1050K Crawler Dozer

(PIN: D268234—)

JOHN DEERE

OPERATOR'S MANUAL

1050K Crawler Dozer

OMT389886X19 ISSUE I3 (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,
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JOHN DEERE

U.S. AND CANADA EMISSION CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

To determine if the John Deere engine qualifies for the additional warranties set forth below, look for the "Emissions Control Information" label located on the engine. If the engine is operated in the United States or Canada and the Emissions Control information label states: "This engine complies with US EPA regulations for nonroad and stationary diesel engines", or "This engine conforms to US EPA nonroad compression-ignition regulations", refer to the "U.S. and Canada Emission Control Warranty Statement." If the engine is operated in California, and the label states: "This engine complies with US EPA and CARB regulations for nonroad diesel engines", or "This engine conforms to US EPA and California nonroad compression-ignition emission regulations", also refer to the "California Emission Control Warranty Statement."

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete engine warranty, less emissions-related parts and components, is provided separately. If you have any questions about your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400.

JOHN DEERE'S WARRANTY RESPONSIBILITY

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine including all parts of its emission-control system was designed, built and equipped so as to conform at the time of the sale with Section 213 of the Clean Air Act and is free from defects in materials and workmanship which would cause the engine to fail to conform with applicable US EPA regulations for a period of five years from the date the engine is placed into service or 3,000 hours of operation, whichever first occurs.

Where a warrantable condition exists, John Deere will repair or replace, as it elects, any part or component with a defect in materials or workmanship that would increase the engine's emissions of any regulated pollutant within the stated warranty period at no cost to you, including expenses related to diagnosing and repairing or replacing emission-related parts. Warranty coverage is subject to the limitations and exclusions set forth herein. Emission- related components include engine parts developed to control emissions related to the following:

Air-Induction System
Fuel System
Ignition System
Exhaust Gas Recirculation Systems
Aftertreatment Devices
Crankcase Ventilation Valves
Sensors
Engine Electronic Control Units

EMISSION WARRANTY EXCLUSIONS

John Deere may deny warranty claims for malfunctions or failures caused by:

- Non-performance of maintenance requirements listed in the Operator's Manual
- The use of the engine/equipment in a manner for which it was not designed
- Abuse, neglect, improper maintenance or unapproved modifications or alterations
- Accidents for which it does not have responsibility or by acts of God

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel can harm the emissions control system of the engine/equipment and is not approved for use.

To the extent permitted by law John Deere is not liable for damage to other engine components caused by a failure of an emission-related part, unless otherwise covered by standard warranty.

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Emission_CI_EPA (18Dec09)

TS1721—UN—15JUL13

DX,EMISSIONS,EPA-19-12DEC12-2/2

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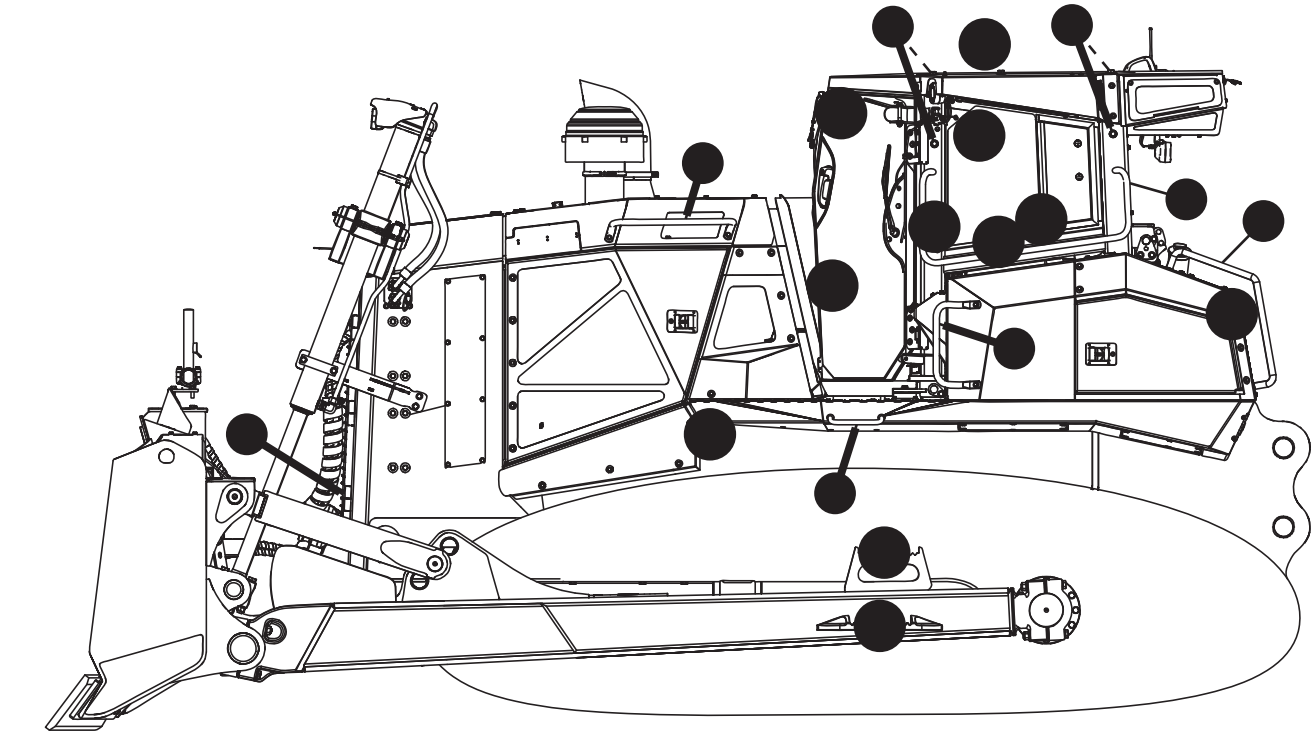
Safety and Operator Convenience Features



