444L 4WD Loader

(PIN: L705208—)

OPERATOR'S MANUAL

444L 4WD Loader

OMT426944X19 ISSUE J3 (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.

Worldwide Construction And Forestry Division

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CARB Non-road Emissions Control Warranty Statement—Compression Ignition

Emissions Control Warranty Statement 2019 through 2021

DXLOGOV1 —UN—28APR09

JOHN DEERE

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the “Emission Control Information” label located on the engine. If the engine is operated in the United States or Canada and the engine label states: “This engine complies with US EPA regulations for nonroad and stationary diesel engines”, or “This engine complies with US EPA regulations for stationary emergency diesel engines”, refer to the “U.S. and Canada Emission Control Warranty Statement.” If the engine is operated in California, and the engine label states: “This engine complies with US EPA and CARB regulations for nonroad diesel engines” also refer to the “California Emissions Control Warranty Statement.” Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emission-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:
The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2019 through 2021 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State’s stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.
Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.
John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB and is free from defects in materials and workmanship which would cause the failure of a warranted part to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first for all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.
EMISSIONS WARRANTY EXCLUSIONS:
John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.
In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

Continued on next page

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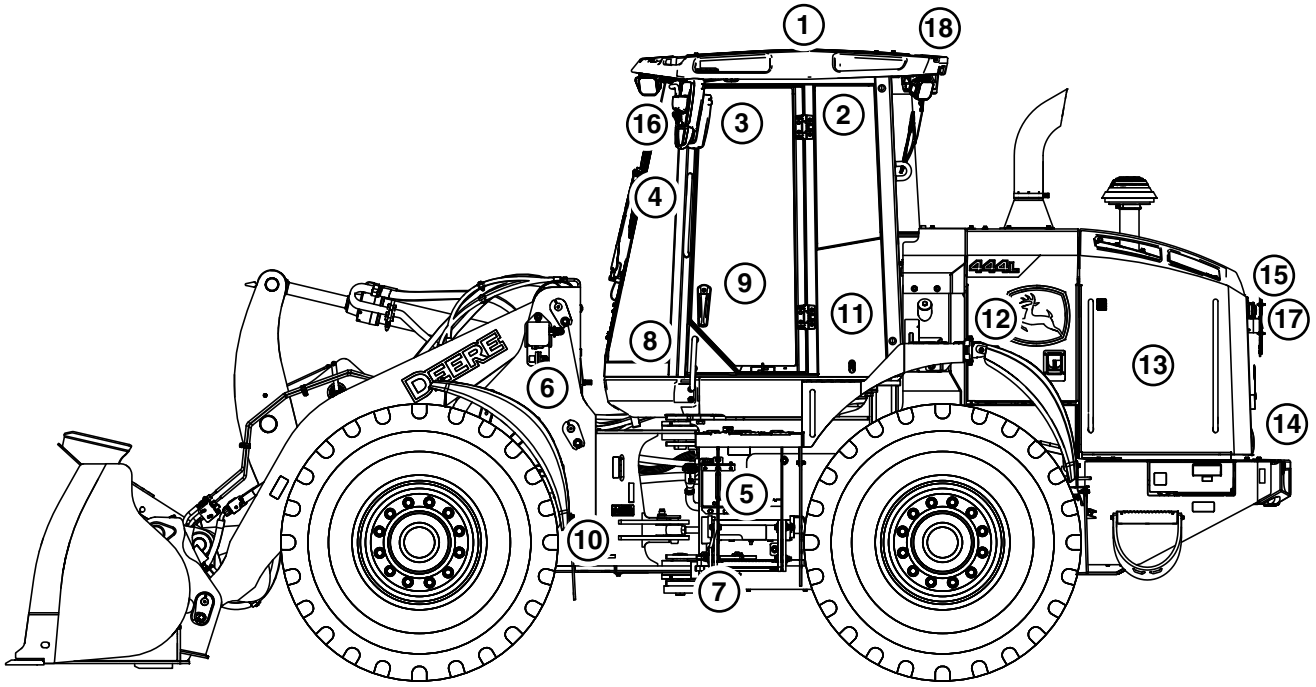
Safety and Operator Convenience Features



TX1288042

Safety and Operator Convenience Features

Please remember, the operator is the key to preventing accidents.

1. Roll-Over Protective Structure (ROPS) and Falling-Object Protective Structure (FOPS). ROPS and FOPS are designed to protect the operator and are certified to ISO and OSHA standards. The enclosed, lockable cabin also provides protection from the weather and reduces vandalism.

2. Pressurized Cab With Heater/Defroster. The positive pressure ventilation system circulates both outside and inside air through filters for a clean working environment. Built-in defroster vents direct air flow for effective window defogging and de-icing.

3. Mirrors. Large exterior mirrors on both sides and an inside mirror offer the operator a broad view of the area behind machine.

4. Large Windshield Wiper With Washer. Extra long wiper cleans large windshield area.

5. Loader Boom Lock. Loader includes a mechanical lock for securing boom in the raised position before work is started on or around the machine.

6. Halogen Lights and Turn Signals. High-intensity halogen drive/work lights and turn signals are standard equipment.

7. Frame Locking Bar. A self-storing mechanical lock is provided for transport or service.

8. Handholds. Large, conveniently placed handholds make it easy to enter or exit the operator's station or service area.

9. Horn. Standard horn is useful when driving or signaling coworkers.

10. Independent Park Brake. Park brake is electrically controlled and engages whenever the engine is stopped.

11. Seat Belt Retractor. Seat belt retractor helps keep belt clean and convenient to use.

12. Bypass Start Protection. Shielding over the starter terminals helps prevent dangerous bypass starting.

13. Engine Fan Guard. A secondary fan guard inside the cooling compartment helps prevent contact with rotating fan blades.

14. Backup Alarm. Alarm alerts bystanders when reverse travel direction is selected by operator.

15. Stop and Signal Lights. Highly visible stop lights and turn signals are standard equipment.

16. Sun Visor. A sun visor folds down to block the operator’s eyes from the sun.

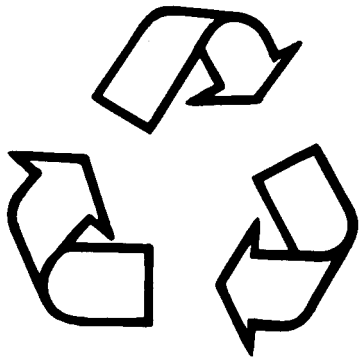
17. Rear Camera and Radar Object Detection (ROD) System (if equipped). The ROD system will display real-time video of objects behind the machine on the primary display unit (PDU) or on the dedicated rear camera display (if equipped).

Continued on next page

Decommissioning — Proper Recycling and Disposal of Fluids and Components

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

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



TS1133 —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

Exhaust Filter Ash Handling and Disposal

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

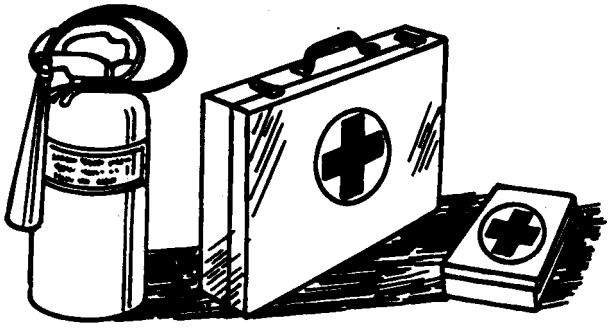
TX,ASH,DISP -19-31MAR22-1/1

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

Park and Prepare for Service Safely

Warn others of service work. Always park and prepare your machine for service or repair properly.

- Park machine on a level surface and lower equipment to the ground.
- Engage park brake.
- Stop engine.
- Install frame locking bar.
- Attach a DO NOT OPERATE tag in an obvious place in the operator's station.

- Do not support machine with boom, bucket, or other hydraulically actuated equipment.
- Do not support machine with cinder blocks or wooden pieces that can crumble or crush.
- Do not support machine with a single jack or other devices that could slip out of place.

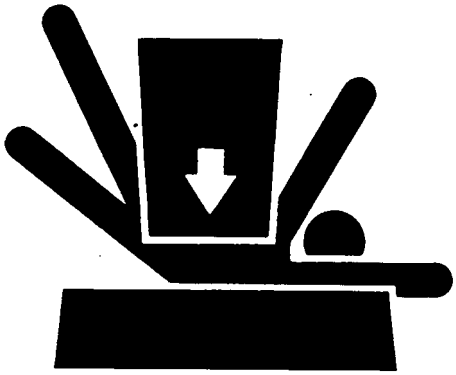
Securely support machine or attachment before working under it.

Install wheel chocks to ensure that machine cannot move backward or forward during service.

Understand service procedures before beginning repairs. Keep service area clean and dry. Use two people whenever the engine must be running for service work.

When performing above-ground maintenance, use appropriate support devices such as ladders, lifts, or platforms. If equipped, use the machine anchorage points and approved fall arrest harnesses and lanyards

T133332 —19—17APR13



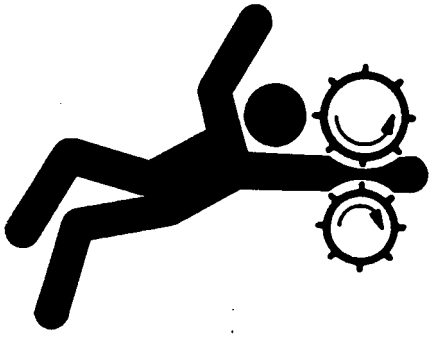
TS229 —UN—23AUG88

TX,PARK,4WD -19-26SEP22-1/1

Service Machines Safely

Tie long hair behind head. Do not wear a necktie, scarf, loose clothing, or necklace when working near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



TS228 —UN—23AUG88

Service Machines Safely

KR46761,00011BA -19-28JUN16-1/1

8. **WARNING, Install Articulation Lock**

   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 locking bar before performing service near center of machine or transporting on a truck.

   This safety label is located on the left and right side of the loader frame.

TX1163913 —19—01JUL14

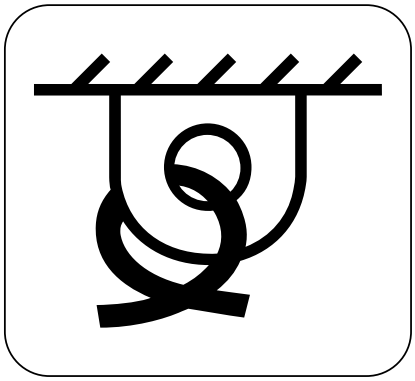
WARNING, Install Articulation Lock

GW86913,00003FF -19-20DEC19-10/19

9. **IMPORTANT, Tiedown Point**

   Route appropriate tiedown device through tiedown points.

