool location when not in use.

Turn ignition key (A) and press ether switch (B) once starter has engaged. Release the key after engine starts.

Hold ether switch for two or three seconds after engine starts. Repeat this step until engine runs without faltering.

**IMPORTANT:** Idle the engine at approximately 1200 rpm with no load for one to two minutes to assure adequate lubrication. Do not operate under full load until engine has reached normal operating temperature.

RW29387,0000256-19-22NOV06-1/1

### Cold Weather Starting And Operation— Internal Starting Aid

The internal starting aid alters fuel injection timing to enhance starting. Operating time of the starting aid is dependent upon coolant temperature and throttle position.

Use the following procedure:

Put throttle (A) in **SLOW IDLE** (900 rpm) position.

Avoid unnecessary engine idling. Operate at minimum of 1200 rpm if idling longer than three minutes.

Start engine. Leave throttle in slow idle position.

#### Operating Characteristics:

- Operating cycle time is ten minutes (9230).
- Operating cycle time varies from 3—30 seconds depending on temperature after engine is started (9330, 9430, 9530 and 9630).
- Moving throttle from the slow idle position will cancel starting aid cycle.
- Engine may run rougher and have increased diesel knock after the end of starting aid cycle. **This is normal.** Engine will run smoother as engine temperature increases.

#### 18-Speed Powershift Transmission Cold Weather Operating Characteristics

- When temperature is -10 °C (14°F) or lower it may take one minute to get the park brake released with operator



RFXA0091621—JUN—30NOV06

#### A—Throttle

- in the seat and transmission into gear. Several shifts between PARK and NEUTRAL may be required.
- When temperature is -10 °C (14°F) or above it may take 3 seconds to get the park brake released with operator in the seat.
- When shift lever is moved to NEUTRAL the corner post display will show “N” for three seconds. If park brake does not release “N” will change back to “P”. Move shift lever back to PARK then back to NEUTRAL until “N” displays more than three seconds.
- During cold weather starting, transmission will not shift into 14F through 18F speeds until normal operating temperature has been reached. Delayed shifting, slow hydraulic operation, hard steering, and limited engine rpm may also be noticeable until operating temperature is obtained.

RW29387,0000257-19-29OCT07-1/1

### Using Auxiliary Heaters—If Equipped

**⚠ CAUTION:** Avoid electrical shock or fire. Use a three-wire, 14 AWG (14 gauge), heavy-duty electrical cord with 15-amp rating, suitable for outdoor use. Always plug electrical cord into an outlet protected by GFI (ground fault interrupter).

Auxiliary heater is available from your John Deere Dealer:

- Engine Coolant Heater (1000 W)

Connect the heater and the ground fault interrupter to a ground fault protected 110-volt electrical outlet.

RW29387,0000258-19-29OCT07-1/1

## Operating the Engine

Working speeds down to 1500 rpm are suitable at reduced throttle and light load conditions.

Under full throttle and full load conditions, engine should **not** run continuously below 1800 rpm.

### Idling the Engine:

Avoid unnecessary engine idling. Operate at minimum of 1200 rpm if idling longer than three minutes.

### Restarting Stalled Engine:

Restart stalled engine **IMMEDIATELY** to prevent excessive heat buildup.

### Stopping the Engine:

- Stop tractor and pull throttle back to slow idle position
- Put gear shift lever in PARK position (A)
- Lower all equipment to the ground
- Make sure SCV levers are in NEUTRAL position



A—PARK Position

**CAUTION:** Remove ignition switch key to prevent accidents.

Turn ignition key to **OFF** position and remove key.

RXA0090476—UN—25AUG06

OU1092A.000020E-19-19OCT07-1/1

### Changing Starting Fluid Cans

**⚠ CAUTION:** Do not use starting fluid near fire, sparks, or flames. Read the caution information on the container. Protect container against damage. Do not carry starting fluid cans inside cab.

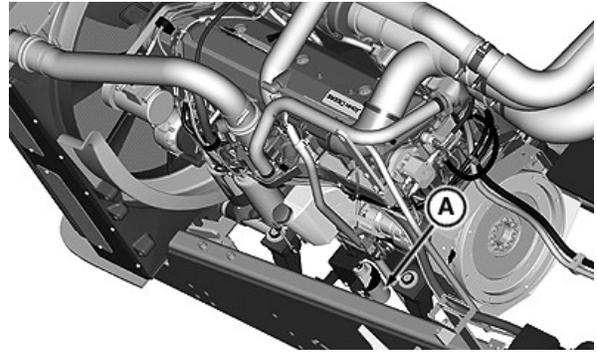
Starting fluid canister (A) is located on left side frame behind front engine mount.

Remove safety cap and plastic spray nozzle from new can.

Loosen canister holder to remove old can. Make sure seal remains in canister and is not stuck on old can.

Install new can and tighten canister holder.

**IMPORTANT:** Avoid drawing dust into engine. Always keep a starting fluid can in position, or clean bottom of canister holder and install bottom side up.



Starting Fluid Can

A—Canister Holder

RXA0091605—UN—21NOV06

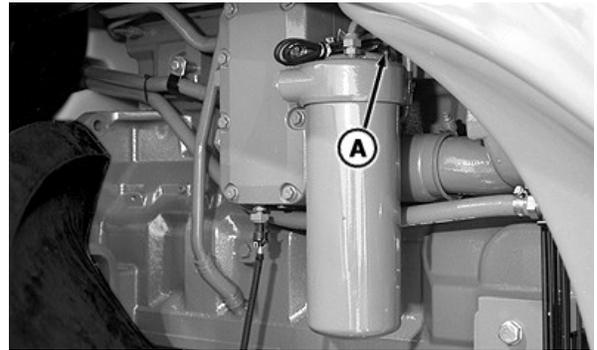
RW29387,000025A-19-27MAR07-1/1

### Using Engine Coolant Heater

**⚠ CAUTION:** To avoid electrical shock or fire, use 3-wire, 14 AWG (14 gauge), heavy-duty electrical cord with 15-amp rating, suitable for outdoor use. Always plug electrical cord into a ground fault protected, 110-volt outlet.

Connect the heater plug (A) to a ground fault protected 110-volt electrical outlet.

*NOTE: Extremely cold weather may require 1—2 hours to heat engine.*



RXA0090695—UN—06SEP06

RW29387,000025B-19-04JUN07-1/1

### Using a Booster Battery or Charger

**⚠ CAUTION:** Gas given off by batteries is explosive. Keep sparks and flames away from batteries. Before connecting or disconnecting a battery charger, turn charger OFF. Make last connection and first disconnection at a point away from batteries.

**IMPORTANT:** Be sure polarity is correct before making connections. Reversed polarity will damage electrical system and can cause battery to explode.

If two or more booster batteries are used, they must be connected in parallel ensuring booster batteries are producing a 12 volt charge.

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.



TS204—UN—15APR13

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

Continued on next page

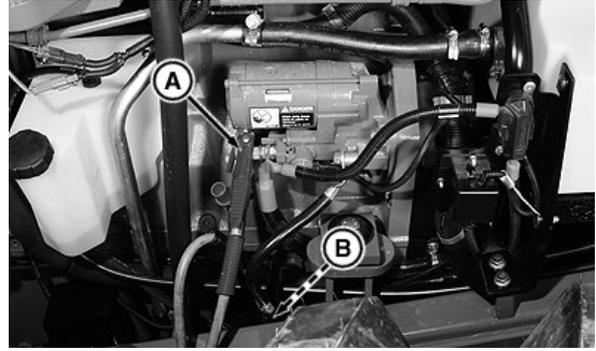
RW29387,000025C-19-03APR07-1/3

### Booster Battery

1. Attach one end of cable (red) to the remote positive terminal (A) of the starter. Attach the other end of the cable (red) to the positive terminal of booster battery.
2. Attach one end of the second cable (black) to negative terminal of booster battery. Attach the other end of the cable (black) to the battery ground (B) at tractor frame.
3. Remove ground cable (B) first when disconnecting.

A—Positive Terminal

B—Negative Terminal



RXA0093323—UN—03APR07

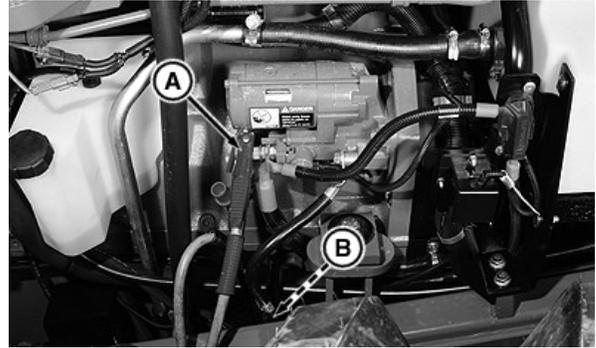
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### Battery Charger

1. Attach positive charger lead to positive remote terminal (A) with charger in OFF position. Attach negative charger lead to negative ground (B) at tractor frame, away from batteries.
2. Switch charger to ON position and charge battery according to charger manufacturers instructions.
3. Switch charger to OFF position. Remove negative charger lead first, then positive lead.

A—Positive Terminal

B—Negative Terminal



RXA0093323—UN—03APR07

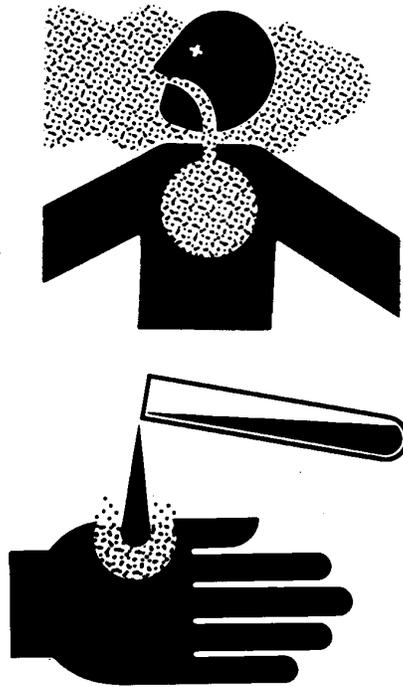
RW29387,000025C-19-03APR07-3/3

# Operating the Tractor

## Avoid Contact With Pesticides

**⚠ CAUTION: This enclosed cab does not protect against inhaling harmful pesticides.**

1. When operating in an environment where harmful 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.



TS220—UN—15APR13

TS272—UN—23AUG88

RW29387,000025D-19-18OCT10-1/1

## Clean Vehicle of Hazardous Pesticides

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

When exposed to hazardous pesticides, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

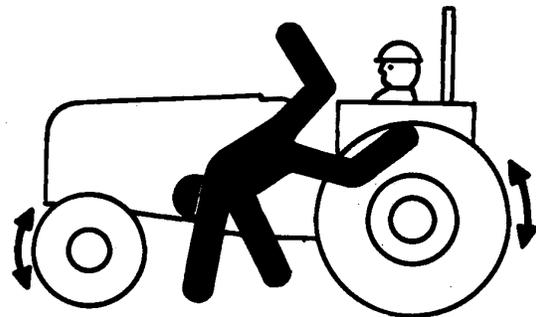
1. Sweep or vacuum the floor of cab.
2. Clean headliners and inside cowlings of cab.
3. Wash entire exterior of vehicle.
4. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

DX,CABS2-19-24JUL01-1/1

## Keep Riders Off Machine

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

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



TS290—UN—23AUG88

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

### Using Emergency Exit

The rear window (A) provides a large exit path if the cab door is blocked in an emergency situation.

Unlatch rear window and push open.

A—Rear Window



RXA0082906—UN—17AUG05

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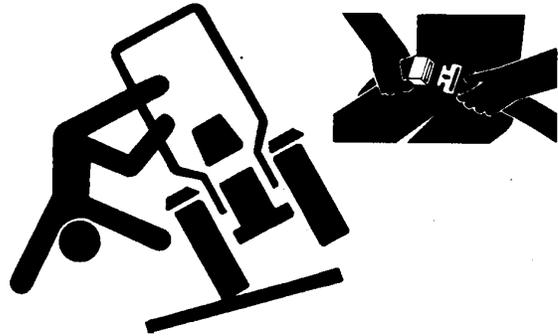
### Using Seat Belts

**CAUTION:**  
Minimize chance of possible injury from an accident. Use a seat belt (A) when operating the tractor.

Use seat belt when operating the tractor.

Inspect seat belt and mounting hardware annually. (See General Maintenance and Inspection Section.)

A—Seat Belt



TS205—UN—29AUG88



RXA0051629—UN—01MAR01

RW29387.0000260-19-15NOV07-1/1

### Using Instructional Seat—If Equipped

**⚠ CAUTION:** This instructional seat has been provided only for training operators or diagnosing machine problems. Keep all other riders off the tractor and equipment. Always wear seat belt (A).

A—Seat Belt



RW29387,0000261-19-06DEC05-1/1

### Standard Hydraulic System Warm-Up

Avoid operating the tractor under load until hydraulic system has warmed up.

Install jumper hose (A) into SCV I coupler.

Shift transmission to PARK position and operate engine at 1500 rpm.

On the TouchSet panel, push SCV I button (B). Turn time control knob (E) clockwise until "C" (continuous) is displayed.

On the CommandARM, place SCV I lever (F) in extend position.

On the TouchSet panel, push SCV II button (C). Rotate time control knob clockwise until "C" (continuous) is displayed.

On the CommandARM, place SCV II lever (G) in extend position.

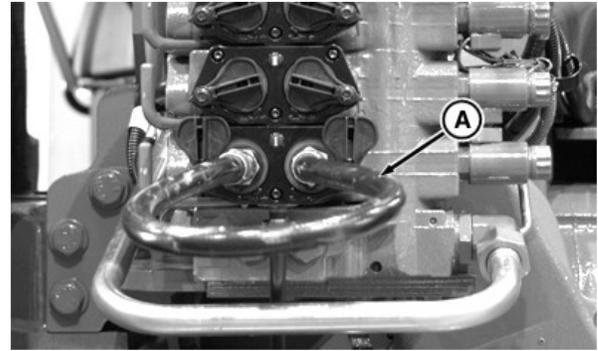
On the TouchSet panel, select SCV I and turn oil flow rate knob (D) until engine is slightly loaded (approximately 7.0—7.2).

Return SCV I and II levers to neutral position, after the hydraulic system has warmed up.

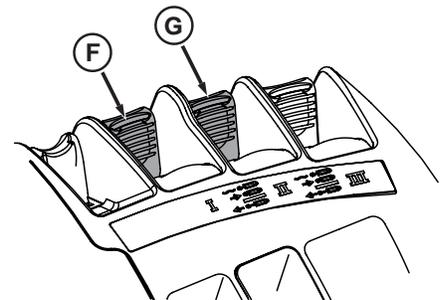
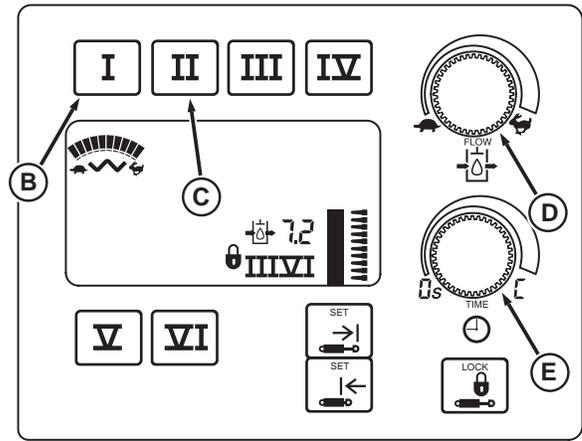
**NOTE:** Hydraulic oil warm-up temperature of 50°C (122°F) is recommended for continuous use applications, such as air seeders. Check hydraulic oil temperature using CommandCenter bottom half display.

- A—Jumper Hose
- B—SCV I Switch
- C—SCV II Switch
- D—Oil Flow Rate Knob

- E—Time Control Knob
- F—SCV I Lever
- G—SCV II Lever



Jumper Hose



CommandARM

RXA0071108—UN—29SEP03

RXA0080647—UN—13JUN05

RXA0083192—UN—09AUG05

RW29387.0000262-19-03APR07-1/1

## High Flow Hydraulic System Warm-Up

Avoid operating the tractor under load until hydraulic system has warmed up.

Install jumper hose (A) into SCV I coupler.

Shift transmission to PARK position and operate engine at 1500 rpm.

On the TouchSet panel, push SCV I button (B). Turn time control knob (E) clockwise until "C" (continuous) is displayed.

On the CommandARM, place SCV I lever (F) in extend position.

On the TouchSet panel, push SCV II button (C). Rotate time control knob clockwise until "C" (continuous) is displayed.

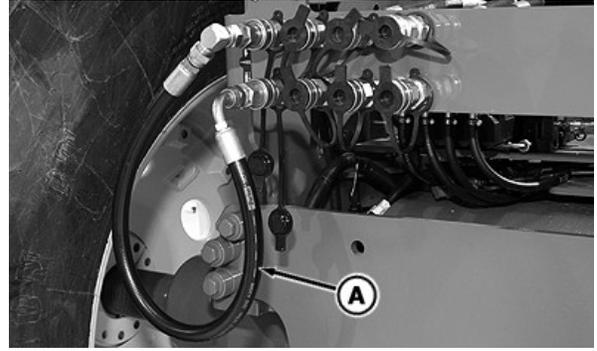
On the CommandARM, place SCV II lever (G) in extend position.

On the TouchSet panel, select SCV I and turn oil flow rate knob (D) until engine is slightly loaded (approximately 7.0—7.2).

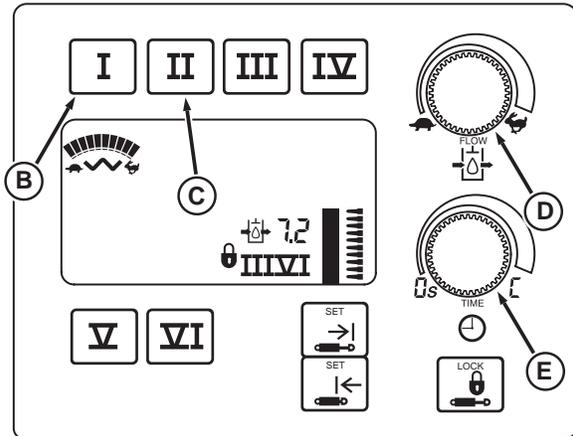
Return SCV I and II controls to neutral position after transmission-hydraulic system has warmed up.

**NOTE:** Hydraulic oil warm-up temperature of 50°C (122°F) is recommended. Check hydraulic oil temperature using CommandCenter bottom half display.

- |                      |                     |
|----------------------|---------------------|
| A—Jumper Hose        | E—Time Control Knob |
| B—SCV I Switch       | F—SCV I Lever       |
| C—SCV II Switch      | G—SCV II Lever      |
| D—Oil Flow Rate Knob |                     |

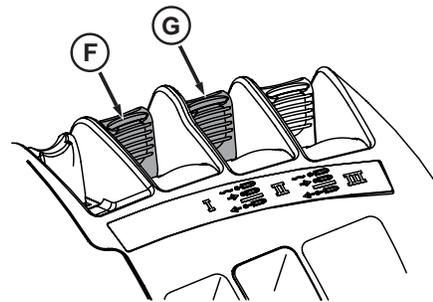


RXA0094303—UN—25MAY07



RXA0080647—UN—13JUN05

TouchSet Panel



CommandARM

RXA0083192—UN—09AUG05

RW29387,00002D-19-05NOV07-1/1

### Drive Train Protection—9430, 9530 and 9630

**NOTE:** Drive train protection system only affects operations in gears with maximum operating speeds below 7 km/h (4.4 mph).

When tractor is loaded to a very low engine speed, the PowerShift transmission may default to NEUTRAL, then PARK will engage once wheel speed drops below 4 km/h (2.5 mph) for drivetrain protection.

To engage transmission, move PowerShift transmission lever to PARK, reduce load, and then shift back into desired operating gear.

A PTP Diagnostic code will be stored and displayed when this condition occurs.

The drivetrain protection system is gear-sensitive and will not be apparent in most situations. It does not affect load starting and only affects operations in gears with maximum operating speeds below 7 km/h (4.4 mph). Full engine

horsepower, plus 10 percent power bulge is available in all other gears. With proper ballast, 4WD tractor is traction limited not power limited, at slow ground speeds.

Electronic engine controls provide protection from drive train overloading. Engine horsepower is automatically reduced to protect drive train components when:

- Air Filter Restriction Warning is activated (CCU 000107.00) the engine performance will be reduced. Service engine air filter immediately.
- Fuel filter(s) become plugged resulting in a loss of power due to a reduction in delivered fuel. Service engine fuel filter immediately.
- See your John Deere Dealer for more details.

Gear	9430 Power	9530 Power	9630 Power
6	425 hp (317 kW)	475 hp (354 kW)	530 hp (395 kW)
5	425 hp (317 kW)	475 hp (354 kW)	500 hp (373 kW)
4	400 hp (298 kW)	450 hp (336 kW)	475 hp (354 kW)
3	375 hp (280 kW)	425 hp (317 kW)	450 hp (336 kW)
2	375 hp (280 kW)	425 hp (317 kW)	425 hp (317 kW)
1	375 hp (280 kW)	425 hp (317 kW)	425 hp (317 kW)

OU1092A,00001CD-19-01MAY08-1/1

### Transmission Operation

**CAUTION:** Avoid personal injury or damage to the tractor. If the engine starts with the shift lever in gear, there is a malfunction of the starting circuit. Repair should be done immediately by your John Deere Dealer.

**IMPORTANT:** Prevent transmission or clutch damage:

- Never rest foot on the clutch pedal while tractor is moving
- Do not allow tractor to coast by disengaging clutch or shifting transmission into NEUTRAL position

- Never attempt to start tractor by towing or pushing
- Always stop tractor completely before shifting transmission to PARK position or NEUTRAL position
- Avoid excessive ballast
- Avoid continuous operation under full throttle and full load conditions below 1800 rpm

Optimum engine speed is 1800—2100 rpm in normal working conditions. Using a higher gear and lower engine speed for light load operation saves fuel and reduces wear. Under full load conditions, use full throttle engine speed.

RW29387,0000265-19-06DEC05-1/1

## Operating the 18-Speed Powershift Transmission



RXA0090479—LUN—28FEB07



RXA0090476—LUN—25AUG06

A—Transmission Shift Lever

**CAUTION:** Avoid personal injury or damage to the tractor. If the engine starts with the shift lever in gear, there is a malfunction of the starting circuit. Repair should be made immediately by your John Deere Dealer.

**IMPORTANT:** Prevent transmission or clutch damage:

- Never depress clutch pedal while tractor is rolling downhill or coasting as transmission over-speed and reduced lubrication will occur and serious transmission damage may result
- Never attempt to start tractor by towing or pushing
- Stop tractor completely before shifting transmission to PARK position
- Avoid excessive ballast
- Avoid continuous operation under full throttle and full load conditions below 1800 rpm

Transmission is shifted using lever (A) on the armrest control.

Transmission can be shifted, without use of clutch pedal, either into a forward or reverse direction.

Clutch pedal allows operator maximum manual control of modulation for ease of connecting to implements, operating in confined areas or slow movement of tractor during

precise maneuvers. Depress clutch pedal to preselect a forward or reverse "command" gear.

When shift lever is moved to NEUTRAL position, the park brake will release and the corner post display will show the pre-selected forward or reverse gear and the letter "N" for NEUTRAL. When lever is in forward or reverse, the display will show an "F" or an "R" along with the "commanded" gear.

Engine will only start with shift lever (A) in PARK or NEUTRAL position. Shifts are made one at a time by "bumping" lever. Pushing and holding lever or pulling and holding lever will result in continuous up or down shifts.

*NOTE: Operator presence safety device is built into the seat to prevent shifting into gear unless operator is in the seat or the clutch pedal is depressed.*

*NOTE: When tractor is loaded to a very low engine speed, the PowerShift transmission may default to NEUTRAL, then PARK will engage once wheel speed drops below 4 km/h (2.5 mph) for drivetrain protection.*

*To engage transmission, move PowerShift transmission lever to PARK, reduce load, and then shift back into desired operating gear.*

*A PTP Diagnostic code will be stored and displayed when this condition occurs.*

RW29387,0000268-19-09MAR09-1/1

## Shifting the Transmission—18-Speed Powershift

### Shift Lever Positions

**PARK** — Rear slot (A)—Park brake applied when lever is fully forward in slot.

**Reverse** — Center slot (B)— Tractor will begin moving rearward when lever enters this slot. Push lever forward for downshifts and pull rearward for upshifts.

**Forward** — Front slot (C)—Tractor will begin moving forward when lever enters this slot. Push lever forward for upshifts and pull rearward for downshifts.

**NOTE:** Transmission is in NEUTRAL position whenever shift lever is not in PARK, forward or reverse positions.

### "Command" Gears

**NOTE:** Optimum engine speed is 1500—2200 rpm in normal working conditions. Using a higher gear and lower engine speed for light load operation saves fuel and reduces wear. Under full load conditions, use full throttle engine speed.

Each time transmission enters the forward or reverse section of the shift pattern, transmission will start in the "command" gear, shown on corner post display.

Transmission will start out in 7F and 2R after engine is started. These are the default "command" gears. Start-up default "command" gears may be changed from 1-13 in forward and 1-3 in reverse. See Setting Start Gear in this section.

Once placed in Forward or Reverse, the "command" gear changes to the last gear of operation before shifting to NEUTRAL.

The initial "command" gear can also be changed prior to initiating motion to match the operation.

Forward Gear between 1 and 13 may be preselected by depressing clutch pedal and pushing or pulling shift lever until desired "command" gear is displayed.

Reverse Gear between 1 and 3 may be preselected by depressing clutch pedal and pulling or pushing shift lever until desired "command" gear is displayed.

Transmission will start out in preselected forward or reverse gear when clutch pedal is released.

### Cold Weather Starting

When temperature is -10 °C (14°F) or lower it may take one minute to get the park brake released with operator in the seat and transmission into gear. Several shifts between PARK and NEUTRAL may be required.

When temperature is -10 °C (14°F) or above it may take 3 seconds to get the park brake released with operator in the seat.

When shift lever is moved to NEUTRAL the corner post



A—PARK  
B—Reverse Gears

C—Forward Gears

RXA0090477—UN—25AUG06

display will show "N" for three seconds. If park brake does not release "N" will change back to "P". Move shift lever back to PARK then back to NEUTRAL until "N" displays more than three seconds.

During cold weather starting, transmission will not shift into 14F through 18F speeds until normal operating temperature has been reached. Delayed shifting, slow hydraulic operation, hard steering, and limited engine rpm may also be noticeable until operating temperature is obtained.

### Shifting From Reverse

The highest forward gear the transmission will automatically shift to is 11F, when shifting from reverse. For example, if transmission is in 13F and is shifted to reverse, and then back to forward, transmission will automatically shift to 11F.

However, if transmission is in 13F or higher and tractor is stopped by using the clutch or shifting to NEUTRAL and not shifted through reverse, transmission will be in 13F when shifted forward again.

### Shifting—Without Using Clutch Pedal

**Gear-to-Gear** — Hold lever to shift up or down to selected gear. Transmission will shift one gear at a time until lever is released.

**Gear-to-Gear** — "Bump" lever to quickly shift up or down to selected gear. Transmission will skip gears, if lever is moved faster than transmission can shift.

### Shifting—Using Clutch Pedal

**IMPORTANT:** Clutch pedal must be fully depressed to completely disengage clutch for correct operation.

**Gear-to-Gear** — Hold lever to shift up or down until desired gear is displayed. Transmission will go into "commanded" gear when clutch pedal is released.

**Gear-to-Gear** — "Bump" lever to quickly shift up or down until desired gear is displayed. Transmission will go into "commanded" gear when clutch pedal is released.

Continued on next page

RW29387.0000269-19-09MAR09-2/1

**Rapid Shift**

When tractor is in light load condition, such as transport, transmission can be shifted very fast by rapidly "bumping" shift lever to reach transport speed quickly.

To reach transport speed quickly, depress clutch pedal and rapidly "bump" shift lever to 13F. Transmission will shift directly to 13F when clutch is released. Once tractor is underway in 13F, "bump" shift lever to 18F.

**Double Shift**

Transmission, under load, can be made to shift two gears at a time when operating in gears 5F—12F by double "bumping" shift lever to slow down or speed up when making headland turns. A double "bump" down shift is also useful in field operation when hitting a "tough" spot.

**Shuttle Shifting (Direction Change)**

Moving shift lever between Forward and Reverse slots causes transmission to modulate directly to opposite direction of travel without clutching or braking.

Shuttle shift occurs between last "commanded" forward and reverse gears.

Shuttle shifting can be performed between gears 11th Forward and 6th Reverse.

**IMPORTANT: This method is not recommended when connecting tractor to implements.**

**Ground Speed Matching**

**CAUTION: Avoid possible accident and injury from loss of vehicle control. Never coast down hill.**

Transmission will match ground speed as clutch is released after tractor slows when clutch pedal is depressed at speeds greater than 13F.

Transmission will not match ground speeds as clutch is released after tractor slows when clutch pedal is depressed at speeds below 13F. Transmission will remain in 13F even if tractor comes to complete stop.

Transmission will not up shift to match ground speed as clutch is released, if tractor speeds up while clutch pedal is depressed.

RW29387,0000269-19-09MAR09-1/1

**Setting Startup Gear**

Press Setting Switch (A).

Display will read:

- English—Translation (if applies)
- Implement Sel—Implement Sel
- RPTO Engage (If Equipped)—RPTO Engage
- Transmission—Transmission
- Decel Switch—Decel Switch

Using Command Dial (B), scroll down to **Transmission**, then press Select Switch (C).

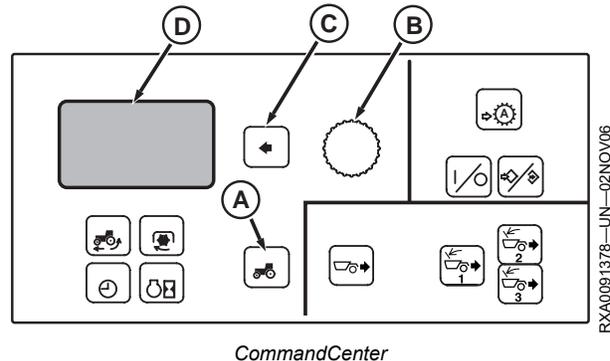
Display will read:

- English—Translation (if applies)
- Auto Shift—Auto Shift
- Fwd Start Gear—Fwd Start Gear
- Rev Start Gear—Rev Start Gear
- Back—Back

To change forward start gear using Command Dial, scroll down to **Fwd Start Gear** and press Select Switch. Rotate Command Dial clockwise to increase the gear displayed or counterclockwise to decrease the gear displayed. A forward start gear can be selected between 1 and 13.

To change reverse start gear using Command Dial, scroll down to **Rev Start Gear** and press select switch. Rotate Command Dial clockwise to increase the gear displayed or counterclockwise to decrease the gear displayed. A reverse start gear can be selected between 1 and 3.

When the desired number for the gear is displayed, press Select Switch.



**NOTE: New startup gear will not be locked into system memory until engine is turned Off, then restart tractor.**

Turn Key switch OFF, after engine is shut off, restart engine.

OU1092A,000020F-19-09NOV06-1/1

### Operating Automatic Powershift (APS)

Automatic Powershift (APS) shifts the transmission to maintain engine speed. APS will not shift above the maximum gear selected. The controller determines shift points based on throttle setting, engine speed and engine load.

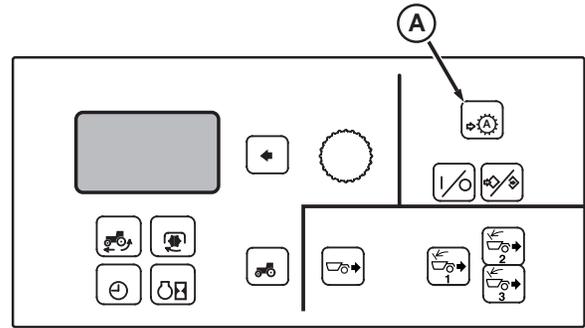
The transmission will downshift as many gears as necessary under heavy load. A change in throttle position allows a maximum downshift or upshift of three gears.

Automatic Powershift sensitivity is adjustable for varying load conditions. See Setting Automatic Powershift Sensitivity in this section.

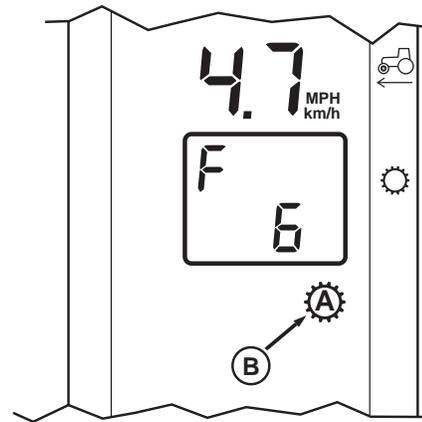
- Throttle must be left at wide open throttle when using APS.
- Select the maximum forward gear.
- Press the **SET** switch (A). APS corner post indicator (B) will light. APS will automatically downshift and upshift as engine rpm or load changes.

A—SET Switch

B—Automatic Power Shift Indicator



CommandCenter



Corner Post Display

OU1092A.0000210-19-30OCT07-1/2

RXA0091466—UN—09NOV06

RXA0090474—UN—13OCT06

Any manual shift cancels APS. Pushing the **RESUME** switch (A) restores control of shifting to APS.

Depressing the clutch pedal suspends APS but will not cancel the APS function. APS will resume when clutch pedal is released.

*NOTE: APS can be programmed into Implement Management System Section.*

APS is cancelled when:

- Operator shifts transmission
- Operator shifts to NEUTRAL or REVERSE



A—Resume Switch

OU1092A.0000210-19-30OCT07-2/2

RXA0091467—UN—09NOV06

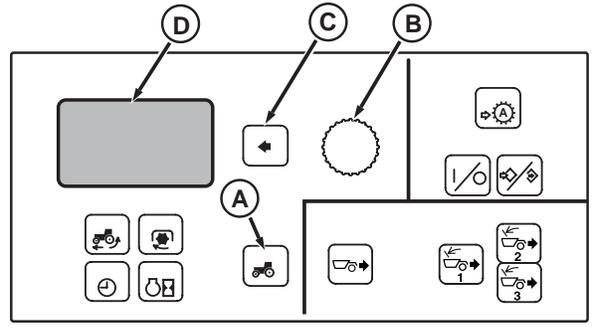
### Setting Automatic Powershift Sensitivity

Press Setting Switch (A).

**Display will read:**

- English**—Translation (if applies)
- Implement Sel**—Implement Sel
- RPTO Engage (If Equipped)**—RPTO Engage
- Transmission**—Transmission
- Decel Switch**—Decel Switch

Using Command Dial (B), scroll down to **Transmission**, then press Select Switch (C).



CommandCenter

- A**—Vehicle Settings Switch
- B**—Command Dial
- C**—Select Switch
- D**—Display

**Display will read:**

- English**—Translation (if applies)
- Auto Shift**—Auto Shift
- Fwd Start Gear**—Fwd Start Gear
- Rev Start Gear**—Rev Start Gear
- Back**—Back

Scroll down to **Auto Shift** and press Select Switch.

**Display will read:**

- English**—Translation (if applies)
- Low RPM**—Low RPM
- Medium RPM**—Medium RPM
- High RPM**—High RPM

**1. Low RPM** — This is the tightest engine speed control setting for APS load mode. It is intended to be used in applications where tight engine speed control is desired. It is automatically selected by the PTP control unit when the

PTO is ON. The Low RPM text description implies that minimal engine speed droop is required to initiate automatic shifts.

**2. Medium RPM** — This is a moderate engine speed control setting for APS load mode. It is the factory default and is intended to be used for most field applications where a moderate level of change in load will be encountered and a balanced sensitivity to changing loads is desired.

**3. High RPM** — This is the widest engine speed control setting for APS load mode and allows more load change before initiating any automatic shifts. This may be useful in applications where highly variable load conditions will be encountered.

Select sensitivity setting desired and press Select Switch to save selection.

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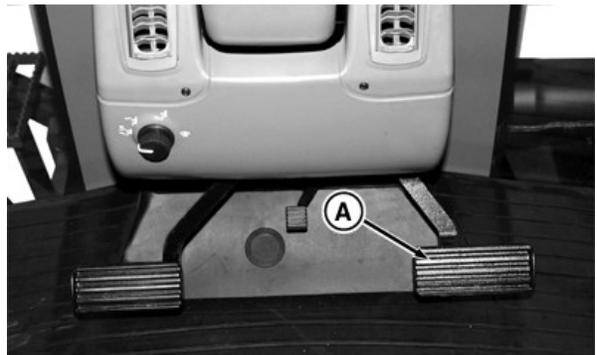
### Using the Brakes

**CAUTION:** Avoid possible personal injury. Reduce speed if towed load weighs more than the tractor or transporting loads under adverse conditions. Avoid hard braking applications. (See implement manual and Transport Section.)

**IMPORTANT:** Avoid unnecessary wear on the brakes. **DO NOT** rest foot on the brake pedal during tractor operation.

Test brakes with engine stopped to be sure manual brake system is functioning. (See General Maintenance and Inspection Section).

Press brake pedal (A) to stop tractor while disengaging the clutch.



**A**—Brake Pedal

RW29387,000026B-19-06DEC05-1/1

### Using Hydraulic Trailer Brakes (If Equipped)

**CAUTION:** Avoid possible injury from losing control of tractor when operating on downhill slopes. Tractor wheels may lock and skid on steep or slippery downhill slopes.

**IMPORTANT:** Operating tractor with three scrapers requires tractor be equipped with hydraulic trailer brakes. Reference "Towing Loads and Transporting with Ballast" Section of Operator's Manual.

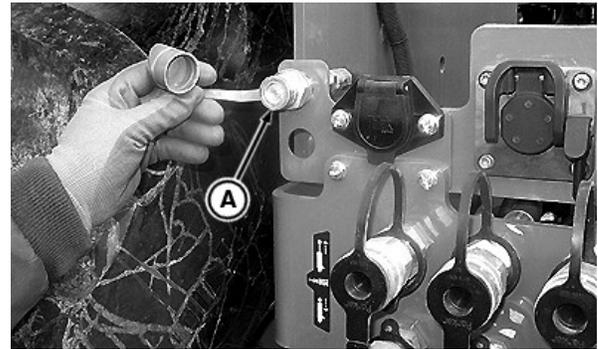
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Remove cap from trailer brake coupler (A). Connect pressure hose to brake coupler, making sure hose end and coupler are clean.

Depress brake pedals to operate hydraulic trailer brake. The braking effect depends on pressure applied to the brake pedals.

**IMPORTANT: Recommendations to reduce brake wear:**

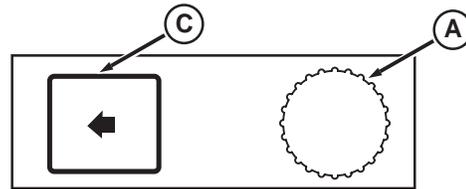
- Make sure the pressure hose is connected.
- Select the same gear for both downhill and uphill driving.
- Check the hydraulic trailer brake regularly for proper operation.



A—Trailer Brake Coupler

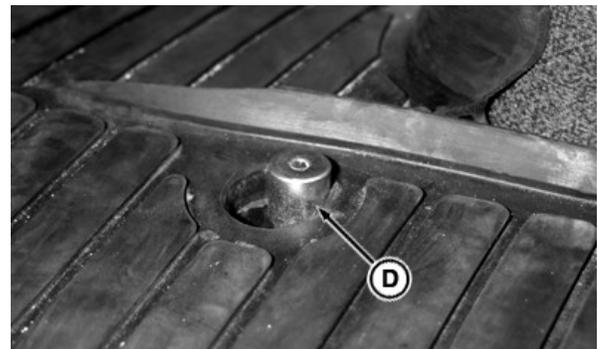
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### Using FieldCruise™ and Foot Decelerator



**FieldCruise**—Rotate Command dial (A) to bring FieldCruise screen (B) to bottom-half display.

- Press **SELECT** switch (C), rotate Command dial to raise or lower engine rpm setting as needed, and press **SELECT** switch again.
- Engine speed can be adjusted from 1100—2200 rpm. Changes to rpm setting take place immediately.
- When FieldCruise is not in use, **OFF** is displayed instead of the rpm speed.
- FieldCruise utilizes a constant speed governor curve, providing instant response to varying loads.
- Use of FieldCruise will remove availability of power bulge and as such is not recommended for heavy tillage applications.
- Limiting engine speed in light load situations may improve fuel economy.



A—Command Dial  
B—FieldCruise Screen

C—SELECT Switch  
D—Foot Decelerator

**Foot Decelerator** —Push button (D) to lower engine rpm until released. Speed resumes when released.

Field Cruise is a trademark of Deere & Company

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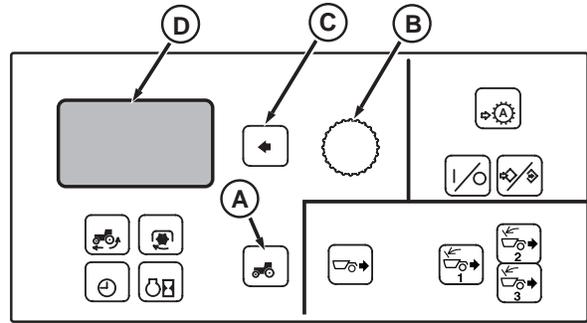
### Setting Decelerator

Press Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) to highlight Decel Switch and press Select Switch (C).

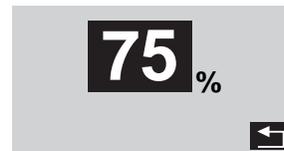
Decelerator is adjustable from 50 to 95 percent of maximum engine (throttle) speed by rotating Command Dial and pressing Select Switch to save setting.

**A—Settings Switch**  
**B—Command Dial**

**C—Select Switch**  
**D—Display**



RXA0091378—UN—02NOV06



RXA0091170—UN—19OCT06

Percent Speed Change Adjustment

OU1092A,0000212-19-26MAR09-2/2

## Using Differential Lock—If Equipped

**NOTE:** During cold weather, oil may need to be warmed before differential lock will function correctly.

The tractor needs to be moving before differential lock will engage.

**IMPORTANT:** Engage differential lock before entering a situation where wheel slippage may occur or when all wheels appear to be turning at the same speed. If engaged after wheels begin to spin, damage to differential could result.

Engage differential lock by pressing switch (A). Indicator light on corner post display panel shows engagement.

Differential lock can be disengaged by using brake pedal or decelerator button.

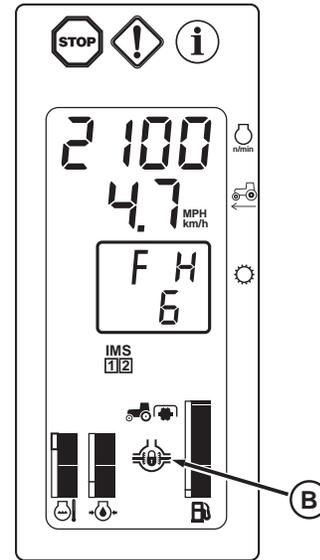
**IMPORTANT:** For 9530 & 9630 tractors with Double Reduction Axles, the brake and differential lock systems function together as described below:

**Brake and differential lock systems function together as described below:**

1. When differential lock switch has been pressed, both front and rear differential locks turn on. When the brake pedal is depressed, the front remains on and the rear turns off. When the brake pedal is released, both front and rear differential locks turn off. The indicator light will turn off once the brake pedal is released.
2. When differential lock switch has not been pressed, the front differential lock will turn on while the brake pedal is pressed and turn off when it is released. The indicator light will turn off once the brake pedal is released.



RXA0096697—UN—05DEC07



Corner Post Display

**A—Differential Lock Switch      B—Differential Lock Indicator**

RXA0096695—UN—05DEC07

### Quick Reference

Differential Lock ON:	Front and Rear differential locks ON
Brake Depressed	Front differential lock ON and Rear differential lock OFF
Brake Released	Front and Rear differential locks OFF
Differential Lock OFF:	Front and Rear differential locks OFF
Brake Depressed	Front differential lock ON and Rear differential lock OFF
Brake Released	Front and Rear differential locks OFF

RW29387,000026D-19-04AUG11-1/1

### Back-Up Alarm—If Equipped

**⚠ CAUTION:** The back-up alarm emits an audible sound to alert anyone near by; the tractor will be traveling in a reverse direction.

*NOTE:* The back-up alarm (B) is located on the rear cross member.

Back-up alarm will sound when key switch is **ON** and transmission is in reverse gear (A).

Alarm can be set at three different volume levels:

- high
- low
- medium

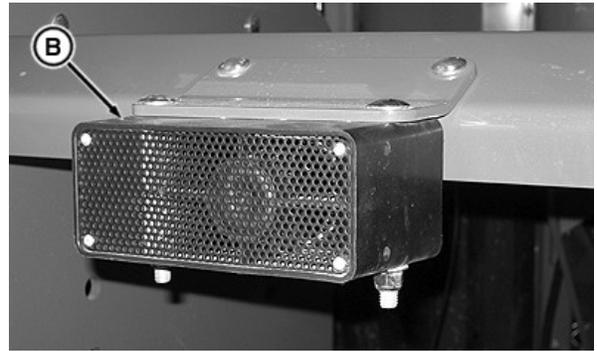
Set sound level switch (C) on back of alarm to desired setting.

**A—Reverse Gear Lever**  
**B—Back-Up Alarm**

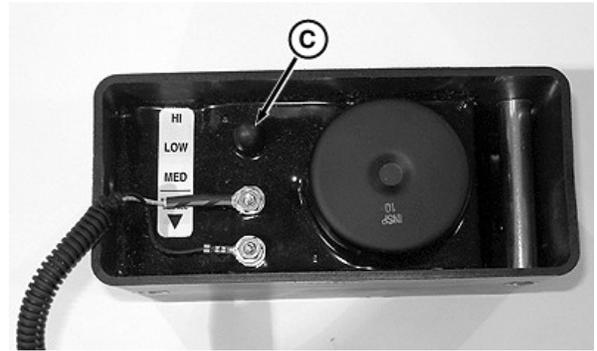
**C—Volume Control**



Powershift Transmission



Back-Up Alarm

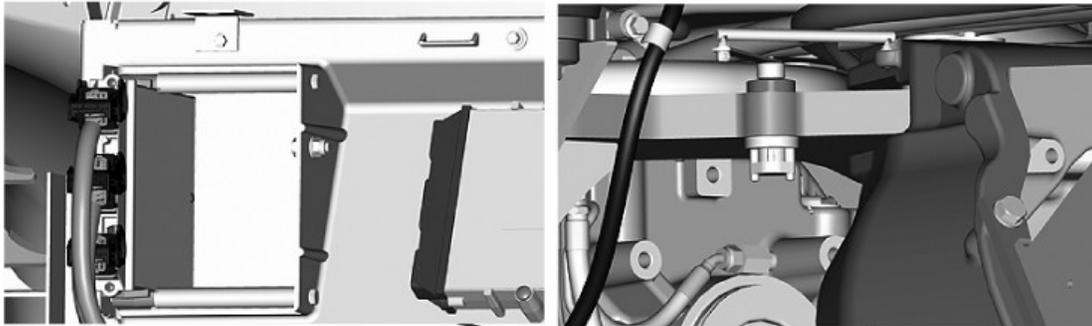


Volume Control-Rear View

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# AutoTrac™

## AutoTrac™ System Component Location



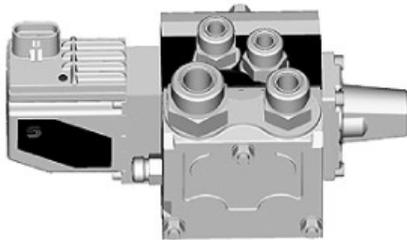
C

D



A

B



A—Electro-Hydraulic Steering Control Unit (EH Valve)

B—Upper Steering Column With Steering Wheel Position Sensor

C—SSU Flexbox And Wiring Harness  
D—Position Sensor

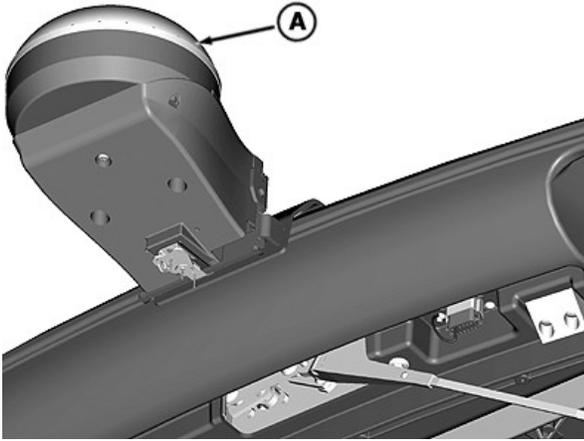
**IMPORTANT: AutoTrac is NOT approved for scraper applications. AutoTrac can be installed on scraper tractors only for use in agricultural applications.**

*AutoTrac is a trademark of Deere & Company*

RW29387,000004A-19-24JUL08-1/1

RX.A0091886—UN—02APR08

### AutoTrac Steering System



RXA0084309—UN—26SEP05



GSD 4 Display / Mobile Processor

RXA0084304—UN—26SEP05

**NOTE:** Electrohydraulic steering is required for AutoTrac to function.

Refer to AutoTrac Operator's Manual for detailed instructions.

Refer to Maintenance and Service Interval Section for daily lubrication for hinge and steering cylinder pins.

- AutoTrac system utilizes StarFire position receiver (A) and GreenStar display (B), (C) or (D) to assist operator in steering tractor.
- AutoTrac steers the vehicle on operator-defined paths through the field. Operator must turn vehicle at the end of each pass and to go around any field obstacles. Steering control is obtained by simply turning steering wheel.



GSD 2100 Display

RXA0084308—UN—26SEP05

- A—Position Receiver
- B—GSD 4 Display / Mobile Processor
- C—GSD 2100 Display
- D—GSD 2600 Display



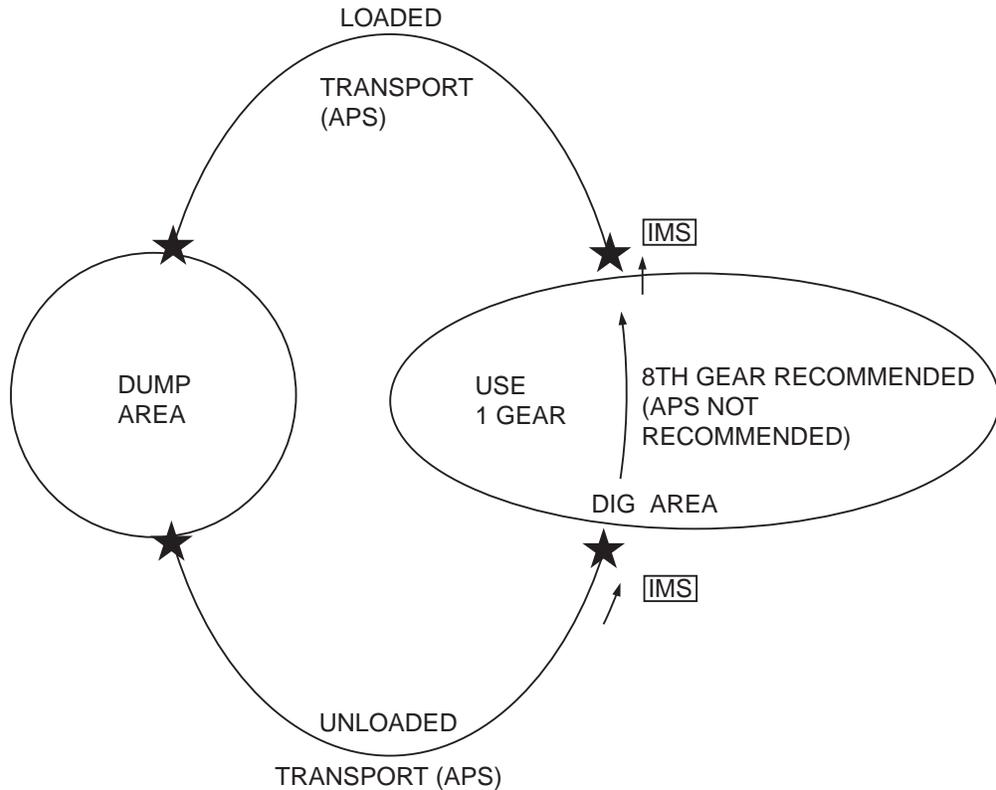
GSD 2600 Display

RXA0084306—UN—26SEP05

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# Scraper Information

## Scraper Operation Cycle



RXA0064881-19-05MAR03

### Towed Scrapers:

Follow manufacturer's instruction in attaching and using scraper.

**IMPORTANT: Operating tractor with three scrapers requires tractor and all scraper pans be equipped with hydraulic trailer brakes. Reference "Towing Loads and Transporting with Ballast" Section of Operator's Manual.**

9030 Series Tractor/Scraper Application Guidelines		
Scraper Size	Without Hydraulic Trailer Brakes	With Hydraulic Trailer Brakes
21 Yard	1	2
18 Yard and Smaller	2	3
Mixed Capacity	Maximum Total of 36 Yards	Maximum Total of 54 Yards

### Scraper Operation Recommendations:

- Do not downshift or upshift transmission when in dig area.
- Limit depth of cut to maintain a loading speed higher than 6.4 km/h (4 mph). For maximum power performance with 9430 and 9530 tractors operate in 7th forward gear or above, and for 9630 tractor operate in 8th forward gear or above.
- Maintain minimum engine rpm of 1850 or higher.
- Ballast tractor correctly to maintain optimum wheel slip of 8-12%.
- Shallow cuts at higher speeds will extend drive train life and increase overall productivity.
- Use APS (Automatic Powershift) for transport mode, not during loading or digging.
- Use IMS (Implement Management System) to combine downshifts/upshifts, raise/lower scrapers or other functions when returning to dig area or to/from transport part of cycle. (See Implement Management System Section.)
- Drawbar height should be set so scraper cutting edge hits the ground before the scraper bottom. See Scraper Operator's Manual.
- Load scrapers going downhill when possible.
- Disengage differential lock when making turns.
- Use of differential lock should be limited to tough spots or wet areas.

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RW29387.0000001-19-17OCT08-1/2

### Scraper Information

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- Do not downshift below ground speeds of 6.4 km/h (4 mph) when under load.
- When downshifting going downhill, do not exceed recommended engine rpm.

RW29387,0000001-19-17OCT08-2/2

# AutoLoad

## AutoLoad™

### Introduction For Scraper Operation

**IMPORTANT:** A recalibration may be required to get a laser scraper to operate with SCU controller.

If this SCU error occurs “Not Calibrated”, contact your John Deere dealer to calibrate.

Operating characteristics of AutoLoad:

- AutoLoad is IMS compatible.
- Recommend use of dual beam radar sensor for maximum operating performance.

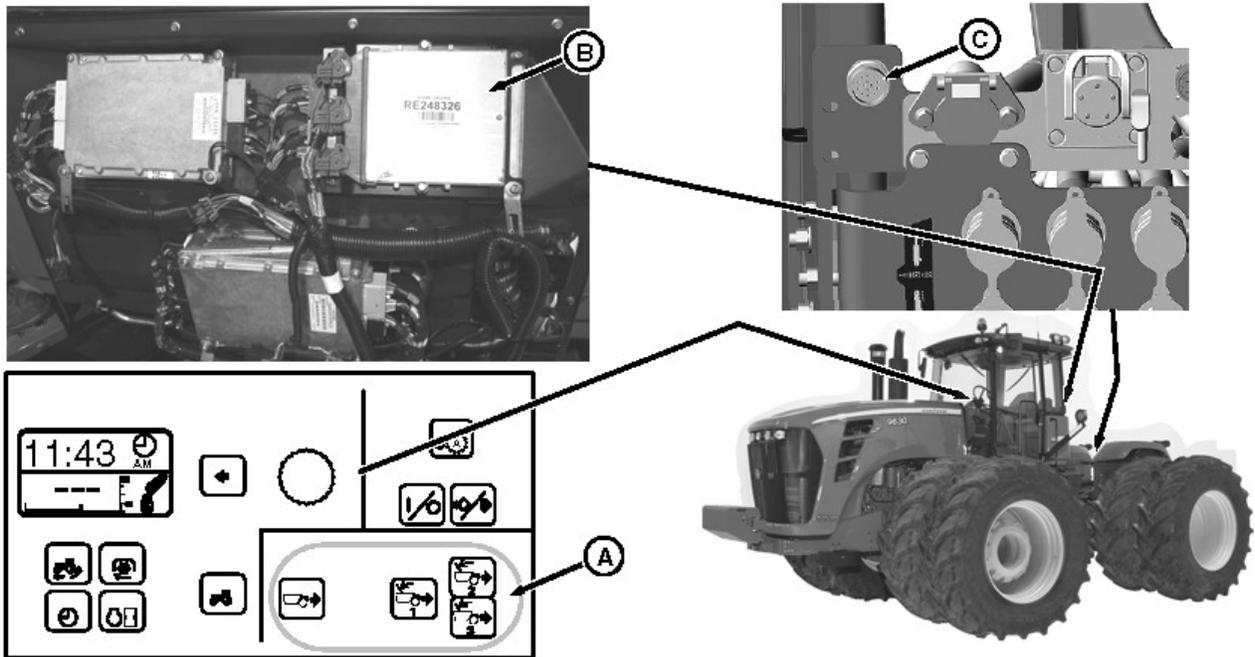
*AutoLoad is a trademark of Deere & Company*

- AutoLoad will function without radar. If the radar signal is lost, an error code will display and AutoLoad will function at a degraded level.
- Radar should be checked regularly and clear of dirt and debris.

*NOTE: Tow cable must be mounted on the right side frame to avoid interference and reduced performance of dual beam radar.*

OU1092A,00001DB-19-18SEP08-1/3

### AutoLoad System Component Location



A—AutoLoad Controls

B—Flexbox Controller (SCS)

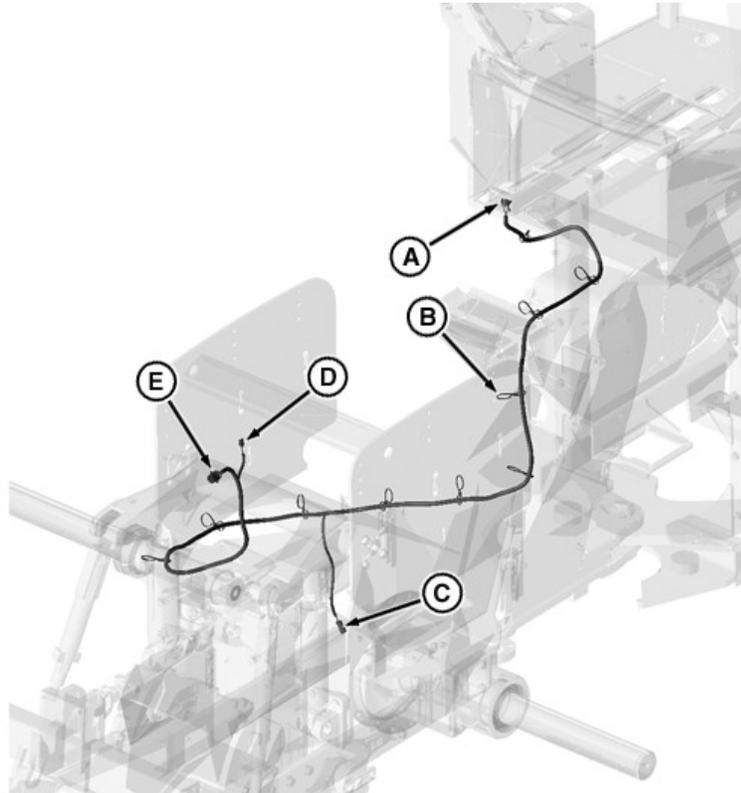
C—AutoLoad Connector

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RXA0099087—UN—17SEP08

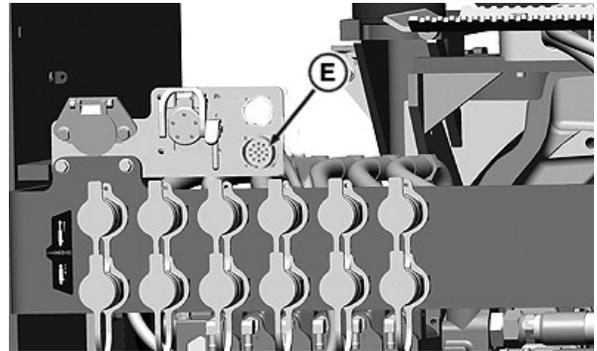
### Two or Three Pan AutoLoad Harness Diagram



AutoLoad Harness Routing Diagram

- A—Option Configuration Connector
- B—Tie Band
- C—Implement Draft Sensor Connector

- D—Drawbar Sensor Calibration Connector
- E—AutoLoad 14-Pin Option Connector



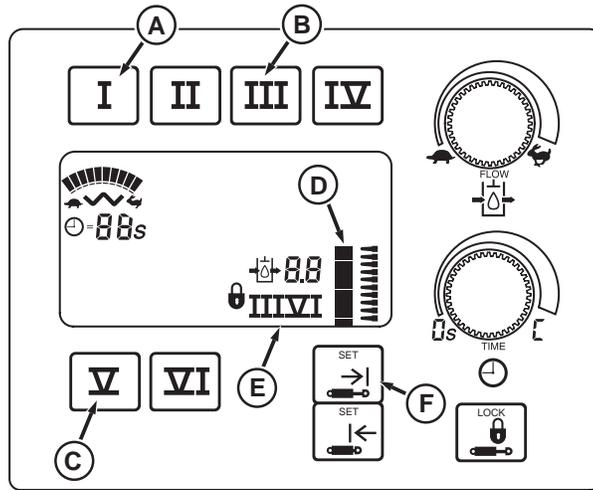
AutoLoad 14-Pin Option Connector

RXA0095229—UN—30JUL07

RXA0100027—UN—16DEC08

OU1092A,00001DB-19-18SEP08-3/3

## Upper Set Point



RXA009089—UN—17SEP08

A—SCV I  
B—SCV III

C—SCV V  
D—Display Graph

E—Valve Number  
F—SET

The tractor has the ability to store two scraper positions for each scraper, called the upper and lower set points. These set points allow the scraper(s) to be quickly returned to preset positions.

These positions are set using the SCV setup panel as shown above.

To set the upper set point, position the scraper at the highest desired position (example: transport height). Then select the SCV for which you are storing the set point (buttons are shown to the right). Only SCVs I (A), III (B) and V (C) have set points.

After selecting the SCV, the corresponding valve number

(E) will be displayed. If this valve number is incorrect, re-select the valve.

After selecting the SCV, press the extend “SET” button (F).

This will store the upper set point.

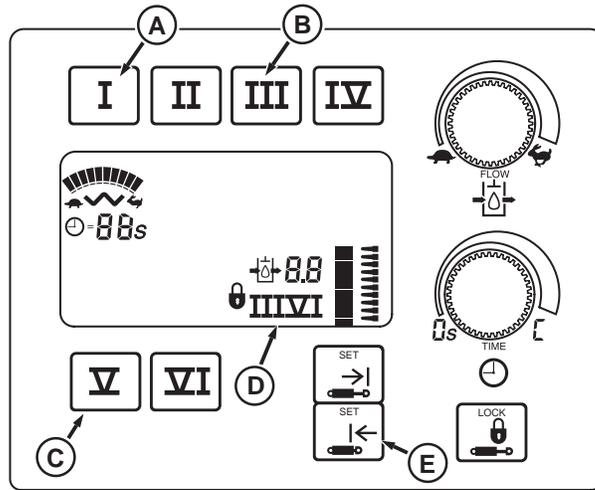
As a result, the position display graph (D) may change slightly.

Once complete, the new upper set point is ready to use.

To change the upper set point once set, simply repeat the above procedure.

OU1092A,00001DC-19-17SEP08-1/1

## Lower Set Point



RXA009088—UN—17SEP08

A—SCV I  
B—SCV III

C—SCV V  
D—Valve Number

E—SET

To set the lower set point, position the scraper at the lowest desired position (example: dump height). Then select the SCV for which you are storing the set point (buttons are shown to the right). Only SCVs I (A), III (B) and V (C) have set points.

After selecting the SCV, the corresponding valve number (D) will be displayed. If this valve number is incorrect, re-select the valve.

After selecting the SCV, press the retract “SET” button (E).

This will store the lower set point.

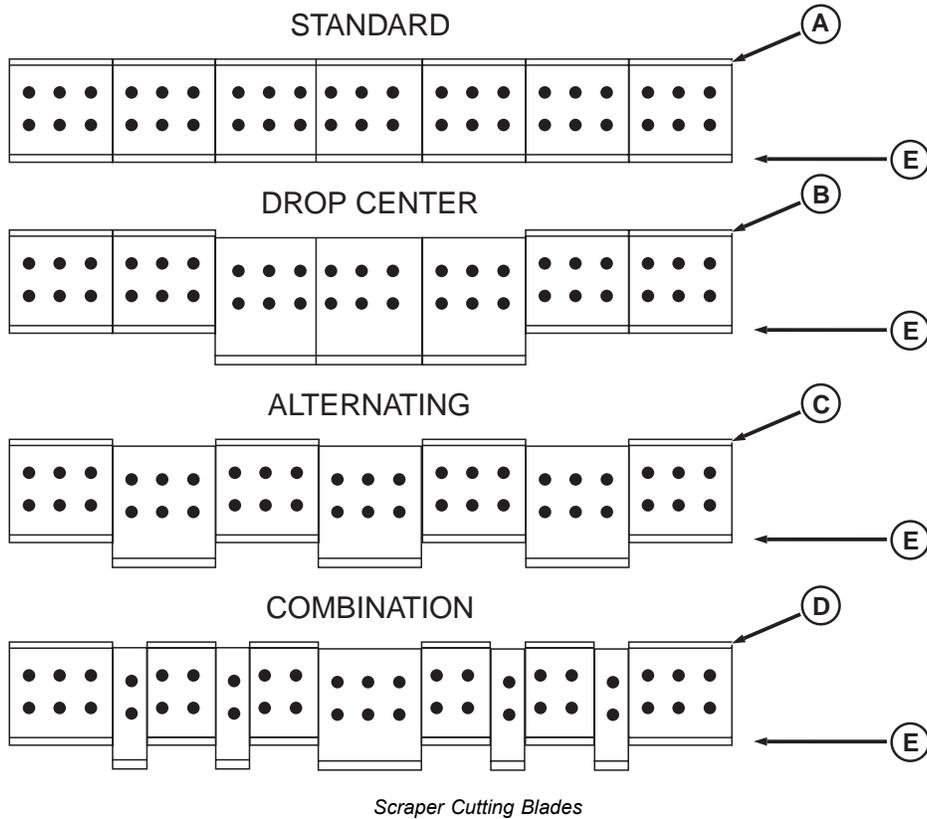
As a result, the position display graph may change slightly. Once complete, the new lower set point is ready to use.

To change the lower set point once set, simply repeat the above procedure.

**IMPORTANT: When using tandem or triple scrapers, make sure the rear scraper blade, when at the lower set point, does not contact the ground when the front scraper is raised to the upper set point. Raising of the front scraper lowers the rear scraper frame which could lead to early entry of the cut if the set points are set incorrectly.**

OU1092A,00001DD-19-17SEP08-1/1

**Ground Level Set Point**



**A—Standard**  
**B—Drop Center**

**C—Alternating**  
**D—Combination**

**E—Ground Contact**

Ground level is a stored location used by AutoLoad to determine where the blade fully contacts the ground. The following is the recommended method for setting ground level. This procedure should be done on flat ground that can be disturbed by the blade.

(C), or combination (D) blade configuration, slowly move the tractor forward while lowering blade to allow the protruding edge(s) to dig into the surface. This will allow for better judgment as to when the outboard cutting edges (E) contact the ground.

**High Flow Scraper Tractor —Single Scraper Configuration**

Set the blade such that the shallowest cutting edges (E) of the blade are just touching the ground. If the scraper has a protruding edge(s) such as the drop center (B), alternating

Place SCV I control lever into the “Float” position.

**IMPORTANT: High Flow scraper tractor hydraulics do not have float capability. However, this switch position is used for setting the ground level set point.**

Continued on next page

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RXA0086256—UN—02MAR06

Store ground level position by selecting SCV I (A), then press the lower set point button. Refer to **Lower Set Point Section**.

If performed correctly, a single dash will display on the left hand side position display graph (D) for approximately 2 seconds, then it will change back to the normal display.

**High Flow Scraper Tractor —Tandem or Triple Scraper Configuration**

Due to the front scraper blade position affecting the second scraper blade position and the second scraper blade position affecting the third scraper blade position, some care should be taken when setting up the scraper ground level setting.

First, place all scrapers at their lower set point.

Set the front scraper ground level using the High Flow Scraper Tractor - Single Scraper Configuration procedure.

When complete, raise the front scraper to the upper set point with a detent rearward (Extend) with SCV I (A).

To set the second scraper ground level position. Follow the single scraper configuration procedure selecting SCV III (B) in place of SCV I (A).

To set the third scraper ground level position. Follow the single scraper configuration procedure selecting SCV V (C) in place of SCV I (A).

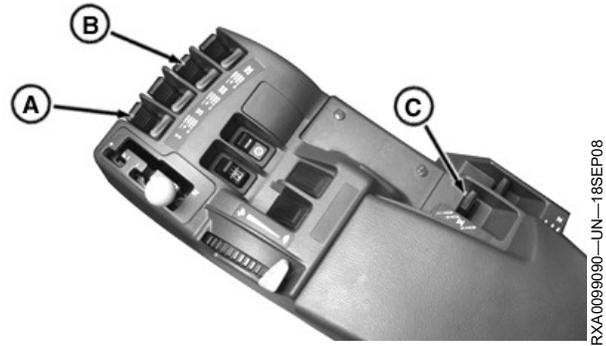
**Standard Flow Scraper Tractor—Single, Tandem and Triple Scraper Configuration**

Procedure is identical to the high flow scraper tractor with the following exception; prior to placing the SCV lever in float, turn off the tractor engine and key on tractor power.

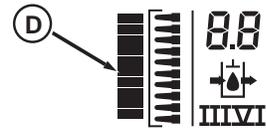
**IMPORTANT: The accumulator only for Standard Flow Scraper Tractors needs to be discharged before starting.**

**Do not activate SCV I, III or V causing scraper to move until the accumulator is discharged.**

**If SCV's are activated, this will result in having the procedure to be repeated again.**



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A—SCV I  
B—SCV II

C—SCV V  
D—Position Display Graph

**For Standard Flow Scraper Tractors only, perform following accumulator bleed procedure:**

1. Turn key switch to RUN position. **DO NOT** start engine.
2. Press the touch pad switch for SCV II. Set detent time for “C”, continuous, and adjust flow rate knob to “10”. Repeat this setting for SCV IV and VI.
3. Engage extend detent for SCV's II, IV, and VI

*NOTE: Bleed down time is approximately 60 seconds when oil temperature is 20 °C (68 °F). Cooler oil will take longer.*

This will eliminate the potential of scraper blade moving up or down when float is engaged. This movement may affect the stored ground level.

Blade should remain set so that the shallowest cutting edges of the blade are just scratching the ground.

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**Change In Ground Level**

Ground level is not a common operator adjustment.

However, ground level may need to be reset if a change to the system is made such as:

1. AutoLoad is newly installed.
2. A different AutoLoad scraper is connected to the tractor
3. The front and rear scrapers are switched
4. A scraper sensor is replaced

5. Blade configuration is changed
6. After blade replacement
7. Excessive blade wear

**Result Of Incorrect Ground Level Settings**

1. On entry, draft load does not increase.
2. On entry, the draft load comes up too quickly. Typically a sharp edge will be visible in the soil where the blade initially contacts the ground.

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### OPERATOR SETTINGS—User Inputs

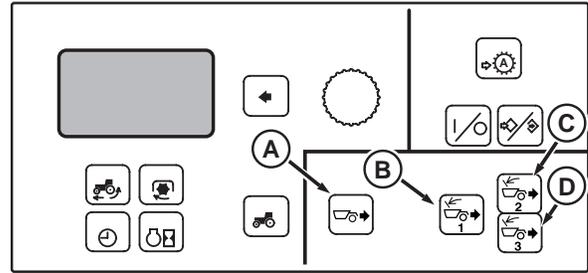
To adjust AutoLoad for different operating conditions, there are three touch switches located on the CommandCenter.

To use these adjustments correctly, consider the digging process as two steps:

1. Entering the cut.
2. Maintaining the cut.

**A—Average Draft Setting**  
**B—Front Scraper Initial Draft Setting**

**C—Second Scraper Initial Draft Setting**  
**D—Third Scraper Initial Draft Setting**



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### Entering the Cut

Entering the cut refers to the initial draft load settings adjusted using touch switches (B), (C) and (D). These initial draft settings are typically used to set loads over approximately the first half of the cut for a particular scraper.

Touch switch (B) sets the initial draft load of the front scraper and is the load the tractor will achieve on entering the cut.

If tractor is loaded too heavy (low RPM) near the start of the cut, lower the initial draft load by touching the touch switch and rotating command dial (E) counter-clockwise (CCW). Front scraper draft setting (F) is shown in CommandCenter display .

If the tractor is not adequately loaded (high RPM) near the start of the cut, raise the initial draft load setting by turning the command dial (CW).

Touch switch (C) sets the initial draft load of the second scraper, otherwise, this switch works identical to switch (B). Second scraper draft setting (G) is shown in CommandCenter display .

**IMPORTANT: Operating tractor with three scrapers requires tractor be equipped with hydraulic trailer brakes. Reference "Towing Loads and Transporting with Ballast" Section of Operator's Manual.**

Touch switch (D) sets the initial draft load of the third scraper, otherwise, this switch works identical to switch (B) and (C). Third scraper draft setting (H) is shown in CommandCenter display .

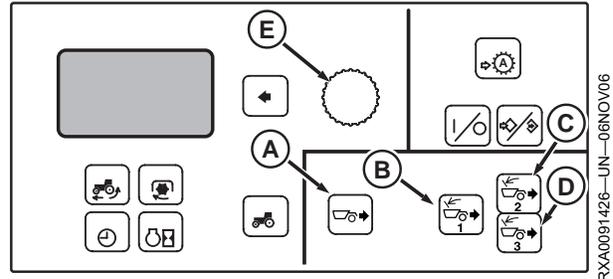
### Maintaining the Cut

Maintaining the cut refers to the average draft load setting adjusted using touch switch (A).

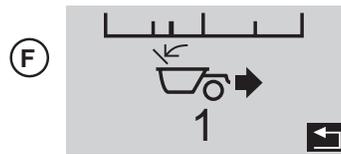
The average draft load is the work load the system will maintain after the scraper has fully entered the cut.

Typically, the average draft load sets the work load over approximately the last half of the cut

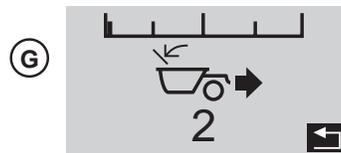
If the tractor is loaded too heavy (low RPM) near the middle or end of the cut, lower the average draft load by pushing touch switch (A) rotating the command dial counter-clockwise (CCW). Average scraper draft setting (I) is shown in CommandCenter display .



CommandCenter



CommandCenter Display Initial Draft Load Front Scraper



CommandCenter Display Initial Draft Load Second Scraper



CommandCenter Display Initial Draft Load Third Scraper



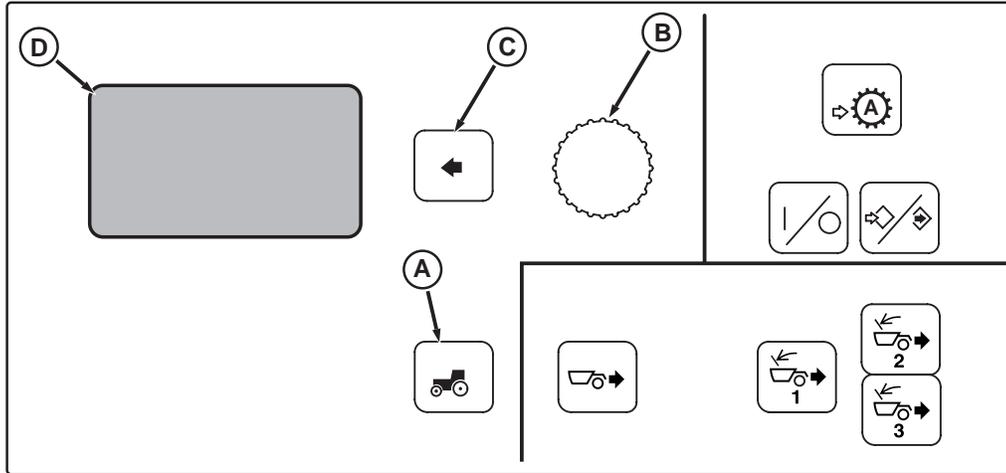
CommandCenter Display Average Draft Load

- A—Average Draft Setting Touch Switch
- B—Front Scraper Touch Switch
- C—Second Scraper Touch Switch
- D—Third Scraper Touch Switch
- E—Command Dial
- F—Front Scraper Draft Setting
- G—Second Scraper Draft Setting
- H—Third Scraper Draft Setting
- I—Average Scraper Draft Setting

If the tractor is not adequately loaded (high RPM) near the middle or end of the cut, raise the average draft load by rotating the command dial clockwise (CW).

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### Setting Scraper Model



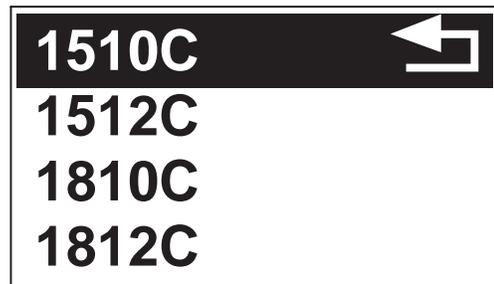
Press vehicle Settings Switch (A) to view menu items on Display (D). Rotate Command Dial (B) to highlight scraper model and press Select Switch (C).

Rotate Command Dial to highlight Scraper Model used and press Select Switch to apply.

**NOTE:** If not selected, the Scraper Model factory default is 1810E.

#### Menu Items on Display (D)

- 1510C
- 1512C
- 1810C
- 1812C
- 1814C
- 2112C
- 1512E
- 1810E
- 1814E
- 2112E



Scrapper Setting Display

A—Vehicle Settings Switch    C—Select Switch  
B—Command Dial                  D—Display

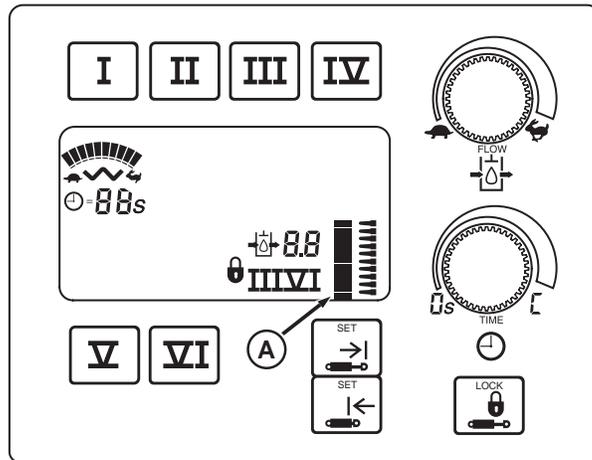
**NOTE:** Refer to Scraper Tractor Operator's Manual for setting ground level set points and AutoLoad operation.

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### SCV Flow Time and Flow Rate Settings



SCV Panel

#### A—Position Display Graph

The flow rate and flow times are set using the setup panel located to the right of the operator.

With AutoLoad active, flow time adjustments are disabled for SCV I, SCV III and SCV V.

Flow rates for SCV I, III and V are enabled, but are only effective when in manual operation or when moving between set points.

Flow time and flow rates for SCV II, SCV IV and SCV VI function as described in HYDRAULICS AND SELECTIVE CONTROL VALVES Section.

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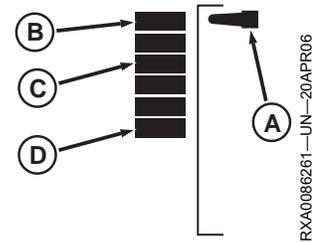
### Position Display Graph

The position indicator (A) shows the current scraper position in relation to upper (B) and lower (D) set points.

In this case, the scraper is at the upper set point.

The squares show the range (C) between the set points.

When at the lower set point, the marker will point to the bottom most square.



Position Indicator

### SCV I, III and V Flow Time Indicator

For SCV I, III and V, the flow time indicator has been modified from its normal display.

Flow times are replaced with letters “P”, “A” and “L”.

- “P” - Position Mode
- “A” - Armed Mode
- “L” - Load Control Mode

**IMPORTANT: Do not unplug implement connector while power or key switch is “ON”.**

*NOTE: If SCV display panel shows “C” (continuous flow) for SCV I, III and V, AutoLoad will not function on that SCV.*

*If this occurs, it is important to perform steps below in exact sequence:*

1. Turn key “OFF”.
2. Unplug Implement Connector harness from scraper, on top of SCV stack.
3. Turn key “ON”.

*NOTE: Leave power on for several seconds.*

Note: Diagnostic codes might have been stored if information light and hydraulic lights are flashing. Contact your John Deere dealer to resolve.

4. Turn key “OFF”.
5. Turn key “ON” and start engine to verify SCV operation without scraper connector plugged into tractor.

A—Position Indicator  
B—Upper Set Point

C—Position Range  
D—Lower Set Point

6. Turn key “OFF”.

7. Plug in harness for scraper into Implement Connector, on top of SCV stack.

*NOTE: Check wiring harness for any broken or damaged wires. Repair if necessary.*

*Verify harness connectors are properly mated.*

8. Turn key “ON” and start tractor to verify SCV operation.

9. If “C” reappears on display panel or AutoLoad does not function, contact your John Deere dealer to resolve codes or repair.

Position mode “P” is an AutoLoad state which SCV lever detent will position the scraper at their respective upper or lower set point.

*NOTE: If scraper position is at or below the lower set point, a forward detent will engage the automated dig.*

Armed mode “A” is an AutoLoad state when the respective SCV lever is detented forward, AutoLoad will start the automated dig.

Load control mode “L” indicates an AutoLoad state when the system is presently in the automated dig routine.

OU1092A,00001DF-19-17SEP08-2/2

## AutoLoad Operation and Controls

To operate AutoLoad, the system uses armrest SCV levers I, III and V (E) and four touch switches (A), (B), (C) and (D) on the CommandCenter.

Touch switches (A), (B), (C) and (D) are used to set the initial and average draft settings. This is explained previously in a OPERATOR SETTINGS Section.

**NOTE:** If the settings for these inputs are unknown, set switch settings in mid-range and make adjustments as required. All adjustments should be made between dig cycles. Avoid making adjustments while a dig is in process.

The SCV I, III and V levers (E) are used to move the scraper between set points, to engage the automated dig, to disengage the automated dig, and to manually operate the scrapers.

### Using The Set Points

The tractor controller can store two user definable positions for each scraper called the **upper and lower set points**.

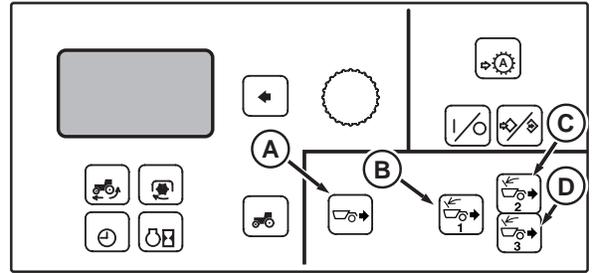
The set points are positions stored in controller software which are used to quickly return the scrapers to known locations (e.g. transport height and dump height).

To move the scraper to the upper set point (F), detent rearward (extend). The scraper will then raise to and maintain this position. When at the upper set point, the position display graph will point to the uppermost position and a "P" will be displayed.

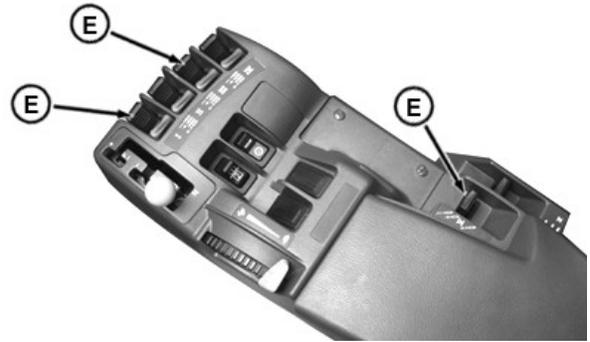
To move the scraper to the lower set point (G), detent forward (retract). The scraper will then lower to and maintain this position. When at the lower set point, the position display graph will point to the lowest bottom position and an "A" will be displayed when the system becomes armed.

**NOTE:** The response of the system to a detent depends on the current position of the scraper,

- If the scraper is below the upper set point, a detent rearward (extend) will raise the scraper to the upper set point, display show "P".
- If the scraper is above the upper set point, a detent rearward (extend) will have no effect.
- If the scraper is above the lower set point and a "P" is displayed (position mode), a detent forward (retract) will lower the scraper to the lower set point (E) and the system will become armed, display shows "A".
- If the system is armed, display shows "A", a detent forward will engage the automated cut.

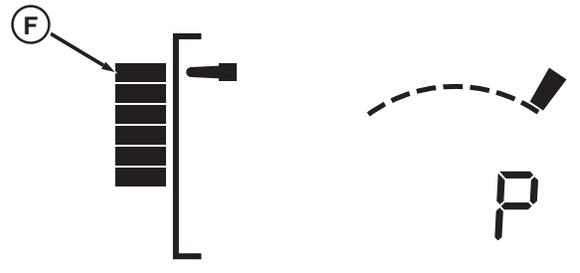


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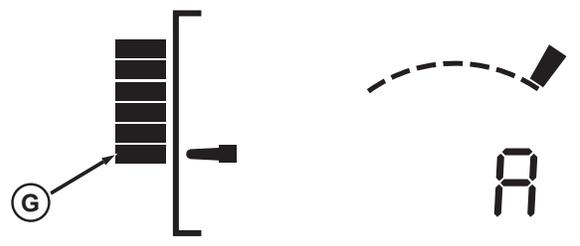
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Armrest Control



RXA0091430—UN—06NOV06

P - Position Mode



RXA0091431—UN—06NOV06

A - Armed Mode

- |  |                    |
|--|--------------------|
| A—Average Draft Setting                | E—SCV I, III and V |
| B—Front Scraper Initial Draft Setting  | F—Upper Set Point  |
| C—Second Scraper Initial Draft Setting | G—Lower Set Point  |
| D—Third Scraper Initial Draft Setting  |                    |

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**Activate Automated Dig**

To activate AutoLoad, the scraper must first be armed; an "A" will be displayed in the SCV setup panel for the respective SCV.

*NOTE: To arm the system, move the scraper to the lower set point.*

**IMPORTANT: The tractor must be at full throttle and in gears 6th through 13th when using AutoLoad. Gears 6th, 7th or 8th are recommended.**

**If outside this gear range, the automated dig cannot be engaged. Shifting gears while in the automated dig will default the system back to manual operation.**

Once the a scraper is armed, the automated dig can be activated with a forward detent (retract) of the respective SCV lever (A).

*NOTE: SCV I is used for the front scraper, SCV III for the second scraper and SCV V for the third scraper.*

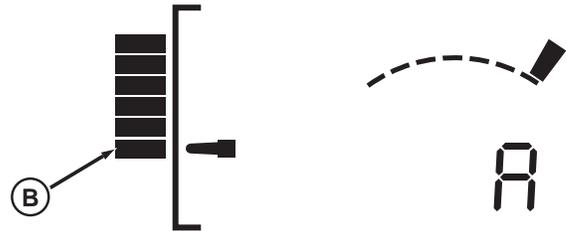
Once the automated dig is activated, the setup display panel will change from the armed status "A" to load control status "L".

*NOTE: If different gears are used from one dig to another, you may need to fine tune the initial and average draft settings.*

**Disengage Automated Dig**

If required, the automated dig can easily be disengaged through manual intervention.

If the clutch is depressed or the SCV lever (SCV I for front scraper, SCV III for the second scraper or SCV V for the



A - Armed Mode

A—SCV I, III and V

B—Lower Set Point

third scraper) is used, the system will default to manual operation.

*NOTE: Operation of SCV II, SCV IV and SCV VI (operating gate) will not disengage the automated dig.*

Autoload will also disengage if the gear is shifted while in the automated dig.

To re-engage the system, the SCV must be armed and then a detent forward (retract) will again activate the automated dig.

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## Typical Dig Cycle For Tandem or Triple Scrapers

Scrapers should be lowered to the lower set point prior to reaching dig site. At the lower set point (A), the setup panel should show the system to be armed "A" for all scrapers. SCV I for front scraper, SCV III for second scraper and SCV V for third scraper.

**IMPORTANT: The tractor must be at full throttle and in gears 6th through 13th when using AutoLoad. Gears 6th, 7th or 8th are recommended. Gears 7th or 8th are recommended for 9430 model tractors.**

To start the dig, detent forward on SCV I.

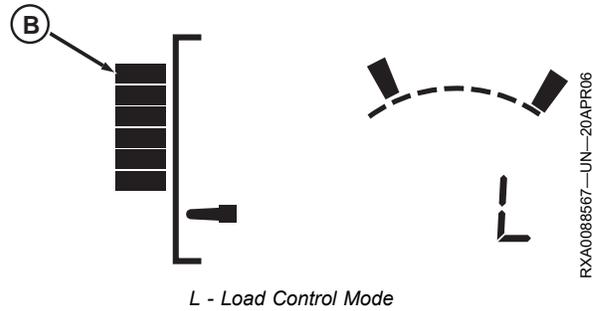
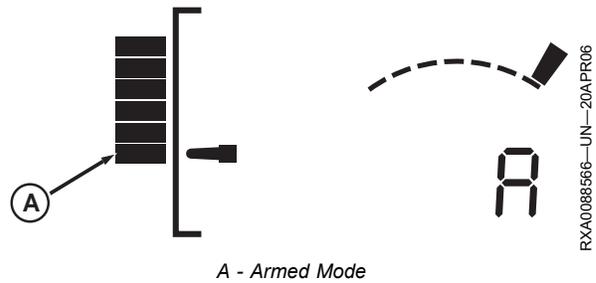
The setup panel will change from armed "A" to load control "L" and front scraper will enter the automated cut.

When the front scraper cut is complete, detent rearward on SCV I to raise the scraper to the upper set point (B). Detent forward on SCV III to begin the second scraper automated cut.

When the second scraper cut is complete, detent rearward on SCV III to raise the scraper to the upper set point (B). Detent forward on SCV V to begin the third scraper automated cut.

*NOTE: Unless it is desired to delay the start of the second scraper automated cut, the forward detent of SCV III should immediately follow the rearward detent of SCV I that raises the front scraper to the upper set point. It is not necessary or recommended, to wait until loaded scraper has reach the upper set point prior to lowering the unloaded scraper.*

If the rear scraper type has been correctly set, the rear scraper will start the dig at approximately where the front scraper ended the cut.