Safety and Operator Convenience Features

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

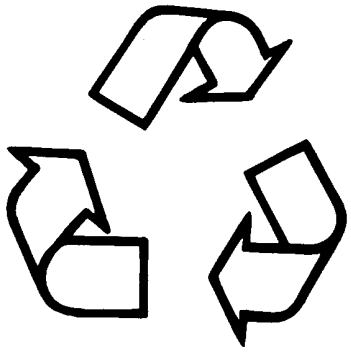
1. **ROPS, FOPS, and OPS.** Structures designed to help protect the operator are certified to ISO and OSHA. Enclosures also deflect sun and rain.
2. **Pressurized Cab.** Positive pressure ventilation system circulates both outside and inside air through filters for a clean working environment. Built-in defroster vents direct air flow for effective window defogging/deicing.
3. **Interior Rear View Mirror.** Offers operator a broad view of area behind machine.
4. **Transmission Start.** After the park lock levers are moved to the down (unlocked) position, the transmission control lever (TCL) must be in the neutral (N) position before the transmission is able to engage.
5. **Handholds.** Large, conveniently placed handholds make it easy to enter or exit the operator's station.
6. **Bypass Start Protection.** Shielding over the starter solenoid helps prevent dangerous bypass starting.
7. **Engine Fan Guard.** A secondary fan guard inside engine compartment helps prevent contact with engine fan blades.
8. **Steps.** Wide, skid-resistant steps help prevent slipping while getting in or out of the operator's station.
9. **Park Lock Start and Park Lock Levers.** Park lock start feature prevents the engine from being started unless the park lock levers are in the up (locked) position. When park lock levers are placed in up (locked) position, the transmission shifts to neutral, the hydrostatic system is deactivated, and the park brake is engaged.
10. **Automatic Seat Belt Retractors.** Seat belt retractors help keep belts clean and are convenient to use.
11. **Backup Alarm.** Alerts bystanders when reverse travel direction is selected by operator.
12. **Operator Manual Holder.** A sealed manual holder keeps manual on machine clean and dry.
13. **Verified Anchor Points.** May be used for attaching job-specific devices.

CN93077,00002FE-19-09MAR17-1/1

Decommissioning — Proper Recycling and Disposal of Fluids and Components

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

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



TS1133—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.

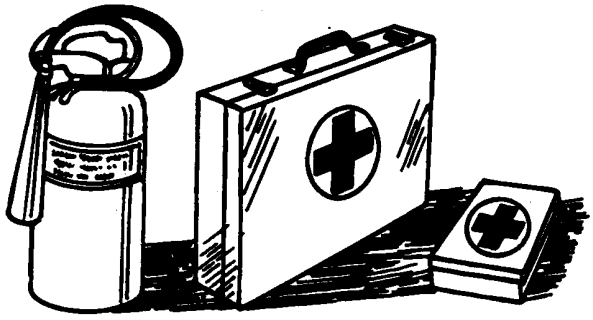
DX,DRAIN-19-01JUN15-1/1

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.



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

Remove Paint Before Welding or Heating

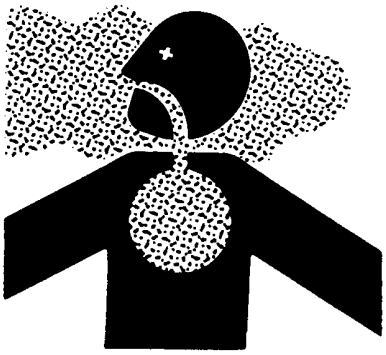
Avoid potentially toxic fumes and dust.

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.



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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

Make Welding Repairs Safely

IMPORTANT: Disable electrical power before welding. Turn off main battery switch and disconnect positive (+) and negative (-) battery cables.

Do not weld or apply heat on any part of a reservoir or tank that has contained oil or fuel. Heat from welding and cutting can cause oil, fuel, or cleaning solution to create gases which are explosive, flammable, or toxic.

Avoid welding or heating near pressurized fluid lines. Flammable spray may result and cause severe burns if pressurized lines malfunction as a result of heating. Do not let heat go beyond work area to nearby pressurized lines.

Remove paint properly. Do not inhale paint dust or fumes.

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Heating Near Pressurized Fluid Lines

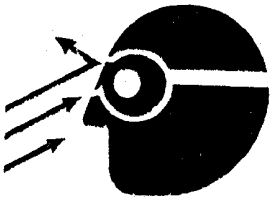
Use a qualified welding technician for structural repairs. Make sure there is good ventilation. Wear eye protection and protective equipment when welding.

TX,WELD,SAFE-19-08MAY20-1/1

Drive Metal Pins Safely

Always wear protective goggles or safety glasses and other protective equipment before striking hardened parts. Hammering hardened metal parts such as pins and bucket teeth could dislodge chips at high velocity.