   These labels are located strategically throughout machine.



TX1171997 —UN—19SEP14

IMPORTANT, Tiedown Point

GW86913,00003FF -19-20DEC19-11/19

10. **DANGER, Always Secure Lift Arm**

    To avoid injury, securely brace lift arm before disassembly of valve or piping.

    This safety label is located on the loader frame.

TX1151834 —19—23JAN14

DANGER, Always Secure Lift Arm

Continued on next page

GW86913,00003FF -19-20DEC19-12/19

This switch has two settings:

- Press and release switch (LED is illuminated) to activate boom height kickout. Move boom control lever to BHKO detent position. Lever will return to neutral position when released and boom will move to preset BHKO position.
- While LED is illuminated, kickout height can be reset as follows: Move boom to desired kickout height and then press and hold switch to reset kickout height. LED flashes and audible alarm sounds to indicate position has been set.
- Press and release switch to deactivate boom height kickout (LED is off).

12—Return-to-Carry (RTC) Switch

Switch has two settings:

- Press and release switch (LED is illuminated) to activate RTC. Move boom control lever to RTC detent position. Lever will return to neutral position when released and boom will move to preset RTC position.
- While LED is illuminated, RTC height can be reset as follows: Move boom to desired height and then press and hold switch to reset RTC height. LED flashes and audible alarm sounds to indicate position has been set.
- Press and release switch to deactivate RTC (LED is off).

13—Not Used

14—Spin Control Switch (if equipped)

Spin control operates in first gear forward to reduce rim pull by reducing engine rpm when loading the bucket.

Switch has four settings to select desired amount of control. Minimum engine rpm decrease occurs with one LED illuminated. Maximum engine rpm decrease occurs with four LEDs illuminated. Press switch momentarily to advance to desired setting.

15—Cab Work Lights Switch

This switch has three or four settings depending on whether or not rear machine work light option is enabled.

If rear machine work light option is **NOT** enabled:

- Press and release switch (left LED is illuminated and middle and right LEDs are off) to turn on front cab lights, marker lights, and taillights.
- Press and release switch again (all LEDs are illuminated) to turn on front cab lights, rear cab lights, marker lights, and taillights.
- Press and release switch again to turn all lights off (all LEDs are off).

If rear machine work light option is enabled:

- Press and release switch (left LED is illuminated and middle and right LEDs are off) to turn on front cab lights, marker lights, and taillights.
- Press and release switch again (left and middle LEDs are illuminated and right LED is off) to turn on front cab lights, rear machine work lights, marker lights, and taillights.
- Press and release switch again (all LEDs are illuminated) to turn on front cab lights, rear cab lights, rear machine work lights, marker lights, and taillights.
- Press and release switch again to turn all lights off (all LEDs are off).

NOTE: For courtesy light option to activate, engine must be running and marker lights turned on when light duration selection is made in the monitor. When the engine is turned off, the courtesy lighting will activate and expire at the selected time. To set a duration time, see Main Menu—Machine Setup. (Section 2-3.)

16—Ride Control Switch (if equipped)

This switch has three settings:

- Press and release switch (left LED is illuminated and right LED is off) to turn ride control to ON mode (full-time mode).
- Press and release switch again (both LEDs are illuminated) to set ride control to AUTO mode. Ride control functions the same as in ON mode except that it is only active when ground speed is greater than the set point. Default set point is approximately 5.6 km/h (3.5 mph).
- Press and release switch again to disable ride control (both LEDs are off).

17—Heated Outside Mirrors Switch (if equipped)

Press switch (LED is illuminated) to energize outside rear view mirror heaters. Press switch again to turn off heaters (LED is off).

Heaters automatically shut off after 15 minutes or when ignition power is turned off. When ignition power is turned back on, switch must be pressed again to energize heaters.

18—Lockup Torque Converter Switch (if equipped)

Press switch (LED is illuminated) to enable the lockup torque converter feature on machines equipped with the 5-speed transmission. Press switch again to disable feature (LED is off).

When engaged, the lockup torque converter provides better fuel economy during material transport and more torque and speed when climbing steep inclines. The feature is physically controlled by the transmission control unit (TCU).

19—Front Washer Switch

Press and hold switch to spray washer fluid on front windshield and activate low speed front wiper operation. Wiper blade swipes 3 times and turns off.

20—Front Wiper Switch

Switch has five settings:

- Press and release switch (left LED flashes on and off and middle and right LEDs are off) for courtesy wipe mode. Front wiper blade swipes 2 times and turns off.

Continued on next page

33a—Pin Disconnect Indicator (if equipped)

Amber indicator illuminates and alarm sounds every 10 seconds when pin disconnect switch is pressed to retract cylinders for removal or installation of attachments.

33b—Loader Boom Float Indicator

Green indicator illuminates and bucket will follow contour of the ground when boom control lever is pushed fully forward into the detented position.

33c—Throttle Lock Standby Indicator (white, if equipped)

White indicator displays on PDU and LED flashes on throttle lock switch on SSM when throttle lock switch is pressed. Throttle lock is ready to be activated.

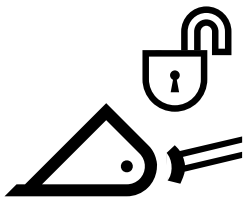
33d—Throttle Lock Active Indicator (green, if equipped)

Green indicator displays on PDU, LED illuminates on throttle lock switch on SSM, and audible alarm sounds to indicate engine speed has been set when engine speed control pedal adjusts engine speed to desired rpm and throttle lock switch is pressed and held.

34—Lockup Torque Convertor Indicator (if equipped)

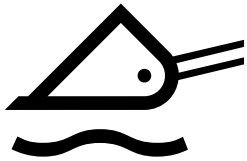
On machines equipped with 5-speed transmission with lockup torque converter, green indicator illuminates when torque converter lockup occurs. Indicator goes off when lockup is disengaged.

TX1263281 —UN—29AUG18



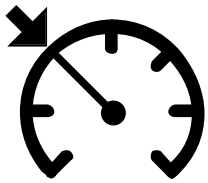
Pin Disconnect Indicator

TX1263282 —UN—29AUG18



Loader Boom Float Indicator

TX1263280 —UN—29AUG18



Throttle Lock Indicator

35—Right Turn Indicator

Green indicator illuminates when right turn signal switch or hazard light switch is engaged.

JB38880,00013EF -19-05MAY21-12/12

Opening and Securing Side Door

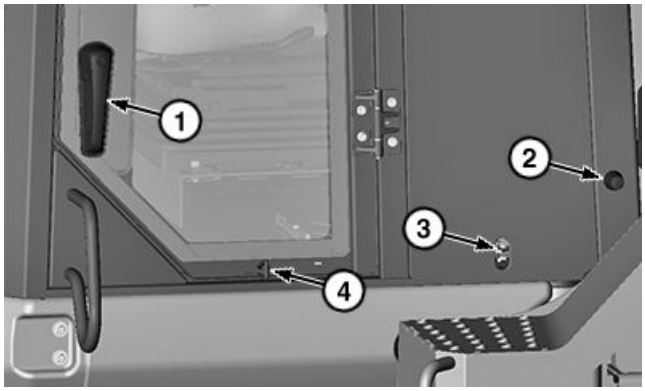
To open left side cab door from the outside, pull door handle (1) and pull door open.

To secure door in open position, open door until striker (4) fastens onto outside latch (3) on side of cab. Door must be secure against rubber bumpers (2). Adjust bumper as required to maintain proper tension.

To release door from secured position from the inside or outside of the cab, press down on either outside latch release lever (5), which are both located to the left of the operator's seat.

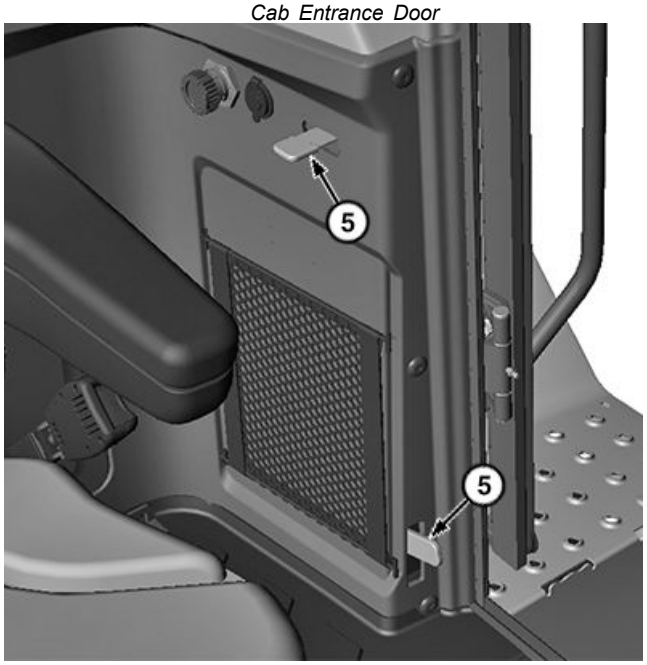
To open left side cab door from the inside of the cab, press forward on latch release lever (6).

1— Door Handle
2— Bumper (2 used)
3— Outside Latch
4— Striker
5— Outside Latch Release Lever (2 used)
6— Latch Release Lever



TX1262259A —UN—16AUG18

Cab Entrance Door



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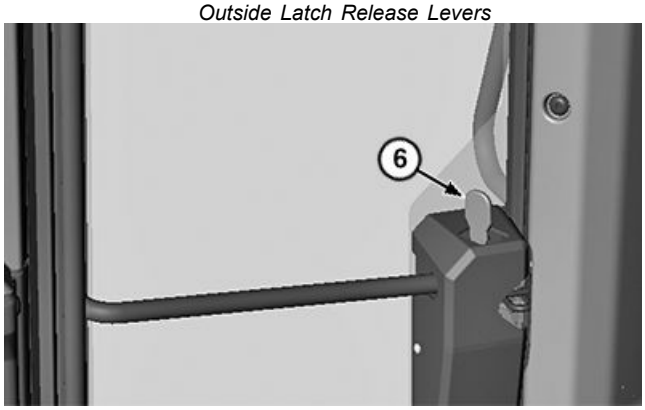
Outside Latch Release Levers



TX1262261A —UN—16AUG18

Latch Release Lever

JB38880,00013F7 -19-24SEP18-1/1

Starting the Engine

CAUTION: Avoid possible injury or death from a runaway machine.