A—Lower Set Point

B—Upper Set Point

When the rear scraper cut is complete, detent rearward on SCV III to raise the scraper to the upper set point (B).

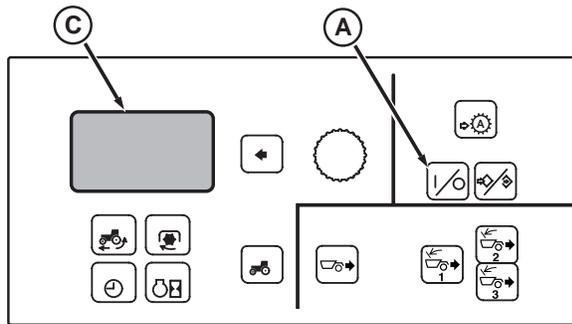
### OPERATING TIPS:

1. Set the lower set points to be dump heights to lay out the fill in a desired depth. Results may vary with soil characteristics.
2. Make changes to draft settings between passes. Do not make adjustments during the dig.

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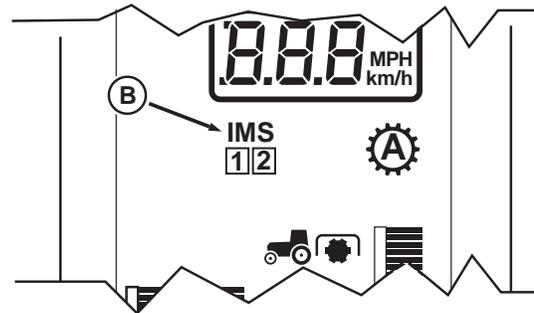
# Implement Management System

## Implement Management System (IMS) — Description and Display



CommandCenter Panel

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Corner Post

RXA0089957—UN—25JUL06

### A—IMS On/Off Switch

### B—IMS Indicator

### C—Display

Implement Management System (IMS) allows multiple tasks to be performed with the touch of one switch.

IMS has two sequences in which learned functions are stored. A sequence is defined as the start of the first recorded function to completion of last recorded function.

**NOTE:** Tractor must be moving at a speed of at least 0.5 km/h (0.31 mph) to program or execute a sequence. Learned sequences will remain stored after engine stops.

A sequence is executed according to **distance** required to perform a series of functions when system is in LEARN mode. A maximum of 20 functions can be learned for each sequence. Learn Mode has a 60 second time limit and will stop recording events when time limit is reached.

Press IMS On/Off Switch (A) to Off, then On to view functions programmed in the two sequences.

IMS indicator (B) will display when system is activated.

**NOTE:** Not all languages are displayed on CommandCenter. Reference "Selecting Units and Language" in CommandCenter section of this manual for more information on languages that can be displayed.

Stored sequences and LEARNED functions can be viewed on display (C) in the order learned.

### An Example of LEARNED Functions on Display (C)

**English—**Translation (if applies)

**Sequence 1—**Sequence 1

**SCV1 Retract—**SCV1 Retract

**SCV2 Retract—**SCV2 Retract

**SCV3 Retract—**SCV3 Retract

**SCV4 Retract—**SCV4 Retract

**Diff Lock On—**Diff Lock On

**Shift Gear—**Shift Gear To 12th Gear

**SCV5 Extend—**SCV5 Extend

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## Operating Implement Management System (IMS)

**⚠ CAUTION:** Avoid possible injury and loss of tractor control.

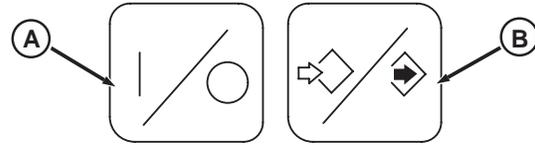
- A stored high gear in a learned sequence could initiate rapid shift changes when activating IMS.
- Clear IMS sequence after application is completed. (See **CLEARING IMS SEQUENCE** in this section.)

**Accidental use of IMS could cause unexpected tractor or implement movement.**

*NOTE:* Press IMS **ON/OFF** switch to **OFF**, then **ON** to view the functions programmed in the two sequences.

*NOTE:* Normally, IMS learned functions are executed according to distance traveled but this can be bypassed by depressing the clutch pedal during learn mode to allow all functions to be executed simultaneously (See **“Programming IMS to BYPASS distance traveled function”** later in this block).

1. **Programing IMS to use distance traveled to determine when functions will execute:**



A—ON/OFF Switch

B—LEARN/SAVE Switch

Make sure tractor is moving with speed of at least 0.5 km/h (0.31 mph). Press **ON/OFF** switch (A).

2. Press **LEARN/SAVE** switch (B) to start programming or learning mode.

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OU1092A,00001D1-19-06MAY08-1/4

3. Press **SEQUENCE** switch (A) **forward for 1** or **rearward for 2** to learn Sequence. Indicator light (B) will show the sequence being learned and an audible signal will sound.

Learn Mode has a 60 second time limit and will stop recording events when time limit is reached. Should time-out occur, limit or reduce the number of steps recorded for a sequence so they are completed within the time limit or use both sequences 1 and 2 to record a complete series of events that exceeds the time limit of a single sequence (60 seconds).

4. Perform desired functions, such as “SCV1 to Extend Detent” and “Differential Lock”.

5. Press **LEARN/SAVE** switch to store functions and end learning mode. Sequence number indicator will stop flashing. IMS indicator light (B) will remain on.

*NOTE: All of the functions above would execute according to the distance travelled while programming. If the tractor travelled 200 feet between “SCV1 Extend” and “Differential Lock” then they would execute at that same distance when Sequence 1 is executed regardless of speed.*

*NOTE: The CommandCenter will display when saving sequence or erasing sequence. Depressing clutch pedal during a sequence will suspend the remaining functions until clutch pedal is released.*

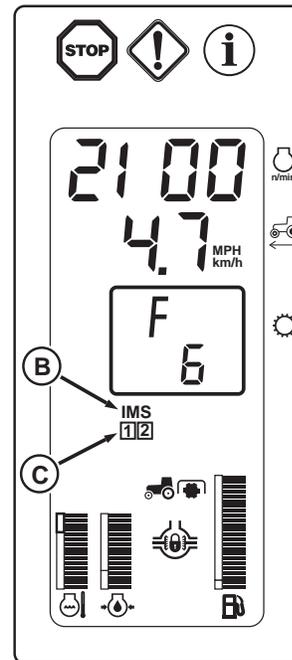
6. Press desired sequence switch and the sequence of learned events will begin. When sequence concludes, sequence number (C) will no longer display.

A—Sequence Switch  
B—IMS Indicator

C—Sequence Indicator



CommandARM



Corner Post Display

OU1092A,00001D1-19-06MAY08-2/4

RXA0091405—UN—06NOV06

RXA0090930—UN—29SEP06

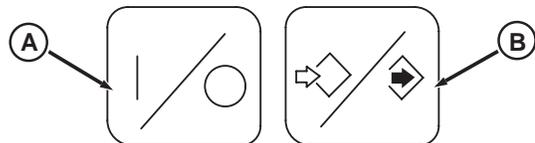
**Programing IMS to BYPASS distance traveled function:**

*NOTE: Press IMS ON/OFF switch to OFF, then ON to view in CommandCenter the functions programmed in the two sequences.*

1. Make sure tractor is moving with speed of at least 0.5 km/h (0.31 mph). Press **ON/OFF** switch (A) to turn IMS on.
2. Press **LEARN/SAVE** switch (B) to start programming or learning mode.

A—ON/OFF Switch

B—LEARN/SAVE Switch



RXA0090936—UN—29SEP06

Continued on next page

OU1092A,00001D1-19-06MAY08-3/4

- Press **SEQUENCE** switch (A) **forward for 1** or **rearward for 2** to learn Sequence. Indicator light (B) will show the sequence being learned and an audible signal will sound.

**Depress clutch pedal and hold while learning Sequence 1 (or 2).**

Learn Mode has a 60 second time limit and will stop recording events when time limit is reached. Should time-out occur, limit or reduce the number of steps recorded for a sequence so they are completed within the time limit or use both sequences 1 and 2 to record a complete series of events that exceeds the time limit of a single sequence (60 seconds).

- Perform desired functions, such as “SCV1 to Extend Detent” and “Differential Lock”.
- Press **LEARN/SAVE** switch to store functions and end learning mode. Sequence number indicator will stop flashing. IMS indicator light (B) will remain on.

*NOTE: The CommandCenter will display when saving sequence or erasing sequence.  
Depressing clutch pedal during a sequence will suspend the remaining functions until clutch pedal is released.*

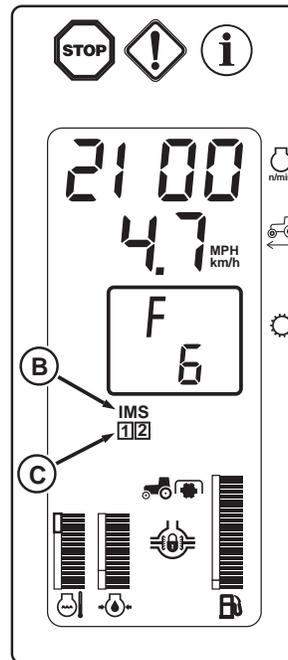
- Release the clutch pedal.

Press desired sequence switch and learned events will be performed simultaneously. So, when Sequence 1 is executed “SCV1 to Extend Detent” and “Differential Lock” would happen at the same time. When sequence concludes, sequence number (C) will no longer display.

A—Sequence Switch                      C—Sequence Indicator  
B—IMS Indicator



CommandARM



Corner Post Display

RXA0091405—UN—06NOV06

RXA0090930—UN—29SEP06

OU1092A,00001D1-19-06MAY08-4/4

**Implement Management System (IMS)—  
Learned Functions**

*NOTE: See this Section how to operate IMS.*

LEARNED FUNCTIONS	
Item	Function(s)
Transmission Gear	Upshift or Downshift in Forward Gear
Automatic Powershift (APS)	CANCEL, RESUME
SCV	EXTEND, RETRACT, FLOAT, NEUTRAL
Differential Lock	ON/OFF

OU1092A,00001CF-19-06NOV06-1/1

### IMS Functions—Selective Control Valves

**NOTE:** Learn mode requires SCV control (A) to be in **detent position**.

Flow Rate and Timed Detent will **not** be learned and can be changed at any time. Timed detent is used to cancel SCV functions.

IMS can learn four functions for SCVs:

- Extend Detent
- Retract Detent
- Float<sup>1</sup>
- Neutral (Used to cancel Float or Detent operations)

SCV control must be in neutral position during execution of a sequence.

**NOTE:** SCVs can be operated manually without causing a sequence to abort.

<sup>1</sup> Not Applicable To High Flow Hydraulic System



CommandArm SCV I

A—SCV Control I

*TouchSet Laser Scraper Control can not be programmed in IMS.*

RXA0091404—UN—06NOV06

OU1092A,00001D0-19-27APR07-1/1

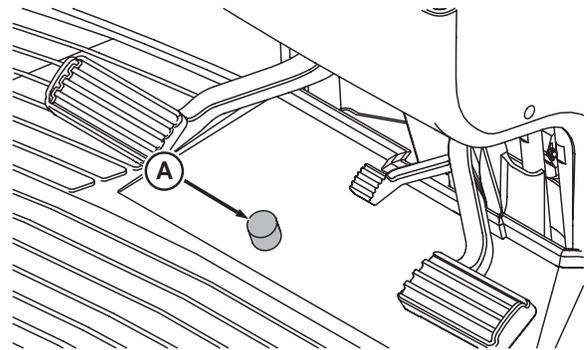
### IMS Functions—Differential Lock

Differential lock can be learned to engage by depressing switch (A) and disengaged by depressing brake pedal.

**IMPORTANT:** Engage differential lock before entering a situation where wheel slippage may occur or when all wheels appear to be turning the same speed.

If differential lock is engaged after wheels begin to spin, which can result in damage to differential.

A—Differential Lock Switch



RXA0089444—UN—12JUN06

OU1092A,00001AE-19-24MAY07-1/1

### IMS Functions

Implement Management System (IMS) is used to combine any of the following functions together to make one sequence performed with the touch of one switch.

**NOTE:** APS maximum gear must be set each time the tractor is started.

**APS switch (A)** can be cancelled or resumed during LEARN mode.

APS is cancelled by programming a transmission shift in IMS. (See Operating Automatic Powershift in Operating the Tractor Section.)

**ON/OFF Switch (B)** enables or disables IMS sequence.

**LEARN/SAVE Switch (C)** enables programming a sequence of functions for IMS. Pressing a second time ends the string of functions learned for that sequence.

**SCV Switches (D)** control the raising and lowering of individual implements.

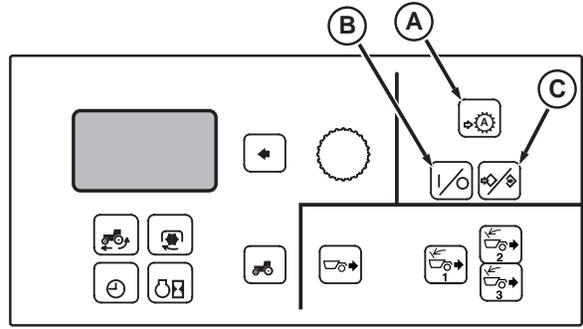
**NOTE:** Learn mode requires SCV control to be in *detent position*. Flow Rate and Timed detent will *not* be learned and can be changed at any time. Timed detent is used to cancel SCV functions. SCVs can be operated manually without causing a sequence to abort.

IMS can learn four functions for SCVs:

- Extend Detent
- Retract Detent
- Float
- Neutral (Used to cancel Float or Detent operations)

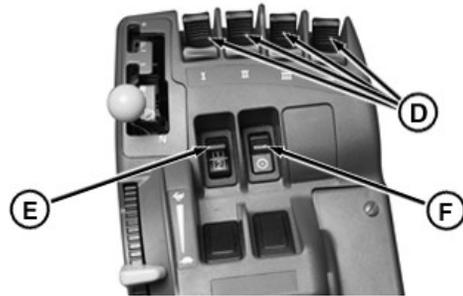
**Differential lock** can be engaged during a sequence by depressing switch on floor board between clutch and brakes.

Tap on brake pedal to disengage differential lock during a sequence.



Automatic Powershift Switch (APS) and IMS Switches

RXA0091465—UN—09NOV06



SCV Switches

RXA0091406—UN—06NOV06

- A—Automatic Power Shift Switch
- D—SCV Switches
- B—ON/OFF Switch
- E—IMS Sequence Switch
- C—Learn/Save Switch
- F—APS Resume Switch

LEARNED FUNCTIONS	
Item	Function(s)
Transmission Gear	Upshift or Downshift in Forward Gear
SCV (CommandARM/TouchSet Only)	Extend, Retract, Float, Neutral
Differential Lock	ON/OFF
Automatic Powershift (PST Transmission Only)	Resume

OU1092A,00001D2-19-09NOV06-1/1

### IMS Functions — 18-Speed Powershift Transmission

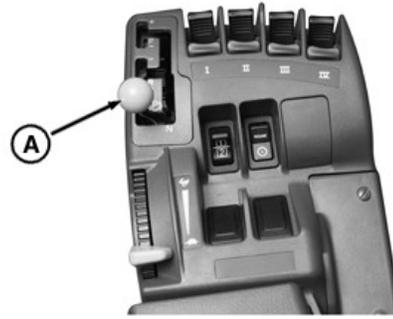
*NOTE: IMS functions only in forward gears.*

The transmission (A) can be upshifted or downshifted during LEARN mode. Shifts made within (2) seconds of one another are considered one event.

If the learned sequence requires **downshifting** (shifting from 7F to 5F for example), IMS will not upshift to reach the desired gear (activating sequence with transmission in 3F will not shift from 3F to 5F).

If the learned sequence requires **upshifting** (shifting from 7F to 9F for example), IMS will not downshift to reach the desired gear (activating sequence with transmission in 11F will not shift from 11F to 9F).

Manually shifting while a sequence is executing will only



A—Transmission Shift Lever

cancel transmission control for the remainder of that sequence. The learned shift changes will remain.

OU1092A,00001D3-19-06NOV06-1/1

RXA0091407—UN—06NOV06

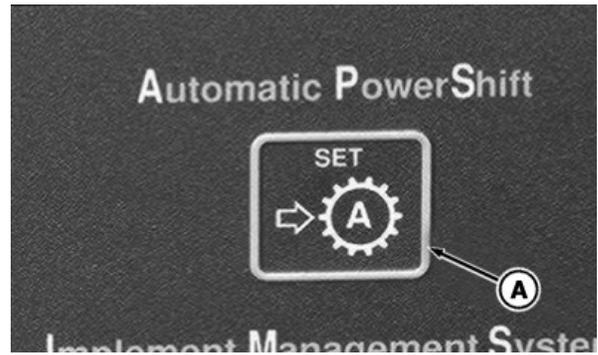
### IMS Functions — Automatic Powershift (APS)

*NOTE: APS maximum gear must be set each time the tractor is started.*

APS can be cancelled or resumed during LEARN mode using resume switch.

APS is cancelled by programming a transmission shift in IMS. (See OPERATING AUTOMATIC 18 SPEED POWERSHIFT in Operating the Tractor Section.)

A—Automatic PowerShift Switch



RW29387,0000275-19-06DEC05-1/1

RXA0062497—UN—18SEP02

## Aborting IMS

Any of the following will cause IMS to shut off (abort):

- Pressing **ON/OFF** switch while sequence is executing
- Pressing **LEARN/SAVE** switch during execution
- Pressing the **opposite sequence** switch during execution
- Allowing speed to drop to less than 0.5 km/h (0.31 mph) and operator not present in seat
- Shifting transmission to **NEUTRAL** or **PARK** position
- If 60 seconds elapses without operator input during the **LEARN** execution mode
- If 60 seconds elapses without operator input during the **SEQUENCE** execution mode and no operator detected in seat or pressing the clutch pedal

RW29387,0000279-19-30NOV06-1/1

## Clearing IMS Sequence

1. Press IMS **ON/OFF** switch to ON.
2. Put transmission in **PARK** position.
3. Press **LEARN/SAVE** switch.
4. Press **SEQUENCE** switch.
5. Press **LEARN/SAVE** switch again to clear existing sequence.

RW29387,000027A-19-25JUL06-1/1

### Use of IMS in Scraper Operation

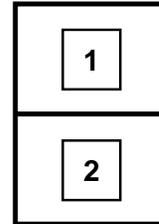
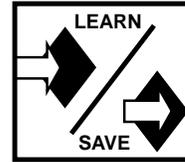
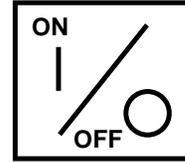
Cycle consists of: Cutting/Loading area, Transporting Loaded distance, Fill/Dump area and Transport Un-loaded/empty distance back to Cut/Loading area.

#### Set-up to “Learn” Sequence # 1 (Finishing cut & going to transport):

1. While still moving, finishing cut & before raising scraper: Depress ON/OFF Touch Switch. (On right console. Turns IMS “On”)
2. Depress Learn/Save touch switch. (On right console. Enters Learn Mode)
3. Depress Sequence 1 rocker switch. (Located on CommandARM)
4. Pull SCV #2 (Gate) to detent “click”. (Closes gate)
5. Pull SCV #1 (Raise) to detent “click”. (Raises scraper)
6. Tap brake pedal to turn off differential lock.
7. Shift up to Transport Gear (Or push resume switch to turn APS back on if previously set for transport).
8. Depress “Learn/Save” touch switch again. (Saves this as Sequence 1)

#### Set-up to “Learn” Sequence # 2 (Returning from transport to begin cut):

1. While still driving back in transport gear: Depress ON/OFF Touch Switch. (Turns IMS “On”)
2. Depress Learn/Save touch switch. (Enters Learn Mode)
3. Depress Sequence 2 rocker switch. (Located on CommandARM)
4. Shift down to proper loading gear. (Example: 8th Forward)
5. Depress Diff. Lock button-switch with foot. (Turns on Diff. Lock)
6. Push SCV #2 Forward to detent “click”. (Opens Gate)
7. Push SCV #1 Forward to detent “click”. (Lowers Scraper)
8. Depress “Learn/Save” touch switch again. (Saves this as Sequence 1)



*NOTE: Be ready to pull SCV #1 back and begin manually controlling the scraper height again if it is set to dig in deeper than engine is ready to handle.*

#### To Use IMS in either sequence (Once sequences have been saved):

- Depress Sequence 1 rocker switch (at moment when done loading scrapers) to go to transport.
- Depress Sequence 2 rocker switch (at moment when ready to return to cut) to begin cutting/loading.

*NOTE: IMS can be programmed in any sequence order. If different procedures or tandem scrapers are used in different manner than this example then operator can program his/her own sequence order if desired.*

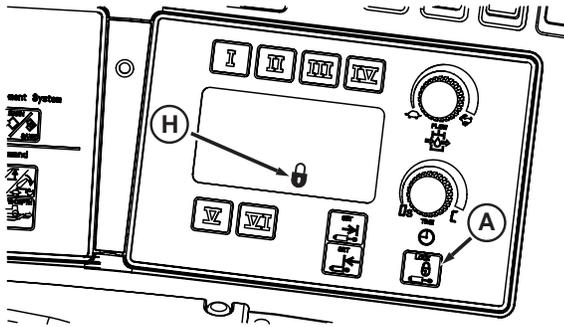
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RXA0065950—UN—13MAR03

RXA0065952—UN—13MAR03

# Hydraulics and Selective Control Valves

## Connecting Standard Hydraulic Hoses



TouchSet Monitor

- A—Transport Lock Touch Switch    C—Retract Icon  
B—Extend Icon    D—SCV Identifier Number

**IMPORTANT:** Steam cleaning or use high pressure washer in the area around the SCV connections and electronics may damage equipment. Any pressure washer exceeding 1000 psi ( 75 bar). should be kept a minimum of 200 mm ( 8 in.) away from connections.

1. Back tractor up to implement and connect to drawbar.

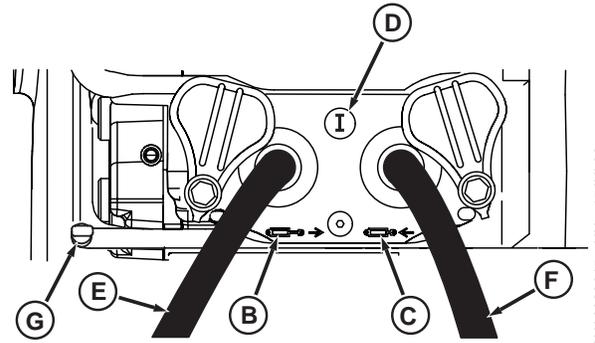
**CAUTION:** Make sure no oil flow is commanded before connecting or disconnecting hydraulic hoses. Failure to perform one of these steps prior to connecting or disconnecting SCV hoses may result in personal injury or damage to equipment.

- Turn off tractor engine
- Push Transport Lock Switch
- SCV lever is in neutral.

2. Push Transport Lock Touch Switch (A) to engage transport lock.

*NOTE: When transport lock engaged, a locked padlock (H) will appear on TouchSet Monitor screen.*

3. Check TouchSet Monitor to ensure transport lock is engaged.



RXA0098649—UN—15JUL08

RXA0098645—UN—17JUL08

- E—Extend Hose    G—Handle  
F—Retract Hose    H—Padlock

4. Clean tractor SCVs and area around SCVs and hose ends.

*NOTE: When connecting couplers, ensure you are connecting to the correct SCV port by noting the number indicated on the identifier (D) on each SCV. If hose connections are reversed, machine will not respond to system controls. Couplers are designated I through V with I being the bottom coupler. Always connect one-way cylinders to the extend side as indicated by the extend icon (B). When connecting two-way cylinders, the extend side will be the left side. The retract side is the right side as indicated by the retract icon (C). Lever (G) is only pushed down when couplers are disconnected. Disconnect both connectors at the same time.*

5. Push extend hose (E) and retract hose (F) firmly into receptacle.

6. Push Transport Lock Touch Switch again to disengage transport lock. Padlock is no longer displayed on TouchSet Monitor.

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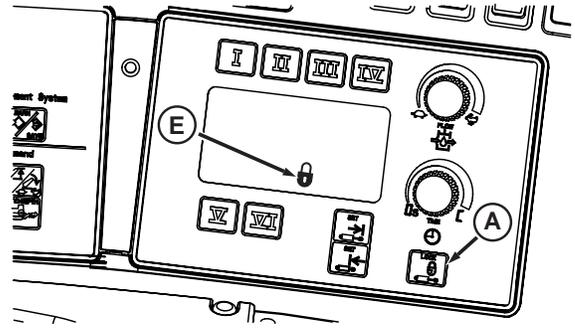
### Disconnecting Remote Hydraulic Hoses

**IMPORTANT:** Steam cleaning or use high pressure washer in the area around the SCV connections and electronics may damage equipment. Any pressure washer exceeding 1000 psi ( 75 bar).. should be kept a minimum of 200 mm ( 8 in.) away from connections.

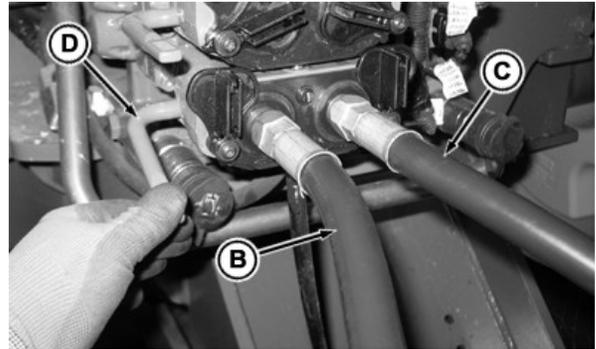
**CAUTION:** Push transport lock touch switch (A) on SCV TouchSet monitor before detaching implements to prevent implement movement and possible personal injury.

1. Lower implement to ground.
2. Push transport lock touch switch to engage transport lock.
3. Observe TouchSet Monitor to ensure padlock (E) is displayed.
4. Push lever (D) down to release both extend hose (B) and retract hose (C).

A—Transport Lock Touch Switch	D—Lever
B—Extend Hose	E—Padlock
C—Retract Hose	



FXA0098646—UN—15JUL08



FXA0102679—UN—07MAY09

RW29387.0000147-19-14MAY09-1/1

## Connecting and Disconnecting High Flow Hydraulic Hoses

**CAUTION:** Push transport lock touch switch (A) on SCV TouchSet monitor before attaching or detaching implements to prevent implement movement and possible personal injury.

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

Be sure hose ends are clean prior to use to minimize hydraulic system contamination.

Clean dust covers. Push sleeve coupler forward to remove dust covers and expose coupler ports.

**NOTE:** Remote cylinder couplers are designated "I" through "V". "I" is the left coupler.

Check to be sure connection on coupler matches cylinder travel direction required.

When using SCV with single acting cylinders, plug hose into extend side of coupler (B).

Move SCV switch to neutral position with no time flow "commanded". Push coupler sleeve forward and push hose firmly into receptacle.

Pull coupler sleeve back to lock hose coupler into receptacle.

Lower implement to the ground before disconnecting cylinder hoses.

Push coupler sleeve forward to release extend (D) or retract hose (E).

Pull hose back from receptacle and replace SCV protective dust cover.

**NOTE:** When high pressure oil is trapped in the scraper hoses which can prevent male hose tip from completely engaging into the female coupler.

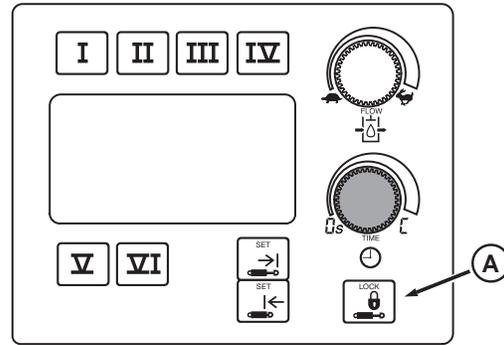
When the SCV is used for the first time, the hose can pop back out.

This is caused by pressure in the hydraulic hoses if scraper was disconnected from tractor when:

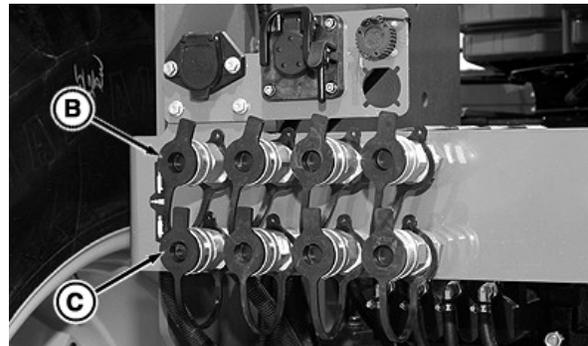
1. Scraper was in a raised position without using transport locks.
2. Scraper was sitting for a period of time with sun heating the oil in the hoses.

When attaching an scraper that has hydraulic hoses under pressure, follow steps in order.

1. Start the tractor and allow it to run for a few minutes.
2. Shut tractor engine off and allow engine to come to a stop.

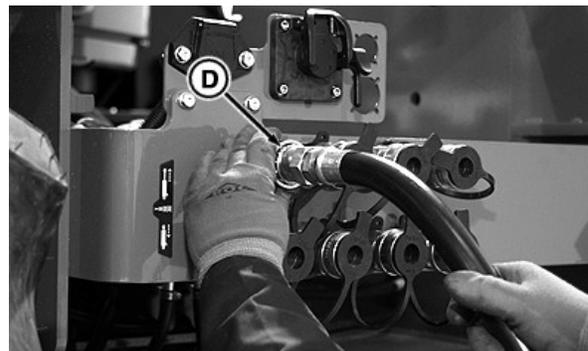


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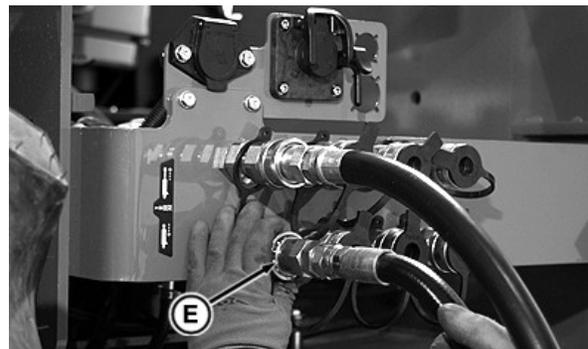


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High Flow SCV's



FXA0094299—UN—25MAY07



FXA0094301—UN—25MAY07

**A—Transport Lock Touch Switch**  
**B—Extend Side**  
**C—Retract Side**

**D—Extend Hose Coupler**  
**E—Retract Hose Coupler**

Continued on next page

RW29387,0000020-19-19OCT07-2/1

3. Immediately turn the key switch back on to the run position.
4. Cycle the SCV lever(s) on the armrest to extend and retract positions. Doing this with the engine off will relieve the internal pressure in the SCV couplers.
5. Connect the scraper hoses to the tractor couplers. Pull

- lightly on the hoses to ensure full engagement was achieved.
6. Start the tractor and flow oil in both directions to allow couplers to unseat the poppets on the male hose tips and enable proper operation of the SCV.
7. If problem persists, contact your John Deere Dealer.

RW29387,0000020-19-19OCT07-1/1

### Using SCV TouchSet™ Controls and Monitor

**⚠ CAUTION:** Push transport lock touch switch (G) on SCV TouchSet monitor before attaching or detaching implements to prevent implement movement and possible personal injury.

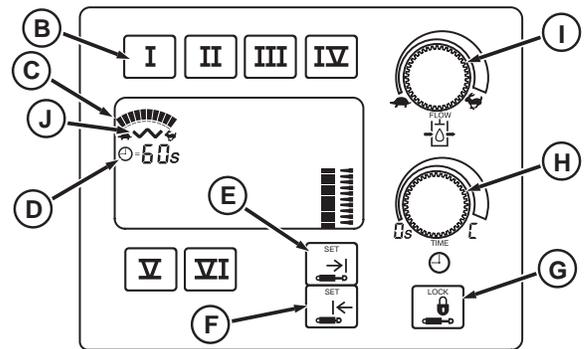
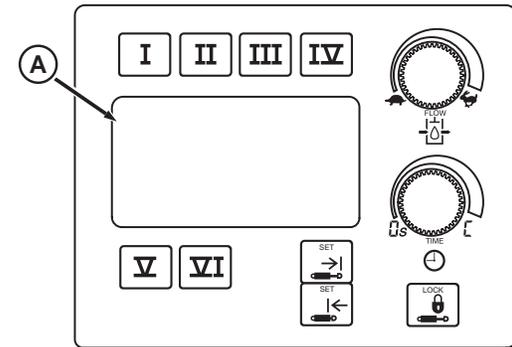
Hydraulic setup and adjustment panel on side console provides operational display of SCV function and a means to set flow rate and detent time operation for each SCV.

At start up, display will show all SCV numbers and symbols for 2 seconds. After start up, SCV monitor displays selected time for each SCV.

Select SCV number (I—V). SCV monitor will enter adjustment mode. Bar graph display will show rabbit, turtle and clock symbols (H) for selected SCV. Digital display shows flow setting and detent time for selected SCV (D).

In adjustment mode, selected SCV settings can be changed. Adjustment mode remains activated for 20 seconds after which time display returns to normal operation.

In normal mode, SCV monitor will only display current detent time settings for each SCV. Flow rate will be displayed as a bar graph.



- |   |  |
|---|--|
| A—Controls and Monitor                            | F—Cylinder Retract Limit Touch Switch <sup>1</sup> |
| B—SCV Selector Touch Switch                       | G—Transport Lock Touch Switch                      |
| C—Display-SCV Selected and Flow Rate              | H—Detent Time Adjustment                           |
| D—Display-Flow Rate and Time Detents              | I—Flow Rate Adjustment                             |
| E—Cylinder Extend Limit Touch Switch <sup>1</sup> | J—Float Symbol                                     |

TouchSet is a trademark of Deere & Company

<sup>1</sup> Cylinder Extend and Retract Limit Touch Switches used with TouchSet Depth Control only

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RXA0096481—UN—23OCT07

## Determining Total Flow Demand

1. Check flow setting for each function, independently. (See implement operator's manual, applications section, to determine correct motor flow settings.)

Examples of functions which can cause the pump to operate at high pressure:

- Down pressure systems (drills, air seeders, disks)—usually can be considered to be zero flow demand after completion of raise or lower cycle.
- Auxiliary flow control valves (vacuum flow control)—Completely open implement flow control valve and adjust tractor flow rate to desired setting
- Cylinder functions, where line or orifice restrictions control flow—Adjust tractor flow control to point where cycle time just begins to decrease.
- Auxiliary control valves (implement stack valves)—Adjust tractor flow control to lowest setting resulting in correct operation

2. Determine total flow demand by adding flow requirements for each SCV using settings determined in Step 1. Include hitch and power-beyond flow requirements, if applicable. (Refer to chart for correct settings.)

3. Determine if flow demand exceeds available pump flow (Refer to chart for available pump flow) :

- Flow demand is less than available pump flow but there is performance concern. (See your John Deere Dealer.)
- Flow demand exceeds pump flow:
  - Increase engine rpm, if possible
  - Decrease flow setting on non-critical functions
  - Convert implement open center valves to closed center operation, if possible

### PUMP FLOW AVAILABLE—STANDARD (PST)

Engine rpm	Flow at 83.4°C (150 °F)	
	L/min	gpm
1000	89	23
1500	136	36
2000	182	48

### PUMP FLOW AVAILABLE—HIGH FLOW (PST)<sup>a</sup>

Engine rpm	Flow at 83.4°C (150 °F)	
	L/min	gpm
1000	136	36
1500	212	56
2000	284	75

<sup>a</sup> Approximate high flow values

RW29387,0000021-19-24MAY07-1/1

### Adjusting Selective Control Valve Flow Rate

**CAUTION:** Excessive operating speed can cause damage or injury. Full extension or retraction of cylinder should take at least 2 seconds.

Adjust rate of operation for each job. Rate should be slow enough to be safe, yet fast enough to be practical.

Change flow setting as follows:

1. Press selected SCV switch (A). Display below touch switch shows previous rate of flow.

**NOTE:** To provide operator with additional indication of command setting, as operator “clicks” flow knob (C) through the flow settings, the display will increase or decrease the number of multiple line increments as the flow changes.

2. Turn flow rate knob (C) clockwise (rabbit) to increase flow or counterclockwise (turtle) to decrease flow. Flow setting is shown on bar graph display (B) when adjustments are made.

**NOTE:** SCV can be operated to observe flow rate while in adjustment mode. Reduced cylinder cycle times and/or a reduction in motor speed may result if total flow demand exceeds available pump flow.

SCV FLOW OUTPUT (APPROXIMATE)

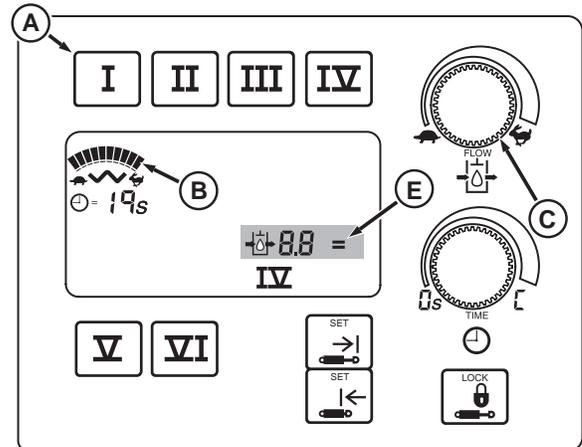
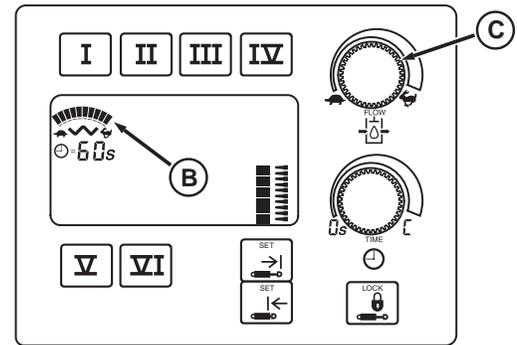
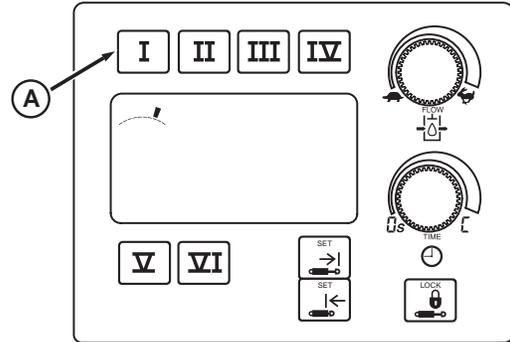
SCV Flow Settings	Standard Flow		High Flow <sup>a</sup>	
	L/min	gpm	L/min	gpm
0.1 <sup>b</sup>	—	—	—	—
1.0	3.6	1.0	0.6	0.2
2.0	7.2	1.9	33.4	8.8
3.0	10.2	2.7	59.9	15.8
4.0	14.4	3.8	88.5	23.4
5.0	19.2	5.0	105.9	28.0
6.0	24.0	6.4	125.8	33.2
7.0	31.2	8.2	157.2	41.5
8.0	39.6	10.5	167.3	44.2
9.0	65.4	17.2	168.7	44.6
10.0	114	30.0	168.9	44.6

<sup>a</sup> Approximate values taken @ 2100 engine rpm

<sup>b</sup> 0.1 = Minimum Flow Setting

A—SCV Switch  
B—Bar Graph Display  
C—Flow Rate Knob

D—Blank Field  
E—Multiple Dashes

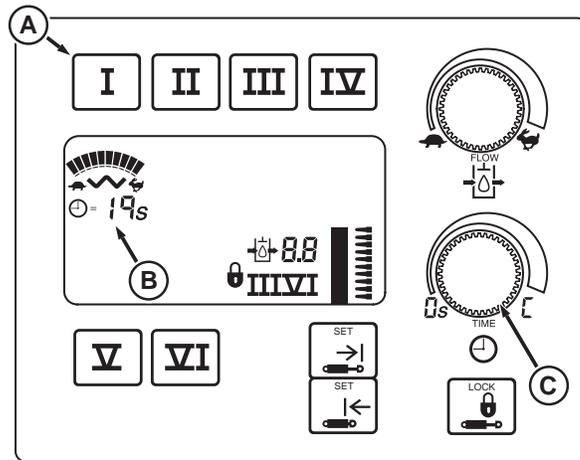


RXA0085795—UN—09JAN06

RXA0085796—UN—09JAN06

RXA0098648—UN—15JUL08

## Adjusting Timed Detent



A—SCV Selector Switch

B—Time Setting Display

C—Detent Time Adjustment

### Timed Detent Function:

Three detent functions are available to hold each SCV function for an adjustable time.

- 0 Second (No Timed Detent)—Hold control lever in extend or retract position. Oil flow continues until control lever is released. (This position is recommended for implements requiring frequent height or depth adjustments.)
- 1—60 Seconds (Adjustable Timed Detent)—Control lever is moved to full (detented) extend or retract position and released. Lever returns to neutral. Oil flow continues until time selected expires. (This position is recommended for implements operating at full depth or with depth stops on the cylinders.)
- C (Continuous Flow)—Control lever is moved to full (detented) extend or retract position and released. Lever returns to neutral. Oil flow continues until control lever is

moved away from Neutral or until tractor is shut off. (This position is required for hydraulic motor use or applications where a continuous flow of oil is required.)

### Timed Detent Adjustment:

Press selected SCV lever (A). Display (B) shows set time.

Adjust displayed timed detent by turning knob (C) clockwise (longer detent time or "C" continuous detent time). Turn knob counterclockwise (shorter detent time or "0" zero detent time). Time setting is shown on display (B).

Settings will take effect immediately. SCV can be operated to observe detents while in adjust mode.

**NOTE:** Move SCV lever slightly forward or rearward from neutral to cancel a detent function manually.

RW29387,0000280-19-30OCT07-1/1

FXA0068098—UN—20JUN03

### Using Six Position SCV Control Levers

**CAUTION:** Prevent possible personal injury. Ensure hydraulic hoses are not reversed at the couplers if cylinder is extending when it should be retracting. Switch hoses at the coupler for proper operation.

SCV control levers (I—VI) have six positions:

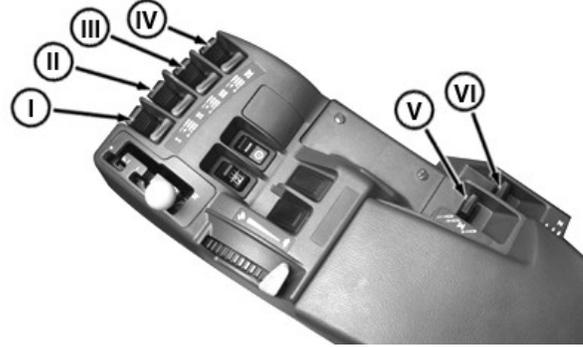
- **Neutral (A)**—Lever returns to center position when released except in float position
- **Extend (B)** (rearward between Neutral and Extend Detent)—variable flow to extend cylinder, proportional to lever movement; shuts off when returned to center position
- **Retract (C)** (forward between Neutral and Retract Detent)—variable flow to retract cylinder, proportional to lever movement; shuts off when returned to center position
- **Extend Detent (D)** (rearward to "click" position)—timed flow to extend cylinder, based on detent time setting and at a rate set by flow rate control (See Adjusting Timed Detent and Adjusting Selective Control Valve Flow Rate in this Section) Lever returns to neutral when released
- **Retract Detent (E)** (forward to "click" position)—timed flow to retract cylinder, based on detent time setting and at a rate set by flow rate control. (See Adjusting Timed Detent and Adjusting Selective Control Valve Flow Rate in this Section.) Lever returns to neutral when released
- **Float (F)** (fully forward and down into locked position)—valve is open to sump to allow cylinder to extend or retract so implement can follow ground contour; must be pulled up and out of locked position to disengage

**IMPORTANT:** To relieve *standard hydraulic system* pressure in implement, move SCV control lever to float position, while engine is running.

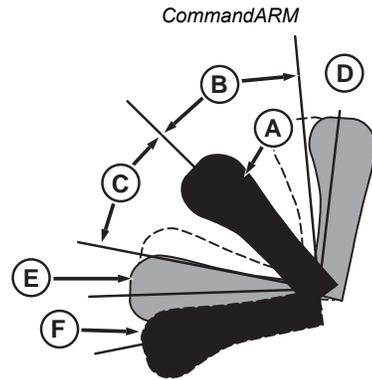
**IMPORTANT:** To relieve *high flow hydraulic system* pressure, stop engine, turn key on without starting engine, move SCV control lever back and forth between extend and retract.

Cover (G) can be moved to cover and SCV levers (I —IV) when not in use.

- |                          |                           |
|--------------------------|---------------------------|
| A—SCV lever (In Neutral) | E—Detent Position Retract |
| B—Extend Range           | F—Float                   |
| C—Retract Range          | G—SCV Switch Cover        |
| D—Detent Position Extend |                           |

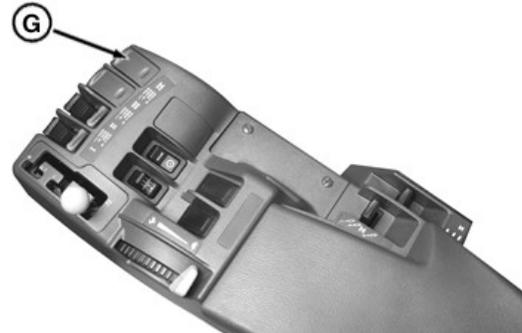


RXA0091415—UN—06NOV06



RXA0090152—UN—03AUG06

Armrest Controls—Six Position SCV Levers



RXA0091411—UN—06NOV06

SCV Lever Cover

OU1092A,00001D4-19-30OCT07-1/1

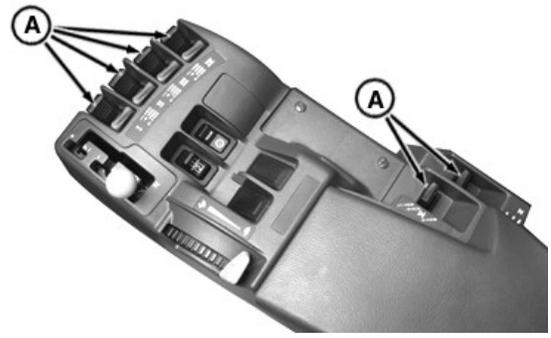
### SCV Lever—Neutral Position

Neutral (A) allows flow to continue until timed detent has expired. If no timed detent was "commanded", then both extend and retract valves will be off.

**NOTE:** SCV control lever should be in neutral position at tractor start up.

Levers in extend or retract position automatically return to neutral when the lever is released. Float position will remain detented.

Any position other than neutral or float will be ignored, until lever is cycled to neutral after engine start up.



A—SCV Neutral Position

RXA0091416—UN—06NOV06

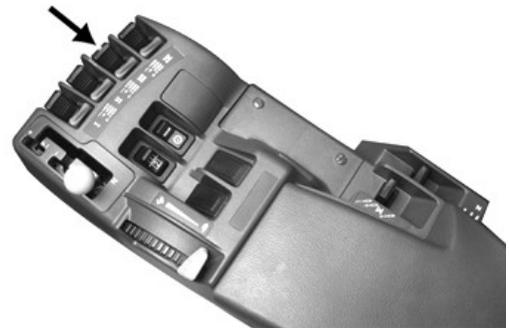
OU1092A,00001D5-19-06NOV06-1/1

### SCV Lever—Extend Position

Pull lever slightly to rear of neutral. This slowly extends cylinder at a variable flow rate as a percent of maximum flow rate (rate that was set when flow rate was set for corresponding SCV) and proportional to amount of lever travel between neutral and extend detent position. (See Adjusting Selective Control Valve Flow Rate in this section.) Lever returns to neutral and flow stops when released.

Pull the lever all the way rearward to extend the remote cylinder at maximum rate. Detent operation mode depends on the SCV detent selected. (See SCV Lever Extend Detent Position in this Section.)

**NOTE:** Time setting is ignored in extend position.



RXA0091417—UN—06NOV06

OU1092A,00001D6-19-06NOV06-1/1

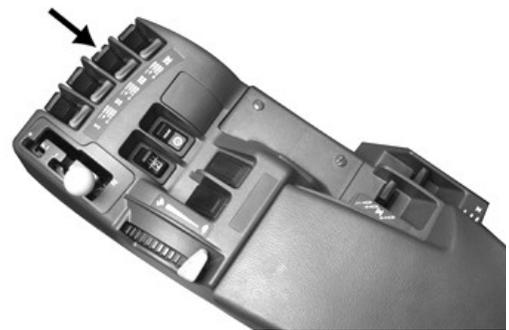
### SCV Lever—Extend Detent Position

Pull lever rearward to "click" detent position and release. Lever will return to neutral position, but flow will continue at rate set on SCV TouchSet panel with SCV flow rate and flow time knobs (as last set for corresponding SCV). (See Adjusting Selective Control Valve Flow Rate and Adjusting Detent Time in this section.)

Flow timing will start when SCV lever is first moved into detent but not before. Oil flow will start as soon as SCV lever is moved but will not reach preset rate until just before lever is moved to detent position. SCV flow time should be adjusted so cylinder will be fully extended when time has elapsed.

Detent can be cancelled by moving SCV lever slightly forward or rearward from neutral after lever has returned to neutral or by holding lever in extend position for more than 0.8 seconds after lever is released from detent.

**NOTE:** Detent positions ignored at startup until lever is cycled to neutral.



RXA0091417—UN—06NOV06

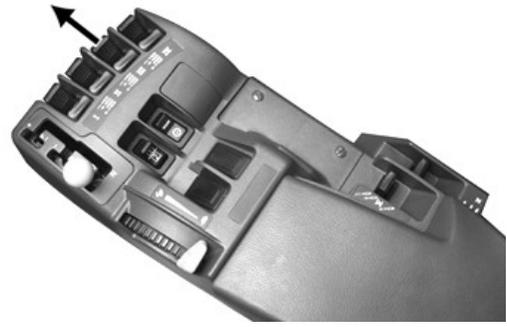
OU1092A,00001D7-19-09NOV06-1/1

### SCV Lever—Retract Position

Push lever slightly forward of neutral. This slowly retracts cylinder at a variable flow rate as a percent of maximum flow rate (rate set when flow rate was set for corresponding SCV) and proportional to amount of lever travel between neutral and extend detent position. (See Adjusting Selective Control Valve Flow Rate in this Section.) Lever returns to neutral and flow stops when released.

Push the lever forward to the first detent notch to retract the remote cylinder at maximum rate. Detent operation mode depends on the SCV detent selected. (See SCV Lever Retract Detent Position in this Section.)

*NOTE: Time setting is ignored in retract position.*



RXA0091418—JUN—06NOV06

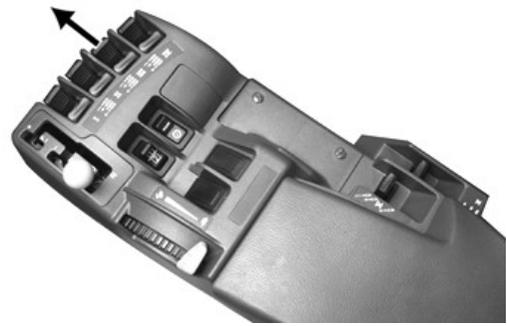
OU1092A,00001D8-19-06NOV06-1/1

### SCV Lever—Retract Detent Position

Push lever forward to "click" detent position and release. Lever will return to neutral position, but flow will continue at rate set on SCV TouchSet panel with SCV flow rate and flow time knobs (as last set for corresponding SCV). (See Adjusting Selective Control Valves Flow Rate and Adjusting Timed Detent in this Section.)

Flow timing will start when SCV lever is first moved into detent but not before. Oil flow will start as soon as SCV lever is moved but will not reach preset rate until just before lever is moved to detent position. SCV flow time should be adjusted so cylinder will be fully retracted when time has elapsed.

Detent can be cancelled by moving SCV lever slightly forward or rearward from neutral after lever has returned to neutral or by holding lever in retract position for more than 0.8 seconds after lever is released from detent.



RXA0091418—JUN—06NOV06

Moving lever quickly from neutral to float position will cause continuous operation and allow motor to turn freely.

*NOTE: Detent positions are ignored at startup until lever is cycled to neutral.*

OU1092A,00001D9-19-06NOV06-1/1

### SCV Lever—Float Position (Standard Hydraulic System Only)

Push SCV lever all the way forward and down to lock in float position. Lever will remain in this position and SCV will remain in float position until lever is returned to neutral position. Cylinder is free to extend or retract, letting implement follow ground.

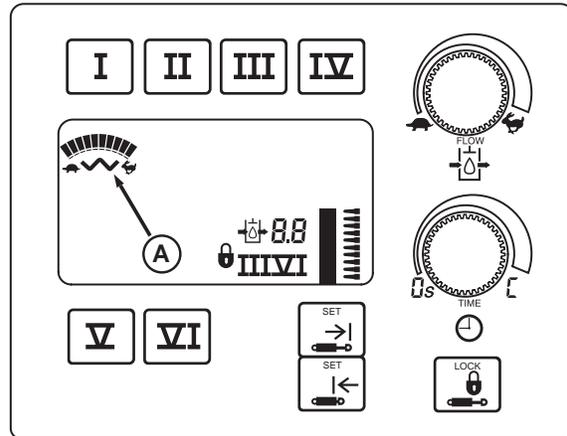
Float indicator (A) will be displayed on SCV TouchSet monitor when lever is in float position.

*NOTE: Time setting is ignored in Float position.*

If lever is in float position at engine start up, float function will operate if lever was moved to float position at least 10 seconds before engine was shut off and had not moved out of float position. If lever was not operated in this manner, float function will be disabled until lever is cycled to neutral.

Cycle cylinder fully in both directions after being used in the float position to ensure cylinder is filled with oil.

**A—Float Indicator**



Float Indicator

OU1092A,00001DA-19-04JUN07-1/1

RXA0091413—UN—06NOV06

RXA0068100—UN—20JUN03

### Operator Presence Sensor

A sensor built into seat alerts operator when leaving seat with SCV engaged. Hydraulic and Service Alert indicator lights will flash for 5 seconds with an audible warning signal with the transmission in PARK or NEUTRAL position, and SCV lever in the "Continuous" or "Timed Detent" modes.

*NOTE: SCV does not disengage while operator is absent from the seat.*

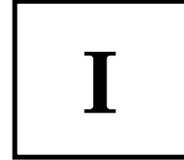
RW29387,0000288-19-06DEC05-1/1

**Use of TouchSet™ in Scraper Operation**

A suggested and common set up is with the number 1 SCV used to operate raise/lower cylinder of the scraper (with pulling back on the SCV lever will raise the scraper. The Number 2 SCV is used to operate the Gate/Bucket cylinders (with pulling back on the SCV lever will close the gate.

**How to Use TouchSet Hydraulic control for scraper use:**

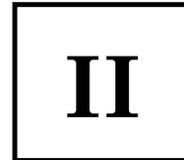
1. Press the number 1 SCV touch switch (Roman numeral I) (located on the right console).
2. Turn flow rate knob (knob located on Touch-Set panel, right side) clockwise until the flow setting is 10.0 (full flow) or desired setting.



RXA0065957—UN—13MAR03

**To set the hydraulic flow (speed) SCV # 1 (Raise/Lower Scraper):**

1. With flow set at desired setting operate the detent “click” to raise or lower scraper and count number of seconds desired for allowed operation.
2. Press the number 1 SCV touch switch (Roman numeral I) (located on the right console).
3. Turn detent rate knob (knob located on Touch-Set panel, left side) until the detent time wanted is displayed (ranges 0-19 sec. Or Continuous).



RXA0065958—UN—13MAR03

**To set the hydraulic flow (speed) SCV # 2 (Gate/Bucket of Scraper):**

1. Press the number 2 SCV touch switch (Roman numeral II) (located on the right console).
2. Turn flow rate knob (knob located on Touch-Set panel, right side) clockwise until the flow setting is 10.0 (full flow) or desired setting.

left side) until the detent time wanted is displayed (ranges 0-19 sec. Or Continuous).

**To set the hydraulic detent for SCV # 2 (Gate/Bucket of Scraper):**

3. With flow set at desired setting operate the detent “click” to raise or lower scraper gate/bucket and count number of seconds desired for allowed operation.
4. Press the number 2 SCV touch switch (Roman numeral II) (located on the right console).
5. Turn detent rate knob (knob located on Touch-Set panel,

**To Operate SCV #1 or #2 in Detent Mode:**

1. Push or Pull desired SCV to full movement and push/pull extra to feel “click” which is detent position. (Lever will return to center but timer will still be flowing oil).
2. To cancel a detent and stop the oil flow, pull/push lever again without “clicking” into detent position. (Flow will stop)
3. If lever is not touched, flow will continue until the preset detent time (0-19 seconds) is reached. Then it will automatically shut off.

*TouchSet is a trademark of Deere & Company*

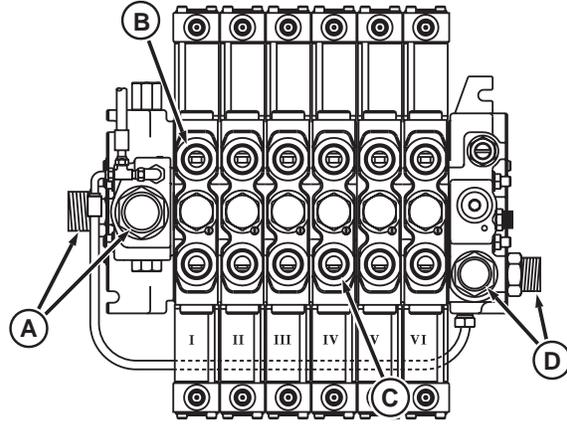
RW29387.0000023-19-24MAY07-1/1

# Remote Hydraulic Connections

## Hydraulic Component Identification—*High Flow Hydraulics*

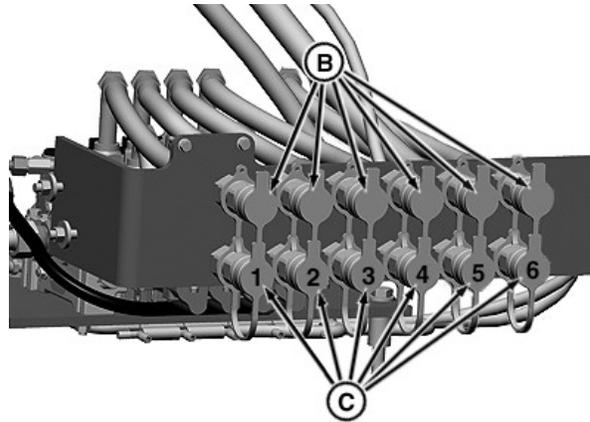
A—Pump Supply Ports  
B—Extend Ports

C—Retract Ports  
D—Return Flow Ports



RXA0097829—UN—24APR08

*Hydraulic Component Identification - High Flow Valves*

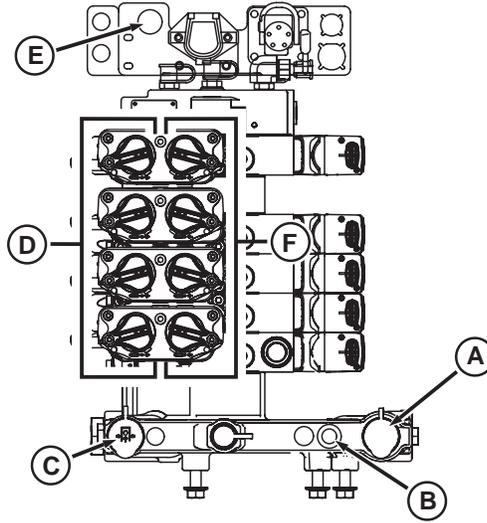


RXA0097830—UN—24APR08

*High Flow Couplers*

RW29387,000002F-19-24APR08-1/1

### Standard Hydraulic Component Identification



Standard Hydraulic Component Identification

- |                                    |   |                                      |                           |
|------------------------------------|---|--------------------------------------|---------------------------|
| <b>A</b> —Power-Beyond Return Port | <b>B</b> —Power-Beyond Load Sense Coupler | <b>C</b> —Power-Beyond Pressure Port | <b>E</b> —Seal Drain Port |
|                                    |   | <b>D</b> —Extend Ports Motor         | <b>F</b> —Retract Ports   |

RW29387,000013D-19-28APR09-1/1

RXA0102924—UN—14MAY09

### Using Load-Sensing Hydraulic System—*Power-Beyond*

Power-beyond is used as a pressure/flow source for auxiliary functions equipped with independent flow control valves. Use power-beyond when:

- Tractor SCV control is not needed
- No other SCV outlet is available

Power-beyond functions require a "load-sense" signal to regulate pump pressure, therefore, a "load-sense" hydraulic line is used. Certain equipment may require modification. (See your John Deere Dealer.)

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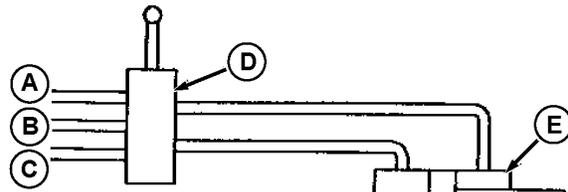
### Examples Using Load-Sensing Hydraulic System—Power-Beyond

**Example 1** —Control valves with a load-sense provide a load-sense signal to hydraulic system and can be operated manually or by solenoids.

**Example 2** —Control valve directs oil into extend or retract circuits. Connect load-sense line to circuit requiring pressure. An example is a wagon lift cylinder with load supported by mechanical stops in full down position. Load-sense signals pump when increased pressure is needed. Pressure remains low when not needed.

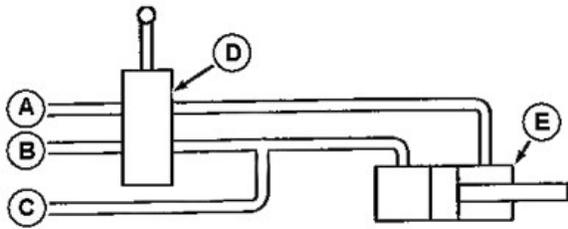
**IMPORTANT: Circuit allows cylinder "leak-down" through load-sense line (C). If leakage is not acceptable for operation, use Example 3.**

- |                   |                 |
|-------------------|-----------------|
| A—Return Line     | D—Control Valve |
| B—Pressure Line   | E—Cylinder      |
| C—Load-Sense Line |                 |



Example 1

RW55109A—UN—18MAR99



Example 2

RXA0073530—UN—17FEB04

RW29387,000028A-19-05NOV07-1/2

**Example 3**—Control valve directs oil into extend or retract circuits, either requiring high pressure. Connect load-sense line to pressure line before control valve.

**NOTE: System will maintain a maximum pressure of 20000 kPa (200 bar) (2900 psi) as long as power-beyond hoses are connected.**

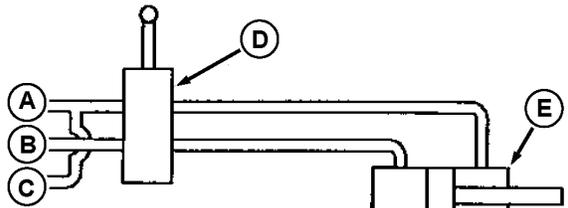
An example is a folding implement, where pressure is needed to extend or retract cylinders.

**Example 4**—Pressure-compensated flow control valve is used to regulate hydraulic motor speed. Connect load-sense line to pressure line after control valve.

**NOTE: Motor speed can fluctuate when other functions cause system pressure change. Minimize fluctuations by installing a pressure-compensated flow control valve.**

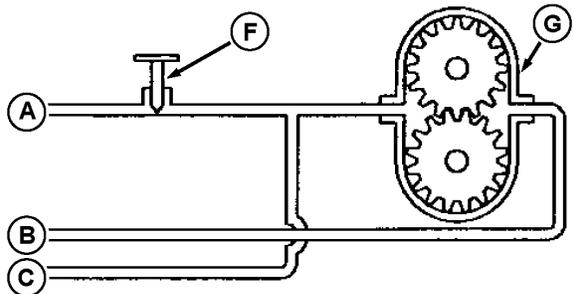
**NOTE: High flow scraper hydraulics not recommended for motor application.**

- |                   |                                   |
|-------------------|-----------------------------------|
| A—Pressure Line   | E—Cylinder                        |
| B—Return Line     | F—Pressure-Compensated Flow Valve |
| C—Load-Sense Line | G—Hydraulic Motor                 |
| D—Control Valve   |                                   |



Example 3

RW55111A—UN—08MAR99



Example 4

RW55112A—UN—08MAR99

RW29387,000028A-19-05NOV07-2/2

### Using Hydraulic Spray Pumps

*NOTE: Not recommended for high flow scraper hydraulics.*

1. Follow spray pump manufacturers recommendations for pump model selection, setup and operation.

*NOTE: Select the smallest displacement motor recommended for multiple hydraulic function operation. The smaller displacement will lower total hydraulic flow demand and improve overall system performance.*

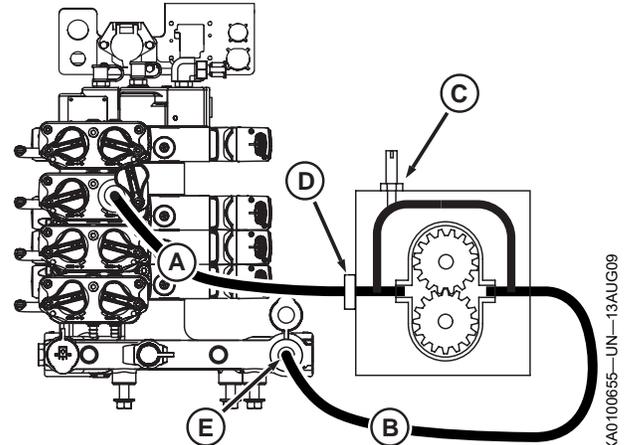
3. Connect motor pressure line (A) to retract port of SCV (right-hand side).

*NOTE: Use of SCV 3, 4, or 5 for standard hydraulic system is suggested. Use SCV 4 or 5 for High Flow hydraulic system and no hitch. Use SCV 3 or 4 for High Flow hydraulic system and with hitch.*

4. Connect return line (B) to power beyond return coupler (E).

5. Activate SCV by moving lever forward to retract detent position and adjust hydraulic flow rate per pump manufacturers guidelines.

6. Shut off spray pump by moving SCV control lever to float position (full forward and down). Stopping spray pump by moving SCV to neutral position will cause high pressure oil to be trapped between SCV and pump. This may cause damage to spray pump seals. This applies to motors using the SCV pressure and return couplers.



Spray Pump (Less Hitch)

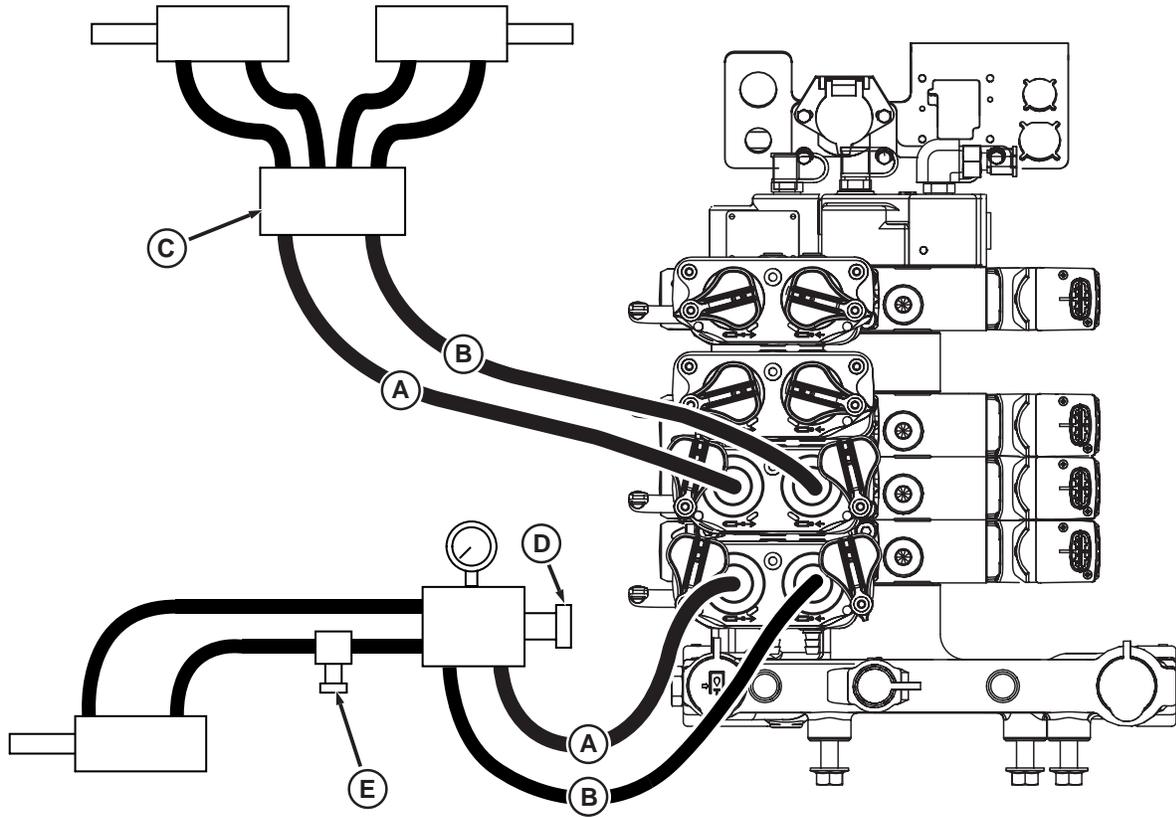
- |                         |                               |
|-------------------------|-------------------------------|
| A—Pressure Line         | D—Inlet Line Orifice (Remove) |
| B—Return Line           | E—Power Beyond Return Coupler |
| C—Needle Valve (Closed) |                               |

**IMPORTANT: Some motors are not equipped with over-speed protection. Extended operation above recommended speed can cause failure.**

RW29387,000012F-19-17JUL09-1/1

RXA0100655—UN—13AUG09

**Implement Connection Example 1—Pressure Control Valve Applications (Grain Drills or Air Seeders with Constant Down-Pressure System)—Less Hitch—Standard Hydraulics**



RXA0100657—UN—13AUG09

A—Extend Coupler Line  
B—Retract Coupler Line

C—Selector Valve  
D—Pressure Control Valve

E—Transport Lock Valve

**NOTE:** *Not recommended for high flow scraper hydraulics.*

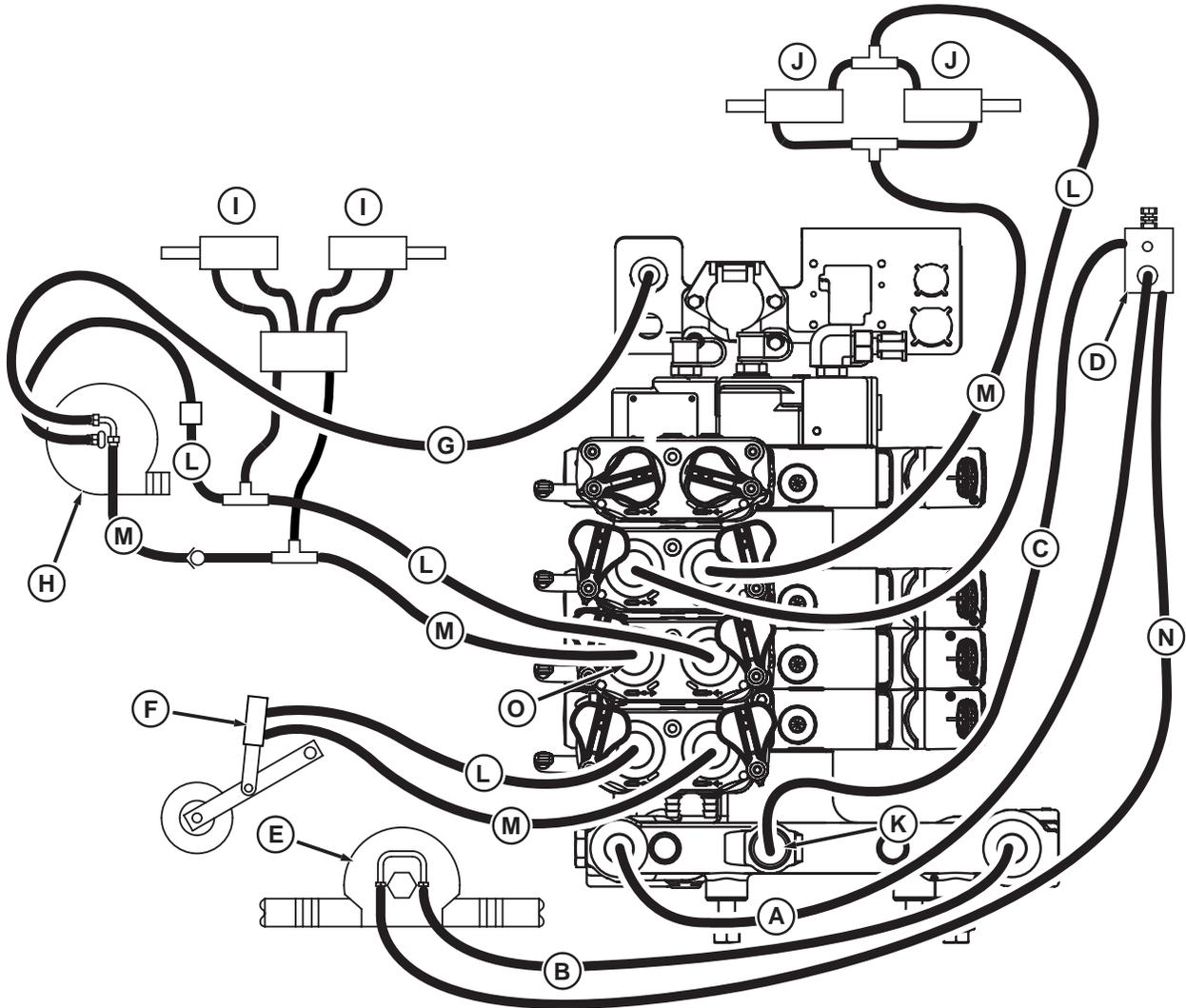
For implements using active down force set flow control to continuous and move lever to detent position.

This will cause hydraulic pump to operate at maximum

pressure which may cause overheating of hydraulic oil if at the same time outside air temperature is high. To avoid this problem, try not to operate more than one hydraulic motor with tractor hydraulic system when active down force is being used.

RW29387,0000131-19-17JUL09-1/1

**Implement Connection Example 2—Motor Application Using Motor Case Drain—Less Hitch—Standard Hydraulics**



RXA0100658—UN—13AUG09

- |                              |                         |                       |                        |
|------------------------------|-------------------------|-----------------------|------------------------|
| A—Power Beyond Pressure Line | E—Vacuum Motor          | I—Marker              | M—Retract Coupler Line |
| B—Power Beyond Return Line   | F—Raise/Lower Cylinder  | J—Fold                | N—Controlled Flow Line |
| C—Load Sense Line            | G—Motor Seal Drain Line | K—Load Sense Port     | O—Hose Tip             |
| D—Control Valve              | H—Fan                   | L—Extend Coupler Line |                        |

**NOTE:** Not recommended for high flow scraper hydraulics.

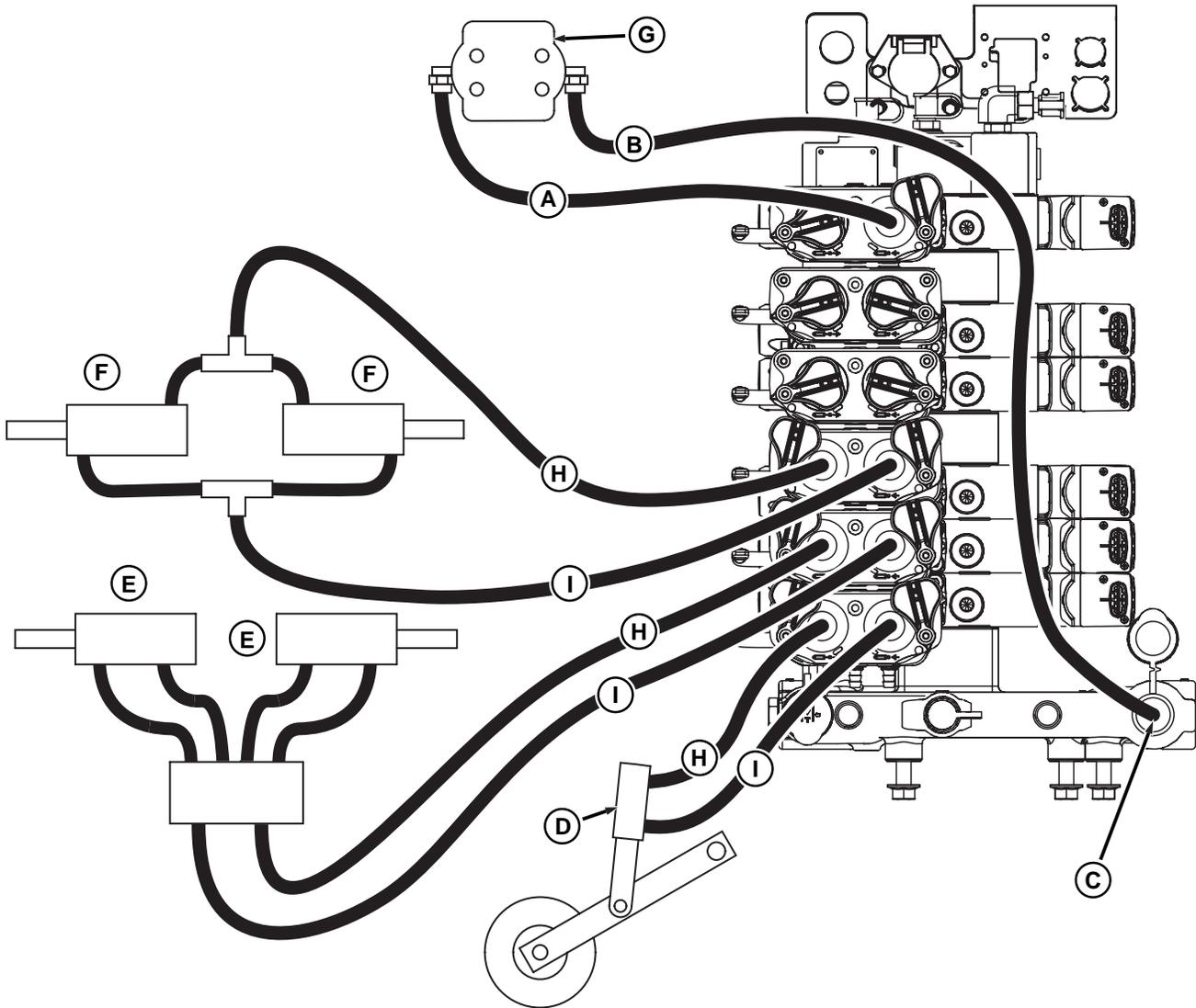
In this motor application (E) is being operated from power beyond which requires a load sense connection (C) to signal hydraulic pump for operation.

The second motor (H) is equipped with motor case drain line (G). Pressure oil comes from the retract port on the SCV and return oil is routed to the extend port. When motor

return oil is routed to an SCV, a special return hose tip (O) with check valve is required to prevent high pressure oil from moving back toward the motor and possibly damaging the seals. When the motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever to neutral will cause motor to stop abruptly and may damage seals.

RW29387.0000132-19-10AUG09-1/1

**Implement Connection Example 3—Closed Center Valve, Pump at High Pressure—Less Hitch—Standard Hydraulics**



RXA0100659—UN—13AUG09

A—Pressure Line  
B—Return Line

C—Power Beyond Return  
coupler  
D—Raise/Lower cylinder

E—Markers  
F—Fold  
G—Hydraulic Motor

H—Extend Coupler Line  
I—Retract Coupler Line

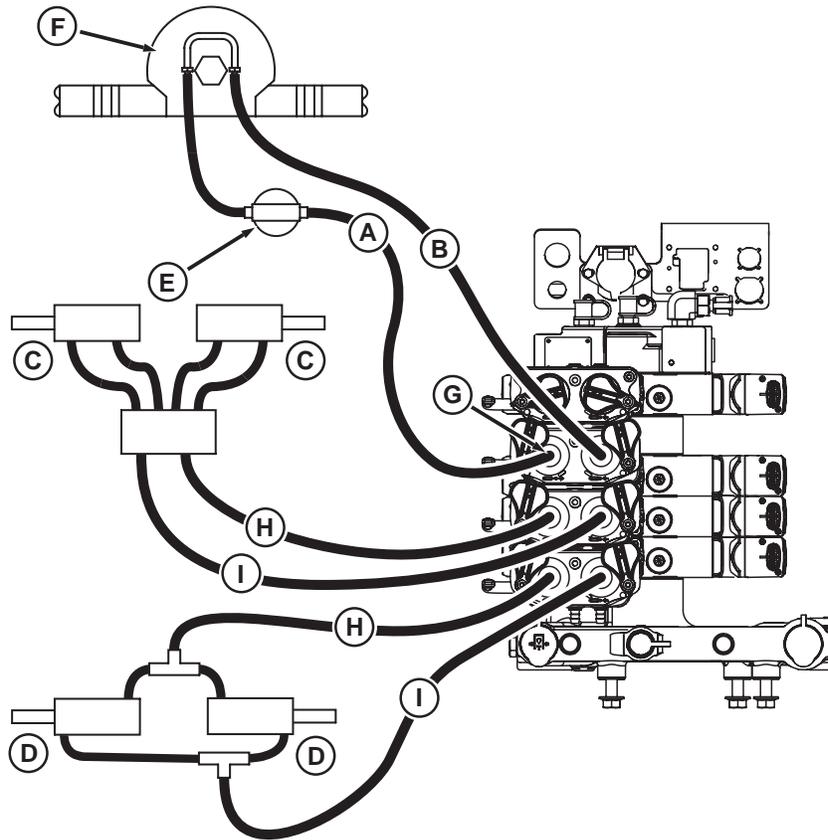
*NOTE: Not recommended for high flow scraper hydraulics.*

In this application motor (G) receives pressure oil from the retract port on SCV. Return oil is routed to power beyond return port. When the motor is shut off, the SCV lever is

moved to float position to allow motor to coast to a stop. Moving lever to neutral can cause motor to stop abruptly and may damage seals. Since return oil is routed to power beyond return port, no special hose tip is required.

RW29387,0000133-19-17JUL09-1/1

**Implement Connection Example 4—Planter with Vacuum Motor and Return Line to SCV Using Motor Return Tip—Less Hitch—Standard Hydraulics**



A—Return Line  
B—Pressure Line  
C—Marker

D—Fold  
E—Flow Control Valve (Wide Open)

F—Vacuum Motor  
G—Special Hose Tip

H—Extend Coupler Line Motor return Tip  
I—Retract Coupler Line

**NOTE:** Not recommended for high flow scraper hydraulics.

In this application vacuum motor (F), similar to a planter blower, receives pressure oil from the retract port on SCV. Since return oil is routed to an SCV, a special return hose tip with check valve is required to prevent high pressure oil from moving back toward the motor and possibly damaging the seals. When motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever

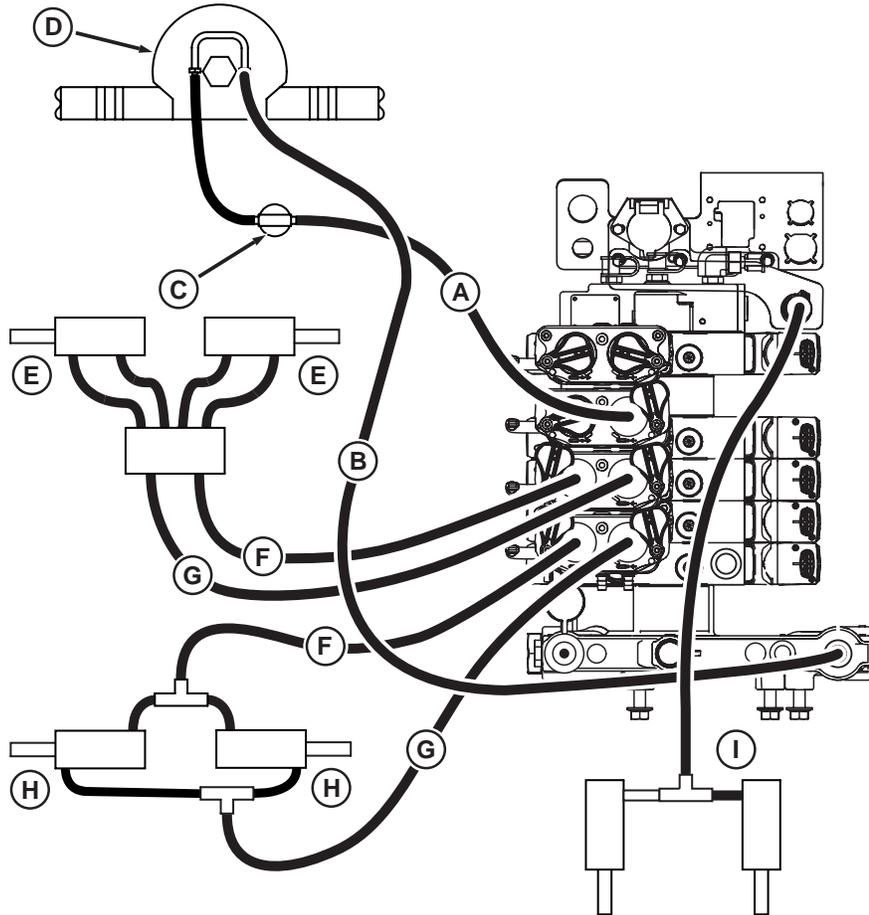
to neutral will cause motor to stop abruptly and may damage seals.

Flow control valve (E) should be wide open and flow controlled by SCV setup panel. If flow is controlled by flow control valve, it will cause hydraulic pump to operate at maximum pressure which may cause overheating of hydraulic oil if at the same time outside air temperature is high.

RW29387,0000134-19-20JUL09-1/1

FXA0100660—UN—13AUG09

**Implement Connection Example 5—Planter with Vacuum Motor and Return Line to Motor Return—With Hitch—With Lift Assist—Standard Hydraulics**



A—Pressure Line  
B—Return Line

C—Flow Control Valve (Wide Open)  
D—Vacuum Motor

E—Fold  
F—Extend Coupler Line  
G—Retract Coupler Line

H—Markers  
I—Lift Assist

**NOTE:** *Not recommended for high flow scraper hydraulics.*

In this application vacuum motor (D) receives pressure oil from the retract port of SCV. Return oil is routed to power beyond return port. If return hose is equipped with special return hose tip, it can be connected directly to left-hand side of coupler three. When the motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever to neutral will cause motor to stop abruptly and may damage seals.

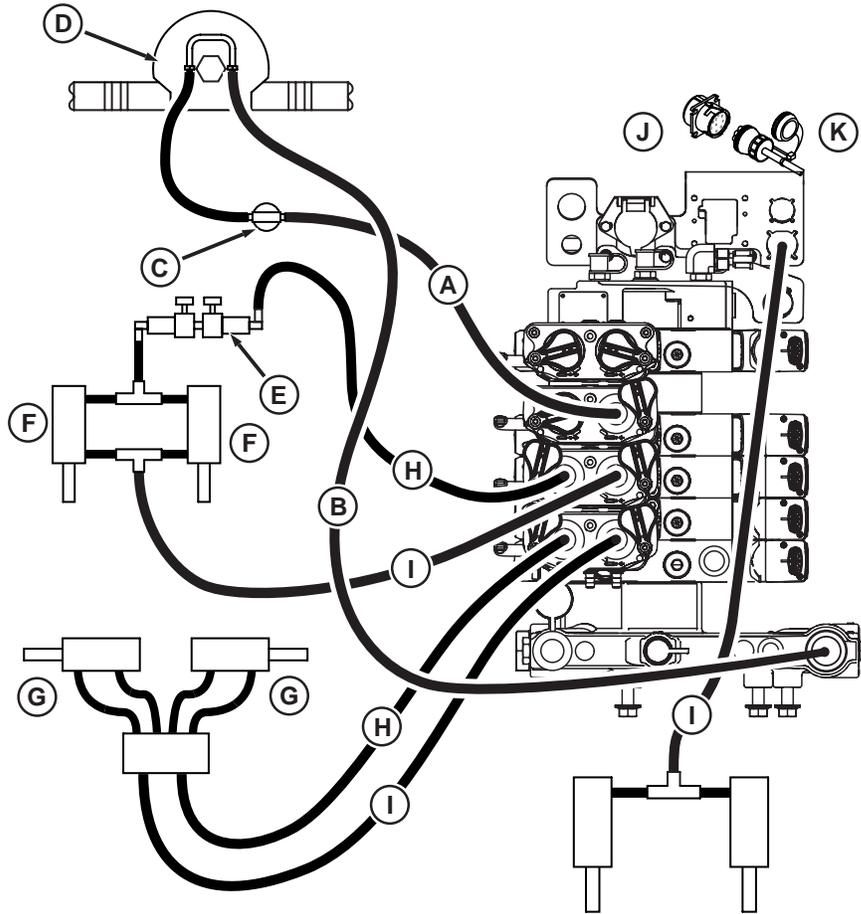
Control valve (C) is wide open and flow is controlled by tractor control panel. If valve is used to control oil flow, pump will operate at maximum pressure which may cause overheating of hydraulic oil if at the same time outside air temperature is high.

Lift assist is controlled by hitch lever.

RW29387,0000135-19-17JUL09-1/1

FXA0100661—UN—10AUG09

**Implement Connection Example 6—Planter with Vacuum Motor and Return Line to Motor Return—With Hitch—Lift Assist—Standard Hydraulics**



A—Pressure Line  
B—Return Line  
C—Flow Control Valve (Wide Open)

D—Vacuum Motor  
E—Control Valve  
F—Lift Assist  
G—Markers

H—Extend Coupler Line  
I—Retract Coupler Line  
J—Tractor 9-Pin Connector  
K—Special 9-Pin Connector

**NOTE:** Not recommended for high flow scraper hydraulics.

In this application vacuum motor (D) receives pressure oil from the retract port of SCV. Return oil is routed to power beyond return port. If return hose is equipped with special planter return hose tip, it can be connected directly to left-hand side of coupler three. When the motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever to neutral will cause motor to stop abruptly and may damage seals.

Control valve (C) is wide open and flow is controlled by

tractor control panel. If valve is used to control oil flow, pump will operate at maximum pressure which may cause overheating of hydraulic oil if at the same time outside air temperature is high.

SCV #1 is used to control both the valve and lift assist. The special 9-pin harness (K) contains a loop circuit that disables tractor hitch control unit when it is connected to 9-pin connector (J) that is wired into tractor main electrical harness.