Use a soft hammer or a brass bar between hammer and object to prevent chipping.



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TX,PINS-19-20JAN11-1/1

23—Rear Auxiliary Mode

- Indicator illuminates rear element function as ripper, winch, rear auxiliary, or towed implement mode.

24—STOP Engine Indicator

IMPORTANT: Prevent possible injury or machine damage. If STOP engine indicator illuminates and alarm sounds, stop machine immediately and investigate cause.

- Indicator illuminates when a problem has developed. Stop machine immediately and determine cause of problem.

25—Park Brake Indicator

- Indicator illuminates when park brake is engaged.

26—Wait-to-Start Indicator

- Indicator illuminates when engine is cold and switched power is ON. Indicator illuminates for a maximum of 0.3 seconds then goes out. Engine can now be started.

27—Engine Coolant Temperature Gauge

IMPORTANT: Prevent machine damage. DO NOT operate machine when engine coolant temperature is high.

- Gauge indicates engine coolant temperature.
- Normal operating temperature is indicated by green zone.
- If needle points to RED zone, gauge turns red, STOP engine indicator illuminates, and an audible alarm sounds, engine is over operating temperature. Stop machine and operate engine at fast idle under no load until engine cools.
- If gauge pointer still points to red indicator after several minutes, stop engine. See an authorized John Deere dealer.

28—Hydraulic Oil Temperature Gauge

- Gauge indicates hydraulic oil temperature.
- Normal operating temperature is indicated by green zone.
- If needle points to RED zone, gauge turns red, STOP engine indicator illuminates, and an audible alarm sounds, hydraulic oil pressure has dropped below recommended pressure. Immediately park machine in a safe area and stop engine.

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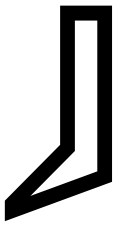

Ripper Indicator

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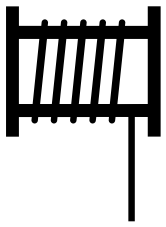

Winch Indicator

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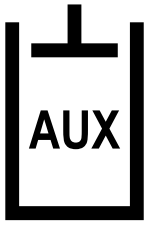


Rear Auxiliary Indicator

TX1162845—UN—11JUN14

Towed Implement Indicator

29—Transmission Oil Temperature Gauge

- Gauge indicates transmission oil temperature.
- Normal operating temperature is indicated by green zone.
- If needle points to RED zone, gauge turns red, transmission oil pressure indicator illuminates, STOP engine indicator illuminates, and an audible alarm sounds, transmission oil temperature is too high. Stop machine and operate engine at fast idle under no load until transmission cools.
- If gauge remains RED after several minutes, stop engine and see an authorized John Deere dealer.

30—Engine Oil Pressure Gauge

- Displays current engine oil pressure level when engine is running.
- Normal operating pressure is indicated by green zone.
- If needle points to RED zone, gauge turns red, STOP engine indicator illuminates, and an audible alarm sounds, engine oil pressure has dropped below recommended pressure. Immediately park machine in a safe area and stop engine.

KR46761,0000F19-19-09AUG18-4/4

Work and Drive Lights

Front and Rear Drive Lights

Front and rear drive lights switch (1) enables standard drive lights.

To enable front and rear drive lights:

- Press and release switch (both LEDs illuminated) to enable front and rear lights.
- Press and hold switch until monitor beeps to enable advanced mode.
- Press and release switch (first LED illuminated) to enable front lights only—advanced mode.
- Press and release switch (second LED illuminated) to enable rear lights only—advanced mode.
- Press and release switch again (all LEDs off) to turn off auxiliary power.

Cab Work Lights—If Equipped

Cab work lights switch (2) enables optional work lights on the machine.

To enable cab work lights:

- Press and release switch (both LEDs illuminated) to enable front and rear lights.
- Press and hold switch until monitor beeps to enable advanced mode.
- Press and release switch (first LED illuminated) to enable front lights only—advanced mode.

TX1161588—UN—27MAY14

Sealed Switch Module (SSM)

1—Front and Rear Drive Lights Switch
2—Cab Work Lights Switch (if equipped)

- Press and release switch (second LED illuminated) to enable rear lights only—advanced mode.
- Press and release switch again (all LEDs off) to turn off cab work lights.

CN93077,000028C-19-06MAR17-1/1

Reversing Fan

CAUTION: Prevent possible injury from flying debris. Clear area of bystanders.

Automatic Fan Reversing System:

NOTE: Timer does not reset when engine is turned off. Time between reversal continues when engine is restarted. For more information, see Setup—Machine Preference. (Section 2-3.)

The reversing fan switch (1) of the sealed switch module (SSM) will indicate when the automatic timer has been activated to purge debris from the radiator (LED is illuminated).

Manually Activated System:

NOTE: Timer does not reset when utilizing the manual reversing fan switch.

If reversing fan switch is not illuminated, the operator may reverse the fan manually by pressing the reversing fan switch.

When activated, reverse operation will proceed for 10 seconds and return to default value.

TX1161591—UN—27MAY14

Sealed Switch Module (SSM)

1—Reversing Fan Switch

CN93077,000028D-19-17SEP14-1/1

Check Instruments Before Starting

Press and release engine start switch (1). The alarm sounds briefly, a gray screen is displayed momentarily, and all indicators on display monitor illuminate.

If security system has been enabled by owner, operator logon screen appears on display window. Operator must enter valid personal identification number (PIN) to access monitor screens.