DO NOT start engine by shorting across starter terminals. If normal circuitry is bypassed, machine will start in gear.

NEVER start engine while standing on ground. Start engine only from operator's seat, with forward, neutral, and reverse (FNR) lever (1) or FNR switch (2) in neutral (N) and park brake engaged.

Use of seat belt with roll-over protective structure (ROPS) is recommended under all operating conditions.

1. Turn battery disconnect switch to the ON position. See Battery Disconnect Switch in this section.
2. Sit in operator's seat and fasten seat belt.
3. Sound horn to alert bystanders that machine is being started.

NOTE: If engine is started with forward, neutral, and reverse (FNR) lever or FNR switch in forward (F) or reverse (R), transmission will not shift into F or R until FNR lever or FNR switch is first moved to neutral (N).

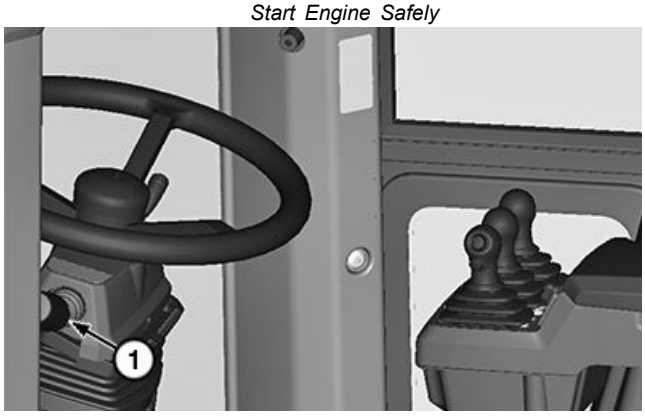
4. Move forward, neutral, and reverse (FNR) lever (1) or FNR switch (2) to neutral (N).

1— Forward, Neutral, and Reverse (FNR) Lever

2— Forward, Neutral, and Reverse (FNR) Switch

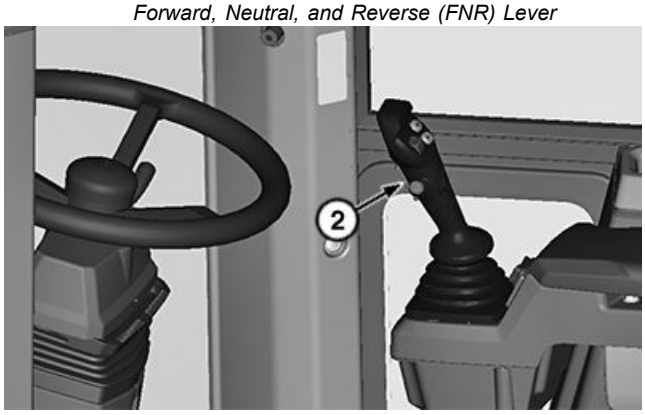
TS177 —UN—11JAN89

Start Engine Safely



TX1262277A —UN—31AUG18

Forward, Neutral, and Reverse (FNR) Lever



TX1263510A —UN—04SEP18

Forward, Neutral, and Reverse (FNR) Switch

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Joystick Bucket and Boom Control

NOTE: There are several control lever configurations available on John Deere four-wheel drive loaders. Verify the configuration of the machine before reviewing operating instructions.

NOTE: To lower boom with engine stopped, pilot enable/boom down switch (9) must be pressed and held down while moving control lever forward.

Move control lever forward to boom lower position (1) to lower boom.

Move control lever rearward to boom raise position (3) to raise boom.

Move control lever right to bucket dump position (5) to dump bucket.

Move control lever left to bucket rollback position (7) to roll bucket backward.

Boom and bucket functions can be operated simultaneously by moving lever between positions. For example: to lower boom and dump bucket, move lever between boom lower and bucket dump positions (1 and 5).

Return-to-Carry (RTC)

NOTE: RTC mode overrides boom float mode if boom is raised above RTC set point.

If RTC is enabled, boom float will engage if bucket is dumped beyond 70% of total stroke and control lever is moved fully forward to detented boom float position (2).

Set return-to-carry (RTC) switch (10) to the ON position (LED illuminated). While LED is illuminated, RTC height can be set as follows: Move boom to desired height and then press and hold switch to set RTC height. LED flashes and audible alarm sounds to indicate position has been set.

Move control lever fully forward to detented boom float position (2). Lever will return to neutral position when released and boom will move to preset RTC position.

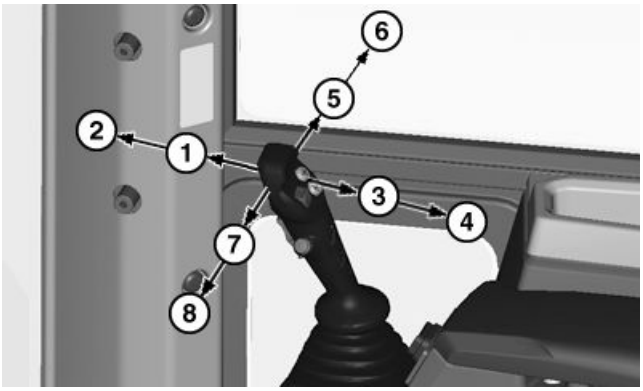
Press and release switch to deactivate RTC (LED is off).

Boom Float

NOTE: Boom float will only function if RTC is off or if the boom starts below the preset RTC position.

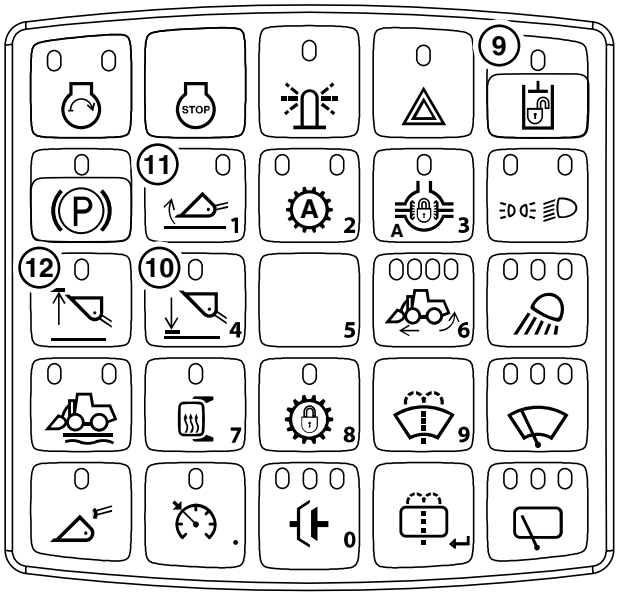
If RTC is disabled, boom float will not engage if bucket is curled back past linkage calibration set point and control lever is moved fully forward to detented boom float position.

This function allows oil to flow in and out both ends of cylinders so the bucket can follow the contour of the ground. Place bucket in the return-to-dig (RTD) position. Move control lever fully forward to detented boom float position (2). Lever will return to neutral position when released and boom lowers to the ground and boom float function is active. Pull control lever rearward to deactivate boom float and stop boom from lowering to the ground.



TX1263932A —UN—28SEP18

Single Lever Hydraulic Control



TX1263965 —UN—11SEP18

Hydraulic Switches

1— Boom Lower Position
2— Boom Float Position
3— Boom Raise Position
4— BHKO Position
5— Bucket Dump Position
6— RTD Position
7— Bucket Rollback Position
8— RTD Position
9— Pilot Enable/Boom Down Switch
10— RTC Switch
11— RTD Switch
12— BHKO Switch

Return-to-Dig (RTD)

Set return-to-dig (RTD) switch (11) to the RTD position 1 ON position (left LED illuminated and right LED is off). While LED is illuminated, RTD position 1 can be set as follows: Move boom and bucket to desired RTD position and then press and hold switch to set RTD position 1. LED flashes and audible alarm sounds to indicate position 1 has been set.

Continued on next page

Service ADVISOR™ Remote (SAR) Software Delivery Process

Theory of Operation

Service ADVISOR™ is a diagnostic tool used by John Deere dealers to perform diagnostics as well as updates to machine settings and software. Dealers can access diagnostic trouble codes and diagnostic addresses, create readings and recordings, and program controllers. This technology consists of both software and hardware. Technicians attend a minimum of 8 hours of training to become certified in utilizing this tool.

Service ADVISOR Remote (SAR) is a function of Service ADVISOR. SAR allows the dealer technician to connect to a SAR-enabled machine via the JDLink™ network to remotely access diagnostic trouble code information and record diagnostic data, as well as program controllers.

Similar to software (payload) updates in the computer industry, SAR enables John Deere to remotely deliver updated software via the JDLink hardware on board. Remote programming gives John Deere the ability to update software to enhance the performance of the machine. This capability can be used to reprogram most machine controllers. The user actively participates with the dealer in this process by both downloading the software update and installing the software update.

NOTE: Some vehicle controllers may not be compatible for SAR reprogramming.

Service ADVISOR is a trademark of Deere & Company
JDLink is a trademark of Deere & Company

For more information about Service ADVISOR Remote, consult an authorized John Deere dealer.

Vehicle Reprogramming

NOTE: Factory setting is set to always accept software downloads. To change this setting, consult an authorized John Deere dealer to either be prompted for software updates or deny all software updates.

Normal machine operation can continue during the software download process.

Customer will be notified by John Deere or a John Deere dealer of pending software updates with appropriate installation instructions via letter or phone.

Customer will determine the appropriate time and place to install the new software on the machine via the machine monitor. For more information, see Main Menu—Software Update. (Section 2-3.)

Once the customer initiates delivery and installation of the software, SAR will start and manage the installation of the new payload to the appropriate machine controllers.

NOTE: Software download speed capability depends on JDLink cellular coverage.