RW29387,0000136-19-17JUL09-1/1

FXA0100662—UN—10AUG09

## Connecting Implements to High Flow Hydraulic SCV's

1. The high flow hydraulic system consists of one 75cc primary pump for bottom SCV's (B) and one 45cc secondary pump for top two SCV's (A).
2. The 45cc pump supplies oil to top two SCV's. It is recommended these SCV's be used for low pressure and high flow functions. Most hydraulic motors use 19 to 26.5 L/min (5 to 7 gpm) per motor and a pressure of around 100 bar (1450 psi) to operate.

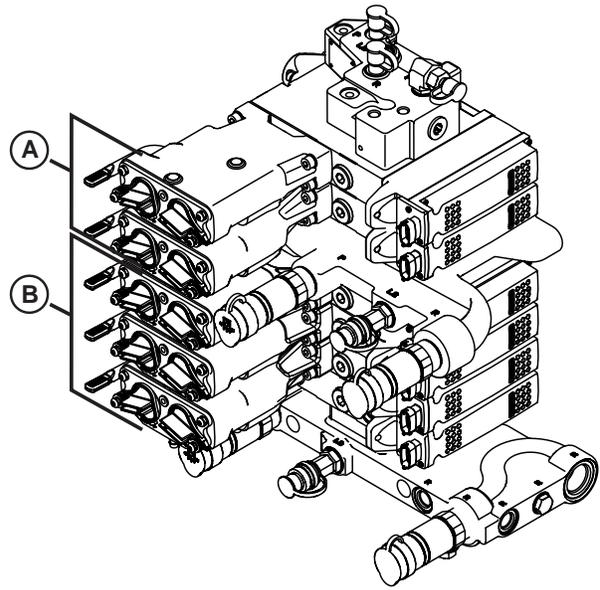
Use top two SCVs to operate hydraulic motors such as air seeders, sprayers and vacuum planters. Using the secondary pump when operating hydraulic motors will improve fuel economy, reduce power loss and reduce heating of hydraulic oil. This reduces hydraulic system interactions with steering, brakes, raise, lower, active down force, etc.

**IMPORTANT: The secondary pump and top two couplers can provide high pressure to the same functions as the primary pump, however, the benefits of improved fuel economy and reduced power loss disappear. There is an increased chance of system interactions with hydraulic motors being on the same pump as other hydraulic functions which typically means increased vacuum level or blower motor speed fluctuations. Under some conditions, more heat can be generated which will place increased load on the cooling system.**

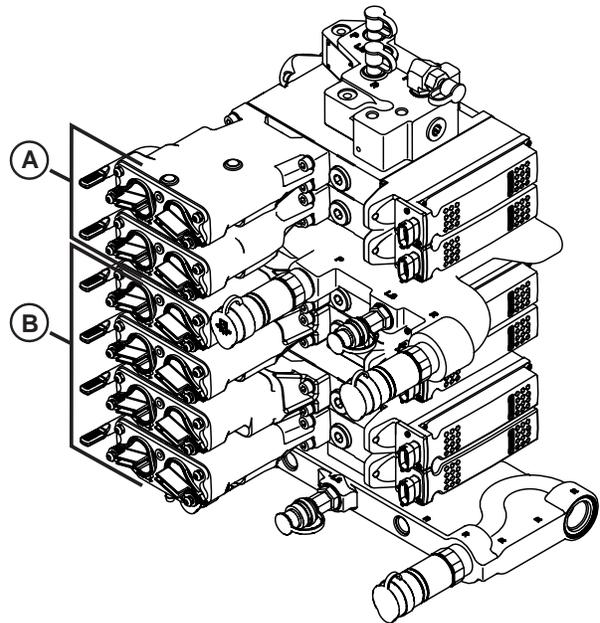
3. The 75cc pump supplies oil to bottom SCV's. It is recommended these SCV's be used for high pressure and low flow functions, such as air seeders, large cylinders and active down force systems.

A—Top SCV Couplers

B—Bottom SCV Couplers



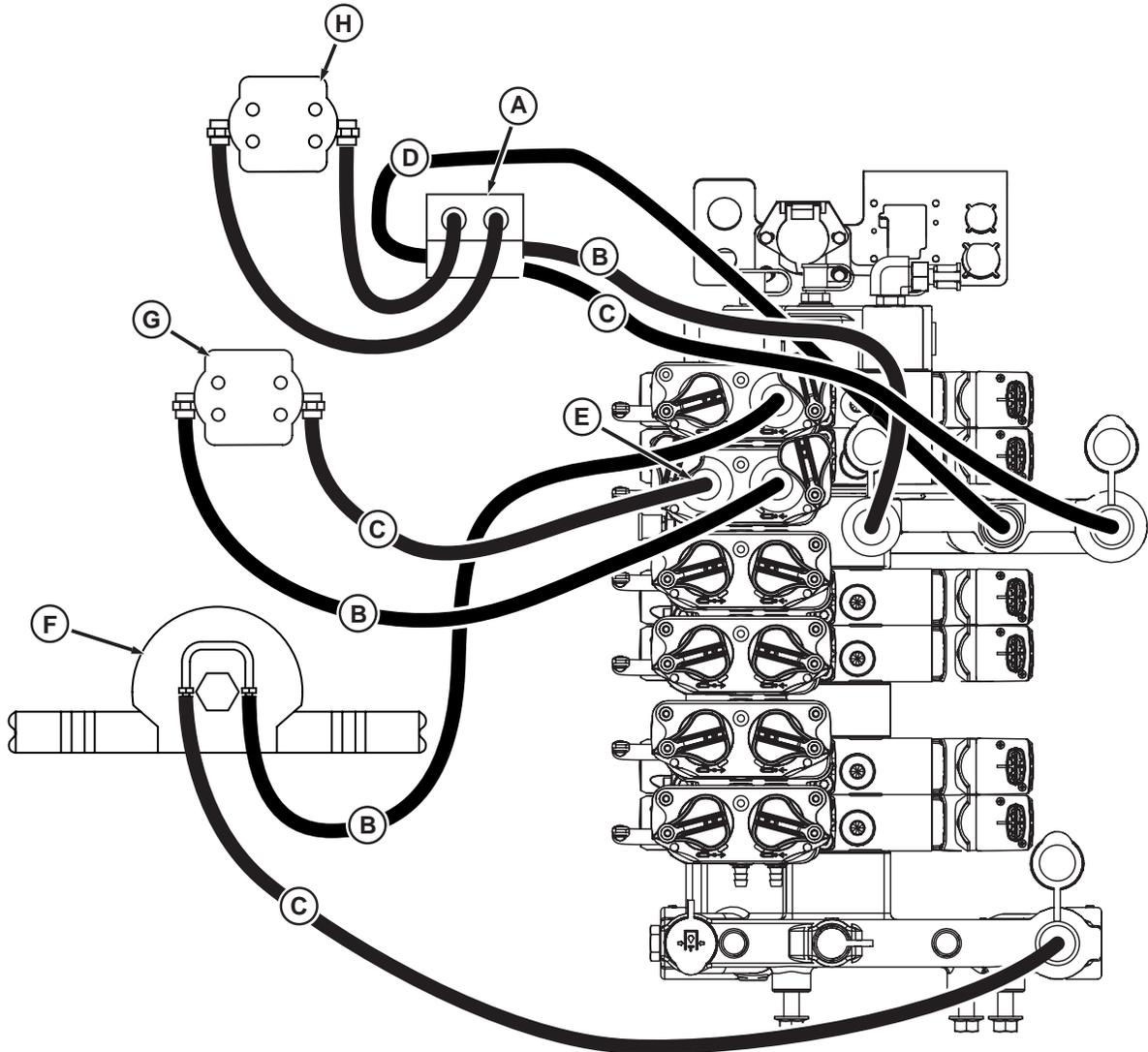
High Flow Hydraulic SCV Stack (5 SCVs with Hitch Valve)



High Flow Hydraulic SCV Stack (6 SCVs, No Hitch)

RW29387,0000137-19-16SEP09-1/1

**Implement Connection Example 1—Implement Control Valves—Less Hitch—High Flow Hydraulics**



FXA0100667—UN—10AUG09

**A—Variable Rate Drive**  
**B—Pressure Line**

**C—Return Line**  
**D—Load Sense Line**

**E—Return Hose Tip**  
**F—Vacuum Motor**

**G—Hydraulic Motor**  
**H—Hydraulic Motor**

In this application vacuum motor (F) receives pressure oil from the retract port of SCV. Return oil is routed to the high flow power beyond return port. If return hose is equipped with special return hose tip, it can be connected directly to left-hand side of coupler. When the motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever to neutral will cause motor to stop abruptly and may damage seals.

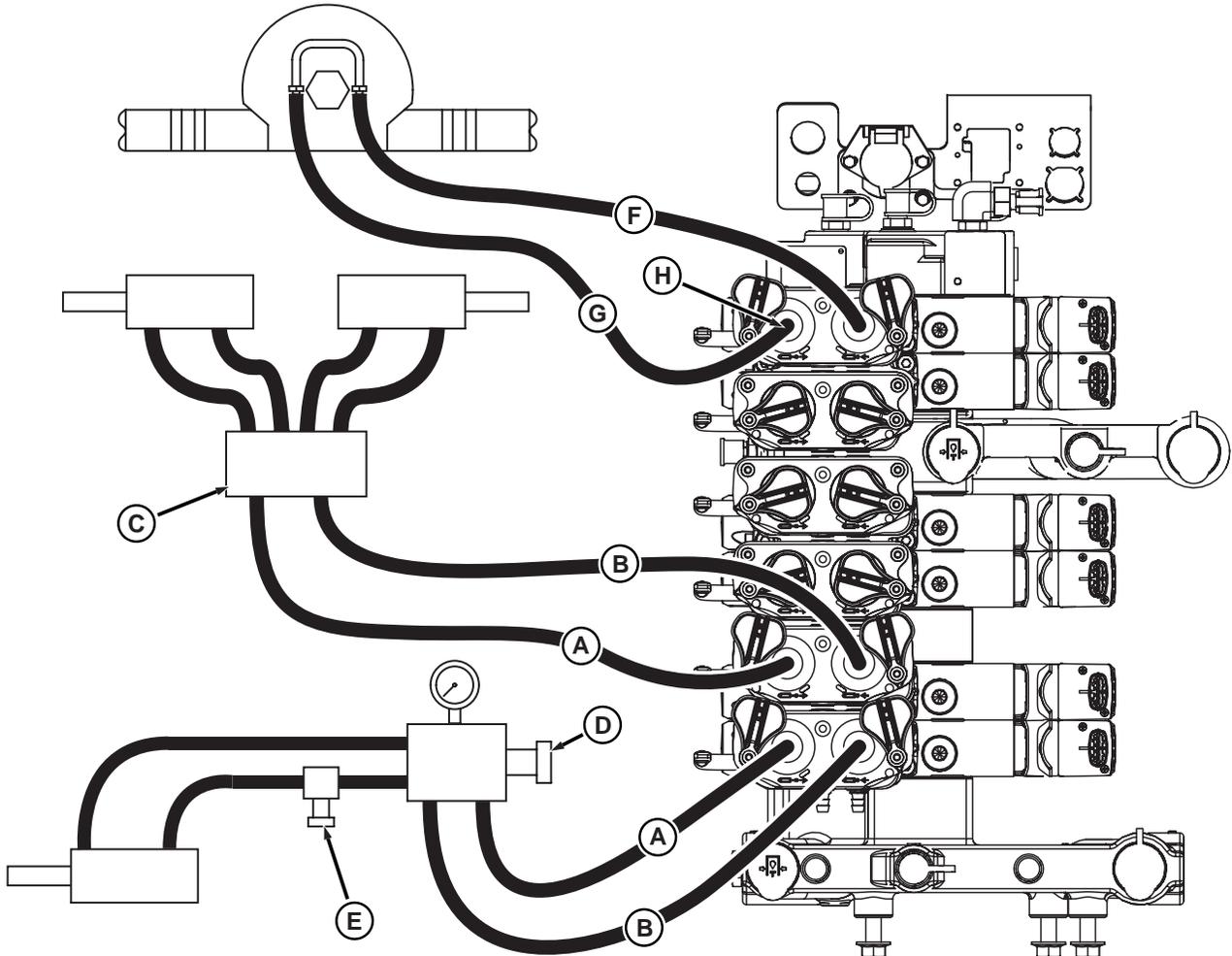
Hydraulic motor (G) receives pressure oil from the retract

port of SCV. Since return oil is routed to extend port of an SCV, a special return hose tip with check valve is required to prevent high pressure oil from moving back toward the motor and possibly damaging the seals.

Hydraulic motor (H) receives pressure oil from power beyond port and return oil is routed to power beyond return port. In this application, both hydraulic motors and vacuum motor are being operated by the secondary hydraulic pump.

RW29387,0000139-19-17JUL09-1/1

**Implement Connection Example 2—Pressure Control Valve Applications (Grain Drills or Air Seeders with Constant Down-Pressure System)—Less Hitch—High Flow Hydraulics**



**A—Extend Coupler Line**  
**B—Retract Coupler Line**

**C—Selector Valve**  
**D—Pressure Control Valve**

**E—Transport Lock Valve**  
**F—Pressure Line**

**G—Return Line**  
**H—Return Hose Tip**

In this application vacuum motor receives pressure oil from the retract port of SCV. Since return oil is routed to extend port of SCV a special return hose tip (H) with check valve is required to prevent high pressure oil from moving back toward the motor and possibly damaging the seals. Another option would be to route return oil to power beyond return port which would not require a special return hose tip. When the motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever to neutral will cause motor to stop abruptly and may damage seals.

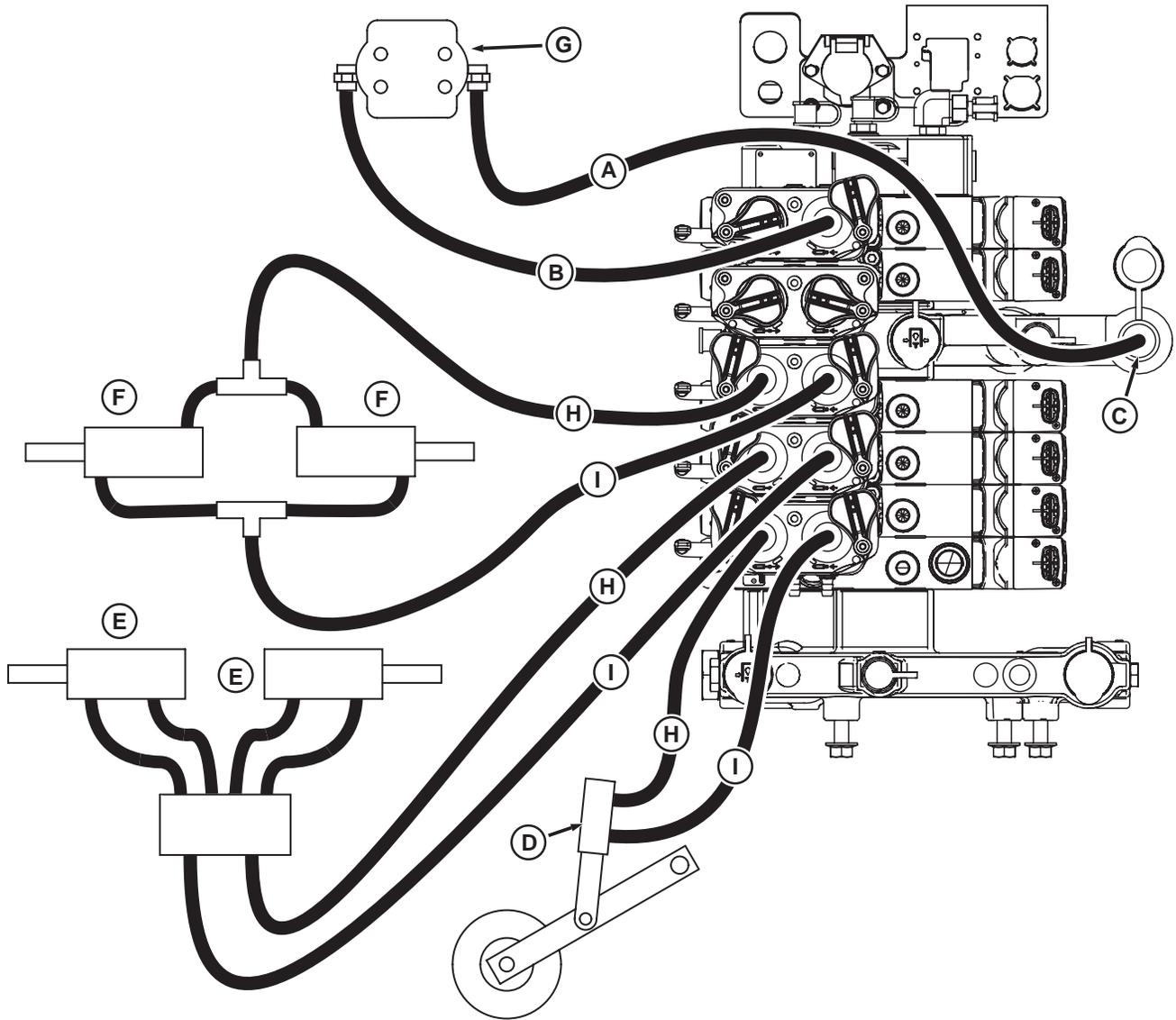
For implements using active down force set flow control to continuous and move lever to detent position.

This will cause hydraulic pump to operate at maximum pressure which may cause overheating of hydraulic oil if at the same time outside air temperature is high. To avoid this problem, try not to operate more than one hydraulic motor with tractor hydraulic system when active down force is being used.

RXA0100668—UN—13AUG09

RW29387,000013A-19-17JUL09-1/1

**Implement Connection Example 3—Closed Center Valve, Pump at High Pressure—Less Hitch—High Flow Hydraulics**



RXA0100669—UN—13AUG09

**A—Return Line**  
**B—Pressure Line**

**C—Power Beyond Return coupler**  
**D—Raise/Lower cylinder**

**E—Markers**  
**F—Fold**  
**G—Hydraulic Motor**

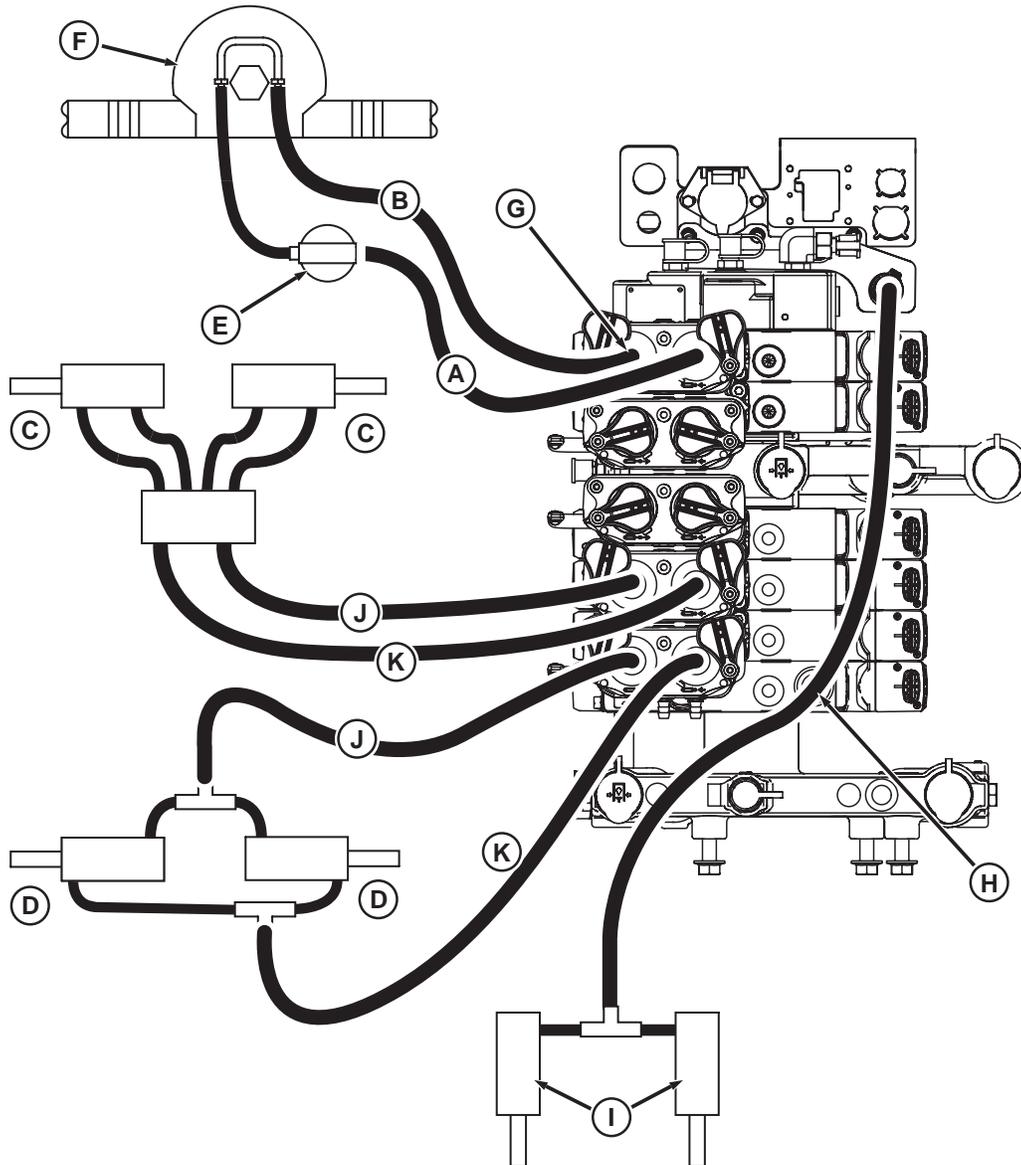
**H—Extend Coupler Line**  
**I—Retract Coupler Line**

In this application hydraulic motor (G) receives pressure oil from the retract port of SCV. Return oil is routed to power beyond return port. If return hose is equipped with special return hose tip, it can be connected directly to left-hand side

of coupler. When the motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever to neutral will cause motor to stop abruptly and may damage seals.

RW29387,000013B-19-20JUL09-1/1

**Implement Connection Example 4—Planter with Vacuum Motor and Return Line to SCV Using Motor Return Tip—With Hitch—High Flow Hydraulics**



A—Pressure Line  
B—Return Line  
C—Marker

D—Fold  
E—Flow Control Valve (Wide Open)

F—Vacuum Motor  
G—Motor return Tip  
H—Auxiliary Hitch Port

I—Lift Cylinders  
J—Extend Coupler Line  
K—Retract Coupler Line

In this application vacuum motor (F) receives pressure oil from the retract port of SCV. Since return oil is routed to an SCV, a special return hose tip (G) with check valve is required to prevent high pressure oil from moving back toward the motor and possibly damaging the seals. When the motor is shut off, the SCV lever is moved to float position to allow motor to coast to a stop. Moving lever to neutral will cause motor to stop abruptly and may damage seals.

Control valve (E) is wide open and flow is controlled by tractor control panel. If valve is used to control oil flow, pump will operate at maximum pressure which may cause overheating of hydraulic oil if at the same time outside air temperature is high.

Lift assist is controlled by hitch lever.

RXA0100670—UN—10AUG09

RW29387,000013C-19-20JUL09-1/1

### Using Implement Requiring Large Volumes of Oil

**⚠ CAUTION:** Do not add hydraulic oil to reservoir with engine running. Injury from unexpected hitch or cylinder movement can occur.

**IMPORTANT:** Power loss and excess heat generation can result if the additional large volume of oil is not removed after using the implement. Removing too much oil can result in malfunction when raising the hitch or using the "extend" function of SCVs.

Cycle all implement cylinders after starting tractor.

Check the hydraulic oil level. (See CHECKING HYDRAULIC OIL LEVEL in the Lubrication Section.)

Add oil if required.

Lower implement to return oil to the reservoir.

Recheck oil level when implement is removed.

Drain any excess oil from hydraulic reservoir.

RW29387.0000299-19-06DEC05-1/1

### Motor Seal Drain Kit—If Equipped

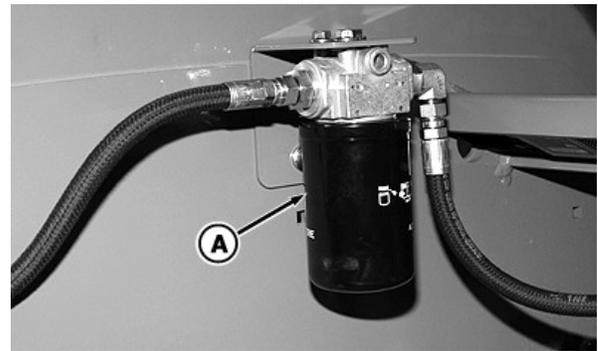
The motor seal drain protects motor and shaft seals by allowing motor crankcase oil to return directly to the hydraulic reservoir at low (sump) pressure.

A filter is required on this circuit in the event a motor failure occurs which could send debris through the seal drain line to the reservoir. A unique coupling system is used to prevent incorrect hose connection.

**NOTE:** The motor seal drain line can handle up to 38 L/min (10 gpm).

**Motor Seal Drain Coupler**  
RE214614

**Implement Hose Tip**  
AA59671



A—Motor Seal Drain Filter

RW29387.000029A-19-19FEB10-1/1

### Recommended Scraper Hydraulic Hose Tips

Recommended scraper hydraulic hose tips for hoses with

flat face O-ring seal connectors and couplers with O-ring boss ports.

Scraper Hose Size	Tractor Female Hose Size	Recommended Hose Tip Part Number	Hose-to-Coupler Adapter Part Number
-8 (0.5 in.)	0.5 in.	AR94522 <sup>a</sup>	38H1161
-12 (0.75 in.)	0.5 in.	AN233013	38H1163
-12 (0.75 in.)	0.75 in.	AT117365 <sup>b</sup>	38H1163
-12 (0.75 in.)	0.75 in.	RE207298 <sup>c</sup>	38H1163

<sup>a</sup> Standard Ag coupler

<sup>b</sup> High Flow Coupler

<sup>c</sup> High Flow Coupler with relief valve poppet for easier hose connection

RW29387.0000024-19-24MAY07-1/1

# Drawbar

## Install Drawbar or Quick-Attach in Short Drawbar Support

Use scraper drawbar when scraper tongue weight exceeds design specifications of agricultural tractor drawbar. The scraper drawbar is shorter which minimizes weight transfer to the rear axle. Follow scraper recommendations for drawbar installation.

**IMPORTANT: Adjust hex bushings (C) when installing scraper drawbar.**

*NOTE: All four (4) locking bolts should be clean and free of oil to maintain maximum torque.*

1. Loosen drawbar locking bolts and bushings, underside of support.
2. Measure width of drawbar area (A) resting on drawbar support.
3. Rotate bushings so distance (B) between bushings is as close to drawbar width (A) as possible.
4. Slide short drawbar or quick-attach drawbar (D) into support.
5. Install front drawbar pin.
6. Tighten drawbar locking bolts.

### Drawbar Locking Bolts — Specification

Bolt—Torque. . . . . 430 N·m (320 lb-ft)

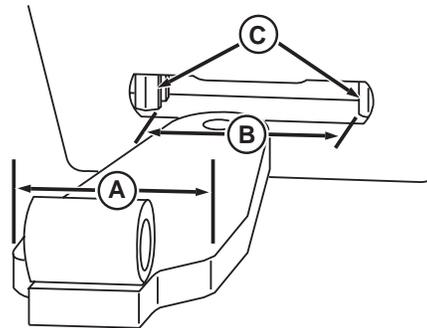
**IMPORTANT: Recheck Locking Bolt Torque Specification.**

7. Check and retorque drawbar support bolts after first **10 Hours, 50 Hours and 100 Hours** of scraper operation.

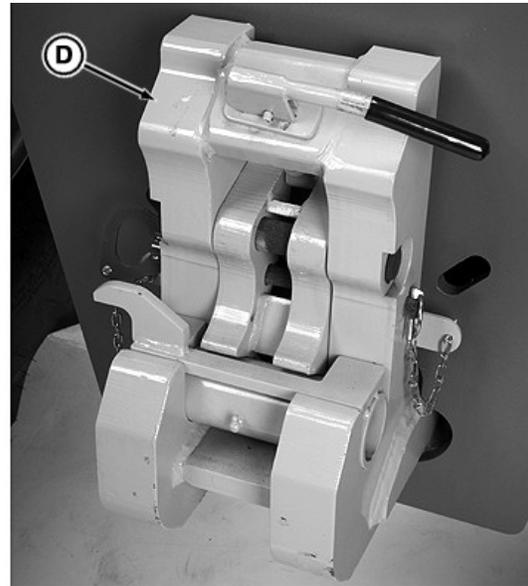
A—Drawbar Width                      C—Bushings  
 B—Drawbar Bushing Distance      D—Quick-Attach Drawbar



Scraper Drawbar Support



Adjusting Drawbar



Quick-Attach Drawbar

RXA0066014—UN—28FEB03

RXA0064878—UN—23JAN03

RXA0096143—UN—04OCT07

OU1092A,00001C5-19-04OCT07-1/1

### Short Scraper Drawbar Conversion

Scraper drawbar support is designed to accept a larger drawbar and can be converted for use with a smaller scraper drawbar. Follow scraper recommendations for drawbar installation.

**IMPORTANT: Adjust hex bushings (C) when installing scraper drawbar.**

*NOTE: All four (4) locking bolts should be clean and free of oil to maintain maximum torque.*

1. Loosen and remove drawbar support locking bolts (A) and bushings (B).
2. Place lower bushings (C) on cap screws with lock washers.
3. Reinstall cap screws (A) with lower bushings (C) and upper bushings (D) to drawbar support.
4. Measure width of drawbar area with drawbar resting on drawbar support.
5. Rotate bushings so distance between bushings is as close to drawbar width as possible.
6. Slide drawbar into support.
7. Install front drawbar pin.
8. Tighten drawbar locking bolts.

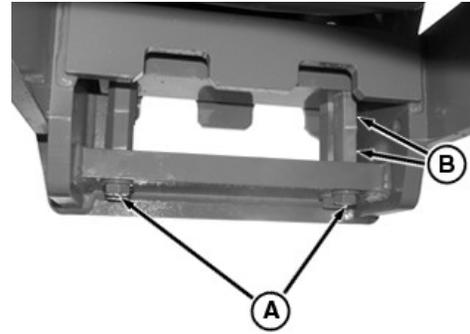
**Drawbar Locking Bolts — Specification**

Bolt—Torque . . . . . 430 N·m (320 lb-ft)

**IMPORTANT: Recheck Locking Bolt Torque Specification.**

9. Check and retorque drawbar support bolts after first **10 Hours, 50 Hours and 100 Hours** of scraper operation.

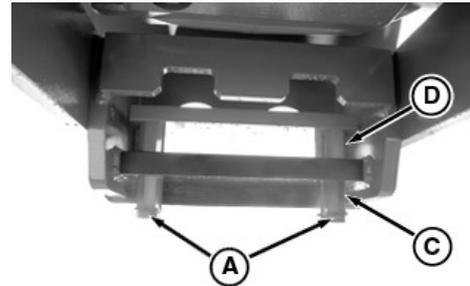
- |                            |                      |
|----------------------------|----------------------|
| A—Support Cap Screws       | D—Upper Bushing      |
| B—Drawbar Support Bushings | E—Support Cap Screws |
| C—Lower Bushing            |                      |



Larger Scraper Drawbar Support Setup



Support Cap Screws and Bushings



Smaller Scraper Drawbar Support Setup

RXA0082010—UN—05JUL05

RXA0082032—UN—05JUL05

RXA0082012—UN—05JUL05

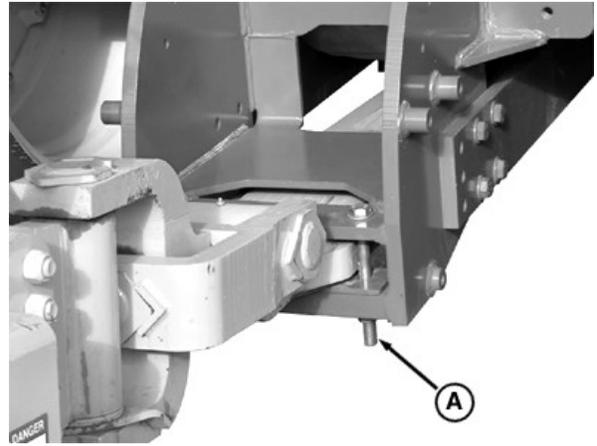
OU1092A,00001C4-19-15MAY07-1/1

### Long Drawbar Support Load Limitations—If Equipped

**IMPORTANT:** If tractor drawbar was installed, certain heavy equipment can place excessive strain on drawbar. Strain is greatly increased by speed and rough ground. Maximum static vertical load on drawbar should not exceed 2043 kg (4500 lb).

Tighten drawbar locking bolts and shims (A).

A—Bolts



RXA0066212—UN—13MAR03

Item	Measurement	Specification
Drawbar Locking Bolts		
Bolt	Torque	610 N·m (450 lb-ft)

**IMPORTANT:** Drive slowly when moving heavy draft loads.

OU1092A,00001C6-19-15MAY07-1/1

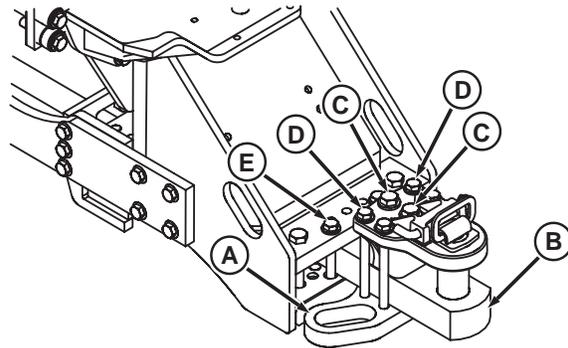
### Category 5 Heavy Duty Drawbar Support Load Limitations—If Equipped

**IMPORTANT:** Heavy duty drawbar support must be used when maximum static vertical load exceeds 2043 kg (4500 lb).

Maximum Static Vertical Drawbar Load	
Short Drawbar Position	4900 kg (11,000 lb)
Long Drawbar Position	4082 kg (9,000 lb)

Attach drawbar brace (A) and hammerstrap to drawbar (B) using M22 cap screws (C) and M20 cap screws (D) and (E).

A—Drawbar Brace  
 B—Drawbar  
 C—Cap Screws, M22  
 D—Cap Screws, M20  
 E—Cap Screws, M20



RXA0100004—UN—12DEC08

Item	Measurement	Specification
Torque Specifications		
M20 Cap Screws	Torque	610 N·m (450 lb-ft)
M22 Cap Screws	Torque	750 N·m (553 lb-ft)

**IMPORTANT:** Drive slowly when moving heavy draft loads.

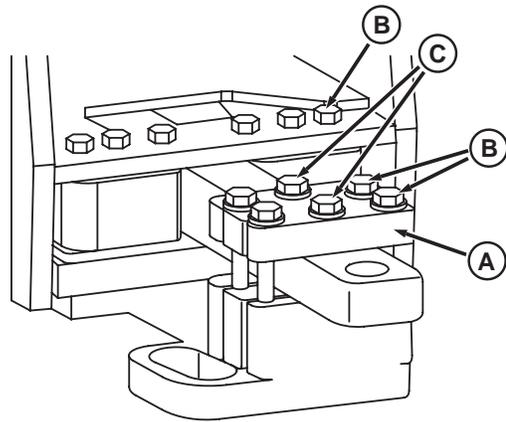
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OU1092A,00001C7-19-12DEC08-1/2

**IMPORTANT: Clamp plate must be installed when hammerstrap is not used.**

Install clamp pate (A) using cap screw (B) and (C).

- A—Plate
- B—Cap Screws, M22
- C—Cap Screws, M20



RXA0070704—UN—25SEP03

Item	Measurement	Specification
Torque Specifications		
M20 Cap Screws	Torque	610 N·m (450 lb-ft)
M22 Cap Screws	Torque	750 N·m (553 lb-ft)

OU1092A,00001C7-19-12DEC08-2/2

### Selecting Standard Drawbar Position—*If Equipped*

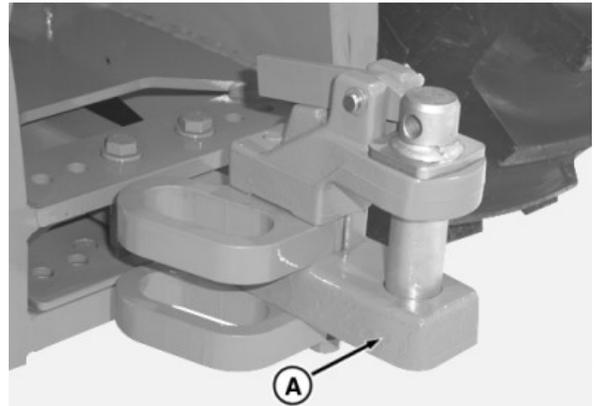
Drawbar (A) length can be extended:

1. Loosen drawbar locking bolts.
2. Remove front drawbar pin (B).
3. Slide drawbar to desired position.
4. Install front drawbar pin.
5. Tighten drawbar locking bolts.

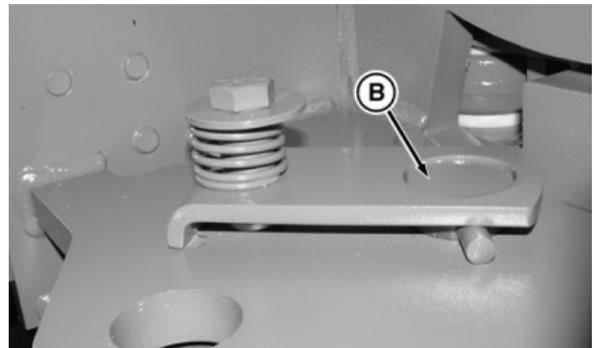
#### Drawbar Locking Bolts — Specification

Bolt—Torque . . . . . 435 N·m (322 lb-ft)

- A—Drawbar
- B—Drawbar Pin



RXA0051681—UN—12FEB01



RXA0051685—UN—12FEB01

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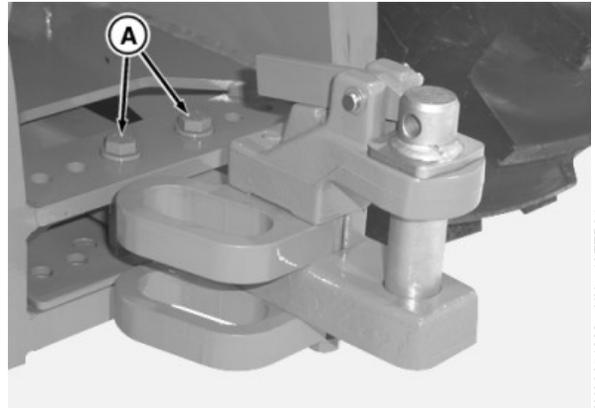
### Adjusting Standard Drawbar Side-to-Side Movement—*If Equipped*

1. Remove drawbar locking bolts (A).
2. Slide drawbar to desired position.
3. Install a locking bolt against each side of drawbar.

#### Drawbar Locking Bolts — Specification

Bolt—Torque. . . . . 435 N·m (322 lb-ft)

**A**—Locking Bolts



RXA0051682—UN—12FEB01

OU1092A,00001C9-19-06NOV06-1/1

### Installing Clevis Assembly—*Category 4 Drawbar*

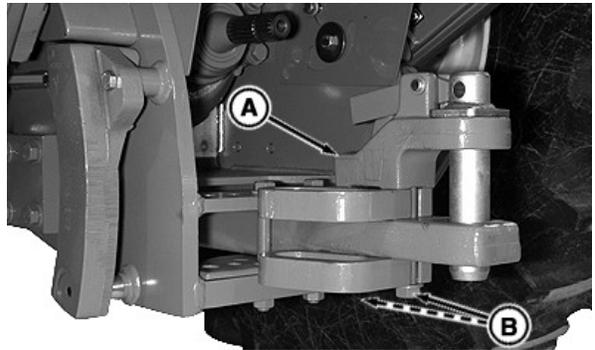
Clevis assembly (A) must be attached *only* to the top of the drawbar. Tighten two cap screws (B).

#### Clevis Cap Screws — Specification

Cap Screw—Torque. . . . . 750 N·m (553 lb-ft)

**A**—Clevis Assembly

**B**—Cap Screws



RXA0090661—UN—31AUG06

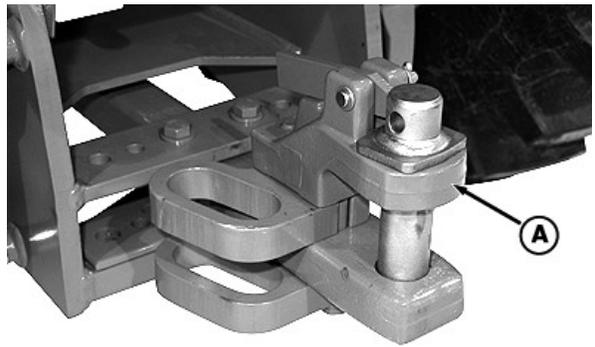
RW29387,000029F-19-08SEP08-1/1

### Using Clevis Assembly—*Category 4 Drawbar*

Clevis assembly (A) must be attached *only* to the top of the drawbar.

If towed implement also has a clevis assembly, insert pin only through tractor drawbar. **DO NOT** insert pin through all four members.

**A**—Clevis Assembly



RXA0090659—UN—31AUG06

RW29387,0000011-19-15MAY07-1/1

### Installing Clevis Assembly—Category 5 Drawbar

Clevis assembly (A) must be attached *only* to the top of the drawbar.

Tighten two center M24 cap screws (B) and four outer cap screws (C) to specification.

**M24 Clevis Cap Screws (B) — Specification**

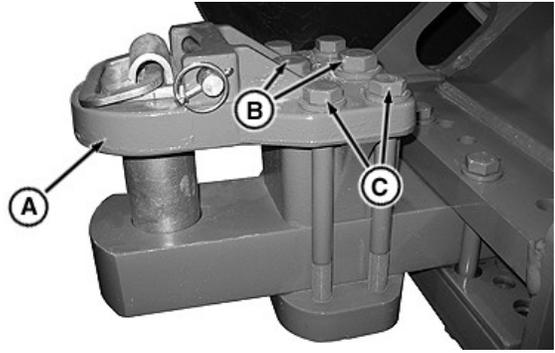
Cap Screw—Torque. . . . . 750 N·m (553 lb-ft)

**M20 Clevis Cap Screws (C) — Specification**

Cap Screw—Torque. . . . . 610 N·m (450 lb-ft)

**A—Clevis Assembly**  
**B—M24 Cap Screws**

**C—M20 Cap Screws**



RXA0094074—JUN—18MAY07

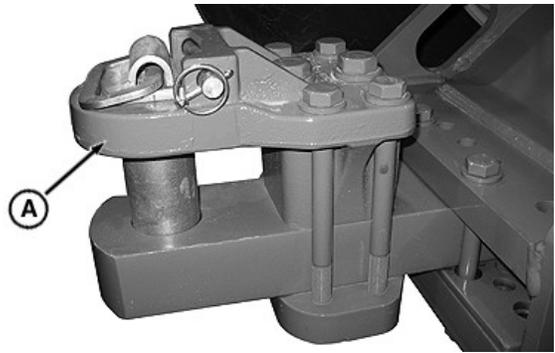
RW29387,00004F4-19-08SEP08-1/1

### Using Clevis Assembly—Category 5 Drawbar

Clevis assembly (A) must be attached *only* to the top of the drawbar.

If towed implement also has a clevis assembly, insert pin only through tractor drawbar. **DO NOT** insert pin through all four members.

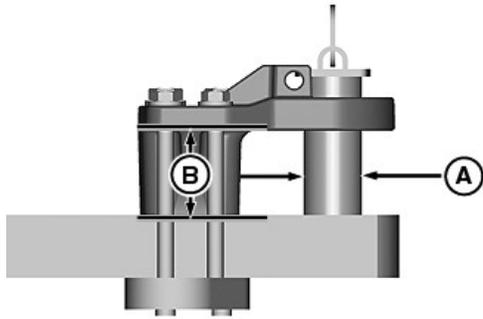
**A—Clevis Assembly**



RXA0094079—JUN—17MAY07

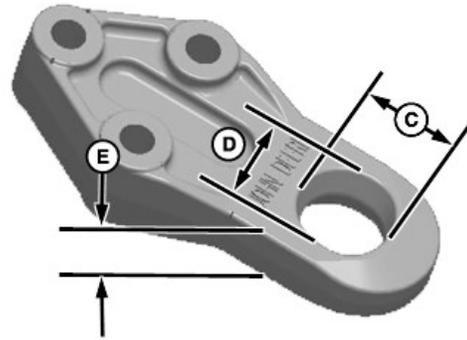
RW29387,0000010-19-01JUN07-1/1

### Using Correct Drawbar Pin—Category 5 to 4



Drawbar

RXA0095713—UN—15AUG07



Hitch Link

N77116—UN—26JUL07

- A—Hitch Pin Diameter
- B—Drawbar Opening Height
- C—Slot Length
- D—Slot Width

- E—Link Thickness

See your John Deere dealer to purchase an Adapter Kit for tractors equipped with a Category 5 drawbar when attaching to implements equipped with a Category 4 hitch link if approved by implement manufacturer.

Use the Category 5 drawbar pin furnished with the tractor to attach implements that have a Category 5 hitch link. See table below for dimensions. Consult the implement Operator's Manual or manufacturer to determine proper size of drawbar pin for the implement attaching system. Operating tractor and implements with drawbar category combinations which are not properly sized for implement

power requirements could result in premature wear or failure of hitch components.

**IMPORTANT: Use the Category 5 drawbar pin for implements that produce drawbar loads requiring more than 348 kW (467 HP) engine power level rating or 300kW (400 HP) PTO power level rating for proper operation. Contact the implement manufacturer for information on how to properly convert the implement to accept the Category 5 drawbar pin.**

Hitch Link Dimensions					
Category	Tractor Drawbar		Implement Hitch Link		
	Hitch Pin Diameter (A)	Drawbar Opening Height (B)	Slot Length (C)	Slot Width (min.) (D)	Link Thickness (E)
4	50 mm (1.97 in)	90 mm (3.54 in)	55 - 70 mm (2.17 - 2.75 in)	55 mm (2.17 in)	50 mm (1.97 in)
5	70 mm (2.76 in)	100 mm (3.94 in)	73 - 85 mm (2.87 - 3.35 in)	73 mm (2.87 in)	60 mm (2.36 in)

RW29387,000006F-19-08SEP08-1/1

### Tow Cable—If Equipped

**IMPORTANT:**

1. Correctly use tow cable by pulling from front of tractor in a straight forward direction. Failure to do so could result in damage tractor or frame.
2. Do not use tow cable to hook tractors in tandem to pull a draft load.
3. Pulling a tractor with loaded equipment can cause excessive strain on drawbar support and is greatly increased by speed and rough ground conditions.
4. Inspect tow cable and/or drawbar pin for wear and replace when necessary.
5. Attach tow cable to storage bracket and keep tight, when not in use.

Use tow cable (A) to pull tractor or tractor with scraper from soft or wet soil conditions.

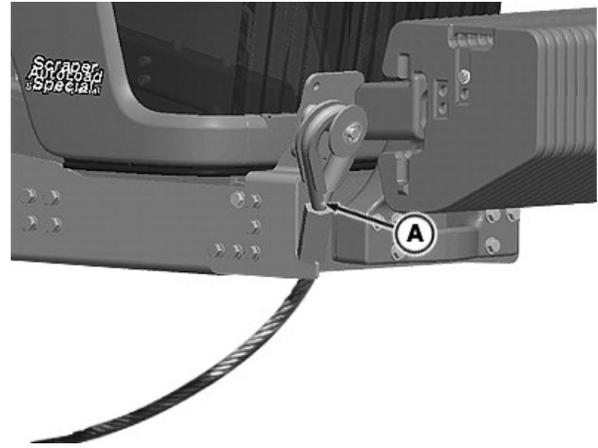
Attach tow cable to drawbar support (B) and support cable with crossbar (C).

*NOTE: Install crossbar support "L" brackets with bend towards center to limit cable side movement and interference with right front tire.*

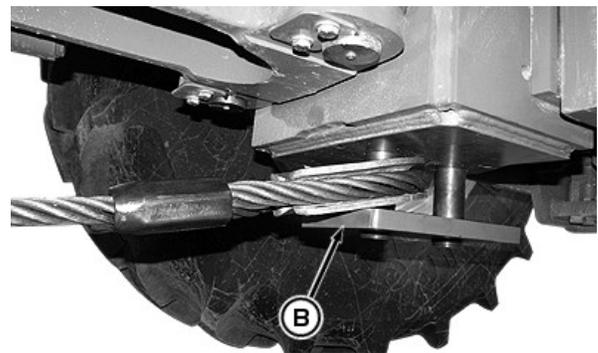
**IMPORTANT:** Correctly use tow cable by pulling from front of tractor in a straight forward direction.

A—Tow Cable  
B—Drawbar Support

C—Crossbar

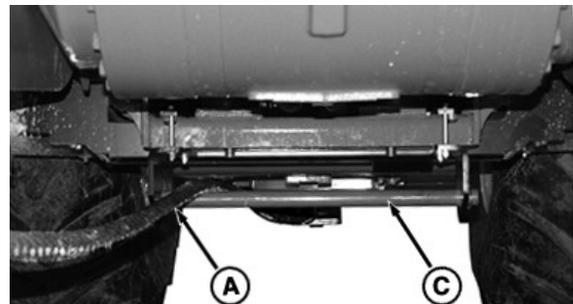


RXA0098385—UN—01JUL08



RXA0093578—UN—26APR07

Drawbar Support



RXA0093579—UN—26APR07

Tow Cable Crossbar

OU1092A.00001CC-19-08JUL08-1/1

# TouchSet Depth Control

## Using TouchSet™ Depth Controls

**⚠ CAUTION:** Avoid personal injury or death. Do not attempt to install depth control sensors on implements not intended for this system. See implement operator's manual.

Moving implement control unit, sensor, connectors, or linkages, when engine is running, may cause unexpected movement. Stay clear of implement when starting engine.

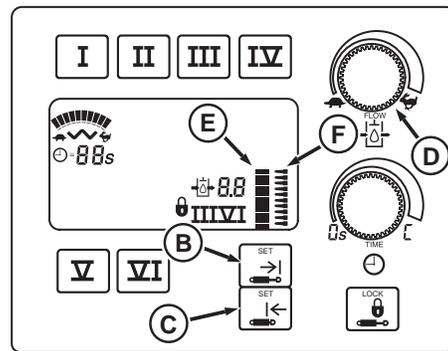
Tractor selective control valves (SCV I and/or III) can be used to electronically control raising, lowering, and setting of implement depth, without leaving the cab.

Control switches (A) are used to control implement operating depth and height that implement will raise.

Touch switches (B) and (C) set limits of implement movement controlled by SCV control switch for repeatability of implement raised and lowered positions.

Flow control (D) adjusts flow rate for each SCV to determine speed at which implement will raise and lower.

- |                                |                             |
|--------------------------------|-----------------------------|
| A—SCV I & III Control Switches | D—Flow Rate Adjustment Knob |
| B—Raise Position Set Switch    | E—Set Point Indicator       |
| C—Lower Position Set Switch    | F—Position Point Indicator  |



RXA00090067—UN—31JUL06

RXA0085787—UN—10JAN06

*TouchSet is a trademark of Deere & Company*

RW29387,00002B6-19-28JUL06-1/1

### Attaching Implement and Control System

**⚠ CAUTION:** Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

**IMPORTANT:** Be sure to correctly connect remote hydraulic hoses to couplers. If hose connections are reversed, machine will not respond to system controls. Extend hose always goes in coupler left-hand port. Retract hose always goes in coupler right-hand port.

- Extend = Left Side
- Retract = Right Side

*NOTE: Hose identification kits are available from your John Deere Dealer.*

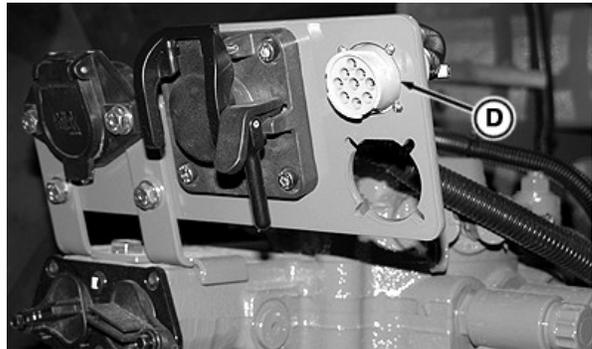
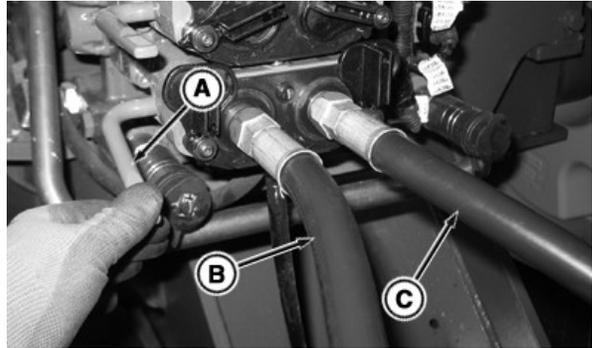
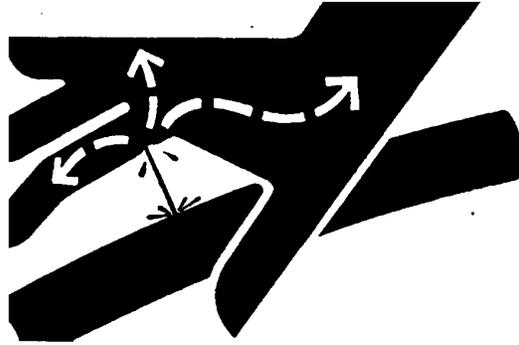
1. Identify extend hose (B) and retract hose (C).
2. Back tractor into position and attach hitch link to drawbar. Be sure hitch pin is locked into position.

**IMPORTANT:** Always shut engine off before connecting/disconnecting implement position sensor. Connect/disconnect with engine running will cause system faults. Shut engine off then restart to restore correct function.

3. Shut off tractor engine.
4. Connect implement hydraulic hoses according to Hydraulics and Selective Control Valves in this Operator's Manual.
5. Install implement position sensor to tractor wiring harness connector (D).

A—SCV handle  
B—Extend Hose

C—Retract Hose  
D—Wiring Harness Connector



X9811—UN—23AUG88

RXA0102925—UN—14MAY09

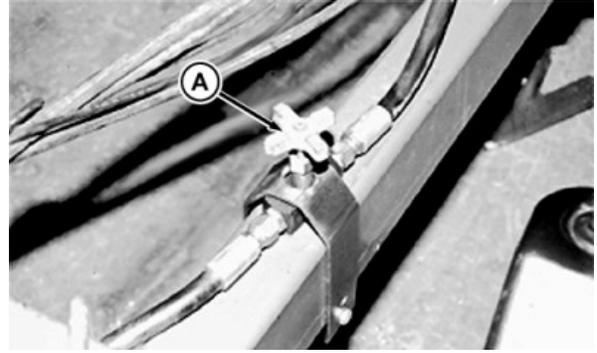
RXA0102927—UN—14MAY09

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### Checking Depth Control Operation

Open lock-up valve (A) on implement, if equipped.

A—Lock-Up Valve



RW26614—UN—05OCT99

RW29387,00002B8-19-30OCT07-1/2

**IMPORTANT:** If setup panel does not show a "P" (B) at start-up, wiring harness connection is not correct.

If "FL" (H) is displayed, a fault condition exists. Check to make sure hoses are not installed backwards.

Start engine and raise and lower implement with SCV I control lever (A). Pulling lever rearward will raise implement and pushing lever forward will lower implement.

Check tractor hydraulic oil level after cycling cylinders. Add oil if necessary.

Push SCV Control Lever forward to desired implement operating depth.

Push lower limit switch (D) to store operating depth. Implement will lower to same working depth each time the lever is pushed forward into detent "click" position and released.

Pull SCV control lever back to raise implement to desired height. Push upper limit switch (C) to store upper limit. Implement will raise to same height each time the lever is pulled back to the detent "click" position and released.

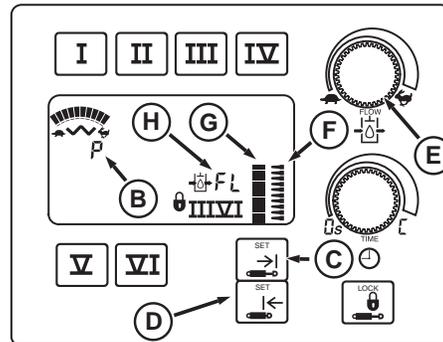
**NOTE:** Set Point Indicator (G) shows upper and lower settings.

Adjust flow rate (E) to determine speed at which implement will raise and lower. If implement goes beyond depth settings, flow rate is too high.

**NOTE:** System can be over-riden by using SCV I lever without detenting. Push lever into detent and release to return implement to saved settings.



RXA0090067—UN—31JUL06



RXA0090087—UN—31JUL06

- A—SCV I & III Control Levers
- B—"P"
- C—Upper Limit Switch
- D—Lower Limit Switch
- E—Flow Rate
- F—Position Indicator
- G—Set Point Indicator
- H—FL (Fault)

RW29387,00002B8-19-30OCT07-2/2

### TouchSet Scraper Control—for Scrapers Equipped with Scraper Control Unit

**⚠ CAUTION:** Avoid personal injury or death. Moving scraper control unit, connectors, or linkages, when engine is running, may cause unexpected movement. Stay clear of implement when starting engine.

Tractor selective control valve (SCV I and/or SCV III) are used to electronically control raising, lowering, and setting of implement depth, without leaving the cab. (Used primarily in areas requiring automated laser guidance system for scraper applications.)

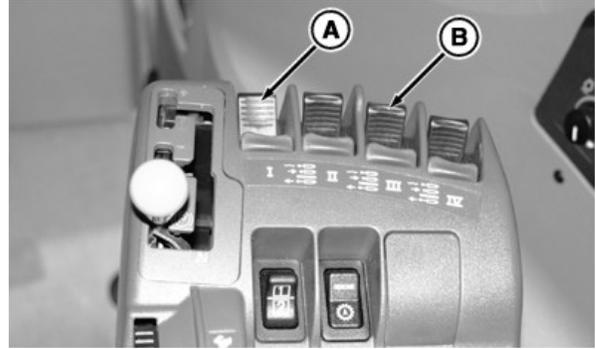
Control lever (A) is used to manually control SCV I and activate an automatic scraper control system.

Control lever (B) is used to manually control SCV III and activate a second automatic scraper control system.

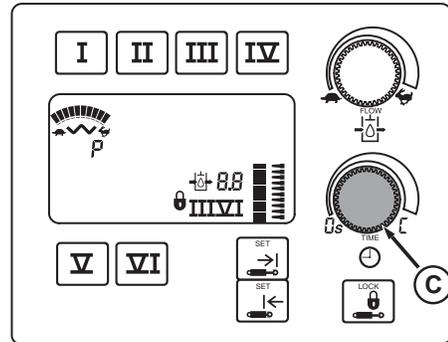
Detent time adjustment knob (C) allows operator determine the time allowed for cylinder to extend. A setting of "P" replaces the zero ("0") detent time when SCV is activated by TouchSet Scraper controller.

**A—SCV I Control Lever**  
**B—SCV III Control Lever**

**C—Detent Time Adjustment Knob**



RXA0088243—UN—20APR06



RXA0085793—UN—09JAN06

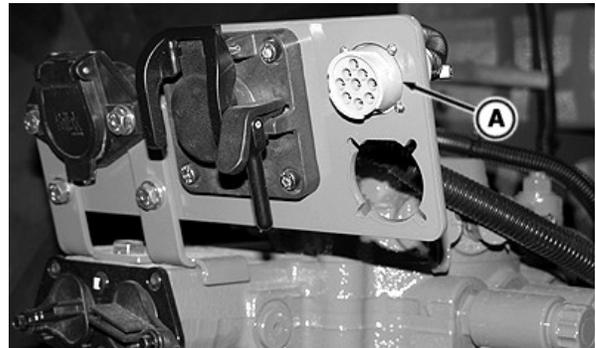
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### Enabling TouchSet Scraper Control System

Scraper controller must be connected to tractor's optional implement harness 9-pin connector (A). The scraper controlled SCV number (I or III), "EC", and 3 vertical bars will be displayed on TouchSet display between the SET switches once the tractor has started and communication between the tractor's SCV controller and the Laser Leveling Control system is established. "EC" must be shown for system to function.

Automatic scraper controller will be OFF until system is activated by moving SCV I or SCV III control lever to the lower detent position.

**A—9-Pin Connector**



9-Pin Connector

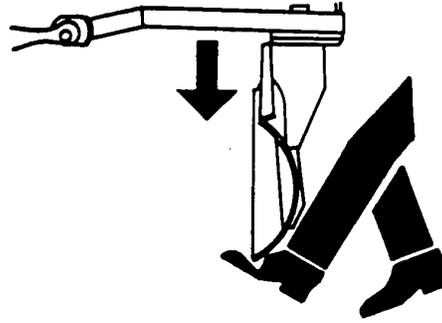
RXA0091711—UN—04DEC06

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## Detaching Implement

**⚠ CAUTION:** Serious personal injury can result if hydraulic hoses are disconnected under pressure. Move SCV lever to the float position and push transport lock touch switch on SCV TouchSet monitor before disconnecting.

1. Lower implement with engine running.
2. Stop engine.
3. Disconnect control system wiring harness.
4. Disconnect hydraulic hoses.
5. Remove hitch pin from drawbar.
6. Drive tractor away from implement.



TS687-UN-28SEP09

RW29387,00002B9-19-28JUL06-1/1

## Restoring SCV Control

*NOTE: SCV is restored to normal operation whenever tractor is started with wiring harness disconnected.*

Start engine with no implement connection to restore SCV control to normal operation.



RXA0090088-UN-31JUL06

RW29387,00002BA-19-28JUL06-1/1

# Performance Ballasting

## General Performance Guidelines

### Attaining Optimum Performance

**Before** adding ballast to your tractor, consider these important factors to attain optimum performance:

- Total tractor weight and static weight split (percent of static weight on front and rear axles)
- Type of ballast used (cast weight or liquid)
- Tire inflation pressures

### Recommended Weight Split

Tractor should be weighed to accurately determine amount and type of ballast. Weight should be distributed depending on how tractor is equipped and the operating conditions.

Recommended weight splits (percent):

	Front	Rear
Towed Implement and Dolly-Wheel Scrapers	51—55	49—45
High Load Transfer Implement (Scrapers without Dolly-Wheel)	65—70	35—30

### Correct Ballast

Use no more ballast than necessary, and adjust ballast as tractor use changes.

For correct ballast, measure amount of travel reduction (% slip) of the drive wheels. Under normal field conditions, travel reduction should be 8—12 percent. Add more weight to drive wheels if slip is excessive. If there is less than minimum percent slip, ballast should be removed, unless needed for stability.

Correct ballast allows for most efficient use of tractor's available power and will not make up for an implement which is too big for the tractor. Adding ballast will not improve performance, if engine speed falls below rated speed and/or wheel slip is beyond the recommended range.

### Correct Inflation Pressure

Inflate tires to correct pressure to carry load on each axle for optimum tractive performance.

### Selecting Ballast Carefully

#### Factors Determining Amount of Ballast

Soil surface—Loose or firm

Type of implement—Integral/semi-integral or towed

Travel speed—Slow or fast

Tractor power output—Partial or full load

Tires—Single or dual; small or large

Pulling a lighter load at a higher speed is more economical and more efficient than pulling heavier loads at a lower speed.

#### Too Little Ballast

Excessive wheel spin

Power loss

Tire wear

Fuel waste

Lower productivity

#### Too Much Ballast

Soil compaction

Power loss

Increased load

Fuel waste

Lower productivity

### Ballast Limitations

**IMPORTANT: Tractor weight exceeding heavy ballast limits should be avoided and can void the warranty due to "overload" conditions.**

Ballast should be limited by the lowest of either tire capacity or tractor capacity.

Carrying capacity of each tire should not be exceeded. If a greater amount of weight is needed, larger duals should be considered.

OU1092A.00001E4-19-11DEC07-1/1

### Determining Maximum Ballast

**IMPORTANT: Do not overload tires. If maximum weight shown in chart is not enough for safety, reduce load or install tires with more load capacity.**

Remove ballast if tractor engine labors when pulling heavy loads below 6.6 km/h (4.1 mph).

*NOTE: For tractors with duals, maximum ballast is not normally limited by tire carrying capacity.*

Use appropriate ballast for a particular operating condition. Tractors should have only enough ballast to maintain safe steering control.

**Adjust ballast as tractor use changes.** For example, adjust ballast when changing from mounted to towed implements.

**IMPORTANT: To extend drive train life and avoid excessive soil compaction and rolling resistance, avoid adding too much ballast. Never add ballast that results in continuous full-power loads below 6.6 km/h (4.1 mph).**

**MAXIMUM LOAD PER WHEEL**

Tire Size	Load Rating	40 km/h (25 mph)
620/70R42	160A8	4500 kg (9910 lb)
620/70R46	162A8	4750 kg (10500 lb)
710/70R38	166A8	5300 kg (11700 lb)
710/70R42	168A8	5590 kg (12320 lb)
76 x 50.00B32	16 Ply	7318 kg (16100 lb)

OU1092A,00001E5-19-03APR08-1/1

### Worksheet to Calculate Ballast Changes

**IMPORTANT: Ballast should not exceed weight required to result in recommended percent slip at 6.6 km/h (4.1 mph) MINIMUM.**

*NOTE: Complete this entire worksheet before adding or changing any ballast, or air pressures.*

- Determine desired weight split for your operation.
- Record desired weight of tractor (See Ballasting Guide).
- Percent of Weight Split from Step No. 1 multiplied by Step No. 2 (Desired Weight) results in Total Front Weight. For Rear Weight, subtract front weight from Total Weight.
- Weight of tractor as determined from the UNBALLASTED TRACTOR WEIGHT CHART, in this section, or weight from scale.
- Ballast needed (subtract tractor weight in Step No. 4 from desired weight in Step No. 3)
- Add ballast.
- Add ballast from Step No. 6 to weights from Step No. 4.
- Set tire pressure for operating conditions using weights from Step No. 7. (See appropriate inflation pressure table).

_____ % Front		
_____		
<b>Front</b>	<b>Rear</b>	<b>Total</b>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

*NOTE: You are now ready to test for wheel slippage. See MEASURING WHEEL SLIP, in this section.*

RW29387,00002BD-19-06DEC05-1/1

## Ballasting for Engine Horsepower

A guide in ballasting tractors is to use engine horsepower combined with the kind of ballast needed for a particular job—light, medium or heavy. Start the process with the lightest ballast that can do the job. Then add ballast as needed to get performance desired.

*NOTE: Correct weight split for application being performed must be maintained when adding or removing ballast (See General Performance Guidelines). Cast weight is preferred to get the best tractive performance.*

More or less weight will be needed if different travel speeds are used. Higher speeds do not require as much weight. The final indication of correct ballast is wheel slip measured in the field.

*NOTE: Radar is recommended to continually monitor wheel slip. Checking wheel slip manually is possible but will only show slip in one area of the field. Knowing the correct average wheel slip is necessary to maintain optimum tractive performance.*

Add more weight if slip is excessive. Remove weight if there is less than minimum percent slip.

If implement pull at full load is 5.5 mph (8.8 km/h) or more, tractor may operate unballasted. Medium ballast is a better choice, if operating at full load between 4.5 and 5.5 mph (7.2 and 8.8 km/h). Heavy ballast should only be used for the few implements (such as deep rippers) which require full-load traction below 4.5 mph (7.2 km/h).

**IMPORTANT: Never add ballast that results in continuous full-power loads below 4.1 mph (6.6 km/h). Continued operation below 4.1 mph (6.6 km/h) at full load will shorten drive train life.**

**IMPORTANT: Do not ballast tractor over 24040 kg (53000 lb) or the total load capacity of the tires, whichever is least.**

Tractor	Engine kW (hp)	kg/kW (lbs/hp) *	Total kg (lb) *
9430	317 (425)	53—73 (88—120)	16935—23133 (37336—51000)
9530	354 (475)	48—69 (79—112) **	17066—24040 (37625—53000) **
9630	395 (530)	43—62 (71—100) **	17066—24040 (37625—53000) **

\* Minimum kg/kW (Lbs/hp) is calculated using unballasted tractor weight with full tank of fuel.

\*\* Maximum ballast for 9530 and 9630 is 24040 kg (53000 lb).

OU1092A,00001E6-19-06DEC07-1/1

## Controlling Power Hop

Power hop is a condition where the tractor exhibits severe bounce and/or jump at field working speeds under 16 km/h (10 mph). Power hop is associated with tractors pulling towed implements at medium to high draft loads in loose, dry soil on top of a firm base and/or when climbing hills. As a result, the tractor cannot maintain pull due to loss of traction, rough ride, or both.

Adjust inflation pressures *only* after following the performance guidelines (recommended weight split, correct ballast, and correct inflation pressures):

1. A) Increase **FRONT** tire pressure by 41—55 kPa (0.4—0.6 bar) (6—8 psi) in 2 psi increments over the rated pressure for the axle load. Follow steps 2 and 3 below.

B) If power hop remains a problem, reduce front tire pressure to the rated pressure. Then raise the **REAR** tire inflation pressure by 41-55 kPa (0.4-0.6 bar) (6-8 psi) in 2 psi increments above rated pressure for the axle load. Follow steps 2, 3, and 4 below.

*NOTE: Raising the front or rear inflation pressure depends on weight splits, operating conditions (steep slopes) or travel speeds. On steep slopes and operating speeds above 8.8 km/h (5.5 mph) raising the rear tire pressure is recommended.*

*Tires on one of the two axles must remain at rated pressure.*

*Ballast tractor so no more than 55 percent of the total tractor weight is on the front, for best power hop control.*

- Remove any liquid ballast and replace with cast weight equivalent, if power hop remains a problem.
- Liquid ballast has a stiffening effect that causes a rough ride. If liquid ballast is used in the rear tires, *all tires on the axle must be filled to the same level* which should not exceed 40 percent fill.

**IMPORTANT: Do not use liquid ballast in scraper REAR tires, unless used with dolly-wheels.**

- If power hop remains a problem, see your John Deere Dealer.

*NOTE: Recommendations to control power hop for tractors used in tillage application where front weight split desired is 55%.*

*For scraper use without dolly wheel, tractor will be setup between 65—75% front weight split. Tire pressure adjustments should take into account tractor load as well as scraper added drawbar load.*

RW29387,000003C-19-22JUN07-1/1

### Calculating Ballast—Without Dolly-Wheel on Drawbar Hitch

Tractors pulling non dolly-wheel scrapers should be recommended, as loading of the scraper will provide all the ballasted so that 65-70 percent of the total static weight of rear axle weight required. the tractor is on the front axle. No rear ballast is

Add enough weight to the front axle to achieve the desired weight split. The chart below illustrates how weight splits between front and rear axle are affected as weight is added.

**In this chart, weight is added to the front axle only.**

Starting weight split is that for a base weight (standard) 4WD tractor. Then, to increase total weight per engine horsepower, add weight to front axle only.

Add to Front Axle	Front Weight Split %	Rear Weight Split %
No Extra Weight	59%	41%
454 kg (1000 lb)	60%	40%
907 kg (2000 lb)	61%	37%
1361 kg (3000 lb)	62%	38%
1814 kg (4000 lb)	63%	37%
2268 kg (5000 lb)	64%	36%
2722 kg (6000 lb)	65%	35%
4082 kg (9000 lb)	72%	28%

#### Cast Weights Required for Ballast Recommendation

966 kg (2130 lb) — 1-75 kg (165 lb) plus 2-204 kg (450 lb) weights on each dual wheel

1270 kg (2800 lb) — 1-635 kg (1400 lb) weight each inner wheel

1783 kg (3930 lb) — 1-204 kg (450 lb) installed on each inside/inner and 1-75 kg (165 lb) plus 3-204 kg (450 lb) weights on each front

2644 kg (5830 lb) — 1-635 kg (1400 lb) installed on each inside/inner and 1-75 kg (165 lb) plus 3- 204 kg (450 lb) weights on each dual

3962 kg (8734 lb) — The 2644 kg (5830 lb) weight listed above plus 1 front weight support/frame and 22 Quik-Tatch weights.

*NOTE: Support and front weights add weight to front axle and remove weight from rear axle due to leveraging.*

OU1092A,00001E7-19-29NOV07-1/1

### Calculating Ballast—With Dolly-Wheel Scrapers or Drawn Tillage Implements

Add enough weight to the rear axle to achieve the desired weight split. The chart below illustrates how weight splits between front and rear axle are affected as weight is added.

**In this chart, weight is added to the rear axle only.**

Starting weight split is that for a base weight (standard) 4WD tractor.

Add to Rear Axle	Front Weight Split %	Rear Weight Split %
No Extra Weight	59%	41%
453 kg (1000 lb)	58%	42%
907 kg (2000 lb)	57%	43%
1361 kg (3000 lb)	55%	45%
1814 kg (4000 lb)	54%	46%
2268 kg (5000 lb)	53%	47%
2723 kg (6000 lb)	52%	48%
3629 kg (8000 lb)	49%	51%

#### Cast Weights Required for Ballast Recommendation

458 kg (1230 lb) — 1-75 kg (165 lb) plus 1-204 kg (450 lb) weights on each dual wheel

966 kg (2130 lb) — 1-75 kg (165 lb) plus 2-204 kg (450 lb) weights on each dual wheel

1270 kg (2800 lb) — 1-635 kg (1400 lb) weight each inner wheel

1783 kg (3930 lb) — 1-204 kg (450 lb) installed on each inside/inner and 1-75 kg (165 lb) plus 3-204 kg (450 lb) weights on each dual

2644 kg (5830 lb) — 1-635 kg (1400 lb) installed on each inside/inner and 1-75 kg (165 lb) plus 3- 204 kg (450 lb) weights on each dual

3627 kg (7997 lb) — The 2644 kg (5830 lb) weight listed above plus 1 rear fender weight support and 20 Quik-Tatch weights.

OU1092A,00001E8-19-29NOV07-1/1

**Recommended Ballast—Dual Radial Tires**

Tractors for scraper (without dolly wheels) application should be ballasted between 65 to 75% Front Weight Split. The chart below lists the factory recommended ballast and resulting weight split.

**Cast Weights Required for Ballast Recommendation**

966 kg (2130 lb) — 1-75 kg (165 lb) plus 2-204 kg (450 lb) weights on each dual wheel

1270 kg (2800 lb) — 1-635 kg (1400 lb) weight each inner wheel

1783 kg (3930 lb) — 1-204 kg (450 lb) installed on each inside/inner and 1-75 kg (165 lb) plus 3-204 kg (450 lb) weights on each front

2644 kg (5830 lb) — 1-635 kg (1400 lb) installed on each inside/inner and 1-75 kg (165 lb) plus 3- 204 kg (450 lb) weights on each dual

3962 kg (8734 lb) — The 2644 kg (5830 lb) weight listed above plus 1 front weight support/frame and 22 Quik-Tatch weights.

*NOTE: These are good starting weight combinations and may be adjusted up/down depending upon application, conditions, ect.*

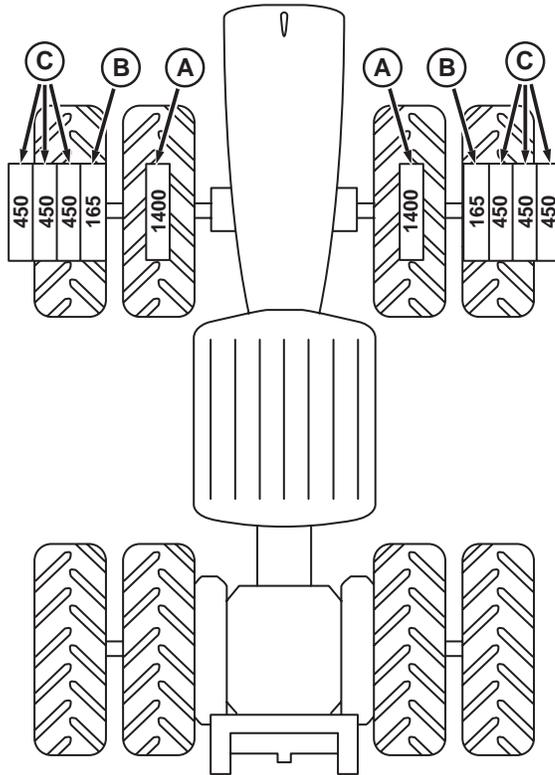
*NOTE: Weight estimates based on 710/70R38 tires and full tank of fuel. Add additional 1408 lbs total to tractor if equipped with 710/70R42 tires.*

**Factory Recommendation for Overall Best Performance**

Model	Front Ballast Added	Rear Ballast Added	Weight Split F/R %	kg/kW Lbs/HP
9430	1270 kg (2800 lb)	0 lb	63% / 37%	59 (97)
9530	2644 kg (5830 lb)	0 lb	65% / 35%	57 (94)
9630	2644 or 3962 kg (5830 or 8734 lb)	0 lb	65% / 35% or 72% / 28%	51 or 54 (84 or 89)

OU1092A,00001E9-19-24OCT07-1/1

### Scraper Ballast Package with Duals



**A—636 kg (1400 lb.) Weights      B—75 kg (165 lb.) Starter Weights      C—204 kg (450 lb.) Weights**

For applications where additional front axle ballast is required.

This ballast package includes one pair of 636 kg (1400 lb.) weights (A) to the inside of the inner wheel on the front axle, and one pair of 75 kg (165 lb.) starter weights (B) and three pair of 204 kg (450 lb.) weights (C) on the outside dual wheels on the front axle.

This combination will add 2644 kg (5830 lb.) to the total weight of the tractor.

Approximately 65% front 35% rear weight split.

The lb/hp of the tractor will vary, depending on the model of tractor.

OU1092A,00001EF-19-24OCT07-1/1

FXA0088076—UN—29MAR06

### Recommended Ballast—76x50.00B32 and Logger Tires-Singles

NOTE: Weight listed are based on full tank of fuel.

Tractors for scraper (without dolly wheels) application should be ballasted between 65 to 75% Front Weight Split. The chart below lists the factory recommended ballast and resulting weight split.

#### Cast Weights Required for Ballast Recommendation

1317 kg (2904 lb) — 1 Front weight support/frame and 22 Quik-Tatch weights

4309 kg (9500 lb) — Additional weight could be obtained if needed by adding 75% liquid ballast in front tires

NOTE: These are good starting weight combinations and may be adjusted up/down depending upon application, conditions, ect.

#### Factory Recommendation for Overall Best Performance

Model	Front Ballast Added	Rear Ballast Added	Weight Split F/R %	kg/kW (Lbs/HP)
9430	1317 kg (2904 lb)	0 kg (0 lb)	67% / 33%	61 (100)
9530	1317 kg (2904 lb)	0 kg (0 lb)	67% / 33%	54 (90)
9630	1317 kg (2904 lb)	0 kg (0 lb)	67% / 33%	49 (80)
Any Model	Additional 4309 kg (9500 lb)	0 kg (0 lb)	73% / 27%	60 to 74 (98 to 122)

OU1092A,00001EA-19-24OCT07-1/1

### Recommended Ballast—Scraper/Ag Combination Tractor With Radial Tires

NOTE: Weights listed are based on 710/70R42 dual tires and full tank of fuel.

Tractors for scraper (without dolly wheels) application should be ballasted between 65 to 75% Front Weight Split.

Tractors for agricultural (drawn tillage or scraper with dolly wheels) application should be ballasted at 55% Front Weight Split.

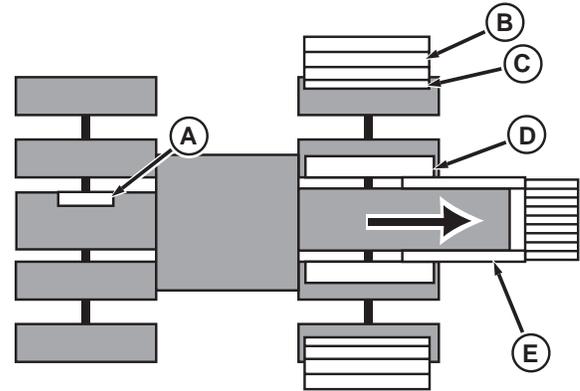
1. The agriculture tractor application requires switching front outside duals with rear outside duals.
2. Then move front quik-tatch weights to rear weight bracket.

#### Dual Purpose Tractor Diagram

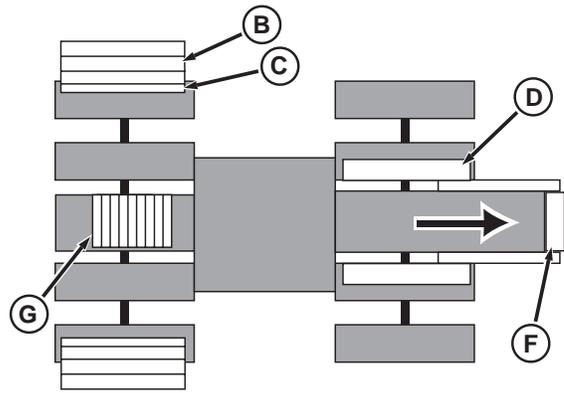
Application	Approximate Weight	% Front/Rear Weight Split
Scraper Tractor	21681 kg (47798 lb)	71/29
Agricultural Tractor	21590 kg (47598 lb)	57/43

- A—One 68 kg (150 lb) Cast Weight Support
- B—Three 204 kg (450 lb) Outer Dual Weights (Each Side)
- C—One 75 kg (165 lb) Starter Dual Weight (Each Side)
- D—One 635 kg (1400 lb) Inner Drive Weight (Each Side)

- E—One Frame Weight Bracket and Front Weight Support with Twenty Two Quik-Tatch Weights
- F—One Frame Weight Bracket and Front Weight Support (Less Front Weights)
- G—Rear Frame Weight Support with Twenty Quik-Tatch Weights



Scraper Version



Agricultural Version

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### Unballasted Tractor Weight Chart—Pounds

*NOTE: Unballasted weights are calculated by averaging and are figured based on tractor with a full tank of fuel. Each tractor will be different. Have your tractor weighed for exact weight and weight splits.*

TRACTOR	9430 OPTIONS	9530 OPTIONS	9630 OPTIONS
<b>76 x 50.00B32 Singles - Steel w/Double Hubs</b>			
FRONT WEIGHT SPLIT	10445 kg (23027 lb) 60%	10366 kg (22853 lb) 59%	10366 kg (22853 lb) 59%
REAR WEIGHT SPLIT	6978 kg (15383 lb) 40%	7188 kg (15846 lb) 41%	7188 kg (15846 lb) 41%
TOTAL	17423 kg (38410 lb)	17554 kg (38699 lb)	17554 kg (38699 lb)
kg/kW (Lb/hp)	55 (90)	50 (82)	44 (73)

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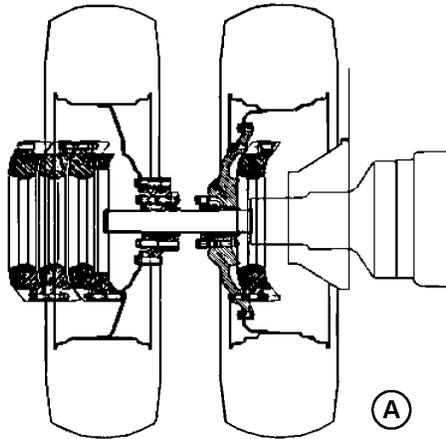
### Unballasted Tractor Weight Chart—Pounds

*NOTE: Unballasted weights are calculated by averaging and are figured based on tractor with a full tank of fuel. Each tractor will be different. Have your tractor weighed for exact weight and weight splits.*

TRACTOR	9430 OPTIONS	9530 OPTIONS	9630 OPTIONS
<b>620/70R42 - Duals - Cast/Steel</b>			
FRONT WEIGHT SPLIT	10121 kg (22314 lb) 60%	10043 kg (22140 lb) 59%	10043 kg (22140 lb) 59%
REAR WEIGHT SPLIT	6654 kg (14670 lb) 40%	6864 kg (15133 lb) 41%	6864 kg (15133 lb) 41%
TOTAL	16775 kg (36984 lb)	16907 kg (37273 lb)	16907 kg (37273 lb)
kg/kW (Lb/hp)	53 (87)	48 (79)	43 (70)
<b>620/70R46 - Duals - Cast/Steel</b>			
REAR			
FRONT WEIGHT SPLIT	10181 kg (22446 lb) 60%	10102 kg (22272 lb) 59%	10102 kg (22272 lb) 59%
REAR WEIGHT SPLIT	6714 kg (14802 lb) 40%	6924 kg (15265 lb) 41%	6924 kg (15265 lb) 41%
TOTAL	16895 kg (37248 lb)	17026 kg (37537 lb)	17026 kg (37537 lb)
kg/kW (Lb/hp)	53 (88)	48 (79)	43 (71)
<b>710/70R38 - Duals - Cast/Steel</b>			
FRONT WEIGHT SPLIT	10201 kg (22490 lb) 60%	10122 kg (22316 lb) 59%	10122 kg (22316 lb) 59%
REAR WEIGHT SPLIT	6734 kg (14846 lb) 40%	6944 kg (15309 lb) 41%	6944 kg (15309 lb) 41%
TOTAL	16935 kg (37336 lb)	17066 kg (37625 lb)	17066 kg (37625 lb)
kg/kW (Lb/hp)	53 (88)	48 (79)	43 (71)
<b>710/70R42 - Duals - Cast/Steel</b>			
FRONT WEIGHT SPLIT	10521 kg (23194 lb) 60%	10442 kg (23020 lb) 59%	10442 kg (23020 lb) 59%
REAR WEIGHT SPLIT	7053 kg (15550 lb) 40%	7263 kg (16013 lb) 41%	7263 kg (16013 lb) 41%
TOTAL	17574 kg (38744 lb)	17705 kg (39033 lb)	17705 kg (39033 lb)
kg/kW (Lb/hp)	55 (91)	50 (82)	45 (74)

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## Using Cast Hub Wheel Weights



A—Dual Wheels (110 and 120 mm Axle)

**CAUTION:** When installing weights, use appropriate equipment or see your John Deere Dealer.

Cast iron weights of 75 kg (165 lb), 205 kg (450 lb) or 635 kg (1400 lb) are available for cast or steel wheels. Weights can be installed on inside or outside of wheel. Also 635 kg (1400 lb) cast weights are available to be installed on inside of cast wheel. Use diagrams showing placement of weights or see your John Deere Dealer.

Install weights on wheel.

For additional weights, install bolts in previous weight. Rotate alternate weight to align bolts with weight holes.

Tighten bolts and then retighten after driving approximately 100 meters (110 yd).

Retighten bolts after working **3 HOURS** and again after **10 HOURS**.

Check torque every **250 hours**.

**IMPORTANT:** Inside wheel weight must have at least 25 mm (1 in.) clearance between weight and tractor components.

**Do NOT stack more than 690 kg (1520 lb) of weights together—three 205 kg (450 lb) weights and one 75 kg (165 lb) weight.**

### Weight Attaching Bolts—Specification

M16-Bolt—Torque .....	310 N·m (230 lb-ft)
M20-Bolt—Torque .....	610 N·m (450 lb-ft)

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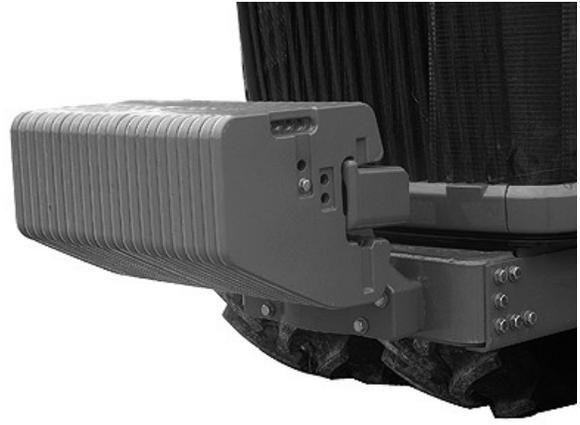
### Front Weight Frame

**IMPORTANT:** The front frame weight support is not intended to be used for pushing other tractors or implements and should not be used for securing chains or cables as tow points.

**IMPORTANT:** A field installed tow cable kit is available through John Deere Parts. If tow cable kit is installed on a tractor without front weight support, then support should also be ordered through service parts to attach cable onto front of tractor frame.

The front weight support extends out in front of the tractor and has the following effect on front axle weight and rear axle weight because of weight transfer effect:

	Actual Weight	Weight Transfer to Front Axle	Weight Reduced From Rear Axle
Front Weight Frame	138 kg (304 lb)	+207 kg (+456 lb)	-69 kg (-152 lb)
22 Weights and Support	1179 kg (2600 lb)	+2058 kg (+4538 lb)	-879 kg (-1938 lb)
Total	1317 kg (2904 lb)	+2265 kg (+4994 lb)	-948 kg (-2090 lb)



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*Front Weight Support With Weights*

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### Installing QUIK-TATCH Frame Weights

**NOTE:** Rear frame weights should not be installed on tractors pulling non dolly wheel scrapers.

Up to 20 QUIK-TATCH weights can be installed on rear frame of tractor.

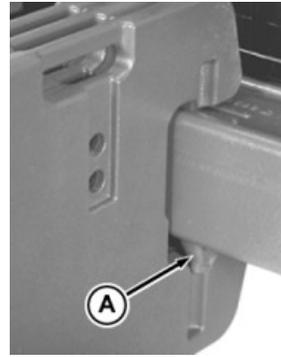
When required, install QUIK-TATCH weights, balanced on each side of center (A). The first two weights must be installed as a pair.

To hold six weights or fewer in position, insert retaining bolts (B) through holes and secure with a nut. Tighten to 230 N·m (170 lb-ft).

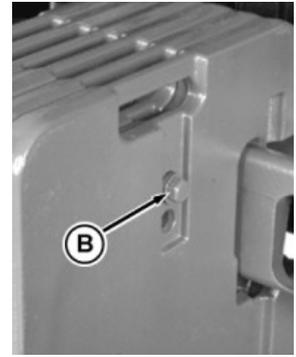
When eight or more weights are installed, insert retainers between weights, one with threaded hole upward and the other with threaded hole downward. Tighten bolts to 230 N·m (170 lb-ft).

A—Center

B—Retaining Bolts



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RW55347A—UN—08MAR99



RW56137—UN—26AUG96

Rear Weights Over Differential Case

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### Implement and Scraper Size Guidelines

**IMPORTANT:** Under scraper or severe applications, tighten wheel bolts every 2 HOURS until all cap screws turn less than 1/4 turn. Then recheck torque once per day until caps screws turn less than 1/8 turn and remain at 600 N·m (445 lb-ft). For single 76 x 50.00B32 tires refer to Wheel Tires and Treads section of this manual for proper torque procedure.

**IMPORTANT:** See your John Deere Dealer for John Deere frame reinforcement and front-mounted equipment compatibility.

Follow manufacturers instruction in attaching and using scraper.

#### 9030 Tractor/Scraper Application Guidelines:

**IMPORTANT:** Operating tractor with three scrapers requires tractor be equipped with hydraulic trailer brakes. Reference "Towing Loads and Transporting with Ballast" Section of Operator's Manual.