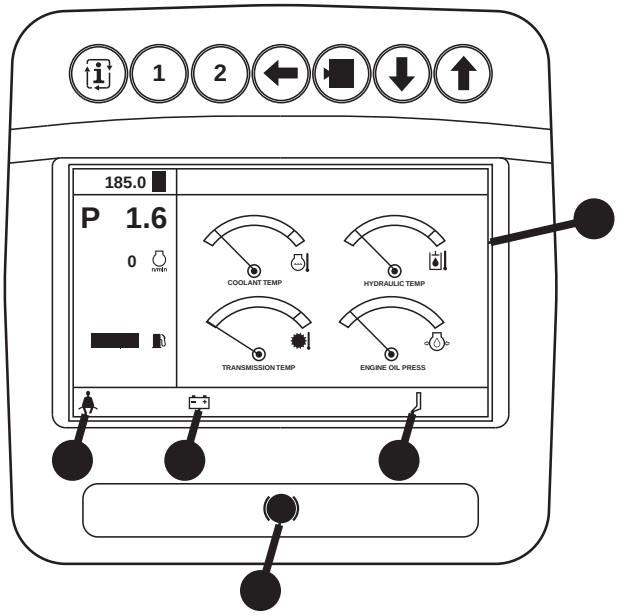
Display (2) window then populates with normal display items with gauge pointers positioned to current input values. Fasten seat belt indicator (3) will stay illuminated until operator fastens seat belt. The engine alternator voltage indicator (4) will also remain on until engine is running and alternator is charging. Rear auxiliary mode (5) illuminates with the selected device.

After the indicator check, the park brake indicator (6) remains illuminated.

1—Engine Start Switch
2—Display
3—Fasten Seat Belt Indicator
4—Engine Alternator Voltage Indicator
5—Rear Auxiliary Mode
6—Park Brake Indicator

TX1160763—UN—16MAY14

Sealed Switch Monitor (SSM)



TX1194883—UN—29MAY15

Primary Display Unit (PDU)

KR46761,0000F17-19-29MAY15-1/1

Decelerator/Brake Pedal and Decelerator Mode Switch

CAUTION: Prevent possible injury from unexpected machine movement. Pushing decelerator/brake pedal (1) beyond a point of increased resistance will apply brakes and stop machine abruptly.

The decelerator mode switch (2) is used to set operational mode of foot pedal. Two modes are available.

Engine Mode

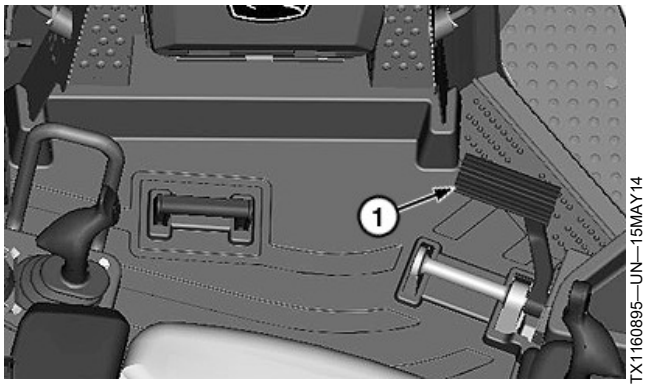
The default setting is engine mode. In engine mode, pressing on the decelerator/brake pedal will both slow engine speed and reduce machine ground speed. Pushing pedal beyond a point of increase resistance will apply brakes and machine will stop abruptly. **Travel will resume as pedal is released.**

Transmission Mode

Pressing the decelerator mode switch (LED illuminated) enables decelerator/brake pedal in transmission mode. In transmission mode, pressing the decelerator/brake pedal will reduce machine ground speed but will not slow engine speed. Pushing pedal beyond a point of increased resistance will apply brakes and machine will stop abruptly. **Travel will resume as pedal is released.**

NOTE: Decelerator mode can be changed at any time. With transmission control lever (TCL) in neutral (N), mode change will take effect immediately. If TCL is not in neutral (N), return-to-neutral indicator will illuminate on the monitor, indicating TCL must be moved to neutral for decelerator mode change to take effect.

1—Decelerator/Brake Pedal **2—Decelerator Mode Switch**



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Decelerator/Brake Pedal

TX1160896—UN—15MAY14

Sealed Switch Module (SSM)

CN93077,00002EA-19-16FEB17-1/1

Mechanical Angle Blade—If Equipped

Operating Mechanical Angle Blade

Mechanical angle blade utilizes blade control pattern of non-IGC units. See Blade Control Lever. (Section 2-1.)

CAUTION: Prevent machine damage. Machine damage occurs with improper use of mechanical angle blade.

- **Do not burry the cutting edge under an obstacle to lift rear of dozer.**
- **Do not use the blade to lift vehicles or heavy objects.**

Typical Uses:

- Straight blade to cut, carry, or spread material
- Angled blade to sidecast material
- Tilted blade to build roads and cut ditches
- Raised blade to push over small trees

Removing stumps and small trees:

1. Tilt blade.
2. Cut lateral roots on three sides of stump or tree.
3. Place blade cutting edge under one side.
4. With roots cut:
   - drive forward to roll stump out of ground.
   - raise blade and push tree over.