JL41294,0000171 -19-11OCT18-1/1

Counter Switch Operation—If Equipped

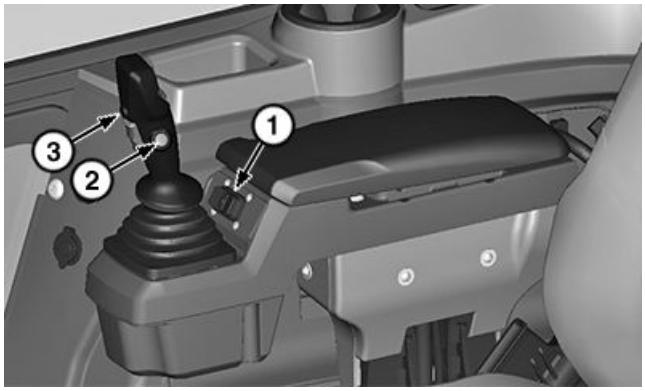
The counter switch (1) is located to the right side of the operator's seat. The switch consists of three individual buttons. The ADD BUCKET button and the ADD TRUCK button are used on machines equipped with the embedded payload scale (EPS) system. For more information, see Embedded Payload Scale—If Equipped in this section.

The SELECT COUNTER button allows the operator to select from up to five different counters, which can correspond to five different aggregates. The operator can choose how many counters are selected. See Main Menu—Machine Setup. (Section 2-3.)

The counter currently selected is displayed in the information display section of the primary display unit (PDU). Press and release the ADD TRUCK button to increment the counter by one. Press and hold the ADD TRUCK button to reset the counter.

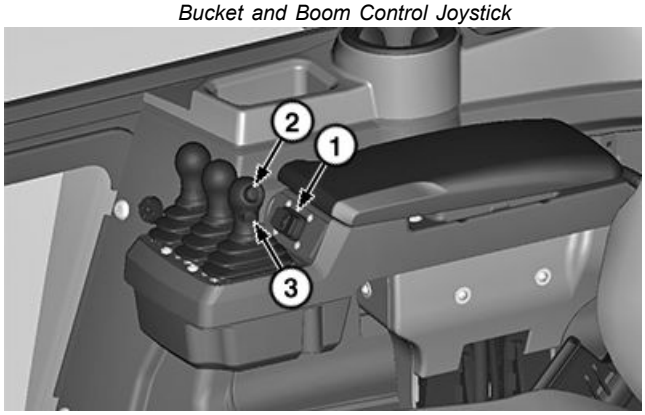
Multi-function button 1 (2) or multi-function button 2 (3) can be assigned to perform ADD TRUCK, SELECT COUNTER, and ADD BUCKET using the PDU. See Main Menu—Machine Setup. (Section 2-3.)

1— Counter Switch
2— Multi-Function Button 1
3— Multi-Function Button 2



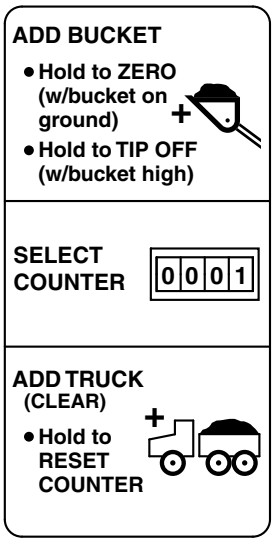
TX1264366A —UN—17SEP18

Bucket and Boom Control Joystick



TX1264563A —UN—19SEP18

Bucket and Boom Control Levers



TX1044805 —19—10JUL08

Counter Switch Label

JL41294,0000140 -19-25OCT18-1/1

LIFTING CAPACITY

To maintain stability, only lift loads equal to or less than mast capacity, tine capacity, or rated operating capacity of machine, whichever is less.

Fork Lift Chart				
Specification	**Z-Bar**		**High-Lift**	
Tine Length	1219 mm (48 in)	1524 mm (60 in)	1219 mm (48 in)	1524 mm (60 in)
Tipping Load Straight, No Tire Deflection	5905 kg (13 018 lb)	5541 kg (12 216 lb)	5192 kg (11 446 lb)	4888 kg (10 776 lb)
Tipping Load Straight, With Tire Deflection	5727 kg (12 626 lb)	5376 kg (11 852 lb)	5037 kg (11 105 lb)	4743 kg (10 457 lb)
Tipping Load, 40° Full Turn, No Tire Deflection	5107 kg (11 259 lb)	4783 kg (10 545 lb)	4461 kg (9835 lb)	4191 kg (9240 lb)
Tipping Load, 40° Full Turn, With Tire Deflection	4884 kg (10 767 lb)	4575 kg (10 086 lb)	4266 kg (9405 lb)	3966 kg (8744 lb)

Fork Lift Chart		
Tine Length	**Z-Bar**	**High-Lift**
1219 mm (48 in)	2442 kg (5384 lb)	2133 kg (4702 lb)
1524 mm (60 in)	2288 kg (5044 lb)	1998 kg (4405 lb)
Rated based on ISO 14397-1 and SAE J1197. Operating Load—50% Full Turn Tipping Load With Tire Deflection.		

Fork Lift Chart		
Tine Length	**Z-Bar**	**High-Lift**
1219 mm (48 in)	2930 kg (6460 lb)	2560 kg (5644 lb)
1524 mm (60 in)	2745 kg (6052 lb)	2398 kg (5287 lb)
Rated based on EN474-3. Operating Load—Rough Terrain, 60% Full Turn Tipping Load With Tire Deflection.		

Fork Lift Chart		
Tine Length	**Z-Bar**	**High-Lift**
1219 mm (48 in)	3907 kg (8614 lb)	3413 kg (7524 lb)
1524 mm (60 in)	3660 kg (8069 lb)	3197 kg (7048 lb)
Rated based on EN474-3. Operating Load—Firm and Level Ground, 80% Full Turn Tipping Load With Tire Deflection.		

LC4VVDS,00005C0 -19-11OCT19-2/2

Main Menu

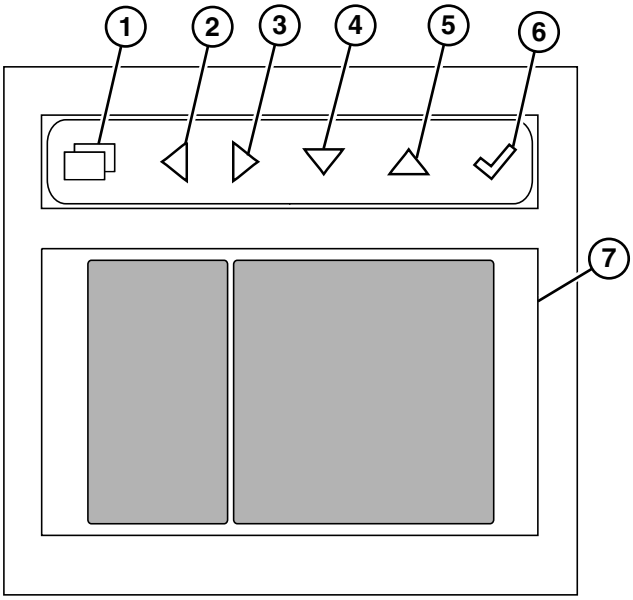
MAIN MENU displays available applications, which can be selected to view diagnostic information or change various operating characteristics of the machine or primary display unit (PDU).

Press menu button (1) to access MAIN MENU.

At main menu, press down button (4), up button (5), left button (2), and right button (3) to scroll through main menu applications.

Press select button (6) to activate the currently chosen (highlighted) application.

1— Menu Button
2— Left Button
3— Right Button
4— Down Button
5— Up Button
6— Select Button
7— Display



TX1219632 —UN—19JUL16

Primary Display Unit (PDU)

MAIN MENU Items	
Menu Items	**Description**
DISPLAY SETTINGS	Allows operator to change the various operating characteristics of the display unit.
DIAGNOSTICS	Provides a limited set of tools and is intended for use by technician and machine operators for diagnostic and troubleshooting functions.
EXHAUST FILTER	Provides current filter soot level and provides options for filter cleaning.
SOFTWARE UPDATE	Allows for machine controlled software to be updated.
CALIBRATIONS	Allows operator to calibrate sensors, functions, valves, and transmission clutches.
MACHINE SETUP	Provides a limited set of tools and is intended for use by technician and machine operators.
SECURITY	Provides means for machine owner to assign personal identification numbers (PINs) to authorized operators to prevent theft or unauthorized use of the machine. When security system is on, the operator must enter valid PIN when prompted or the machine will not start.
MACHINE FAN	Allows operator to enable reversing fan, adjust reversing fan intervals, diagnose, and troubleshoot functions.
FUEL CONSUMPTION	Allows operator to view fuel consumption averages and the instantaneous fuel rate of the machine. Owner can view each operator's fuel usage if security is enabled.
ABOUT	Allows operator to view hardware and software information for all machine controllers.
JOB TIMER	Allows operator to use a resettable timer that may be used to display hours to nearest tenth of an hour for a job.
CAMERA—IF EQUIPPED	Allows operator to troubleshoot and set up the camera and radar object detection (ROD) system (if equipped).
PAYLOAD WEIGHING—IF EQUIPPED	Allows operator to configure embedded payload scale (EPS) system and allows an authorized John Deere dealer to set up and troubleshoot EPS system.

BE78919,00002BD -19-03DEC19-1/1

Main Menu—Calibrations—Loader Position Sensors

The LOADER POSITION SENSORS menu displays calibration procedures to calibrate the loader boom and bucket position sensors.

Ensure surroundings are clear.

Navigate through menu: **MAIN MENU >> CALIBRATIONS >> LOADER POSITION SENSORS**.

Follow the on-screen instructions and select Next on each screen until the calibration procedure is finished.

LOADER POSITION SENSORS Menu Items

Menu Item		Submenu Items		Values
LOADER POSITION SENSORS	>>	RAISE BOOM	>>	Fully raise the boom to its stop. Ensure the bucket is not against a stop that would prevent a full boom raise.
		LOWER BOOM	>>	Fully lower the boom to its stop. Ensure the bucket is not against a stop that would prevent a full boom lower.
		CURL BUCKET	>>	Raise the boom to between 40% and 60% of full height, then fully curl the bucket to its stop. Filtered Boom Position .....%
		DUMP BUCKET	>>	Raise the boom to between 40% and 60% of full height, then fully dump the bucket to its stop. Filtered Boom Position .....%

BE78919,00002C7 -19-03DEC19-1/1

Main Menu—Calibrations—Loader Linkage

NOTE: Loader linkage calibration needs to be performed each time a pin on attachment or coupler is added or changed.

The LOADER LINKAGE menu displays calibration procedures to calibrate the position of the current attachment relative to the loader linkage.

Ensure that a coupler or a pin-on attachment are connected to the machine before proceeding.

Ensure surroundings are clear.

Navigate through menu: **MAIN MENU >> CALIBRATIONS >> LOADER LINKAGE**.