#### Towed Scrapers:

9030 Tractor/Scraper Application Guidelines		
Scraper Size	Without Hydraulic Trailer Brakes	With Hydraulic Trailer Brakes
21 Yard	1	2
18 Yard and Smaller	2	3
Mixed Capacity	Maximum Total of 36 Yards	Maximum Total of 54 Yards

#### Front-Mounted Implements:

Front frame reinforcement is recommended whenever the tractor has front-mounted dozer blades, used in scraper applications, or is equipped with front frame ballast.

The reinforcement attaches to the underside of the front axle and to the outside of the front frame behind the front axle. See your John Deere Dealer for parts and assistance.

NON-APPROVED USES
<b>Scrapers</b> - Without proper tractor/scraper drawbar and frame/axle supports
<b>Tiling Plows</b> - Mounted to tractor frame
<b>Extreme Draft Loads</b> - Requiring two tractors hooked in tandem
<b>Tow Hooks</b> - Adding tow hooks is not an option

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### Measuring Wheel Slip—MANUALLY

*NOTE: Wheel slip can be easily determined, automatically, with Performance Monitor, if equipped with optional radar unit. (See Controls and Instruments Section.)*

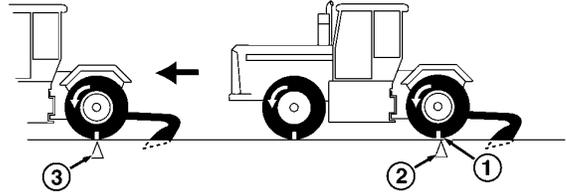
Radar will display true ground speed on corner post below 26 km/h (16 mph) and actual wheel speed above 27 km/h (16 mph).

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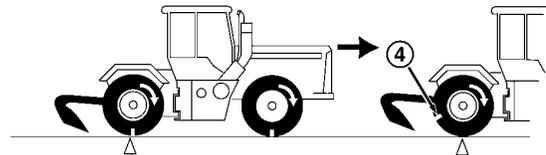
## Performance Ballasting

1. Mark a tire.
2. With tractor working, mark a starting point on the ground.
3. Follow tractor and mark the ground again where tire completes 10 full revolutions.
4. At working speed, go back with implement raised. Count revolutions between same two marks.
5. Use second count and chart to determine slippage. Remember 8—12 percent is ideal.



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Wheel Slippage Chart		
Wheel Revolutions (Step 4)	Percent of Slip	Result
10	0	Remove Ballast
9-1/2	5	
9-1/3	8	Proper Ballast
8-3/4	12	
8	20	Add Ballast
7-1/2	25	
7	30	



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6. Adjust ballast or load to give 8—12 percent slippage at 4.1 mph (6.6 km/h), without exceeding maximum ballast level.

*NOTE: Available horsepower is greatly reduced when wheel slip drops below eight percent.*

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## Using Liquid Ballast

Tire Size	Liquid Weight per Tire	
	40% Fill	75% Fill
76x50.00B32 Singles	1165 kg (2717 lb)	2184 kg (4815 lb)
710/70R38	465 kg (1024 lb)	929 kg (2048 lb)
620/70R42	390 kg (859 lb)	779 kg (1716 lb)
620/70R46	422 kg (929 lb)	843 kg (1858 lb)
710/70R42	523 kg (1154 lb)	1047 kg (2308 lb)

**CAUTION:** Avoid possible injury. Installing liquid ballast requires special equipment and training. See your John Deere Dealer or a tire service store.

**IMPORTANT:** Liquid ballast is not preferred. Liquid weight greatly increases tire stiffness at lower operating pressures, and greatly reduces ride performance.

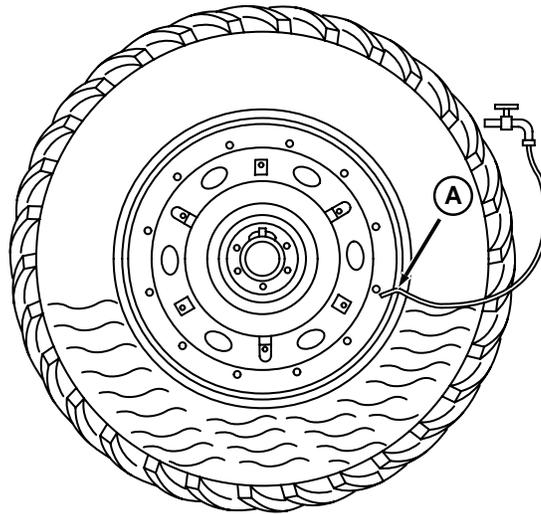
Use calcium chloride to prevent water from freezing. A mixture of 3.5 lb of calcium chloride per gallon (0.42 kg per liter) will not freeze solid above -50°F (-45°C).

**IMPORTANT:** A maximum liquid fill of 40 percent is recommended for better tractor performance.

*NOTE:* Use of alcohol as liquid ballast is not recommended.

*In areas where freezing is not a problem and water is used as a ballast, multiply the weight shown in the table by 0.8.*

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**A—Valve**

Fill tube-type or tubeless tires up to valve level (40 percent full) with valve (A) in the 4 o'clock position. Radial and bias tires hold the same amount of liquid. When putting liquid in

rear tires, make sure all tires on the axle have the same amount of liquid fill.

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RW71542—UN—06SEP00

# Wheels, Tires, and Treads

## Service Tires Safely

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

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

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

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

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



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

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## Tire Group Sizes

Tire Section Width		
Group Size	620 mm (24.5 in.)	710 mm (28 in.)
47	620/70R42	710/70R38
	650/75R38	IF710/70R38
48	620/70R46	710/70R42
	650/85R38	IF 710/70R42
	IF650/85R38	

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## Tire Inflation Pressure Guidelines

Check tire inflation pressure *at least* every two weeks, while tires are cool using an accurate dial or stick-type gauge having 10 kPa (0.1 bar) (1 psi) graduations.

*NOTE: Use a special air-water gauge and measure with valve stem at bottom if tires contain liquid ballast.*

*Checking inflation pressures of inner wheels is much easier, if valve stems of inner and outer tires are aligned at the time the outer wheel is installed.*

Correctly inflated radial tires will show a deflection of the sidewall. This is normal and will not harm the tire.

Inflation pressures less than 83 kPa (0.8 bar) (12 psi) should be monitored frequently because of the increased risk of low pressure air leaks.

*NOTE: Bead slip can be experienced in high-traction conditions, with single tire usage. Increasing the inflation pressure will help but will reduce traction.*

Maximum tire pressure is specified on tire sidewall.

Determine correct tire pressure by weighing tractor using the following procedure:

- Front axle weight with implement lowered
- Rear axle weight with implement raised

Set tire inflation pressures according to weight measured. *Ballasting and tire inflation pressure may need to be adjusted when operating conditions change.* Use the inflation tire charts on the following pages.

*NOTE: If tractor is equipped with front-mounted implement, raise implement when determining front axle weight and lower implement when determining rear axle weight. If tractor is equipped with both a front and rear-mounted implement, raise both implements.*

**IMPORTANT: Inflation pressures exceeding heavy ballast guidelines of 76 kg/kW (125 lbs/hp) are not recommended. Tractor efficiency will be decreased. Use larger dual or triple wheels.**

### Managing Tire Inflation Pressures

**IMPORTANT: Integral implements transfer significant weight to rear axle. Include this added weight when determining correct inflation pressures. (See chart in Optimum Performance/Ballast section.)**

Tractors operating on steep side slopes or furrow plowing should increase rear tire pressures 30 kPa (0.3 bar) (4 psi) above the values listed for base pressures 80 kPa (0.8 bar) (12 psi) and above to compensate for lateral weight transfer. For base pressures below 80 kPa (0.8 bar) (12 psi), pressure should be increased by 30 percent.

*NOTE: All tires on an axle must have the same inflation pressure.*

Tractors with heavy hitch-mounted implements require increased rear tire inflation pressures to carry the increased weight during transport.

**Reduce pressures to correct pressure for towed implement operation.**

### Using Tubes with Tubeless Radial Tires

Inflation pressure can be set as low as 40 kPa (0.4 bar) (6 psi), if high quality (natural rubber) tubes are used. Lower quality tubes require the minimum inflation pressure of 80 kPa (0.8 bar) (12 psi). Direct questions regarding tube quality to your tire dealer.

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**Recommended Inflation Pressures—Single Tires**

Axle Load Kg (lb)	76x50-32 16 Ply <sup>a</sup> kPa(bar)(psi)
9072 (20000)	100(1.00)(15)
9525 (21000)	100(1.00)(15)
9979 (22000)	100(1.00)(15)
10433 (23000)	100(1.00)(15)
10886 (24000)	100(1.00)(15)
11340 (25000)	110(1.10)(16)
11793 (26000)	117(1.17)(17)
12247 (27000)	124(1.24)(18)
12701 (28000)	124(1.24)(18)
13154 (29000)	131(1.31)(19)
13608 (30000)	138(1.38)(20)
14061 (31000)	145(1.45)(21)
14515 (32000)	152(1.52)(22)
14969 (33000)	159(1.59)(23)
15422 (34000)	165(1.65)(24)
15876 (35000)	165(1.65)(24)
16329 (36000)	172(1.72)(25)
16783 (37000)	186(1.86)(27)
17237 (38000)	193(1.93)(28)
17690 (39000)	200(2.00)(29)
18144 (40000)	207(2.07)(30)
18597 (41000)	214(2.14)(31)
19051 (42000)	221(2.21)(32)
19504 (43000)	228(2.28)(33)
19958 (44000)	234(2.34)(34)
20412 (45000)	241(2.41)(35)

<sup>a</sup> Tire pressures and loads assume cyclical lading at 32 km (20 mph) or less. If a higher speed is used, the load capacity will decrease by 12% for a given tire pressure setting.

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**Recommended Inflation Pressures—Dual Tires—Group 47**

Axle Load Kg (lb)	620/70R42	710/70R38
	160A8 kPa(bar)(psi)	166A8 kPa(bar)(psi)
4535 (10000)	40(0.40)(6)	40(0.40)(6)
4760 (10500)	40(0.40)(6)	40(0.40)(6)
4990 (11000)	40(0.40)(6)	40(0.40)(6)
5215 (11500)	40(0.40)(6)	40(0.40)(6)
5440 (12000)	40(0.40)(6)	40(0.40)(6)
5670 (12500)	40(0.40)(6)	40(0.40)(6)
5895 (13000)	40(0.40)(6)	40(0.40)(6)
6120 (13500)	40(0.40)(6)	40(0.40)(6)
6350 (14000)	40(0.40)(6)	40(0.40)(6)
6575 (14500)	40(0.40)(6)	40(0.40)(6)
6800 (15000)	40(0.40)(6)	40(0.40)(6)
7030 (15500)	40(0.40)(6)	40(0.40)(6)
7255 (16000)	50(0.50)(7)	40(0.40)(6)
7485 (16500)	50(0.50)(7)	40(0.40)(6)
7710 (17000)	50(0.50)(7)	40(0.40)(6)
7935 (17500)	55(0.55)(8)	40(0.40)(6)
8165 (18000)	55(0.55)(8)	40(0.40)(6)
8390 (18500)	60(0.60)(9)	40(0.40)(6)
8615 (19000)	70(0.70)(10)	50(0.50)(7)
8845 (19500)	70(0.70)(10)	50(0.50)(7)
9070 (20000)	70(0.70)(10)	50(0.50)(7)
9525 (21000)	75(0.75)(11)	55(0.55)(8)
9975 (22000)	80(0.80)(12)	60(0.60)(9)
10430 (23000)	85(0.85)(13)	70(0.70)(10)
10885 (24000)	90(0.90)(14)	70(0.70)(10)
11430 (25000)	100(1.00)(15)	75(0.75)(11)
11790 (26000)	110(1.10)(16)	80(0.80)(12)
12 245 (27000)	120(1.20)(17)	85(0.85)(13)
12700 (28000)	120(1.20)(17)	85(0.85)(13)
13150 (29000)	125(1.25)(18)	90(0.90)(14)
13605 (30000)	130(1.30)(19)	100(1.00)(15)
14060 (31000)	—	—
14510 (32000)	—	—

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**Recommended Inflation Pressures—Dual Tires—Group 48**

Axle Load Kg (lb)	620/70R46	710/70R42
	162A8 kPa(bar)(psi)	168A8 kPa(bar)(psi)
4535 (10000)	40(0.40)(6)	40(0.40)(6)
4760 (10500)	40(0.40)(6)	40(0.40)(6)
4990 (11000)	40(0.40)(6)	40(0.40)(6)
5215 (11500)	40(0.40)(6)	40(0.40)(6)
5440 (12000)	40(0.40)(6)	40(0.40)(6)
5670 (12500)	40(0.40)(6)	40(0.40)(6)
5895 (13000)	40(0.40)(6)	40(0.40)(6)
6120 (13500)	40(0.40)(6)	40(0.40)(6)
6350 (14000)	40(0.40)(6)	40(0.40)(6)
6575 (14500)	40(0.40)(6)	40(0.40)(6)
6800 (15000)	40(0.40)(6)	40(0.40)(6)
7030 (15500)	40(0.40)(6)	40(0.40)(6)
7255 (16000)	40(0.40)(6)	40(0.40)(6)
7485 (16500)	50(0.50)(7)	40(0.40)(6)
7710 (17000)	50(0.50)(7)	40(0.40)(6)
7935 (17500)	50(0.50)(7)	40(0.40)(6)
8165 (18000)	50(0.50)(7)	40(0.40)(6)
8390 (18500)	55(0.55)(8)	40(0.40)(6)
8615 (19000)	55(0.55)(8)	40(0.40)(6)
8845 (19500)	60(0.60)(9)	50(0.50)(7)
9070 (20000)	70(0.70)(10)	50(0.50)(7)
9525 (21000)	70(0.70)(10)	50(0.50)(7)
9975 (22000)	75(0.75)(11)	55(0.55)(8)
10430 (23000)	80(0.80)(12)	60(0.60)(9)
10885 (24000)	85(0.85)(13)	70(0.70)(10)
11430 (25000)	85(0.85)(13)	70(0.70)(10)
11790 (26000)	100(1.00)(15)	75(0.75)(11)
12245 (27000)	110(1.10)(16)	80(0.80)(12)
12700 (28000)	110(1.10)(16)	85(0.85)(13)
13150 (29000)	120(1.20)(17)	85(0.85)(13)
13605 (30000)	120(1.20)(17)	100(1.00)(15)
14060 (31000)	125(1.25)(18)	—
14510 (32000)	140(1.40)(20)	—

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**Recommended Pressures—Group 48 — IF Tires**

Axle Load kg (lb)	IF 650/85/R38 (GP 48)	IF 710/70R42 (GP 48)
	Dual	Dual
	179 Load Index kPa(bar)(psi)	179 Load Index kPa(bar)(psi)
4535(10000)	40(0.4)(6)	40(0.4)(6)
4762(10500)	40(0.4)(6)	40(0.4)(6)
4990(11000)	40(0.4)(6)	40(0.4)(6)
5216(11500)	40(0.4)(6)	40(0.4)(6)
5443(12000)	40(0.4)(6)	40(0.4)(6)
5670(12500)	40(0.4)(6)	40(0.4)(6)
5896(13000)	40(0.4)(6)	40(0.4)(6)
6123(13500)	40(0.4)(6)	40(0.4)(6)
6350(14000)	40(0.4)(6)	40(0.4)(6)
6577(14500)	40(0.4)(6)	40(0.4)(6)
6803(15000)	40(0.4)(6)	40(0.4)(6)
7030(15500)	40(0.4)(6)	40(0.4)(6)
7257(16000)	40(0.4)(6)	40(0.4)(6)
7484(16500)	40(0.4)(6)	40(0.4)(6)
7711(17000)	40(0.4)(6)	40(0.4)(6)
7937(17500)	40(0.4)(6)	40(0.4)(6)
8164(18000)	40(0.4)(6)	40(0.4)(6)
8391(18500)	40(0.4)(6)	40(0.4)(6)
8618(19000)	40(0.4)(6)	40(0.4)(6)
8845(19500)	40(0.4)(6)	40(0.4)(6)
9072(20000)	40(0.4)(6)	40(0.4)(6)
9525(21000)	40(0.4)(6)	40(0.4)(6)
9979(22000)	40(0.4)(6)	40(0.4)(6)
10432(23000)	40(0.4)(6)	40(0.4)(6)
10886(24000)	50(0.5)(7)	50(0.5)(7)
11340(25000)	50(0.5)(7)	50(0.5)(7)
11793(26000)	55(0.55)(8)	55(0.55)(8)
12247(27000)	55(0.55)(8)	55(0.55)(8)
12700(28000)	60(0.6)(9)	60(0.6)(9)
13154(29000)	70(0.7)(10)	70(0.7)(10)
13607(31000)	70(0.7)(10)	70(0.7)(10)
14061(31000)	75(0.75)(11)	75(0.75)(11)
14514(32000)	80(0.8)(12)	80(0.8)(12)
14968(33000)	80(0.8)(12)	80(0.8)(12)
15422(34000)	90(0.9)(13)	90(0.9)(13)
15875(35000)	90(0.9)(13)	90(0.9)(13)
16330(36000)	—	—

RW29387,00007E5-19-16AUG10-1/1

### Using Correct Tire Combinations

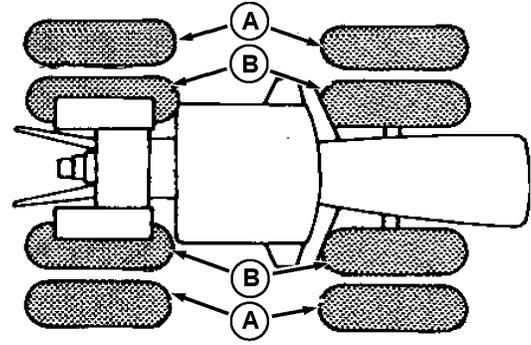
**CAUTION:** Prevent possible injury. High-speed transport with outer duals removed can cause loss of steering control and reduce vehicle stability. Reduce speed immediately if loss of steering control occurs.

If outer duals must be removed, adjust wheels to wider tread and travel at slow speeds.

Do not operate with single wheels and tires.

**IMPORTANT:** Avoid excessive drive train wear or a possible reduction in performance. Do not mix worn and new tires, bias and radial, or tires of different diameters. Do not use R2 tires in combination with R1.

When radial-ply tires are used as inner dual (B), outer dual (A) may be bias-ply tires.



A—Outside Dual

B—Inside Dual

RW4590A—UN—08MAR99

Any other mixing of radial-ply and bias-ply tires is not recommended.

RW29387,00005B4-19-28MAR07-1/1

### Using Dual Tires

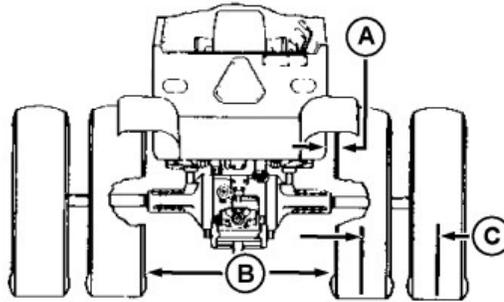
**IMPORTANT:** Installation of dual tires wider than 800 mm (31.5 in.) can cause damage to the axles from overloading.

Use of clamp-on dual wheels is *not* allowed. A separate hub is required for each dual or triple tire.

Installation of dual tires wider than 800 mm (31.5 in.) not recommended unless certain precautions are followed. See your John Deere Dealer for recommendations.

RW29387,00002D3-19-09JUN08-1/1

### Observing Tread Width Limitations



RW19282A—UN—26MAR89

A—Clearance

B—Width

C—Tire Spacing

**IMPORTANT:** Tires must have at least 25 mm (1 in.) clearance (A) with fenders. Clearance (B) between tires must be at least 1041 mm (41 in.), with tires equal distance from center line.

**IMPORTANT:** With dual tires, refer to following chart for minimum spacing between tires (C). (See Using Radial and Bias-Ply Tires for more information.)

Steering stops may be required for some tread settings.

Extremely wide wheel spacings provide higher loads for axle bearings and shafts. Try to minimize overall tread width.

	Maximum Tread Width
Towed Implement	3455 mm (136 in.)

Tire Section	Tire Centerline	Minimum Spacing
620 (24.5)		801 mm (31.5 in.)
710 (28.8)		890 mm (35.0 in.)

OU1092A,00001F2-19-11AUG09-1/1

### Tread Widths—Singles or Duals

Approximate tread ranges for each tire size are shown in the following chart:

*NOTE: See Observing Tread Width Limitations in this Section.*

#### TREAD WIDTH—SINGLE WHEELS

Tire Size	Inner Tire Range (Approximate Minimum)
76x50.00B32 Flotation 23-Degree Logger	2302 mm (90.5 in.)

#### TREAD WIDTH—DUAL WHEELS

Tire Size	Inner Tire Range (Minimum—Maximum)	Outer Tire Range (Minimum—Maximum)
620/70R42 Cast/Steel	1689—2063 mm (66.5—81.2 in.)	3240—3615 mm (127.6—142.3 in.)
620/70R46 Cast/Steel	1689—2063 mm (66.5—81.2 in.)	3240—3615 mm (127.6—142.3 in.)
710/70R38 Cast/Steel	1782—1844 mm (70.2—72.6 in.)	3562—3624 mm (140.2—142.7 in.)
710/70R42 Cast/Steel	1782—1911 mm (70.2—75.2 in.)	3562—3691 mm (140.2—145.3 in.)

OU1092A,00001F3-19-11AUG09-1/1

### Installing Wheel Rim to Cast Wheel

**⚠ CAUTION:** Avoid the possibility of personal injury.  
Never operate tractor with loose wheel bolts.

**NOTE:** The wheel rim (A) has one **tight fit** hole that is smaller than other holes. One **slot fit** hole is 180° from the tight fit hole.

Install and hand tighten bolt in the **tight fit** hole (B).

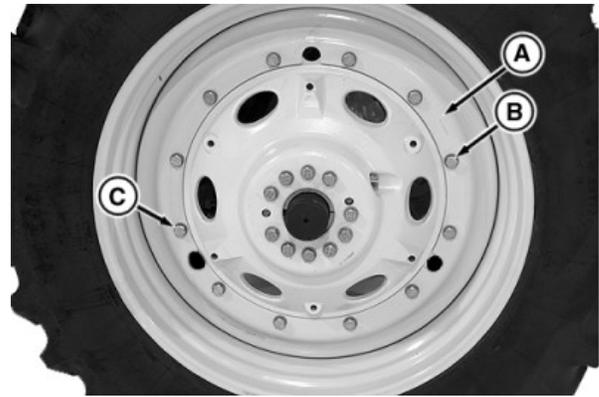
Install and hand tighten bolt in the **slot fit** hole (C).

Install and hand tighten remaining bolts.

Tighten all bolts to 600 N·m (445 lb-ft).

Drive tractor 100 meters (110 yd) and retighten bolts.

Tighten again at **3 HOURS** and **10 HOURS**. Continue to tighten to specified torque daily during the first week of operation.



A—Wheel Rim  
B—Tight Fit Hole

C—Slot Fit Hole

**NOTE:** For continual heavy draft load operation, like scrapers, tighten every two hours during the first week of operation.

RW29387,00002D9-19-22MAY07-1/1

RXA0052979—UN—17MAY01

### Wheel Torque Wrench Adapter—JDG679

The JDG679 Torque Wrench Adapter (A), 32 mm (3/4 in.) drive is designed for easy access to sleeve bolts on inner cast wheels with outside duals in place.

Torque wrench adapter should be at **90° angle** from torque wrench shaft for correct torque specification.

See your John Deere Dealer to order.

#### Specification

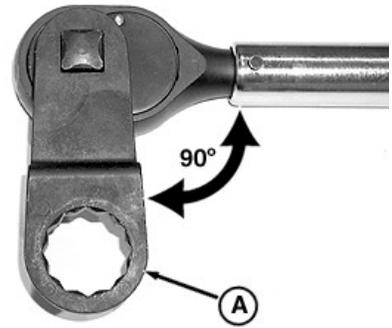
Cast Wheel Cap Screws—Torque. . . . . 610 N·m (450 lb-ft)

**When unable to use Adapter at 90° angle from torque wrench shaft, use this formula to calculate correct torque setting.**

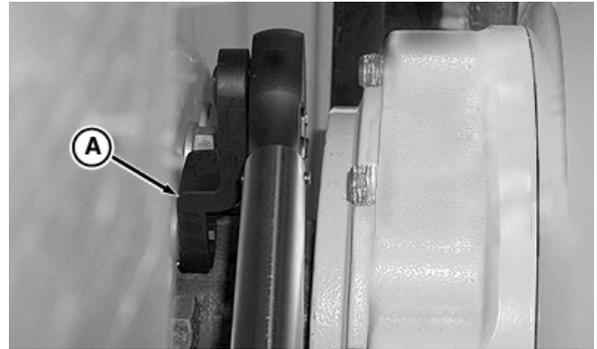
- Tw = Torque setting on the torque wrench
- Ta = Torque actually being applied to the nut or cap screw
- L = Length from the point of force (center of the wrench handle) to the center of head of torque wrench
- A = Application distance from center of torque wrench head to the center of adapter which is 95 mm (3.75 in.)

Example: Torque wrench length = 0.91 m (36 in.), wrench adapter = 0.1 m (4 in.), so new Tw for torque wrench setting is 549 N·m (405 lb-ft).

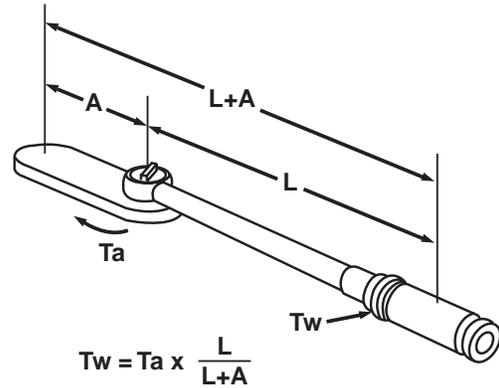
#### A—JDG679 Torque Wrench Adapter



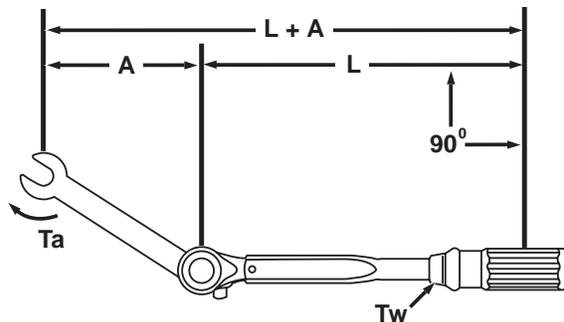
RXA0086802—UN—15FEB06



RXA0086804—UN—15FEB06



RXA0061214—UN—19JUN02



RXA0062101—UN—15AUG02

RW29387,000042F-19-19JAN07-1/1

### Wheel Weight Holding Wrench—*JDG10958*

The JDG10958 Holding Wrench can be used when multiple inner and outer wheel weights are stacked on the tractor wheel.

The Holding Wrench is designed to hold M20 wheel weight cap screws in limited access areas while tightening cap screws to specified torque per Tractor Operator's Manual.

The wrench is available from your John Deere Dealer.

#### Specification

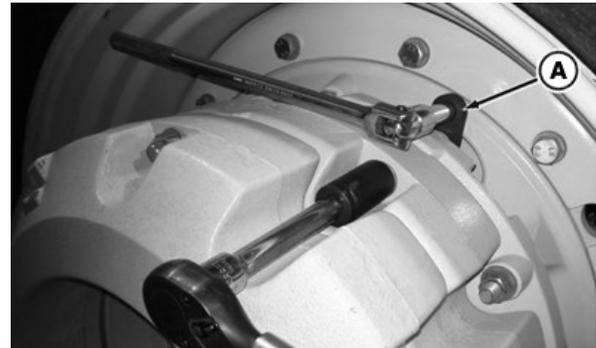
Wheel Weight Cap Screws—Torque. . . . . 610 N·m (450 lb-ft)

#### A—JDG10958 Wheel Weight Holding Wrench



RXA0100328—UN—03FEB09

*JDG10958 Wheel Weight Holding Wrench*



RXA0100329—UN—03FEB09

*Outer Wheel Weight*



RXA0100330—UN—03FEB09

*Inner Wheel Weight*

RW29387,00000CE-19-12MAR09-1/1

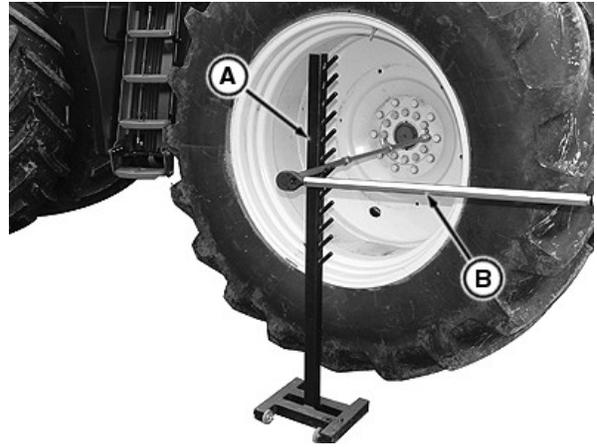
**Wheel Tightening Stand—DFRW219 or JDG10741**

Wheel tightening stand (A) may be used to aid in tightening wheel hardware.

It will support the torque wrench (B) when tightening cap screws at different heights.

See your John Deere Dealer to order.

**A—Wheel Tightening Stand      B—Torque Wrench**



RXA00066392—UN—25OCT07

*Wheel Tightening Stand*

RW29387,00000A5-19-14DEC07-1/1

### Adjusting and Tightening Wheels-Heavy-Duty Drive Wheels and Dual Hubs

**CAUTION:** Avoid personal injury. Never run the engine with transmission in gear when adjusting wheels. Wheels on the ground could pull supported wheels off jackstands.

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

**IMPORTANT:** Tractors are equipped 12 bolt heavy-duty drive wheels and hubs. Numbers indicating proper torquing sequence are cast into wheel hub.

Carefully follow procedure. Failure to do so could lead to sleeve or cast wheel damage.

**IMPORTANT:** Clean any paint, grease, film, rust or debris from axle shafts, cap screws, and threads prior to positioning and installing wheel sleeves and cast wheel. **DO NOT** apply any lubricant to cap screws, threads, wheel or axle.

1. Raise the tractor on level ground and support tractor with jackstands.
2. Loosen (without removing) sleeve bolts (1—12) just enough to move wheel.

**IMPORTANT:** Do not loosen or remove the two allen head screws. Doing so could result in wheel jamming or damage.

*NOTE: Adjusting tool is not compatible with heavy-duty cast wheel.*

**CAUTION:** Use a hoist, wheel dolly or proper lifting equipment to safely slide and adjust wheels on axles and avoid possibility of personal injury.

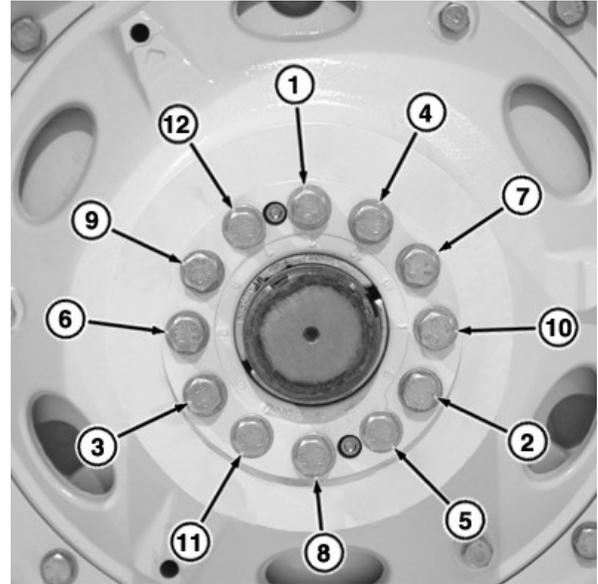
Failure to follow torquing sequence and procedure will result in damage to wheel sleeves and may result in personal injury. Wheel bolt torques are critical and require repeated tightening.

3. Move wheel to desired position.
4. Tighten bolts (1—12) in numerical torque sequence until bolts maintain initial torque. Make sure wheel is perpendicular to axle.

**Specification**

Wheel Bolts—Initial Torque. . . . . 405 N·m  
300 lb-ft

5. Tighten bolts (1—12) in numerical order until bolts maintain final torque.



12 Bolt Heavy-Duty Drive Wheel

**Specification**

Wheel Bolts—Final Torque. . . . . 610 N·m  
450 lb-ft

**IMPORTANT:** Some sleeve bolts may loosen as sleeve is tightened. Repeat star shaped numbered sequence torquing pattern until ALL sleeve bolts maintain the proper torque. Failure to follow procedure could result in damage to equipment and may result in personal injury.

6. Drive tractor unloaded in a large figure-8 pattern a minimum of four times and tighten bolts in numerical order until bolts maintain final torque of 610 N·m (450 lb-ft).

**IMPORTANT:** Keep wheel sleeve cap screws tightened to specification. If tractor is operated with loose wheel sleeves or under-torqued cap screws it may be necessary to replace sleeves and cast wheels.

7. Torque bolts after working **3 HOURS, 10 HOURS, and DAILY** during the first week of operation or until bolts **do not** move when re-torquing.

*NOTE: Continue to check torque a minimum of weekly if used for normal scraper operations.*

RW29387,0000508-19-21JUN07-1/1

### Adjusting and Tightening—Heavy-Duty Dual Wheel Hubs

**CAUTION:** Avoid personal injury. Never run the engine with transmission in gear when adjusting wheels. Wheels on the ground could pull supported wheels off jackstands.

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

**IMPORTANT:** Tractors are equipped with 12 bolt heavy-duty wheels and 10 or 12 bolt hubs. Numbers indicating proper torquing sequence are cast into wheel hub.

Carefully follow procedure. Failure to do so could lead to wheel hub damage.

**IMPORTANT:** Clean any paint, grease, film, rust or debris from axle shafts prior to positioning and installing wheel hubs and sleeves. **DO NOT** apply any lubricant to cap screws or threads.

1. Raise the tractor on level ground and support tractor with jackstands.
2. Loosen (without removing) sleeve bolts (1—10) or (1—12) just enough to move wheel.

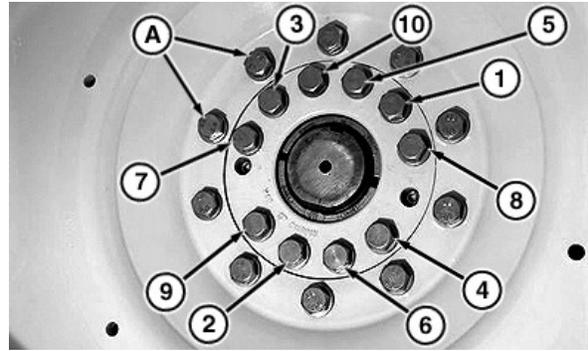
**IMPORTANT:** Do not loosen or remove the two allen head screws. Doing so could result in wheel jamming or damage.

*NOTE: Adjusting tool is not compatible with heavy-duty wheel hub.*

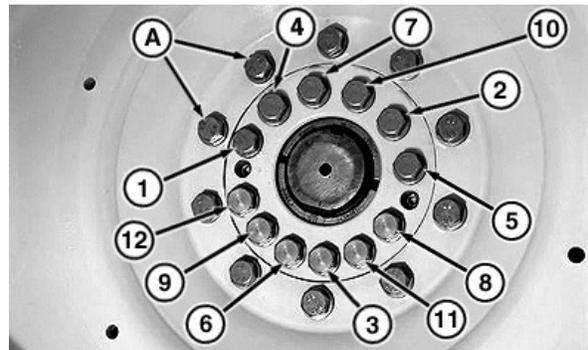
3. Move wheel to desired position.
4. Tighten bolts (1—10) or (1—12) in numerical order until bolts maintain torque of 405 N·m (300 lb-ft). Make sure wheel is perpendicular to axle.
5. Tighten bolts (1—10) or (1—12) in numerical order until bolts maintain torque of 610 N·m (450 lb-ft).
6. Using a star shaped pattern, torque all wheel to hub cap screws (A) as needed to maintain torque.

**Specification**

Cap Screws (A)—Initial Torque. . . . .	405 N·m 300 lb-ft
Cap Screws (A)—Final Torque. . . . .	610 N·m 450 lb-ft



Heavy-Duty Hub-10 Bolt (110 mm Axle)



Heavy-Duty Hub-12 Bolt (120 mm Axle)

A—Cap Screws

**IMPORTANT:** Repeat torquing pattern until ALL bolts maintain the proper torque. Failure to follow procedure could result in damage to equipment and may result in personal injury.

7. Drive tractor a minimum of 100 meters (110 yd) and tighten bolts in numerical order until bolts maintain torque of 610 N·m (450 lb-ft).

**IMPORTANT:** If tractor is operated with wheel sleeve loose for 4-5 hours, it is necessary to replace sleeves.

8. Torque bolts after working **3 HOURS, 10 HOURS,** and **DAILY** during the first week of operation.

*NOTE: Continue to check torque a minimum of weekly if used for normal scraper operations.*

RW29387,00002DD-19-22JUN07-1/1

### Installing 76x50.00B32 Wheel and Tire Assembly—Early Wheel Design

**IMPORTANT:** Wheel, rim and components used with 76x50.00B32 tire are not warranted by John Deere. For replacement parts call Southern Wheel and Rim at 1-800-438-8856 to find nearest dealer location.

**CAUTION:** Avoid personal injury. Never run the engine with transmission in gear when adjusting wheels. Wheels on the ground could pull supported wheels off jackstands.

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

**IMPORTANT:** Carefully follow procedure. Failure to do so could lead to wheel hub damage. Clean any paint, grease, film, rust or debris from axle shafts prior to position and installing wheel hubs and sleeves. Do NOT apply any lubricant to cap screws or threads.

1. Raise tractor on level ground and support with jackstands.
2. Install wheel and tire assembly to inner hub, using a washer on each M22 x 120 mm cap screw (A).

**NOTE:** Use Torque Multiplier Wrench for heavy-duty fasteners. See your John Deere Dealer.

Torque multiplier wrenches available for purchase are:

- JT05706 - Capacity - 1360 N·m (1000 lb-ft)
- D05125ST - Capacity - 2720 N·m (2000 lb-ft)

3. Tighten cap screws (A) in criss cross pattern.

**Specification**

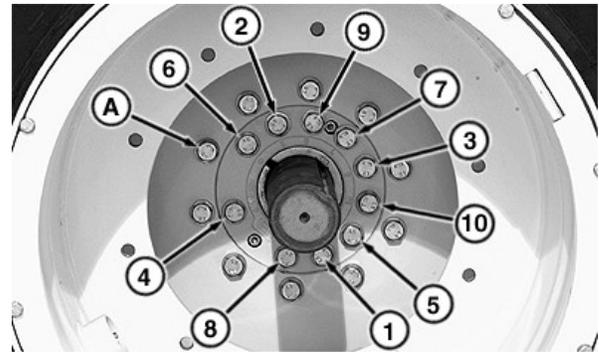
Cap Screw—Torque. . . . . 600 N·m  
450 lb-ft

4. Loosen (without removing) sleeve bolts (1—10 or 1—12).

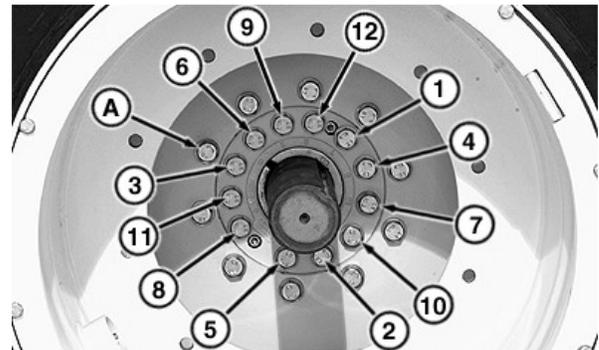
**IMPORTANT:** Do not loosen or remove the two allen head screws. Doing so could result in wheel jamming or damage.

5. Adjust tread spacing between 2302 mm (90.5 in.) minimum and 2617 mm (103 in.) maximum.

**NOTE:** Torque pattern is stamped on wheel hub.



10-Bolt Hub



12-Bolt Hub

A—Wheel Bolts

6. Tighten bolts (1—10 or 1—12) in numerical order to 405 N·m (300 lb-ft).
7. Tighten bolts (1—10 or 1-12) in numerical order until bolts maintain torque.

**Specification**

Cap Screw—Torque. . . . . 600 N·m  
450 lb-ft

8. Drive tractor in a “figure 8” pattern over four laps.
9. Repeat drive and torque procedure a minimum of three times until all hardware holds torque.

**IMPORTANT:** Insure inner hub and wheel bolts hold torque before installing outer hub and disk. This may take several drive and torque sequences.

Continued on next page

OU1092A.00001F4-19-05OCT07-1/2

10. Install outer wheel hub (A) on axle.

**IMPORTANT:** Place side of disk with primer paint (flat yellow) against wheel hub.

Clean any paint, grease, film, rust or debris from axle shafts and disk mounting surfaces prior to positioning and installing wheel hubs and sleeves. Do NOT apply any lubricant to cap screws or threads.

11. Install disk (B) to wheel hub using washers and M22 x 120 mm cap screws (D).

**Specification**

Cap Screw—Torque. . . . . 600 N·m  
450 lb-ft

12. Install disk to wheel using 3/4 x 2 1/2 in. cap screws (C).

**Specification**

Cap Screw—Torque. . . . . 520 N·m  
380 lb-ft

*NOTE: Torque pattern is stamped on wheel hub.*

13. Tighten bolts (1—10 or 1—12) in numerical order to 405 N·m (300 lb-ft).

14. Tighten bolts (1—10 or 1—12) in numerical order until bolts maintain torque.

**Specification**

Cap Screw—Torque. . . . . 600 N·m  
450 lb-ft

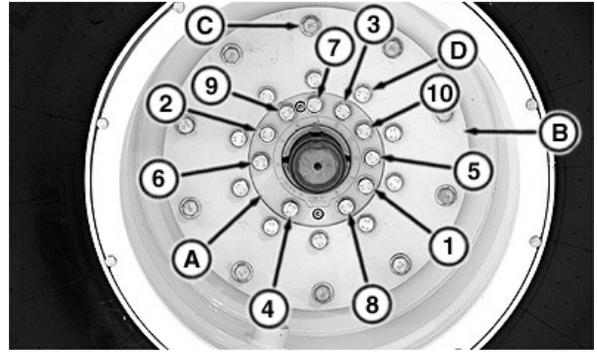
15. Drive tractor in a “figure 8” pattern over four laps.

**IMPORTANT:** Insure hub and wheel bolts hold torque. This may take several drive and torque sequences.

16. Repeat drive and torque procedure a minimum of three times until all hardware holds torque.

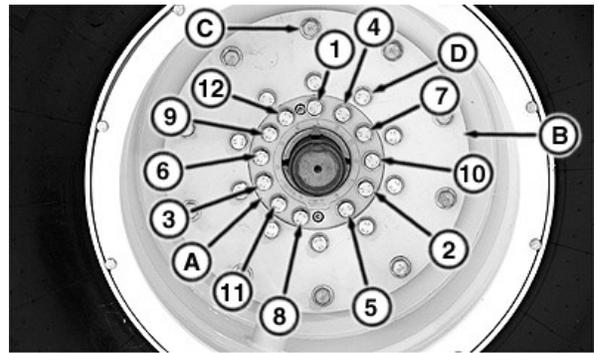
**IMPORTANT:** Recheck Wheel Cap Screw Torque.

17. Check cap screw torque **Every Two Hours** of operation until cap screws turn less than 1/4 turn.



10-Bolt Hub

RXA0071037—UN—29SEP03



12-Bolt Hub

RXA0093705—UN—03MAY07

18. Then recheck torque **Once Per Day** until cap screws turn less than 1/8 turn.

19. Then recheck torque **Every seven days**, if cap screws move more than 1/4 turn, repeat Steps 15 and 16.

**IMPORTANT:** If tractor is operated with wheel sleeves loose for 4 -5 hours, it is necessary to replace sleeves.

OU1092A,00001F4-19-05OCT07-2/2

### Installing 76x50-32 Flotation Wheel and Tire Assembly—Late Wheel Design

**CAUTION:** Avoid personal injury. Never run the engine with transmission in gear when adjusting wheels. Wheels on the ground could pull supported wheels off jackstands.

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

**IMPORTANT:** Carefully follow procedure. Failure to do so could lead to wheel hub damage. Clean any paint, grease, film, rust or debris from axle shafts prior to position and installing wheel hubs and sleeves. Do NOT apply any lubricant to cap screws or threads.

*NOTE: For 9030 Series tractors starting with (Serial No. E022812-) equipped with contoured wheel disk assembly requiring service will be handled through John Deere Service Parts and Warranty. Contact your John Deere dealer for service.*

1. Raise tractor on level ground and support with jackstands.
2. Install wheel and tire assembly to inner hub, using a washer on each M22 x 120 mm cap screw (A).

*NOTE: Use Torque Multiplier Wrench for heavy-duty fasteners. See your John Deere Dealer.*

*Torque multiplier wrenches available for purchase are:*

- JT05706 - Capacity - 1360 N·m (1000 lb-ft)
- D05125ST - Capacity - 2720 N·m (2000 lb-ft)

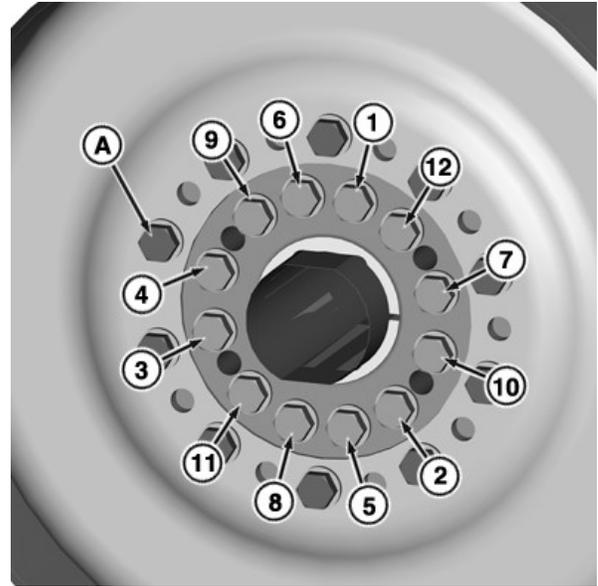
3. Tighten cap screws (A) in crisscross pattern.

**Specification**

Cap Screw—Torque. . . . . 600 N·m  
450 lb-ft

4. Loosen (without removing) sleeve bolts.

**IMPORTANT: Do not loosen or remove the two allen head screws. Doing so could result in wheel jamming or damage.**



Inner Fixed Disk Hub

A—Wheel Bolts

5. Adjust tread spacing between 2302 mm (90.5 in.) minimum and 2617 mm (103 in.) maximum.
6. Tighten bolts in numerical order to 405 N·m (300 lb-ft).
7. Tighten bolts in numerical order until bolts maintain torque.

**Specification**

Cap Screw—Torque. . . . . 600 N·m  
450 lb-ft

8. Drive tractor in a “figure 8” pattern over four laps.

**IMPORTANT: Insure inner hub and wheel bolts hold torque before installing outer hub and disk. This may take several drive and torque sequences.**

9. Repeat drive and torque procedure a minimum of three times until all hardware holds torque.

Continued on next page

RW29387,000003D-19-16MAR11-1/2

RXA0112038—JUN—10NOV10

10. Install outer wheel hub (A) on axle.

**IMPORTANT:** Place side of disk with primer paint (flat yellow) against wheel hub.

Clean any paint, grease, film, rust or debris from axle shafts and disk mounting surfaces prior to positioning and installing wheel hubs and sleeves. Do NOT apply any lubricant to cap screws or threads.

11. Install disk (B) to wheel hub using washers and M22 x 120 mm cap screws (D).

**Specification**

Cap Screw—Torque. . . . . 600 N·m  
450 lb·ft

12. Install disk to wheel using M16. cap screws (C).

**Specification**

Cap Screw—Torque. . . . . 235 N·m  
173lb·ft

**NOTE:** M16 8.8 cap screw torque pattern is stamped on wheel hub.

13. Tighten bolts 1-12 in numerical order until bolts maintain torque.

**Specification**

Cap Screw—Torque. . . . . 405 N·m  
300 lb·ft

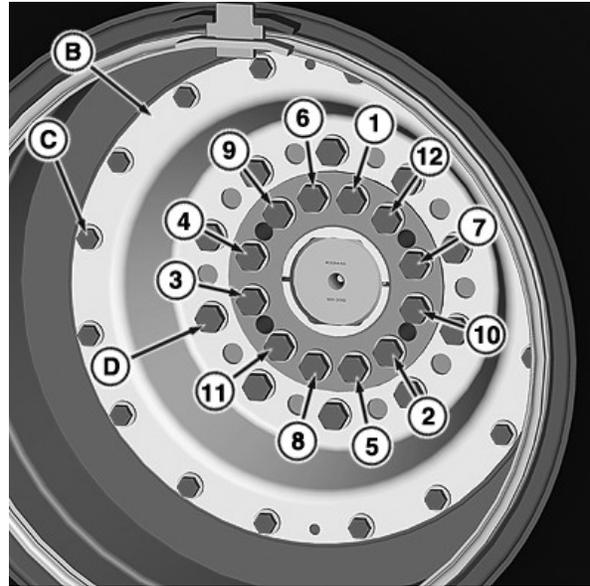
14. Tighten bolts 1-12 in numerical order until bolts maintain torque.

**Specification**

Cap Screw—Torque. . . . . 600 N·m  
450 lb·ft

15. Drive tractor in a “figure 8” pattern over four laps.

**IMPORTANT:** Insure hub and wheel bolts hold torque. This may take several drive and torque sequences.



Outer Removable Disk Hub

16. Repeat drive and torque procedure a minimum of three times until all hardware holds torque.

**IMPORTANT:** Keep wheel sleeve cap screws tightened to specification. If tractor is operated with loose wheel sleeves or under-torqued cap screws it may be necessary to replace sleeves and cast wheels.

17. Torque bolts after working **3 HOURS, 10 HOURS,** and **DAILY** during the first week of operation or until bolts do not move when re-torquing.

**NOTE:** Continue to check torque a minimum of **weekly** if used for normal scraper operations.

RW29387,000003D-19-16MAR11-2/2

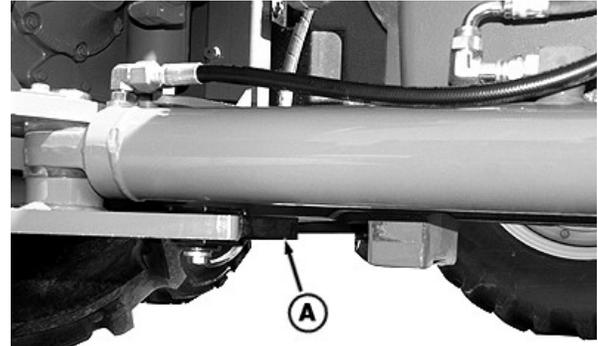
### Using Steering Stops

*NOTE: Steering Stops of 3°, 5°, and 10° are available through your John Deere Dealer. The correct steering stops are installed at the factory with tire option ordered.*

**IMPORTANT: Steering stops (A) must be installed if tractor is equipped with dual tires when outer tire treads are greater than 3343 mm (131.6 in.) or if equipped with triple tires.**

**Check clearance by turning steering wheel to full left and full right positions after installing steering stops and adjusting wheel treads.**

Tighten steering stop retaining cap screw to 90 N·m (66 lb-ft).



A—Steering Stops

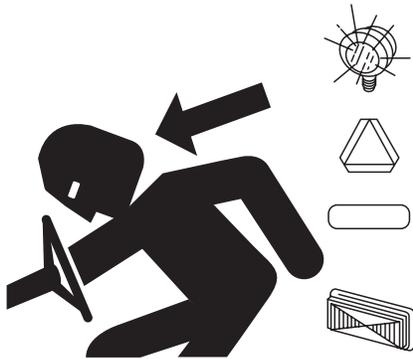
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Tires	Steering Stop	Tread Spacing Range		
		Inner Tire	Outer Tire	Triple Tire
18.4R46, 480/80R46 Duals	3°	1524-1910 mm (60-75 in.)	2969-3348 mm (117-131.8 in.)	
18.4R46, 480/80R46 Triples	10°	1500 mm (59 in.)	2752 mm (108.4 in.)	4106 mm (161.6 in.)
480/80R50 Duals	10°	1524-1910 mm (60-75 in.)	2969-3348 mm (117-131.8 in.)	
480/80R50 Triples	10°	1500 mm (59 in.)	2752 mm (108.4 in.)	4106 mm (161.6 in.)
20.8R42, 520/85R42 Duals	3°	1600-2062 mm (63-81 in.)	2985-2453 mm (117.6-136 in.)	
20.8R42, 520/85R42 Triples	10°	1600 mm (63 in.)	2987 mm (117.6 in.)	4374 mm (172 in.)
520/85R46 Duals	10°	1600-2062 mm (63-81 in.)	2985-2453 mm (117.6-136 in.)	
520/85R46 Triples	10°	1600 mm (63 in.)	2987 mm (117.6 in.)	4374 mm (172 in.)
620/70R42 Duals	5°	1689-2062 mm (66.5-81 in.)	3241-3614 mm (127.6-142 in.)	
620/70R46 Duals	10°	1689-2062 mm (66.5-81 in.)	3241-3614 mm (127.6-142 in.)	
710/70R38 Duals	5°	1783-1935 mm (70-76 in.)	3472-3625 mm (137-143 in.)	
710/70R42 Duals	10°	1783-1935 mm (70-76 in.)	3472-3625 mm (137-143 in.)	
800/70R38 Duals	10°	1876-2188 mm (74-86 in.)	3763-4075 mm (148-160 in.)	

RW29387,00002DE-19-08SEP08-1/1

# Transport

## Driving Tractor on Roads



**CAUTION:** Avoid personal injury or death from losing control of tractor. When driving tractor on roads:

- Wear Seat belts
- Reduce speed when driving on icy, wet, or graveled surfaces
- Ballast tractor correctly (See Performance Ballasting section)
- Prevent wheels from locking and skidding on tractors transporting heavy loads.
- Avoid holes, ditches, sharp turns, hill sides and obstructions which may cause tractor to roll over.
- Frequently check for traffic from the rear, especially in turns, and use turn signal lights.
- Always operate flashing lights when traveling on a highway or public roads, except where prohibited by law.

**Lights**—Use headlights and turn signals day and night.

Follow local regulations for equipment lighting and marking. Keep lighting and marking visible and in good working order. Replace or repair lighting and marking that has been damaged or lost. An implement safety lighting kit is available from your John Deere dealer.

**Brakes**—Tap brake pedal to ensure differential lock is NOT engaged. Avoid hard application of brakes.

**Remote Cylinders**—Position transport lock switch(es) to eliminate possibility of lowering an implement during transport by inadvertently bumping the extend/retract lever (s). (See procedure in Hydraulics and Selective Control Valves or TouchSet Depth Control section.)

**Rear Hitch**—Position or lock hitch in transport position to eliminate possibility of lowering an implement during transport by inadvertently bumping the raise/lower lever. (See procedure in Hitch section.)

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RW29387,00004F6-19-16MAY07-1/1

## Towing Loads and Transporting with Ballast

**⚠ CAUTION:** Avoid possible injury from losing control while towing a load. Stopping distance increases with speed and weight of towed loads, and on slopes.

Tractor wheels may lock and skid on slippery downhill slopes when tractors are transporting heavy loads.

Never transport at speeds exceeding the implement's maximum transport speed. Before transporting a towed implement, refer to the implement operator's manual and implement decals to determine the maximum transport speed. This tractor is capable of operating at transport speeds exceeding the maximum allowable transport speed for most towed implements. Use implement code in implement operator's manual to determine the minimum number of front weights required. Failure to adhere to the implement's maximum transport speed or to have correct ballast can result in:

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

**Guidelines for Towing Equipment without Brakes:**

- Do not transport at speeds greater than 32 km/h (20 mph).
- Must weigh less than 1.5 times the tractor weight.

**Guidelines for Towing Equipment with Brakes:**

- If manufacturer does not specify a maximum transport speed, do not transport at speeds above 40 km/h (25 mph).
- When transporting at speeds up to 40 km/h (25 mph) the fully loaded implement must weigh less than 4.5 times the tractor weight.
- When transporting at speeds between 40 km/h (25 mph) and 50 km/h (31 mph), the fully loaded implement must weigh less than 3 times the tractor weight.

The tractor must be heavy and powerful enough with adequate braking power for the towed load. Add ballast to tractor or lighten the implement load.

Drive slowly enough to maintain safe control. Be alert for skids. Shift to a lower gear for hillsides, rough ground, and sharp turns, especially when transporting heavy equipment.

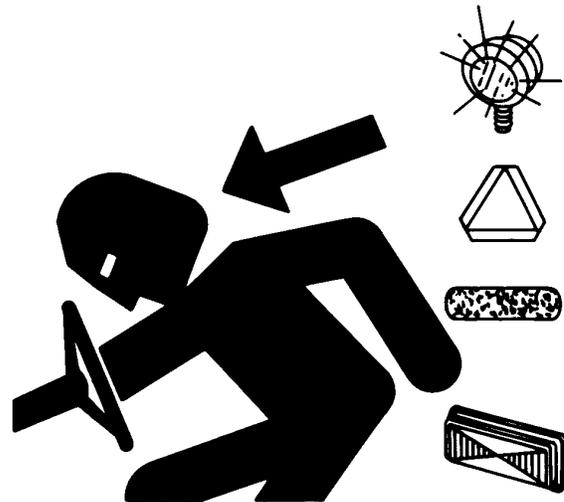
Never operate with transmission in neutral position or with clutch disengaged.

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## Use Safety Lights and Devices

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

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



TS951—UN—12APR90

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### Transporting Rear Mounted Implements with Ballast

**CAUTION:** Avoid possible injury when transporting heavy rear-mounted implements.

Drive slowly over rough ground, regardless of how much ballast used.

Add weight if needed for stability. Add enough ballast to maintain steering control.

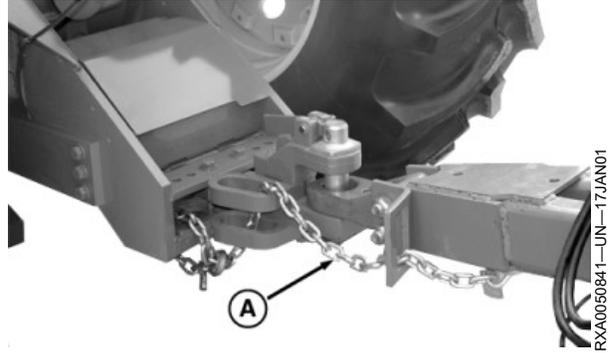
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### Using Safety Chains

Attach and route the safety chain (A) to the drawbar support.

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

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



A—Safety Chain

RW29387,00002E3-19-06DEC05-1/1

### Transporting on Carrier

The best method of transporting a disabled tractor is to haul it on a flatbed carrier.

**⚠ CAUTION:** Stop engine and remove key before working in hinge area.

**IMPORTANT:** Install hinge lock, originally equipped with tractor, on hinge cylinders before transporting tractor.

Steer tractor straight ahead to install hinge lock (A).

Chain tractor to carrier securely. Drive slowly.

**IMPORTANT:** Be sure hinge lock is removed from hinge area before operating tractor.

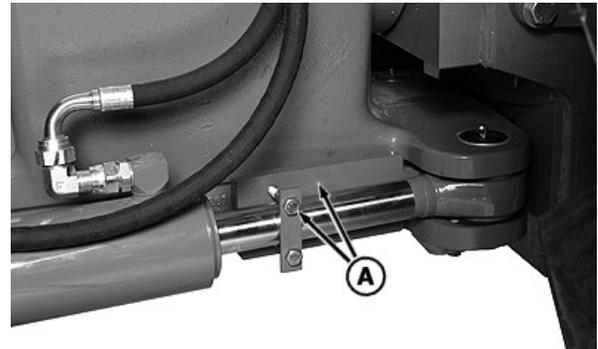
Store hinge lock on tractor as shown (B).



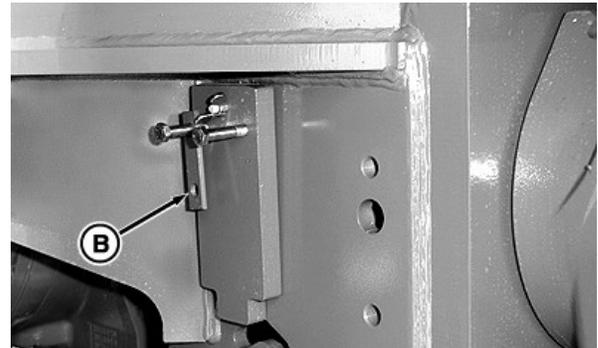
RW13091—UN—07DEC88

A—Hinge Lock

B—Hinge Lock Storage



RXA0090466—UN—18AUG06



RXA0090464—UN—21AUG06

Continued on next page

RW29387,000007B-19-26OCT07-1/2

**“T” Hook Locations**

**⚠ CAUTION:** To avoid accident or injury, securely chain the tractor to carrier. Drive carefully.

**IMPORTANT:** Attach tie downs only to frame “T” hook slots and drawbar support when securing tractor on a carrier.

A disabled tractor should be hauled on a flat bed carrier.

1. Engage PARK position.
2. Attach chain using left and right side frame “T” hook slots (A) and tension chains forward and down to trailer frame.
3. Attach chain “T” hooks using left and right side frame “T” hook slots (B) and tension chains forward and down to trailer frame.

**NOTE:** Use a rubber or protective material to prevent paint damage to drawbar support.

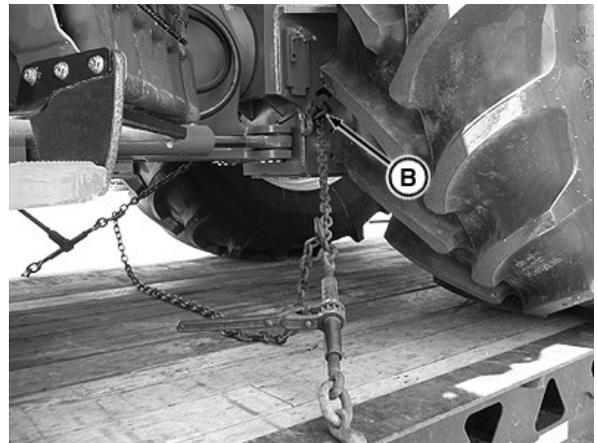
4. Attach chains to each side of rear drawbar support (C) to secure tractor to carrier.
5. After traveling a short distance, check load shift and tighten chains if needed.

- A—“T” Hook Slot-Left Side      C—Drawbar Support Tie Down Frame  
 B—“T” Hook Slot- Rear Frame



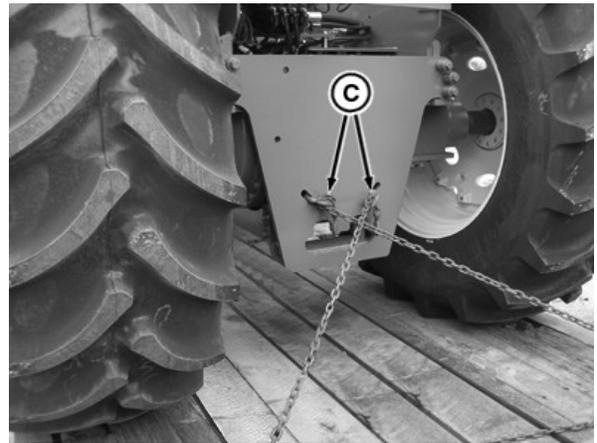
“T” Hook Slot-Left Side

RXA0096136—UN—04OCT07



“T” Hook Slot-Rear Frame

RXA0096138—UN—05OCT07



Scraper Drawbar Support

RXA0096502—UN—26OCT07

RW29387,000007B-19-26OCT07-2/2

## Towing—Rear Wheels Off Ground

If tractor must be towed, the best method is to lift rear axle and tow tractor backward.

**⚠ CAUTION:** Stop engine and remove key before working in hinge area.

**IMPORTANT:** Install hinge lock on tractor hinge cylinders before transporting tractor.

1. Steer tractor straight ahead before installing hinge lock.
2. Remove retaining nut (A) to remove hinge lock (C).
3. Install hinge lock (C) with cap screws.
4. Disconnect front axle by removing front axle drive shaft.

*NOTE: It is not necessary to release internal park brake because rear wheels are off the ground and front driveline is disconnected.*

5. Release park brake on 18 Speed Powershift transmission. If tractor can not be started to release the park brake, see your John Deere Dealer for special tools required to release the brake.

**IMPORTANT:** Never tow tractor faster than 8 km/h (5 mph) for a maximum distance of 8 km (5 mile).

6. Lift tractor by rear axle housings. Attach tow bar to tractor drawbar. Couple as closely as possible.
7. Tow tractor slowly and cautiously.

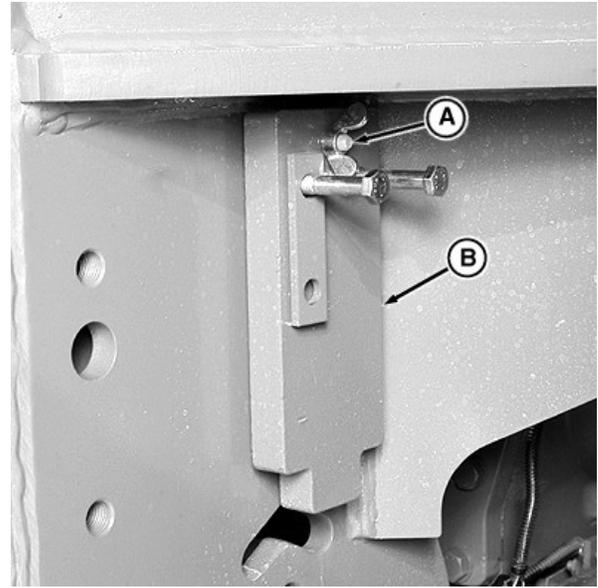
**IMPORTANT:** Be sure hinge lock is removed from hinge area before operating tractor.

8. Store hinge lock (B) on tractor.

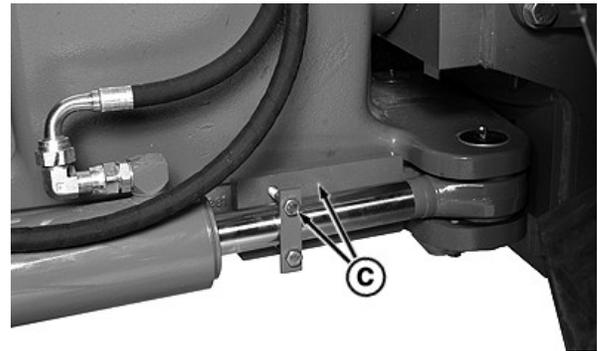
A—Wing Nut

C—Hinge Lock

B—Hinge Lock Storage



RXA0086697—UN—13FEB06



RXA0050482—UN—22AUG06

RW29387,00002E5-19-15AUG08-1/1

## Towing—All Wheels On Ground

**IMPORTANT:** Never attempt to start tractor by towing.

Avoid damaging the transmission and hydraulic systems. Operate engine above 1250 rpm to provide adequate system lubrication. All pressure indicator lights must be off.

Never tow tractor faster than 8 km/h (5 mph) for a maximum distance of 8 km (5 mile).

Park brake has to be released before towing. Special tools are needed to release park brake. See your John Deere Dealer.

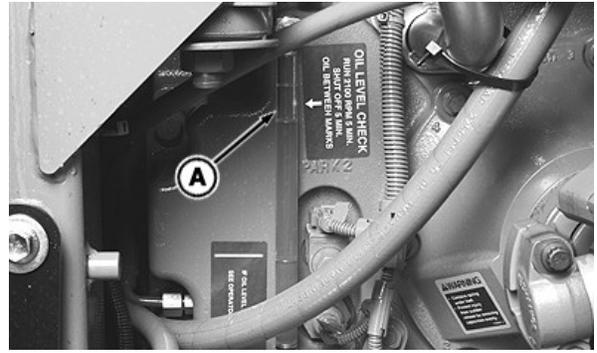
Check transmission/axle oil level sight glass (A) and hydraulic oil level (B). (See Lubrication Section.)

Attach tow bar to drawbar for towing.

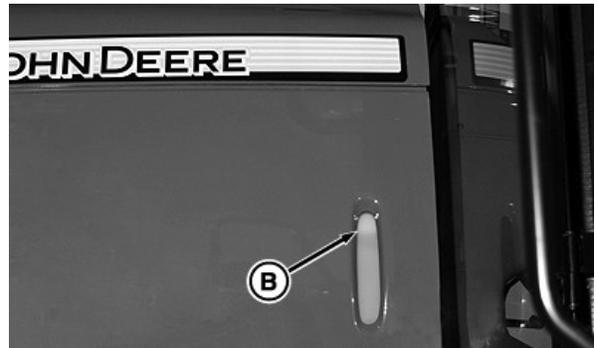
If tractor starts, shift transmission to NEUTRAL position (C).

Steer and brake the tractor while being towed.

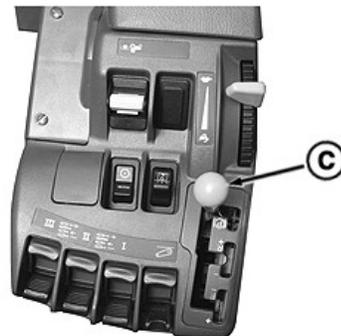
A—Transmission/Axle Oil Level Sight Glass  
B—Hydraulic Oil Level  
C—Neutral Position



RXA0090470—UN—18AUG06



RXA0090468—UN—18AUG06



RXA0090472—UN—21AUG06

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### Freeing a Mired Tractor

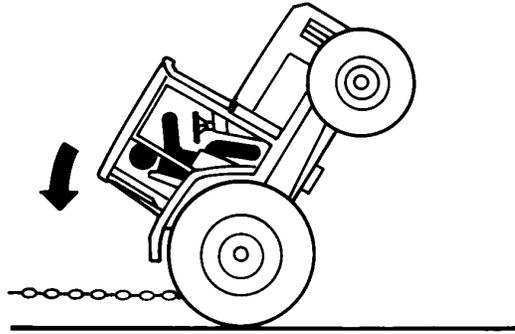
Attempting to free a mired machine can involve safety hazards such as the mired tractor tipping rearward, the towing tractor overturning, and the tow chain or tow bar (a cable is not recommended) failing and recoiling from a stretched condition.

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

Use a tow bar or long chain of adequate size and strong enough to handle the load. Inspect chain for flaws. Always attach vehicles drawbar to drawbar whether pulling forward or rearward. Clear area of people and other hazards before moving.

**IMPORTANT: Avoid damaging transmission/axle and hydraulic system. Never attempt to start tractor by towing.**

**If possible, run engine at 1250 rpm to provide lubrication, steering and brakes. Have an operator steer and brake tractor.**



TS1645—UN—15SEP95

TS263—UN—23AUG88

RW29387,00002E7-19-06DEC05-1/1

# 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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 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  $10^{\circ}\text{C}$  ( $18^{\circ}\text{F}$ ) below the fuel cloud point.

**Fuel lubricity** should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

**Diesel fuel quality and sulfur content** must comply with all existing emissions regulations for the area in which the engine operates. DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

**Materials** such as copper, lead, zinc, tin, brass and bronze should be avoided in fuel handling, distribution and storage equipment as these metals can catalyze fuel oxidation reactions which can lead to fuel system deposits and plugged fuel filters.

### E-Diesel fuel

DO NOT use E-Diesel (Diesel fuel and ethanol blend). Use of E-Diesel fuel in any John Deere machine may void the machine warranty.

**⚠ CAUTION: Avoid severe injury or death due to the fire and explosion risk from using E-Diesel fuel.**

<sup>1</sup> See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2,EXT for more information on Engine Oil and Filter Service Intervals.

### Sulfur Content for Interim Tier 4, Final Tier 4, Stage III 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.<sup>1</sup>
- 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,FUEL1-19-01NOV22-1/1

## Lubrlicity of Diesel Fuel

Most diesel fuels manufactured in the United States, Canada, and the European Union have adequate lubricity to ensure proper operation and durability of fuel injection system components. However, diesel fuels manufactured in some areas of the world may lack the necessary lubricity.

**IMPORTANT: Make sure the diesel fuel used in your machine demonstrates good lubricity characteristics.**

Fuel lubricity should pass a maximum scar diameter of 0.52

mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

If fuel of low or unknown lubricity is used, add John Deere Fuel-Protect Diesel Fuel Conditioner (or equivalent) at the specified concentration.

## Lubrlicity of BioDiesel Fuel

Fuel lubricity can improve significantly with BioDiesel blends up to B20 (20% BioDiesel). Further increase in lubricity is limited for BioDiesel blends greater than B20.

DX,FUEL5-19-07FEB14-1/1

## Handling and Storing Diesel Fuel

**⚠ CAUTION: 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 practicable 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 bio-diesel 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: If a new filler cap is required, always replace it with an original cap.**

**The fuel tank is vented through a separate breather filter.**

When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize the fuel and prevent water condensation. Contact your fuel supplier for recommendations.

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## Biodiesel Fuel

Biodiesel fuel is comprised of monoalkyl esters of long chain fatty acids derived from vegetable oils or animal fats. Biodiesel blends are biodiesel mixed with petroleum diesel fuel on a volume basis.

Before using fuel containing biodiesel, review the Biodiesel Use Requirements and Recommendations in this Operator's Manual.

Environmental laws and regulations can encourage or prohibit the use of biofuels. Operators should consult with appropriate governmental authorities prior to using biofuels.

### John Deere Stage V Engines Operating in the European Union

Where the engine is to be operated within the Union on diesel or non-road gas-oil, a fuel with a FAME content not greater than 8% volume/volume (B8) shall be used.

### John Deere Engines with Exhaust Filter Except Stage V Engines Operating in the European Union

Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

Biodiesel concentrations above B20 can harm the engine's emission control systems and should not be used. Risks include, but are not limited to, more frequent stationary regeneration, soot accumulation, and increased intervals for ash removal.

John Deere Fuel conditioners or equivalent, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B20, and are recommended when using lower biodiesel blends.

### John Deere Engines Without Exhaust Filter

Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

These John Deere engines can operate on biodiesel blends above B20 (up to 100% biodiesel). Operate at levels above B20 ONLY if the biodiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on biodiesel blends above B20 might not fully comply with or be permitted by all applicable emissions regulations. Expect up to a 12% reduction in power and an 18% reduction in fuel economy when using 100% biodiesel.

John Deere fuel conditioners or equivalent, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B100, and are recommended when using lower biodiesel blends.

## Biodiesel Use Requirements and Recommendations

The petroleum diesel portion of all biodiesel blends must meet the requirements of ASTM D975 (US) or EN 590 (EU) commercial standard.

Biodiesel users in the U.S. are strongly encouraged to purchase biodiesel blends from a BQ-9000 Certified Marketer and sourced from a BQ-9000 Accredited Producer (as certified by the National Biodiesel Board). Certified Marketers and Accredited Producers can be found at the following website: <http://www.bq9000.org>.

Biodiesel contains residual ash. Ash levels exceeding the maximums allowed in either ASTM D6751 or EN14214 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present).

The fuel filter can require more frequent replacement when using biodiesel fuel, particularly if switching from diesel. Check engine oil level daily prior to starting engine. A rising oil level can indicate fuel dilution of the engine oil. Biodiesel blends up to B20 must be used within 90 days of the date of biodiesel manufacture. Biodiesel blends above B20 must be used within 45 days from the date of biodiesel manufacture.

When using biodiesel blends up to B20, the following must be considered:

- Cold-weather flow degradation
- Stability and storage issues (moisture absorption, microbial growth)
- Possible filter restriction and plugging (usually a problem when first switching to biodiesel on used engines)
- Possible fuel leakage through seals and hoses (primarily an issue with older engines)
- Possible reduction of service life of engine components

Request a certificate of analysis from your fuel distributor to ensure that the fuel is compliant with the specifications provided in this Operator's Manual.

Consult your John Deere dealer for John Deere fuel products to improve storage and performance with biodiesel fuels.

The following must also be considered if using biodiesel blends above B20:

- Possible coking or blocked injector nozzles, resulting in power loss and engine misfire if John Deere fuel additives and conditioners or equivalent containing detergent/dispersants are not used
- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures
- Possible compatibility issues with other materials

(including copper, lead, zinc, tin, brass, and bronze) used in fuel handling, distribution, and storage equipment

- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to biodiesel
- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system

- Because biodiesel blends above B20 contain more ash, using blends above B20 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present)

**IMPORTANT: Raw pressed vegetable oils are NOT acceptable for use as fuel in any concentration in John Deere engines. Their use could cause engine failure.**

DX,FUEL7-19-13JAN18-2/2

### Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as calculated cetane index, fuel type, sulfur content, water content, appearance, suitability for cold weather operations, bacteria, cloud point, acid number, particulate

contamination, and whether the fuel meets ASTM D975 or equivalent specification.

Contact your John Deere dealer for more information on diesel fuel analysis.

DX,FUEL6-19-13JAN18-1/1

## Minimizing the Effect of Cold Weather on Diesel Engines

John Deere diesel engines are designed to operate effectively in cold weather.

However, for effective starting and cold-weather operation, a little extra care is necessary. The following information outlines steps that can minimize the effect that cold weather may have on starting and operation of your engine. See your John Deere dealer for additional information and local availability of cold-weather aids.

### Use Winter Grade Fuel

When temperatures fall below 0°C (32°F), winter grade fuel (No. 1-D in North America) is best suited for cold-weather operation. Winter grade fuel has a lower cloud point and a lower pour point.

**Cloud point** is the temperature at which wax begins to form in the fuel. This wax causes fuel filters to plug. **Pour point** is the lowest temperature at which movement of the fuel is observed.

*NOTE: On average, winter grade diesel fuel has a lower Btu (heat content) rating. Using winter grade fuel may reduce power and fuel efficiency, but should not cause any other engine performance effects. Check the grade of fuel being used before troubleshooting for low-power complaints in cold-weather operation.*

### Air Intake Heater

An air intake heater is an available option for some engines to aid cold weather starting.

### Ether

An ether port on the intake is available to aid cold weather starting.

**⚠ CAUTION: Ether is highly flammable. Do not use ether when starting an engine equipped with glow plugs or an air intake heater.**

### Coolant Heater

An engine block heater (coolant heater) is an available option to aid cold weather starting.

### Seasonal Viscosity Oil and Proper Coolant Concentration

Use seasonal grade viscosity engine oil based on the expected air temperature range between oil changes and a proper concentration of low silicate antifreeze as recommended. (See DIESEL ENGINE OIL and ENGINE COOLANT requirements in this section.)

### Diesel Fuel Cold Flow Additive

Use John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula), which contains anti-gel chemistry, or equivalent fuel conditioner to treat non-winter grade fuel (No. 2-D in North America) during the cold-weather season. This generally extends operability to about 10°C (18°F) below the fuel cloud point. For operability at even lower temperatures, use winter grade fuel.

**IMPORTANT: Treat fuel when outside temperature drops below 0°C (32°F). For best results, use with untreated fuel. Follow all recommended instructions on label.**

### Biodiesel

When operating with biodiesel blends, wax formation can occur at warmer temperatures. Begin using John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula) or equivalent at 5°C (41°F) to treat biodiesel fuels during the cold-weather season. Use B5 or lower blends at temperatures below 0°C (32°F). Use only winter grade petroleum diesel fuel at temperatures below -10°C (14°F).

### Winterfronts

Use of fabric, cardboard, or solid winterfronts is not recommended with any John Deere engine. Their use can result in excessive engine coolant, oil, and charge air temperatures. This can lead to reduced engine life, loss of power and poor fuel economy. Winterfronts may also put abnormal stress on fan and fan drive components potentially causing premature failures.

If winterfronts are used, they should never totally close off the grill frontal area. Approximately 25% area in the center of the grill should remain open at all times. At no time should the air blockage device be applied directly to the radiator core.

### Radiator Shutters

If equipped with a thermostatically controlled radiator shutter system, this system should be regulated in such a way that the shutters are completely open by the time the coolant reaches 93°C (200°F) to prevent excessive intake manifold temperatures. Manually controlled systems are not recommended.

If air-to-air aftercooling is used, the shutters must be completely open by the time the intake manifold air temperature reaches the maximum allowable temperature out of the charge air cooler.

For more information, see your John Deere dealer.

DX,FUEL10-19-13JAN18-1/1

## Fuel Storage

**IMPORTANT: Proper fuel storage is critical. Use clean storage and transfer tanks. Periodically drain water and sediment from bottom of tank. Store fuel in a convenient place away from buildings.**

Avoid storing fuel over long periods of time. If there is a very slow fuel turnover in the fuel or storage tank, a fuel

conditioner may need to be added. This conditioner can be poured directly into fuel tank or bulk storage tank.

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

RW29387,0000810-19-29SEP10-1/1

## Filling Fuel Tank

**⚠ CAUTION: Avoid possible personal injury:**

- Always stop engine when refueling.
- Do not refuel while smoking or when near open flame or sparks.
- Handle fuel with care. Always clean up spilled fuel.
- Fill fuel tank outdoors.
- Prevent fires by keeping machine clean of accumulated trash, grease, and debris.



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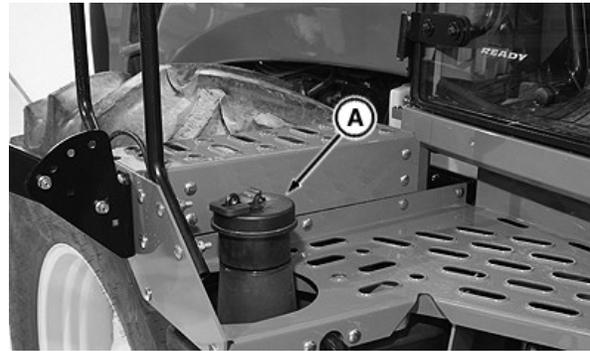
Raise fuel cap lock lever (C) and rotate counterclockwise. Remove fuel cap (A) and fill fuel tanks at end of each day. This prevents condensation in tank as moist air cools.

*NOTE: When digital display fuel gauge flashes, approximately 20 to 25 gallons of fuel remains.*

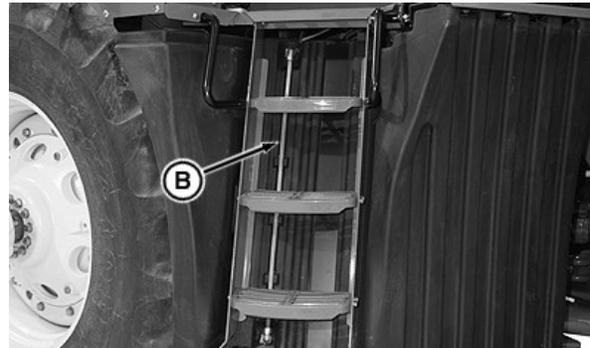
Approximately 132 L (35 gal) of fuel remains when the fuel level is at the bottom of sight tube (B).

A—Fuel Cap  
B—Sight Tube

C—Fuel Cap Lock



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RXA0091490—UN—13NOV06



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## John Deere Break-In™ Plus Engine Oil

To confirm the engine type with which your tractor is equipped, see Identification Numbers – Record Engine Number in this Operator’s Manual. Then, use your tractor’s model number and engine type to select proper Engine Oil and Filter Service Intervals specifications in the Fuels, Lubricants and Coolant Section.

### Initial Service Intervals

The initial break-in service interval of a new or rebuilt wet sleeve engine with Break-In Plus must go at least 100 hours to assure the 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 maximum service interval is the same as the service interval recommendations for Plus-50 II.

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.

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 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

RX32825.00001CC-19-05JAN11-1/1

## Diesel Engine Oil — Tier 3 and Stage IIIA

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.

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

**John Deere Plus-50™ II oil is preferred.**

John Deere Plus-50™ is also recommended.

John Deere Torq-Gard™ is also allowed.

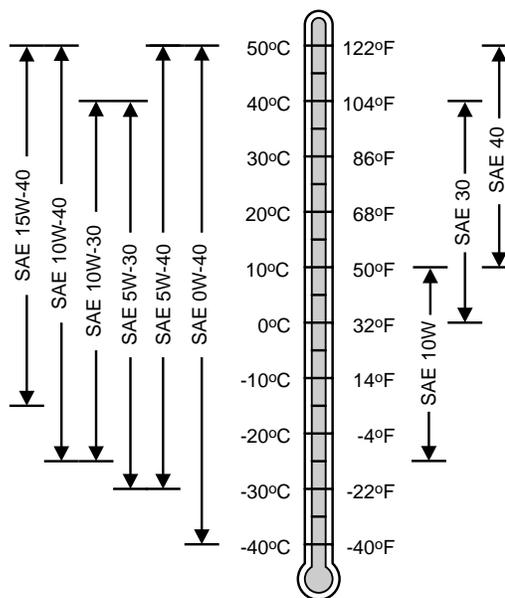
Other oils may be used if they meet one or more of the following standards:

- API Service Category CK-4
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E7
- ACEA Oil Sequence E6
- ACEA Oil Sequence E5
- ACEA Oil Sequence E4

**Multi-viscosity diesel engine oils are preferred.**

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

*Plus-50 is a trademark of Deere & Company  
Torq-Gard is a trademark of Deere & Company*



Oil Viscosities for Air Temperature Ranges

DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

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DX,ENOil11-19-23APR19-1/1

## Engine Oil and Filter Service Intervals—9430 Tractors With Tier 3 and Stage III A Engines

To confirm which engine your tractor is equipped with, see Identification Numbers Section - Record Engine Serial Number in this Operator's Manual.

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.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

**Diesel fuel sulfur content** affects engine oil and filter service intervals.

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 1000—5000 mg/kg (1000—5000 ppm) REDUCES the oil and filter change interval.
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.
- DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

**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.

### Approved Oil Types:

- “Plus-50 Oils” include John Deere Plus-50™ II and John Deere Plus-50.
- “Other Oils” include John Deere Torq-Gard™, API CJ-4, API CI-4 PLUS, API CI-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, and ACEA E4.

*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 5000 mg/kg (5000 ppm).
- Use of John Deere Plus-50™ II or John Deere Plus-50 oil.
- Use of an approved John Deere oil filter.

Engine Oil and Filter Service Intervals	
<b>Fuel Sulfur</b>	Less than 1000 mg/kg (1000 ppm)
Plus-50 Oils	500 hours
Other Oils	250 hours
<b>Fuel Sulfur</b>	1000—2000 mg/kg (1000—2000 ppm)
Plus-50 Oils	300 hours
Other Oils	200 hours
<b>Fuel Sulfur</b>	2000—5000 mg/kg (2000—5000 ppm)
Plus-50 Oils	250 hours
Other Oils	150 hours
<b>Fuel Sulfur</b>	5000—10 000 mg/kg (5000—10 000 ppm)
Plus-50 Oils	Contact John Deere dealer
Other Oils	Contact John Deere dealer
Oil analysis may extend the service interval of “Other Oils”, to a maximum not to exceed the interval of Plus-50 Oils.	

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Torq-Gard is a trademark of Deere & Company

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## Engine Oil and Filter Service Intervals—9530 and 9630 Tractors With Tier 3 and Stage III A Engines

To confirm which engine your tractor is equipped with, see Identification Numbers Section - Record Engine Serial Number in this Operator's Manual.

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 diesel fuel. Actual service intervals also depend on operation and maintenance practices.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

**Diesel fuel sulfur content** affects engine oil and filter service intervals.

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 1000—5000 mg/kg (1000—5000 ppm) REDUCES the oil and filter service interval.
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.
- DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

**IMPORTANT: To avoid engine damage:**

- **Reduce oil and filter service interval by 50% when using biodiesel blends greater than B20. Oil analysis may allow longer service interval.**

*Plus-50 is a trademark of Deere & Company  
Torq-Gard is a trademark of Deere & Company*

- Use only approved oil types.

**Approved Oil Types:**

- "Plus-50 Oils" include John Deere Plus-50™ II and John Deere Plus-50.
- "Other Oils" include John Deere Torq-Gard™, API CJ-4, API CI-4 PLUS, API CI-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, and ACEA E4.

*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 5000 mg/kg (5000 ppm).
- Use of John Deere Plus-50™ II or John Deere Plus-50 oil.
- Use of an approved John Deere oil filter.

Engine Oil and Filter Service Intervals	
<b>Fuel Sulfur</b>	Less than 1000 mg/kg (1000 ppm)
Plus-50 Oils	500 hours
Other Oils	250 hours
<b>Fuel Sulfur</b>	1000 - 2000 mg/kg (1000 - 2000 ppm)
Plus-50 Oils	500 hours
Other Oils	250 hours
<b>Fuel Sulfur</b>	2000—5000 mg/kg (2000—5000 ppm)
Plus-50 Oils	300 hours
Other Oils	200 hours
<b>Fuel Sulfur</b>	5000—10 000 mg/kg (5000—10 000 ppm)
Plus-50 Oils	Contact John Deere dealer
Other Oils	Contact John Deere dealer
Oil analysis may extend the service interval of "Other Oils", to a maximum not to exceed the interval of Plus-50 Oils.	

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## Oil Filters

Filtration of oils is critical to proper operation and lubrication.

Always change filters regularly as specified in this manual.

Use filters meeting John Deere performance specifications.

DX,FILT-19-18MAR96-1/1

## Diesel Engine Coolant (engine with wet sleeve cylinder liners)

Failure to follow applicable coolant standards and drain intervals can result in severe engine damage that may not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere coolants, parts, or service.

### Preferred Coolants

The following pre-mix engine coolants are preferred:

- John Deere COOL-GARD™ II
- John Deere COOL-GARD II PG

COOL-GARD II pre-mix coolant is available in several concentrations with different freeze protection limits as shown in the following table.

COOL-GARD II Pre-Mix	Freeze Protection Limit
COOL-GARD II 20/80	-9°C (16°F)
COOL-GARD II 30/70	-16°C (3°F)
COOL-GARD II 50/50	-37°C (-34°F)
COOL-GARD II 55/45	-45°C (-49°F)
COOL-GARD II PG 60/40	-49°C (-56°F)
COOL-GARD II 60/40	-52°C (-62°F)

Not all COOL-GARD II pre-mix products are available in all countries.

Use COOL-GARD II PG when a non-toxic coolant formulation is required.

### Additional Recommended Coolants

The following engine coolant is also recommended:

- John Deere COOL-GARD II Concentrate in a 40—60% mixture of concentrate with quality water.

**IMPORTANT: When mixing coolant concentrate with water, do not use less than 40% or greater than 60% concentration of coolant. Less than 40% gives inadequate additives for corrosion protection. Greater than 60% can result in coolant gelation and cooling system problems.**

### Other Coolants

Other ethylene glycol or propylene glycol base coolants may be used if they meet the following specification:

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<sup>1</sup> 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.