Changing Blade Angle

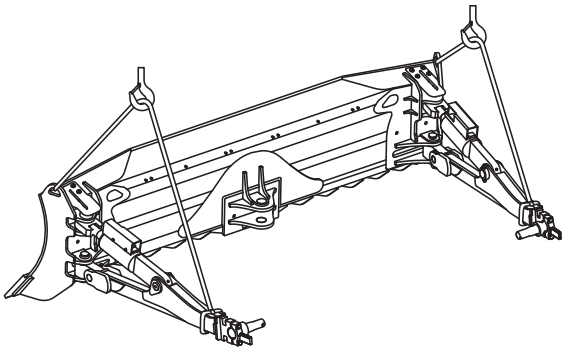
The blade angle can be adjusted to suit ground conditions by changing the position of ball stud (4). There are three blade angle positions—no angle, angle left, and angle right.

Blade Angle	Right Strut Ball Stud	Left Strut Ball Stud
No Angle	Right Middle Frame Bracket (2)	Left Middle Frame Bracket
Angle Left	Right Front Frame Bracket (3)	Left Rear Frame Bracket
Angle Right	Right Rear Frame Bracket (1)	Left Front Frame Bracket

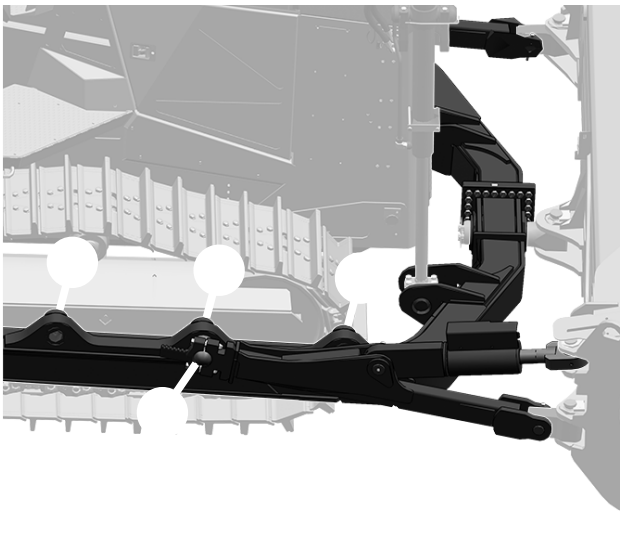
CAUTION: Prevent possible injury from falling blade or frame. NEVER work under a raised blade unless the blade or frame is supported.

CAUTION: Prevent possible crushing injury from heavy component. Use appropriate lifting device.

1. Attach slings in preparation for supporting mechanical angle blade and struts (5).



Lifting Mechanical Angle Blade and Struts



Mechanical Angle Blade (right side shown)

1—Rear Frame Bracket (2 used)
2—Middle Frame Bracket (2 used)
3—Front Frame Bracket (2 used)
4—Ball Stud (2 used)
5—Strut (2 used)

2. Lift blade and struts at each end of blade as indicated in graphic.

Specification

Mechanical Angle Blade and Strut—Weight (approximate). . . . . 4164 kg 9180 lb

Continued on next page

9. Pull and turn brake pump off (red) selector valve (3) to the extended out (tow) position on hand pump valve manifold.

NOTE: There is a relief valve for the park brake in the hand pump valve. Oil flow through relief valve can be heard and increased pressure on handle can be felt when brakes are totally released.

10. Insert handle (5) into hand pump (4). Actuate hand pump to apply pressure to release brakes.

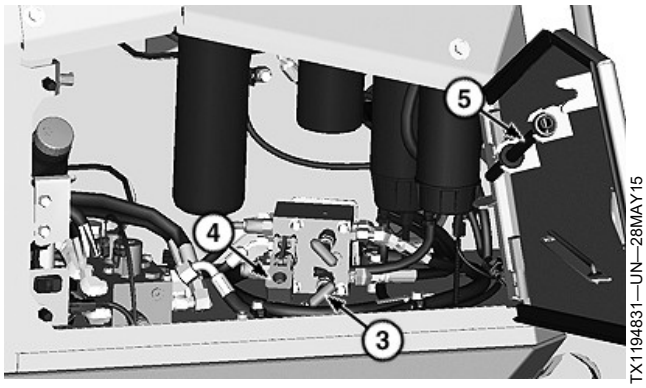
NOTE: Brakes can be applied in TOW mode by moving park levers in the up (locked) position, depressing decelerator/brake pedal fully to floor, or pressing the engine stop switch.

NOTE: If brakes are applied while towing, brake release procedure must be repeated before resuming towing.

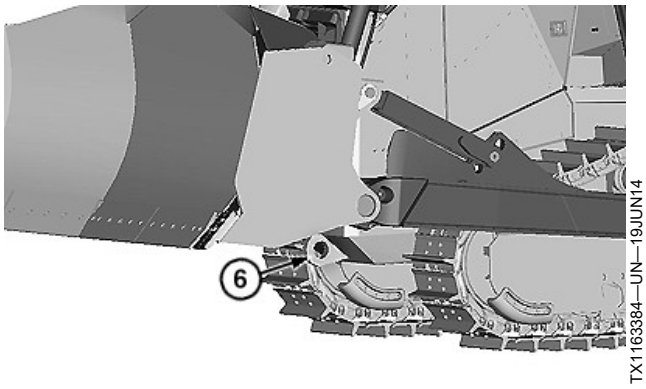
11. Close left rear service door.