Follow the on-screen instructions and select Next on each screen until the calibration procedure is finished.

LOADER LINKAGE Menu Items

Menu Item		Submenu Items		Values		Values
LOADER LINKAGE	>>	LOWER BOOM/CURL BUCKET	>>	Lower the boom fully to its stop, then curl the bucket fully to its stop.		
		HOLD BUCKET/RAISE BOOM	>>	Hold the bucket in the curl direction, then start raising the boom.	>>	Continue holding the bucket in the curl direction while raising the boom. Note: Boom may stop moving briefly during calibration.
		RAISE BOOM/DUMP BUCKET	>>	Raise the boom fully to its stop, then dump the bucket fully to its stop.		
		HOLD BUCKET/LOWER BOOM	>>	Hold the bucket in the dump direction, then start lowering the boom.	>>	Continue holding the bucket in the dump direction while lowering the boom. Note: Boom may stop moving briefly during calibration.

BE78919,00002C8 -19-03DEC19-1/1

Main Menu—Security

The SECURITY menu allows owner to enable and disable security as well as remove, add, and modify operator personal identification numbers (PINs). Owner can also set the time interval allowed for logout after the machine is shut off and manage and assign transport PIN. When enabled, the security feature is designed to impede theft or unauthorized use of the machine by preventing the engine from starting until the operator correctly enters a valid PIN.

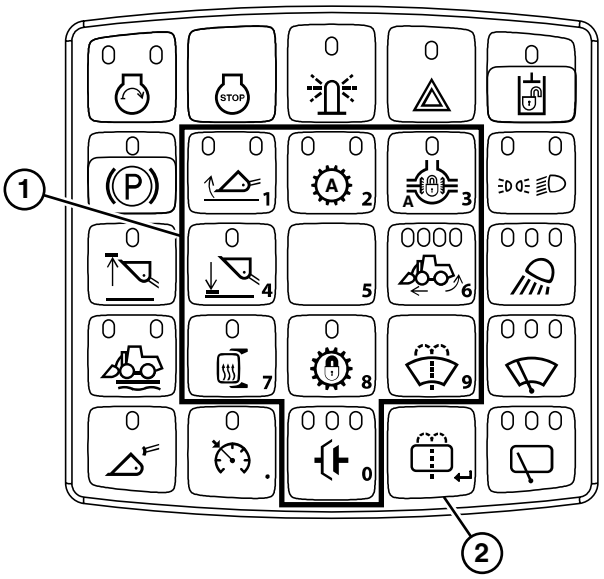
Navigate through menu: **MAIN MENU >> SECURITY**.

PINs can be from 1—8 numeric characters in length. Leading zeros are recognized. For example: 1, 01, and 001 are each valid and unique PINs.

Pressing select button on the monitor or enter key (2) on the sealed switch module (SSM) will save adjusted PIN.

Selecting the left button on monitor will discard any entered PIN.

Enter valid pin using numeric keypad (1) on SSM. Press enter key.



TX1265697 —UN—04OCT18

Sealed Switch Module (SSM)

1— Numeric Keypad **2— Enter Key**

SECURITY Menu Items					
Menu Items		**Submenu Items**		**Submenu Items**	**Description**
LOG IN					Allows owner and operator to log in with assigned PIN.
CURRENT USER		.....OWNER ..... OPERATOR 1 ..... OPERATOR 2 ..... OPERATOR 3 ..... OPERATOR 4 ..... OPERATOR 5 ..... OPERATOR 6 ..... OPERATOR 7 ..... OPERATOR 8 ..... OPERATOR 9 .....OPERATOR 10			Displays who is currently logged in.
OWNER LOCKOUT SETTINGS	>>	AUTO IDLE AUTO SHUTDOWN MAX GEAR SELECTION RIDE CONTROL MARKER LIGHTS ALWAYS ON	>>	• OWNER • SERVICE MODE • OPERATORS	Owner chooses who can modify individual settings.
SECURITY	>>	• ENABLED • DISABLED			
DELAYED OPERATOR LOGOUT	>>	• OFF • 5 MINUTES • 60 MINUTES			Allows owner to set time interval allowed for logout after machine is shut off. Once the logout time expires, a valid PIN is required to restart the machine.

Continued on next page

Biodiesel Fuel

Biodiesel fuel is comprised of monoalkyl esters of long chain fatty acids derived from vegetable oils or animal fats. Biodiesel blends are biodiesel mixed with petroleum diesel fuel on a volume basis.

Before using fuel containing biodiesel, review the Biodiesel Use Requirements and Recommendations in this Operator's Manual.

Environmental laws and regulations can encourage or prohibit the use of biofuels. Operators should consult with appropriate governmental authorities prior to using biofuels.

John Deere Stage V Engines Operating in the European Union

Where the engine is to be operated within the Union on diesel or non-road gas-oil, a fuel with a FAME content not greater than 8% volume/volume (B8) shall be used.

John Deere Engines with Exhaust Filter Except Stage V Engines Operating in the European Union

Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

Biodiesel concentrations above B20 can harm the engine's emission control systems and should not be used. Risks include, but are not limited to, more frequent stationary regeneration, soot accumulation, and increased intervals for ash removal.

John Deere Fuel conditioners or equivalent, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B20, and are recommended when using lower biodiesel blends.

John Deere Engines Without Exhaust Filter

Biodiesel blends up to B20 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B20.

These John Deere engines can operate on biodiesel blends above B20 (up to 100% biodiesel). Operate at levels above B20 ONLY if the biodiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on biodiesel blends above B20 might not fully comply with or be permitted by all applicable emissions regulations. Expect up to a 12% reduction in power and an 18% reduction in fuel economy when using 100% biodiesel.

John Deere fuel conditioners or equivalent, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B100, and are recommended when using lower biodiesel blends.

Biodiesel Use Requirements and Recommendations

The petroleum diesel portion of all biodiesel blends must meet the requirements of ASTM D975 (US) or EN 590 (EU) commercial standard.

Biodiesel users in the U.S. are strongly encouraged to purchase biodiesel blends from a BQ-9000 Certified Marketer and sourced from a BQ-9000 Accredited Producer (as certified by the National biodiesel Board). Certified Marketers and Accredited Producers can be found at the following website: http://www.bq9000.org.

Biodiesel contains residual ash. Ash levels exceeding the maximums allowed in either ASTM D6751 or EN14214 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present).

The fuel filter can require more frequent replacement when using biodiesel fuel, particularly if switching from diesel. Check engine oil level daily prior to starting engine. A rising oil level can indicate fuel dilution of the engine oil. Biodiesel blends up to B20 must be used within 90 days of the date of biodiesel manufacture. Biodiesel blends above B20 must be used within 45 days from the date of biodiesel manufacture.

When using biodiesel blends up to B20, the following must be considered:

- Cold-weather flow degradation
- Stability and storage issues (moisture absorption, microbial growth)
- Possible filter restriction and plugging (usually a problem when first switching to biodiesel on used engines)
- Possible fuel leakage through seals and hoses (primarily an issue with older engines)
- Possible reduction of service life of engine components

Request a certificate of analysis from your fuel distributor to ensure that the fuel is compliant with the specifications provided in this Operator's Manual.

Consult your John Deere dealer for John Deere fuel products to improve storage and performance with biodiesel fuels.

The following must also be considered if using biodiesel blends above B20:

- Possible coking or blocked injector nozzles, resulting in power loss and engine misfire if John Deere fuel additives and conditioners or equivalent containing detergent/dispersants are not used
- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures

Continued on next page

DX,FUEL7 -19-13JAN18-1/2

Oil Filters

Filtration of oils is critically important for proper operation and lubrication. John Deere brand oil filters have been designed and produced specifically for John Deere applications.

John Deere filters adhere to engineering specifications for quality of the filter media, filter efficiency rating, strength of the bond between the filter media and the element end cap, fatigue life of the canister (if applicable), and pressure capability of the filter seal. Non-John Deere branded oil filters might not meet these key John Deere specifications.

Always change oil filters regularly as specified in this manual.

DX,FILT1 -19-11APR11-1/1

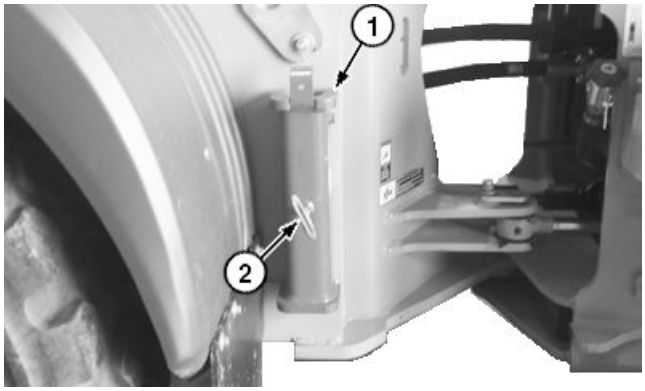
Locking Loader Boom

CAUTION: Prevent possible crushing injury from falling boom. Always install boom lock (1) before working on or around this machine with the boom raised.

Empty bucket and place in dump position before installing boom lock.

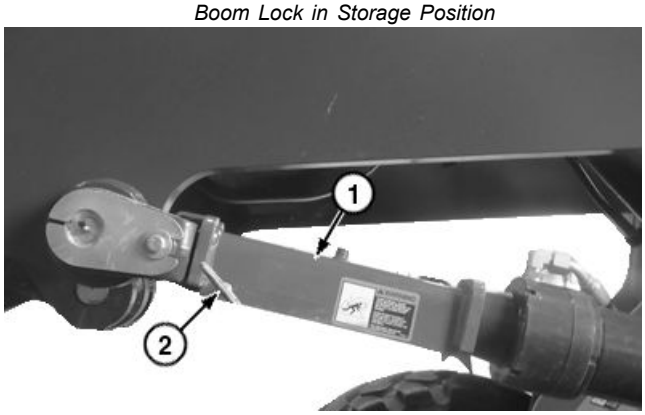
1. Raise boom. Empty bucket and place in dump position before installing boom lock (1).
2. Remove hand bolt (2) and remove boom lock, located on left side of loader frame.
3. Install boom lock on boom cylinder and install hand bolt in outer face of boom lock. Lower boom onto lock.
4. Tighten hand bolt.
5. Prepare machine for maintenance. See Prepare the Machine for Maintenance. (Section 3-2.)
6. Before removing boom lock from cylinder, raise boom slightly to relieve pressure. Return boom lock to the storage position located on left side of loader frame. Move hand bolt to top of boom lock and tighten.