- Pre-mix coolant meeting ASTM D6210 requirements
- Is formulated with a 2-ethylhexanoic acid (2-EHA) free additive package
- Coolant concentrate meeting ASTM D6210 requirements in a 40—60% mixture of concentrate with quality water

If coolant meeting one of these specifications is unavailable, use a coolant concentrate or pre-mix coolant that has a minimum of the following chemical and physical properties:

- Provides cylinder liner cavitation protection according to either the John Deere Cavitation Test Method or a fleet study run at or above 60% load capacity
- Is formulated with a nitrite-free additive package
- Is formulated with a 2-ethylhexanoic acid (2-EHA) free additive package
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion

### Water Quality

Water quality is important to the performance of the cooling system. Deionized or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

### Coolant Drain Intervals

Drain and flush the cooling system and refill with fresh coolant at the indicated interval, which varies with the coolant used.

When COOL-GARD II or COOL-GARD II PG is used, the drain interval is 6 years or 6000 hours of operation.

If a coolant other than COOL-GARD II or COOL-GARD II PG is used, reduce the drain interval to 2 years or 2000 hours of operation.<sup>1</sup>

**IMPORTANT: Do not use cooling system sealing additives or antifreeze that contains sealing additives.**

**Do not mix ethylene glycol and propylene glycol base coolants.**

**Do not use coolants that contain nitrites.**

DX,COOL3-19-25AUG20-1/1

## John Deere COOL-GARD™ II Coolant Extender

Some coolant additives gradually deplete during engine operation. For COOL-GARD™ II pre-mix and COOL-GARD II Concentrate, replenish coolant additives between drain intervals by adding COOL-GARD II Coolant Extender.

COOL-GARD II Coolant Extender should not be added unless indicated by COOL-GARD II Test Strips. These test strips provide a simple, effective method to check the freeze point, additive levels, and pH of your engine coolant.

Test the coolant solution at intervals of 12 months and whenever excessive coolant is lost through leaks or overheating.

**IMPORTANT: Do not use COOL-GARD II Test Strips with COOL-GARD II PG.**

COOL-GARD II Coolant Extender is a chemically matched  
*COOL-GARD is a trademark of Deere & Company*

additive system for use with all COOL-GARD II coolants. COOL-GARD II Coolant Extender is not intended for use with nitrite-containing coolants.

**IMPORTANT: Do not add a supplemental coolant additive when the cooling system is drained and refilled with any of the following:**

- John Deere COOL-GARD II
- John Deere COOL-GARD II PG

The use of non-recommended supplemental coolant additives can result in additive drop-out, gelation of the coolant, or corrosion of cooling system components.

Add the recommended concentration of COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

DX,COOL16-19-15MAY13-1/1

## Operating in Warm Temperature Climates

John Deere engines are designed to operate using recommended engine coolants.

Always use a recommended engine coolant, even when operating in geographical areas where freeze protection is not required.

**IMPORTANT: Water may be used as coolant in emergency situations only.**

**Foaming, hot surface aluminum and iron corrosion, scaling, and cavitation occur when water is used as the coolant, even when coolant conditioners are added.**

**Drain cooling system and refill with recommended engine coolant as soon as possible.**

DX,COOL6-19-17FEB20-1/1

## Drain Intervals for Diesel Engine Coolant

Drain and flush the cooling system and refill with fresh coolant at the indicated interval, which varies with the coolant used.

John Deere COOL-GARD™ II Premix, COOL-GARD II PG Premix and COOL-GARD II Concentrate are maintenance free coolants for up to six years or 6000 hours of operation, provided that the cooling system is topped off using only John Deere COOL-GARD II Premix or COOL-GARD II PG Premix.

Test the coolant condition annually with Coolant Test Strips designed for use with John Deere COOL-GARD II coolants. If the test strip chart indicates that additive is required, add John Deere COOL-GARD II Coolant Extender as directed.

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If John Deere COOL-GARD™ II Premix, COOL-GARD II PG Premix, or COOL-GARD II Concentrate is used, but the coolant is not tested OR additives are not replenished by adding John Deere COOL-GARD II Coolant Extender, the drain interval is four years or 4000 hours of operation. This drain interval only applies to COOL-GARD II coolants that have been maintained within a 40—60% mixture of concentrate with quality water.

If a coolant other than COOL-GARD II, or COOL-GARD II PG is used, reduce the drain interval to two years or 2000 hours of operation.

DX,COOL11-19-14APR11-1/1

## Additional Information About Diesel Engine Coolants and John Deere COOL-GARD™ II Coolant Extender

Engine coolants are a combination of three chemical components: ethylene glycol (EG) or propylene glycol (PG) antifreeze, inhibiting coolant additives, and quality water.

### Coolant Specifications

John Deere COOL-GARD™ II Premix either EG or PG, are fully formulated coolants that contain all three components in their correct concentrations. DO NOT add an initial charge of John Deere COOL-GARD II Coolant Extender to COOL-GARD II Premix. DO NOT add any other supplemental coolant additive or water to COOL-GARD II Premix.

John Deere COOL-GARD II Concentrate contains both ethylene glycol and inhibiting coolant additives. Mix this product with quality water, but DO NOT add an initial charge of John Deere COOL-GARD II Coolant Extender or any other supplemental coolant additive.

### Replenish Coolant Additives

Some coolant additives will gradually deplete during engine operation. Periodic replenishment of inhibitors is required, even when John Deere COOL-GARD II Premix or COOL-GARD II Concentrate is used. Follow the recommendations in this manual for the use of John Deere COOL-GARD II Coolant Extender.

### Why use John Deere COOL-GARD II Coolant Extender?

Operating without proper coolant additives will result in increased corrosion, cylinder liner erosion and pitting, and other damage to the engine and cooling system. A simple mixture of ethylene glycol or propylene glycol and water will not give adequate protection.

John Deere COOL-GARD II Coolant Extender is a chemically matched additive system designed to fortify the proprietary additives used in John Deere COOL-GARD II Premix and COOL-GARD II Concentrate and to provide optimum protection for up to six years or 6000 hours of operation.

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### Avoid Automotive-type Coolants

Never use automotive-type coolants (such as those meeting ASTM D3306). These coolants do not contain the correct additives to protect heavy-duty diesel engines. Do not treat an automotive engine coolant with supplemental coolant additives because the high concentration of additives can result in additive fallout.

### Water Quality

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate. All water used in the cooling system should meet the following minimum specifications for quality:

Chlorides	<40 mg/L
Sulfates	<100 mg/L
Total dissolved solids	<340 mg/L
Total hardness	<170 mg/L
pH	5.5 to 9.0

### Freeze Protection

The relative concentrations of glycol and water in the engine coolant determine its freeze protection limit.

Ethylene Glycol	Freeze Protection Limit
40%	-24°C (-12°F)
50%	-37°C (-34°F)
60%	-52°C (-62°F)
Propylene Glycol	Freeze Protection Limit
40%	-21°C (-6°F)
50%	-33°C (-27°F)
60%	-49°C (-56°F)

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

DX,COOL17-19-20APR11-1/1

## Testing Diesel Engine Coolant

Maintaining adequate concentrations of glycol and inhibiting additives in the coolant is critical to protect the engine and cooling system against freezing, corrosion, and cylinder liner erosion and pitting.

Test the coolant solution at intervals of 12 months or less and whenever excessive coolant is lost through leaks or overheating.

### Coolant Test Strips

Coolant test strips are available from your John Deere dealer. These test strips provide a simple, effective method to check the freeze point and additive levels of your engine coolant.

### When Using John Deere COOL-GARD II

John Deere COOL-GARD II Premix™, COOL-GARD II PG Premix and COOL-GARD II Concentrate are maintenance free coolants for up to six years or 6000 hours of operation, provided that the cooling system is topped off using only John Deere COOL-GARD II Premix or COOL-GARD II PG premix. Test the coolant condition annually with coolant test strips designed for use with John Deere COOL-GARD II coolants. If the test strip chart indicates that additive is required, add John Deere COOL-GARD II Coolant Extender as directed.

*COOL-GARD is a trademark of Deere & Company*

Add only the recommended concentration of John Deere COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

### When Using Nitrite-Containing Coolants

Compare the test strip results to the supplemental coolant additive (SCA) chart to determine the amount of inhibiting additives in your coolant and whether more John Deere Liquid Coolant Conditioner should be added.

Add only the recommended concentration of John Deere Liquid Coolant Conditioner. DO NOT add more than the recommended amount.

### Coolant Analysis

For a more thorough evaluation of your coolant, perform a coolant analysis. The coolant analysis can provide critical data such as freezing point, antifreeze level, pH, alkalinity, nitrite content (cavitation control additive), molybdate content (rust inhibitor additive), silicate content, corrosion metals, and visual assessment.

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

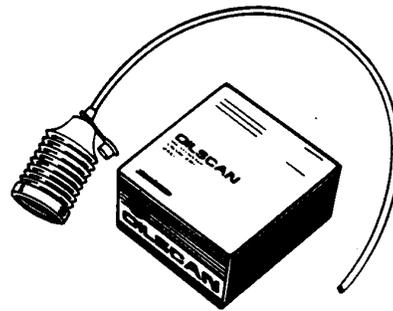
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## Oilscan™ and CoolScan™

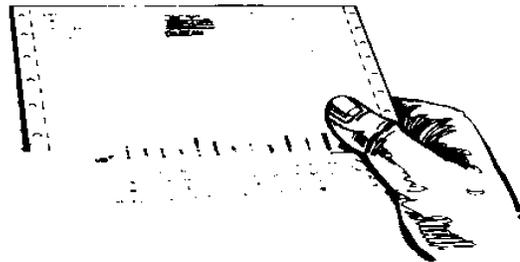
Oilscan™ and CoolScan™ are John Deere sampling programs to help you monitor machine performance and identify potential problems before they cause serious damage.

Oil and coolant samples should be taken from each system before its recommended change interval.

Check with your John Deere dealer for the availability of Oilscan™ and CoolScan™ kits.



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*Oilscan is a trademark of Deere & Company*  
*CoolScan is a trademark of Deere & Company*

DX,OILSCAN-19-13SEP11-1/1

## Transmission/Axle and Hydraulic Oil

**IMPORTANT:** To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.

**Shift quality problems and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed.**

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®

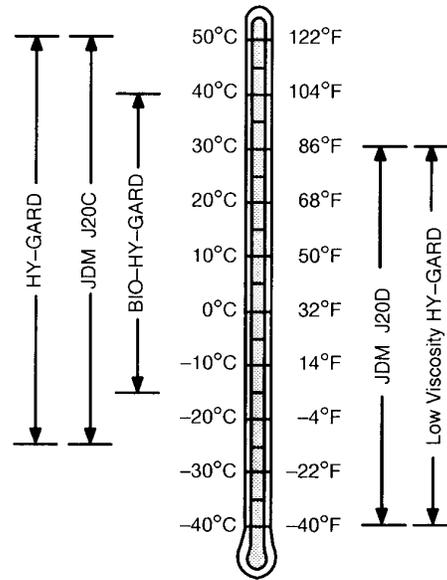
\* Not for use with 18-Speed Powershift Transmission.

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D \*

\* Not for use with 18-Speed Powershift Transmission.

Use John Deere BIO-HY-GARD™ oil when a biodegradable fluid is required.<sup>1</sup>



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*HY-GARD is a trademark of Deere & Company.  
BIO-HY-GARD is a trademark of Deere & Company*

<sup>1</sup> BIO-HY-GARD meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC-L-33-T-82 test method. BIO-HY-GARD should not be mixed with mineral oils, because this reduces the biodegradability and makes proper oil recycling impossible.

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## 18-Speed Powershift Transmission

Your tractor's transmission is factory filled with John Deere HY-GARD JDM J20C™ oil.

**IMPORTANT:** To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.

*HY-GARD is a trademark of Deere & Company*

**Shift quality problems and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed.**

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### Multipurpose Extreme Pressure (EP) Grease

**IMPORTANT:** For automated lubrication systems different ambient air temperatures need to be considered.

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

**John Deere SD Polyurea Grease is preferred.**

The following greases are also recommended:

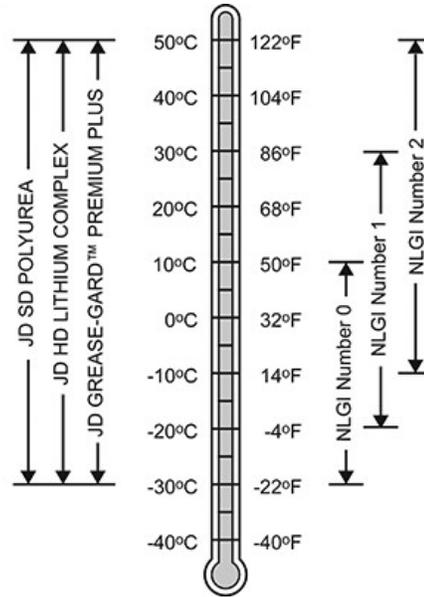
- John Deere HD Lithium Complex Grease
- John Deere Grease-Gard™ Premium Plus

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB
- ISO-L-X-BDHB 2 or DIN KP 2 N-10 Lithium Complex, Non-Synthetic Base Oil (100 to 220 mm<sup>2</sup>/s @ 40°C)

**IMPORTANT:** Some types of thickeners, base oils, and additives used in greases are not compatible with others. Mixing greases should be avoided. Consult your grease supplier before mixing different types of grease.

*Grease-Gard is a trademark of Deere & Company*



Greases for Air Temperature Ranges

RG30199—UN—08MAR18

DX,GREA1-19-13JAN18-1/1

### Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

Consult your John Deere dealer to obtain specific information and recommendations.

DX,LUBMIX-19-18MAR96-1/1

### Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Consult your John Deere dealer to obtain information and recommendations.

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

The temperature limits and service intervals shown in this manual apply to John Deere branded fluids or fluids that have been tested and/or approved for use in John Deere equipment.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

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

### Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

DX,LUBST-19-11APR11-1/1

# Maintenance and Service Intervals

## Observing Service Intervals

Service required during the break-in period should be previously performed. (See Break-in Period Section.)

Perform all services at the hourly intervals indicated on the SERVICE INTERVAL CHARTS in this Section. Record the service performed in Lubrication and Maintenance Records Section.

**IMPORTANT:** Recommended service intervals are for average conditions. Service **MORE OFTEN** if tractor is operated under adverse conditions.

**CAUTION:** Lower all implements to the ground for service and repairs. If the implement needs to be in the raised position, properly support it with jack stands or blocks.

RW29387,0000364-19-13SEP06-1/1

## Service Interval Chart—Daily or 10 Hours—250 Hours—750 Hours

Item	Daily or 10 Hours	250 Hours	750 Hours
Check Engine Oil	•		
Check Coolant Levels	•		
Drain Water Separator	•		
Check Transmission/Axle and Hydraulic Oil Levels	•		
Lubricate Hinge Pins	•		
Lubricate Steering Pins— <i>If Equipped</i>	•		
Inspect Drawbar Support (Tighten Cap Screws-If Needed)	•	•	
Inspect Tires	•		
Check Hydraulic Accumulator	•		
Tighten Wheel and Weight Bolts— <i>Initial at 100 Hours *</i>	•	•	
Change Engine Oil and Filter *		•	
Replace Primary and Secondary Fuel Filters— <i>Initial at 100 Hours ***</i>		•	
Service Batteries		•	
Clean Dual Beam Radar Sensor		•	
Drain Fuel Tank Sump		•	
Check Manual Brakes		•	
Check Neutral Start System		•	
Check PARK System		•	
Inspect Air Intake System for Loose Clamps		•	
Clean Cab Air and Recirculation Filters **		•	
Lubricate Telescoping Drive Shafts		•	
Lubricate Lower Drive Line Bearing		•	
Lubricate Heavy-Duty Gudgeon Bearings		•	
Check Scraper Drawbar Bolts		•	
Replace Hydraulic Filter ***			•
Clean Reservoir Screen— <i>Initial at 100 Hours ***</i>			•
Replace Reservoir Breather Filter **			•
Replace Transmission/Axle Filter ***			•
Test Coolant and Add Coolant Extender			•
Clean Fuel Tank Vent Filter **			•

\*Perform **INITIAL** filter replacement at 100 hours maximum operation. After first 100 hour service, perform oil change in accordance with Changing Engine Oil and Filter in Fuels, Lubricants and Coolant Section of this Operator's Manual.

\*\* Interval can vary according to operating conditions

\*\*\* **INITIAL** filter change is 100 hours maximum of operation.

OU1092A,00001F5-19-16FEB11-1/1

**Service Interval Chart—1500 Hours—2000 Hours—2500 Hours—Annual—Five Years/4500 Hours**

Item	1500 Hours	2000 Hours	2500 Hours	Annual	Every Five Years or 4500 Hours
Change Transmission/Axle, and Hydraulic Oil	•				
Clean Transmission Sump Screen	•				
Check Axle End Play *****	•				
Adjust Engine Valve Clearance *			•		
Inspect Alternator and Fan Belt Tensioners				•	
Replace Primary and Secondary Engine Air Filters **				•	
Replace Cab Air and Recirculation Filters **				•	
Inspect Seat Belts				•	
Replace Hydraulic Motor Seal Drain Filter— <i>If Equipped</i> *****				•	
Drain, Flush, and Refill Engine Cooling System ***		•			
Test or Replace Engine Coolant Thermostats and Radiator Cap ***		•			
Replace Transmission Drive Shaft Damper ****					•

\* See your John Deere Dealer for service

\*\* Interval can vary according to operating conditions

\*\*\*\* **INITIAL** change interval is 6 years or 6000 hours, provided cooling system is topped off using only John Deere Cool-GARD II and premix and coolant is tested at recommended intervals. After initial service, the **SCHEDULED** interval (2 years or 2000 hours) can be extended up to 6 years or 6000 hours depending on coolant used and if coolant is tested at recommended intervals (Reference "Drain Intervals for Diesel Engine Coolant" in Fuels, Lubricants and Coolant section of Operator Manual). See your John Deere Dealer for COOL-GARD™ II.

\*\*\*\*\* **SEVERE DUTY**—Inspect annually and change at 3000 hours.

\*\*\*\*\* **FOR HEAVY TILLAGE, FRONT BLADE OR SCRAPER APPLICATION** Check at 1500 hours.

\*\*\*\*\* Annually or replace in the event of a hydraulic motor failure.

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OU1092A,00001F6-19-18DEC08-1/1

## Raising and Closing the Hood

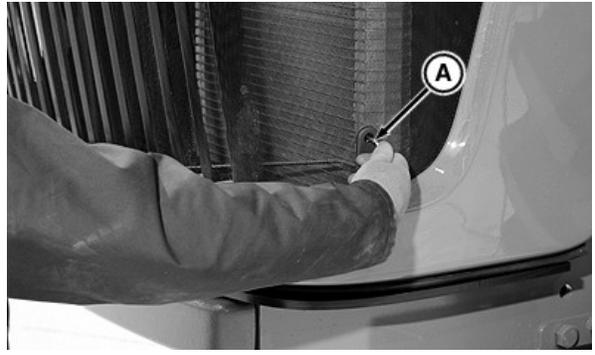
**⚠ CAUTION: Shut off engine before raising the hood.**

Pull hood release handle (A) and lift hood (B) to raise.

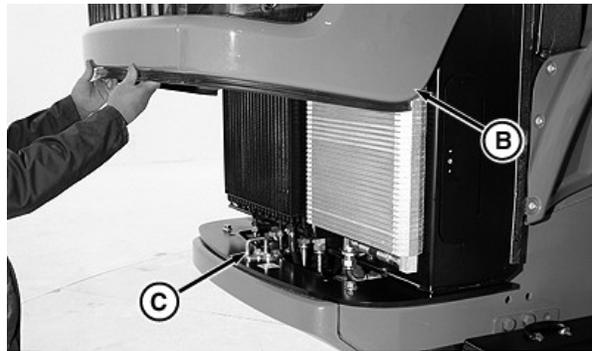
Carefully pull down hood and close latch on retaining bracket (C).

A—Hood Release Handle  
B—Hood

C—Retaining Bracket



RXA0093337—UN—03APR07



RXA0093327—UN—03APR07



RXA0093329—UN—03APR07

RW29387,0000367-19-14MAY07-1/1

### Accessing Batteries

Lift battery box cover (A) to access battery terminals (B).

(See SERVICE BATTERIES in General Maintenance and Inspection Section.)

A—Battery Cover

B—Battery Terminals

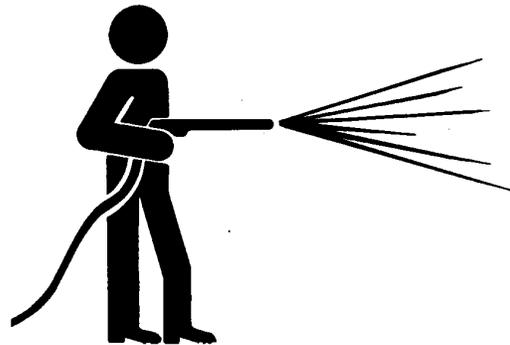


RXA0093333—UN—03APR07

RW29387,000036B-19-03APR07-1/1

### Using High-Pressure Washers

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

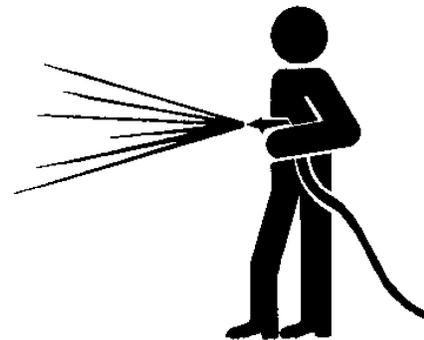


T6642EJ—UN—18OCT88

RW29387,000036C-19-06DEC05-1/1

### Using Compressed Air

**IMPORTANT:** Directing pressurized air at electronic/electrical components or connectors, can cause build-up of static electricity and product malfunctions.



RW56455—UN—30JUN97

RW29387,000036D-19-06DEC05-1/1

# Lubrication and Maintenance—Daily or 10 Hour Service

## Checking Engine Oil Level

SERVICE INTERVAL — DAILY OR 10 HOURS

Remove dipstick (A) and check oil level with tractor on level ground before starting tractor. Oil level should be between the “ADD” and the top of the cross-hatch area on dipstick.

**NOTE:** Cross-hatch area (C) is considered FULL.

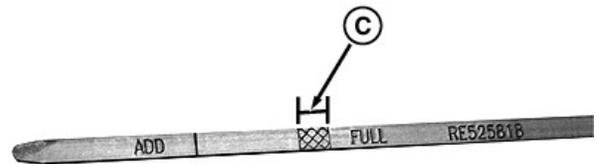
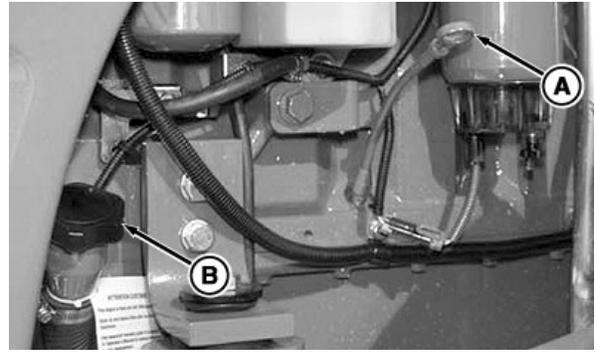
*Engine oil level indicator is a dipstick with a “crosshatch” area with a “safe” zone. After tractor has been parked on level ground overnight is best time to check oil level. Anywhere in the dipstick crosshatch safe zone is considered full.*

Remove fill cap (B) if oil is required. (See DIESEL ENGINE OIL in the Fuels, Lubricants and Coolant Section.)

Do not operate engine with oil level below the “ADD” mark on dipstick.

A—Dipstick  
B—Fill Cap

C—Cross-Hatch



Engine Oil Dipstick

OU1092A,0000200-19-29MAR07-1/1

## Checking Hydraulic Oil Level

SERVICE INTERVAL — DAILY OR 10 HOURS

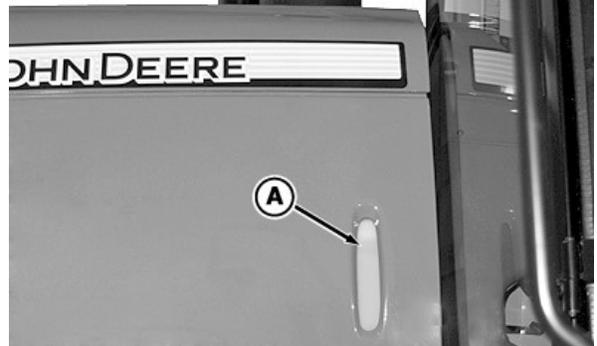
Check tractor and implement for leaks before start-up. Check hydraulic oil level (A) with tractor on level ground before starting engine. If oil level is not between marks on sight gauge, DO NOT start engine.

**NOTE:** An exception is implements with large hydraulic cylinders that can remove large volumes of oil from the tractor's hydraulic system. Oil level should be near the bottom mark of sight gage with implement positioned to contain the maximum amount of oil.

If oil level is low, add HY-GARD Transmission-Hydraulic Oil.

**NOTE:** Oil level in reservoir will rise as temperature rises.

*Oil level in the reservoir will fluctuate depending upon the volume of oil exchanged with an attached implement.*



A—Hydraulic Oil Level

*Oil level switch, located in the reservoir below the sight gauge, will sense if oil level drops below switch level and STOP engine light will come on.*

RW29387,0000389-19-10DEC07-1/1

## Checking Coolant Level

**SERVICE INTERVAL — DAILY OR 10 HOURS**

Engine stopped.

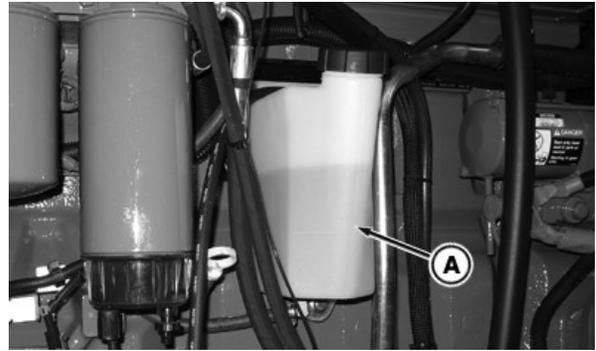
Check coolant level (A). Level should be at or slightly above lower mark with cold engine.

Add coolant to overflow tank if needed.

**NOTE:** Do not add a supplemental coolant additive when the cooling system is drained and refilled with John Deere COOL-GARD II™ **except** if the following situations:

- When coolant is replaced or more than 4 gal (15 L) of coolant is added within first 1000 hours.
- Whenever radiator is replaced with a new replacement radiator, coolant conditioner must be used for next 1000 hours of tractor use.

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A—Coolant Level

**Do not exceed recommended concentration of coolant conditioner, use coolant test strips, TY16175 to test if necessary.**

Refer to Fuels, Lubrications, and Coolants SECTION.

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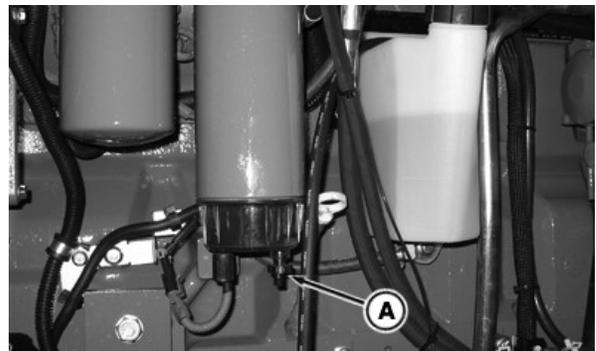
## Draining Water Separator

**SERVICE INTERVAL — DAILY OR 10 HOURS**

**NOTE:** When separator sensor identifies water in the fuel system, the service alert indicator will flash on the cornerpost display. An alarm will sound for five seconds and a corresponding message appears on the CommandCenter display.

**NOTE:** Water in fuel collects in the bottom of the fuel filters. Loosening drain valve nut (A) causes tabs (B) to drop down allowing water to drain.

Turn drain valve (A) on bottom of separator counterclockwise all the way open to drain accumulated water.



A—Drain Valve Nut

OU1092A,0000206-19-14SEP09-1/1

## Checking Transmission/Axle Oil Level— Powershift Transmission Tractors

SERVICE INTERVAL — DAILY OR 10 HOURS

### IMPORTANT:

1.
  - a. Poor shift quality and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed. To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.
  - b. Do not operate tractor if oil is not above mark (C) in sight gauge with engine off.

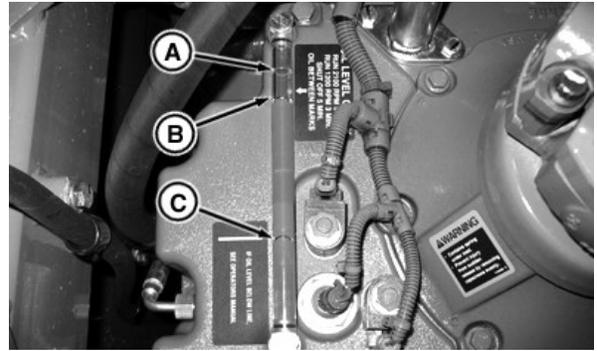
1. Park tractor on level ground and shut engine **OFF**.
2. Check to ensure transmission/axle oil level is visible above (C) in sight gauge.

*NOTE: If oil level is visible above (C), tractor can be used for normal operation.*

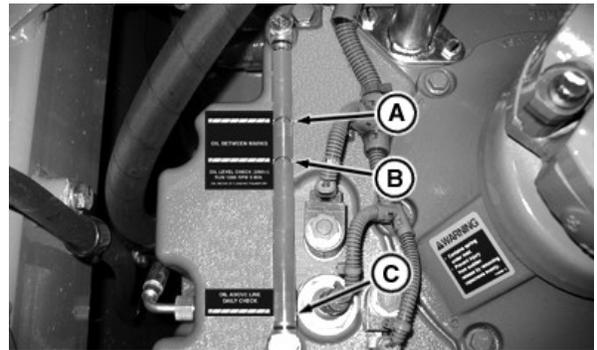
*If oil is below (C) in sight gauge, perform Checking Powershift Transmission/Axle Oil Level in Lubrication and Maintenance-250 Hour Service Section.*

A—Oil Level Maximum  
B—Oil Level Minimum

C—Oil Low Level



Three Line Powershift Transmission Sight Gauge and Labels-9430 Tractor



Two Line Powershift Transmission Sight Gauge and Labels-9530 and 9630 Tractors

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RW29387,0000101-19-24SEP09-1/1

## Lubricating Hinge Pins—*Heavy-Duty Gudgeon With Tapered Roller Bearings*

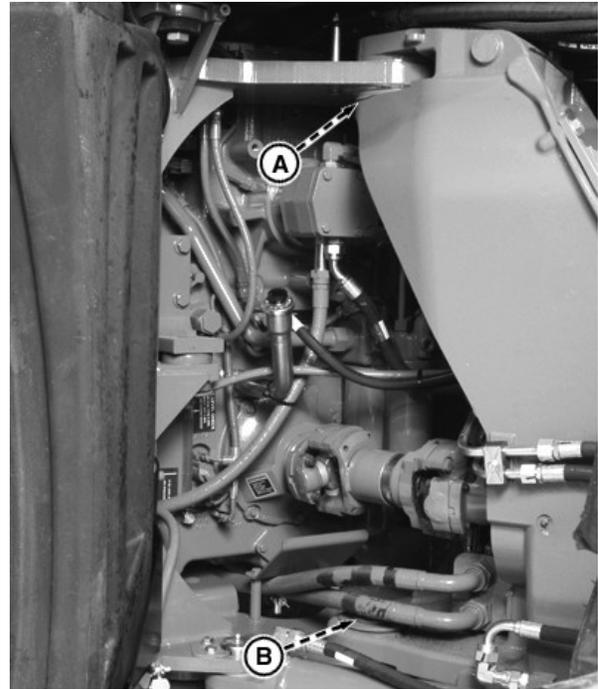
SERVICE INTERVAL — DAILY OR 10 HOURS

**⚠ CAUTION:** Stop engine and remove key before working in hinge area.

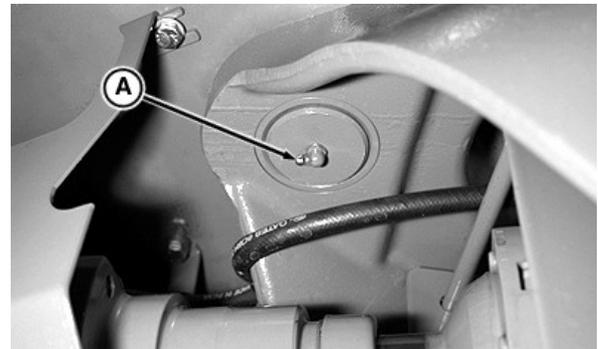
Lubricate upper (A) and lower (B) hinge pins with John Deere HD grease specified in Fuels, Lubricants and Coolant Section.

A—Upper Hinge Pin

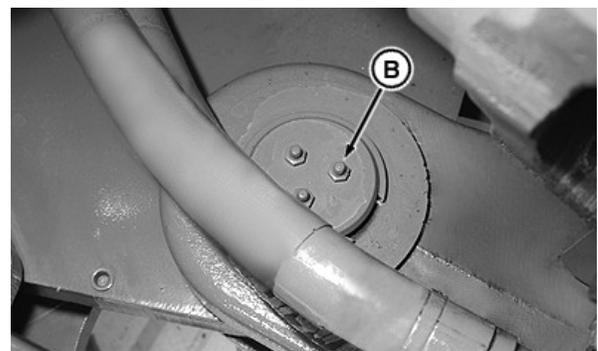
B—Lower Hinge Pin



RXA0090376—UN—21AUG06



RXA0086685—UN—14FEB06



RXA0090378—UN—13NOV06

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## Lubricating Steering Pin Bushings—If Equipped

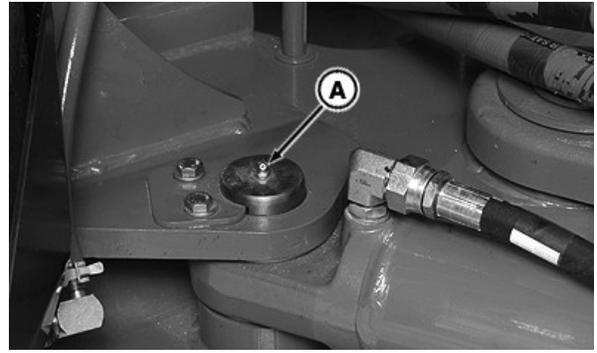
SERVICE INTERVAL — DAILY OR 10 HOURS

**⚠ CAUTION:** Stop engine and remove key before working in hinge area.

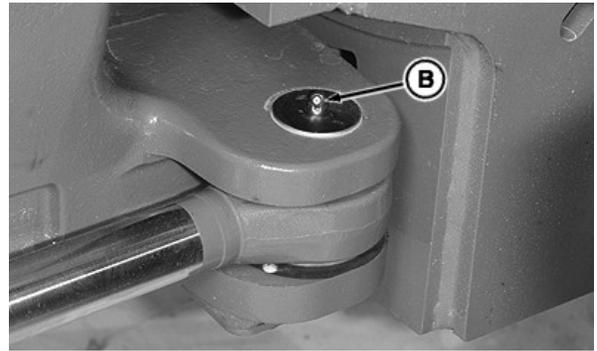
Lubricate left front (A) and rear (B), right front (C) and rear (D) steering pin bushings with John Deere HD grease specified in Fuels, Lubricants and Coolant Section.

A—Left Front Pin  
B—Left Rear Pin

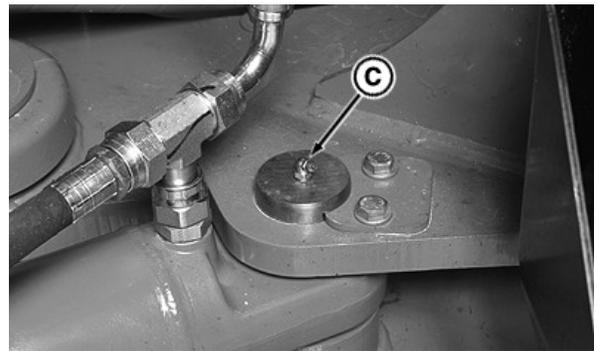
C—Right Front Pin  
D—Right Rear Pin



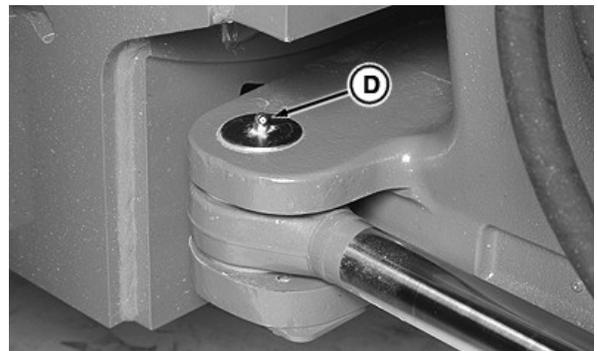
Left Front Steering Pin



Left Rear Steering Pin



Right Front Steering Pin



Right Rear Steering Pin

RW29387,0000391-19-14AUG06-1/1

## Checking Tires

**SERVICE INTERVAL — DAILY OR 10 HOURS**

Inspect tires for cuts or damage. Check tire inflation pressure weekly.



RXA0091461—UN—09NOV06

OU1092A,00001F7-19-09NOV06-1/1

## Checking Wheel and Weight Bolts

**SERVICE INTERVAL — DAILY, 10 HOURS, 250 HOURS**

**IMPORTANT:** If tractor is operated with loose wheel sleeve for 4-5 hours, it is necessary to replace sleeves.

Retighten wheel and weight bolts after working **3 HOURS, 10 HOURS** and **DAILY** during the first week of operation.

Check and torque all wheel and weight bolts on a regular or **250 Hour** interval. See Wheels, Tires and Treads Section for bolt tightening information.



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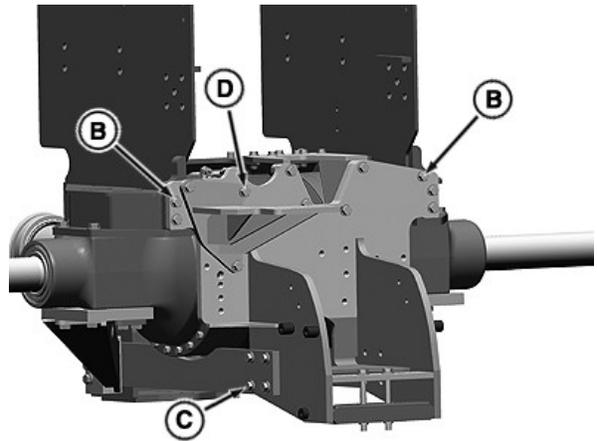
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## Checking Scraper Drawbar Support Bolts



RXA0065861—UN—26FEB03

Heavy Duty Drawbar Support—Short Drawbar



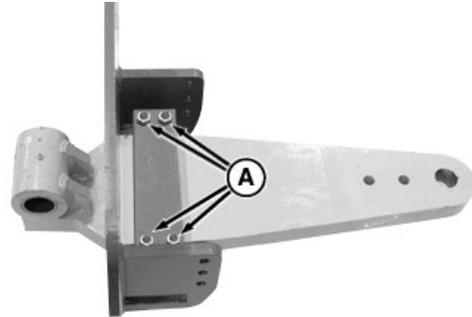
RXA009177—UN—01OCT08

Heavy Duty Drawbar Support—Long Drawbar

Tighten drawbar support bolts (A).

**IMPORTANT: Check and retorque drawbar support bolts after first 10 Hours, 50 Hours and 100 Hours of scraper operation.**

**SERVICE INTERVAL —250 HOURS**



RXA0065722—UN—18FEB03

**A—Locking Bolts**

### Drawbar Support Cap Screw Torque Specification

Locking Bolts (A)	430 N·m (320 lb-ft)
Drawbar Support Cap Screws to Frame (B)	610 N·m (450 lb-ft)
Support Stabilizer Cap Screws to Drawbar Support (C)	610 N·m (450 lb-ft)
SCV Bracket Cap Screws to Drawbar Support (D)	610 N·m (450 lb-ft)
SCV Stack Cap Screws to SCV Bracket (Not Shown)	125 N·m (92 lb-ft)
SCV Line Clamp Screw (Not Shown)	30 N·m (22 lb-ft)

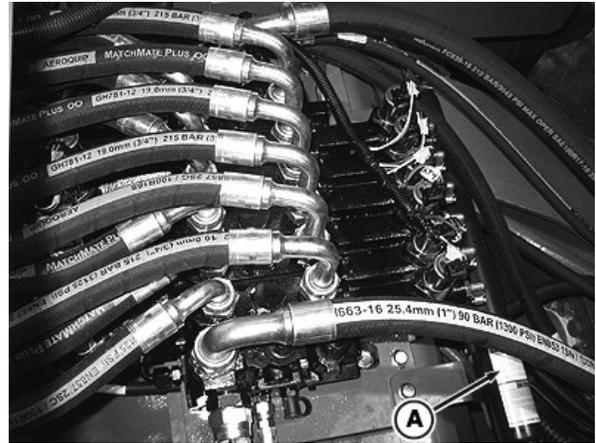
OU1092A,00001FA-19-16OCT08-1/1

## Check High Flow Hydraulic Accumulator

**SERVICE INTERVAL — DAILY OR 10 HOURS**

- Start tractor engine.
- Lift scraper to full raised position.
- Turn engine off.
- Turn key on, with engine stopped.
- Activate SCV switch to lower scraper to ground.
- Scraper should lower and rest on ground.
- If high flow accumulator (A) check fails, have your John Deere Dealer recharge or replace **immediately**.

**A—High Flow Accumulator**



High Flow Hydraulic Accumulator

OU1092A,00001F8-19-18JUL08-1/1

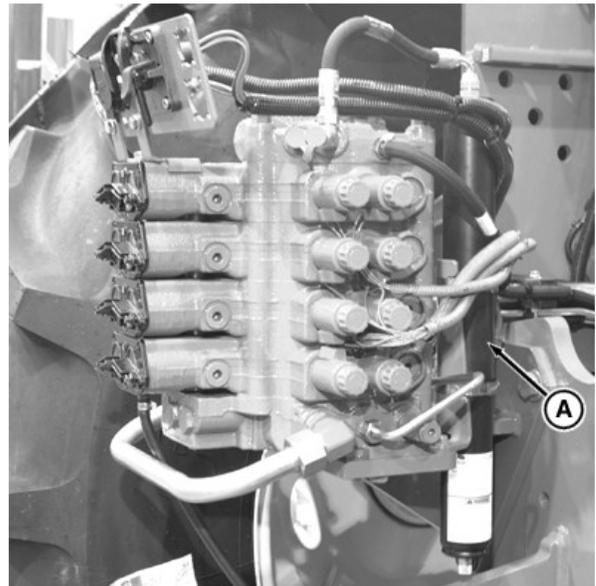
RXA00098665—UN—16JUL08

## Check Standard Flow Hydraulic Accumulator

**SERVICE INTERVAL — DAILY OR 10 HOURS**

- Start tractor engine.
- Lift scraper to full raised position.
- Turn engine off.
- Turn key on, with engine stopped.
- Activate SCV switch to lower scraper to ground.
- Scraper should lower and rest on ground.
- If standard flow accumulator (A) check fails, have it recharged or replaced **immediately** by your John Deere Dealer.

**A—Standard Flow Accumulator**



Standard Flow Hydraulic Accumulator

OU1092A,00001F9-19-08NOV06-1/1

RXA0071098—UN—29SEP03

# Lubrication and Maintenance—Initial 100 Hour Service

## Changing Engine Oil and Filter

*NOTE: The initial break-in service interval of a new or rebuilt wet sleeve engine with Break-In Plus must go at least 100 hours to assure the 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 maximum service interval is the same as the service interval recommendations listed in Engine Oil and Filter Service Intervals (Fuels, Lubricants and Coolant Section of this Operator's Manual) for your engine. To confirm the engine type with which your tractor is equipped, see Identification Numbers – Record Engine Number in this Operator's Manual. Then, use your tractor's model number and engine type to select proper Engine Oil and Filter Service Intervals specifications.*

*For subsequent oil changes, see Engine Oil and Filter Service Intervals for your engine located in the Fuels, Lubricants, and Coolant Section of this Operator's Manual.*

See Changing Engine Oil and Filter in the Lubrication and Maintenance - 250 Hour Service Section of this Operator's Manual.

RX32825,00001CD-19-05JAN11-1/1

## Checking Wheel and Weight Bolts

**SERVICE INTERVAL — DAILY, 10 HOURS, 250 HOURS**

**IMPORTANT:** If tractor is operated with loose wheel sleeve for 4-5 hours, it is necessary to replace sleeves.

Retighten wheel and weight bolts after working **3 HOURS, 10 HOURS** and **DAILY** during the first week of operation.

Check and torque all wheel and weight bolts on a regular or **250 Hour** interval. See Wheels, Tires and Treads Section for bolt tightening information.



RXA0090161—UN—03AUG06

RW29387,000036F-19-01AUG06-1/1

## Replacing Transmission/Axle Oil Filters—18-Speed Powershift Transmission

### SERVICE INTERVAL —

INITIAL — 100 HOURS  
SCHEDULED — 750 HOURS \*

\* Interval can vary according to operating conditions

**NOTE:** The powershift transmission *only* needs to be recalibrated if transmission shift characteristics change after transmission oil and filter change. See *Transmission Calibration* procedure in this Section.

A drain pan is recommended for 1.9 L (2 qts) oil spillage when changing the transmission oil filter.

Tractors with standard axles only have a transmission oil filter (A).

Tractors with double reduction axles have both a transmission (A) and axle oil filter (B).

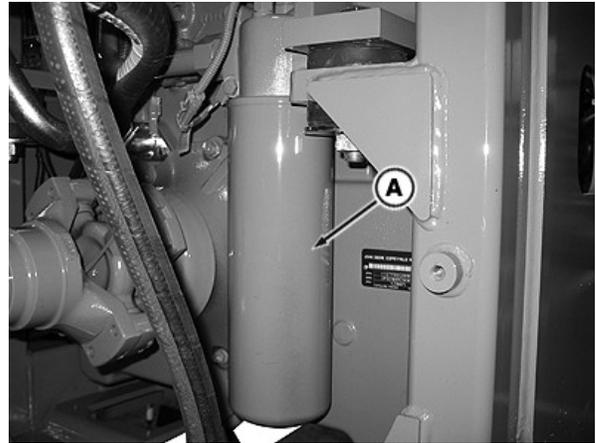
Remove transmission oil filter (A) and axle oil filter (B), if equipped.

Install new filter(s) and tighten one-half turn after gasket contacts filter housing base.

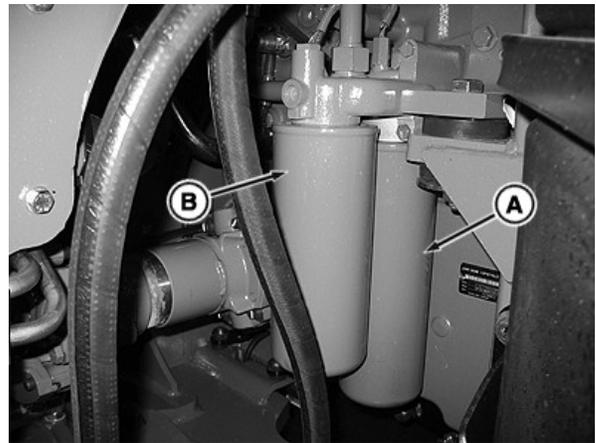
Check transmission oil level and fill as required using HY-GARD JDM J20C Oil ONLY.

A—Powershift Transmission Oil Filter

B—Double Reduction Axle Oil Filter



9430 Standard Axle Tractors



9530, 9630 Double Reduction Axle Tractors

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RWA0099354—UN—01OCT08  
RW29387.000007C-19-15OCT08-1/1

## Replacing Hydraulic Filter

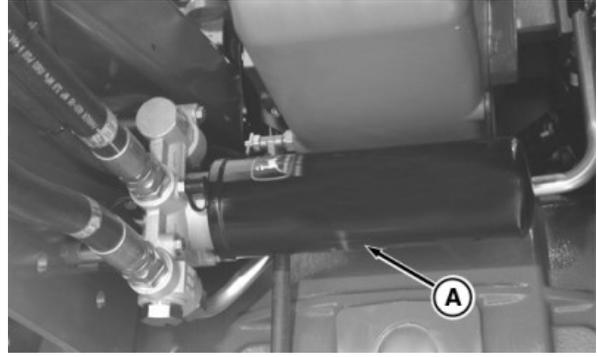
**SERVICE INTERVAL —**

**SCHEDULED — 1500 HOURS \***

*\* Interval can vary according to operating conditions*

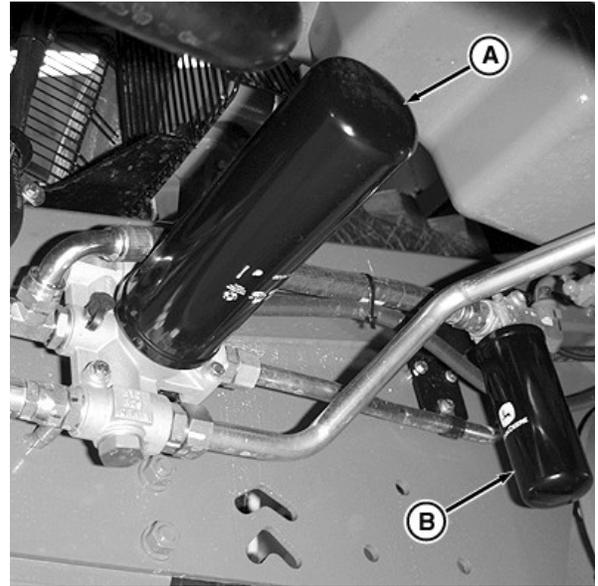
1. Replace standard primary hydraulic filter (A) and secondary filter (B) for High Flow, if hydraulic functions are slow or if indicator light comes on. Install new filter(s) and tighten one half turn after seal contacts filter housing base.
2. Check reservoir oil level and fill as required.

**A—Primary Hydraulic Filter      B—Secondary Hydraulic Filter**



Standard Hydraulic Filter

RXA0052030—UN—28FEB01



High Flow Hydraulic Filters

RXA0086701—UN—13FEB06

RW29387,000038B-19-25OCT06-1/1

## Replacing Fuel Filter Elements

### SERVICE INTERVAL —

INITIAL SECONDARY FILTER— 100 HOURS \*

PRIMARY FILTER SCHEDULED— 250 HOURS \*\*

SECONDARY FILTER SCHEDULED— 250 HOURS \*\*

NOTE: \*Factory equipped secondary fuel filter (D) is shorter than replacement filter and should be changed at initial 100 hour interval or at first engine oil and filter change.

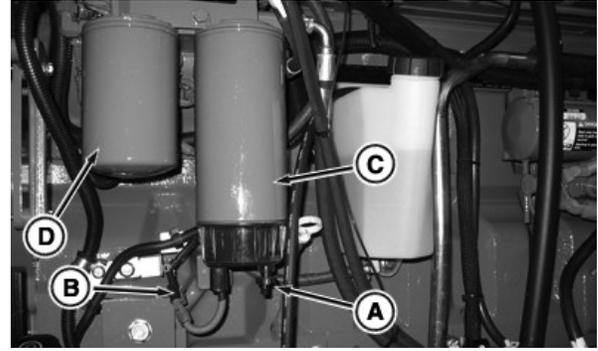
\*\* Interval can vary according to operating conditions

**IMPORTANT:** Replace fuel filter elements anytime audible alarm sounds and diagnostic trouble codes indicate plugged fuel filters (low fuel pressure). If no alarm sounds during the 12 month service interval, replace elements at that time, or after 250 hours operation, whichever comes first.

1. Thoroughly clean exterior of fuel filter/water separator assembly and surrounding area.
2. Drain water and contaminants from primary filter into suitable container by opening drain valve (A) on bottom of separator.
3. Disconnect the water-in-fuel (WIF) sensor connector (B) from primary filter.
4. Remove primary filter (C) and secondary filter (D) and discard.

**IMPORTANT:** Do NOT prefill either fuel filter with fuel.

5. Lubricate gasket for primary fuel filter with fuel, and install canister onto base. Tighten 3/4 turn after packing contacts base.
6. Lubricate primary fuel filter water separator gasket with



A—Drain Valve  
B—Connector

C—Primary Filter  
D—Secondary Filter

fuel and install onto filter canister. Tighten 3/4 of a full turn after gasket contacts the base.

7. Lubricate gasket for secondary fuel filter with fuel, and install filter onto base. Tighten 3/4 turn after packing contacts base.
8. Connect water separator sensor harness.

**IMPORTANT:** Key must be turned to ON position for 3 minutes before starting engine to provide time to prefill fuel filters. Fuel system is self-bleeding.

**Do not try to crank engine until after 3 minute time elapses or an air lock in the fuel system may occur.**

9. Turn key switch to ON position for 3 minutes to allow transfer pump to prefill fuel filters.
10. Turn key switch clockwise to START position, and run engine at fast idle for 2 minutes.

OU1092A,0000208-19-14SEP09-1/1

# Lubrication and Maintenance—250 Hour Service

## Checking Transmission/Axle Oil Level— Powershift Transmission Tractors

SERVICE INTERVAL — 250 HOURS

### IMPORTANT:

1.
  - a. Poor shift quality and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed. To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.
  - b. Do not operate tractor if oil is not above mark (C) in sight gauge with engine off.

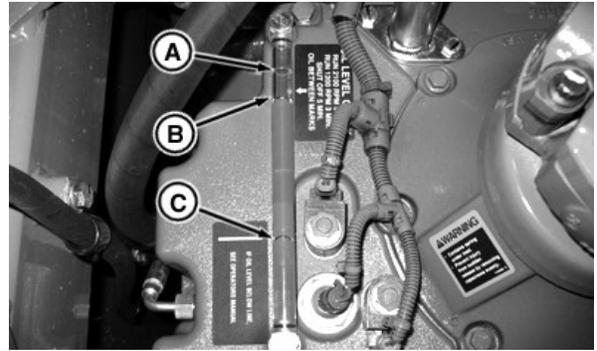
### PROCEDURE:

**NOTE:** *Do not* perform oil check within eight hours of transporting tractor in 15th or higher gear.

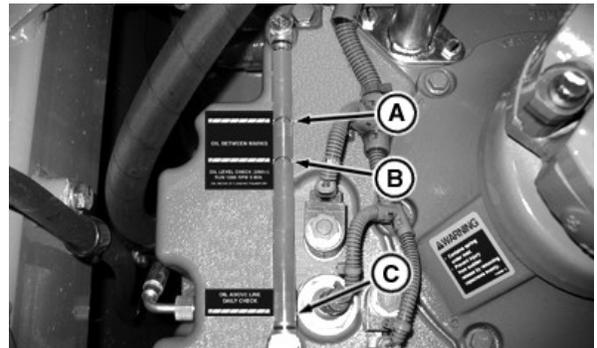
1. Start tractor engine and warm transmission/axle oil to above 35°C (95°F). Use CommandCenter display to check transmission/axle temperature. (See CommandCenter Section).
2. After oil is at desired temperature, drive to a level surface.
3. Shift transmission lever to **Park**, set engine speed at **1200 rpm and run for 3 minutes**.

**NOTE:** *DO NOT* step on brake pedal during this segment of the procedure to avoid additional oil flow to the axles and resulting in an inaccurate oil level check.

4. Reduce engine speed to slow idle, shut engine **OFF**, and wait **5 minutes**.
5. Check oil level on sight gauge on rear of transmission. Oil level should be between marks (A) and (B).



Three Line Powershift Transmission Sight Gauge and Labels-9430 Tractor



Two Line Powershift Transmission Sight Gauge and Labels-9530 and 9630 Tractors

RXA0100424—UN—03FEB09



CommandCenter Transmission/Axle Oil Temperature Display

A—Top Oil Level Mark  
B—Lower Oil Level Mark

C—Low Level Mark

Continued on next page

RW29387,0000102-19-24SEP09-1/2

**TROUBLESHOOTING:**

**Transmission Oil Overheats**

- Drain out approximately 3.8 L (1 gal.) of oil.
- If oil level needs to be drained/lowered, slightly loosen the sump screen cover (E) cap screws.<sup>1</sup>

*NOTE: To drain oil, **do not** remove sump cover. Slightly loosen cap screws to begin draining process.*

*Ensure O-ring remains in place on sump screen cover.*

- Tighten sump cover cap screws when completed to specification.

**Specification**

Sump Screen Cover Cap  
Screws—Torque..... 55 N·m (40 lb·ft)

- Complete oil check **PROCEDURE** steps 1-5 eight hours later without additional transport or the next day.

**Transmission Oil Pressure Low Warning**

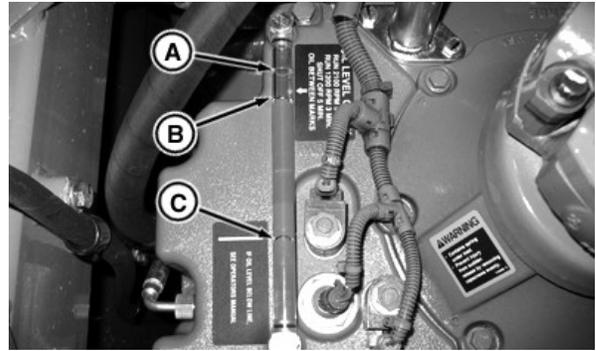
- Complete oil check **PROCEDURE** steps 1-5.
- If transported within last eight hours, add 3.8 L (1 gal.) of oil. Complete the oil check **PROCEDURE** eight hours later without additional transport or the next day.

*NOTE: If warning code continues to appear, contact your John Deere Dealer.*

**Continuous Side Slope Operation**

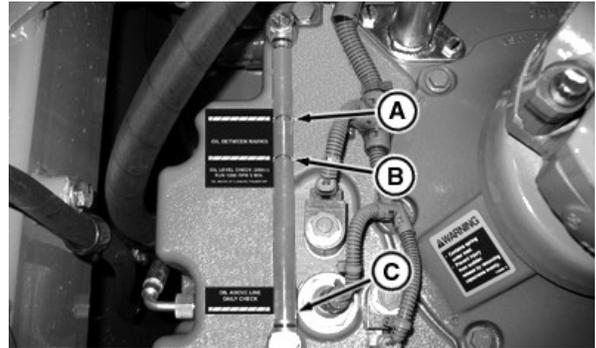
If tractor is operating on continuous side slopes over 10 degrees, additional oil must be added. Add oil using fill tube (D). Oil level must be between mark (A) to 25.4 mm (1 in.) above mark (A).

- |                        |                          |
|------------------------|--------------------------|
| A—Top Oil Level Mark   | D—Transmission Fill Tube |
| B—Lower Oil Level Mark | E—Sump Screen Cover      |
| C—Low Level Mark       |                          |



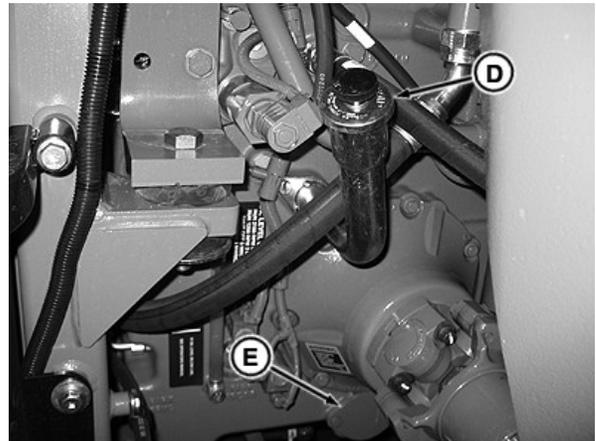
Three Line Powershift Transmission Sight Gauge and Labels-9430 Tractor

RXA00099427—UN—08OCT08



Two Line Powershift Sight Gauge and Labels-9530 and 9630 Tractors

RXA0100689—UN—23FEB09



Powershift Transmission

RXA0100691—UN—26FEB09

<sup>1</sup> Reference Tip - 1 gallon of oil is equivalent to approximately 25.4 mm (1 in.) on sight gauge.

## Changing Engine Oil and Filter

### SERVICE INTERVAL

INITIAL — 100 HOURS

SCHEDULED — 250 HOURS \*

\* Interval can be extended to 375 hours if PLUS-50 oil and a John Deere filter are used

**IMPORTANT:** Change engine oil every 125 hours if diesel fuel has a sulfur content greater than 0.50% (5000 ppm). Refer to Fuel, Lubricants and Coolant section for more information on oil change intervals.

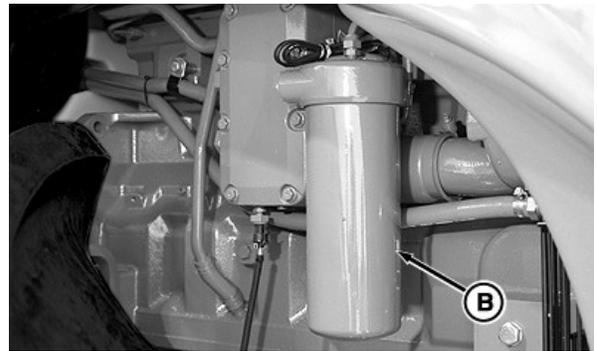
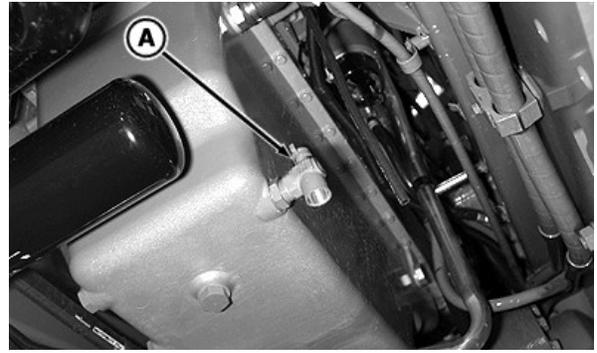
**NOTE:** The initial break-in service interval of a new or rebuilt wet sleeve engine with Break-In Plus must go at least 100 hours to assure the surface mating of the rings and liners has had an opportunity to occur. The 100 hour minimum applies to all new or rebuilt engines. The maximum service interval is the same as the service interval recommendations listed in Engine Oil and Filter Service Intervals (Fuels, Lubricants and Coolant Section of this Operator's Manual) for your engine. To confirm the engine type with which your tractor is equipped, see Identification Numbers – Record Engine Number in this Operator's Manual. Then, use your tractor's model number and engine type to select proper Engine Oil and Filter Service Intervals specifications.

For subsequent oil changes, see Engine Oil and Filter Service Intervals for your engine located in the Fuels, Lubricants, and Coolant Section of this Operator's Manual.

Operate engine to warm oil. Stop engine. Turn crankcase drain fitting (A). Tighten fitting after oil drains out.

**NOTE:** Oil flow can be controlled by attaching a hose to the drain fitting.

Remove filter (B). Remove old gasket and clean filter mounting surface. Apply a thin film of oil to new gasket and install new filter. Hand-tighten filter. Do not overtighten.



A—Engine Drain Fitting

B—Oil Filter

Refill crankcase with seasonal viscosity grade oil. (See Fuels, Lubricants, and Coolant Section.)

### Capacities with Filter

9430 .....	40 L (10.5 gal)
9530-9630 .....	56 L (14.8 gal)

Start engine and check for leaks.

Stop engine. Recheck oil level.

OU1092A,0000201-19-16FEB11-1/1

## Replacing Fuel Filter Elements

### SERVICE INTERVAL —

INITIAL SECONDARY FILTER— 100 HOURS \*

PRIMARY FILTER SCHEDULED— 250 HOURS \*\*

SECONDARY FILTER SCHEDULED— 250 HOURS \*\*

NOTE: \*Factory equipped secondary fuel filter (D) is shorter than replacement filter and should be changed at initial 100 hour interval or at first engine oil and filter change.

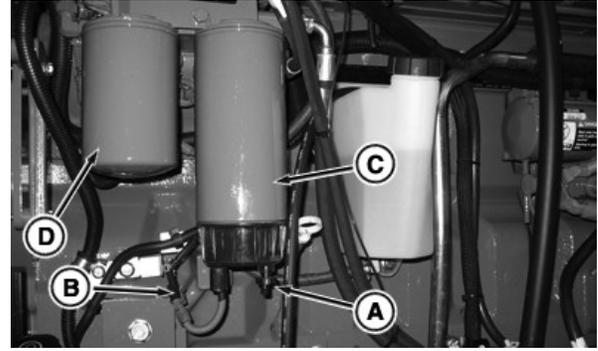
\*\* Interval can vary according to operating conditions

**IMPORTANT:** Replace fuel filter elements anytime audible alarm sounds and diagnostic trouble codes indicate plugged fuel filters (low fuel pressure). If no alarm sounds during the 12 month service interval, replace elements at that time, or after 250 hours operation, whichever comes first.

1. Thoroughly clean exterior of fuel filter/water separator assembly and surrounding area.
2. Drain water and contaminants from primary filter into suitable container by opening drain valve (A) on bottom of separator.
3. Disconnect the water-in-fuel (WIF) sensor connector (B) from primary filter.
4. Remove primary filter (C) and secondary filter (D) and discard.

**IMPORTANT:** Do NOT prefill either fuel filter with fuel.

5. Lubricate gasket for primary fuel filter with fuel, and install canister onto base. Tighten 3/4 turn after packing contacts base.
6. Lubricate primary fuel filter water separator gasket with



A—Drain Valve  
B—Connector

C—Primary Filter  
D—Secondary Filter

fuel and install onto filter canister. Tighten 3/4 of a full turn after gasket contacts the base.

7. Lubricate gasket for secondary fuel filter with fuel, and install filter onto base. Tighten 3/4 turn after packing contacts base.
8. Connect water separator sensor harness.

**IMPORTANT:** Key must be turned to ON position for 3 minutes before starting engine to provide time to prefill fuel filters. Fuel system is self-bleeding.

**Do not try to crank engine until after 3 minute time elapses or an air lock in the fuel system may occur.**

9. Turn key switch to ON position for 3 minutes to allow transfer pump to prefill fuel filters.
10. Turn key switch clockwise to START position, and run engine at fast idle for 2 minutes.

OU1092A,0000208-19-14SEP09-1/1

## Draining Fuel Tank Sump

### SERVICE INTERVAL — 250 HOURS

**IMPORTANT:** Use wrench to hold drain fitting before opening tee or damage to tank threads can occur.

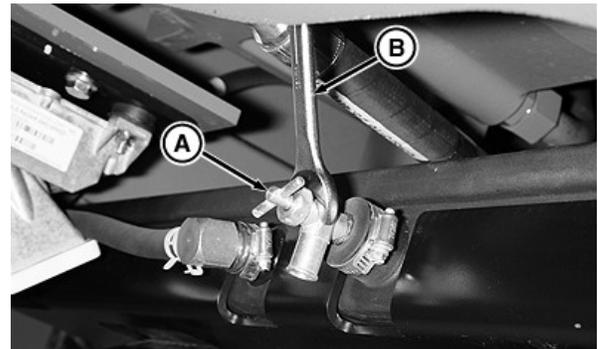
Open drain tee (A) while holding drain fitting with wrench (B).

Drain fuel from tanks until clean fuel appears from tank.

Hold fitting with wrench to close drain tee.

A—Drain Tee

B—Wrench



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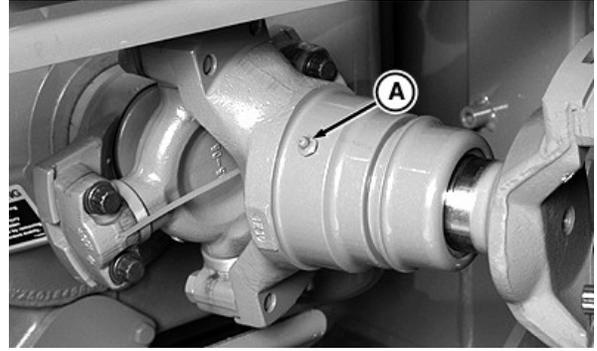
## Lubricating Telescoping Drive Shaft

SERVICE INTERVAL — 250 HOURS

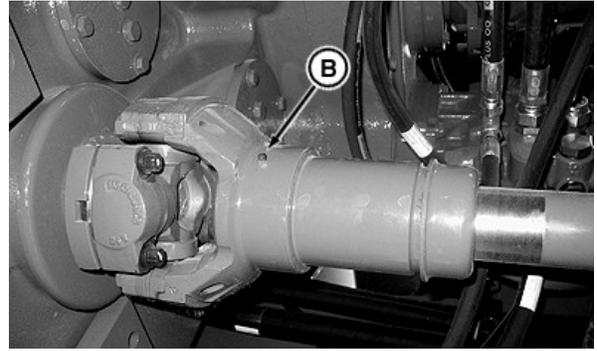
Lubricate telescoping transmission to gudgeon drive shaft (A).

Lubricate telescoping transmission to front axle drive shaft (B).

A—Drive Shaft (9230, 9330 and 9430 Only)    B—Transmission to Front Axle Drive Shaft



Transmission to Gudgeon Drive Shaft (9230, 9330 and 9430 Only)



Transmission to Front Axle Drive Shaft

RXA0086693—UN—14FEB06  
RXA0098652—UN—20NOV07  
RW29387,0000395-19-30MAY08-1/1

## Lubricating Lower Driveline Bearings

SERVICE INTERVAL — 250 HOURS

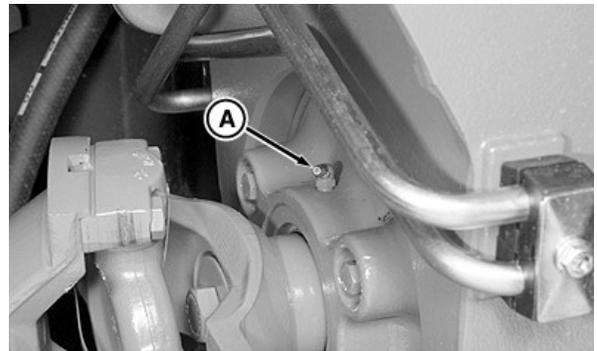
**IMPORTANT:** Operate tractor at low speeds (below 10 MPH) for first 6 hours of operation.

**IMPORTANT:** Over lubrication can result in premature bearing and drive shaft failures.

*Only use a hand pump grease gun to lubricate gudgeon bearings.*

**Other types of grease guns fill the grease cavity at a greater speed which may push retention seal out of position allowing grease to enter gudgeon center cavity and leaves bearing without proper lubrication.**

Lubricate thrust cap lubrication fitting (A).



Thrust Cap Lubrication Fitting

A—Thrust Cap Lubrication Fitting

Grease every 250 hours with John Deere HD Grease as specified in Fuels, Lubricants and Coolant Section.

RXA0086689—UN—30NOV06  
RW29387,0000396-19-06NOV07-1/1

## Lubricating Heavy-Duty Gudgeon Bearings— If Equipped

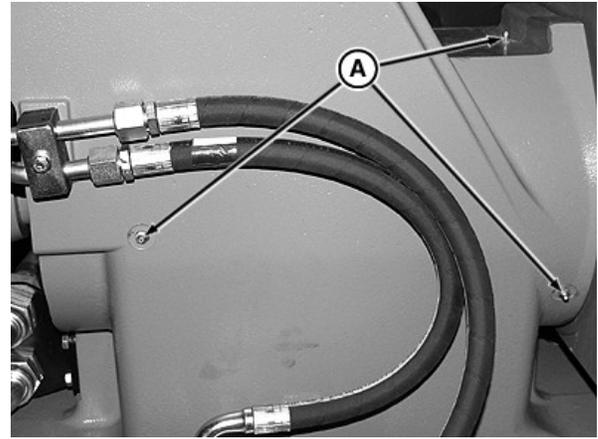
SERVICE INTERVAL — 250 HOURS

**IMPORTANT:** *DO NOT* over lubricate the tapered roller bearings. Doing so may result in damage to the inner grease retention seal or bearing and drive shaft.

*Only use a hand pump grease gun to lubricate gudgeon bearings.*

Other types of grease guns fill the grease cavity at a greater speed which may push retention seal out of position allowing grease to enter gudgeon center cavity and leaves bearing without proper lubrication.

Lubricate heavy-duty gudgeon tapered roller bearing fittings (A) on both left and right hand side and on top of gudgeon. Give **each** fitting approximately 40 pumps of grease.



A—Gudgeon Tapered Roller  
Bearing Lubrication Fitting

Grease every 250 hours with John Deere HD Grease as specified in Fuels, Lubricants and Coolant Section.

RW29387.0000397-19-02APR07-1/1

RXA0093290—UN—02APR07

## Checking Wheel and Weight Bolts

SERVICE INTERVAL — DAILY, 10 HOURS, 250 HOURS

**IMPORTANT:** If tractor is operated with loose wheel sleeve for 4-5 hours, it is necessary to replace sleeves.

Retighten wheel and weight bolts after working **3 HOURS**, **10 HOURS** and **DAILY** during the first week of operation.

Check and torque all wheel and weight bolts on a regular or **250 Hour** interval. See Wheels, Tires and Treads Section for bolt tightening information.



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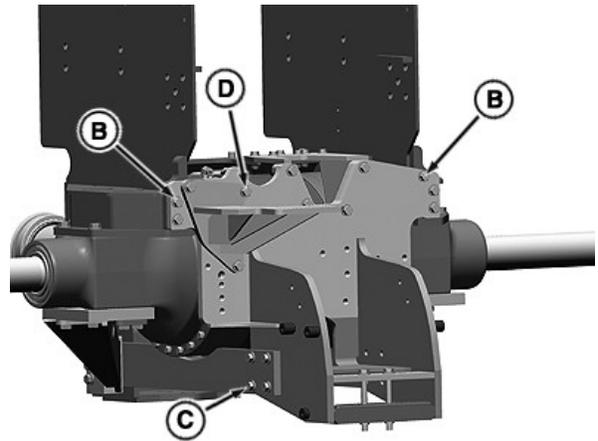
RXA0090161—UN—03AUG06

### Checking Scraper Drawbar Support Bolts



RXA0065861—UN—26FEB03

Heavy Duty Drawbar Support—Short Drawbar



RXA009177—UN—01OCT08

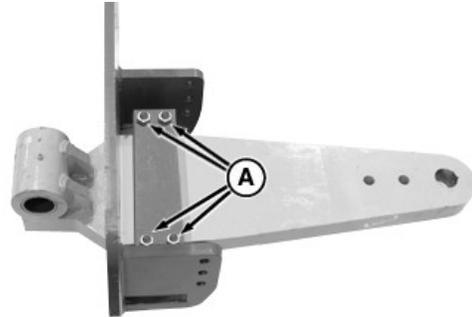
Heavy Duty Drawbar Support—Long Drawbar

Tighten drawbar support bolts (A).

**IMPORTANT: Check and retorque drawbar support bolts after first 10 Hours, 50 Hours and 100 Hours of scraper operation.**

**SERVICE INTERVAL —250 HOURS**

**A—Locking Bolts**



RXA0065722—UN—18FEB03

#### Drawbar Support Cap Screw Torque Specification

Locking Bolts (A)	430 N·m (320 lb-ft)
Drawbar Support Cap Screws to Frame (B)	610 N·m (450 lb-ft)
Support Stabilizer Cap Screws to Drawbar Support (C)	610 N·m (450 lb-ft)
SCV Bracket Cap Screws to Drawbar Support (D)	610 N·m (450 lb-ft)
SCV Stack Cap Screws to SCV Bracket (Not Shown)	125 N·m (92 lb-ft)
SCV Line Clamp Screw (Not Shown)	30 N·m (22 lb-ft)

OU1092A,00001FA-19-16OCT08-1/1

## Servicing the Batteries



TS204—UN—15APR13

**SERVICE INTERVAL — 250 HOURS**

**NOTE:** Factory installed batteries are maintenance free and require no additional service.

However in certain conditions such as long periods of operation at high ambient temperatures or excessive engine cranking, may require adding water. See label on battery.

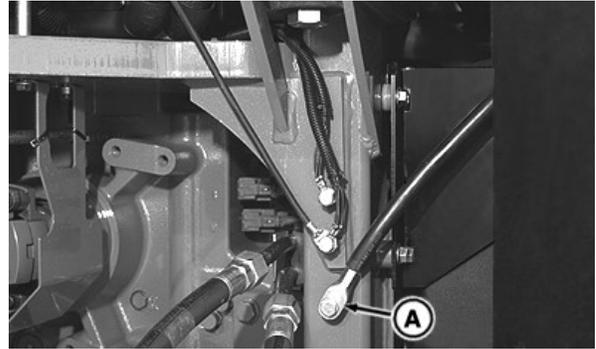
**CAUTION:** Never use compressed air to clean batteries. It can cause a build up of static charge leading to potential injury.

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

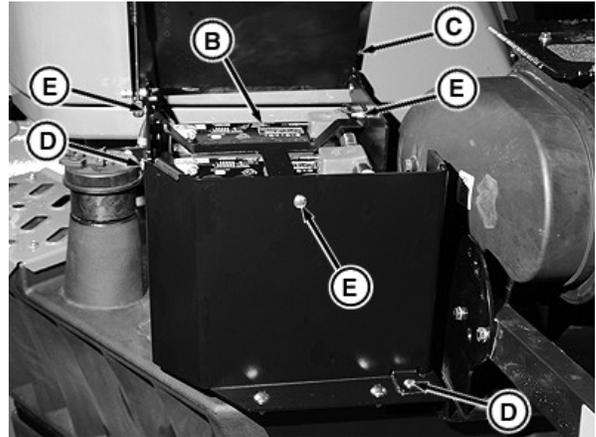
Never check battery charge by placing a metal object across the posts. Use a voltmeter, load tester or hydrometer.

Always remove battery ground cable (A) first and connect it last. Do not let disconnected ground terminal touch metal surface.

Lift cover (C) to access batteries (B). Remove cap screws



FXA0090290—UN—30NOV06



FXA0093331—UN—23MAY07

A—Single Point Ground (SPG) (-) Cable  
 B—Batteries  
 C—Cover  
 D—Cap Screws  
 E—Cap Screws

(D) from side and bottom of panel and cap screws (E) to remove retaining bracket. Slide batteries from battery box.

**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.**

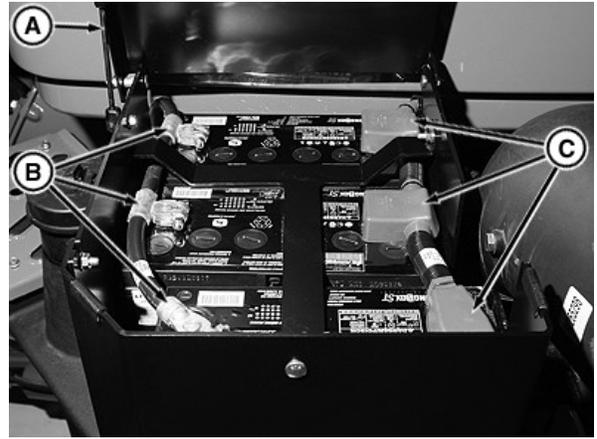
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RW29387,0000379-19-03SEP08-1/2

**CAUTION:** Avoid contact with poisonous sulfuric acid in battery electrolyte. Battery acid can burn skin, damage clothing, and cause blindness if splashed into eyes.

1. Disconnect tractor negative cable from frame.
2. Disconnect negative terminals (B) from batteries.
3. Disconnect positive terminals (C) from batteries.
4. Clean terminals and battery posts using a baking soda and water solution.
5. Remove any corrosion with a terminal brush.
6. Rinse with clean water and air dry.
7. Connect positive battery cables and apply thin coating of grease.
8. Connect negative battery cables and apply thin coating of grease.
9. Connect negative cable to tractor frame.
10. Close covers.

*NOTE: Keep all battery terminals (A) clean and tight.*



A—Cover  
B—Negative Battery Terminals  
C—Positive Battery Terminals

*NOTE: For replacement batteries follow manufacturer's recommendations.*

RW29387,0000379-19-03SEP08-2/2

## Checking Neutral Start System

SERVICE INTERVAL — 250 HOURS

### 18-Speed Powershift Transmission

Fully depress clutch and brake pedals. Move gear shift lever (A) from PARK position to a forward gear. Attempt to start engine. Starter should **NOT** engage.

If starter engages, neutral start system should be repaired by your John Deere Dealer **immediately**. Repeat this step with transmission in a reverse gear.

A—Gear Shift Lever



OU1092A,00001FB-19-08NOV06-1/1

## Checking PARK System

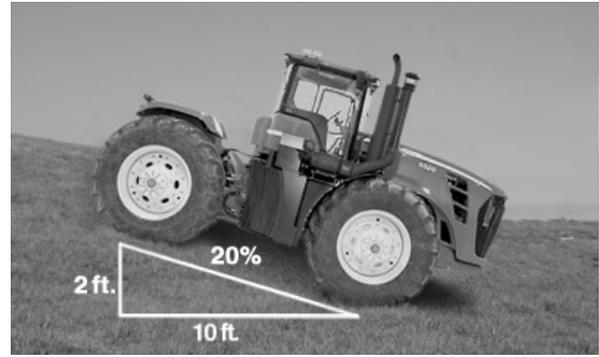
**SERVICE INTERVAL — 250 HOURS**

Park tractor on a 20 % incline 0.6 m (2 ft) vertically for every 3.0 m (10 ft) horizontally.

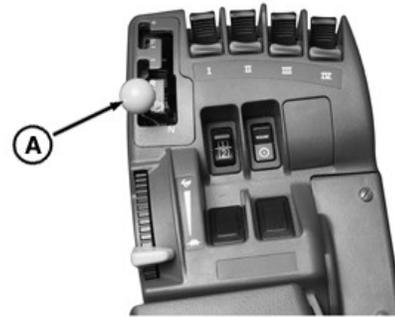
Move range shift lever (A) to PARK position.

Park system should be repaired **immediately** by your John Deere Dealer, if tractor does not hold on incline with shift lever (A) in PARK position.

A—Shift Lever



RXA0090171—UN—03AUG06



Powershift Shifter

RXA0091407—UN—08NOV06

OU1092A,00001FC-19-08NOV06-1/1

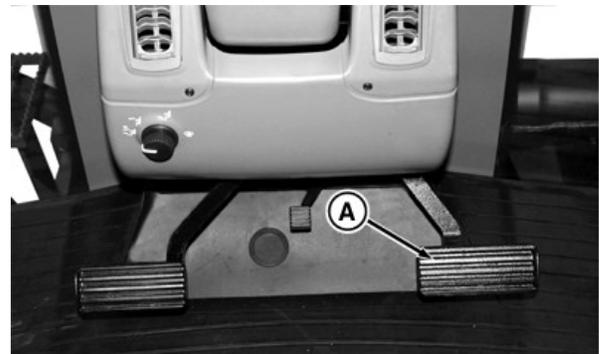
## Checking Manual Brakes

**SERVICE INTERVAL — 250 HOURS**

With engine stopped, check manual brakes for correct function:

1. Pump brake pedal. Pedal (A) should have a solid feel. If the pedal does not feel solid, bleeding the brakes may be necessary. See your John Deere Dealer.
2. Be sure the pedal does not settle to the end of stroke within 10 seconds after being applied. If leakage exceeds this rate, see your John Deere Dealer.

**IMPORTANT: Any noticeable pedal drift downward from the point of resistance indicates brake leakage. See your John Deere Dealer.**



A—Brake Pedal

**A solid pedal is important for emergency braking conditions.**

RXA0056246—UN—14AUG01

RW29387,000037C-19-06DEC05-1/1

## Checking Air Intake System

**SERVICE INTERVAL — 250 HOURS**

**IMPORTANT:** When tractor is operated with loose air intake clamps which may result in damage to engine.

Check air intake system for loose clamps (A) or cap screws (B) and (C) at service or **250 Hour** interval.

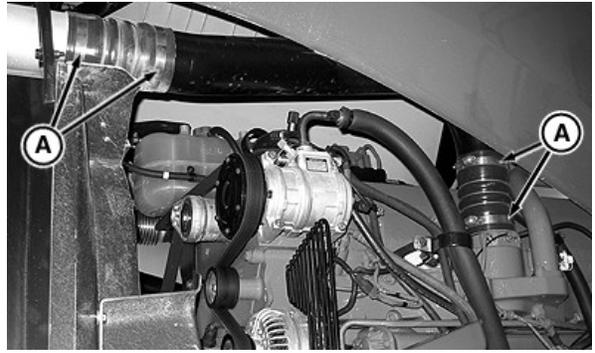
Tighten air intake system clamps and cap screws to specification.

### Specification

Air Intake Clamps (A)—Torque. . . . . 8 N·m (70 lb-in.)  
 Cap Screw (B)—Torque. . . . . 40 N·m (30 lb-ft.)  
 Cap Screw (C)—Torque. . . . . 50 N·m (37 lb-ft.)

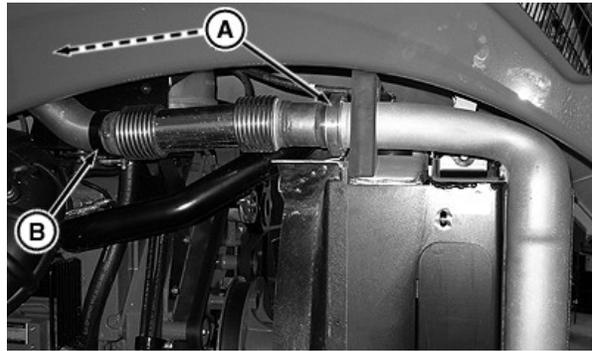
**A—Clamps**  
**B—Cap Screw**

**C—Cap Screw**



*Air Intake System - Left Side*

RXA0093461—UN—18APR07



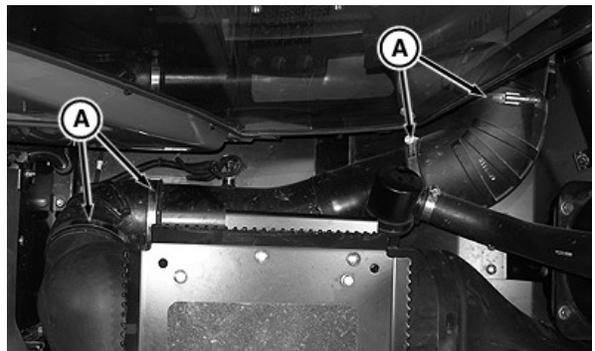
*Air Intake System - Right Front Side*

RXA0093463—UN—19APR07



*Air Intake System - Right Side*

RXA0093465—UN—09MAY07



*Air Intake System - Right Side*

RXA0093467—UN—18APR07

RW29387,000000C-19-09MAY07-1/1

## Cleaning or Replacing Cab Air Filters

### SERVICE INTERVAL —

CLEAN — 250 HOURS \*  
REPLACE — ANNUALLY

\* Interval can vary according to operating conditions

**CAUTION:** The air quality system air filters are not designed to filter out harmful chemicals. Follow the instructions in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.

### Recirculation Filter

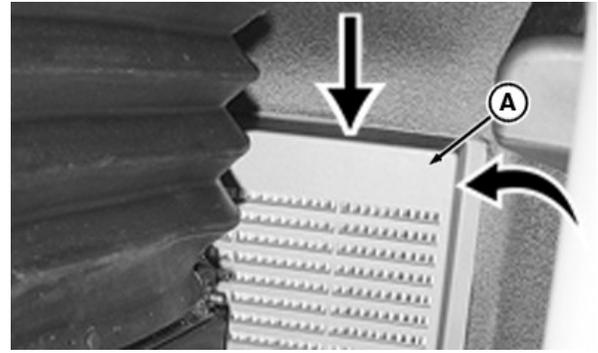
Push down and forward filter cover (A) to remove from behind the seat.

Remove air filter (B). Replace or clean using compressed air. In dusty conditions, this service may be required more often.

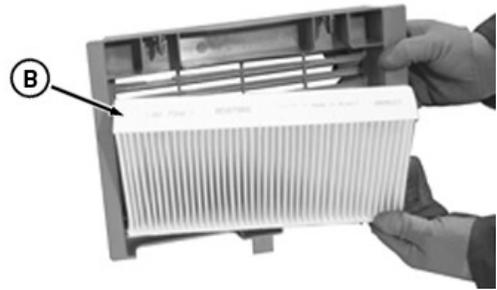
Install new or clean filter with **Air Flow** (C) arrows toward rear of cab.

A—Filter Cover  
B—Recirculation Air Filter

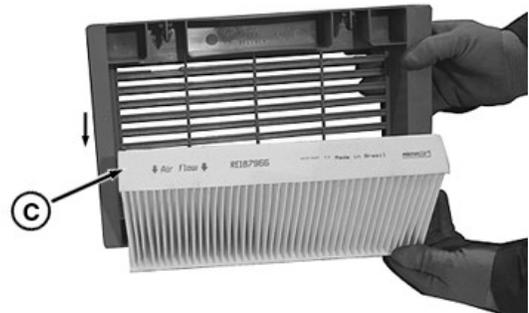
C—Air Flow Direction



RXA0086493—UN—10MAR06



RXA0086497—UN—10MAR06



RXA0086507—UN—13FEB06

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RW29387,0000376-19-07FEB06-1/2

### Cab Air Filter

Remove wing nut (A) and filter cover.

Remove wing nut (B) and air filter (C).

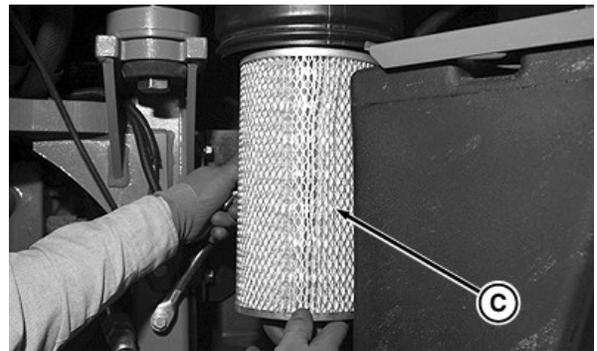
Clean with compressed air or replace.

Install new or clean filter and tighten wing nut.

Install filter cover.

A—Cover Wing Nut  
B—Filter Wing Nut

C—Air Filter



RW29387,0000376-19-07FEB06-2/2

## Checking Dual Beam Radar Sensor

SERVICE INTERVAL — 250 HOURS

Check and clean radar sensor depending on operating conditions.

**IMPORTANT:** Inspect radar sensor horns for dirt or debris build up, which affects accuracy performance.

**Avoid use of high-pressure washer nozzle pointed directly at radar.**

**Avoid damage to radar and wiring harness when using sharp tools to remove dirt or packed mud around radar.**

Clean radar sensor horns (A) with warm water and mild soap.



# Lubrication and Maintenance—750 Hour Service

## Replacing Transmission/Hydraulic/Axle Oil Filters—18-Speed Powershift Transmission

SERVICE INTERVAL —

SCHEDULED — 1500 HOURS \*

\* Interval can vary according to operating conditions

**NOTE:** The powershift transmission *only* needs to be recalibrated if transmission shift characteristics change after transmission oil and filter change. See *Transmission Calibration* procedure in this Section.