12. Tow machine using frame tiedown (6).

3—Brake Pump Off (red) Selector Valve
4—Hand Pump
5—Handle
6—Frame Tiedown



Hand Pump Compartment



Tiedown

KR46761,0000F15-19-21JUL21-2/2

MACHINE PREFERENCE Menu Items								
	>>	3: AUTO SHUTDOWN	>>	1: OFF 2: 1 MINUTE 3: 2 MINUTES 4: 3 MINUTES 5: 4 MINUTES 6: 5 MINUTES 7: 10 MINUTES 8: 15 MINUTES 9: 20 MINUTES 10: 25 MINUTES 11: 30 MINUTES				

[1]*Owner PIN required.*

TRANSMISSION SETTINGS

1. TRACK AGGRESSIVENESS—Sets power management routine intended to prevent engine from stalling when large transmission load is applied.
2. DECELERATOR—Determines dependency between engine and transmission speeds when actuating decelerator pedal.
3. FNR—Determines rate at which machine accelerates when shifting into gear.
4. STEER RATE—Sets rate at which machine steers to prevent oversteering.
5. STEER MODULATION—Sets steer output for left and right steer commands.
6. SPEED AGGRESSIVENESS—Sets machine speed response when encountering or shedding a load.
7. ALTITUDE MODE—When enabled, improves machine performance in high altitude areas.
8. TRACK SPEED—Sets transmission speed range for forward and reverse transmission control lever (TCL) positions.

COURTESY LIGHTS

Allows operator's to set courtesy light time interval when key switch position changes from ON to OFF.

AUTO-SHUTDOWN

Allows operator's to set a specific time interval to turn off engine when machine has been idling at less than 945 RPM and transmission control lever (TCL) is in park.

BRAKE MODE

Default setting is NORMAL. If setting is changed brake mode will default to NORMAL after a power cycle.

CN93077,00002D9-19-22JUN21-2/2

Setup—Machine Configuration

The MACHINE CONFIGURATION menu allows operator to make changes to a limited number of operating characteristics of the machine.

Navigate through menu: **MAIN MENU >> SETUP >> MACHINE CONFIGURATION**.

MACHINE CONFIGURATION Menu Items				
Menu Items		Submenu Items		Submenu Items
1: MANUFACTURER ..... John Deere				
2: MACHINE VIN..... VIN #				

CN93077,00002DA-19-16SEP14-1/1

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:

- Pre-mix coolant meeting ASTM D6210 requirements
- Is formulated with a 2-ethylhexanoic acid (2-EHA) free additive package
- Coolant concentrate meeting ASTM D6210 requirements in a 40—60% mixture of concentrate with quality water

If coolant meeting one of these specifications is unavailable, use a coolant concentrate or pre-mix coolant that has a minimum of the following chemical and physical properties:

- Provides cylinder liner cavitation protection according to either the John Deere Cavitation Test Method or a fleet study run at or above 60% load capacity
- Is formulated with a nitrite-free additive package
- Is formulated with a 2-ethylhexanoic acid (2-EHA) free additive package
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion

Water Quality

Water quality is important to the performance of the cooling system. Deionized or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

Coolant Drain Intervals

Drain and flush the cooling system and refill with fresh coolant at the indicated interval, which varies with the coolant used.

When COOL-GARD II or COOL-GARD II PG is used, the drain interval is 6 years or 6000 hours of operation.

If a coolant other than COOL-GARD II or COOL-GARD II PG is used, reduce the drain interval to 2 years or 2000 hours of operation.[1]

IMPORTANT: Do not use cooling system sealing additives or antifreeze that contains sealing additives.

Do not mix ethylene glycol and propylene glycol base coolants.

Do not use coolants that contain nitrites.

COOL-GARD is a trademark of Deere & Company

[1] Coolant analysis may extend the service interval of other "Coolants" to a maximum not to exceed the interval of Cool-Gard II coolants. Coolant analysis means taking a series of coolant samples at 1000 hour increments beyond the normal service interval until either the data indicate the end of useful coolant life or the maximum service interval of Cool-Gard II is reached.