1— Boom Lock **2— Hand Bolt**



TX1263051A —UN—02OCT18

Boom Lock in Storage Position



TX1265385A —UN—02OCT18

Boom Lock Installed on Boom Cylinder

JB38880,0001482 -19-22OCT18-1/1

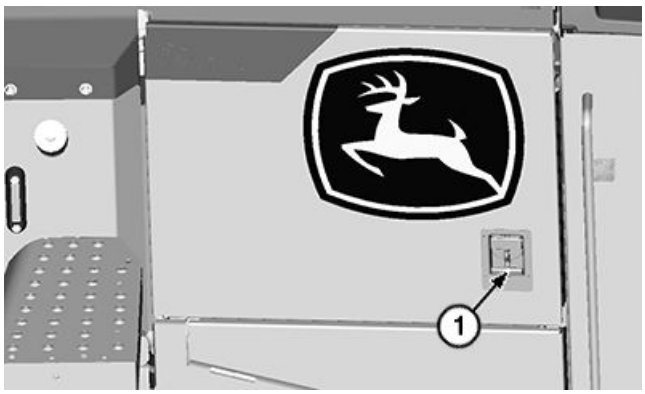
Engine Service Doors and Side Shields

CAUTION: Prevent possible injury from engine service door closing. Always keep service door in the open and locked position when servicing the engine area.

NOTE: Right and left side service doors and side shields open in the same manner.

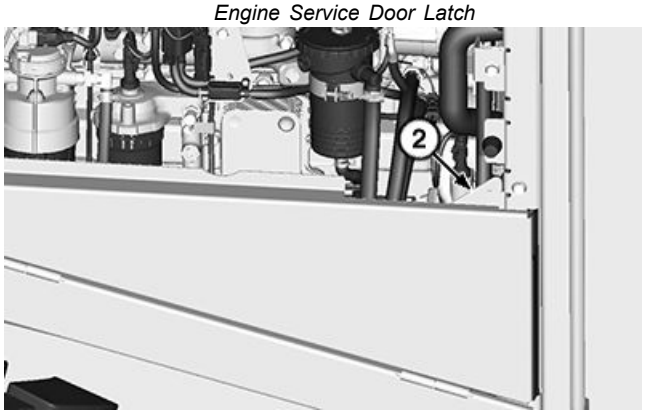
1. Pull out on latch (1) to open engine service door.
2. Open service door to the full extent. Strut holds door in the open position.
3. Rotate latch (2) to the side and fold down side shield.

1— Engine Service Door Latch **2— Engine Side Shield Latch**



TX1262993 —UN—22AUG18

Engine Service Door Latch



TX1262995 —UN—22AUG18

Engine Side Shield Latch

JB38880,000147D -19-15OCT18-1/1

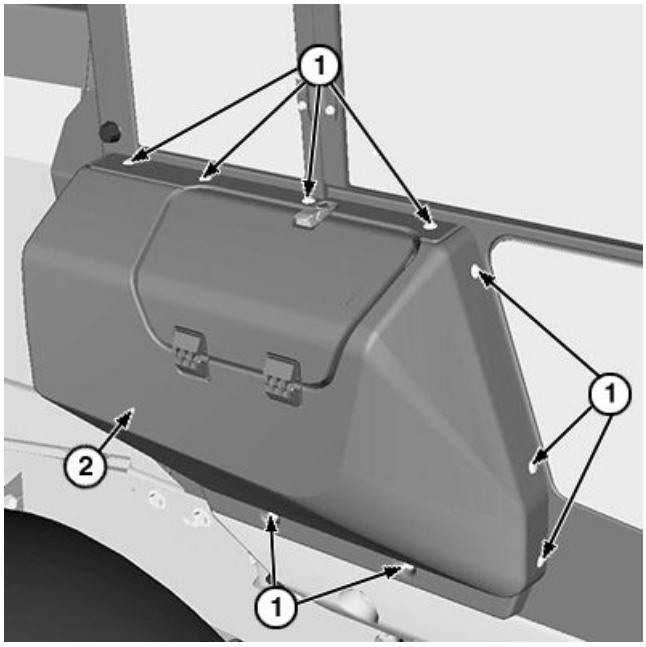
Check and Clean Heating and Air Conditioner Housing

1. Prepare machine for maintenance. See Prepare Machine for Maintenance. (Section 3-2.)
2. On right side of machine, remove cap screws (1) and cover (2).
3. Inspect cover for dirt and damage. Thoroughly clean and remove debris inside compartment and adjacent areas.

CAUTION: Prevent possible injury from flying chips and dirt. Reduce compressed air pressure to less than 210 kPa (2.1 bar) (30 psi) when using for cleaning purposes. Clear area of bystanders; guard against flying chips; and wear personal protection equipment, including eye protection.

4. Install cap screws to cover. Tighten to specification.

Specification	
Cap Screw (1)—Torque	8.0 N·m 6.0 lb·ft



TX1266395 —UN—10OCT18

Cover

1— Cap Screw (9 used) **2— Cover**

BE78919,0000317 -19-10DEC19-1/1

j. If observed detection zone differs significantly from the approximate detection zone chart, see an authorized John Deere dealer.

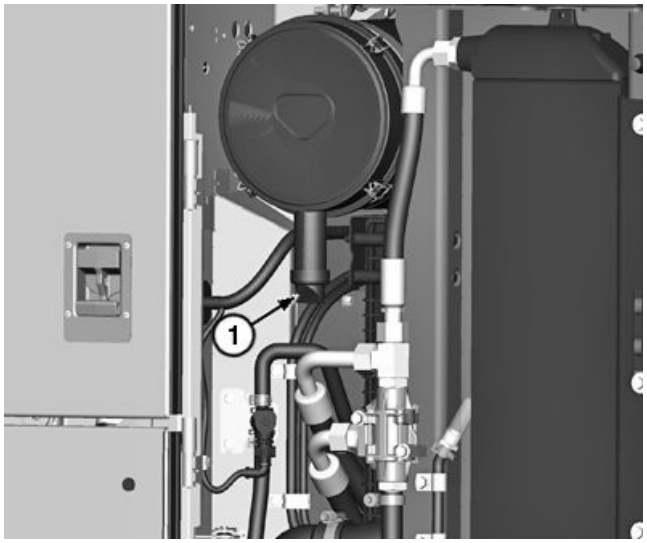
JB38880,000149B -19-26OCT18-2/2

Clean Air Cleaner Dust Unloader Valve

IMPORTANT: A missing, damaged, or hardened dust unloader valve (1) will make the dust cup precleaner ineffective, causing very short element life. Valve should close when engine is running.

NOTE: If operating in high dust conditions, squeeze dust unloader valve every couple of hours of operation to release dust.

1. Prepare machine for maintenance. See Prepare Machine for Maintenance. (Section 3-2.)
2. Open side shield on the left side of machine. See Engine Service Doors and Side Shields. (Section 3-2.)
3. Squeeze dust unloader valve (1) to remove dust from the air cleaner.
4. Check condition of dust unloader valve. Replace if hardened or damaged.
5. Close left engine service door.



TX1287104A —UN—24OCT19

Dust Unloader Valve

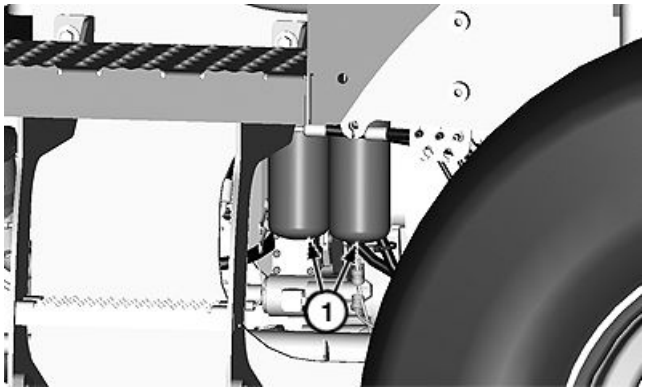
1— Dust Unloader Valve

LC4VVDS,00005EA -19-30OCT19-1/1

Replace Axle Oil Filters—If Equipped

NOTE: Perform this service at the first 250 hours of operation and at 1000 hour intervals thereafter.

1. On left side of machine, remove cover behind steps.
2. Turn axle oil filters (1) counterclockwise to remove.
3. Apply light film of axle oil to gasket on new filters.
4. Install new axle oil filters. Turn filter clockwise by hand until gasket contacts mounting base.
5. Tighten filter an additional 1/2—3/4 turn.
6. Start engine and check for leaks around base of filters. Tighten filters as required to stop any leaks.
7. Install cover.



TX1092418 —UN—18MAY11

Axle Oil Filters

1— Axle Oil Filter (2 used)

BE78919,00000CF -19-25SEP19-1/1

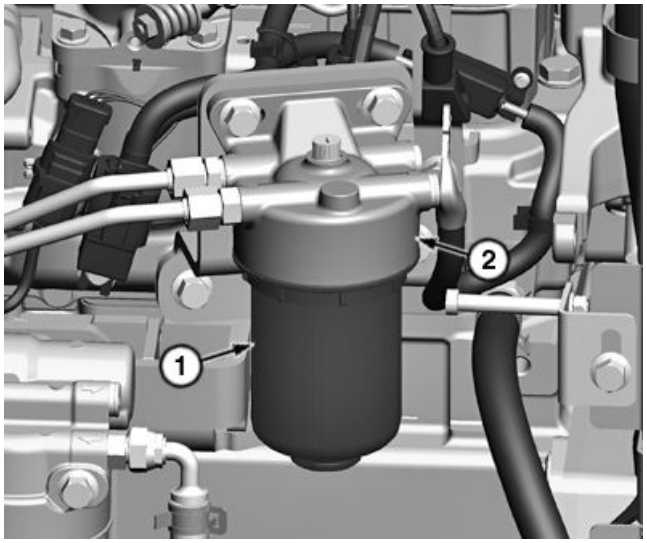
Replace Final Fuel Filter

1. Prepare machine for maintenance. See Prepare Machine for Maintenance. (Section 3-2.)
2. Open left engine service door and side shield. See Engine Service Doors and Side Shields. (Section 3-2.)
3. Thoroughly clean exterior of final fuel filter (1) and surrounding area.
4. Remove final fuel filter. Dispose of used filter properly.
5. Clean filter base (2).