A drain pan is recommended for 1.9 L (2 qts) oil spillage when changing the transmission oil filter.

The double reduction axles have a transmission (A) and axle oil filter (B).

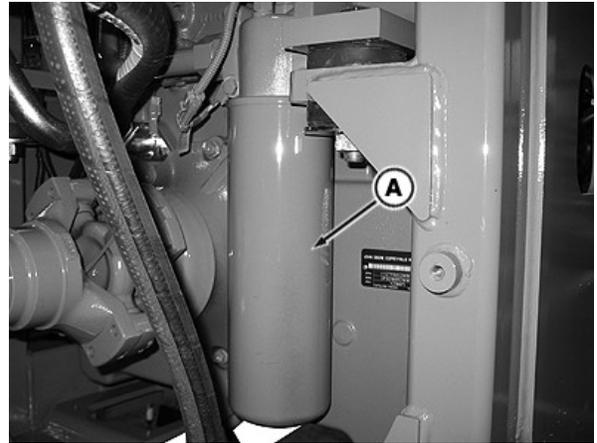
Remove transmission oil filter (A) and axle oil filter (B).

Install new filters and tighten one-half turn after gasket contacts filter housing base.

Check transmission oil level and fill as required using HY-GARD JDM J20C Oil ONLY.

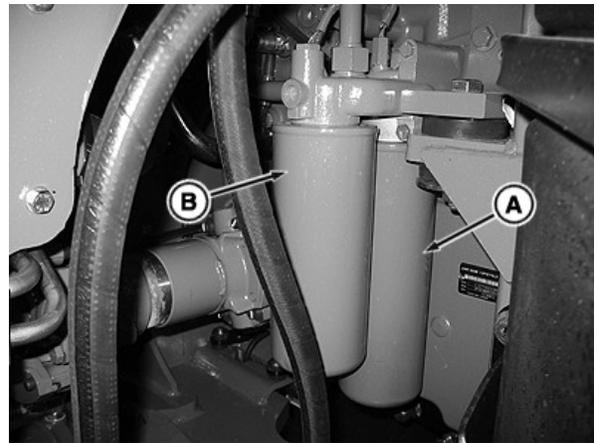
A—Powershift Transmission Oil Filter

B—Double Reduction Axle Oil Filter



9450 Standard Axle Tractors

RXA0099352—UN—01OCT08



9500, 9550 Double Reduction Axle Tractors

RXA0099354—UN—01OCT08

RW29387,0000073-19-15OCT08-1/1

## Replacing Hydraulic Filter

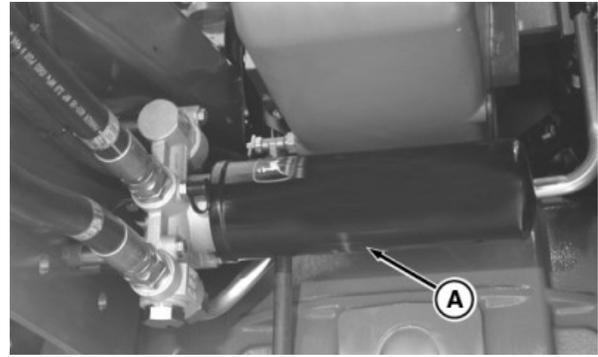
**SERVICE INTERVAL —**

**SCHEDULED — 1500 HOURS \***

*\* Interval can vary according to operating conditions*

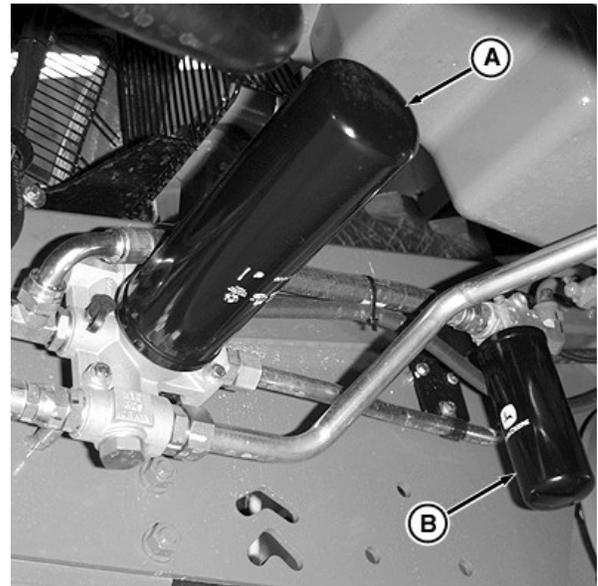
1. Replace standard primary hydraulic filter (A) and secondary filter (B) for High Flow, if hydraulic functions are slow or if indicator light comes on. Install new filter(s) and tighten one half turn after seal contacts filter housing base.
2. Check reservoir oil level and fill as required.

**A—Primary Hydraulic Filter      B—Secondary Hydraulic Filter**



Standard Hydraulic Filter

RXA0052030—UN—28FEB01



High Flow Hydraulic Filters

RXA0086701—UN—13FEB06

RW29387,000038B-19-25OCT06-1/1

### Inspect and Clean Hydraulic Reservoir Screen

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

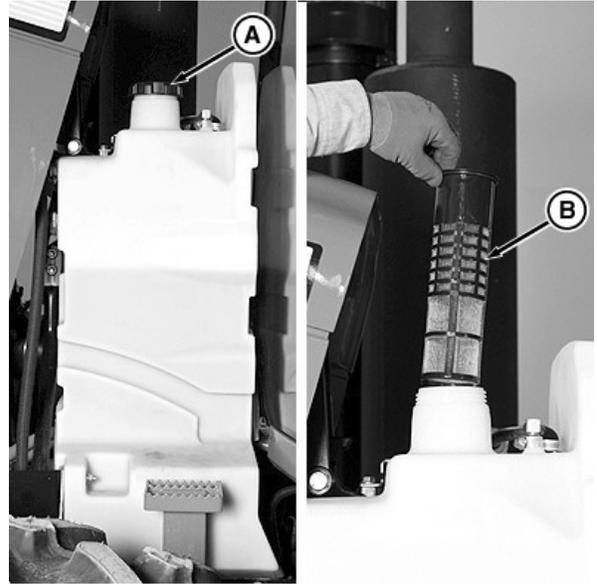
**SERVICE INTERVAL — 750 HOURS \***

*\* Interval can vary according to operating conditions*

Remove hydraulic reservoir cap (A) and inspect screen (B). Clean screen in solvent and blow dry.

A—Cap

B—Screen



RXA0100997—UN—10MAR09

RW29387,000038C-19-11MAR09-1/1

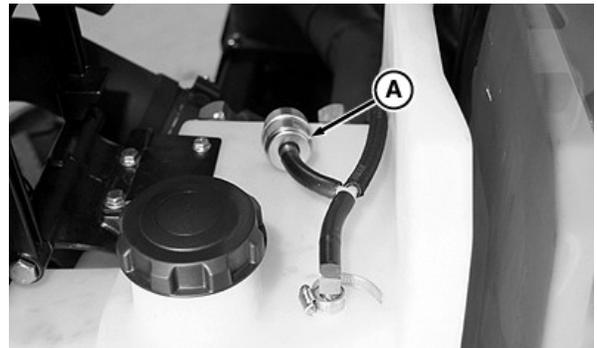
### Replacing Hydraulic Reservoir Breather Filter

**SERVICE INTERVAL — 750 HOURS**

**IMPORTANT:** Verify direction (see arrow on filter) of air flow before removing breather filter. Install new filter in same direction as one removed. Improper installation of filter could cause hydraulic system damage.

1. Verify direction of arrow on filter and remove filter from line.
2. Replace new filter in same direction as one removed.

A—Breather Filter



RXA0086711—UN—13FEB06

RW29387,000038D-19-25OCT06-1/1

## Testing Coolant

**SERVICE INTERVAL — 1000 HOURS**

**CAUTION:** Avoid personal injury. Do not remove fill cap when engine is hot. Stop engine and wait until engine has cooled.

2. Slowly turn de-aeration tank cap (A) to relieve pressure. Remove cap.

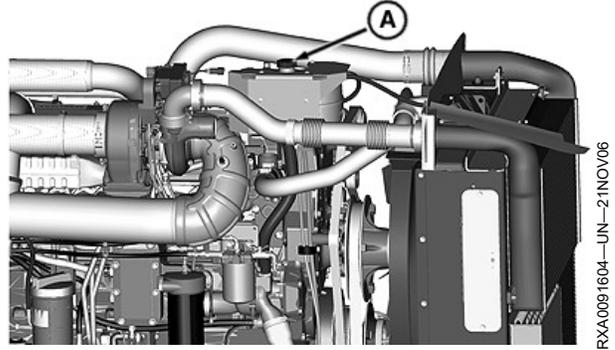
*NOTE: De-aeration tank will not be full of coolant when cap is removed. When looking in tank, if coolant tank is at least half full, do not add additional coolant.*

3. Test coolant using TY26605 COOL-GARD™II 3-way test strips available from your John Deere dealer.

*NOTE: Follow instructions on back of reader card in test strip pack when testing coolant.*

4. Add TY26603 COOL-GARD II Coolant Extender available from your John Deere dealer as indicated by the color matrix on reader card in test strip pack. If tank is too full, drain a small amount of coolant from system before extender is added.

*COOL-GARD is a trademark of Deere & Company*



Surge Tank Cap-13.5 L Engine (Shown)

A—Cap

*NOTE: Cap gasket should be visually checked for sealing effectiveness. A good functioning gasket should have the imprint of the mating surface with no apparent scratches or leak paths.*

5. Install de-aeration tank cap and lower hood.

RW29387.000039A-19-27JAN10-1/1

## Clean Fuel Tank Vent Filter

**SERVICE INTERVAL — 1000 HOURS \***

*\* Interval can vary according to operating conditions*

*NOTE: Fuel tanks are vented through a fuel vent filter (C) located behind right side cab panel.*

Remove rear cab panel.

Loosen right rear cab panel screws (A).

Remove top cab panel retaining screws (B).

Open up front of cab panel to access tank vent filter (C).

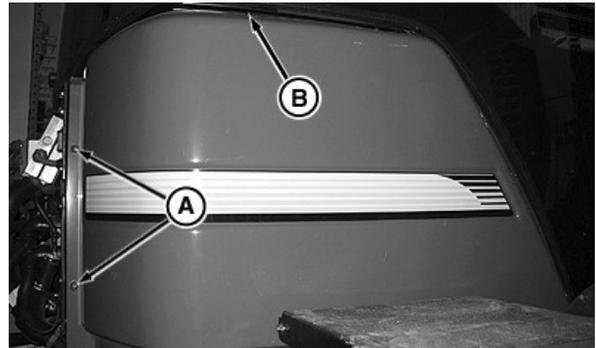
Unscrew to remove vent filter and clean in soapy detergent solution.

Blow dry with compressed air and replace.

Reinstall side panel retaining screws and rear cab panel.

A—Screws  
B—Screws

C—Vent Filter



RW29387.0000008-19-27JAN10-1/1

# Lubrication and Maintenance—1500 Hour Service

## Changing Powershift Transmission/Standard Axle Oil-18-Speed Powershift Transmission-9430 Tractors

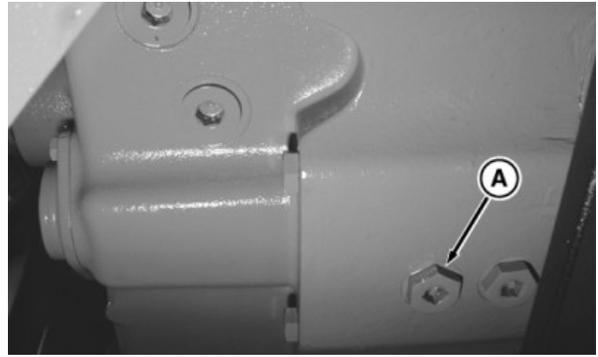
SERVICE INTERVAL — 1500 HOURS

**IMPORTANT:** Prevent premature axle failure. Carefully follow drain and fill procedure.

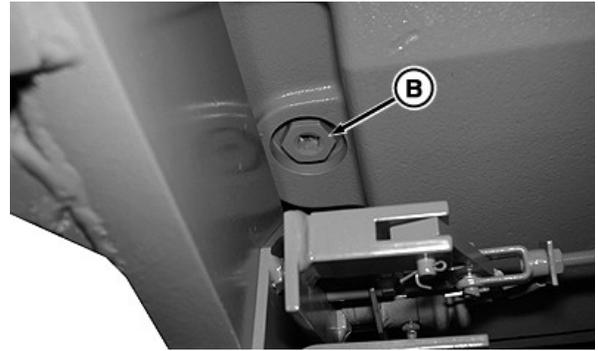
**NOTE:** The powershift transmission *only* needs to be recalibrated if transmission shift characteristics change after transmission oil and filter change. See Powershift Transmission Calibration procedure in this General Maintenance and Inspection Section.

1. Park tractor on level ground. Allow oil to cool for five minutes.
2. Remove the transmission oil fill cap.
3. Remove plug (A) from bottom of transmission.
4. Remove three drain plugs (B) and (C) and drain both front and rear axles.
5. Drain PTO drop box, if equipped.
6. Install all drain plugs.

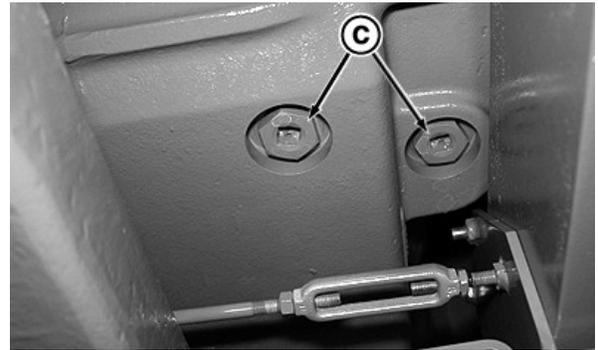
A—Transmission Drain Plug      C—Axle Drain Plugs  
B—Axle Drain Plug



Powershift Transmission Drain Plug



Left Rear Axle Drain Plug Shown



Right Rear Axle Drain Plugs Shown

Continued on next page

RWA0052015—UN—28FEB01  
RXA0090328—UN—11AUG06  
RXA0090330—UN—11AUG06  
RW29387,00000A4-19-12MAR09-1/3

7. Change transmission oil filter.
  8. Remove sump screen cover (B) cap screws. Remove sump screen and clean with solvent.
  9. Inspect for debris in sump screen cavity using a flashlight or magnet.
- NOTE: Replace O-ring if cracked, hard or brittle.*
10. Remove and inspect O-ring from sump screen cover.
  11. Install O-ring on cover.
  12. Reinstall sump screen and cover. Tighten cap screws to specification.

**Specification**

Sump Screen Cover Cap  
Screws—Torque..... 55 N·m (40 lb-ft)

**IMPORTANT: To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.**

**Shift quality problems and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed.**

13.

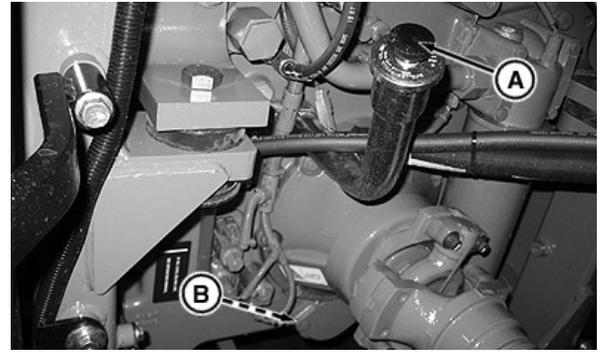
**System Capacities**

110 mm Axles ..... 170.5 L (45 gal)

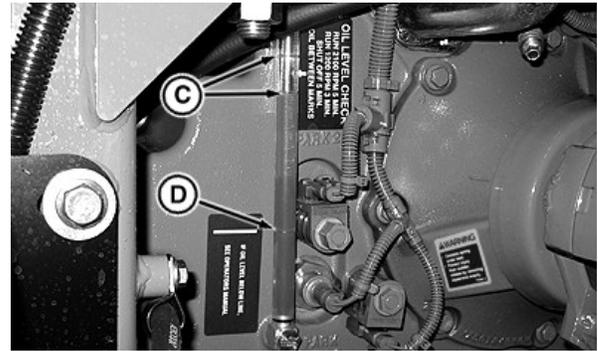
Remove axle drain plug (E) and (F) for filling purposes.

14. Fill transmission with oil at fill tube (A). Oil level should be between upper marks (C) on sight glass.

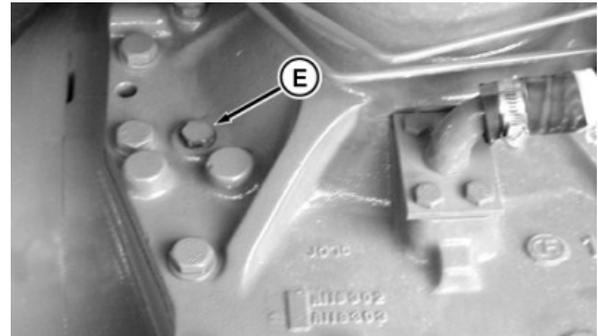
A—Transmission Fill Tube	D—Low Oil Level Mark
B—Transmission Sump Screen	E—Front Axle Drain Plug
C—Full Oil Level Mark	F—Rear Axle Drain Plug



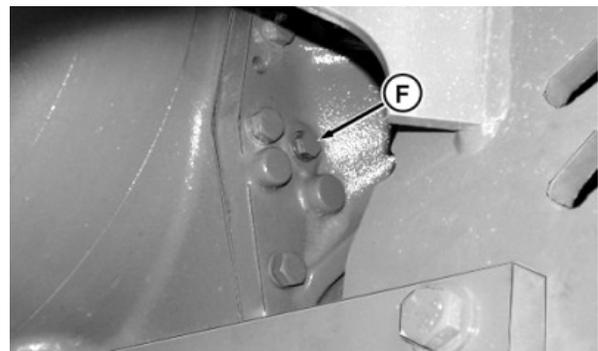
Rear of Transmission



Powershift Transmission



Back Side of Front Axle



Front Side of Rear Axle

Continued on next page

RW29387,00000A4-19-12MAR09-2/3

**1. OIL LEVEL CHECK PROCEDURE:**

**IMPORTANT:**

1.
  - a. Poor shift quality and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed. To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.
  - b. Do not operate tractor if oil is not above mark (C) in sight gauge with engine off.

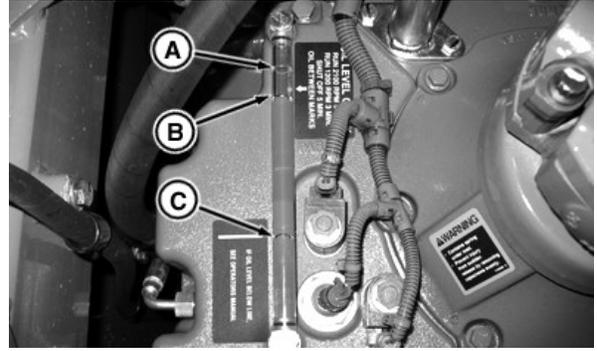
*NOTE: Do not perform oil check within 8 hours of transporting tractor in 15th or higher gear.*

Start tractor engine and warm transmission/axle oil to above 35°C (95°F). Use CommandCenter display to check transmission/axle temperature. (See CommandCenter Section).

2. After oil is at desired temperature, drive to a level surface.
3. Shift transmission lever to **Park, set engine speed at 1200 rpm and run for 3 minutes.**

*NOTE: DO NOT step on brake pedal during this segment of the procedure to avoid additional oil flow to the axles and resulting in an inaccurate oil level check.*

4. Reduce engine speed to slow idle, shut engine **OFF**, and **wait 5 minutes.**



Three Line Powershift Transmission Sight Gauge and Labels

RXA0100424—UN—03FEB09



CommandCenter Transmission/Axle Oil Temperature Display

- A—Top Oil Level Mark
- B—Lower Oil Level Mark
- C—Low Level Mark
- D—Fill Tube

5. Check oil level on sight gauge on rear of transmission. Oil level should be between marks (A) and (B).

RW29387,00000A4-19-12MAR09-3/3

## Changing Powershift Transmission/Double Reduction Axle Oil-9530 and 9630 Tractors

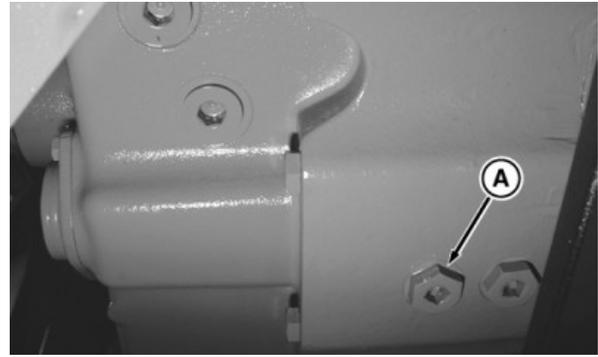
**SERVICE INTERVAL — 1500 HOURS**

**IMPORTANT: Prevent premature axle failure. Carefully follow drain and fill procedure.**

**NOTE:** The powershift transmission *only* needs to be recalibrated if transmission shift characteristics change after transmission oil and filter change. See Powershift Transmission Calibration procedure in General Maintenance and Inspection Section.

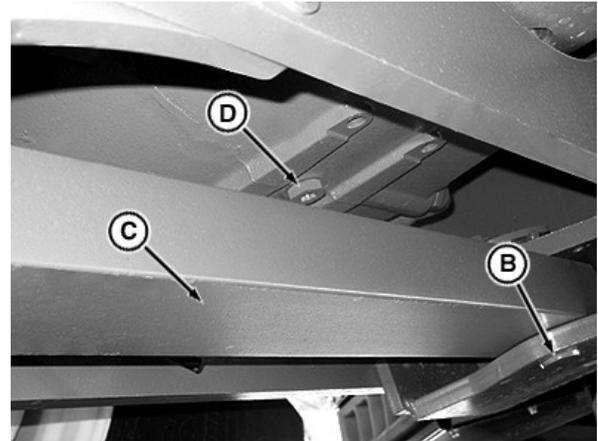
1. Park tractor on level ground and shut engine **OFF**. Allow oil to cool for five minutes.
2. Remove plug (A) from bottom of transmission.
3. Remove front drawbar retaining pin (B) and pull drawbar (C) rearward to access rear axle drain plug (D).
4. Remove front axle drain plug (E) and drain oil.
5. Install all drain plugs.
6. Change transmission oil filter. (See Replacing Transmission/Axle Oil Filter—18-Speed Powershift Transmission in this Section.)

A—Transmission Drain Plug	D—Rear Axle Drain Plug
B—Front Drawbar Pin	E—Front Axle Drain Plug
C—Drawbar	



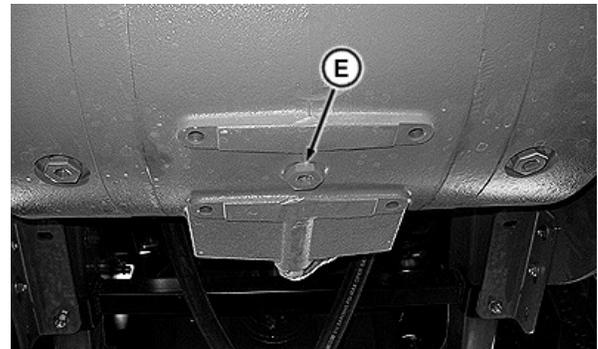
Powershift Transmission Drain Plug

RXA0052015—UN—28FEB01



Rear Axle Drain Plug

RXA0096574—UN—20NOV07



Front Axle Drain Plug

RXA0096650—UN—20NOV07

Continued on next page

OU1092A,00001AF-19-06MAR09-1/4

7. Remove sump screen cover (B) cap screws. Remove sump screen and clean with solvent.

8. Inspect for debris in sump screen cavity using a flashlight or magnet.

*NOTE: Replace O-ring if cracked, hard or brittle.*

9. Remove and inspect O-ring from sump screen cover.

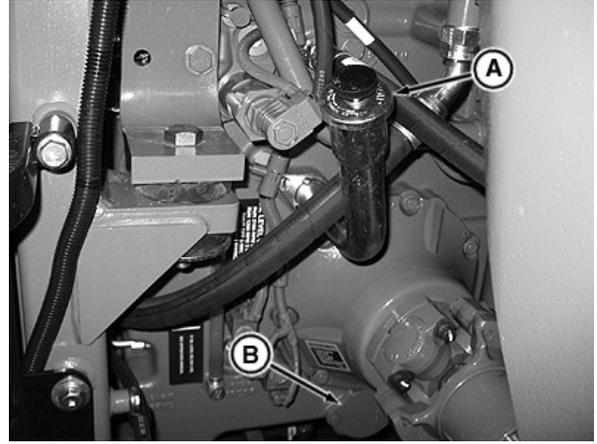
10. Install O-ring on cover.

11. Reinstall sump screen and cover. Tighten cap screws to specification.

**Specification**

Sump Screen Cover Cap  
Screws—Torque. . . . . 55 N·m (40 lb-ft)

12. Fill transmission with oil at fill tube (A). Oil level should be between marks on the sight gauge.



RXA0096843—UN—12DEC07

Rear of Transmission

**A—Transmission Fill Tube**

**B—Transmission Sump Screen Cover**

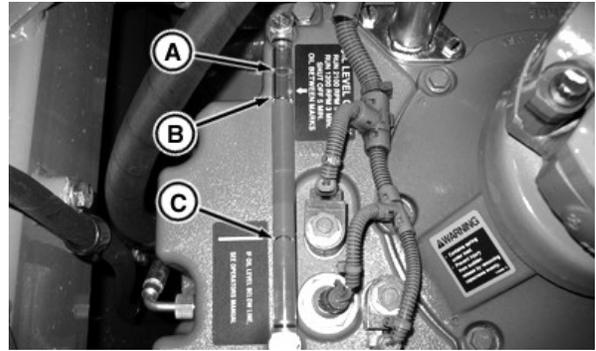
**System Capacities**

9530/9630 Axles . . . . . 87 L (23 gal)

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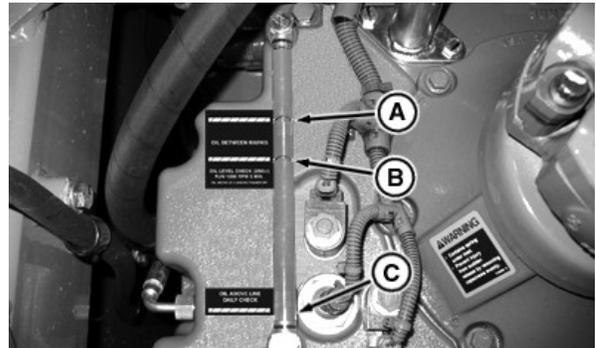
OU1092A,00001AF-19-06MAR09-2/4

1.



RXA0099427—UN—08OCT08

Three Line Powershift Transmission Sight Gauge and Labels



RXA0100689—UN—23FEB09

Two Line Powershift Transmission Sight Gauge and Labels

RXA0100424—UN—03FEB09



CommandCenter Transmission/Axle Oil Temperature Display

A—Top Oil Level Mark  
B—Lower Oil Level Mark

C—Low Level Mark  
D—Fill Tube

Continued on next page

OU1092A,00001AF-19-06MAR09-3/4

OIL LEVEL CHECK PROCEDURE:

**IMPORTANT:**

1.
  - a. **Poor shift quality and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed. To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.**
  - b. **Do not operate tractor if oil is not above mark (C) in sight gauge with engine off.**

*NOTE: Do not perform oil check within 8 hours of transporting tractor in 15th or higher gear.*

Start tractor engine and warm transmission/axle oil to above 35°C (95°F). Use CommandCenter display to

check transmission/axle temperature. (See CommandCenter Section).

2. After oil is at desired temperature, drive to a level surface.
3. Shift transmission lever to **Park, set engine speed at 1200 rpm and run for 3 minutes.**

*NOTE: DO NOT step on brake pedal during this segment of the procedure to avoid additional oil flow to the axles and resulting in an inaccurate oil level check.*

4. Reduce engine speed to slow idle, shut engine **OFF**, and **wait 5 minutes.**
5. Check oil level on sight gauge on rear of transmission. Oil level should be between marks (A) and (B).

OU1092A,00001AF-19-06MAR09-4/4

## Changing Hydraulic Oil

**SERVICE INTERVAL — 1500 HOURS**

1. Remove plug (A) and drain the hydraulic oil reservoir.
2. Change hydraulic oil filter.
3. Fill reservoir with HY-GARD Hydraulic Oil between marks on sight gauge (B). Tractor should be on level ground.

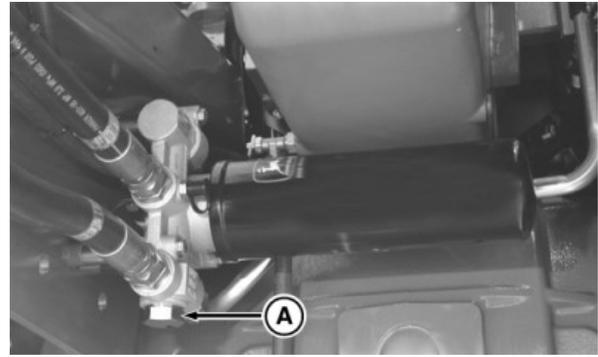
### Capacities

Standard Without Hitch .....	102 L (27 gal)
Standard With Hitch .....	106 L (28 gal)
High Flow Without Hitch .....	113.5 L (30 gal)
High Flow With Hitch .....	117 L (31 gal)

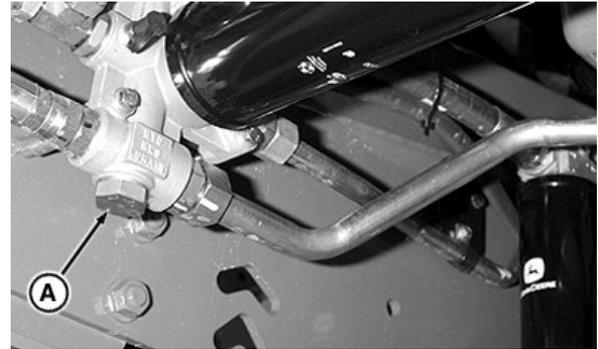
4. Operate engine at 1500 rpm for approximately 5 minutes to pump oil through the system.
5. Add oil to the reservoir keeping the level within the bottom of the sight gauge. Continue to add oil to the reservoir until the level stops changing at the bottom of the sight gauge.
6. Operate the engine at low idle for 5 minutes with the transmission in PARK position.
7. Add oil as required until sight gauge level remains between sight gauge marks.

**A—Drain Plug**

**B—Sight Gauge**



Standard Hydraulic System



High Flow Hydraulic System



RW29387,000038A-19-25OCT06-1/1

RXA0052028—UN—28FEB01

RXA0086703—UN—17AUG06

RXA0090359—UN—21AUG06

## Check Axle End Play (Severe Duty Use)

**SERVICE INTERVAL — 1500 HOURS \***

\* For Normal Use—Check at 2000 hours

Have your John Deere Dealer check axle end play

OU1092A,0000250-19-02JUN08-1/1

# Lubrication and Maintenance—2000 Hour Service

## Draining, Flushing and Refilling Cooling System

**INITIAL** change interval is 6 years or 6000 hours, provided cooling system is topped off using only John Deere COOL-GARD II™ and premix and coolant is tested at recommended intervals.

After initial service, the **SCHEDULE** interval (2 years or 2000 hours) can be extended up to 6 years or 6000 hours depending on coolant used and if coolant is tested at recommended intervals. Follow recommendations in "Drain Intervals for Diesel Engine Coolant" in Fuels, Lubricants and Coolant section of this manual.

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

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

**IMPORTANT:** Avoid cooling system damage. Test or replace thermostats and de-aeration tank cap whenever cooling system is flushed. See your John Deere dealer.

Check de-aeration tank level. If tank is empty and recovery COOL-GARD is a trademark of Deere & Company



TS281—UN—15APR13

tank has been kept at least full cold, this indicates a leak that prevents system from recovering coolant from recovery tank. If recovery tank level does not change when engine is being warmed up, this is a sign of a leak or of a very low coolant level in the pressurized circuit.

After flushing system, cooling system should be checked for leaks and de-aeration cap should be pressure checked. See your John Deere dealer for testing.

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RW29387,000059E-19-12DEC08-1/8

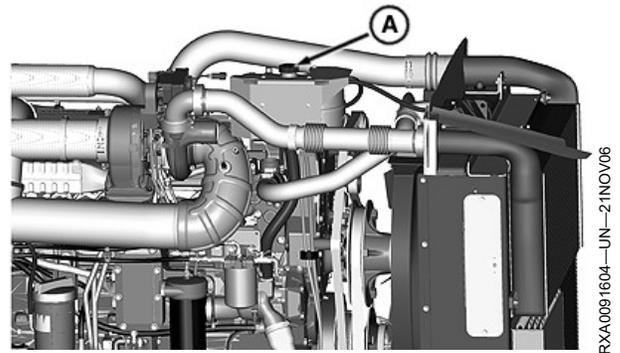
1. Open hood.
2. Remove de-aeration tank cap (A) slowly and when engine is cool.

**NOTE:** For tractors equipped with Automatic Temperature Control, temperature readout must say "HI" and key must be in **RUN** position. This prevents trapping old coolant in the heater.

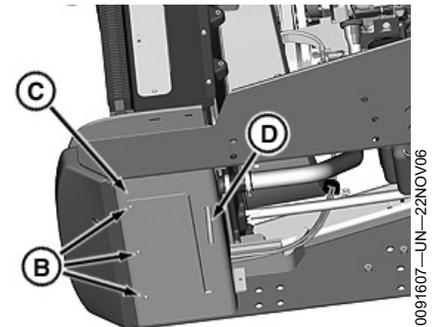
3. For tractors equipped with Automatic Temperature Control (ATC), turn key to Run. Turn ATC controls to ON; ATC indicator must show "HI".
4. Remove three cap screws (B), then remove panel (C) beneath radiator drain valve.
5. Open radiator drain valve and drain coolant into catch pan through drain hose (D).
6. Open engine drain valve (E) and drain coolant into catch pan.

A—De-aeration Tank Cap  
 B—Cap Screws  
 C—Panel

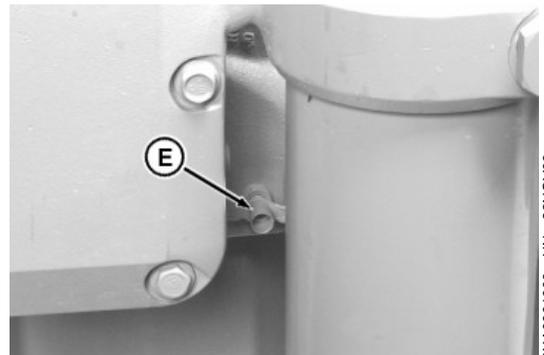
D—Drain Hose  
 E—Engine Drain Valve



Remove De-aeration Tank Cap



Open Engine Drain Valve (Under Frame View)



Drain Valve 13.5 L Engine

Continued on next page

RWA0091604—UN—21NOV06  
 RXA0091607—UN—22NOV06  
 RXA0091608—UN—22NOV06  
 RW29387,000059E-19-12DEC08-2/8

7. Remove EGR cooler vent plug (A).
8. Remove five screws (B) and side shield.
9. Remove two screws (E) and finger guard.
10. Remove clamps and intake tube (C).
11. Remove clamps, coolant tube and hose (D).
12. Remove clamps and hose (F).
13. Disconnect line (G).
14. Remove five cap screws (H) and thermostat housing.
15. Remove and discard old thermostats.
16. Install cover, and gasket without thermostats. Tighten cap screws to specifications.

**Specification**

Thermostat Cover Cap  
 Screws—Torque. . . . . 48 N·m  
 (35 lb-ft)

17. Replace previously removed radiator hoses, clamps, line and tube.
  18. Close engine drain valve, and radiator drain valve.
- NOTE: See your John Deere Dealer for recommendations on cleaning solutions.*
- IMPORTANT: Never pour cold water or coolant into hot engine.**

19. Begin filling system with cooling system cleaning solution. When air is purged and system cleaning solution appears at the EGR port, install EGR cooler vent plug and finish filling system.
20. Install de-aeration cap, side panel and close hood.

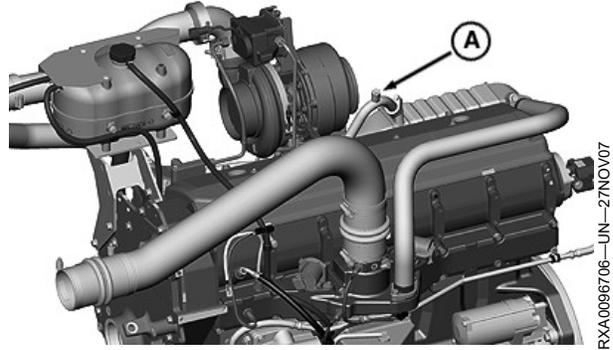
- ⚠ CAUTION: Make sure side panel is installed and hood is closed before starting engine.**
21. Start engine and run at a minimum of 1500 rpm for 15 minutes.

- ⚠ CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns.**
- Shut off engine. Only remove cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.**

22. Shut off engine and allow to cool.
23. Open hood, remove de-aeration cap, put drain pans in place, then open radiator and engine drain valves. Remove EGR cooler vent plug.

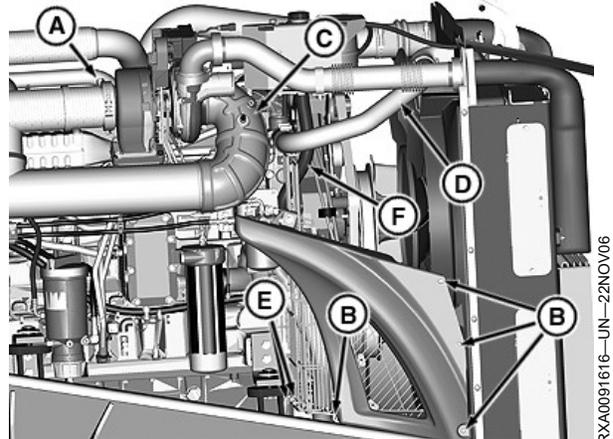
*NOTE: For tractors equipped with Automatic Temperature Control, temperature readout must say "HI" and key must be in RUN position. This prevents trapping cleaning solution in the heater.*

24. Turn heater temperature control clockwise to the full on



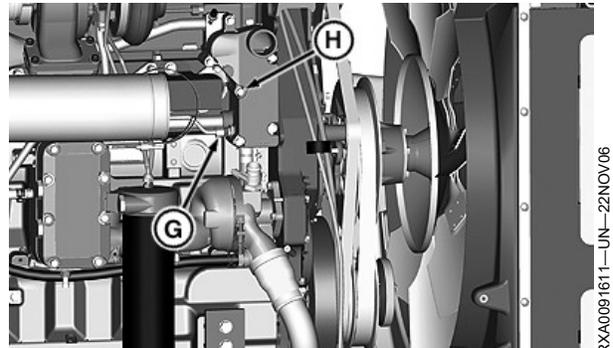
EGR Cooler Vent Plug

RXA0096706—UN—27NOV07



EGR Cooler Vent Plug

RXA0091616—UN—22NOV06



Remove Radiator Hose

RXA0091611—UN—22NOV06

- |                        |          |
|------------------------|----------|
| A—EGR Cooler Vent Plug | E—Screws |
| B—Screws               | F—Hose   |
| C—Tube                 | G—Line   |
| D—Hose                 | H—Screws |

position. For tractors equipped with Automatic Temperature Control, temperature readout must say "HI" and turn key switch on to **RUN** position for coolant drain, flush, refill and de-aeration process. Do not start engine.

*NOTE: This is the only way to get old coolant and air out of circuit.*

*NOTE: See your John Deere Dealer for recommendations on cleaning solutions.*

Continued on next page

RW29387,000059E-19-12DEC08-3/8

25. Install radiator and engine drain plugs.

26. Using clean water, begin filling coolant system. When air is purged and water appears at the EGR port, install EGR cooler vent plug and finish filling the system.

**CAUTION:** Make sure fan guard and side panel are installed and hood is closed before starting engine.

27. Close hood, start engine and run for a minimum of 1500 rpm for 15 minutes.

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

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

28. Turn off engine, allow coolant to cool, then using previously listed steps, drain system.

29. Close engine drain valve and radiator drain valve.

30. Begin filling system with proper mix of coolant and distilled water or demineralized water. When air is

purged and water is visible in the EGR valve port, close EGR cooler vent plug.

**CAUTION:** Make sure fan guard and side panel are installed and hood is closed before starting engine.

**IMPORTANT:** Never pour cold water or coolant into hot engine.

31. Start engine and run at 1500 rpm for a minimum of 15 minutes.

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

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

32. Turn off engine, allow coolant to cool, raise hood, remove side panel, then using previously listed steps, drain system.

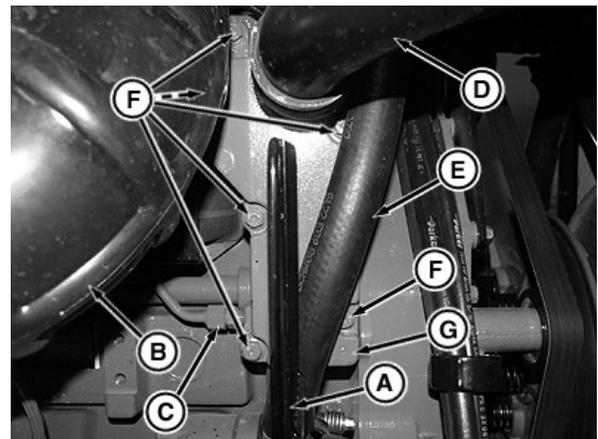
33. Using previous steps, remove clamps, hoses, tube and braces.

RW29387,000059E-19-12DEC08-4/8

### Install New Thermostats—13.5 L Engine

**CAUTION:** Explosive release of fluids from pressurized cooling system can cause serious burns. DO NOT drain coolant until it has cooled below operating temperature. Always loosen radiator pressure cap or drain valve slowly to relieve pressure.

1. Visually inspect area around thermostat cover for leaks. Partially drain cooling system below thermostat housing level.
2. Remove fan shield and finger guard bracket (A).
3. Disconnect air intake temperature sensor and remove air intake tube (B).
4. Loosen top liner cooling return line (C) front and rear fittings and remove.
5. Loosen upper radiator coolant hose clamp and remove hose (D).
6. Loosen lower coolant bypass hose clamp and remove hose (E).
7. Remove cap screws (F) securing thermostat cover to thermostat housing.



13.5 L Engine Thermostat Cover

- |                               |                             |
|-------------------------------|-----------------------------|
| A—Finger Guard Bracket        | E—Lower Coolant Bypass Hose |
| B—Air Intake Tube             | F—Cap Screws                |
| C—Liner Cooling Return Line   | G—Thermostat Cover          |
| D—Upper Radiator Coolant Hose |                             |

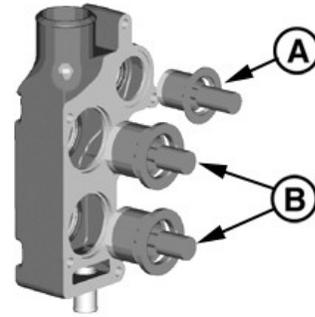
8. Remove thermostat cover (G) from thermostat housing.

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RW29387,000059E-19-12DEC08-5/8

9. Remove gasket or seal and remove EGR thermostat (A) and engine coolant thermostats (B).
10. Test each thermostat for proper opening temperature. (See your John Deere dealer.)

**A—EGR Coolant Thermostat    B—Engine Coolant Thermostats**



Thermostats

RW29387,000059E-19-12DEC08-6/8

RG14923—UN—01SEP06

### Install Thermostats and Thermostat Cover

1. Clean all material from thermostat cover mounting surfaces.
2. Insert cover in lower coolant bypass hose and place thermostat cover in position using a new gasket or seal.
3. Install thermostats and tighten thermostat cover cap screws to specifications.

#### Specification

Thermostat Cover Cap  
Screws—Torque. . . . . 50 N·m (37 lb-ft)

4. Lubricate O-ring for the top liner cooling return line fitting with petroleum jelly and install line. Tighten fittings (C) to specifications.

#### Specification

Coolant Line Fittings—Torque. . . . . 13.5 N·m (10 lb-ft)

5. Tighten upper radiator hose clamp and lower bypass coolant hose clamp to specifications.

#### Specification

Hose Clamp—Torque. . . . . 8 N·m (6 lb-ft) (71 lb-in.)

6. Install air intake tube and attach temperature sensor harness connectors.
7. Install finger guard bracket and fan shield.
8. Close radiator and engine drain valves.

### Fill Cooling System

**IMPORTANT: Use coolant as specified in Fuel, Lubricants and Coolant section.**

1. Fill high pressure coolant circuit at de-aeration tank.
2. Begin filling coolant recovery tank. When air is purged and coolant is visible, close EGR cooler vent plug.
3. Finish filling coolant recovery tank to Full Hot mark.

*NOTE: Coolant level in recovery tank will drop the first few cycles unless there is a leak.*

4. With de-aeration tank cap **ON** and hood closed, start engine and run at idle for 1 to 5 minutes.



Upper Cylinder Coolant Line

RG15107—UN—05SEP06

5. Shut off engine, raise hood, remove de-aeration tank cap. Top off high pressure circuit at de-aeration tank and reinstall cap.
6. Close hood, start engine and warm up for 15 minutes. If the coolant recovery tank loses coolant to the ground, repeat previous step and top off until it does not. Loosing coolant to the ground indicates air in high pressure circuit is being discharged through coolant recovery tank.
7. Shut off engine and allow to cool. Observe coolant level dropped below **Full Hot** in the recovery tank.
8. Monitor coolant recovery tank level for the next two days of use. Refill coolant recovery tank as required.

*NOTE: If coolant level did not drop below Full Hot, there is a leak in cooling system that could lead to engine damage.*

*NOTE: It is normal for level to go down with the first few cycles and then range somewhere between Full Hot and Full Cold.*

*NOTE: It is normal for de-aeration tank to be partially full of air when cap is removed and system completely de-aerated. When inspecting tank, if it is at least half full, do not add additional coolant. Topping off tank may cause coolant to be expelled onto the ground and/or cavitation of water pump.*

Continued on next page

RW29387,000059E-19-12DEC08-7/8

**Check Cooling System for Leaks**

1. Let engine cool and raise hood.
2. Check radiator for leaks or damage.
3. With engine cooled down, slowly turn de-aeration tank cap (A) to relieve pressure. Remove cap.
4. Attach Surge Tank Adapter Cap and Radiator Pressure Tester to filler neck. (Test equipment is available from your John Deere dealer.)
5. Pressurize system.

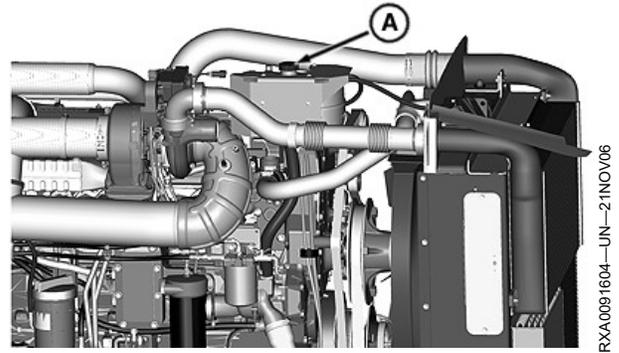
**Specification**

Radiator—Pressure Test. . . . . 60 kPa (0.6 bar)  
(9 psi)

6. If pressure drops immediately, or will not build, have John Deere dealer check and repair system.
7. Test and/or replace de-aeration cap whenever cooling system is flushed. Use suitable equipment or see your John Deere dealer for testing equipment.

*NOTE: Cap gasket should be visually checked for sealing effectiveness. A good functioning gasket should have the imprint of the mating surface with no apparent scratches or leak paths. If gasket is damaged, replace cap and test new cap.*

*NOTE: Cap should hold pressure within specifications. Relief occurs at top of range.*



Remove De-aeration Tank Cap

**A—De-aeration Tank Cap**

*NOTE: Replace cap if test result is out of specifications.*

8. Pressurize cap.

**Specification**

Radiator Cap—Pressure Test. . . . . 60–80 kPa (0.6–0.8 bar)  
(9–12 psi)

9. Remove tester and install radiator cap.
10. Close hood.

RW29387,000059E-19-12DEC08-8/8

# Lubrication and Maintenance—2500 Hour Service

## Adjust Engine Valve Clearance

Have your John Deere Dealer adjust engine valve clearance.

SERVICE INTERVAL — 2500 HOURS \*

OU1092A,000024E-19-02JUN08-1/1

# Lubrication and Maintenance—Annual Service

## Inspect Belt Tensioner

SERVICE INTERVAL — ANNUALLY

**IMPORTANT:** Inspect all belt tensioner and pulley systems in this manner.

*NOTE:* Pulley and dust shield can be serviced separate from spring tensioner. Spring tensioner is serviced as an assembly.

### 1. With belt ON the drive, perform the following checks:

- Check to see if tensioning arm (A) is against free arm stops (B). Replace belt if this condition is seen.
- Check belt tracking mark on the pulley. Replace belt tensioner if tracking mark is considerably wider than belt.

### 2. With belt OFF the drive, perform the following checks:

*NOTE:* Do not pry between pulley and spring case.

- Release tension on belt using a long-handle 1/2 in. drive tool. Remove belt from alternator pulley.
- Release tension on tension arm (A).
- Rotate tension arm (A) slowly using a 1/2 in. drive tool. Arm should rotate smoothly between arm stops (B); if not, replace tensioner.
- Replace tension mechanism if there is:
  - Metal-to-metal contact is present between rotating and stationary parts at location (C and D) on tensioner.
  - Cracks or broken spring case or broken stops.

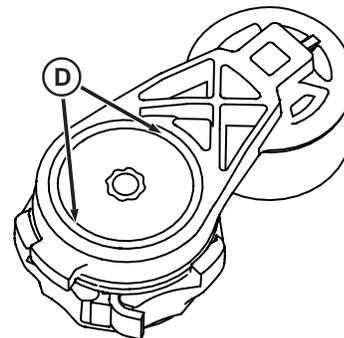
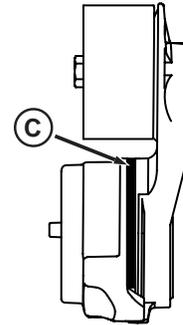
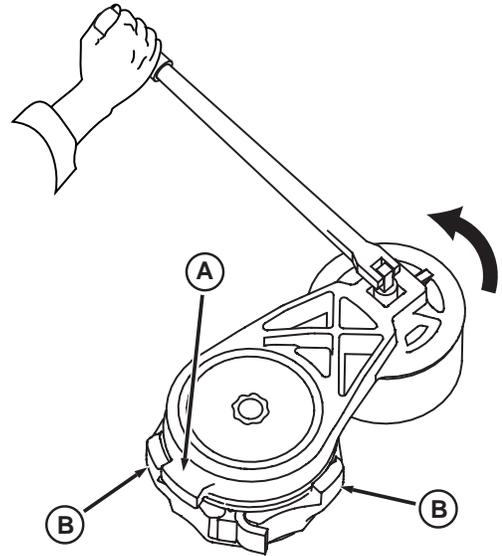
### 3. Apply thread lock and sealer to cap screw and install belt tensioner in engine front cover at mounting hole. Tighten to specification.

#### Specification

Belt Tensioner Mounting Cap  
Screw—Torque. . . . . 70 N·m  
(52 lb·ft)

A—Tension Arm  
B—Free Arm Stops

C—Metal-to-Metal Contact  
Between Arm and Spring  
Case  
D—Metal-to-Metal Contact  
Between Arm and End Cap



RXA0073092—UN—09JAN04

RXA0074277—UN—29MAR04

RXA0073094—UN—09JAN04

OURX956.00002E9-19-04SEP08-1/1

## Replacing Primary and Secondary Engine Air Filters

### SERVICE INTERVAL — ANNUALLY \*

\* Interval can vary according to operating conditions or when filter indicator light is ON.

Replace the primary air filter if the filter indicator light is ON.

**NOTE:** Replace filters **at least** once a year or when air filter indicator remains ON.

Replace secondary filter **every second** primary filter change.

**IMPORTANT:** When Engine Air Filter Restriction Warning is activated (CCU 107.00, 107.15 or 107.16) the engine performance will be reduced. Service engine air filter immediately.

**Do not use compressed air pressure to clean engine air filters.**

**NOTE:** Make sure air filter and air intake assembly seals are in good condition.

Remove four wing nuts (A) to remove air cleaner shield (B).

Unfasten four clips (C) to remove filter cover.

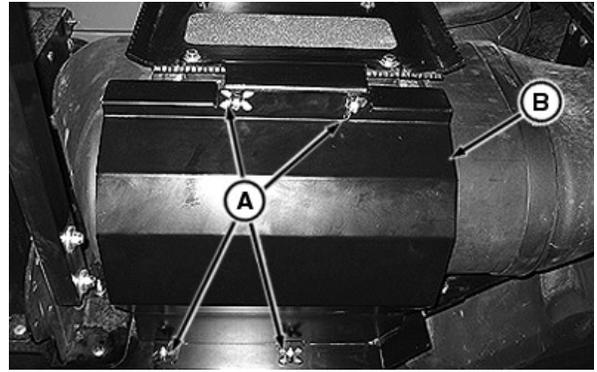
Grasp air filter handle (D) to slide air cleaner forward and release from canister inlet.

Remove filter from canister.

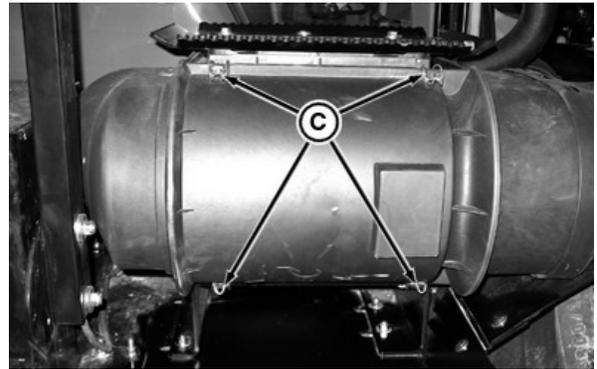
Clean dirt and debris from inside canister and cover.

A—Wing Nuts  
B—Shield

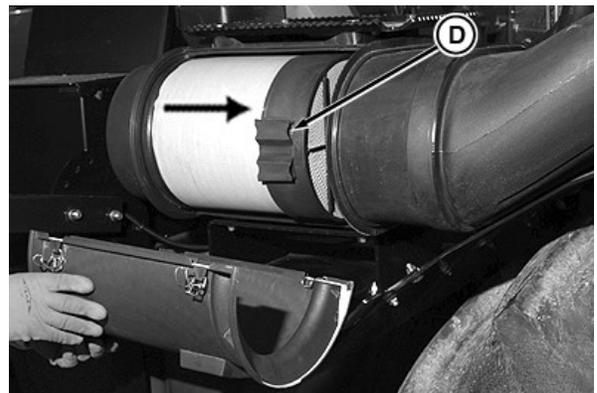
C—Clips  
D—Air Filter Handle



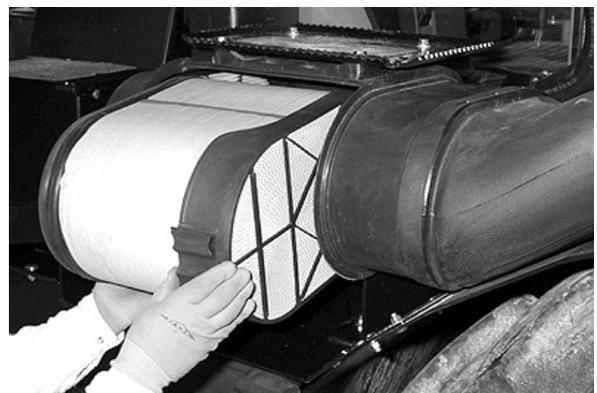
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RXA0095916—UN—11SEP07



RXA0091683—UN—29NOV06



RXA0087333—UN—06MAR06

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RW29387,0000375-19-04JUN09-1/2

**IMPORTANT: Do not attempt to clean secondary filter.**

**Replace secondary filter every second primary filter change.**

**Install new secondary filter immediately to prevent dust from entering air intake system.**

Pull on handle (A) to remove secondary filter (B).

Replace air filters.

When reinstalling secondary filter, be sure to insert filter tab (C) into canister slot (D) for proper seal.

Install air filters in reverse order of disassembly.

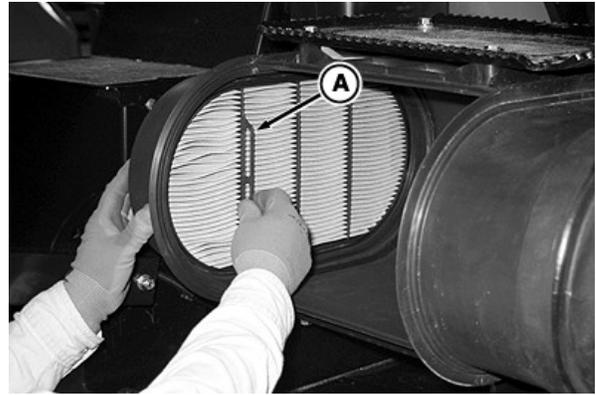
**IMPORTANT: Be sure secondary filter tab (C) is correctly inserted into canister slot (D) or possible damage to engine may result.**

A—Handle

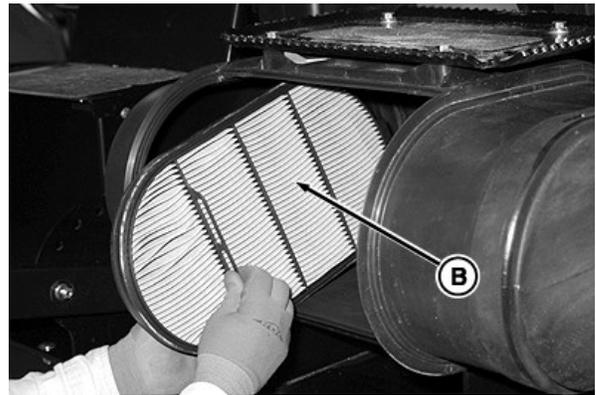
C—Tab

B—Secondary Filter

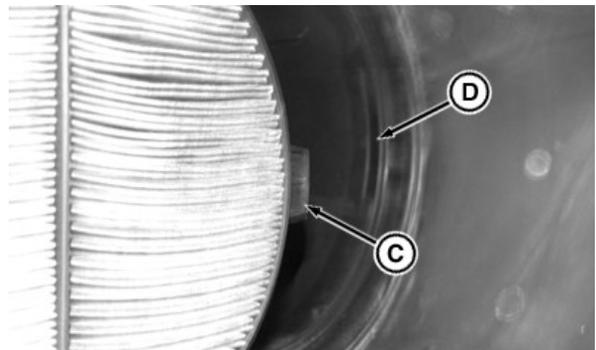
D—Slot



RXA0087335—UN—06MAR06



RXA0087337—UN—06MAR06



RXA0091637—UN—28NOV06

RW29387.0000375-19-04JUN09-2/2

## Cleaning or Replacing Cab Air Filters

### SERVICE INTERVAL —

**CLEAN — 250 HOURS \***  
**REPLACE — ANNUALLY**

*\* Interval can vary according to operating conditions*

**⚠ CAUTION:** The air quality system air filters are not designed to filter out harmful chemicals. Follow the instructions in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.

### Recirculation Filter

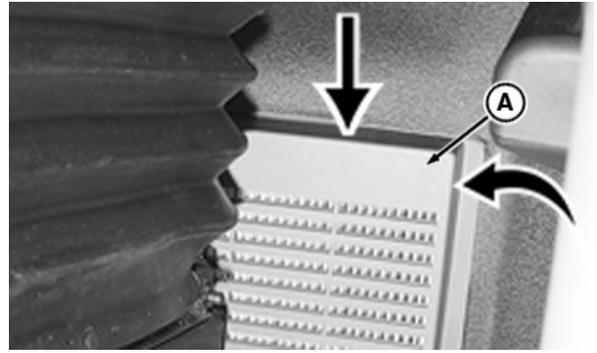
Push down and forward filter cover (A) to remove from behind the seat.

Remove air filter (B). Replace or clean using compressed air. In dusty conditions, this service may be required more often.

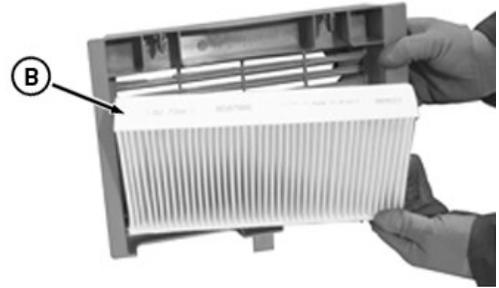
Install new or clean filter with **Air Flow** (C) arrows toward rear of cab.

**A—Filter Cover**  
**B—Recirculation Air Filter**

**C—Air Flow Direction**



RXA0086493—UN—10MAR06



RXA0086497—UN—10MAR06



RXA0086507—UN—13FEB06

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RW29387,0000376-19-07FEB06-1/2

### Cab Air Filter

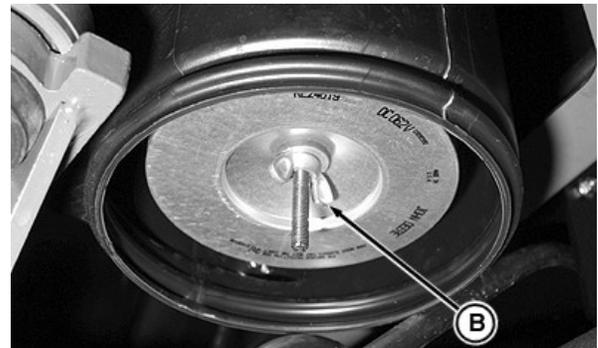
Remove wing nut (A) and filter cover.  
 Remove wing nut (B) and air filter (C).  
 Clean with compressed air or replace.  
 Install new or clean filter and tighten wing nut.  
 Install filter cover.

A—Cover Wing Nut  
 B—Filter Wing Nut

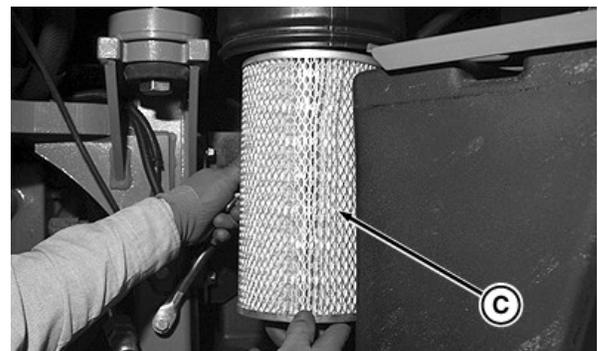
C—Air Filter



RXA0086673—UN—20FEB06



RXA0086675—UN—20FEB06



RXA0086679—UN—20FEB06

RW29387,0000376-19-07FEB06-2/2

### Inspecting Seat Belts

SERVICE INTERVAL — ANNUALLY

**CAUTION:** If the seat belt system, including the mounting hardware, buckle, belt or retractor shows any sign of damage such as cuts, fraying, extreme or unusual wear, discoloration or abrasion, the entire seat belt system should be replaced immediately.

Replace the belt system only with replacement parts approved for your machine.

Inspect seat belts (A) and mounting hardware. If seat belts need to be replaced, see your John Deere Dealer.

A—Seat Belts



RXA0051988—UN—28FEB01

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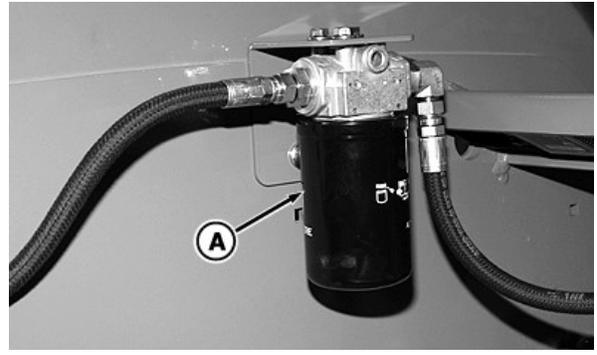
## Replacing Motor Seal Drain Filter

### SERVICE INTERVAL — ANNUALLY \*

\* Interval can vary according to operating conditions or replace in the event of a hydraulic motor failure.

1. Replace motor seal drain filter (A).
2. Install new filter and tighten one half turn after seal contacts filter housing base.
3. Check reservoir oil level and fill as required.

**A**—Motor Seal Drain Filter



Motor Seal Drain Filter

RW29387,000038E-19-19SEP07-1/1

RXA0088185—UN—05APR06

## Lubrication and Maintenance—4500 Hour or Five Year Service

### Replace Transmission Drive Shaft Damper

Have your John Deere Dealer replace transmission drive shaft damper.

**SERVICE INTERVAL — FIVE YEARS OR 4500 HOURS \***

*\* For SEVERE DUTY—Inspect annually and change at 3000 hours*

RW29387,000037F-19-06DEC05-1/1

# General Maintenance and Inspection

## Service Accumulator Systems Safely

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.



TS281—UN—15APR13

DX,WW,ACCLA-19-15APR03-1/1

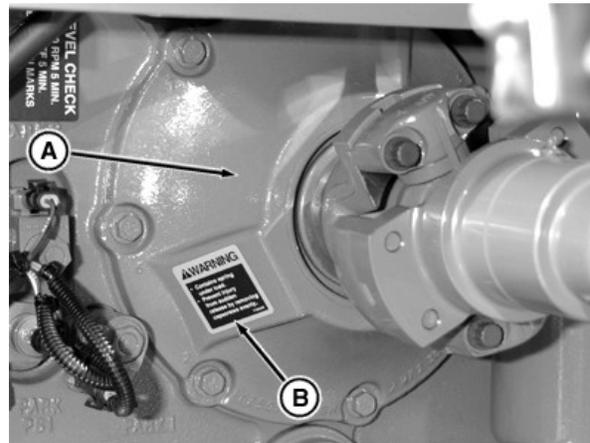
## Internal Park Brake

**IMPORTANT:** Park brake on Powershift transmission equipped tractors is spring applied and hydraulically released. If engine will not run or hydraulic system fails, park brake will be applied. Tractor cannot be towed with park brake applied. See your John Deere dealer to release park brake on a disabled tractor.

**CAUTION:** Label (B) states, internal park brake contains spring under load. Prevent injury from sudden release by removing cap screws evenly.

9030 tractors have an internal park brake (A). No maintenance is required.

Park brake should be repaired or replaced by your John Deere Dealer if found defective.



A—Internal Park Brake

B—Warning Label

RXA0071089—UN—25SEP03

RW29387,0000373-19-28SEP10-1/1

## Cleaning Grille Screens, Radiator and Oil Cooler

Stop engine and clean screen (A) using a brush.

Clean trash from engine compartment shields.

A—Screen



RXA0090173—UN—03AUG06

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RW29387,0000377-19-28SEP10-1/2

Raise hood (A) and remove radiator side panels (B). Clean radiator, oil cooler, condenser and aftercooler.

**CAUTION:** Compressed air pressure should not exceed 75 psi (500 kPa) (5 bar) when used for cleaning. Clear area of bystanders, guard against flying chips and wear personal protection equipment including eye protection.

Clean radiator, oil cooler, condenser, and aftercooler from behind with compressed air if a more thorough cleaning is necessary. Straighten any bent fins.

Reinstall side panels (B) before closing hood.

A—Hood

B—Side Panels



RXA0108489—UN—12NOV10

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### Inspect and Clean Fuel Sump Screen

*NOTE: The fuel sump screen should not require service unless fuel supply is disrupted due to contaminates in tank.*

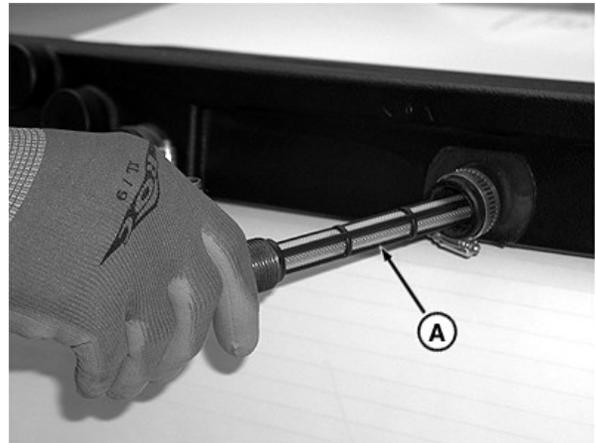
**CAUTION:** Fuel tanks must be completely drained before removing sump screen.

**IMPORTANT:** If adaptor is removed, clamp should only be loosened slightly. If clamp is removed plastic boss could relax making it difficult to reinstall adaptor. Adaptor has a pipe thread which seals with fuel tank. Apply LOCTITE® 30558 to adaptor prior to reinstalling in tank.

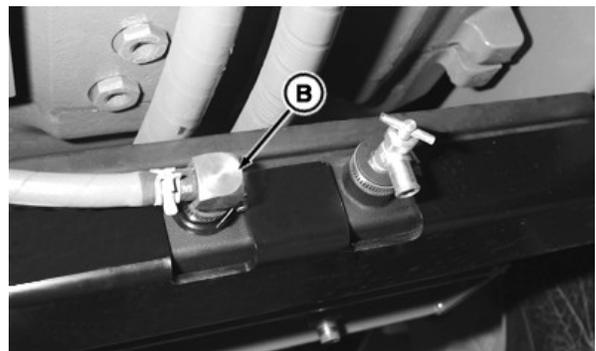
1. Disconnect sump hose and remove adaptor and screen (A) from threaded boss on crossover tank (B).
2. Clean or replace as necessary.
3. Apply Loctite 30558 to adaptor threads and install adaptor and screen in threaded boss in crossover pipe.
4. Reconnect sump hose.
5. Tighten clamp.

A—Sump Screen

B—Crossover Tank



RXA0077314—UN—01SEP04



RXA0090285—UN—09AUG06

LOCTITE is a trademark of Loctite Corp.

RW29387,0000378-19-09AUG06-1/1

### Checking Weep Hole—13.5 L Engine

1. Raise hood.
  2. Remove screws (A) and right-hand side panel (B).
- NOTE: Use a mirror (D) to locate the weep hole.*
3. Locate weep hole (C) on under side of water pump and inspect for oil or coolant leakage.

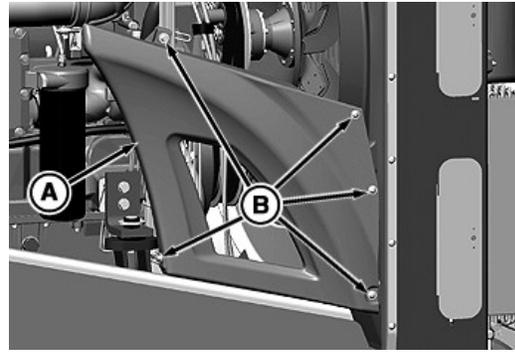
- Oil leakage indicates a damaged rear seal.
- Coolant leakage indicates a damaged front seal.

If leakage is detected, see your John Deere dealer to replace complete coolant pump assembly (repair parts are not available).

4. Replace engine side panel and tighten screws.
5. Close hood.

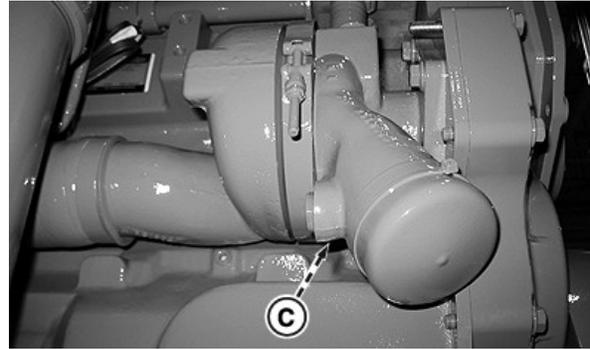
A—Side Panel  
B—Screws

C—Weep Hole  
D—Mirror



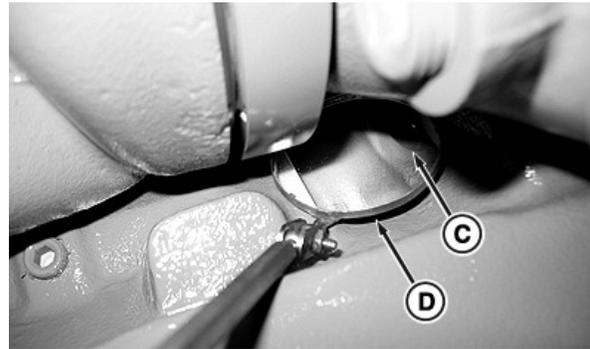
Engine Right-Hand Side Panel

RXA0091226—UN—26OCT06



Water Pump

RXA0105550—UN—13JAN10



Weep Hole Location

RXA0105528—UN—13JAN10



Water Pump-On Bench View

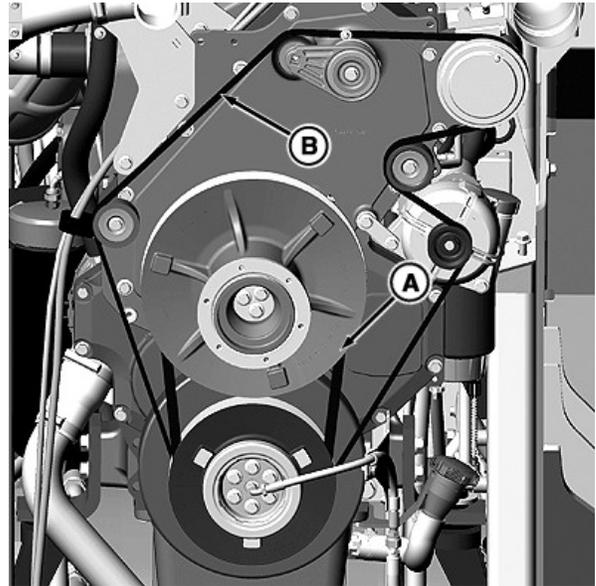
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## Drive Belt Routings

A—Vari-Cool Fan Belt

B—Accessory Drive Belt



RXA0091223—UN—26OCT06

Drive Belt—13.5 L Engine

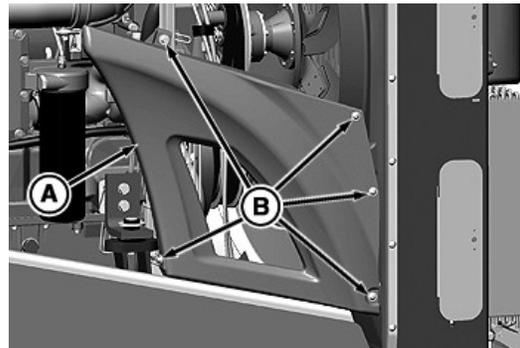
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## Replacing VARI-COOL™ Fan Belt—9330-9430-9530-9630 13.5 L Engine

1. For disassembly perform the following: Raise hood.
2. Remove cap screws (B) and front right-hand side panel (A).

A—Side Panel

B—Cap Screws (5 used)



RXA0091226—UN—26OCT06

VARI-COOL is a trademark of Deere & Company

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RW29387.00004FB-19-28SEP10-1/5

**IMPORTANT: Be careful not to damage sheave or belt when forcing outer sheave outward.**

3. Locate control valve at location (A) under rear left-hand upper gusset of main frame.
4. Loosen bleed screw jam nut and bleed screw (B) 1-2 turns and force outer sheave (C) open.

**IMPORTANT: Bleed screw (B) does not need to be completely removed for bleeding.**

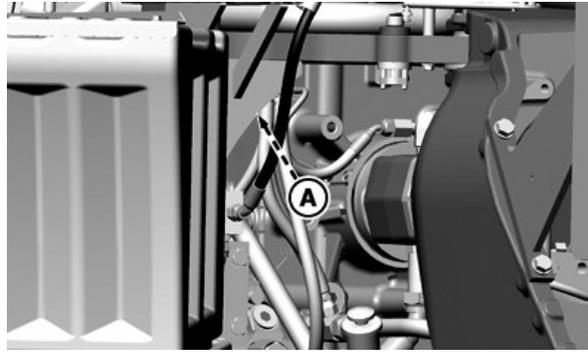
**Bleed screw (B) is an internal drain that must be closed after sheave has been forced open.**

5. Close bleed screw (B) and tighten to specification.

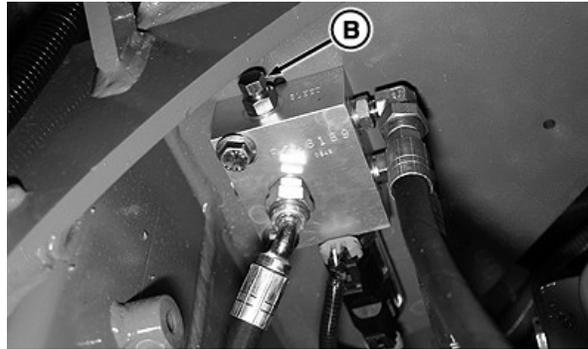
**Specification**

Bleed Screw—Torque. . . . .	25 N·m (221 lb-in.)
Bleed Screw Jam Nut —Torque. . . . .	25 N·m (221 lb-in.)

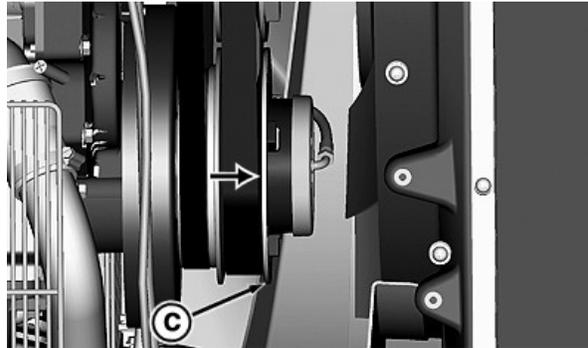
**A—Control Valve Location      C—Outer Sheave**  
**B—Bleed Screw**



RXA0091224—UN—26OCT06



RXA0092918—UN—14MAR07



RXA0091233—UN—26OCT06

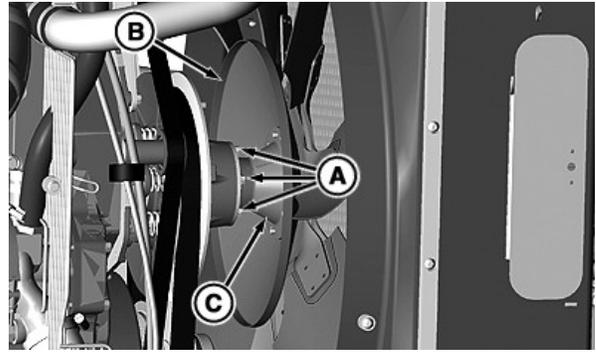
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RW29387,00004FB-19-28SEP10-2/5

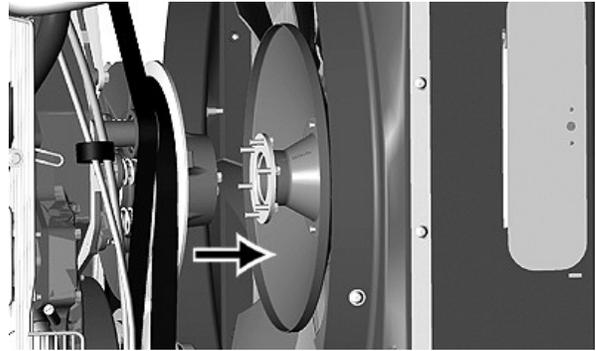
6. Remove cap screws (A) from fan hub (C) and move fan (B) forward.

A—Cap Screws (6 used)  
B—Fan

C—Fan Hub



RXA0091227—UN—26OCT06



RXA0091228—UN—26OCT06

Continued on next page

RW29387,00004FB-19-28SEP10-3/5

7. Disconnect hose (A).

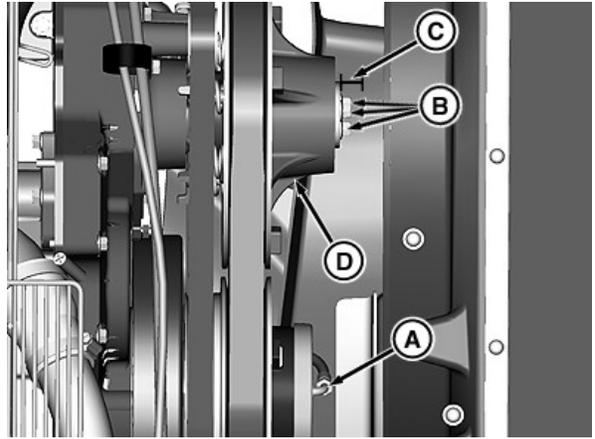
**⚠ CAUTION: Sheave is under spring tension, use care when loosening cap screws.**

8. Loosen cap screws (B) evenly to achieve 26 mm (1 in.) (C) between cap screws (B) and upper sheave (D).

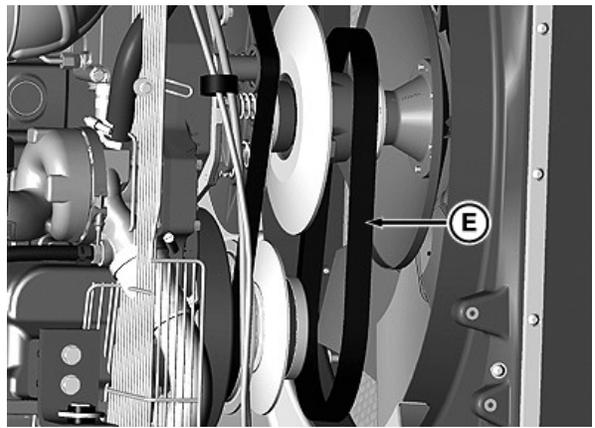
9. Remove belt (E) between sheave and fan hub.

A—Hose  
B—Cap Screws (3 used)  
C—26 mm (1 in.)

D—Upper Sheave  
E—Belt



RXA0091229—UN—26OCT06



RXA0091231—UN—26OCT06

Continued on next page

RW29387,00004FB-19-28SEP10-4/5

**IMPORTANT:** Mating surfaces of sheave and shaft must be clean and free of oil or lubricant when installing driven sheave on shaft.

10. **For reassembly perform the following:** Install belt (A) in reverse order of disassembly on driven assembly and tighten cap screws (B) to specifications labeled on the driven sheave.

**Sheave-to-Driven Assembly — Specification**

Nut—Torque. . . . . 130 N·m  
(96 lb-ft)

11. Install and tighten fan hub-to-driven sheave cap screws to specification. Ensure belt is not pinched while tightening cap screws.

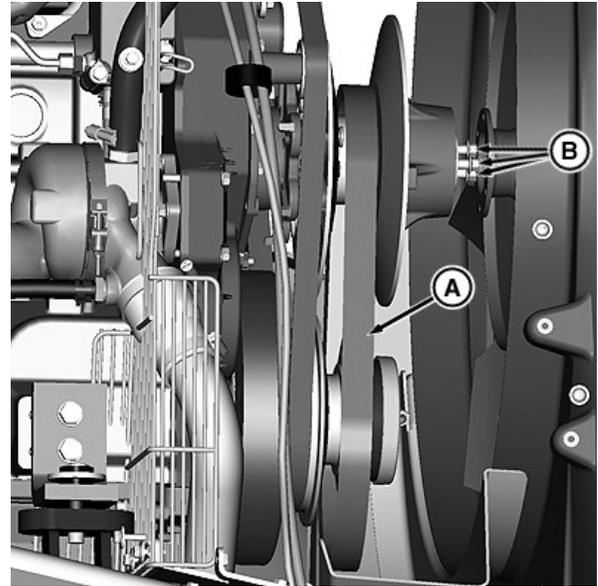
**Fan hub-to-Driven Sheave Assembly — Specification**

Nut—Torque. . . . . 35 N·m  
(26 lb-ft)

*NOTE: Belt will be loose on the drives until engine is started and run.*

12. Belt should appear loose in drive assembly.

**IMPORTANT:** Internal bleed screw must be closed for proper tension to be applied to the belt once tractor is started.



A—Belt

B—Cap Screws (3 used)

13. Check internal bleed screw to make sure it is closed and jam nut is tight.

RW29387,00004FB-19-28SEP10-5/5

## Powershift Transmission Calibration

**NOTE:** The powershift transmission *only* needs to be recalibrated if transmission shift characteristics change after transmission oil and filter change.

If shift characteristics change, use following procedure to calibrate the transmission.

### IMPORTANT:

1.
  - a. Poor shift quality and/or transmission damage may occur if the HY-GARD or JDM J20C specifications are not followed. To ensure proper shift quality, an oil meeting HY-GARD or JDM J20C specifications must be used.
  - b. Do not operate tractor if oil is not above mark (C) in sight gauge with engine off.

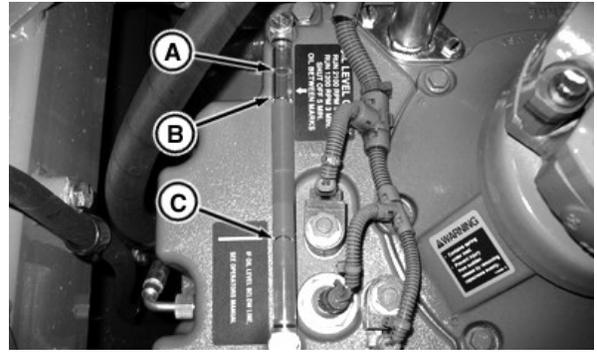
### PROCEDURE:

**NOTE:** *Do not* perform oil check within eight hours of transporting tractor in 15th or higher gear.

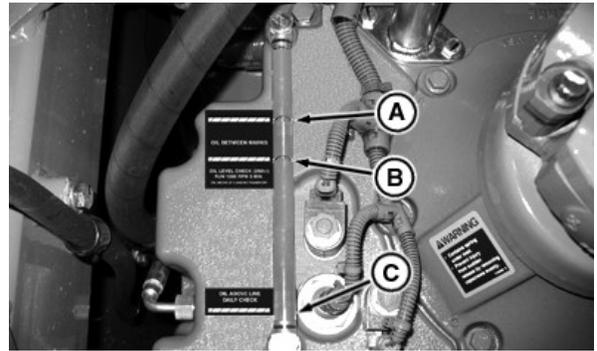
1. Start tractor engine and warm transmission/axle oil to above 35°C (95°F). Use CommandCenter display to check transmission/axle temperature. (See CommandCenter Section).
2. After oil is at desired temperature, drive to a level surface.
3. Shift transmission lever to **Park**, set engine speed at **1200 rpm** and run for **3 minutes**.

**NOTE:** *DO NOT* step on brake pedal during this segment of the procedure to avoid additional oil flow to the axles and resulting in an inaccurate oil level check.

4. Reduce engine speed to slow idle, shut engine **OFF**, and wait **5 minutes**.
5. Check oil level on sight gauge on rear of transmission. Oil level should be between marks (A) and (B).



Three Line Powershift Transmission Sight Gauge and Labels



Two Line Powershift Transmission Sight Gauge/Labels 9530, 9630 Tractors

RXA0100424—UN—03FEB09



CommandCenter Transmission/Axle Oil Temperature Display

A—Top Oil Level Mark  
B—Lower Oil Level Mark

C—Low Level Mark

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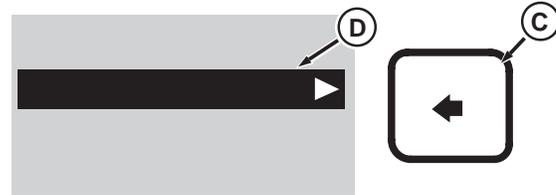
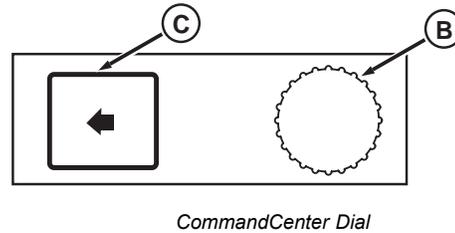
RW29387,00000EA-19-30APR09-1/9

1. Place shift lever in **PARK** position. Start the engine.
2. Press the **Settings** switch (A) on the CommandCenter™ panel.
3. Turn the CommandCenter dial (B) to highlight **Diagnostics** on display (D), and press the select switch (C).
4. Turn the dial to highlight **Controllers** on display (D), then press and hold the select switch until the next menu appears.

RXA0091469—UN—14NOV06



A—Settings Switch  
B—CommandCenter Dial  
C—Select Switch  
D—Display

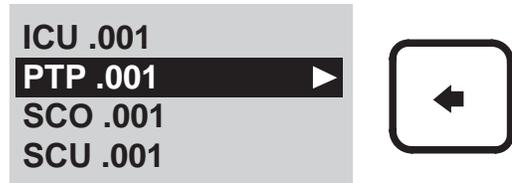


RXA0091511—UN—14NOV06

RXA0091470—UN—20NOV06

RW29387,00000EA-19-30APR09-2/9

5. Turn the dial to highlight **PTP.001**, and press the select switch.

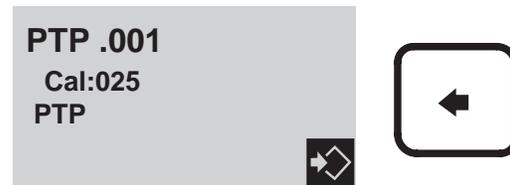


RXA0091472—UN—14NOV06

RW29387,00000EA-19-30APR09-3/9

*NOTE: Operator presence must be detected by PTP in this step to proceed.*

6. Turn the dial to select **PTP Address 25**, and press the select switch.

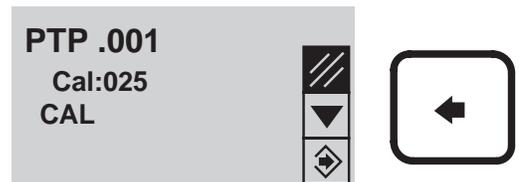


RXA0091473—UN—14NOV06

RW29387,00000EA-19-30APR09-4/9

**IMPORTANT: If CAL does not appear, tractor will move if shift lever is moved into forward or reverse position.**

7. **CAL** should appear on the CommandCenter display. This indicates transmission calibration is ready to begin.

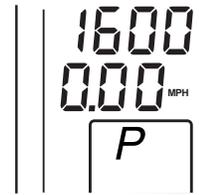


RXA0091474—UN—14NOV06

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RW29387,00000EA-19-30APR09-5/9

8. Adjust throttle to set the engine at 1600 rpm.
9. Move the shift lever to the F or R position to start the calibration.

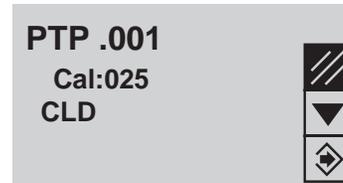


RXA0091475—UN—14NOV06

RW29387,00000EA-19-30APR09-6/9

10. If **CLD** appears which indicates the powershift transmission sump temp is less than 50°C. The calibration process will continue in order to warm the sump and automatically begin calibration when the sump is warm enough. If the powershift sump temperature (available in PTP Address 33) is more than a few degrees below 50°C, it may be faster to warm the sump by shuttle-shifting the tractor prior to attempting a calibration.