DX,COOL3-19-25AUG20-1/1

Service Intervals

Model:	**PIN/Serial Number:**
Hour Meter Reading:	
SERVICE INTERVALS	
Service machine at intervals shown on this chart. Also, perform service on items at multiples of the original requirement. For example: at 500 hours, also service those items (if applicable) listed under 250 hours, 100 hours, 50 hours, and 10 hours or daily.	
FLUID SAMPLING	
Fluid samples should be taken from each system at its recommended change interval prior to actually draining the fluid. Regular oil sampling will extend the operational life of the machine.	
As Required	
□ Inspect and clean cooling system	□ Check and fill windshield washer fluid
□ Check and adjust track sag	□ Check air cleaner dust unloader valve
□ Check and replace cab fresh air and recirculation filter elements	□ Replace primary and secondary engine air filter elements
□ Check and drain primary fuel filter and water separator	□ Inspect or replace belt and check automatic belt tensioner
□ Check and drain auxiliary fuel filter and water separator	□ Clean and tighten battery terminals
Every 10 Hours or Daily	
□ Check coolant level at surge tank	□ Check engine oil level
□ Check hydraulic system oil level	□ Lubricate pushbeam dozer linkage
□ Check hydrostatic transmission oil level	□ Lubricate mechanical outside angle dozer linkage (if equipped)
Every 50 Hours	
□ Lubricate right, left, and center crossbar pivots	□ Lubricate rear ripper (if equipped)
□ Lubricate lift cylinder pivots	
Every 250 Hours	
□ Check inner and outer final drive oil level	□ Take engine oil sample
Every 500 Hours	
□ Drain and refill engine oil and replace filter	□ Take hydraulic system oil sample
□ Drain water and sediment from fuel tank	□ Take inner and outer final drive oil sample
□ Replace primary and final fuel filters	□ Take hydrostatic transmission oil sample
□ Replace auxiliary fuel filter	□ Take engine coolant sample
□ Flush and drain final drive seal cavity oil	□ Take diesel fuel sample
□ Check hybrid battery electrolyte level (if equipped)	
Every 1000 Hours	
□ Check coolant condition	□ Replace cab fresh air and recirculation filters
□ Check air intake hoses and connections	□ Check and refill track frame pivot shaft bushing oil
□ Drain and refill inner and outer final drive oil	
Every 2000 Hours	
□ Check and adjust engine valve lash	□ Replace fuel tank breather
□ Drain and refill hydraulic system oil and replace filter	□ Replace hydrostatic tank breather
□ Drain and refill transmission oil and replace hydrostatic charge oil filter	□ Replace hydraulic tank breather
□ Replace hydraulic fan drive system oil filter	
Every 6000 Hours	
□ Drain and refill engine cooling system	

MB60223,00003B5-19-22JAN20-1/1

Check and Adjust Track Sag

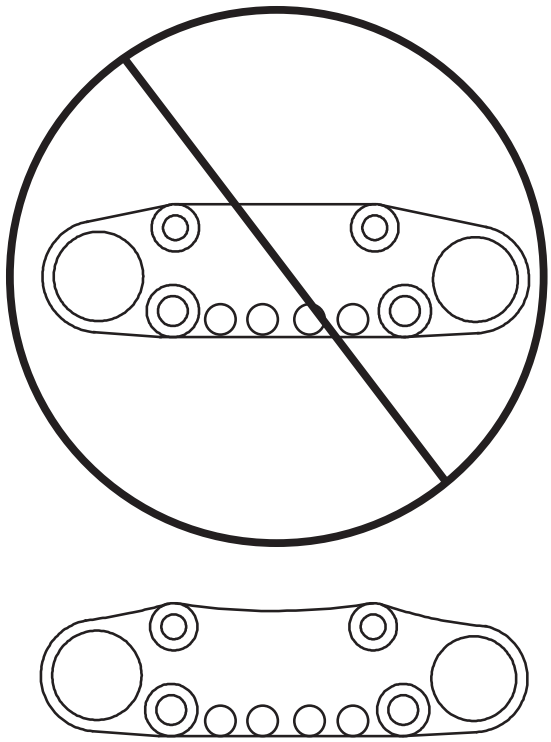
Maintaining proper track sag (3) to specification is the single most important adjustment. Tight tracks can reduce wear life by more than 50% over tracks which are properly maintained at 63.5 mm (2.5 in) of sag. Tight tracks increase loading on undercarriage components and accelerate wear rate. Track sag should be adjusted as soil conditions change. See Track Sag General Information. (Section 4-1.)

1. Allow machine to slowly roll forward so track pin (1) is centered over rear carrier rollers (2).
2. Engage park lock levers in up (locked) position.
3. Measure track sag between two carrier rollers. Measure track sag from top of track grouser to a straightedge (4). If track sag is not within specification, see Adjust Track Sag in this section

Specification

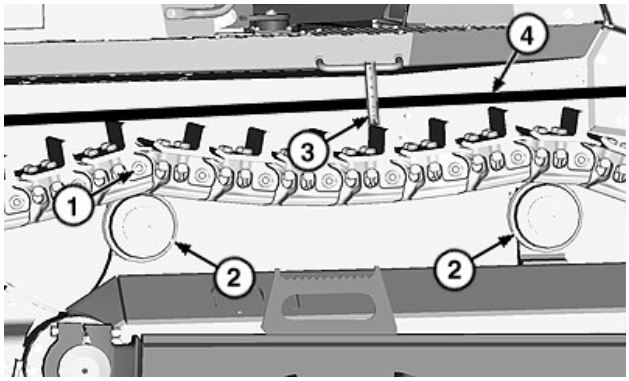
Track Sag—Distance. . . . . 58—70 mm
2.25—2.75 in