IMPORTANT: DO NOT prefill fuel filters. Debris in unfiltered fuel will damage fuel system components.

Only lubricate filter seal with diesel fuel before installing.

6. Install new final fuel filter onto mounting base. Rotate filter housing clockwise by hand. Tighten 1/2—3/4 turn more after seal contacts mounting base.
7. Bleed fuel system. See Bleed Fuel System. (Section 4-1.)



TX1286908A —UN—22OCT19

Final Fuel Filter

1— Final Fuel Filter **2— Filter Base**

8. Close left engine service door and side shield.

BE78919,00000FA -19-22OCT19-1/1

Check Park Brake Oil Level

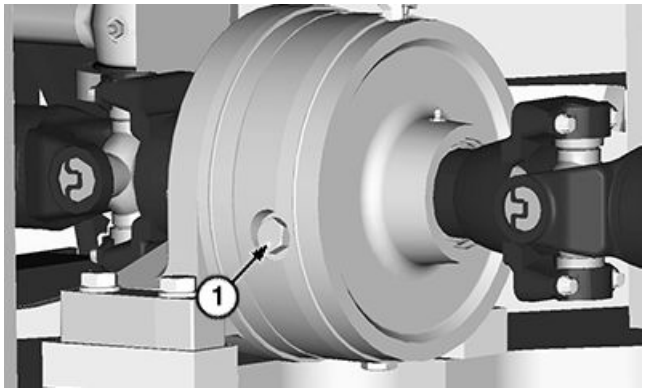
CAUTION: Prevent possible injury from unexpected machine movement. Always install articulation locking bar.

NOTE: Change park brake oil every 500 hours for applications running in deep water, mud, or snow.

1. Prepare machine for maintenance. See Prepare Machine for Maintenance. (Section 3-2.)
2. Install frame locking bar. See Frame Locking Bar. (Section 3-2.)

IMPORTANT: Oil level must be at bottom of check plug on the side of the park brake. Too much oil can cause overheating. Too little oil can cause bearing malfunction.

3. Remove check/fill plug (1). Check oil level.
4. Add oil if necessary. See Transmission, Park Brake, and Axle Oil. (Section 3-1.) Allow 2 minutes for oil to settle to bottom of reservoir.



TX1264353 —UN—17SEP18

Park Brake

1— Check/Fill Plug

BE78919,00000FB -19-03OCT19-1/1

Clean Front and Rear Axle Oil Recirculation Screens—If Equipped

NOTE: Axle oil recirculation screens are included only on machines equipped with optional axle oil cooler package.

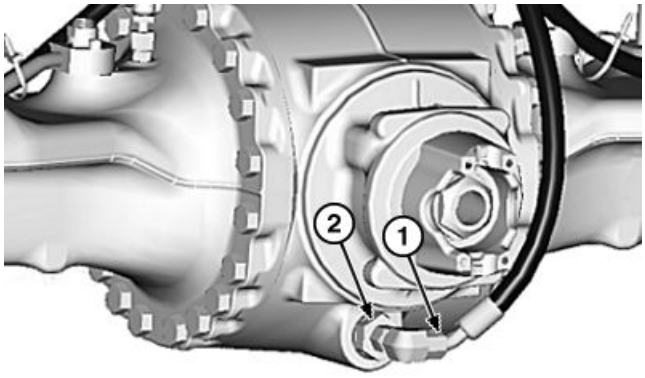
NOTE: Clean recirculation screens after axle oil is drained.

1. Place container under axle and disconnect hose (1) from screen fitting (2).
2. Remove screen fitting.

NOTE: Fitting and screen are of a one piece design. Thoroughly clean and reuse screen.

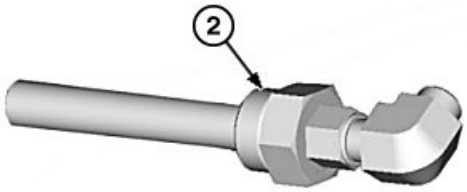
3. Clean screen with solvent.
4. Install screen fitting.
5. Connect hose to fitting.
6. Fill axle with oil.

1— Hose **2— Screen Fitting**



TX1044526A —UN—20JUN08

Front Axle Shown



TX1044528A —UN—24JUN08

Screen Fitting

DP99999,000008E -19-20JAN12-1/1

Check and Adjust Engine Valve Lash

See an authorized John Deere dealer for engine valve clearance adjustment.

CED,OUO1032,2768 -19-30MAR17-1/1

Rerun Transmission Clutch Calibration

See an authorized John Deere dealer.

OUT4001,00005D7 -19-19SEP18-1/1

Cooling System Fill and Deaeration Procedure

CAUTION: Prevent possible injury from hot, spraying fluids. Shut off engine. Remove surge tank fill cap (2) only when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

IMPORTANT: Avoid mixing different brands or types of coolant. Coolant manufacturers engineer their coolants to meet certain specifications and performance requirements. Mixing different coolant types can degrade coolant and machine performance.

Use only permanent-type, low-silicate, ethylene glycol-based antifreeze in coolant solution. Other types of antifreeze may damage cylinder seals.

John Deere Cool-Gard™ II Pre-Mix coolant is recommended when adding new coolant to cooling system.

Follow directions on container for correct mixture ratio.

FREEZING TEMPERATURES: Fill with permanent-type, low-silicate, ethylene glycol base antifreeze (without stop-leak additive) and clean, soft water.

FILL

1. Loosen surge tank fill cap (2) to relieve pressure and remove cap.
2. Fill surge tank (1) to the MAX COLD mark on surge tank. See Diesel Engine Coolant (engine with wet sleeve cylinder liners). (Section 3-1.)
3. Install surge tank fill cap.

DEAERATION

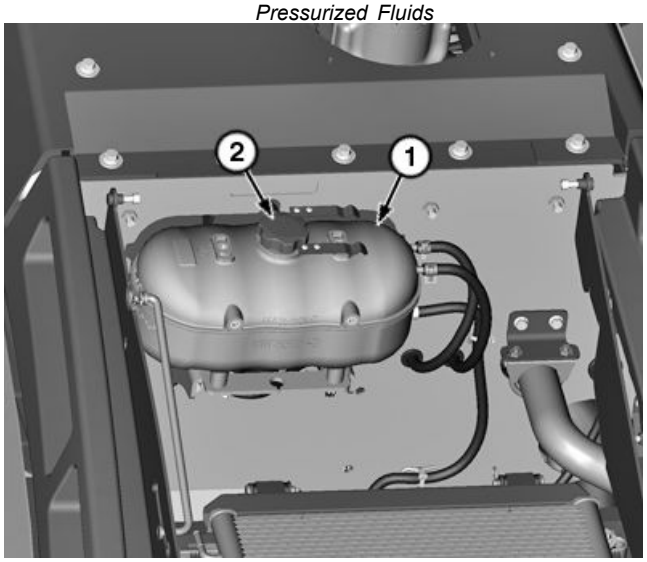
The cooling system requires several warm-up and cool down cycles to deaerate. It will NOT deaerate during normal operation. Only during warm-up and cool down cycles will the system deaerate.

1. Start engine. Run engine until coolant reaches a warm temperature.
2. Stop engine. Allow coolant to cool.
3. Check coolant level. If coolant level is not full, loosen radiator cap to relieve pressure.
4. Repeat steps 1—3 until coolant level in surge tank stabilizes at the same level.

Cool-Gard is a trademark of Deere & Company

TS281 —UN—15APR13

Pressurized Fluids



TX1287258A —UN—29OCT19

Surge Tank and Fill Cap

1— Surge Tank **2— Surge Tank Fill Cap**

5. Remove surge tank fill cap and add coolant to surge tank. For recommended coolant, see Diesel Engine Coolant (engine with wet sleeve cylinder liners). (Section 3-1.)
6. Install surge tank fill cap and close top cooler door.

NOTE: Coolant level MUST be repeatedly checked after all drain and refill procedures to ensure that all air is out of the system, which allows the coolant level to stabilize. Coolant level should only be checked when the engine is cold.

Specification	
Cooling System—Capacity	24.0 L 6.3 gal

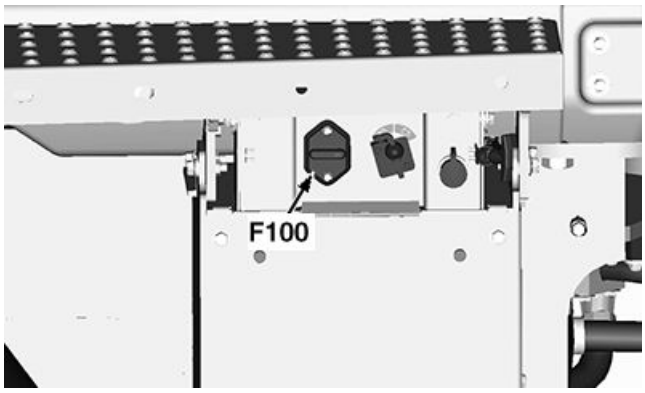
BE78919,00000DB -19-20NOV19-1/1

Main circuit breaker (F100) is located above the battery compartment next to the battery disconnect switch.

Start relay (K3) and ignition relay (K4) are located next to the fuse panels behind the seat.

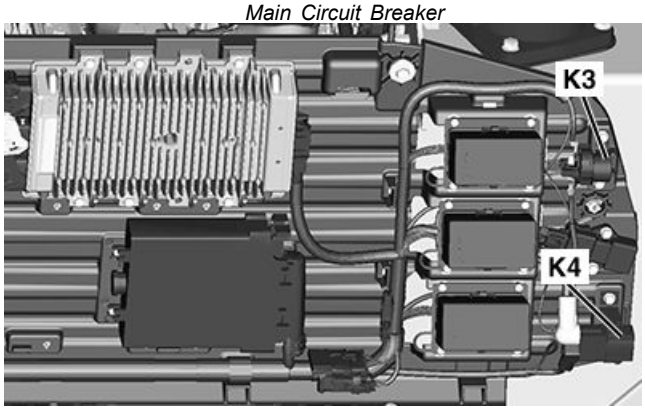
Secondary steering relay (K6) is located next to secondary steering pump motor on the left side of the machine.