*NOTE: In addition to powershift sump temperature available in PTP Address 33, it is also available on the lower half of the CommandCenter display (by turning the dial) before entering PTP diagnostic addresses.*



RXA0091476—UN—14NOV06

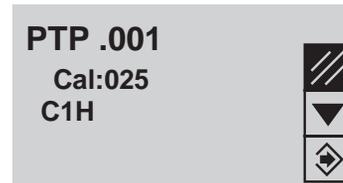
RW29387,00000EA-19-30APR09-7/9

11. **C1H** will appear which indicates calibration has started. Once calibration begins, **do not**:
  - Manually change the throttle
  - Move the shift lever
  - Depress the clutch pedal

or calibration will be aborted and must be repeated.

12. **C1H** indicates "Clutch 1 Hold calibration" is in progress. Hold stages for clutches 2, R, A, B, C, L, M, and H then follow in order. When all nine hold stages are complete,

the fill stages for each clutch are performed in the same order. "C1F," "C2F," etc. will be displayed.



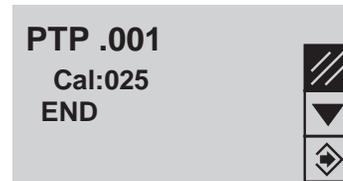
RXA0091477—UN—14NOV06

RW29387,00000EA-19-30APR09-8/9

13. When **END** appears, calibration is complete. Depending on starting sump temperature, calibration typically takes 12-15 minutes.

If calibration aborts due to a fault (i.e. no engine or transmission activity is heard for a period of 30 seconds), the three-letter fault message will display on the CommandCenter, and it should be noted and reported. Another cal attempt may be made if so desired.

14. Turn the CommandCenter dial to select **PTP Address 27**. Record the clutch calibration results for each clutch as they are displayed.
15. Turn the engine off. The PTP will store the cal results just obtained.



RXA0091478—UN—13NOV06

RW29387,00000EA-19-30APR09-9/9

### Checking Air Conditioning System

**⚠ CAUTION:** Refrigerant under pressure. Improper servicing can cause refrigerant to penetrate eyes and skin or cause burns.

**IMPORTANT:** R134a refrigerant must be used. This requires special equipment and procedures. See your John Deere Dealer.

*NOTE:* Some oil seepage from compressor shaft seal, on the lower front, is normal.

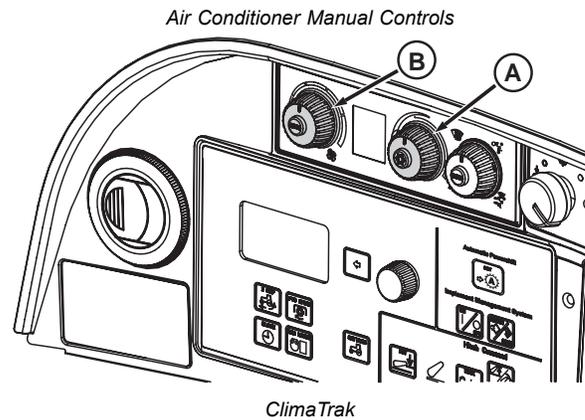
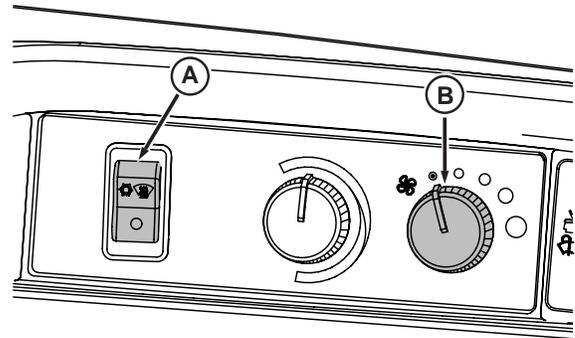
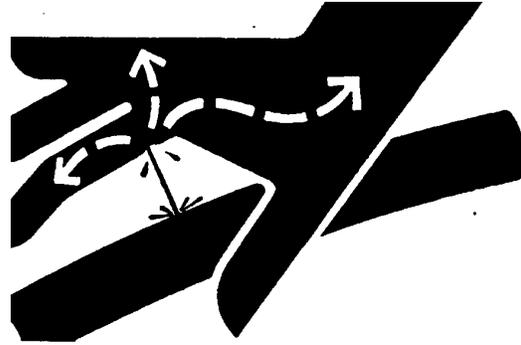
Check the following if air conditioner will not cool, or cooling is intermittent:

- Clean grille, radiator, and refer to Cleaning Radiator, Coolers and Air Conditioning Condenser in this section.
- Inspect and clean cab air filters. Replace filters if required. Refer to Cleaning or Replacing Cab Air Filters in this section.
- For standard air conditioning, operate engine at 2000 rpm and set compressor switch (A) to ON position and blower knob (B) to HIGH position.  
For ClimaTrak, operate engine at 2000 rpm and set compressor knob (A) to ON position and blower knob (B) to HIGH position.

If problems persist, see your John Deere Dealer.

*NOTE:* Initially cool cab with blower speed on HIGH, then turn blower speed knob to RUN or Low for preferred comfort level.

A—Compressor Switch/Knob    B—Blower Knob



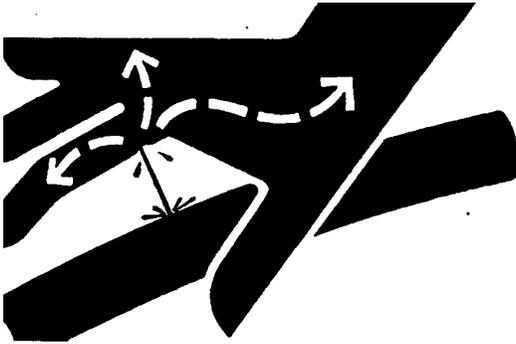
X9811—UN—23AUG88

RXA0078794—UN—01FEB05

RXA0090198—UN—03AUG06

RW29387.000037D-19-28SEP10-1/1

## Do Not Modify Fuel System



X9811—UN—23AUG88

*High Pressure Fluids*



TS1343—UN—18MAR92

**IMPORTANT:** Increasing horsepower, or altering any aspect of fuel and air delivery on emission certified engines beyond factory rating will cause emission levels to exceed 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.

Tractor 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. See your John Deere dealer.

**CAUTION:** Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting fuel or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury or gangrene may result. Doctors unfamiliar with this type of injury may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.

RW29387,0000495-19-04APR06-1/1

## Bleed Fuel System

Turn the key switch to run position, to start electric fuel

pump and bleed air from fuel system. Allow pump to run for 30 seconds to one minute before restarting.

OU1092A,00003D2-19-02AUG06-1/1

### Backflushing Optional Fuel Water Separator (If Equipped)

**NOTE:** Optional fuel water separator should be back flushed whenever bowl is half full of water or when diagnostic trouble code ECU 94.17, "Low fuel pressure out of lift pump", appears. If trouble code is still displayed, wash filter element, see **CLEANING FILTER ELEMENT**. If code persists, change both fuel filters.

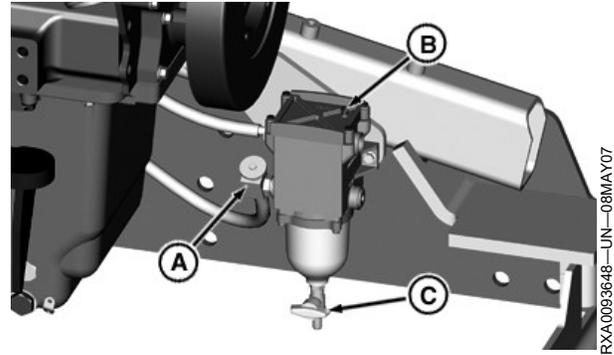
**SERVICE INTERVAL — 500 HOURS \***

\* Interval can vary according to operating conditions

1. Close fuel shut-off valve (A).
2. Open bleed screw (B) on top of water separator lid. Allow water and dirt to be released from filter element and settle in bottom of bowl.
3. Push IN on drain valve (C) and turn COUNTER-CLOCKWISE to drain out water and dirt from bowl.

**NOTE:** As fuel, water, and dirt is drained from bowl in step 3, more water and dirt will be flushed from filter element and collect in bottom of bowl.

4. Close drain valve (C) and allow water and dirt to settle again.
5. Repeat steps 3 and 4 until all dirt and water is removed.



Water Separator (If Equipped)

**A—Fuel Shut-Off Valve**                      **C—Drain Valve**  
**B—Bleed Screw**

6. Close bleed screw (B) and open fuel shut-off valve (A).
7. Start and run engine at fast idle for 2 minutes. If engine won't start or dies, see **REPLACING FUEL FILTER ELEMENTS** in tractor Operator's Manual and follow instructions for priming the engine.

**NOTE:** Filter element in water separator can be back flushed up to five times before being cleaned or replaced.

RW29387.0000004-19-30NOV12-1/1

### Cleaning Optional Fuel Water Separator Filter Element (If Equipped)

**NOTE:** To replace filter element and filter housing gasket, See your John Deere dealer.

1. Turn off engine.

**NOTE:** Drain fuel into an appropriate container and dispose of properly.

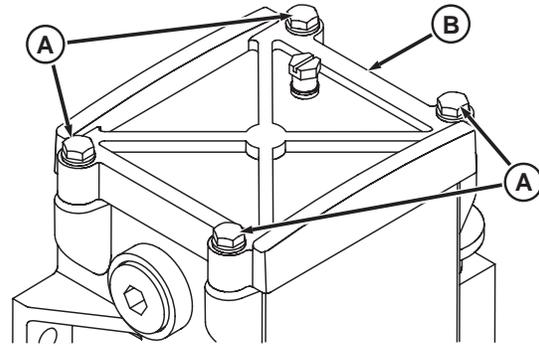
**SERVICE INTERVAL — 500 HOURS \***

\* Interval can vary according to operating conditions

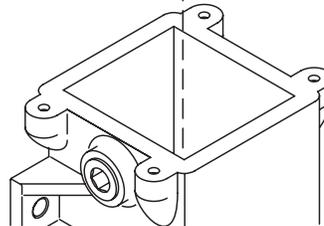
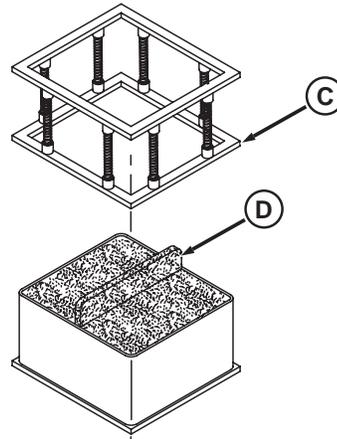
2. Open drain valve and drain fuel from bowl.
3. Remove cap screws (A) and lid (B).
4. Remove spring cassette (C).
5. Lift out filter element by the handle (D).
6. Wash filter in clean diesel fuel or mineral spirits.
7. Inspect filter for damage. If damage, replace with new filter.
8. Install filter element.
9. Install spring cassette.
10. Inspect lid gasket (E) and replace if necessary.

A—Cap Screws  
B—Cover  
C—Spring Cassette

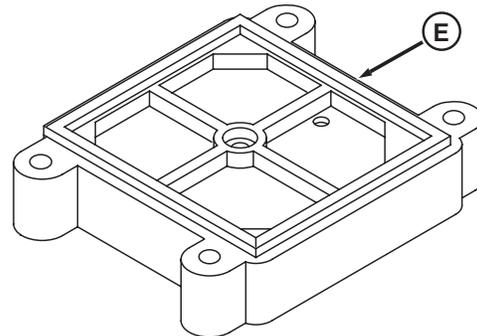
D—Handle  
E—Gasket



Remove Cap Screws



Remove Spring Cassette and Filter Element



Gasket

RXA0089770—UN—14JUL06

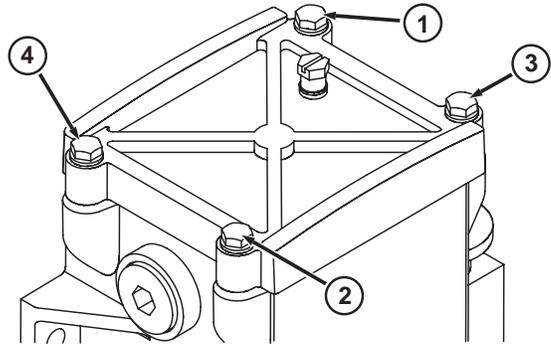
RXA0089818—UN—14JUL06

RXA0089773—UN—14JUL06

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RW29387,0000006-19-30NOV12-1/2

11. Install new filter, spring cassette, lid and four cap screws. Leave cap screws finger tight.
12. Tighten cap screws in sequence as shown.
13. Prime fuel system and check for leaks.



Install Cap Screws

RW29387,0000006-19-30NOV12-2/2

FXA0089820—UN—14JUL06

# Maintenance—Electrical System

## Introduction to Electrical System Section

In addition to the fuses and relays mounted in the fuse panel (behind the operator's seat), these tractors are also equipped with solid state load centers located in two of the electronic controllers.

These solid-state load centers replace fused relay circuits previously used. The primary function is to control the majority of high current loads such as fender flood lights and the horn. This electronic circuitry will monitor loads and voltages to provide fast reaction time and the ability to alert the operator if a circuit overloads or if voltage is out of specifications, i.e. open circuit (undercurrent) or short circuit (over-current).

If circuit is faulty and a diagnostic trouble code is generated, the circuit will stay in the OFF state and diagnostic trouble code will remain active until the circuit is shut off by the operator. If the circuit or one of its components is turned back ON and the problem is not present, the system will function normally.

As an example, if a light circuit is determined to have an over-current condition, it will shut off. If the operator turns

the light switch off and then back on to clear the fault, and the current sense reading is zero amps with the light off, the logic circuit will turn back on.

If the total current load of the solid state load center exceeds a preset level, the software will begin to shut down the system, turning off one circuit at a time. The logic circuit will wait a few seconds between circuit shutdowns to determine if the total controller current has fallen below preset level, or if additional circuits should be turned off.

Solid state circuits are rated for a fixed value. If any additional electrical devices need to be added to the tractor, we recommend a power strip or convenience outlets should be used in conjunction with an off/on switch. Splicing into a wire in the wrong location could cause the circuit to overload and shut the circuit down.

If extra implement lights and controls, such as switches are needed, contact your John Deere dealer. He can provide information on methods to tie in the light switch with one of the accessory wires located in the 7 pin terminal on the back of the tractor.

RW29387,0000469-19-22MAR06-1/1

## Replacing Fuses and Relays

Open rear window.

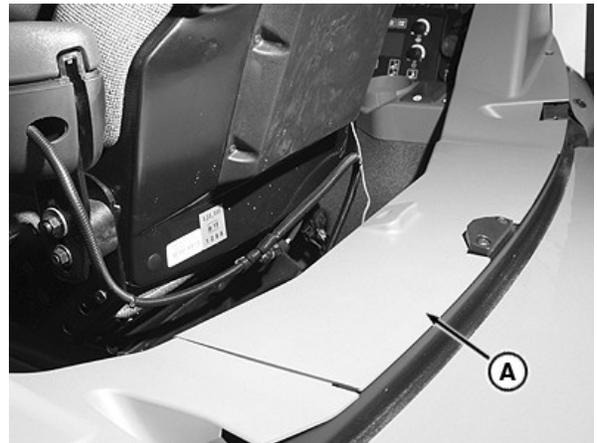
Lift up and remove rear cover (A) to access fuse and relay panel (B).

**IMPORTANT: Fuse replacement must be the same rating as the original.**

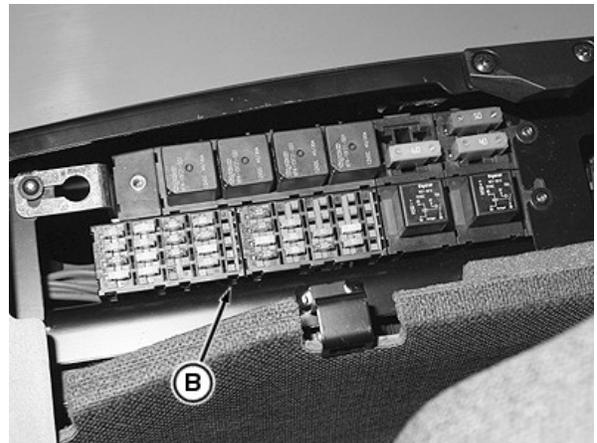
**See your John Deere Dealer for replacement fuses and relays.**

A—Rear Cover

B—Relay Panel



RXA0086519—UN—07FEB06



RXA0086521—UN—07FEB06

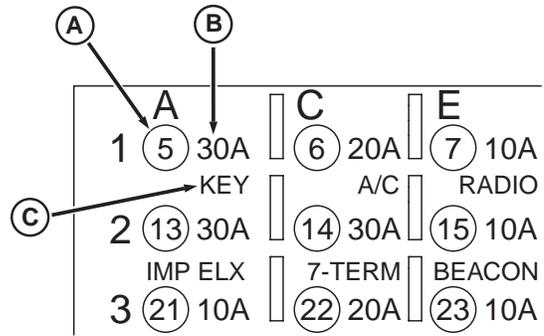
RW29387,00003D3-19-27OCT06-1/1

### Load Center Fuses

The illustration to the right explains how to read the load center diagram.

A—Fuse Location Number  
B—Fuse Size

C—Fuse Use/Description



Load Center — Legend

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RW29387,000046A-19-06NOV07-1/4

RXA0081528—UN—10AUG05



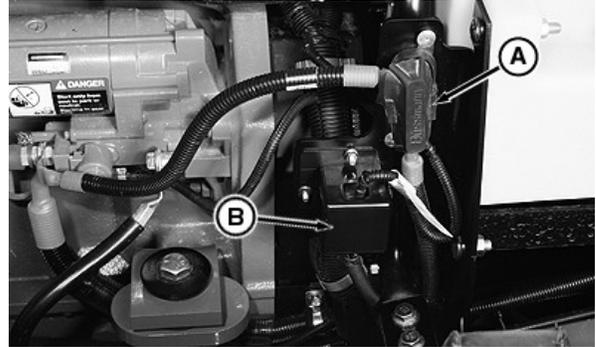
CommandCenter is a trademark of Deere & Company  
 Service ADVISOR is a trademark of Deere & Company  
 GreenStar is a trademark of Deere & Company

RW29387,000046A-19-06NOV07-3/4

9030 Series Tractors have a 250 amp master fuse (A) and K301 Starter Relay (B) which can be accessed by the starter, on left rear of engine.

A—250 Amp Master Fuse (F001)

B—K301 Starter Relay



250 Amp Master Fuse

RW29387,000046A-19-06NOV07-4/4

### Side Console Load Center

**IMPORTANT:** Fuse replacement must be the same rating as the original.

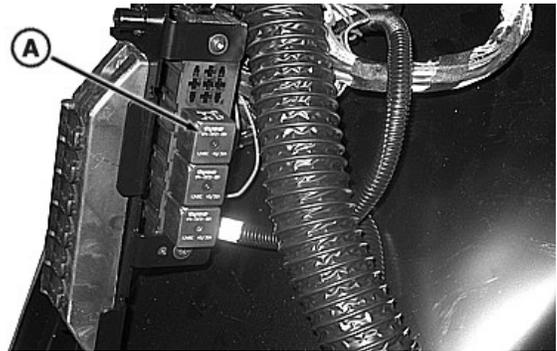
See your John Deere Dealer for replacement fuses or relays.

Do not attempt to disassemble master fuse unless instructed by your John Deere dealer. Insure both negative (—) and positive (+) battery connections are disconnected from both batteries prior to fuse inspection or replacement.

RW29387,0000062-19-31OCT07-1/2

The load center relays (A) can be accessed by removing the side console cover.

A—Side Load Center Relays



#### Side Load Center Relay

F69  
 F70  
 KT1  
 KTF  
 KA1

#### Function

JD Link (JDL) Switched  
 JD Link (JDL) Unswitched  
 Powershift Transmission (Located in Front Load Center)  
 Trailer Lights (Located in Front Load Center)  
 Circulation Blower Motor

RW29387,0000062-19-31OCT07-2/2

### Welding Near Electronic Control Units

**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.



TS953—UN—15MAY90

DX,WW,ECU02-19-14AUG09-1/1

### 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. (See your John Deere dealer.)
5. The wiring harness terminals and connectors for electronic control units are repairable.

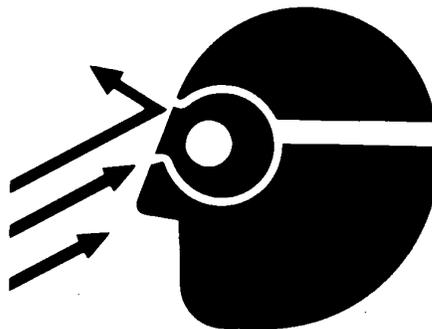
DX,WW,ECU04-19-11JUN09-1/1

### Handling Halogen Light Bulbs Safely

**⚠ CAUTION:** Halogen bulbs (A) contain gas under pressure. Handling a bulb improperly could cause it to shatter into flying fragments. To avoid possible injury:

- Turn light switch off and allow bulbs to cool before changing. Leave switch off until bulb change is done.
- Wear eye protection.
- Handle bulb by its base. Keep bulb oil free; wear gloves to avoid touching glass.
- Do not drop or scratch bulb. Keep moisture away.
- Place used bulb in the new bulb's carton and dispose of properly. Keep out of reach of children.

A—Halogen Bulb



TS266—UN—23AUG88



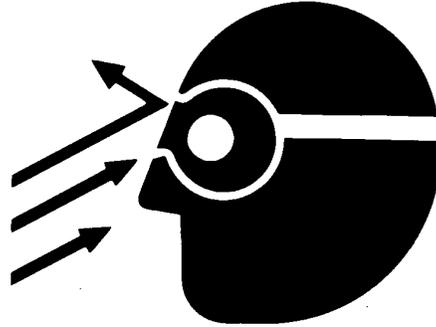
H39474—UN—30JUN00

RW29387,00003DA-19-17JAN06-1/1

### Handling HID Light Bulbs Safely

**⚠ CAUTION:** Handling a bulb improperly could cause it to shatter into flying fragments. To avoid possible injury:

- High voltage is conducted by electrical connection between worklights and ballast unit; this connection must never be broken.
- Handle bulb by its base. Keep bulb oil free; wear gloves to avoid touching glass. Use a clean cloth and alcohol to remove any fingerprints from the glass bulb before installing. Skin oil deposited on bulb will cause overheating and premature failure.
- Do not operate bulb outside of enclosure. When operating HID bulbs have high internal pressure and if cracked or broken could explode and cause injury.
- Turn light switch off and allow bulbs to cool before changing. Leave switch off until bulb change is done.
- Wear eye protection.



- Do not drop or scratch bulb. Keep moisture away.
- Place used bulb in the new bulb's carton and dispose of properly. Keep out of reach of children.

TS266—UN—23AUG88

RW29387,00003DB-19-17JAN06-1/1

## Replacing Front Grille Flood Light Bulb—High Intensity Discharge (HID) Light-If Equipped

1. Raise hood.

**IMPORTANT:** Hold light socket with other hand while removing retaining clip.

**Do not touch bulb with bare hand.**

2. Disconnect wiring harness plug (B).

3. Press in on side of bulb assembly retainer (C) to release from housing clip (D).

4. Remove light bulb/starter assembly from housing.

5. Install replacement bulb/starter assembly and retainer in reverse order of removal.

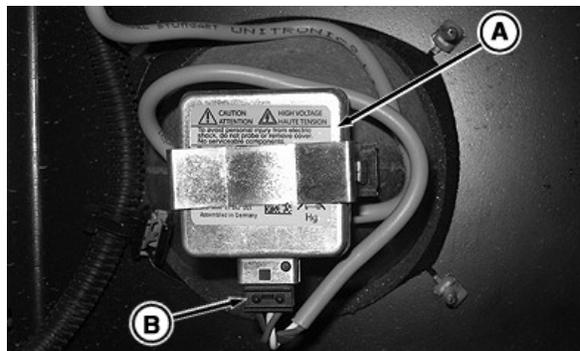
**CAUTION:** Wear gloves and safety glasses when handling the headlight bulbs. Bulb should cool down for three minutes after switching lights off.

The lights must never be operated without a bulb. Dangerous voltage spark-over may occur and cause damage/injury at the connector. See manufacturer's warnings packaged with replacement bulb.

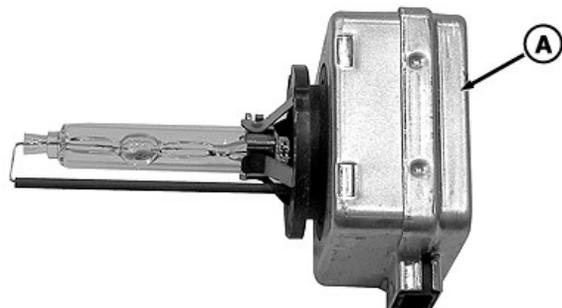
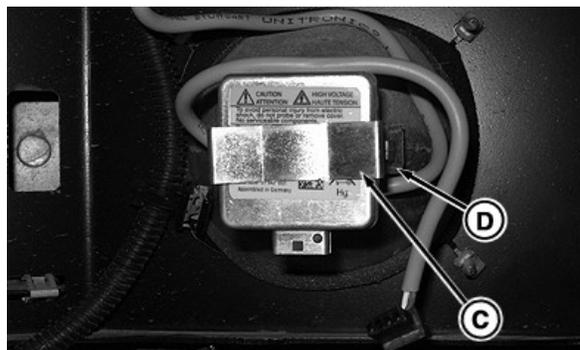
**NOTE:** Headlights will need to be adjusted when bulbs are replaced. (See *ADJUSTING HEADLIGHTS* in this Section.)

A—Light Bulb/Starter Assembly  
B—Wiring Harness Plug

C—Bulb Assembly Retainer  
D—Housing Clip



Right Side Shown



HID Light Bulb Assembly

RW29387,00003DC-19-17MAY07-1/1

RXA0094103—UN—17MAY07

RXA0094105—UN—17MAY07

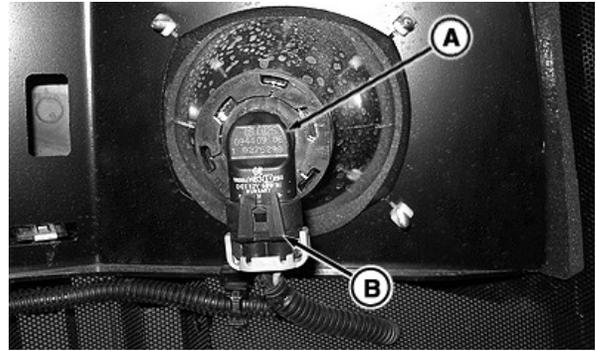
RXA0094107—UN—17MAY07

## Replacing Front Grille Flood Light Bulbs— Standard Lighting

1. Raise hood.
2. Disconnect wiring harness plug (B).
3. Rotate bulb assembly (A) counterclockwise approximately 1/4 turn and remove.
4. Install bulb assembly in reverse order of removal.

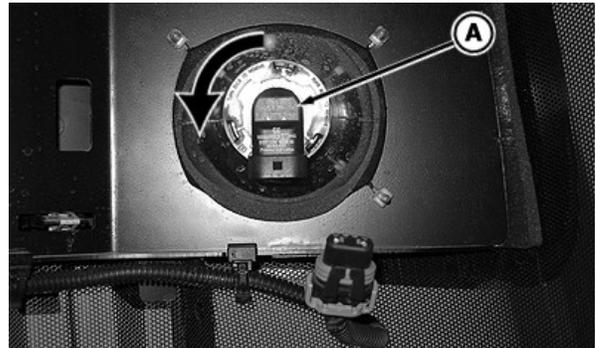
A—Light Bulb Assembly

B—Wiring Harness Plug



RXA0094098—UN—17MAY07

Right-Hand Side Shown



RXA0094098—UN—17MAY07



RXA0094100—UN—17MAY07

Bulb Assembly

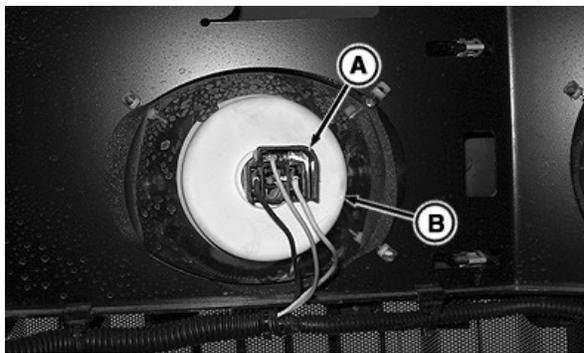
RW29387.0000013-19-17MAY07-1/1

### Replacing Road Light Bulb

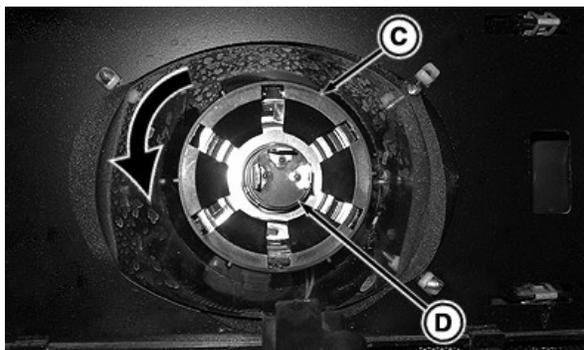
1. Raise hood.
2. Disconnect wiring harness plug (A).
3. Remove dust boot (B).
4. Turn retaining ring (C) counterclockwise approximately 1/4 turn and remove bulb assembly (D).
5. Install new bulb assembly in reverse order of removal.
6. Adjust headlights, if necessary. (See ADJUSTING FRONT GRILLE LIGHTS this Section for correct aiming procedure.)

A—Wiring Harness Plug  
B—Dust Boot

C—Retaining Ring  
D—Bulb Assembly



Right Side Shown



Retaining Ring



Bulb Assembly

RXA0094090—UN—17MAY07

RXA0094092—UN—17MAY07

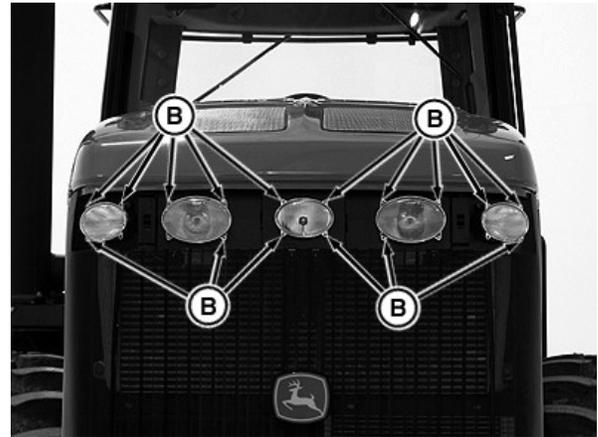
RXA0091184—UN—23OCT06

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## Adjusting Front Grille Lights



RXA0091330—UN—31OCT06



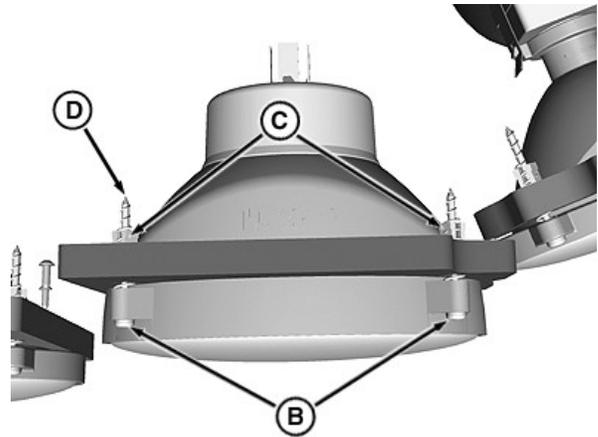
RXA0091332—UN—31OCT06

1. To remove bezel, place one hand on each side of bezel (A) and pull straight back.
2. Adjust the light beam by turning aiming screws (B) to move headlights up or down and from side-to-side.
3. To return light to factory setting, adjust cap screws so the screw tips (D) are flush with plastic retainers (C), then adjust light beams from there.

See ADJUSTING HEADLIGHTS, this Section for correct aiming procedure.

A—Bezel  
B—Aiming Cap Screws

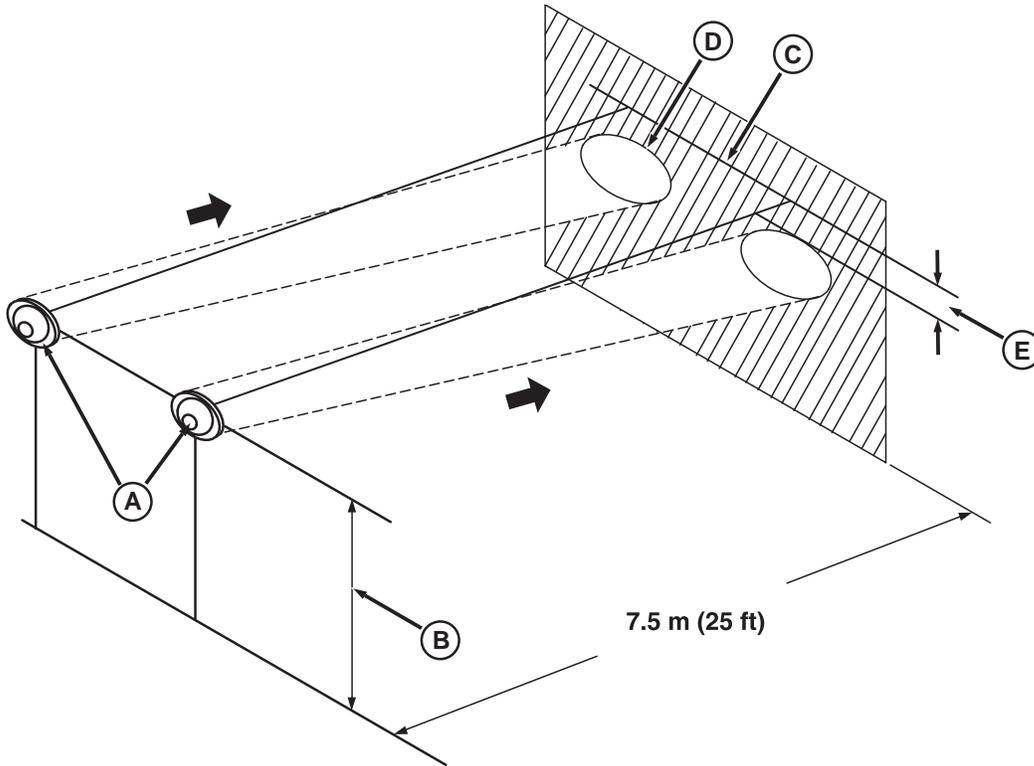
C—Plastic Retainers  
D—Screw Tips



RXA0080565—UN—02AUG05

RW29387,00004FA-19-16MAY07-1/1

## Adjusting Headlights



RXA0052853—UN—20APR01

A—Headlights

B—Distance from Center of Head Light to Ground

C—Horizontal Line on Wall  
D—Border of Bright Area

E—10% of Distance (B)

1. Park tractor on a level surface with headlights (A) 7.5 meters (25 ft) from a vertical wall.
2. Measure the distance (B) from the center of a head light to the ground.
3. Mark a horizontal line (C) on the wall, the same distance from the ground as (B).

4. Set headlights on low beam and observe bright areas on the wall.
5. Adjust headlights so the upper border of bright area (D) is **at least** one tenth of distance (B) **below** line (C).

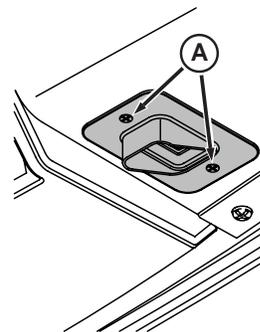
RW29387,00003DF-19-17JAN06-1/1

## Replacing Instrument and Display Illumination Light Bulb

1. Remove screws (A) and light assembly.
2. Rotate retainer (B) counterclockwise approximately 1/4 turn and remove.
3. Pull out light bulb.
4. Install new bulb in reverse order of removal.

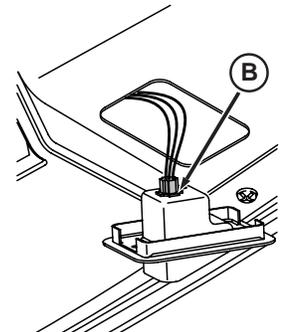
A—Screws

B—Light Bulb Retainer



Illumination Light

RXA0068512—UN—08SEP03



Rotate Retainer

RXA0068513—UN—09SEP03

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### Replacing Dome Light Bulb

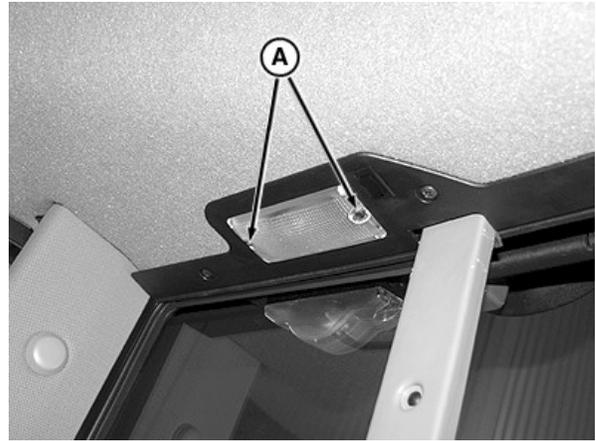
Remove light screws (A) and lens cover.

Push in and turn counterclockwise to remove light bulb (B).

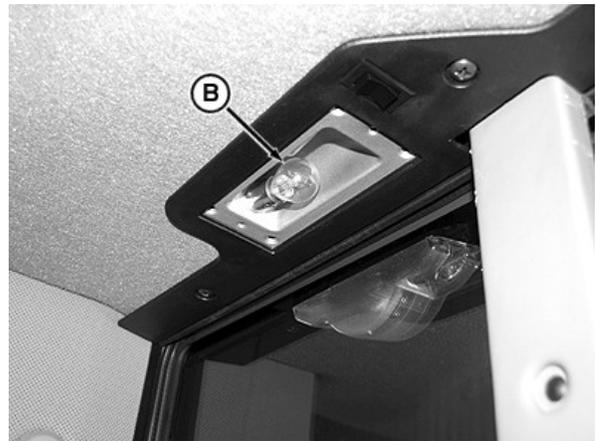
Install new bulb in reverse order of removal.

A—Screws

B—Light Bulb



RXA0083563—UN—31AUG05



RXA0083565—UN—31AUG05

RW29387.00003E0-19-04SEP08-1/1

### Replacing Front and Rear Hazard Lights

Remove screws (A) holding light assembly (B) in roof.

*NOTE: Do not drop light bezel.*

Pull light housing from roof.

Grasp light bulb retainer (C) and turn counterclockwise approximately 1/4 turn to remove from housing.

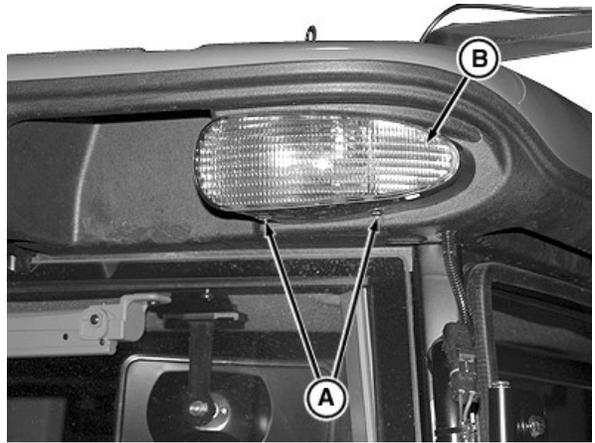
Remove light bulb (D) by pulling straight out of retainer.

Replace bulb and push bulb straight in retainer to snap in place.

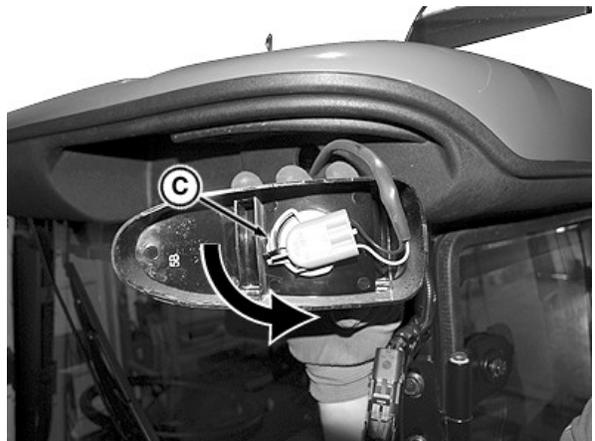
Install light assembly in reverse order of removal.

A—Screws  
B—Light Assembly

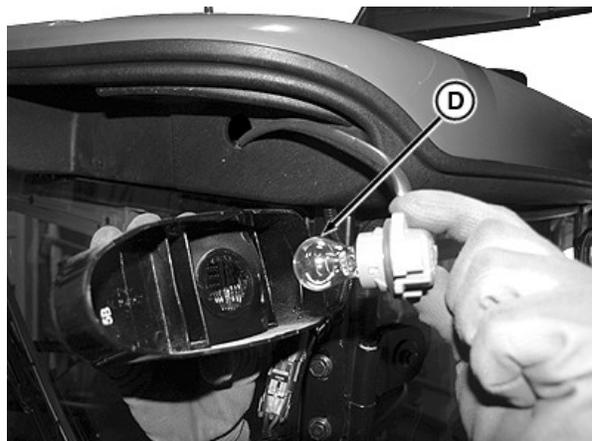
C—Light Bulb Retainer  
D—Light Bulb



RXA0083549—UN—31AUG05



RXA0083551—UN—31AUG05



RXA0083553—UN—31AUG05

RW29387,00003E2-19-04SEP08-1/1

### Replacing Roof Flood Lights—If Equipped

Remove light boot retaining tie band.

Twist and pull out bulb plug from back of light housing.  
Unplug bulb from light harness (A).

Install light assembly in reverse order of removal.

A—Light Harness



RXA0083555—UN—31AUG05

RW29387.00003E3-19-04SEP08-1/1

### Replacing Courtesy Light—If Equipped

Remove light screws (A) and light assembly.

Pull light plug (B) straight out from light assembly.

Discard light assembly (C) and replace with new assembly.

Install light assembly in reverse order of removal.

A—Screws  
B—Light Plug

C—Light Assembly



RXA0083557—UN—31AUG05



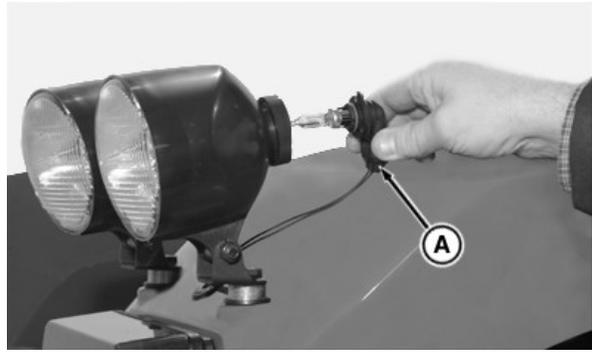
RXA0083559—UN—31AUG05

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### Replacing Fender Mounted Flood Lights

Twist and pull out bulb plug from back of light housing.  
Unplug bulb from light harness (A).

A—Light Harness



RXA0052088-UN-09MAR01

RW29387,00003E5-19-17JAN06-1/1

### Rear Fender HID Bulb Replacement—If Equipped

Remove cap screws (A) and bezel (B).

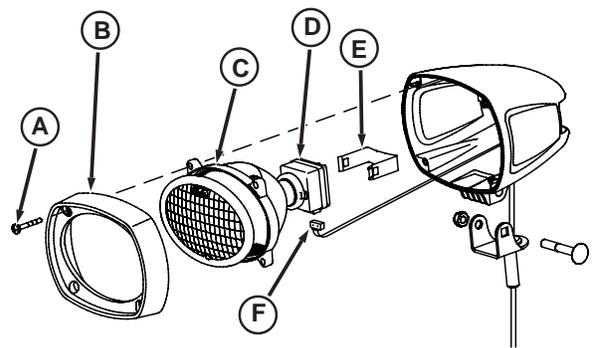
Carefully pull HID light assembly (C) out of cover far enough to unplug wiring harness (F).

*NOTE: Do not remove HID lamp (D) from HID light assembly.*

Press in on HID light assembly and remove retainer (E) with a screw driver.

Connect wiring harness plug to new HID light assembly.

Install HID light assembly in cover and install bezel and cap screws.



A—Cap Screw  
B—Bezel  
C—Reflector

D—Lamp  
E—Retainer  
F—Wiring Harness

RXA0085596-UN-13FEB06

RW29387,0000463-19-09MAR06-1/1

### Replacing Extremity Transport Warning Lights

Insert a screwdriver in slot (A) and remove lens.

Replace bulb and install lens.

A—Slot



RW26034-UN-30MAR99

RW29387,00003E6-19-17JAN06-1/1

# Troubleshooting

## Engine Troubleshooting

Symptom	Problem	Solution
<b>Engine hard to start or will not start</b>	Incorrect starting procedure	Review starting procedure
	No fuel	See Bleeding Fuel System
	Air in fuel line	Bleed fuel line
	Cold weather	Use cold weather starting aids
	Slow starter speed	See Starter Cranks Slowly
	Crankcase oil too heavy	Use correct oil viscosity
	Incorrect type of fuel	Consult fuel supplier; use correct fuel type for operating conditions
	Water, dirt, or air in fuel system	Drain, flush, fill and bleed system
	Clogged fuel filter	Replace filter
	Clogged sump screen	Drain tank, clean or replace screen
	Dirty or faulty injectors	Have John Deere Dealer check injectors
<b>Engine knocks</b>	Insufficient oil	Add oil
	Low coolant temperature	Replace thermostats
	Engine overheating	See Engine Overheats
	Valve lash	See your John Deere Dealer
<b>Engine runs irregularly or stalls frequently</b>	Low coolant temperature	Replace thermostats
	Clogged in-line filter or fuel filter	Replace filters and flush in-line filter
	Clogged sump screen	Drain tank, clean or replace screen
	Water, dirt, or air in fuel system	Drain, flush, fill and bleed system
	Restricted fuel line	Clean or replace fuel line
	Dirty or faulty injectors	Have John Deere Dealer check injectors
<b>Below normal engine temperature</b>	Defective thermostat or thermostat incorrectly installed	Remove and check thermostats
	Defective temperature gauge or sender	Check gauge, sender and connections
	Viscous fan locked up	See your John Deere Dealer
<b>Lack of power</b>	Engine overloaded	Reduce load or shift to lower gear
	Low fast idle speed	See your John Deere Dealer

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RW29387,00003E7-19-14NOV06-1/3

## Troubleshooting

Symptom	Problem	Solution
	Intake air restriction	Service air cleaner
	Clogged in-line filter or fuel filter	Replace filter(s)
	Clogged sump screen	Drain tank, clean or replace screen
	Incorrect type of fuel	Use correct fuel
	Overheated engine	See Engine Overheats
	Below normal engine temperature	Replace thermostats
	Incorrect valve clearance	See your John Deere Dealer
	Dirty or faulty injectors	Have John Deere Dealer check injectors
	Turbocharger not functioning	See your John Deere Dealer
	Leaking exhaust manifold gasket	See your John Deere Dealer
	Implement incorrectly adjusted	See implement operator's manual
	Restricted fuel line	Clean or replace fuel line
	Incorrect ballast	Adjust ballast to load
<b>Low oil pressure</b>	Low oil level	Add oil
	Incorrect type of oil	Drain, fill crankcase with correct quality and viscosity of oil
<b>High oil consumption</b>	Crankcase oil too light	Use correct viscosity oil
	Incorrect oil refill	See CHECKING ENGINE OIL LEVEL in the Lubrication Section
	Oil leaks	Check for leaks in lines, around gaskets and drain plug
	Defective turbocharger	See your John Deere Dealer
<b>Engine emits white smoke</b>	Incorrect type of fuel	Use correct fuel
	Clogged or dirty air cleaner	Service air cleaner
	Engine overloaded	Reduce load or shift to a low gear
	Incorrect starting procedure	See STARTING THE ENGINE, in Operating The Engine Section
	Injection nozzles dirty	See your John Deere Dealer
	Engine out of time	See your John Deere Dealer
	Turbocharger not functioning	See your John Deere Dealer

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RW29387,00003E7-19-14NOV06-2/3

## Troubleshooting

Symptom	Problem	Solution
<b>Engine overheats</b>	Dirty radiator core, oil cooler, or grille screens	Remove all trash
	Engine overloaded	Shift to lower gear or reduce load
	Low engine oil level	Check oil level. Add oil as required
	Low coolant level	Fill radiator to correct level, check radiator and hoses for loose connections or leaks
	Faulty radiator cap	See your John Deere Dealer
	Loose or defective fan belt	Check belt tensioner. Replace as needed
	Cooling system needs flushing	Flush cooling system
	Defective thermostat	Replace thermostats
	Defective temperature gauge or sender	See your John Deere Dealer
	<b>High fuel consumption</b>	Incorrect type of fuel
Clogged or dirty air cleaner		Service air cleaner
Engine overloaded		Reduce load or shift to lower gear
Incorrect valve clearance		See your John Deere Dealer
Injection nozzles dirty		See your John Deere Dealer
Implement incorrectly adjusted		See implement operator's manual
Low engine temperature		Replace thermostats
Excessive ballast		Adjust ballast to load
Defective turbocharger		See your John Deere Dealer
<b>Engine power reduced (9430, 9530 and 9630)</b>	Operating with heavy ballast and full power	See DRIVE TRAIN PROTECTION—9430, 9530 and 9630 in Operating the Tractor Section
	Using PTO with tractor stationary	See DRIVE TRAIN PROTECTION—9430, 9530 and 9630 in Operating the Tractor Section

RW29387,00003E7-19-14NOV06-3/3

## 18-Speed Powershift Transmission Troubleshooting

Symptom	Problem	Solution
<b>Transmission slippage</b>	Low oil supply	Fill system with correct oil
	Riding clutch pedal	Remove foot from clutch pedal
	Excessive load on tractor	Lower gear and/or reduce load
	Transmission filter indicator light on	Change filter element or have your John Deere Dealer repair
<b>Tractor will not move in any gear</b>	Low transmission oil level	Fill transmission with correct oil
	Extremely cold transmission oil	Warm transmission oil
	Check for active diagnostic code	See your John Deere Dealer
	Transmission malfunction	Remove and inspect transmission suction screen for metal particles or See your John Deere Dealer
	Transmission drive line broken	Repair or have your John Deere Dealer repair
<b>Tractor lacks power or moves slow</b>	Transmission slipping	Have your John Deere Dealer repair
	Transmission in too high a gear	Downshift to lower gear
	Excessive load	Transmission in wrong gear for operating conditions
<b>Transmission shifts too slow</b>	Low transmission oil level	Fill transmission with correct oil
	Sticking clutch solenoid valve	Have your John Deere Dealer repair
	Pump malfunction	Have your John Deere Dealer repair
	Transmission filter indicator light on	Change filter element(s) Have your John Deere Dealer repair
<b>Transmission shifts too fast</b>	High transmission system pressure	Have your John Deere Dealer repair
	Transmission requires calibration	See Powershift Transmission Calibration in General Maintenance and Inspection Section
<b>Transmission shift quality changed</b>	Transmission requires calibration	See Powershift Transmission Calibration in General Maintenance and Inspection Section
<b>Transmission system overheats</b>	High transmission oil level	Check transmission-axle oil level. See Checking Transmission-Axle Oil Level in Lubrication and Maintenance Section-250 Hour Service
	Excessive load	Lighten load or use lower gear

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RW29387,00003E9-19-26MAR09-1/2

## Troubleshooting

Symptom	Problem	Solution
	Pump malfunction	Have your John Deere Dealer repair
<b>Transmission alarm sounds and red stop engine indicator light on</b>	Transmission-axle filter(s) restricted	Stop engine. Change filter element(s)
<b>Transmission alarm sounds and red stop engine indicator light on</b>	Transmission-axle oil level low	Stop engine. See Checking Transmission-Axle Oil Level in Lubrication and Maintenance Section-250 Hour Service
<b>Excessive transmission noise (Under load or no load)</b>	Low transmission oil level	Fill transmission with correct oil
	Parts worn or damaged in transmission	Have your John Deere Dealer repair
<b>Excessive tractor vibration</b>	Transmission or transmission pump malfunction	Have your John Deere Dealer repair
	Parts worn or damaged in transmission	Have your John Deere Dealer repair
<b>Excessive noise</b>	Transmission pump malfunction	Have your John Deere Dealer repair
	Excessive backlash in gear train	Have your John Deere Dealer repair

RW29387,00003E9-19-26MAR09-2/2

### Hydraulic System Troubleshooting

Symptom	Problem	Solution
<b>Entire hydraulic system fails to function</b>	Low oil supply	Fill system with correct oil
	Clogged hydraulic filters	Replace hydraulic filter
	Oil cooler air passages clogged	Clean oil cooler
	High-pressure internal leak	See your John Deere Dealer
<b>Hydraulic oil overheats</b>	Low oil supply	Fill system with correct oil
	Oil cooler air passages clogged	Clean oil cooler
	Clogged transmission oil filter	Replace transmission filter
	Internal hydraulic leak	See your John Deere Dealer
	Implement hydraulic load not matched to tractor	See your John Deere Dealer

RW29387,00003EA-19-17JAN06-1/1

## **Brakes Troubleshooting**

<b>Symptom</b>	<b>Problem</b>	<b>Solution</b>
<b>No solid pedal feel (Engine Off)</b>	Air in system	See your John Deere Dealer
<b>Pedal settles (Engine Off)</b>	Brake piston seals leaking	See your John Deere Dealer
	Brake bleeder not correctly closed	See your John Deere Dealer
	Leakage in pump control system at brake valve	See your John Deere Dealer
<b>Excessive pedal travel or kickback (With Engine On)</b>	Leakage in pump control system	See your John Deere Dealer
	Air in system	See your John Deere Dealer
	Brake piston seals leaking	See your John Deere Dealer
	Brake bleeder not correctly closed	See your John Deere Dealer

RW29387,00003EB-19-17JAN06-1/1

## Hitch Troubleshooting

Symptom	Problem	Solution
<b>Insufficient transport clearance</b>	Center link too long	Adjust center link
	Lift links too long	Adjust lift links
	Implement not level	Level implement
	Implement not correctly adjusted	See implement operator's manual
	Upper height limit not correctly set	Adjust upper height limit
<b>Hitch fails to follow lever</b>	Malfunction in lever position sensor circuit or hitch position sensor	See your John Deere Dealer
<b>Poor position control</b>	Load/depth mix control on wrong position	Turn load/depth mix control to the left
	System is reset	Enable system
	Calibration fuse inadvertently moved	Be sure key switch is OFF and move fuse to spare position
	Malfunction in lever position sensor circuit or hitch position sensor	See your John Deere Dealer
<b>Hitch drops slowly</b>	Hitch rate-of-drop control not correctly set	Adjust rate-of-drop knob
<b>Hitch fails to lift or lifts slowly</b>	Excessive load on hitch	Reduce load
	Center link in wrong position	Adjust upper height limit
<b>Implement will not operate at desired depth</b>	Lift links too short	Adjust lift links
	Lack of penetration	See implement operator's manual
	Draft sensor failed	See your John Deere Dealer
<b>Insufficient or no hitch response to draft load</b>	Load/depth mix control in wrong position	Turn load/depth mix control to the right
	System is reset	Enable system
	Rate-of-drop too slow	Adjust rate-of-drop knob
<b>Hitch too responsive</b>	Load/depth mix control not correctly set	Turn load/depth mix control to the left
<b>Hitch settles too fast after tractor is parked and engine is shut off</b>	Internal circuit leakage	See your John Deere Dealer
<b>Hitch will not move (controls not working, including rear raise/lower switch)</b>	Fuse(s) blown	Replace fuses
	Engine not running	Start engine

Continued on next page

RW29387.00003EC-19-17JAN06-1/2

## Troubleshooting

Symptom	Problem	Solution
<b>Rear raise/lower switch will not move hitch</b>	Failure of raise/lower switch, connector, or wiring harness	See your John Deere Dealer
	Lever in transport	Move lever out of transport

RW29387,00003EC-19-17JAN06-2/2

### Selective Control Valve Troubleshooting

Symptom	Problem	Solution
<b>Remote cylinder will not lift load</b>	Flow check	Cycle SCV levers
	Excessive load	Reduce load
	Hoses not completely installed	Attach hoses correctly
	Incorrect remote cylinder size	Use correct size cylinder
	SCV transport lock engaged	Release SCV transport lock
<b>Remote cylinder rate of travel too fast or too slow</b>	Incorrect flow rate	Adjust flow rate
<b>Direction of remote cylinder travel is reversed</b>	Incorrect hose connections	Reverse hose connections
<b>Hoses will not couple</b>	Incorrect hose male connectors	Replace connectors with ISO Standard connectors
<b>Detent does not hold or releases too soon</b>	Detent time set incorrectly	Set time correctly
	SCV lever is not being released to neutral	Release SCV lever from detent to neutral in less than 0.8 seconds
<b>SCV lever does not release</b>	SCV float is being "commanded"	Do not push lever down in forward position
	Lever mechanism failed	See your John Deere Dealer
<b>Implement does not operate or does not operate correctly</b>	Incorrect hose connections	See hose connection examples in Remote Hydraulic Connections Section
		See your John Deere Dealer

RW29387,00003ED-19-17JAN06-1/1

## Electrical System Troubleshooting

Symptom	Problem	Solution
<b>Voltage indicator flashing when there is low battery voltage (key ON and engine stopped)</b>	Defective battery	Check electrolyte level and specific gravity
	Low charging voltage	Have your John Deere Dealer check charging circuit
	High resistance in charging circuit	Have your John Deere Dealer check charging circuit
	Indicator malfunction	Have your John Deere Dealer check indicator
<b>Voltage and SERVICE ALERT indicators flashing indicating low charging voltage (engine running)</b>	Low engine speed	Increase speed
	Alternator belt slipping	Check belt tension
	Defective battery	Check electrolyte level and specific gravity
	Defective alternator	Have your John Deere Dealer check alternator
	Excessive electrical load	Decrease load
<b>Voltage and SERVICE ALERT indicators flashing indicating excessive charging voltage</b>	Faulty connection to alternator	Check wiring connections
	Defective regulator	Have your John Deere Dealer check alternator
	Excessive electrical load	Decrease load
<b>Voltage indicator flashing indicating excessive charging voltage</b>	Faulty connection to alternator	Check wiring connections
	Defective regulator	Have your John Deere Dealer check alternator
<b>Batteries will not charge</b>	Loose or corroded connections	Clean and tighten connections
	Sulfated or worn-out batteries	Check electrolyte level and specific gravity
	Loose or defective alternator belt	Adjust belt tension or replace belts
<b>Starter inoperative</b>	Transmission in gear	Place transmission in PARK
	Faulty or maladjusted neutral start switch or starter solenoid malfunction	See your John Deere Dealer
	Loose or corroded connections	Clean and tighten loose connections
	Low battery output	See your John Deere Dealer

Continued on next page

RW29387,00003EE-19-17JAN06-1/2

## Troubleshooting

Symptom	Problem	Solution
<b>Starter cranks slowly</b>	Blown fuse	Replace fuse
	Low battery output	Check electrolyte level and specific gravity
	Crankcase oil too heavy	Use correct viscosity oil
<b>Light system does not function; rest of electrical system functions</b>	Loose or corroded connections	Clean and tighten loose connections
	Blown fuse	Replace fuse
	Faulty battery connection	Clean and tighten connections
<b>Entire electrical system does not function</b>	Sulfated or worn out batteries	Check electrolyte level and specific gravity
	Blown fuse	Replace fuse
	Blown or loose fusible link	Replace fusible link near starter
	Blower does not work	Check all blower fuses
<b>Blower malfunctioning</b>	Blower does not work	Check all blower fuses
<b>Blower operates only in PURGE</b>	Blown blower resistor	See you John Deere Dealer

RW29387,00003EE-19-17JAN06-2/2

## Operator Enclosure Troubleshooting

Symptom	Problem	Solution
<b>Blower not keeping dust out of operator enclosure</b>	Defective seal around filter	Check seal condition
		Check filter for correct installation
	Defective filter	Replace filter
	Excessive air leak	Seal air leaks
<b>Blower air flow too low</b>	Blower air flow too low	See Blower Air Flow Too Low
	Clogged filter or air intake screen	Clean
	Heater core or evaporator core clogged	Clean
<b>Heater will not shut off</b>	Heater hoses connected incorrectly	See your John Deere Dealer
<b>Air conditioner not cooling</b>	Low voltage	Check charging circuit. See CHECKING AIR CONDITIONING SYSTEM in the General Maintenance and Inspection Section
	Low refrigerant	Check sight glass. (If Equipped) See CHECKING AIR CONDITIONING SYSTEM in the General Maintenance and Inspection Section
	Belt slipping	Check belt tension
	Heater switched on	Switch heater off
	Compressor stuck	Rock compressor pulley back and forth
	<b>Intermittent cooling</b>	Air restriction
<b>Seat suspension not working</b>	Blown fuse	Replace fuse
<b>Radio does not function</b>	Blown fuse	Replace fuse
<b>Intermittent or poor radio reception</b>	Check for broken braided wire inside antenna spring	Replace radio spring antenna

RW29387.00003EF-19-17MAY07-1/1

# Diagnostic Trouble Codes

## Introduction To Diagnostic Trouble Codes

When either a Service Alert or Information indicator is displayed, the tractor should be placed in park and engine shut off. Before contacting your John Deere dealer, restart the engine to verify the active Diagnostic Trouble Code will reappear. Sometimes, the code can be corrected by resetting the communication messages when tractor is restarted.

Some Service Alerts and Information indicators can be

acknowledged and display cleared by pressing the SELECT switch on the CommandCenter. The display will return to a normal mode. This will allow tractor function to continue however Diagnostic Trouble Code may reappear at a later date if condition still exists.

If a code is not in this section, contact your John Deere dealer.

RW29387,0000491-19-22MAR06-1/1

Diagnostic Trouble Codes

### Armrest Control Unit (ACU) Diagnostic Trouble Codes

Armrest Control Unit (ACU) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
ACU 000158.04	Rear PTO system	ACU Switched Supply Voltage Low. Visually inspect around the batteries and alternator for any visual signs of damage or accumulated debris. Have your John Deere dealer repair as soon as possible.
ACU 000237.02 ACU 000237.14 ACU 000237.31	Identification System	VIN Security Problem. Have your John Deere dealer repair as soon as possible.
ACU 000628.02 ACU 000628.12 ACU 000629.11 ACU 000630.13	Operator Controls	Control Unit Fault. Restart tractor. If code still exists, have your John Deere dealer repair as soon as possible.
ACU 000974.02 ACU 000974.03 ACU 000974.04	Operator Controls	Hand Throttle Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 001079.03 ACU 001079.04	Operator Controls	ACU Sensor Supply 1 Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 001080.03 ACU 001080.04	Operator Controls	ACU Sensor Supply 2 Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 002000.09	Communication System	ECU Message Missing. Check fuse F24.
ACU 002003.09	Communication System	PTP Message Missing. Have your John Deere dealer repair as soon as possible.
ACU 002049.09	Communication System	CAB Message Missing. Check fuse F22.
ACU 523775.02	Single Lever Control	Single Lever Control (if equipped) Hand Presence Switch Problem. Move hand to show operator is in place. If code still exists, have your John Deere dealer repair as soon as possible.
ACU 523776.02 ACU 523801.02 ACU 523804.02 ACU 523804.03 ACU 523804.04 ACU 523805.02 ACU 523805.03 ACU 523805.04	Single Lever Control	Single Lever Control Problem. To keep working, use SCV controls 3 and 4. Go to CommandARM and disable single lever control. Have your John Deere dealer repair as soon as possible.
ACU 523923.02 ACU 523923.03 ACU 523923.04	Operator Controls	SCV I Control Lever Switch/Sensor Problem. Have your John Deere dealer repair as soon as possible.
ACU 523960.31	Operator Not In Seat	Operator Not Seated During Shift Reverse Command. Change position in seat or depress clutch or brake pedal to indicate operator is present.
ACU 524018.31	Right-Hand Reverser	RHR Neutral/Not Neutral Transition Fault. Have your John Deere dealer repair as soon as possible.
ACU 524019.31	Lever not in park	RHR Neutral/Not Neutral Transition Fault. Have your John Deere dealer repair as soon as possible.
ACU 524020.31	Lever not in park	Transmission In Gear at Power Up. Move shift lever to PARK and restart vehicle.
ACU 524021.31	Operator Controls	Multiple Reverser Switches Conflict. Have your John Deere dealer repair as soon as possible.
ACU 524101.02	Operator Controls	Front Hitch Valve Control Lever Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
ACU 524101.03 ACU 524101.04	Operator Controls	Front Hitch Valve Control Lever Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 524102.02	Operator Controls	SCV V Control Lever Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
ACU 524102.03 ACU 524102.04	Operator Controls	SCV V Control Lever Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 524103.02	Operator Controls	SCV IV Control Lever Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
ACU 524103.03 ACU 524103.04	Operator Controls	SCV IV Control Lever Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 524104.02	Operator Controls	SCV III Control Lever Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
ACU 524104.03 ACU 524104.04	Operator Controls	SCV III Control Lever Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.

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RW29387.0000482-19-26MAR07-1/2

## Diagnostic Trouble Codes

### Armrest Control Unit (ACU) Diagnostic Trouble Codes

Diagnostic Trouble Code	Display	Solution
ACU 524105.02	Operator Controls	SCV II Control Lever Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
ACU 524105.03 ACU 524105.04	Operator Controls	SCV II Control Lever Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 524212.02	Operator Controls	Rear Hitch Control Lever Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
ACU 524212.03 ACU 524212.04	Operator Controls	Rear Hitch Control Lever Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
ACU 524224.02	Operator Controls	Rear PTO Switch Circuit Conflict. Cycle PTO switch (s) OFF and then ON. If code still exists, have your John Deere dealer repair as soon as possible.
ACU 524254.31	Operator Controls	Transmission Enable Relay Circuit Fault. Have your John Deere dealer repair as soon as possible.

RW29387,0000482-19-26MAR07-2/2

### Active Seat Control Unit (ASU) Diagnostic Trouble Codes

#### Active Seat Control Unit (ASU) Diagnostic Trouble Codes

Diagnostic Trouble Code	Display	Solution
ASU 524002.31	Active Seat System	Active Seat Pressure Control Solenoid Fault. Have your John Deere dealer repair as soon as possible.
ASU 524008.13	Active Seat System	ASU Not Calibrated. Have your John Deere dealer repair as soon as possible.

RW29387,0000483-19-26MAR07-1/1

### Automatic Temperature Control Unit (ATC) Diagnostic Trouble Codes

**IMPORTANT:** Check the cleanliness of the condenser at the front of the tractor and make sure the cab recirculation air filter is not plugged for all ATC diagnostic trouble codes. If the codes return, contact your John Deere dealer as soon as possible.

OU1092A,00001A4-19-21NOV06-1/1

## Diagnostic Trouble Codes

### Brake Control Unit (BRC) Diagnostic Trouble Codes

Brake Control Unit (BRC) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
BRC 000158.04 BRC 000168.04	Brake System	BRC Supply Voltage Problem. Visually inspect around the batteries and alternator for any visual signs of damage or accumulated debris. Check fuse F30. If code returns, have your John Deere dealer repair as soon as possible.
BRC 000628.02	Brake Control Circuit Error	See your John Deere dealer as this code could affect braking performance.
BRC 000629.12	Brake System	BRC Control Unit Fault. Have your John Deere dealer repair
BRC 000630.13	Brake System	BRC Calibration Fault/Not Calibrated. Have your John Deere dealer repair as soon as possible.
BRC 001079.03 BRC 001079.04	Brake Control Circuit Error	See your John Deere dealer as this code could affect braking performance.
BRC 002000.09	Communication System	ECU Message Missing. Have your John Deere dealer repair as soon as possible.
BRC 002049.09	Communication System	CAB Message Missing. Have your John Deere dealer repair as soon as possible.
BRC 002071.09	Communication System	CCU Message Missing. See your John Deere dealer as this code could affect braking performance.
BRC 522279.05 BRC 522279.06	Secondary Brake System	Secondary Brake Control Valve Current Problem. Have your John Deere dealer repair as soon as possible.
BRC 522279.13	Secondary Brake System	Secondary Brake Control Valve Not Calibrated. Have your John Deere dealer repair as soon as possible.
BRC 522280.00 BRC 522280.01 BRC 522280.03 BRC 522280.04	Secondary Brake System	Secondary Brake Pressure Sensor Voltage Problem. Have your John Deere dealer repair as soon as possible.
BRC 522280.13	Secondary Brake System	Secondary Brake Pressure Not Calibrated. Have your John Deere dealer repair as soon as possible.
BRC 522281.05 BRC 522281.06 BRC 522281.16 BRC 522281.18	Brake System	Rear Cooling Valve Problem. Have your John Deere dealer repair as soon as possible.
BRC 523652.02	Hydraulic System	Control Unit Connected to Wrong Harness. Have your John Deere dealer repair as soon as possible.
BRC 523778.05 BRC 523778.06 BRC 523778.16 BRC 523778.18	Brake System	Front Cooling Valve Problem. Have your John Deere dealer repair as soon as possible.
BRC 523787.04	Brake System	Brake Cooling Control Valve Sensor Voltage Low. Have your John Deere dealer repair as soon as possible.
BRC 523839.19	Brake System	Hand Brake Switch Fault. Have your John Deere dealer repair as soon as possible.
BRC 523841.19 BRC 523841.31	Secondary Brake System	Secondary Hand Brake Position Message Problem. Have your John Deere dealer repair as soon as possible.
BRC 523910.02	Brake System	BRC Control Unit Fault. Have your John Deere dealer repair as soon as possible.
BRC 524016.04	Brake System	Brake Solenoid Supply Voltage Problem. Have your John Deere dealer repair as soon as possible
BRC 524088.31	Brake System	Have your John Deere dealer repair as soon as possible.
BRC 524094.02 BRC 524095.02	Brake System	Brake Cooling Control Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
BRC 524157.19	Front Brake System	Right Brake Pedal Switch Fault Message Received. Have your John Deere dealer repair as soon as possible.

RW29387,0000484-19-26MAR07-1/1

Diagnostic Trouble Codes

### Cab Control Unit (CAB) Diagnostic Trouble Codes

Cab Control Unit (CAB) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
CAB 000091.02 CAB 000091.03 CAB 000091.04	Operator Controls	Foot Throttle Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
CAB 000158.03 CAB 000158.04	Electrical System Voltage	CAB Switched Supply Voltage Problem. Check alternator cable, and battery cables. If code still exists, have your John Deere dealer repair as soon as possible.
CAB 000628.02	Programming	CAB EOL Data Fault. Have your John Deere dealer repair as soon as possible.
CAB 000628.12	Programming	CAB Programming. Have your John Deere dealer repair as soon as possible.
CAB 000629.12	Electrical System	CAB Control Unit Fault. Have your John Deere dealer repair as soon as possible.
CAB 001079.02 CAB 001079.03 CAB 001079.04	Transmission System	CAB Sensor Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
CAB 001504.30	Operator Controls	Seat Switch Circuit Fault. Have your John Deere dealer repair as soon as possible.
CAB 002876.02	Operator Controls	Turn Signal Switch Conflict. Have your John Deere dealer repair as soon as possible.
CAB 523839.02 CAB 523839.13	Operator Controls	Hand Brake Switch Problem (European Only). Have your John Deere dealer repair as soon as possible.
CAB 523841.03 CAB 523841.04	Operator Controls	Hand Brake Sensor Voltage Problem (European Only). Have your John Deere dealer repair as soon as possible.
CAB 523908.02	Operator Controls	PTO ON and OFF Switch Inputs are Receiving High or Low Voltage Level. Have your John Deere dealer repair as soon as possible.
CAB 523922.31	Hand Brake On	Hand Brake on While Moving (European Only).
CAB 524014.31 CAB 524017.13 CAB 524022.31 CAB 524023.31 CAB 524024.31 CAB 524025.31 CAB 524026.31 CAB 524027.31 CAB 524030.31 CAB 524031.31 CAB 524032.31 CAB 524034.31 CAB 524036.31	Reverse Circuit Error	Shift reverser lever to PARK to recover. If problem still exists, contact your John Deere dealer
CAB 524016.04	Operator Controls	CAB Switched Supply Voltage Low. Have your John Deere dealer repair as soon as possible.
CAB 524017.13	Operator Controls	Reverse Lever Type Not Selected. Have your John Deere dealer repair as soon as possible.
CAB 524017.31	Operator Controls	Reverse Power Circuit Fault. Have your John Deere dealer repair as soon as possible.
CAB 524018.31 CAB 524019.31	Operator Controls	Reverse Transition Fault. Lever is held in an invalid position. Move lever to PARK. Have your John Deere dealer repair as soon as possible.
CAB 524020.31	Lever not in park	Reverse in Gear at Power Up. Move reverse lever to NEUTRAL or PARK before starting.
CAB 524021.31	Operator Controls	Reverse Multiple Switch Circuit Fault. Have your John Deere dealer repair as soon as possible.
CAB 524166.02	Operator Controls	Brake Pedal Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
CAB 524166.03 CAB 524166.04	Operator Controls	Brake Pedal Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
CAB 524166.13	Operator Controls	Brake Pedal Sensor Not Calibrated. Have your John Deere dealer repair as soon as possible.
CAB 524166.30	Operator Controls	Brake Pedal Sensor Adjustment Fault. Have your John Deere dealer repair as soon as possible.
CAB 524169.02	Operator Controls	Brake Pedal Switch/Sensor Circuit Conflict. Have your John Deere dealer repair as soon as possible.
CAB 524169.03 CAB 524169.04	Operator Controls	Brake Pedal Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
CAB 524169.13	Operator Controls	Brake Pedal Sensor Not Calibrated. Have your John Deere dealer repair as soon as possible.

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RW29387,0000485-19-17OCT07-1/2

*Diagnostic Trouble Codes*

<b>Cab Control Unit (CAB) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
CAB 524169.30	Operator Controls	Brake Pedal Sensor Adjustment Fault. Have your John Deere dealer repair as soon as possible.
CAB 524173.02 CAB 524173.03 CAB 524173.04	Operator Controls	Clutch Pedal Sensor Problem. Have your John Deere dealer repair as soon as possible.

RW29387.0000485-19-17OCT07-2/2

Diagnostic Trouble Codes

**Central Control Unit (CCU) Diagnostic Trouble Codes**

Central Control Unit (CCU) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
CCU 000090.03 CCU 000090.04	PTO System	PTO Oil Temperature Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
CCU 000096.03	Fuel Level System	Fuel Level Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
CCU 000096.17	Fuel Level Low	Fuel Level Low. Check fuel level.
CCU 000107.00	Engine Air Filter Restricted	Engine Air Filter Restricted/Engine Limited to Low Idle. Clean or Replace Engine Air Filter.
CCU 000107.03 CCU 000107.04	Engine Air Filter System	Engine Air Filter Restriction Sensor Problem. Have your John Deere dealer repair as soon as possible.
CCU 000107.15	Engine Air Filter Restricted	Engine Air Filter Becoming Restricted. Clean or replace engine air filter.
CCU 000107.16	Engine Air Filter Restricted	Engine Air Filter Restricted/Engine Derated. Clean or replace engine air filter.
CCU 000126.16	Transmission Oil Filter Restricted	Transmission Oil Filter Restricted/Park Not Engaged (MST Only). Replace transmission oil filter.
CCU 000127.01	Transmission Oil Pressure Low	Transmission Enable Pressure Very Low. Check transmission oil level. Have your John Deere dealer repair as soon as possible.
CCU 000127.03 CCU 000127.04	Transmission System	Transmission Pump Pressure Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
CCU 00158.01	Electrical System	Restart tractor engine. Have your John Deere dealer repair as soon as possible.
CCU 00168.03	Electrical System	Amber Warning Lamp. Restart tractor engine. Have your John Deere dealer repair as soon as possible.
CCU 00168.04	Electrical System	Restart tractor engine. Have your John Deere dealer repair as soon as possible.
CCU 000237.02 CCU 000237.14 CCU 000237.31	Identification System	VIN Security Problem. Have your John Deere dealer repair as soon as possible.
CCU 000628.02	Chassis Control System	CCU EOL Data Fault. Have your John Deere dealer repair as soon as possible.
CCU 000628.12	Electrical System	Have your John Deere dealer repair as soon as possible.
CCU 000630.14	Rear PTO System	Rear PTO Configuration Invalid. Have your John Deere dealer repair as soon as possible (9430T).
CCU 00976.14	Rear PTO System	Rear PTO Configuration Invalid. Have your John Deere dealer repair as soon as possible (9530T and 9630T).
CCU 001079.03 CCU 001079.04	Electrical system	CCU Sensor Supply Voltage Problem (PTP Only). Have your John Deere dealer repair as soon as possible.
CCU 001638.00	Hydraulic Oil Temperature Very High	Hydraulic Oil Temperature Very Hot. Check hydraulic oil level. Inspect transmission/hydraulic cooler and front grill for debris. If code returns, have your John Deere dealer repair immediately.
CCU 001638.03 CCU 001638.04	Hydraulic System	Hydraulic Oil Temperature Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
CCU 001638.16	Hydraulic Oil Temperature High	Hydraulic Oil Temperature Hot. Check hydraulic oil level. Inspect transmission/hydraulic cooler. Restart vehicle and operate at rated speed for 1-2 minutes and if code returns, have your John Deere dealer repair as soon as possible.
CCU 001713.00	Powershift Hydraulic Oil Filter Restricted	Replace Hydraulic oil filters. If problem continues, see your John Deere dealer.
CCU 001883.00	Rear PTO Speed High	Rear PTO Overspeed. Check throttle setting. If code returns, have your John Deere dealer repair as soon as possible.
CCU 001883.01	Rear PTO System	Rear PTO Underspeed. Check throttle setting and select proper PTO engagement rate in the CommandCenter. If code returns, contact your John Deere dealer as soon as possible.
CCU 001883.13	Rear PTO System	Rear PTO Not Calibrated. Have your John Deere dealer repair as soon as possible.
CCU 002392.05	Backup alarm system	Back Up Alarm Circuit Fault. Have your John Deere dealer repair as soon as possible.
CCU 002602.01	Hydraulic oil level low	Hydraulic Oil Level Very Low. Check hydraulic oil level.
CCU 002602.02	Hydraulic System	Hydraulic Oil Level Sensor Fault. Have your John Deere dealer repair as soon as possible.
CCU 002613.01 CCU 002613.16	Axle lube pressure	Have your John Deere dealer repair as soon as possible.
CCU 002613.03 CCU 002613.04	Electrical System	Have your John Deere dealer repair as soon as possible.
CCU 002614.00 CCU 002614.03	Steering System	Have your John Deere dealer repair as soon as possible.

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RW29387,0000486-19-27MAR09-1/2

## Diagnostic Trouble Codes

<b>Central Control Unit (CCU) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
CCU 523777.05		
CCU 523770.05 CCU 523830.04	Transmission System	Have your John Deere dealer repair as soon as possible.
CCU 523844.12	Front Brake System	Have your John Deere dealer repair as soon as possible.
CCU 523851.02	Implement Management System	IMS disabled. Cycle hitch/SCV levers. Have your John Deere dealer repair as soon as possible.
CCU 524016.04	Electrical System	CCU Switched Supply Voltage Low. Have your John Deere dealer repair as soon as possible.
CCU 524067.01	Rear Axle Lube Pressure Very Low	Stop Engine Indicator. PARK safely. Have your John Deere dealer repair immediately.
CCU 524067.03 CCU 524067.04 CCU 524067.05 CCU 524067.16	Axle Lube Pressure	Lube pressure circuit problem detected. Have your John Deere dealer repair as soon as possible.
CCU 524068.01	Front Axle Lube Pressure Very Low	Stop Engine Indicator. PARK safely. Have your John Deere dealer repair immediately.
CCU 524068.03 CCU 524068.04	Front Axle Lube Pressure Sensor	Lube pressure circuit problem detected. Have your John Deere dealer repair as soon as possible.
CCU 524068.05	Axle Lube Pressure Sensor	Have your John Deere dealer repair as soon as possible.
CCU 524068.16	Axle Lube Pressure	Have your John Deere dealer repair as soon as possible.
CCU 524224.14	PTO Switch	Rear PTO Disabled. Turn all PTO switches off. Restart vehicle and if code returns, have your John Deere dealer repair as soon as possible.
CCU 524251.31	Rear PTO on	Alert to Indicate Operator Not Present With Rear PTO On. Does not change PTO performance.
CCU 524267.16	Clutch Partially Engaged	Remove foot from clutch pedal. If code returns, have your John Deere dealer repair as soon as possible.

RW29387,0000486-19-27MAR09-2/2

*Diagnostic Trouble Codes*

### Cab Load Center (CLC) Diagnostic Trouble Codes

Cab Load Center (CLC) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
CLC 000158.00 CLC 000158.01 CLC 000158.17 CLC 000158.18	Electrical System	CAB Switched Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
CLC 000628.02	Operator Controls	CAB EOL Data Fault. Have your John Deere dealer repair as soon as possible.
CLC 000628.12	Programming	CLC Programming. Have your John Deere dealer repair as soon as possible.
CLC 000629.12	Operator Controls	CAB Control Unit Fault. Shift to PARK. If code returns, have your John Deere dealer repair as soon as possible.
CLC 001079.03 CLC 001079.04	Electrical System	CLC Sensor Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
CLC 002050.06	Electrical System	CLC Circuit Current High. Remove all operator customized accessories such as flood lights, hazard lights and window wipers. Have your John Deere dealer repair as soon as possible.
CLC 002360.06	Lighting System	Rear Fender Flood Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002362.06	Lighting System	Rear Roof Flood Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002364.06	Lighting System	Mid Body Flood Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002366.06	Lighting System	Side Roof Flood Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002368.06	Lighting System	Left Turn Signal Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002370.06	Lighting System	Right Turn Signal Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002372.06	Lighting System	Brake Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002378.06	Lighting System	Tail Light Circuit Current Problem. Check condition of light bulb. If code still exists, have your John Deere dealer repair as soon as possible.
CLC 002386.06	Roof Beacon Circuit Fault	Beacon Light Circuit Problem. Have your John Deere dealer repair.
CLC 002394.06	Lighting System	Trailer Flood Light Circuit Overload or Short Circuit. Unplug 7-pin connector to verify code still exists. Have your John Deere dealer repair as soon as possible.
CLC 522310.05 CLC 522310.06	Electrical System	ELX Output Circuit Current High. Have your John Deere dealer repair as soon as possible.
CLC 522433.06	Wiper System	Rear Wiper Motor Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
CLC 522434.06	Wiper System	Front Wiper Motor Low Speed Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
CLC 522435.06	Wiper System	Front Wiper Motor High Speed Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
CLC 524016.05 CLC 524016.06	Electrical System	Communication Bus or Vehicle Load Center Wakeup Circuit Current High. Have your John Deere dealer repair as soon as possible.
CLC 524037.02	Operator Controls	Auto Mode and Brake Assist Mode High. Have your John Deere dealer repair as soon as possible.

RW29387,0000487-19-26MAR07-1/1

*Diagnostic Trouble Codes*

**Engine Control Unit (ECU) Diagnostic Trouble Codes**

<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
ECU 000094.03 ECU 000094.04	Engine System	Fuel Pressure Sensor Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000094.17	Engine System	Low Fuel Pressure Out of Lift Pump. Change fuel filters. If problem continues, have your John Deere dealer repair as soon as possible.
ECU 000097.03 ECU 000097.04	Engine System	Water in Fuel Signal Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000097.16	Engine Water Separator Full	Water In Fuel Detected. Drain both filters. If code returns, have your John Deere dealer repair immediately.
ECU 000100.01	Engine Oil Pressure Very Low	Engine Oil Pressure Extremely Low. If code returns, have your John Deere dealer repair immediately.
ECU 000100.04	Engine System	Engine Oil Pressure Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000100.18	Engine Oil Pressure Low	Engine Oil Pressure Moderately Low. Check engine oil level. If code returns, have your John Deere dealer repair as soon as possible.
ECU 000100.31	Engine Oil Pressure	Sensor Indicates Oil Pressure When Engine Is OFF. Have your John Deere dealer repair as soon as possible.
ECU 000102.02	Engine System	Manifold Air Pressure Sensor Problem. Have your John Deere dealer repair as soon as possible.
ECU 000102.03 ECU 000102.04	Engine System	Manifold Air Pressure Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000103.00	Engine System	Turbo Speed Overspeed. If operating at high altitude, reduce load on engine. If problem continues, have your John Deere dealer repair immediately.
ECU 000103.05 ECU 000103.08 ECU 000103.31	Engine System	Turbo Speed Error. Have your John Deere dealer repair as soon as possible.
ECU 000105.00 ECU 000105.15 ECU 000105.16	Engine Air Intake Temperature High	Intake Air Temperature High. Check coolant level. Inspect and clean radiator. If code returns, have your John Deere dealer repair immediately.
ECU 000105.03 ECU 000105.04	Engine System	Intake Air Temperature Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000108.02	Engine System	Barometric Pressure Sensor Problem. Have your John Deere dealer repair as soon as possible.
ECU 000110.00	Engine Coolant Temperature High	Engine Coolant Temperature Extremely High. Check coolant level. Inspect and clean radiator. If code returns, have your John Deere dealer repair immediately.
ECU 000110.03 ECU 000110.04	Engine System	Engine Coolant Temperature Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000110.15 ECU 000110.16	Engine Coolant Temperature High	Engine Coolant Temperature Moderately High. Check coolant level. Inspect and clean radiator. Check to see if code returns. Have your John Deere dealer repair as soon as possible.
ECU 000110.17	Engine Coolant Temperature Low	Engine Coolant Temperature Low. Warm up engine. If problem continues, have your John Deere dealer repair as soon as possible.
ECU 000157.01	Engine System	Low Pressure Fuel Pressure Low. Change fuel filters. If problem continues, have your John Deere dealer repair as soon as possible.
ECU 000157.03 ECU 000157.04	Engine System	Fuel Rail Pressure Input Voltage Problem. Have your John Deere dealer repair immediately.
ECU 000157.16	Engine System	Low Pressure Fuel Pressure High. Have your John Deere dealer repair as soon as possible.
ECU 000157.18	Engine System	Low Pressure Fuel Pressure Low. Change fuel filters. If problem continues, have your John Deere dealer repair as soon as possible.
ECU 000158.17	Engine System	ECU Power Down Error. Restart engine. If code returns, have your John Deere dealer repair as soon as possible.
ECU 000174.00	Fuel Temperature High	Fuel Temperature High. Check coolant level. Inspect and clean radiator. Check to see if code returns. Have your John Deere dealer repair immediately.
ECU 000174.03 ECU 000174.04	Engine System	Fuel Temperature Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000174.16	Fuel Temperature High	Fuel Temperature High - Moderately severe. Check coolant level. Inspect and clean radiator. Check to see if code returns. Have your John Deere dealer repair as soon as possible.
ECU 000237.02 ECU 000237.13 ECU 000237.31	Identification System	VIN Security Problem. Have your John Deere dealer repair as soon as possible.

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RW29387,0000488-19-14SEP09-1/3

## Diagnostic Trouble Codes

Diagnostic Trouble Code	Display	Solution
ECU 000412.00	Engine System	EGR Temperature Signal Extremely High. Have your John Deere dealer repair as soon as possible.
ECU 000412.03 ECU 000412.04	Engine System	EGR Temperature Sensor Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000412.15 ECU 000412.16	Engine System	EGR Temperature Moderately High. Have your John Deere dealer repair as soon as possible.
ECU 000611.03	Engine System	Injector Wiring Shorted to Power Source. Have your John Deere dealer repair as soon as possible.
ECU 000611.04	Engine System	Injector Wiring Shorted to Ground. Have your John Deere dealer repair as soon as possible.
ECU 000627.01	Engine System	Injector Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 000629.13	Engine System	ECU Programming Error. Have your John Deere dealer repair immediately.
ECU 000636.02	Engine System	Cam Position Sensor Input Noise. Have your John Deere dealer repair as soon as possible.
ECU 000636.05	Engine System	Cam Sensor Open. Have your John Deere dealer repair as soon as possible.
ECU 000636.06	Engine System	Cam Sensor Shorted. Have your John Deere dealer repair as soon as possible.
ECU 000636.08	Engine System	Cam Position Sensor Input Missing. Could result in excessive cranking. Have your John Deere dealer repair as soon as possible.
ECU 000636.10	Engine System	Cam Position Input Pattern Error. Have your John Deere dealer repair as soon as possible.
ECU 000637.02 ECU 000637.05 ECU 000637.06 ECU 000637.08 ECU 000637.10	Engine System	Crank Position Sensor Problem. Have your John Deere dealer repair as soon as possible.
ECU 000637.07	Engine System	ECU/Pump Timing Moderately Out Of Sync. Have your John Deere dealer repair as soon as possible.
ECU 000640.11	Engine System	Voltage On Tracks Shutdown Signal Out Of Spec. Have your John Deere dealer repair as soon as possible.
ECU 000640.31	Engine System	Tracks Shutdown Signal Commanded Shutdown.. Have your John Deere dealer repair as soon as possible.
ECU 000641.04 ECU 000641.12 ECU 000641.13	Engine System	VGT Actuator Problem. Have your John Deere dealer repair as soon as possible.
ECU 000641.16	Engine System	Turbo Actuator Over Temperature. Have your John Deere dealer repair as soon as possible.
ECU 000647.05	Fan System	Fan Drive Output 1 Shorted or Open. Inspect wiring leads on solenoid coil. Have your John Deere dealer repair as soon as possible.
ECU 000647.07	Fan System	Fan Drive Output 2 Shorted or Open. Inspect wiring leads on solenoid coil. Have your John Deere dealer repair as soon as possible.
ECU 000651.05 ECU 000656.13	Engine System	Electronic Fuel Injector Problem. Have your John Deere dealer repair as soon as possible.
ECU 001075.05	Fuel Supply System	Electric Lift Pump in Fuel Filter Base Short/Open. Have your John Deere dealer repair as soon as possible.
ECU 001075.12	Fuel Supply System	Electric Lift Pump Signal Indicates Fault. Have your John Deere dealer repair as soon as possible.
ECU 001110.31	Engine System	Engine Protection Shutdown. Have your John Deere dealer repair as soon as possible.
ECU 001136.00 ECU 001136.16	Engine System	ECU Temperature High. Check area around ECU for adequate air flow. If problem continues, have your John Deere dealer repair immediately.
ECU 001172.03 ECU 001172.04	Engine System	Compressor Inlet Temperature Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 001180.00	Engine System	Exhaust Temperature High. Have your John Deere dealer repair as soon as possible.
ECU 001180.16	Engine System	Exhaust Temperature High. Have your John Deere dealer repair as soon as possible.
ECU 001569.31	Engine Power Derated	Fuel Derate. Have your John Deere dealer repair as soon as possible.
ECU 001639.01	Fan System	Fan Speed Signal Missing. Have your John Deere dealer repair as soon as possible.
ECU 001639.16	Fan Speed High	Fan Speed Higher Than Expected. Have your John Deere dealer repair as soon as possible.
ECU 001639.18	Fan Speed Low	Fan Speed Lower Than Expected. Make sure bleed screw for fan drive is fully closed. See General Maintenance and Inspection section. Have your John Deere dealer repair as soon as possible.
ECU 002005.09	Communication System	ACU Message Missing. Have your John Deere dealer repair as soon as possible.
ECU 002005.14	Communication System	Have your John Deere dealer repair as soon as possible.

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RW29387,0000488-19-14SEP09-2/3

## Diagnostic Trouble Codes

Diagnostic Trouble Code	Display	Solution
ECU 002030.09	Communication System	CAB Message Missing. Have your John Deere dealer repair as soon as possible.
ECU 002071.09	Communication System	CCU Message Missing. Have your John Deere dealer repair as soon as possible.
ECU 002630.00 ECU 002630.15 ECU 002630.16	Engine System	Charge Air Outlet Temperature Higher than Expected. Have your John Deere dealer repair immediately.
ECU 002630.03 ECU 002630.04	Engine System	Charge Air Outlet Temperature Input Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 002659.02 ECU 002659.15 ECU 002659.17	Engine System	EGR Flow Rate Data Problem. Have your John Deere dealer repair as soon as possible.
ECU 002790.16	Engine System	Compressor Outlet Temperature High. Have your John Deere dealer repair as soon as possible.
ECU 002791.02 ECU 002791.03 ECU 002791.04 ECU 002791.07 ECU 002791.13 ECU 002791.31	Engine System	EGR Valve Error. Have your John Deere dealer repair as soon as possible.
ECU 002795.07	Engine System	Variable Geometry Turbo Control Error. Have your John Deere dealer repair as soon as possible.
ECU 003510.03 ECU 003510.04 ECU 003511.03 ECU 003511.04 ECU 003512.03 ECU 003512.04	Engine System	Sensor Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
ECU 003822.02 ECU 003822.03 ECU 003822.04 ECU 003822.07	Engine System	EGR Valve Position Problem. Have your John Deere dealer repair as soon as possible.
ECU 003822.13 ECU 003822.31	Engine System	EGR Valve Calibration Change Error. Have your John Deere dealer repair as soon as possible.

RW29387,0000488-19-14SEP09-3/3

### (HV I) Diagnostic Codes

(HV I) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
HV I 000158.03	Electrical System	HV I Switched Supply Voltage High. Have your John Deere dealer repair as soon as possible.
HV I 000158.04	Electrical System	HV I Switched Supply Voltage Low. Have your John Deere dealer repair as soon as possible.
HV I 002035.09	Communications System	HCC Message Missing. Have your John Deere dealer repair as soon as possible.
HV I 004084.07	HV I Not in FLOAT Position	
HV I 004084.16	HV I Overshot Commanded Position	
HV I 004084.18	HV I Failed to Reach Commanded Position	
HV I 004085.07	HV I Not in Neutral Position	
HV I 004085.12	HV I Control Unit Fault	

RW29387,0000127-19-21APR09-1/1

*Diagnostic Trouble Codes*

### Instrument Control Unit (ICU) Diagnostic Codes

<b>Instrument Control Unit (ICU) Diagnostic Trouble Codes</b>		
<b>IMPORTANT: Contact your John Deere dealer for ICU codes not listed below.</b>		
ICU 000237.02 ICU 000237.14 ICU 000237.31	Identification System	VIN Security Problem. Have your John Deere dealer repair as soon as possible.
ICU 000628.12	Programming	ICU Programming. Have your John Deere dealer repair as soon as possible.
ICU 000630.02	Electrical System	ICU Calibration Fault/Data Invalid. Have your John Deere dealer repair as soon as possible.
ICU 002000.09 — ICU 002019.09	Communication System	No CAN message received from source address within time out period. Have your John Deere dealer repair as soon as possible.
ICU 002019.12	Steering System	SST Message Missing. Have your John Deere dealer repair immediately.
ICU 002020.09 — ICU 002254.09	Communication System	No CAN message received from source address within time out period. Have your John Deere dealer repair as soon as possible.
ICU 002255.09	Communication System	No CAN message received from any source within time out period. Have your John Deere dealer repair as soon as possible.
ICU 523791.14	Starting Aid Time	Engine Starting Aid Countdown.

RW29387,000048A-19-27MAR07-1/1

**Powershift Transmission Control Unit (PTP) Diagnostic Trouble Codes**

<b>Powershift Transmission Control Unit (PTP) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
PTP 000126.16	Transmission/Axle Oil Filter Restricted	Service Alert Indicator. Change Transmission/Axle Oil Filter. If code returns, have your John Deere dealer repair immediately.
PTP 000126.31	Both Transmission/Axle Oil Filters Restricted	Stop Engine Indicator. PARK safely. Change Both Transmission/Axle Filters. If code returns, have your John Deere dealer repair immediately.
PTP 000127.01	Transmission System	Transmission oil pressure sensor voltage problem. Have your John Deere dealer repair as soon as possible.
PTP 000127.03 PTP 000127.04	Transmission oil pressure low	Transmission Oil Pressure Very Low. Check transmission/hydraulic oil level.
PTP 000168.04	Transmission System	PTP Supply Voltage Problem. Visually inspect around the batteries and alternator for damage or accumulated debris. Have your John Deere dealer repair as soon as possible.
PTP 000177.00	Transmission Oil Temperature High	Transmission Oil Temperature High-Stop Engine. PARK safely. Have your John Deere dealer repair immediately.
PTP 000177.03 PTP 000177.04	Transmission System	Transmission Oil Temperature Sensor Problem. Have your John Deere dealer repair as soon as possible.
PTP 000177.16	Transmission Oil Temperature High	Transmission Oil Temperature High-Warning. Have your John Deere dealer repair as soon as possible.
PTP 000177.17	Transmission Oil Temperature Low	Gear Limited to 14F Due to Cold Oil. Slow engine speed to less than 1500 rpm and heat hydraulic oil with a jumper hose as soon as possible.
PTP 000190.01	Transmission System	Engine Speed Low. Speed up engine.
PTP 000190.02	Transmission System	Engine Speed Conflict. Have your John Deere dealer repair as soon as possible
PTP 000190.18	Engine Speed	Engine Speed too Low for Wheel Speed
PTP 000191.02	Transmission System	Output Speed Conflict. Have your John Deere dealer repair as soon as possible
PTP 000191.14	Park System	Output #1 Speed Detection Fault. Have your John Deere dealer repair as soon as possible
PTP 000619.31	Park System	Park Solenoid #1 Circuit Fault. Have your John Deere dealer repair as soon as possible.
PTP 000628.12	Programming	PTP Programming.
PTP 000630.02	Transmission System	PTP Calibration Fault/Data Invalid. Have your John Deere dealer repair as soon as possible.
PTP 000630.13	Transmission Not Calibrated.	PTP Calibration Fault/Not Calibrated. Have your John Deere dealer repair as soon as possible.
PTP 000630.14	Transmission Calibration	
PTP 000639.09	Communication System	Engine Speed and/or Torque Message Missing. Have your John Deere dealer repair as soon as possible.
PTP 000734.05 PTP 000734.06	Electrical Clutch	Clutch C1 Solenoid Circuit Fault. Have your John Deere dealer repair as soon as possible.
PTP 000735.05 PTP 000735.06	Electrical Clutch	Clutch C2 Solenoid Circuit Fault. Have your John Deere dealer repair as soon as possible.
PTP 002005.09	Communication System	ACU Message Missing. Shift in and out of Neutral. If code returns, have your John Deere dealer repair as soon as possible.
PTP 002049.09	Communication System	Cab Control Unit Message Missing. Have your John Deere dealer repair as soon as possible.
PTP 522431.12	Transmission System	Ram Test Failure. Have your John Deere dealer repair as soon as possible.
PTP 523436.31	Transmission System	Software Watchdog Timeout/Bad Power-Down. Have your John Deere dealer repair as soon as possible.
PTP 523438.12	Transmission System	Configuration Memory Test Failure. Have your John Deere dealer repair as soon as possible.
PTP 523953.02	Operator Controls	Speed Control Lever Sensor Circuit Conflict. Shift to PARK. If code returns, have your John Deere dealer repair as soon as possible.
PTP 523956.18	Transmission System	No Motion Detected-Engine Off. Have your John Deere dealer repair as soon as possible.
PTP 523959.31	Transmission System	No Motion Detected-Engine Running. Have your John Deere dealer repair as soon as possible.
PTP 523960.31	Operator not in seat	Operator Not Seated During Reverser Command. Be sure operator is firmly seated in the seat. If code returns, have your John Deere dealer repair as soon as possible.
PTP 523978.04	Transmission System	Speed Clutch Power Missing. Have your John Deere dealer repair as soon as possible.
PTP 524020.31	Operator Controls	Transmission In Gear at Power Up. Move shift lever to PARK and restart.
PTP 524044.16	Axle Oil Filter Restricted	Change Filter. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524173.02	Operator Controls	Clutch Pedal Position Data out of Range. Have your John Deere dealer repair as soon as possible.
PTP 524173.18	Clutch Partially Engaged	Operator Attempting to Shift Above 13F With Clutch Partially Engaged.

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RW29387.000048B-19-13APR10-1/2

## Diagnostic Trouble Codes

<b>Powershift Transmission Control Unit (PTP) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
PTP 524228.04	Park System	Park Solenoid #2 Output Fault. Have your John Deere dealer repair as soon as possible.
PTP 524232.03 PTP 524232.04	Park System	Park Brake Pressure Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
PTP 524232.16	Park System	Park Brake Pressure High/Park Commanded. Have your John Deere dealer repair as soon as possible.
PTP 524232.18	Park System	Park Brake Pressure Low/Park Not Commanded. Have your John Deere dealer repair as soon as possible.
PTP 524248.31	Park System	Vehicle Motion With Park Brake Engaged. Have your John Deere dealer repair as soon as possible.
PTP 524250.31	Park System	Park Brake Previously Failed/May Not Hold. Have your John Deere dealer repair as soon as possible.
PTP 524254.03 PTP 524254.04	Transmission System	Transmission Enable Circuit Voltage Fault. Have your John Deere dealer repair as soon as possible.
PTP 524258.02	Transmission System	Invalid Gear Request Received.
PTP 524262.09	Communication System	Gear Command Message Missing. Have your John Deere dealer repair as soon as possible.
PTP 524263.02	Transmission System	Fifth Stage Speed Conflict. Have your John Deere dealer repair as soon as possible.
PTP 524264.12	Transmission System	PTP EOL Data Fault. Have your John Deere dealer repair as soon as possible.
PTP 524266.05 PTP 524266.06	Electrical Clutch	Clutch R Solenoid Circuit Fault. Have your John Deere dealer repair as soon as possible.
PTP 524267.16	Clutch Partially Engaged	Range Clutch Slipping Too Long. Ensure foot is not resting on clutch pedal. Transmission will downshift one gear at a time until in 1st gear. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524267.31	Clutch Partially Engaged	Range Clutch Slipping Too Long. Ensure foot is not resting on clutch pedal. Transmission shifts from 1st gear to Neutral. If code returns, have your John Deere dealer repair immediately.
PTP 524268.05 PTP 524268.06	Electrical Clutch	Clutch M Circuit Fault. Shift to Neutral. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524269.05 PTP 524269.06	Electrical Clutch	Clutch L Circuit Fault. Shift to Neutral. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524270.05 PTP 524270.06	Electrical Clutch	Clutch H Circuit Fault. Shift to Neutral. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524271.05 PTP 524271.06	Electrical Clutch	Clutch C Circuit Fault. Shift to Neutral. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524272.05 PTP 524272.06	Electrical Clutch	Clutch B Circuit Fault. Shift to Neutral. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524273.05 PTP 524273.06	Electrical Clutch	Brake A Valve Circuit Fault. Shift to Neutral. If code returns, have your John Deere dealer repair as soon as possible.
PTP 524277.00	Engine Overspeed	Engine Speed Too High For Downshift. Slow vehicle before downshifting. Have your John Deere dealer repair as soon as possible.
PTP 524279.31	Transmission in neutral	Operator Not Seated With Transmission In Neutral. Be sure operator is firmly seated in the seat. Have your John Deere dealer repair as soon as possible.
PTP 524280.31	Park Delayed	Vehicle Motion While Shifting to Park. Lever has been placed in PARK and is coming ON when vehicle speed is less than 4 km/h (2.5 mph).
PTP 524281.02	Park System	Output #2 Speed Detection Fault. Have your John Deere dealer repair as soon as possible.
PTP 524282.31	Transmission System	Shuttle Shift Prevented Due to High Ground Speed. Slow tractor and repeat shuttle shift.
PTP 524284.02	Transmission System	Cylinder Speed Conflict. Have your John Deere dealer repair as soon as possible.

RW29387,000048B-19-13APR10-2/2

## SCV CAN Controller (SCC) Diagnostic Trouble Codes

SCV CAN Controller (SCC) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
SCC 000158.4	SCC Switched Supply Voltage Low	Selective Control Unit (SCC) switched supply voltage is below 9.0 Volts.
SCC 000168.4	SCC Switched Supply Voltage High	Selective Control Unit (SCC) unswitched supply voltage above 18.0 V.
SCC 000629.12	SCC Control Unit Fault	Selective Control Unit (SCC) software failed to execute in allotted time.
SCC 000630.13	SCC Calibration Fault/Not Calibrated	Selective Control Unit (SCC) valves SV-SV VII not calibrated or a failed calibration was saved.
SCC 000639.12	SCC CAN Message Overflow	Bad intelligent device or component. SCC has not received expected messages from other components.
SCC 000639.14	SCC CAN Error Limit Exceeded	Too many errors received by SCC Control Unit.
SCC 001079.3	SCC Sensor Supply Voltage High	Selective Control Unit (SCC) sensor supply voltage for Option Configuration Connector above 5.25 Volts.
SCC 001079.4	SCC Sensor Supply Voltage Low	Selective Control Unit (SCC) sensor supply voltage is below 4.55 Volts.
SCC 002005.9	ACU Message Missing	Selective Control Unit (SCC) not receiving required messages from the Armrest Control Unit (ACU).
SCC 002049.9	CAB Message Missing	Selective Control Unit (SCC) not receiving required messages from the Cab Control Unit (CAB).
SCC 002161.09.9	SV I Message Missing	Selective Control Unit (SCC) not receiving required messages from the Selective Control Valve I (SV I).
SCC 002162.09	SV II Message Missing	Selective Control Unit (SCC) not receiving required messages from the Selective Control Valve II (SV II).
SCC 002163.09	SV III Message Missing	Selective Control Unit (SCC) not receiving required messages from the Selective Control Valve III (SV III).
SCC 002164.09	SV IV Message Missing	Selective Control Unit (SCC) not receiving required messages from the Selective Control Valve IV (SV IV).
SCC 002165.09	SV V Message Missing	Selective Control Unit (SCC) not receiving required messages from the Selective Control Valve V (SV V).
SCC 002166.09	SV VI Message Missing	Selective Control Unit (SCC) not receiving required messages from the Selective Control Valve VI (SV VI).
SCC 002167.09	SV VII Message Missing	Selective Control Unit (SCC) not receiving required messages from the Selective Control Valve VII (SV VII).
SCC 002602.18	Hydraulic Oil Level Low	Hydraulic oil level low. All SCVs will respond to open loop control only.
SCC 521000.02	Front External Switch Circuit Fault	Front Hitch External Switch failure.
SCC 523216.03	SCC Unswitched Supply Voltage High to SV I and SV II	Unswitched supply voltage for SV I and SV II is above 18.0 Volts.
SCC 523216.04	SCC Unswitched Supply Voltage Low to SV I and SV II	Unswitched supply voltage for SV I and SV II is below 9.0 Volts.
SCC 523217.03	SCC Unswitched Supply Voltage High to SV VI (Front Hitch)	Unswitched supply voltage for SV VI (Front Hitch) is above 18.0 Volts.
SCC 523217.04	SCC Unswitched Supply Voltage Low to SV VI (Front Hitch)	Unswitched supply voltage for SV VI (Front Hitch) is below 9.0 Volts.
SCC 523219.03	SCC Unswitched Supply Voltage High to SV III and SV IV	Unswitched supply voltage for SV III and IV is above 18.0 Volts.
SCC 523219.04	SCC Unswitched Supply Voltage Low to SV III and SV IV	Unswitched supply voltage for SV III and IV is below 9.0 Volts.
SCC 523652.2	Wire Connector Fault	Control unit is connected to wrong harness.
SCC 523693.2	Missing SV I Extend Control Message for 10 Seconds	SV I external control message missing for longer than 10 seconds.
SCC 523693.9	Missing SV I Extend Control Message for 1 Seconds	SV I external control message missing for longer than 1 second.
SCC 523693.19	Missing SV I Fault I Message Received	SV I external control data has been received via CAN message with a failure indication.
SCC 523694.2	Missing SV II Extend Control Message for 10 Seconds	SV II external control message missing for longer than 10 seconds.
SCC 523694.9	Missing SV II Extend Control Message for 1 Seconds	SV II external control message missing for longer than 1 second.

Continued on next page

RW29387,0000128-19-14MAY09-1/2

## Diagnostic Trouble Codes

<b>SCV CAN Controller (SCC) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
SCC 523694.19	SV II External Control Fault Message Received	SV II external control data has been received via CAN message with a failure indication.
SCC 523695.2	Missing SV I Extend Control Message for 10 Seconds	SV I external control message missing for longer than 10 seconds.
SCC 523695.09	SV V External Control Fault Message Received	SV V external control message missing for longer than 1 second.
SCC 523695.19	Missing SV V Extend Control Message for 1 Seconds	SV V external control data has been received via CAN message with a failure indication.
SCC 523696.02	Missing Front Hitch External Control Message for 10 Seconds	Front Hitch (SV VI) external control message missing for longer than 10 seconds.
SCC 523696.09	Front Hitch External Control Message Rate Fault	Front Hitch (SV VI) external control message missing for longer than 1 seconds.
SCC 523696.19	Front Hitch External Control Fault Message Received	Front Hitch (SV VI) external control data has been received via CAN message with a failure indication.
SCC 523775.19	Single Lever Control Hand Presence Switch Fault Message Received	Single lever control hand presence switch failure.
SCC 523776.19	Single Lever Control Transport Lock Switch Fault Message Received	Single lever control transport lock switch failure.
SCC 523785.1	Deluxe Hydraulic Control Unit/Auxiliary Valve 1	Front scraper has lost laser signal input.

RW29387,0000128-19-14MAY09-2/2

Diagnostic Trouble Codes

**Deluxe Hydraulic Control Unit (SCU) Diagnostic Trouble Codes**

Deluxe Hydraulic Control Unit (SCU) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
SCU 000158.04 SCU 000168.04	Hydraulic System	SCU Supply Voltage Problem. Visually inspect around the batteries and alternator for any visual signs of damage or accumulated debris. Have your John Deere dealer repair as soon as possible.
SCU 000629.12	Hydraulic System	SCU Control Unit Fault. Have your John Deere dealer repair as soon as possible.
SCU 000630.02 SCU 000630.13	Hydraulic System	SCU Not Calibrated. Have your John Deere dealer calibrate as soon as possible.
SCU 001079.03 SCU 001079.04	Hydraulic System	SCU Option Connector Voltage Problem. Check implement documentation. Have your John Deere dealer repair as soon as possible.
SCU 001638.02	Hydraulic System	SCU Calibration Fault/Hydraulic Oil Temperature Low. Have your John Deere dealer calibrate as soon as possible.
SCU 001913.13 SCU 001914.13	Hydraulic System	SCU Calibration Fault/SCV I Not Calibrated. Have your John Deere dealer calibrate as soon as possible.
SCU 001915.05	Hydraulic System	SCV I Flow Control Solenoid Current Low for Float Operation. Have your John Deere dealer repair as soon as possible.
SCU 001925.13 SCU 001926.13	Hydraulic System	SCU Calibration Fault/SCV II Not Calibrated. Have your John Deere dealer calibrate as soon as possible.
SCU 001927.05	Hydraulic System	SCV II Flow Control Solenoid Current Low for Float Operation. Have your John Deere dealer repair as soon as possible.
SCU 001937.13 SCU 001938.13	Hydraulic System	SCU Calibration Fault/SCV III Not Calibrated. Have your John Deere dealer calibrate as soon as possible.
SCU 001939.05	Hydraulic System	SCV III Flow Control Solenoid Current Low for Float Operation. Have your John Deere dealer repair as soon as possible.
SCU 001949.13 SCU 001950.13	Hydraulic System	SCU Calibration Fault/SCV IV Not Calibrated. Have your John Deere dealer calibrate as soon as possible.
SCU 001951.05	Hydraulic System	SCV IV Flow Control Solenoid Current Low for Float Operation. Have your John Deere dealer repair as soon as possible.
SCU 002003.09	Communication System	Transmission Current Gear Message Not Received Within Timeout Period. Have your John Deere dealer repair as soon as possible.
SCU 002005.09	Communication System	ACU Message Missing. Have your John Deere dealer repair as soon as possible.
SCU 002049.09	Communication System	CAB Message Missing. Have your John Deere dealer repair as soon as possible.
SCU 002071.09	Communication System	CCU Message Missing. Have your John Deere dealer repair as soon as possible.
SCU 002129.09	Communication System	Failed to Receive Ground-Based Vehicle Speed from Chassis Controller. Have your John Deere dealer repair as soon as possible.
SCU 523216.03 SCU 523216.04	Hydraulic System	12Volt (VP4/J1-H3) Voltage to SCU Fault. Restart engine. If code continues, have your John Deere dealer repair as soon as possible.
SCU 523219.03 SCU 523219.04	Hydraulic System	12Volt (VP1/J3-H1) Voltage to SCU Fault. Restart engine. If code continues, have your John Deere dealer repair as soon as possible.
SCU 523652.02	Hydraulic System	Wire Connector Fault. Have your John Deere dealer repair as soon as possible.
SCU 523693.02	Hydraulic System	Missing SCV I External Control Message. Refer to implement documentation. If code continues, have your John Deere dealer repair as soon as possible.
SCU 523693.19	Hydraulic System	SCV I External Control Fault Message Received. Refer to implement documentation. If code continues, have your John Deere dealer repair as soon as possible.
SCU 523694.02	Hydraulic System	Missing SCV II External Control Message. Refer to implement documentation. If code continues, have your John Deere dealer repair as soon as possible.
SCU 523694.19	Hydraulic System	SCV II External Control Fault Message Received. Refer to implement documentation. If code continues, have your John Deere dealer repair as soon as possible.
SCU 523783.03 SCU 523783.04	Hydraulic System	Remote Sensor #4 (J2-F4) Output Voltage for SCV 1-4 Fault. Have your John Deere dealer repair as soon as possible.
SCU 523783.07	Hydraulic System	AutoLoad Operation Cancelled Due to Invalid Operational Conditions, i.e. Shifting, Clutching, Enabling, Field Cruise. Have your John Deere dealer repair as soon as possible.
SCU 523784.03 SCU 523784.04	Hydraulic System	Remote Sensor #3 (J2-E3) Output Voltage for Optional SCV 1-4 Fault. Restart engine. Have your John Deere dealer repair as soon as possible.
SCU523784.07	Hydraulic System	Remote Sensor #3 (J2-E3) Output Voltage for Optional SCV 1-4 Fault. Turn ignition switch to OFF. Have your John Deere dealer repair as soon as possible.

Continued on next page

RW29387,000048D-19-11MAR09-1/3

## Diagnostic Trouble Codes

<b>Deluxe Hydraulic Control Unit (SCU) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
SCU 523784.13	Hydraulic System	Remote Sensor #3 Output Voltage for Optional SCV 1-4 Feature Appears to be Wrong Polarity. Operator Attempted to Set Upper and Lower Setpoints Such That Upper Setpoint Voltage is Greater Than Lower Setpoint Voltage. Reset Upper and Lower Setpoints.
SCU 523785.01	Hydraulic System	Lost Laser Signal Secondary Scraper (laser implement). Check laser adjustment. Operate in a more level part of the field. If code returns, have your John Deere dealer repair as soon as possible.
SCU 523785.03 SCU 523785.04 SCU 523785.07 SCU 523785.13	Hydraulic System	Remote Sensor #2 (J2-G3) Output Voltage for Optional SCV 1-4 Problem. Have your John Deere dealer repair as soon as possible.
SCU 523786.01	Hydraulic System	Lost Laser Signal Primary Scraper (laser implement). Check laser adjustment. Operate in a more level part of the field. If code returns, have your John Deere dealer repair as soon as possible.
SCU 523786.03 SCU 523786.04	Hydraulic System	SCVs I - IV Remote Position Sensor Circuit Voltage Problem. Have your John Deere dealer repair as soon as possible.
SCU 523786.07	Hydraulic System	SCVs I - IV Remote Position Sensor 1 Fault/Unexpected Response. Insure SCV hoses are connected correctly and are not reversed. If code returns, have your John Deere dealer repair as soon as possible.
SCU 523786.13	Hydraulic System	Remote Sensor #1 Output Voltage for SCV 1-4 Appears to be Wrong Polarity. Operator attempted to set upper and lower setpoints such that upper setpoint voltage is greater than lower setpoint voltage. If code returns, have your John Deere dealer repair as soon as possible.
SCU 523787.03 SCU 523787.04	Hydraulic System	SCU Switched Supply Voltage Problem/SCVs III and IV Solenoids. Visually inspect around the batteries and alternator for any visual signs of damage or accumulated debris. Check fuse F30. If code returns, have your John Deere dealer repair as soon as possible.
SCU 523788.02	Hydraulic System	Hydraulic Option Configuration Changed Since Power-Up. Refer to implement documentation.
SCU 523788.14	Hydraulic System	Hydraulic Option Configuration Changed Without Disconnect. Refer to implement documentation.
SCU 523788.31	Hydraulic System	Hydraulic Option Configuration Invalid. Implement EHDC unhooked with key ON. Reconnect to implement with key ON. ALWAYS turn key OFF before disconnecting.
SCU 523910.02	Hydraulic System	SCU Control Unit Fault. Have your John Deere dealer repair as soon as possible.
SCU 523923.31	Hydraulic System	SCV I Control Lever Command Missing. Have your John Deere dealer repair as soon as possible.
SCU 523932.05 SCU 523932.06	Hydraulic System	SCV IV Extend Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523933.05 SCU 523933.06	Hydraulic System	SCV III Extend Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523934.05 SCU 523934.06	Hydraulic System	SCV II Extend Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523935.05 SCU 523935.06	Hydraulic System	SCV I Extend Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523938.05 SCU 523938.06	Hydraulic System	SCV IV Retract Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523939.05 SCU 523939.06	Hydraulic System	SCV III Retract Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523940.05 SCU 523940.06	Hydraulic System	SCV II Retract Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523941.05 SCU 523941.06	Hydraulic System	SCV I Retract Valve Solenoid Current Problem. Have your John Deere dealer repair as soon as possible.
SCU 523944.31	SCV IV On	Operator Out Of Seat With SCV IV On. See Operator Presence Sensor in Hydraulics and Selective Control Valves section.
SCU 523945.31	SCV III On	Operator Out Of Seat With SCV III On. See Operator Presence Sensor in Hydraulics and Selective Control Valves section.
SCU 523946.31	SCV II On	Operator Out Of Seat With SCV II On. See Operator Presence Sensor in Hydraulics and Selective Control Valves section.
SCU 523947.31	SCV I On	Operator Out Of Seat With SCV I On. See Operator Presence Sensor in Hydraulics and Selective Control Valves section.
SCU 524015.02	Hydraulic System	Missing SCV III External Control Message for 10 Seconds. Refer to implement documentation. If code returns, have your John Deere dealer repair as soon as possible.

Continued on next page

RW29387,000048D-19-11MAR09-2/3

## Diagnostic Trouble Codes

<b>Deluxe Hydraulic Control Unit (SCU) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
SCU 524015.19	Hydraulic System	SCV III External Control Fault Message Received. Refer to implement documentation. If code returns, have your John Deere dealer repair as soon as possible.
SCU 524016.03 SCU 524016.04	Hydraulic System	SCU Switched Supply Voltage Problem/SCVs I and II Solenoids. Visually inspect around the batteries and alternator for any visual signs of damage or accumulated debris. Check fuse F30. Have your John Deere dealer repair as soon as possible.
SCU 524038.02	Hydraulic System	Missing SCV IV External Control Message for 10 Seconds. Refer to implement documentation. If code returns, have your John Deere dealer repair as soon as possible.
SCU 524038.19	Hydraulic System	SCV IV External Control Lever Fault Message Received. Refer to implement documentation. If code returns, have your John Deere dealer repair as soon as possible.
SCU 524103.31	Hydraulic System	SCV IV Control Lever Command Missing. Have your John Deere dealer repair as soon as possible.
SCU 524104.31	Hydraulic System	SCV III Control Lever Command Missing. Have your John Deere dealer repair as soon as possible.
SCU 524105.31	Hydraulic System	SCV II Control Lever Command Missing. Have your John Deere dealer repair as soon as possible.

RW29387,000048D-19-11MAR09-3/3

**Steering System Control Unit (SSU) Diagnostic Trouble Codes**

<b>Steering System Control Unit (SSU) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
SSU 000084.09	Communication System	Wheel Speed Message Missing. Have your John Deere dealer repair as soon as possible.
SSU 000168.03 SSU 000168.04	Steering System	SSU Unswitched Supply Voltage Problem. Check fuse F23. If code returns, have your John Deere dealer repair as soon as possible.
SSU 000237.31	Identification System	Vehicle Identification Number.
SSU 000517.09	Communication System	GPS Speed Message Missing. Check StarFire connector. If code returns, have your John Deere dealer repair as soon as possible.
SSU 000523.09	Communication System	MST Current Gear Message Missing. Have your John Deere dealer repair as soon as possible.
SSU 000523.31	Communication System	No Transmission Detected. Have your John Deere dealer repair as soon as possible.
SSU 000524.09	Communication System	Selected Gear Message Missing. Restart vehicle. If code returns, have your John Deere dealer repair as soon as possible.
SSU 000628.02	Steering System	SSU EOL Data Fault. Have your John Deere dealer repair as soon as possible.
SSU 000628.12	Programming	SSU Programming.
SSU 000629.12	Steering System	SSU Control Unit Fault. Have your John Deere dealer repair as soon as possible.
SSU 000630.13	AutoTrac System	SSU Calibration Fault/Not Calibrated. Have your John Deere dealer repair as soon as possible.
SSU 001079.03 SSU 001079.04	Steering System	SSU Sensor Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
SSU 001504.09	Communication System	Operator Presence Message Missing. Have your John Deere dealer repair as soon as possible.
SSU 001504.14	AutoTrac System	Operator Not Seated While AutoTrac Active.
SSU 001638.09	Communication System	Hydraulic Oil Temperature Message Missing. Have your John Deere dealer repair as soon as possible.
SSU 001807.02	Steering System	Steering Wheel Position Sensor Conflict. Have your John Deere dealer repair as soon as possible.
SSU 001807.03 SSU 001807.04	Steering System	Steering Wheel Position Sensor 1 Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
SSU 001807.05 SSU 001807.06	Steering System	Steering Wheel Position Sensor 1 Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
SSU 001807.10 SSU 001807.14	Steering System	Steering Wheel Position Sensor 1 Signal Problem. Have your John Deere dealer repair as soon as possible.
SSU 001865.09	Communication System	ELX Message Missing. Have your John Deere dealer repair as soon as possible.
SSU 522273.00	Steering System	SSU Steering Valve Control Circuit Command High. Have your John Deere dealer repair as soon as possible.
SSU 522273.01	Steering System	SSU Steering Valve Control Circuit Command Low. Have your John Deere dealer repair as soon as possible.
SSU 522387.07	Steering System	AutoTrac Wheel Angle Sensor or Steering Valve Fault. Have your John Deere dealer repair as soon as possible.
SSU 522394.09	Communication System	TCM Messages Missing. Check StarFire connector. If code returns, have your John Deere dealer repair as soon as possible.
SSU 523451.00 SSU 523451.01	Steering System	Secondary Steering Angle Voltage Problem. Have your John Deere dealer repair as soon as possible.
SSU 523451.14	Steering System	Secondary Steering Angle Redundancy Fault. Have your John Deere dealer repair as soon as possible.
SSU 523651.02	Steering System	SSU Control Unit Fault. Have your John Deere dealer repair as soon as possible.
SSU 523698.09	Communication System	AMS Display Message Missing. Check GPS/Mobile Processor connector. If code returns, have your John Deere dealer repair as soon as possible.
SSU 523767.09	Communication System	Resume Switch Message Missing. Have your John Deere dealer repair as soon as possible.
SSU 523795.02	Steering System	AutoTrac Steering Valve Workport Connections Backwards. Have your John Deere dealer repair as soon as possible.
SSU 523795.11	Steering System	AutoTrac Steering Valve Deadbands Inconsistent. Have your John Deere dealer repair as soon as possible.
SSU 523795.12	Steering System	AutoTrac Steering Valve Fault. Have your John Deere dealer repair as soon as possible.
SSU 523795.13	Steering System	SSU Calibration Fault/Steering Valve. Have your John Deere dealer repair as soon as possible.

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RW29387,000048E-19-27MAR07-1/2

## Diagnostic Trouble Codes

<b>Steering System Control Unit (SSU) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
SSU 523810.00	Steering System	SSU Steering Valve Power Status Incorrect. Have your John Deere dealer repair as soon as possible.
SSU 523810.01	Steering System	SSU Steering Valve Supply Voltage Low. Have your John Deere dealer repair as soon as possible.
SSU 523821.02	Steering System	Vehicle Mismatch. Have your John Deere dealer repair as soon as possible.
SSU 523824.03 SSU 523824.04	Steering System	Steering Wheel Position Sensor 2 Supply Voltage Problem. Have your John Deere dealer repair as soon as possible.
SSU 523824.05 SSU 523824.06	Steering System	Steering Wheel Position Sensor 2 Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
SSU 523824.10	Steering System	Steering Wheel Position Sensor 2 Signal Mismatch. Have your John Deere dealer repair as soon as possible.
SSU 523824.14	Steering System	Steering Wheel Position Sensor 2 Signal Fault. Have your John Deere dealer repair as soon as possible.
SSU 523826.00 SSU 523826.01	Steering System	Primary Steering Sensor Voltage Problem. Have your John Deere dealer repair as soon as possible.
SSU 523826.02 SSU 523826.07	Steering System	SSU Calibration Fault/Steering Angle Sensor. Have your John Deere dealer repair as soon as possible.
SSU 523826.10 SSU 523826.12	Steering System	Steering Angle Sensor Uncommanded Motion. Have your John Deere dealer repair as soon as possible.
SSU 523826.14	Steering System	Steering Angle Sensor Low Motion. Have your John Deere dealer repair as soon as possible.
SSU 524221.09	Communication System	Vehicle Yaw Rate Message Missing. Have your John Deere dealer repair as soon as possible.

RW29387,000048E-19-27MAR07-2/2

### SV Diagnostic Trouble Codes

In column one of the following table only SV and the trouble code is listed without being followed by a Roman numeral. That is because the same trouble codes are available for each of the seven select control valves available on this tractor.

<b>SV Diagnostic Trouble Codes (SCV 1 Through SCV VII)</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
SV 000158.03	Switched Supply Voltage High	Switched supply voltage to Selective Control Valve Unit I (SV) above 16.0 V.
SV 000158.04	SV Switched Supply Voltage Low	Switched supply voltage to Selective Control Valve Unit I (SV) below 9.0 V.
SV 002034.09	SCC Message Missing	Code Caused By: Selective Control Valve Unit I (SV) not receiving required messages from the SCC.
SV 004084.07	SV Not in Float Position	Selective Control Valve Unit I (SV) not going into FLOAT position.
SV 004084.16	SV Overshot Commanded Position	Selective Control Valve Unit I (SV) valve spool is over-shooting it's desired position.
SV 004084.18	SV Failed to Reach Commanded Position	Selective Control Valve Unit I (SV) valve spool is under-shooting it's desired position.
SV 004085.07	SV Not in NEUTRAL Position	Selective Control Valve Unit I (SV) valve is not in NEUTRAL position.
SV 004085.12	SV Control Unit Fault	Selective Control Valve Unit I (SV) software failed to execute in allotted time.

RW29387,0000129-19-21APR09-1/1

**Setup Panel (SUP), Tractor Electronic Control Unit (TEC), and Tractor Electronic Interface (TEI) Diagnostic Trouble Codes**

<b>Setup Panel (SUP), Tractor Electronic Control Unit (TEC) and Tractor Electronic Interface (TEI) Diagnostic Trouble Codes</b>		
<b>Diagnostic Trouble Code</b>	<b>Display</b>	<b>Solution</b>
SUP 000628.12	Programming	SUP Programming.
SUP 000629.12	Electrical System	SUP Control Unit Fault. Have your John Deere dealer repair as soon as possible.
SUP 00524013.03	Electrical System	One or more keys stuck in depressed position. Have your John Deere dealer repair as soon as possible.
<b>Tractor Electronic Control Unit (TEC) Diagnostic Trouble Codes</b>		
TEC 000628.12	Electrical System	TEC Programming.
TEC 000630.02	Electrical System	TEC Calibration Fault/Data Invalid. Have your John Deere dealer repair as soon as possible.
TEC 000639.12	Communication System	TEC Tractor CAN Message Missing. Have your John Deere dealer repair as soon as possible.
TEC 000639.14	Communication System	TEC Tractor CAN Error Limit Exceeded. Have your John Deere dealer repair as soon as possible.
TEC 001231.12	Communication System	TEC Implement CAN Message Overflow. Have your John Deere dealer repair as soon as possible.
TEC 001231.14	Communication System	TEC Implement CAN Error Limit Exceeded. Have your John Deere dealer repair as soon as possible.
TEC 522550.14	Incompatible Device	ISO Compliant and Non-ISO Compliant Devices on Implement Bus. Remove devices. If code returns, have your John Deere dealer repair as soon as possible.
<b>Tractor Electronic Interface (TEI) Diagnostic Trouble Codes</b>		
TEI 000628.12	Electrical System	TEI Programming.
TEI 000629.12	Implement System	TEI Control Unit Fault. Have your John Deere dealer repair as soon as possible.
TEI 000630.02	Electrical System	TEI Calibration Fault/Data Invalid. Have your John Deere dealer repair as soon as possible.
TEI 000639.12	Communication System	TEC Tractor CAN Message Overflow. Have your John Deere dealer repair as soon as possible.
TEI 000639.14	Communication System	TEC Tractor CAN Error Limit Exceeded. Have your John Deere dealer repair as soon as possible.
TEI 001231.12	Communication System	TEC Implement CAN Message Overflow. Have your John Deere dealer repair as soon as possible.
TEI 001231.14	Communication System	TEC Implement CAN Error Limit Exceeded. Have your John Deere dealer repair as soon as possible.
TEI 522550.14	Incompatible Device	ISO Compliant and Non-ISO Compliant Devices on Implement Bus. Remove devices. If code returns, have your John Deere dealer repair as soon as possible.

RW29387,000048F-19-27MAR07-1/1

## Vehicle Load Center Control Unit (VLC) Diagnostic Trouble Codes

Vehicle Load Center Control Unit (VLC) Diagnostic Trouble Codes		
Diagnostic Trouble Code	Display	Solution
VLC 000628.02	Electrical System	VLC EOL Data Fault. Have your John Deere dealer repair as soon as possible.
VLC 000628.12	Electrical System	VLC Programming.
VLC 000629.12	Electrical System	VLC Control Unit Fault. Have your John Deere dealer repair as soon as possible.
VLC 001542.04	Electrical System	Wake Up Signal Voltage Low. Likely an open circuit. Have your John Deere dealer repair as soon as possible.
VLC 002030.06	Electrical System	VLC Circuit Current High. Remove all operator customized accessories such as flood lights, hazard lights and window wipers. Total output excessive. Have your John Deere dealer repair as soon as possible.
VLC 002050.09	Communication System	CLC Message Missing. Have your John Deere dealer repair as soon as possible.
VLC 002348.06	Lighting System	High Beam Light Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 002350.06	Lighting System	Low Beam Light Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 002354.06	Lighting System	Front Outer Flood Light Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 002356.06	Lighting System	Front Inner Flood Light Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 002388.06	Lighting System	Center Spot Light Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 522310.05 VLC 522310.06	Electrical System	ELX Output Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 522311.06	Washer System	Rear Washer Pump Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 522312.06	Washer System	Front Washer Pump Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 522620.06	Electrical System	Horn Circuit Current Problem. Have your John Deere dealer repair as soon as possible.
VLC 600006.31	Electrical System	Default DTC

RW29387.0000490-19-21NOV06-1/1

# Storage

## Placing Tractor in Long-Term Storage

**IMPORTANT: If the tractor will not be used for several months, the following recommendations for storage and removal from storage will minimize corrosion and deterioration.**

*NOTE: Whenever possible store tractor in a building or under a roof to avoid damage resulting from prolonged exposure to the elements.*

- Lower hitch, if equipped.
- Change engine oil and replace the filter.
- Service the air cleaner.
- Drain the fuel tank and add back 10 L (2.5 gal) of fuel.
- Remove ECU fuse **F24** to prevent engine from starting.
- Crank engine a few revolutions.
- Reinstall ECU fuse **F24**.
- Seal air inlets, exhaust, crankcase fill cap, fuel tank cap, radiator overflow hose, and transmission and hydraulic system fill cap using plastic bags and tape.
- Release tension on auxiliary drive belts. Remove belt from air conditioner pulley and fan pulley.
- Remove and store batteries in a cool dry location— (keep batteries charged) <sup>1</sup>.
- Coat all exposed (machined) metal surfaces such as lift cylinders and steering cylinder rods with light coat of grease.
- Thoroughly clean tractor touching up any scratched or chipped painted surfaces

<sup>1</sup> Disconnect battery ground cable for short-term storage periods (20 to 90 days)

<sup>2</sup> Move tractor once a month if tires are not raised off the ground

- Wax entire tractor.
- Protect tires from heat and sunlight:
  - Raise tires off the ground<sup>2</sup>
  - Cover wheels with water-proof tarpaulin
  - Avoid storing at temperatures greater than 29° C (85° F)
  - Avoid direct sunlight
- Lubricate all grease fittings.
- **If tractor must be stored outside, follow additional precaution:** Cover instrument panel, control levers, and seat with sheets of material or cardboard or cover entire tractor with waterproof material to protect against the sun's rays.
- Rotate A/C compressor pulley several turns once a month to prevent seizure of compressor.

**IMPORTANT: Compressor requires lubrication to maintain sealing function to retain refrigerant. Start engine and run air conditioner once a month during seasonal storage time to let compressor circulate lubricant throughout system and recharge batteries.**

**IMPORTANT: If system is not cooling properly, turn air conditioning switch off to avoid possible compressor damage.**

BB92646,0000112-19-06NOV07-1/1

## Removing Tractor from Storage

Perform the following steps to remove tractor from storage:

- Remove any coverings placed in or on tractor while preparing for storage
- Unseal all openings sealed prior to storage
- Rotate A/C compressor pulley several turns
- Install auxiliary drive belts on air conditioner pulley and fan pulley
- Check all fluid levels
- Inspect tires and check tire inflation pressures. (See Wheels, Tires and Treads Section)
- Fill the fuel tank
- Install batteries and connect cables
- Perform all services for daily, 10 , 250 , 500 or 750 Hour Interval—(See Lubrication And Maintenance Sections)
- Check all instruments and indicators by turning key to the ON position

**IMPORTANT: Removing F24 fuse will allow engine to turn over without starting. Performing this step will allow engine oil to be circulated before actually starting engine.**

- Remove ECU fuse **F24** to prevent engine from starting
- Crank the engine a few revolutions
- Reinstall ECU fuse **F24**

**IMPORTANT: DO NOT operate the starter for more than 30 seconds. Wait at least two minutes for starter to cool before trying again.**

- Start engine
- Operate engine at slow idle for several minutes

**IMPORTANT: If air conditioning compressor is locked up, engine operation with compressor clutch engaged will damage belt or compressor.**

- Check air conditioning
- Check all other system functions
- Warm up tractor before putting engine under load

BB92646,0000113-19-23OCT07-1/1

### Paint Finish Care

- Wash tractor regularly, particularly if it has been exposed to herbicides, pesticides, road salt or other chemical agents.
- DO NOT wash tractor in direct sunlight.
- DO NOT use strong soaps, chemical detergents, or cleaning agents containing acids, caustics, or abrasives. It is best to use commercially available car wash (non-detergent) products which will not remove protective wax, which may be applied to the paint finish.
- All cleaning agents should be rinsed promptly and not be allowed to dry on the paint surface.
- Waxing tractor occasionally is recommended to remove residue from and further protect the paint finish. DO NOT use waxes containing abrasive compounds.
- Inspect paint surface during washing or waxing for chips and scratches. Repaint any areas where paint has been damaged.

Your John Deere dealer has a full line of cleaners, waxes, and touch-up paints to help enhance the paint finishes and which are compatible with your equipment.

BB92646,0000114-19-17JAN06-1/1

# Specifications

## General Specifications

	9430	9530	9630
<b>Power:</b>			
Engine Horsepower <sup>a</sup>	425 hp (317 kW)	475 hp (354 kW)	530 hp (395 kW)
97/68/EC @ Rated Speed ps <sup>b</sup>	439 ps (323 kW)	491 ps (361 kW)	543 ps (399 kW)
ECE 24 Rated ps <sup>b</sup>	430 ps (320 kW)	477 ps (356 kW)	524 ps (390 kW)
Rated Speed	2100 rpm	2100 rpm	2100 rpm
Governed Speed Range	900—2200 rpm	900—2200 rpm	900—2200 rpm
Operating Speed Range	1500—2100 rpm	1500—2100 rpm	1500—2100 rpm
Slow Idle	900±10 rpm	900±10 rpm	900±10 rpm
Fast Idle	2200±25 rpm	2200±25 rpm	2200±25 rpm

### Engine:

	Diesel	Diesel	Diesel
Type	In-line 6	In-line 6	In-line 6
Cylinders	In-line 6	In-line 6	In-line 6
Aspiration	Turbocharged Variable Geometry and Air-to-Air Aftercooled	Turbocharged Variable Geometry and Air-to-Air Aftercooled	Turbocharged Variable Geometry and Air-to-Air Aftercooled
Lubrication	Full Pressure Full-Flow Filtration	Full Pressure Full-Flow Filtration	Full Pressure Full-Flow Filtration
Displacement	13.5 L (824 in. <sup>3</sup> )	13.5L (824 in. <sup>3</sup> )	13.5L (824 in. <sup>3</sup> )
Bore	132 mm (5.20 in.)	132 mm (5.20 in.)	132 mm (5.20 in.)
Stroke	165 mm (6.50 in.)	165 mm (6.50 in.)	165 mm (6.50 in.)
Compression Ratio	16:1	16:1	16:1

### Capacities:

	9430	9530	9630
Fuel Tank Fill	1325 L (350 gal)	1325 L (350 gal)	1325 L (350 gal)
Cooling System, includes overflow tank capacity	53 L (14 gal)	53 L (14 gal)	53 L (14 gal)
Crankcase, includes filter	40 L (10.5 gal)	56 L (14.8 gal)	56 L (14.8 gal)
Powershift Transmission:			
110 mm Axle	170.8 L (45 gal) *		
Heavy Duty 120 mm Axle		87 L (23 gal) *	87 L (23 gal) *
Hydraulic System:			
Standard	103 L (27 gal)	103 L (27 gal)	103 L (27 gal)
.. High Flow	113.5 L (30 gal)	113.5 L (30 gal)	113.5 L (30 gal)

\* Capacity Includes Axles

<sup>a</sup> @ Rated Speed (ISO) Advertised hp

<sup>b</sup> Unit of German origin for horse strength similar to English "horse power"

### Fuel System:

Injection Pump Type:	
.. 9430, 9530, 9630 .....	Unit Electronic, Electronic Governor
Air Cleaner .....	Dry-Type with Secondary Element

### Cooling System:

Type .....	70 kPa (0.7 bar) (10 psi) with Centrifugal Pump
Fan Drive .....	Variable Ratio Belt Drive
Thermostats .....	Three Heavy-Duty (Two Large, One Small)

Continued on next page

RW29387,00000A1-19-14MAR11-1/2

## Specifications

### Hydraulic System:

Standard	
Type .....	Closed Center Pressure/Flow Compensated
Main Hydraulic Pump .....	Axial Piston
Displacement .....	75 cm <sup>3</sup> (4.5 in. <sup>3</sup> )
Maximum Pressure .....	20000 kPa (200 bar) (2900 psi)
Maximum Pump Flow PST .....	186 L/min (48 gpm)
Available Flow at One SCV .....	114 L/min (30 gpm)
Available Flow Two SCV's PST .....	186 L/min (48 gpm)
Selective Control Valves (SCVs) .....	Electro-hydraulic
High Flow <sup>a</sup>	
Type .....	Closed Center Pressure/Flow Compensated
Main Hydraulic Pump .....	Axial Piston
Displacement .....	75 cm <sup>3</sup> (4.5 in. <sup>3</sup> )
Second Hydraulic Pump .....	Axial Piston
Displacement .....	45 cm <sup>3</sup> (2.7 in. <sup>3</sup> )
Maximum Pressure .....	20000 kPa (200 bar) (2900 psi)
Maximum Pump Flow From Both Pumps .....	284 L/min (75 gpm)
Available Flow at One SCV .....	163 L/min (43 gpm)
Available Flow Multiple SCV's .....	284 L/min (75 gpm)
Selective Control Valves (SCVs) .....	Electro-hydraulic

### Electrical System:

Type .....	12 Volt (parallel)
Alternator .....	200 amp
Batteries:	
.. 9430-9530-9630 .....	3
Cold Cranking Amps:	
.. 9430-9530-9630 .....	2775

### Steering:

Type .....	Articulated Hydrostatic with Two Double Action Rams
Turns (Lock to Lock) .....	4.3
Articulation Steering Angle .....	42°

### Brakes:

Type .....	Power Hydraulic Wet Disk
------------	--------------------------

### 18 Speed Powershift Transmission:

Type .....	Electronically Activated Wet Disk Clutch
Gear Selections .....	18 Forward – 6 Reverse

### Front and Rear Axle:

.. 9430 .....	Standard
.. 9530-9630 .....	Double Reduction

### Weight (Average Shipping):

9430 .....	16116 kg (35530 lb)
9530 .....	16361 kg (36070 lb)
9630 .....	16914 kg (37290 lb)

<sup>a</sup> Approximate flow values @ 2000 Engine rpm

RW29387.00000A1-19-14MAR11-2/2

*Specifications*

**Overall Dimensions**

	<b>9430</b>	<b>9530</b>	<b>9630</b>
Wheelbase	3500 mm (137.8 in.)	3500 mm (137.8 in.)	3500 mm (137.8 in.)
Overall Length	6860 mm (270 in.)	6860 mm (270 in.)	6860 mm (270 in.)
Overall Length	7240 mm (285 in.)	7240 mm (285 in.)	7240 mm (285 in.)
Overall Width:			
Width *	3012 mm (118.6 in.)	3012 mm (118.6 in.)	3012 mm (118.6 in.)
Axle Length	3048 mm (120 in.)	3048 mm (120 in.)	3048 mm (120 in.)
Axle Diameter (std.)	110 mm	120 mm	120 mm
Axle Diameter (opt.)	—	—	—
Height from Ground:			
.. Top of Cab	3593 mm (142 in.)	3593 mm (142 in.)	3593 mm (142 in.)
.. Top of Air Stack	3668 mm (144 in.)	3668 mm (144 in.)	3668 mm (144 in.)
.. Top of Exhaust	3960 mm (156 in.)	3960 mm (156 in.)	3960 mm (156 in.)
.. Top of Hood	2724 mm (107 in.)	2724 mm (107 in.)	2724 mm (107 in.)
Turning Radius			
.. No Steering Stops	4.45 m (14.6 ft)	4.45 m (14.6 ft)	4.45 m (14.6 ft)
.. With 3° Stops	4.72 m (15.6 ft)	4.72 m (15.6 ft)	4.72 m (15.6 ft)
.. With 5° Stops	5.18 m (17.0 ft)	5.18 m (17.0 ft)	5.18 m (17.0 ft)
.. With 10° Stops	5.92 m (19.5 ft)	5.92 m (19.5 ft)	5.92 m (19.5 ft)
Crop Clearance			
Axle Housing	782 mm (30.8 in.)	782 mm (30.8 in.)	782 mm (30.8 in.)
Hinge Pin	520 mm (20.5 in.)	520 mm (20.5 in.)	520 mm (20.5 in.)
Drawbar Support	406 mm (16 in.)	406 mm (16 in.)	406 mm (16 in.)
Drawbar	482 mm (19 in.)	482 mm (19 in.)	482 mm (19 in.)
Unballasted Base Weight	15888 kg (35026 lb)	16018 kg (35315 lb)	16018 kg (35315 lb)

*Dimensions are for tractor equipped with standard tires*

*\* Left Step to Right Fuel Tank*

OU1092A,00001E2-19-06DEC07-1/1

**Ground Speeds—18-Speed Powershift Transmission**

**Group 47 Tires**

**Group 48 Tires**

18.4R46, 20.8R42, 480/80R46, 520/85R42, 620/70R42, 480/80R50, 520/85R46, 620/70R46, 710/70R42, 800/70R38  
710/70R38

Gear	Speed		Speed	
	km/h	mph	km/h	mph
1	4.0	2.5	4.2	2.6
2	4.8	3.0	5.0	3.1
3	5.3	3.3	5.6	3.5
4	5.9	3.7	6.2	3.9
5	6.5	4.0	6.8	4.3
6	7.3	4.5	7.6	4.8
7	8.0	5.0	8.5	5.3
8	9.0	5.6	9.5	5.9
9	9.9	6.1	10.4	6.5
10	11.0	6.9	11.6	7.2
11	12.2	7.6	12.9	8.0
12	13.5	8.4	14.2	8.8
13	15.0	9.3	15.8	9.8
14	16.6	10.3	17.5	10.9
15	20.5	12.8	21.6	13.4
16	25.3	15.7	26.6	16.5
17	31.2	19.4	32.9	20.4
18	38.5	23.9	40.5	25.2
R1	3.9	2.4	4.1	2.5
R2	5.3	3.3	5.6	3.5
R3	5.9	3.7	6.2	3.9
R4	8.0	5.0	8.5	5.3
R5	9.0	5.6	9.5	5.9
R6	12.2	7.6	12.9	8.0

Engine at 2100 rpm

BB92646,0000118-19-17APR07-1/1

**Identify Zinc-Flake Coated Fasteners**

Standard cap screws (A) are a reflective silver color.

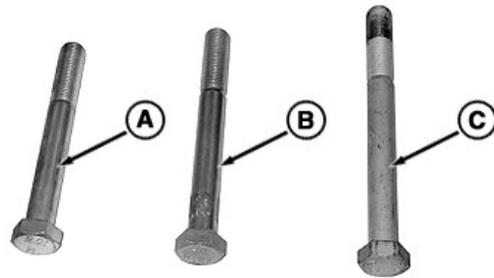
Zinc plated cap screws (B) are a reflective gold color.

Zinc-Flake Coated cap screws (C) are a dull silver color.

*NOTE: Zinc-Flake Coated fasteners are tightened to lubricated specifications, unless otherwise noted. (See Torque Value Charts in this group.)*

**A—Standard Cap Screws**  
**B—Zinc-plated Cap Screw**

**C—Zinc-Flake Cap Screw (16 mm and larger)**

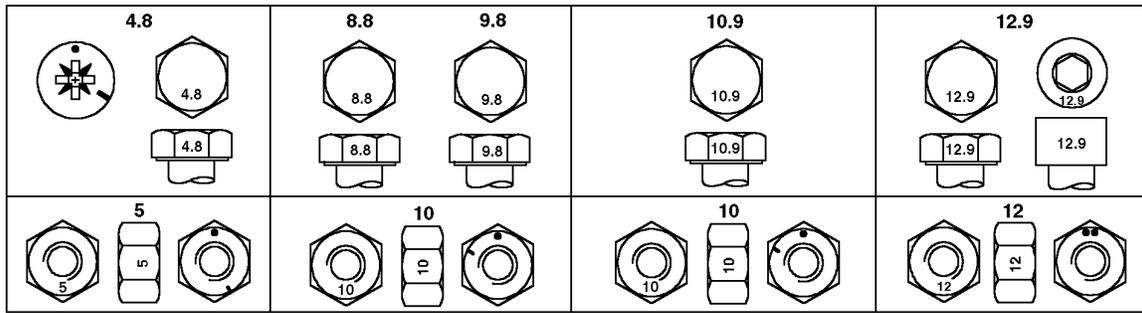


RXA0073812—UN—03M/AF04

BB92646,0000119-19-17JAN06-1/1

Specifications

**Metric Bolt and Cap Screw Torque Values**



Top, Property Class and Head Markings; Bottom, Property Class and Nut Markings

TORQ2—UN—15APR13

Size	Class 4.8		Class 8.8 or 9.8		Class 10.9		Class 12.9	
	Lubricated <sup>a</sup> N·m (lb-ft)	Dry <sup>b</sup> N·m (lb-ft)	Lubricated <sup>a</sup> N·m (lb-ft)	Dry <sup>b</sup> N·m (lb-ft)	Lubricated <sup>a</sup> N·m (lb-ft)	Dry <sup>b</sup> N·m (lb-ft)	Lubricated <sup>a</sup> N·m (lb-ft)	Dry <sup>b</sup> N·m (lb-ft)
M6	4.7 (3.5)	6 (4.4)	9 (6.6)	11.5 (8.5)	13 (9.5)	16.5 (12.2)	15.5 (11.5)	19.5 (14.5)
M8	11.5 (8.5)	14.5 (10.7)	22 (16)	28 (20.5)	32 (23.5)	40 (29.5)	37 (27.5)	47 (35)
M10	23 (17)	29 (21)	43 (32)	55 (40)	63 (46)	80 (59)	75 (55)	95 (70)
M12	40 (29.5)	50 (37)	75 (55)	95 (70)	110 (80)	140 (105)	130 (95)	165 (120)
M14	63 (46)	80 (59)	120 (88)	150 (110)	175 (130)	220 (165)	205 (150)	260 (190)
M16	100 (74)	125 (92)	190 (140)	240 (175)	275 (200)	350 (255)	320 (235)	400 (300)
M18	135 (100)	170 (125)	265 (195)	330 (245)	375 (275)	475 (350)	440 (325)	560 (410)
M20	190 (140)	245 (180)	375 (275)	475 (350)	530 (390)	675 (500)	625 (460)	790 (580)
M22	265 (195)	330 (245)	510 (375)	650 (480)	725 (535)	920 (680)	850 (625)	1080 (800)
M24	330 (245)	425 (315)	650 (480)	820 (600)	920 (680)	1150 (850)	1080 (800)	1350 (1000)
M27	490 (360)	625 (460)	950 (700)	1200 (885)	1350 (1000)	1700 (1250)	1580 (1160)	2000 (1475)
M30	660 (490)	850 (625)	1290 (950)	1630 (1200)	1850 (1350)	2300 (1700)	2140 (1580)	2700 (2000)
M33	900 (665)	1150 (850)	1750 (1300)	2200 (1625)	2500 (1850)	3150 (2325)	2900 (2150)	3700 (2730)
M36	1150 (850)	1450 (1075)	2250 (1650)	2850 (2100)	3200 (2350)	4050 (3000)	3750 (2770)	4750 (3500)

<sup>a</sup> "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings.

<sup>b</sup> "Dry" means plain or zinc plated without any lubrication.

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class.

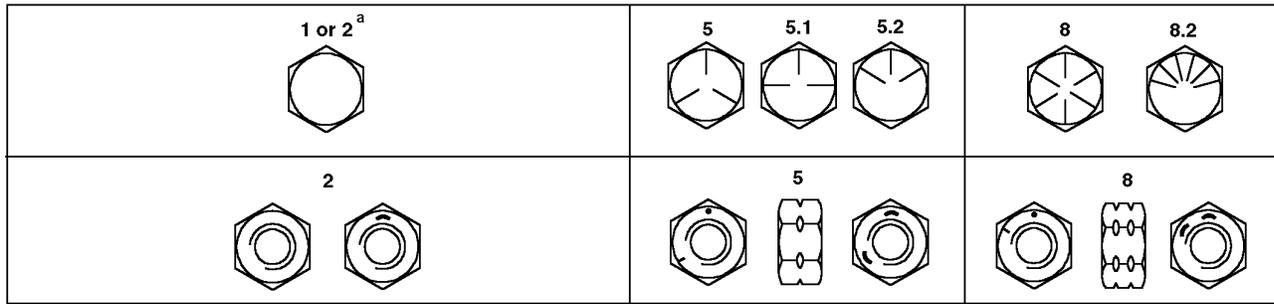
Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

Fasteners should be replaced with the same or higher property class. If higher property class fasteners are used, these should only be tightened to the strength of the original.

BB92646,000011A-19-17JAN06-1/1

Specifications

Unified Inch Bolt and Cap Screw Torque Values



TORC1A—UN—15APR13

Top, SAE Grade and Head Markings; Bottom, SAE Grade and Nut Markings

Size	Grade 1 (No Mark)		Grade 2 <sup>a</sup> (No Mark)		Grade 5, 5.1 or 5.2		Grade 8 or 8.2	
	Lubricated <sup>b</sup> N·m (lb-ft)	Dry <sup>c</sup> N·m (lb-ft)	Lubricated <sup>b</sup> N·m (lb-ft)	Dry <sup>c</sup> N·m (lb-ft)	Lubricated <sup>b</sup> N·m (lb-ft)	Dry <sup>c</sup> N·m (lb-ft)	Lubricated <sup>b</sup> N·m (lb-ft)	Dry <sup>c</sup> N·m (lb-ft)
1/4	3.8 (2.8)	4.7 (3.5)	6 (4.4)	7.5 (5.5)	9.5 (7)	12 (9)	13.5 (10)	17 (12.5)
5/16	7.7 (5.7)	9.8 (7.2)	12 (9)	15.5 (11.5)	19.5 (14.5)	25 (18.5)	28 (20.5)	35 (26)
3/8	13.5 (10)	17.5 (13)	22 (16)	27.5 (20)	35 (26)	44 (32.5)	49 (36)	63 (46)
7/16	22 (16)	28 (20.5)	35 (26)	44 (32.5)	56 (41)	70 (52)	80 (59)	100 (74)
1/2	34 (25)	42 (31)	53 (39)	67 (49)	85 (63)	110 (80)	120 (88)	155 (115)
9/16	48 (35.5)	60 (45)	76 (56)	95 (70)	125 (92)	155 (115)	175 (130)	220 (165)
5/8	67 (49)	85 (63)	105 (77)	135 (100)	170 (125)	215 (160)	240 (175)	305 (225)
3/4	120 (88)	150 (110)	190 (140)	240 (175)	300 (220)	380 (280)	425 (315)	540 (400)
7/8	190 (140)	240 (175)	190 (140)	240 (175)	490 (360)	615 (455)	690 (510)	870 (640)
1	285 (210)	360 (265)	285 (210)	360 (265)	730 (540)	920 (680)	1030 (760)	1300 (960)
1-1/8	400 (300)	510 (375)	400 (300)	510 (375)	910 (670)	1150 (850)	1450 (1075)	1850 (1350)
1-1/4	570 (420)	725 (535)	570 (420)	725 (535)	1280 (945)	1630 (1200)	2050 (1500)	2600 (1920)
1-3/8	750 (550)	950 (700)	750 (550)	950 (700)	1700 (1250)	2140 (1580)	2700 (2000)	3400 (2500)
1-1/2	990 (730)	1250 (930)	990 (730)	1250 (930)	2250 (1650)	2850 (2100)	3600 (2650)	4550 (3350)

<sup>a</sup> Grade 2 applies for hex cap screws (not hex bolts) up to 6 in. (152 mm) long. Grade 1 applies for hex cap screws over 6 in. (152 mm) long, and for all other types of bolts and screws of any length.

<sup>b</sup> "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings.

<sup>c</sup> "Dry" means plain or zinc plated without any lubrication.

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

BB92646,000011B-19-17JAN06-1/1

**Limited Battery Warranty**

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

**To Secure Warranty Service**

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

**Free Replacement**

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within 90 days of purchase will be replaced free of charge. Installation costs will be covered by warranty if (1) the unserviceable battery was installed by a John Deere factory or dealer, (2) failure occurs within 90 days of purchase, and (3) the replacement battery is installed by a John Deere dealer.

**Pro Rata Adjustment**

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship more than 90 days after purchase, but before the expiration of the applicable adjustment period, will be replaced upon payment of the battery's current list price less a pro rata credit for unused months of service. The applicable adjustment period is determined from the Warranty Code printed at the top of the battery and chart below. Installation costs are not covered by warranty after 90 days from the date of purchase.

**This Warranty Does Not Cover**

- Breakage of the container, cover, or terminals.
- Depreciation or damage caused by lack of reasonable and necessary maintenance or by improper maintenance.
- Transportation, mailing, or service call charges for warranty service.

**Limitation of Implied Warranties and Purchaser's Remedies**

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

**No Dealer Warranty**

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

**Pro Rata Months of Adjustment**

Warranty Code	Warranty Period
A	40 Months
B	36 Months
C	24 Months

*NOTE: If your battery is not labeled with a warranty code, it is a warranty code "B".*

BB92646,000011C-19-17JAN06-1/1

# Identification Numbers

## Identification Plates

Each tractor has the identification plates shown on these pages. The letters and numbers stamped on the plates identify a component or assembly. ALL these characters are needed when ordering parts or identifying a tractor or component for any John Deere product support program.

Also, they are needed for law enforcement to trace your tractor if it is ever stolen. ACCURATELY record these characters in the spaces provided in each of the following photographs.

BB92646,000011D-19-17JAN06-1/1

## Record Product Identification Number

Identification data plate (A) is along right-hand tractor frame.

Product Identification Number

\* \_\_\_\_\_ \*

PRODUCT IDENTIFICATION NUMBER (PIN): consist of 17 positions without spaces, dashes or other interruptions as follows:

**Positions 1-3:** World Manufacturer Code (WMC) (e.g. 1RW)

**Positions 4-7:** is the numeric portion of the tractor model number.

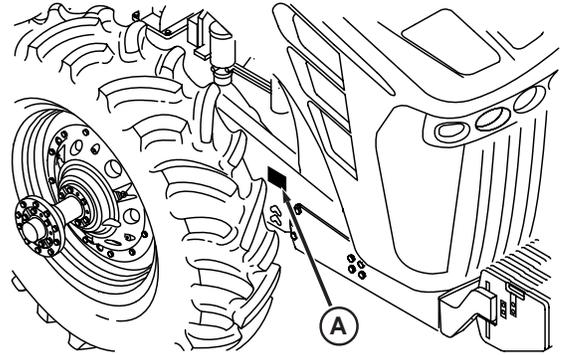
**Position 8:** Transmission Option Code indicated in table below.

**Position 9:** is a check letter calculated based on the values and positions of the other sixteen characters. Details of the check letter calculation are restricted. Contact Deere & Company Engineering Standards for more information.

**Position 10:** Calendar Year of Manufacture may be a letter or a number which reflects the calendar year (not model year) of manufacture. The value of this character is specified in Table below.

Characters Used To Designate Year Of Manufacture Or Model Year			
Year	Code	Year	Code
2010	A	2012	C
2011	B	2013	D

**Position 11:** Transmission Option Code indicated in the table.



A—Identification Data Plate

RXA0106278—UN—02FEB10

Configuration and Transmission Option Codes Used in Positions 8 and 11	
P	POWERSHIFT
H	Manual Shift Transmission
T	Track Tractor Configuration

**Positions 12:** Additional Manufacturing or Product Information provides additional information about the tractor configuration. If the tractor is a track tractor, the character in position 12 will be a "9". Otherwise the character in position 12 will be a numerical zero, "0".

**Positions 13-17:** Sequential Serial Number will be a serialized number uniquely identifying individual tractors bearing the same model designation.

**Additionally:** An asterisk (\*) shall immediately precede the first character and immediately follow the last character of the PIN to discourage tampering or altering of the PIN.

RW29387,0000006-19-23NOV10-1/1

### Record Engine Serial Number

Identification plate (A) is located behind starter.

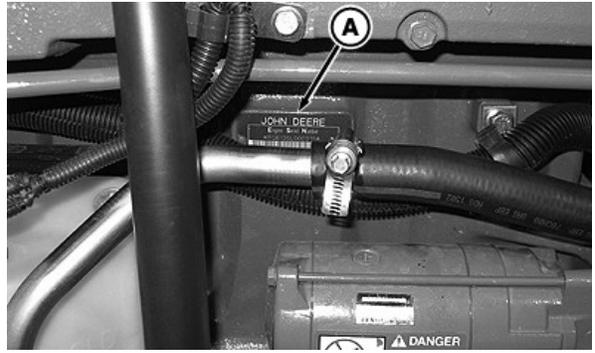
Serial Number

\* \_\_\_\_\_ \*

Engine emission tier level is identified by seventh character of engine serial number (B).

Emission Tier Level	Seventh Character of Engine Serial Number
U.S. EPA Tier 3 and EU Stage III A	L
U.S. EPA Tier 2 and EU Stage II	G

A—Engine Serial Number Plate Location    B—Engine Emission Tier Level Code



RXA0093576—UN—26APR07



RXA0112371—UN—29NOV10

RX32825,00001D0-19-05JAN11-1/1

### Record Cab Serial Number

Identification plate (A) is located on the lower right corner of cab.

Serial Number

\* \_\_\_\_\_ \*



RXA0090761—UN—12SEP06

BB92646,0000120-19-11SEP06-1/1

### Record Transmission Serial Number

Identification plate (A) for Powershift is located on right rear of transmission case, near the transmission filter.

Serial Number

\* \_\_\_\_\_ \*

A—Identification Plate



RXA0091537—UN—16NOV06

Powershift Transmission

RW29387,00005AB-19-27MAR07-1/1

### Keep Proof of Ownership

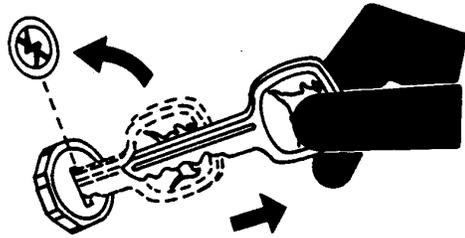
1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:
  - Mark your machine with your own numbering system
  - Take color photographs from several angles of each machine



BB92646,0000124-19-17JAN06-1/1

### Keep Machines Secure

1. Install vandal-proof devices.
2. When machine is in storage:
  - Lower equipment to the ground
  - Set wheels to widest position to make loading more difficult
  - Remove any keys and batteries
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When parking outdoors, store in a well-lighted and fenced area.
5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
6. Notify your John Deere dealer of any losses.



TS230-UN-24MAY89

BB92646,0000125-19-17JAN06-1/1

# Lubrication and Maintenance Records

## 250 Hour Service Records

- Change engine oil and filter
- Check manual brakes
- Check neutral start system
- Check transmission PARK position
- Check transmission park brake (*18-Speed Powershift*)
- Service batteries
- Replace fuel filters
- Clean cab air and recirculation filters
- Inspect for loose bolts
- Lubricate telescoping drive shafts
- Lubricate lower driveline bearing

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

BB92646,0000126-19-17JAN06-1/1

## 500 Hour Service Records

- Replace fuel filters

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

BB92646,0000127-19-17JAN06-1/1

## 750 Hour Service Records

- Check air intake and cooling system
- Replace hydraulic filter
- Clean reservoir screen
- Replace transmission and axle filters
- Clean water separator
- Clean fuel tank vent filter

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

BB92646,0000128-19-17JAN06-1/1

**1500 Hour Service Records**

- Change transmission oil
- Change axle oil
- Change hydraulic oil
- Clean transmission sump screen
- Service cooling system
- Check belt tensioners
- Check Axle End Play (Heavy Application)

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

BB92646.0000129-19-17MAY07-1/1

**2000 Hour Service Records**

- Drain, flush, and refill cooling system **SCHEDULED**
- Check Axle End Play (Normal Application)

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

RW29387.00000AB-19-12DEC08-1/1

**2500 Hour Service Records**

- Adjust engine valve clearance

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

RW29387.0000221-19-06DEC05-1/1

**Annual Service Records**

- Replace engine air filters
- Replace cab air and recirculation filters
- Replace motor seal drain filter
- Lubricate hitch sensor
- Inspect seat belts

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

BB92646,000012A-19-17JAN06-1/1

**Two Year Service Records**

- Check Axle End Play (Normal Application)

Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				
Hours					Hours				
Date					Date				

BB92646,000012B-19-17MAY07-1/1

**4500 Hour or Five Year Service Records**

- Replace transmission drive shaft damper

Hours					Hours				
Date					Date				

BB92646,000012C-19-20SEP07-1/1

# Glossary

## Glossary of Terms

Alternating Current	AC	Electrical current that reverses its direction at regularly recurring intervals
Air Conditioning	A/C	System used for conditioning the air in the cab
Accessory	ACC	Secondary electrical system
Air Quality System	AQS	System used to control conditioned air in the cab
Automatic Powershift Control System	APS	System used to control automatic transmission shifting
Armrest Control Unit	ACU	Armrest control used to control tractor functions
Cold Cranking Amperes	CCA	Refers to a battery's capability to perform during cold weather operation
Circulator Motor		Symbols for circulator motor speeds
	O	Medium Speed
	++	Fastest Speed
Central Control Unit	CCU	Computerized system for tractor monitoring
Component Technical Manual	CTM	Technical manual developed for the servicing of major components
Direct Current	DC	Electrical current flowing in one direction only
Engine Control Unit	ECU	Computerized system used to govern engine speed
Electro-hydraulic	EH	Refers to a hydraulic valve function that is controlled electrically
Electro-hydraulic Depth Control	EHDC	Abbreviation
Electro-hydraulic Selective Control Valve	EH SCV	Selective control valve operated with electrical solenoids
Gallons Per Minute	gpm	Amount of fluid over a period of one minute
Hitch Control Unit	HCU	Computerized system used to control hitch functions
High Intensity Discharge	HID	Type of field lights use for front lighting
High Pressure Common Rail	HPCR	Fuel injection system on the engine
Hitch Slip Command	HSC	Computerized system used to supplement hitch draft control
Instrument Control Unit	ICU	Computerized system controlling tractor warning functions
Ignition	IGN	Control for starting and stopping the tractor
Implement Management System	IMS	Computerized system used to perform multi-functional tractor tasks
International Standards Organization	ISO	Standards organization
Mechanical Shift Transmission	MST	24 Speed Transmission
Mechanical Front Wheel Drive	MFWD	A powered front axle which is driven mechanically from the transmission
Number	No.	Abbreviation
Product Identification Number	PIN	Serial number relating to tractor identification
Powershift Control Unit	PCU	Computerized system used to control transmission shift functions
Pressure Control Valve	PCV	Valve used to control pressure within a system
Powershift Transmission	PST	Abbreviation
Power Take-Off	PTO	Abbreviation
Revolutions Per Minute	rpm	Abbreviation
Society of Automotive Engineers	SAE	Standards Organization
Selective Control Valve	SCV	Device used to control remote hydraulic functions
Selective Control Unit	SCU	Computerized system used to control selective control valve functions for selective control valves 1, 2, and 3
Selective Control Option	SCo	Controller for selective control valves 4 and 5
Slow Moving Vehicle	SMV	Warning sign on the rear of the tractor
Set-Up Panel	SUP	Operator control panel used to set selective control valve function

BB92646,000012D-19-17JAN06-1/1



# Index

	Page		Page
<b>A</b>			
Abbreviations .....	185-1	Beverage cooler .....	25-11
Active seat .....	25-2	Biodiesel fuel.....	90-3
ACU Diagnostic Trouble Codes .....	160-2	Brakes .....	40-11, 110-10
Air		Trailer	
Cab filters .....	110-12, 135-4	Hydraulic .....	40-12
Conditioning .....	145-12	BRC Diagnostic Trouble Codes .....	160-4
Air conditioning, operating		Break-in period .....	30-1
Standard .....	25-5	Break-in Plus engine oil .....	90-8
Air pressure (IF tires		<b>C</b>	
Group 48 .....	80-6	CAB Diagnostic Trouble Codes .....	160-5
ASU Diagnostic Trouble Codes .....	160-3	Cab heat, operating	
ATC		Standard .....	25-5
Display panel .....	25-7	CAN Statistics .....	16-13
ATC Diagnostic Trouble Codes .....	160-3	Capacities .....	170-1
AutoLoad		Cat. 5 to 4 drawbar pin	
Change in ground level.....	43-6	Drawbar pin adapter .....	60-7
Ground level set point .....	43-5	CCU Diagnostic Trouble Codes .....	160-7
Guidelines.....	43-1	Checking	
Lower set point.....	43-4	Weep hole .....	145-3
Operation		CLC Diagnostic Trouble Codes.....	160-9
Controls .....	43-12	Clevis	
Operator settings		Cat. 4 .....	60-5
Setting scraper model .....	43-9	Cat. 5 .....	60-6
User inputs .....	43-7	Clock	
SCV setup panel .....	43-10	Setting .....	16-12
Upper set point .....	43-3	Codes.....	16-13
AutoTrac Assisted Steering System .....	25-16	Cold weather starting .....	35-1, 35-3
AutoTrac component location.....	41-1	CommandARM	
AutoTrac steering system .....	41-2	Position, adjusting.....	25-3
Auxiliary heaters.....	35-3	CommandCenter	
Axle		Light indicators .....	20-1
End play.....	120-8	CommandCenter panel .....	16-1
<b>B</b>			
Back-Up alarm		Connecting implements to high flow hydraulics .....	55-11
Volume control.....	40-15	Console, side .....	15-6
Ballast .....	75-1, 75-14	Control console	
Ballast		Powershift.....	15-8
Worksheet.....	75-2	Coolant	
Battery		Additional information.....	90-13
Charger.....	35-5	Diesel engine	
Service .....	110-8	Engine with wet sleeve cylinder liners .....	90-11
Warranty.....	170-7	John deere COOL-GARD II coolant extender .....	90-12
Battery Handling, Safety		Testing.....	90-14
Safety, Battery Handling.....	05-13	Warm temperature climates.....	90-12
Beacon light.....	20-8	Coolant heater .....	35-5
Belt		Coolant temperature gauge .....	15-5
Routing .....	145-4	Cooling system .....	100-2
Tensioner.....	135-1	Draining, flushing and refilling .....	125-1
Belts .....	145-4	CoolScan .....	90-14
		Corner post display .....	15-2

Continued on next page

Index

	Page		Page
<b>D</b>			
Day backlight		Standard position .....	60-4
Setting .....	16-10	Tow cable .....	60-8
Defrost, operating		Drive belts .....	145-4
Standard .....	25-5	Dual beam radar	
Depth control .....	70-1	Performing vehicle speed calibration .....	16-15
Diagnostic Trouble Codes		<b>E</b>	
Active Seat Control Unit (ASU) .....	160-3	ECU Diagnostic Trouble Codes .....	160-10
Armrest Control Unit (ACU) .....	160-2	Effect of cold weather on diesel engines .....	90-5
Automatic Temperature Control (ACU) .....	160-3	Electric Mirror .....	25-13
Brake Control Unit (BRC) .....	160-4	Electrical connectors .....	25-19
Cab Control Unit (CAB) .....	160-5	Electrical Connectors .....	20-9, 25-20
Cab Load Center (CLC) .....	160-9	Emergency exit .....	40-2
Central Control Unit .....	160-7	Engine	
Deluxe Hydraulic Control Unit (SCU) .....	160-18	Air .....	135-2
Engine Control Unit (ECU) .....	160-10	Emissions certification .....	35-1
Instrument Control Unit (ICU) .....	160-13	Internal starting aid .....	35-3
Powershift Transmission Control Unit (PTP) ..	160-14	Oil .....	100-1
SCC - SCV CAN Controller .....	160-16	Oil 100 hour initial .....	105-1
Setup Panel (SUP) .....	160-23	Operating .....	35-1
Steering System Control Unit (SSU) .....	160-21	Valve Clearance .....	130-1
SV I .....	160-22	Engine oil	
SV II .....	160-22	Break-In Plus .....	90-8
SV III .....	160-22	Diesel	
SV IV .....	160-22	Tier 3 and stage IIIA .....	90-8
SV V .....	160-22	Engine oil and filter service intervals .....	90-9, 90-10
SV VI .....	160-22	Engine oil pressure gauge .....	15-5
SV VII .....	160-22	<b>F</b>	
Tractor Electric Control Unit (TEC) .....	160-23	Fan belt	
Tractor Electronic Interface (TEI) .....	160-23	Remove and install .....	145-4
Vehicle Load Center Control Unit (VLC) .....	160-24	Field and egress lights, programming .....	20-3
Diagnostic Trouble Codes		Field cruise	
HV I .....	160-12	Foot decelerator .....	40-12
Diagnosics .....	16-13	Field cruise control .....	16-6
Diesel engine oil		Filters	
Tier 3 and stage IIIA .....	90-8	Cab air .....	110-12, 135-4
Diesel engines, cold weather effect .....	90-5	Engine oil .....	105-1
Diesel fuel .....	90-1	Fuel .....	105-4, 110-4
Diesel fuel, testing .....	90-4	Hydraulic .....	105-3, 115-2, 135-6
Differential lock .....	40-14	Transmission .....	105-2, 115-1
Digital indicators		Flood Light Bulbs, replacing	
Tachometer, ground speed, transmission .....	15-5	Front grille .....	150-8
Display, corner post .....	15-2	Front console .....	15-1
Drain Intervals for Diesel Engine Coolant		Front grill flood light bulb, replacing .....	150-7
Diesel Engine Coolant, Drain Intervals .....	90-12	Front grill flood light bulbs, replacing .....	150-8
Drawbar		Front grille lights	
Adjusting		Adjusting .....	150-10
Side-to-side .....	60-5	Fuel	
Heavy-Duty drawbar		Biodiesel .....	90-3
Limitations .....	60-3	Diesel .....	90-1
Long drawbar support		<b>Continued on next page</b>	
Limitations .....	60-3		

Index

	Page		Page
Filters .....	105-4, 110-4	Implement connector.....	25-18
Handling and storing .....	90-2	Implement guidelines .....	75-12
Lubricity .....	90-2	Implement management system	
Storage .....	90-6	Description and display.....	45-1
System .....	35-1	Implement management system (IMS)	
Tank.....	90-7	Functions	
Tank drain.....	110-4	Differential lock.....	45-5
Fuel		Selective control valves (SCV).....	45-5
Bleeding fuel system.....	145-13	Learned functions.....	45-4
Fuel level gauge.....	15-5	Implement selection, setting .....	16-8
Fuel system, bleeding .....	145-13	Inch torque values .....	170-6
Fuses .....	150-1	Information indicators.....	15-3
Location .....	150-2	Instructional seat .....	40-3
 <b>G</b> 			
Gauges .....	15-5		
Glossary .....	185-1		
Grease			
Multipurpose Extreme Pressure (EP).....	90-16		
GreenStar connectors .....	25-15		
Grille .....	145-1		
Ground speed, digital indicator.....	15-5		
 <b>H</b> 			
Hauling tractor .....	85-4		
Heated leather seat switch			
Heated seat switch.....	25-3		
HID road light bulb, replacing.....	150-9		
High Flow hydraulic			
Hoses.....	50-3		
High/low beam, operating .....	20-4		
Hinge pins.....	100-4		
Hood .....	95-3		
HV I			
Diagnostic Trouble Codes.....	160-12		
Hydraulic			
Hoses.....	50-1		
Motor seal drain filter			
Hose tip .....	55-16		
Oil and filter .....	100-1		
Reservoir screen .....	115-3		
Standard hydraulic component identification .....	55-2		
Trailer brakes.....	40-12		
Hydraulic			
Reservoir breather filter .....	115-3		
 <b>I</b> 			
ICU Diagnostic Trouble Codes .....	160-13		
Identification numbers .....	175-1		
Ignition switch.....	15-1		
 <b>K</b> 			
Key switch.....	15-1		
 <b>L</b> 			
Language, selecting.....	16-11		
Lighting			
Adjusting Headlights .....	150-11		
Courtesy Light			
Late cab.....	150-14		
Dome Light.....	150-12		
Field and entry .....	20-6		
Front light bulb			
Front grille .....	150-7		
Hazard.....	20-5		
Hazard lights.....	150-13		
Roof Flood			
Late cab.....	150-14		
Lights			
Adjusting front grille lights.....	150-10		
Identification .....	20-1		
Liquid ballast.....	75-14		
Load sensing .....	55-3		
Lubricant			
Mixing.....	90-16		
Lubricant Storage			
Storage, Lubricant .....	90-16		
Lubricants, safety.....	90-16		
Lubrication			
Heavy-Duty gudgeon bearings .....	110-6		
Lower driveline bearings .....	110-5		
Lubrication and maintenance records .....	180-1		
Lubricity of diesel fuel.....	90-2		
 <b>M</b> 			
Maintenance intervals.....	95-1		
Metric torque values .....	170-5		

Continued on next page

Index

	Page		Page
Mixing lubricants.....	90-16	Removing from storage.....	165-1
Monitor		Reset % wheel slip.....	16-16
Mounts.....	25-22		
SCV.....	50-4	<b>S</b>	
Motor seal drain		Safety	
Filter .....	135-6	Protect against noise .....	05-2
Multipurpose Extreme Pressure (EP) grease .....	90-16	Rotating drivelines, stay clear .....	05-5
<b>N</b>		Safe maintenance, practice .....	05-15
Neutral start system.....	110-9	Tires, service safely.....	05-18, 80-1
Night backlight		Towed equipment, transport at safe speeds .....	05-10
Setting.....	16-10	Tractor, operating safely.....	05-7
<b>O</b>		Use caution on slopes, uneven terrain, and rough ground.....	05-10
Oil		Safety chains .....	85-3
Cooler .....	145-1	Safety labels	
Engine.....	100-1	Cab corner post .....	10-2, 10-4
Tier 3 and stage IIIA.....	90-8	Side frame .....	10-5, 10-6
Filters.....	105-2, 105-3, 115-1, 115-2	Safety, Avoid High-Pressure Fluids	
High Flow warm-up .....	40-5	Avoid High-Pressure Fluids.....	05-19
Hydraulic .....	100-1	Safety, Fire Prevention	
Standard warm-up .....	40-4	Fire Prevention .....	05-3
Oil filters.....	90-10	Safety, Forestry Operations	
Oilscan.....	90-14	Limited Use in Forestry Operation .....	05-8
Operating		Safety, Handle Fuel Safely, Avoid Fires	
Extremity transport warning lights.....	20-7	Avoid Fires, Handle Fuel Safely.....	05-3
<b>P</b>		Safety, lubricants .....	90-16
Paint care .....	165-2	Safety, ROPS	
Park brake .....	145-1	ROPS, Keep Installed Properly .....	05-4
Power hop.....	75-3	Safety, Steps and Handholds	
Powershift		Use Steps and Handholds Correctly.....	05-5
Calibration.....	145-9	Safety, Tightening Wheel Retaining Bolts/Nuts	
Powershift transmission/axles		Tightening Wheel Retaining Bolts/Nuts.....	05-19
Oil level check.....	100-3	SCC - SCV CAN Controller	
Powershift transmission/double reduction axles		Diagnostic Trouble Codes .....	160-16
Oil level check.....	110-1	Scraper	
PTP Diagnostic Trouble Codes.....	160-14	Ballast package .....	75-6
<b>R</b>		Scraper operation cycle .....	42-1
Radar, dual beam		Screen contrast	
Performing vehicle speed calibration .....	16-15	Setting.....	16-10
Radar, single beam		SCU Diagnostic Trouble Codes .....	160-18
Performing vehicle speed calibration, .....	16-14	SCV	
Recommended IF R tire pressures		Control levers.....	50-8
Group 48 .....	80-6	Flow demand .....	50-5
Relays .....	150-1	Monitor controls .....	50-4
		Seat	
		Active .....	25-2
		Air suspension.....	25-1
		Belts .....	40-2, 135-5
		Service	
		100 hour (initial)	
		Changing engine oil and filter .....	105-1

Continued on next page



Index

	Page		Page
<b>V</b>		Weights.....	75-11
Vehicle speed calibration, performing (dual beam radar)	16-15, 16-16	Wheel	
Vehicle speed calibration, performing (single beam radar)	16-14	Adjustment.....	80-9
VLC Diagnostic Trouble Codes.....	160-24	12-Bolt Wheel.....	80-13
<b>W</b>		Hop.....	75-3
Water separator.....	100-2	Slip.....	75-12
Backflushing.....	145-14	Tightening stand.....	80-12
Cleaning filter element.....	145-15	Tread settings.....	80-8
Weep hole		Weights.....	75-9
Checking.....	145-3	Wrench adapter.....	80-10
		Wheel slip	
		Resetting %.....	16-16
		Wheels	
		Weight holding wrench.....	80-11
		Windshield wiper.....	25-8

# John Deere Service Literature Available

## Technical Information

Technical information can be purchased from John Deere. Publications are available in print or CD-ROM format.

Orders can be made using one of the following:

- John Deere Technical Information Store: [www.JohnDeere.com/TechInfoStore](http://www.JohnDeere.com/TechInfoStore)
- Call 1-800-522-7448
- Contact your John Deere dealer

Available information includes:

DX,SERVLIT-19-07DEC16-1/5

**PARTS CATALOGS** list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.



TS189—UN—17JAN89

DX,SERVLIT-19-07DEC16-2/5

**OPERATOR'S MANUALS** providing safety, operating, maintenance, and service information.



TS191—UN—02DEC88

DX,SERVLIT-19-07DEC16-3/5

**TECHNICAL MANUALS** outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in a separate component technical manual.



TS224—UN—17JAN89

Continued on next page

DX,SERVLIT-19-07DEC16-4/5

EDUCATIONAL CURRICULUM including five comprehensive series of books detailing basic information regardless of manufacturer:

- Agricultural Primer series covers technology in farming and ranching.
- Farm Business Management series examines “real-world” problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
- Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
- Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.
- Fundamentals of Compact Equipment manuals provide



instruction in servicing and maintaining equipment up to 40 PTO horsepower.

DX.SERVLIT-19-07DEC16-5/5

TS1663—UN—10OCT97

# John Deere Service Keeps You on the Job

## John Deere Is At Your Service

CUSTOMER SATISFACTION is important to John Deere.

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

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.

## CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

Your John Deere dealer is dedicated to supporting your equipment and resolving any problem you may experience.

1. When contacting your dealer, be prepared with the following information:

- Machine model and product identification number
- Date of purchase
- Nature of problem

2. Discuss problem with dealer service manager.

3. If unable to resolve, explain problem to dealership manager and request assistance.

4. If you have a persistent problem your dealership is unable to resolve, ask your dealer to contact John Deere for assistance. Or contact the Ag Customer Assistance Center at 1-866-99DEERE (866-993-3373) or e-mail us at [www.deere.com/en\\_US/ag/contactus/](http://www.deere.com/en_US/ag/contactus/).



TS201—UN—15APR13

DX,IBC,2-19-02APR02-1/1