F100— Main Circuit Breaker
K3—Start Relay
K4—Ignition Relay
K6—Secondary Steering Relay



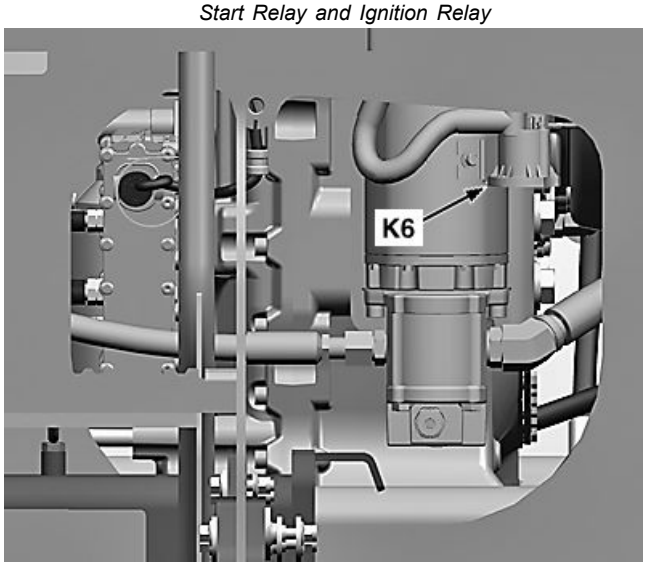
TX1265129 —UN—26SEP18

Main Circuit Breaker



TX1265123 —UN—26SEP18

Start Relay and Ignition Relay



TX1286280A —UN—08OCT19

Secondary Steering Relay (parts removed for clarity)

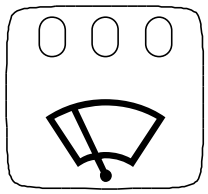
GW86913,00003D0 -19-17OCT19-3/3

Hardware Torque Specifications

Check cap screws and nuts to be sure they are tight. If hardware is loose, tighten to torque shown on the following charts unless a special torque is specified.

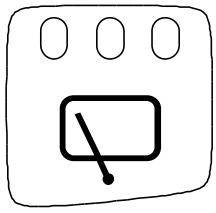
TX,90,FF1225 -19-15MAR93-1/1

Front and Rear Wiper Checks



TX1286769 —UN—21OCT19

Front Wiper Switch



TX1286774 —UN—21OCT19

Rear Wiper Switch

Press front wiper speed switch until one LED is illuminated.

Press rear wiper speed switch until one LED is illuminated.

Observe wipers.

LOOK: Do wipers operate in intermittent speed mode?

Press front wiper speed switch (two LEDs illuminated).

Press rear wiper speed switch (two LEDs illuminated).

LOOK: Do wipers operate in low speed mode?

Press front wiper speed switch (three LEDs illuminated).

Press rear wiper speed switch (three LEDs illuminated).

LOOK: Do wipers operate in high speed mode?

Press front wiper switch again to disable front wipers.

Press rear wiper switch again to disable rear wipers.

LOOK: Do wipers return to park positions?

YES: Go to next check.

NO: Check washer fluid level and add fluid if washer fluid level is low.

NO: Check window wipers 5 A fuse (F37). See Replacing Fuses. (Section 4-1.)

If fuse (F37) is OK, see an authorized John Deere Dealer.

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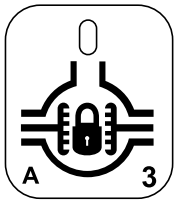
GH30757,0000823 -19-13NOV19-13/48

Auto Differential Lock (ADL) Check



TX1276835 —UN—22APR19

Auto Differential Lock Enable Switch

CAUTION: Prevent possible injury from machine movement. Perform this check in an open area away from other people and machinery.

Fasten seat belt.

Enable auto differential lock (ADL) by pressing the ADL enable switch on the sealed switch module (SSM) (LED on).

Enable ADL diagnostic screen on the primary display unit (PDU). See Main Menu—Diagnostics. (Section 2-3.)

Put transmission in first gear forward (F). See Shifting the Transmission. (Section 2-2.)

Position machine on a flat, level surface with bucket in pile or against an immovable object.

Lower boom enough to remove some load and lift the front axle slightly.

Gradually increase engine speed until front wheels begin to turn.

YES: Go to next check.

NOTE: Initially, only one front wheel turns and, if the ADL is functioning correctly, the differential lock will automatically engage, causing both front wheels to turn equally.

NO: Check operation of the ADL enable switch. See Main Menu—Diagnostics. (Section 2-3.)

LOOK: Do both front wheels turn equally?

NO: See an authorized John Deere dealer.

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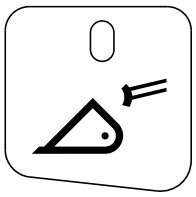
GH30757,0000823 -19-13NOV19-28/48

Pin Disconnect System Check	 TX1286488 —UN—14OCT19 *Pin Disconnect Switch* Run engine at slow idle. Position bucket flat on the ground. See Joystick Bucket and Boom Control or see Two Lever Bucket and Boom Control. (Section 2-2.) Press and hold the pin disconnect switch on the sealed switch module (SSM). *LOOK: Does the pin disconnect cylinder retract both pins when the switch is pressed?* Press the pin disconnect switch to extend the pin disconnect cylinder pins. *LOOK: Does the pin disconnect cylinder extend both pins when the switch is pressed?*	**YES:** Go to next check. **NO:** Check operation of the pin disconnect switch. See Main Menu—Diagnostics. (Section 2-3.) **NO:** See an authorized John Deere dealer.

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GH30757,0000823 -19-13NOV19-39/48

Engine

Symptom	Problem	Solution
Engine Will Not Crank	Low battery power	Charge or replace battery.
	Corroded or loose battery connections	Clean battery terminals and connections. See Check Battery Electrolyte Level and Terminals. (Section 3-8.)
	Battery disconnect switch is in the OFF position	Turn battery disconnect switch to the ON position. See Battery Disconnect Switch. (Section 2-2.)
	Fuse	Check fuses. See Replacing Fuses. (Section 4-1.)
	Starter solenoid malfunction	Replace solenoid. See an authorized John Deere dealer.
	Starter malfunction	See an authorized John Deere dealer.
	Engine is seized	See an authorized John Deere dealer.
Engine Cranks but Won't Start or Hard to Start	Fuel quality poor or quantity low	If quality is poor, replace fuel with proper fuel. If quantity is low, fill tank.
	Incorrect oil viscosity	Check for correct oil viscosity. See Diesel Engine Oil—Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V. (Section 3-1.)
	Restricted fuel filters	Replace fuel filters. See Replace Primary Fuel Filter, Replace Final Fuel Filter, and Replace In-Line Fuel Filter. (Section 3-8.)
	Restricted engine air cleaner elements	Replace engine air cleaner elements. See Replace Engine Air Cleaner Elements. (Section 3-9.)
	Low battery power	Charge or replace battery.
	Air in fuel system	Bleed air from fuel system. See Bleed Fuel System. (Section 4-1.)
	Exhaust filter restricted	See an authorized John Deere dealer.
Engine Misfires/Runs Irregularly	Fuel quality poor or quantity low	If quality is poor, replace fuel with proper fuel. If quantity is low, fill tank.

Continued on next page

Hydraulic System

Symptom	Problem	Solution
No Hydraulic Functions	Pilot enable/boom down switch in the OFF position	Turn pilot enable/boom down switch to the ON position.
	Pilot enable/boom down switch malfunction	Check pilot enable/boom down switch. See an authorized John Deere dealer.
Slow Hydraulic Functions	Cold hydraulic oil	Warm hydraulic oil.
	Slow engine speed	See Engine Does Not Develop Full Power in engine troubleshooting section.
	Suction line air leak	Tighten or install new suction lines.
	Low hydraulic oil level	Add hydraulic oil. See Drain, Flush, and Refill Hydraulic System Oil. (Section 3-12.)
	Incorrect oil viscosity	Check for correct oil viscosity. See Hydraulic Oil. (Section 3-1.)
	Restricted line	Inspect hydraulic lines.
	Slow cycle times due to low hydraulic system pressures	Verify cycle times and check hydraulic system pressure. Cycle times are listed in the Operational Checkout. (Section 4-2.)
Noisy Hydraulic Pump	Low hydraulic oil supply	Add hydraulic oil. See Drain, Flush, and Refill Hydraulic System Oil. (Section 3-12.) For recommended hydraulic oil, see Hydraulic Oil. (Section 3-1.)
	Incorrect oil viscosity	Check for correct oil viscosity. See Hydraulic Oil. (Section 3-1.)
	Restricted suction line	Clean or replace suction line.
	Air in hydraulic oil	Check for foamy hydraulic oil. Tighten connections. Replace O-rings and/or lines.
	Loose or missing hydraulic line clamps	Tighten or replace clamps.
	Hydraulic lines in contact with frame	Inspect and repair.

Continued on next page

Removing Engine From Long-Term Storage

NOTE: The following storage removal procedure is used for long-term engine storage up to 1 year. After that, the engine should be started, warmed up, and retreated for an extended storage period.

Refer to the appropriate section for detailed services listed below or have an authorized servicing dealer or engine distributor perform unfamiliar services.

1. Remove all protective coverings from engine. Unseal all openings in engine and remove covering from electrical systems.
2. Remove grease from all exposed metal surfaces.
3. Remove the batteries from storage. Install batteries (fully charged) and connect the terminals.
4. Install fan and alternator poly-vee belt if removed.
5. Fill fuel tank.
6. If drained, fill diesel exhaust fluid tank with new DEF. See Diesel Exhaust Fluid (DEF)—Use in Selective Catalytic Reduction (SCR) Equipped Engines. (Section 3-1.)

   If not drained, DEF must pass visual, smell, and concentration checks before the engine can be ran. See Selective Catalytic Reduction (SCR) System Overview. (Section 2-2.)
7. Perform all appropriate prestarting checks. See Inspect Machine Daily Before Starting. (Section 2-2.)

IMPORTANT: Prevent possible damage to starter. DO NOT operate starter more than 30 seconds at a time. Wait at least 2 minutes for starter to cool before trying again.

8. Crank engine for 20 seconds with starter. Do not allow the engine to start. Wait 2 minutes and crank engine an additional 20 seconds to ensure bearing surfaces are adequately lubricated.

   See an authorized John Deere dealer for the proper procedure.
9. Start engine and run at low idle and no load for 15 minutes.
10. Shut engine off. Change engine oil and replace filter.
11. Warm up engine and check all gauges before placing engine under load.
12. On the first day of operation after storage, check overall engine for leaks and check all gauges for correct operation.

NOTE: If using biodiesel blends after long-term storage, frequency of fuel filter plugging can increase initially.

KR46761,0000FEF -19-09APR18-1/1

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