1—Track Pin
2—Carrier Roller (2 used)
3—Track Sag
4—Straightedge



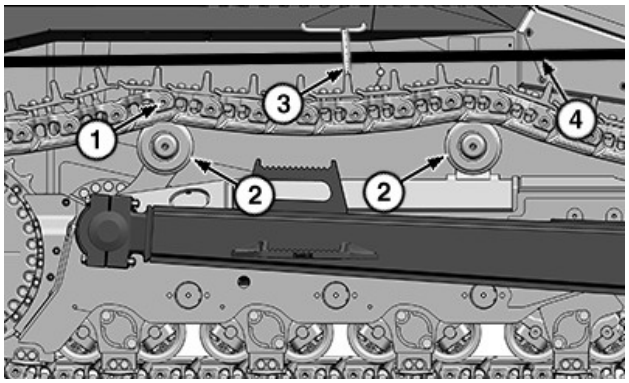
T207501—UN—15FEB05

Track Sag



TX1164036—UN—01JUL14

Check Track Sag—Fixed Undercarriage



XJ1306350—UN—15DEC20

Check Track Sag—Double Bogie Undercarriage

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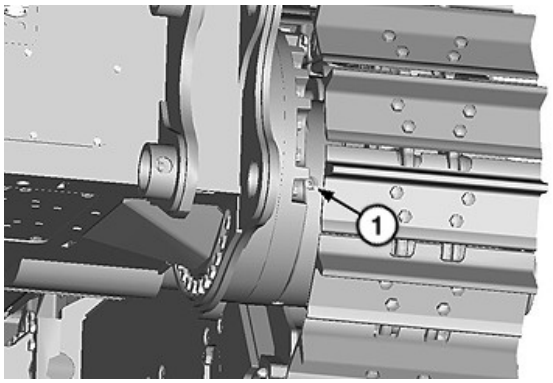
CN93077,0000312-19-10MAR22-1/3

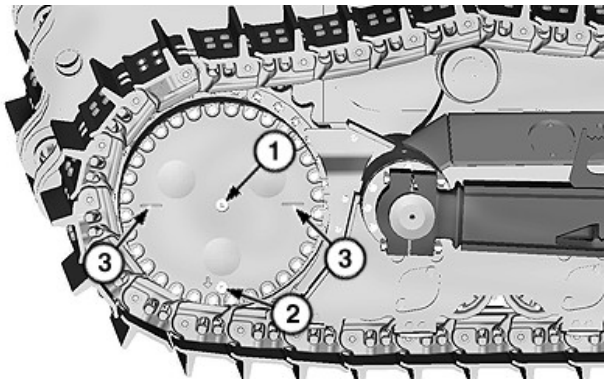
Check Inner and Outer Final Drive Oil Level

1—Fill Plug (1 inner, 1 outer)
2—Outer Drain Plug
3—Sproket Oil Level Line



TX1164312—UN—09JUL14

Inner Final Drive Housing—Fixed Undercarriage



TX1164314—UN—01JUL14

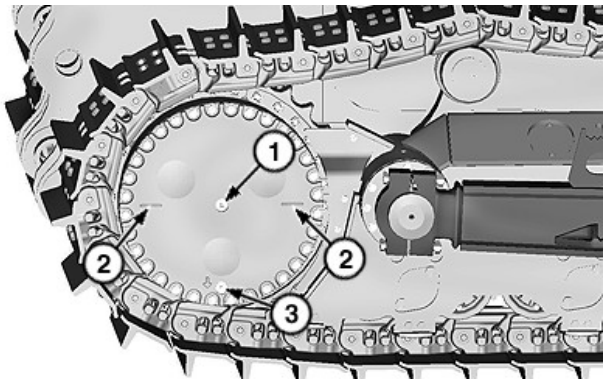
Outer Final Drive Housing—Fixed Undercarriage

Continued on next page

CN93077,000031C-19-09DEC20-1/2

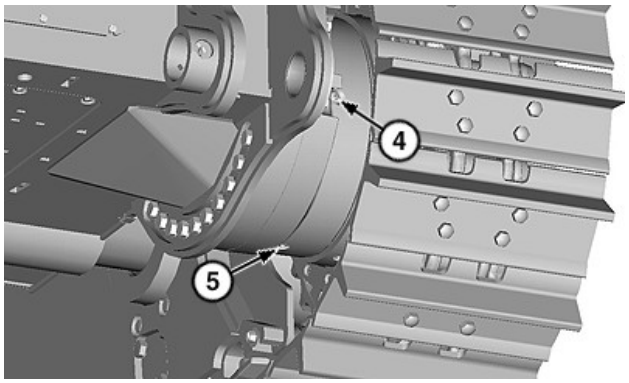
Drain and Refill Inner and Outer Final Drive Oil

1—Outer Fill Plug
2—Sprocket Oil Level Line
3—Outer Drain Plug
4—Inner Fill Plug
5—Inner Drain Plug



TX1168356—UN—06AUG14

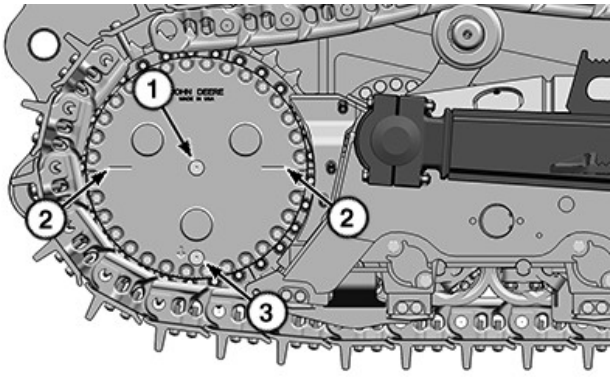
Outer Final Drive Housing—Fixed Undercarriage



TX1167294—UN—06AUG14

Inner Final Drive Housing—Fixed Undercarriage

CN93077,0000323-19-09DEC20-1/3



XJ1307076—UN—09DEC20

Outer Final Drive Housing—Double Bogie Undercarriage

Continued on next page

CN93077,0000323-19-09DEC20-2/3

Clean Machine Regularly

Remove any grease, oil, fuel, or debris buildup to avoid possible injury or machine damage.

IMPORTANT: Avoid using high-pressure washing for electronic or electric devices, including the engine control unit (ECU), relays, and harness couplers.

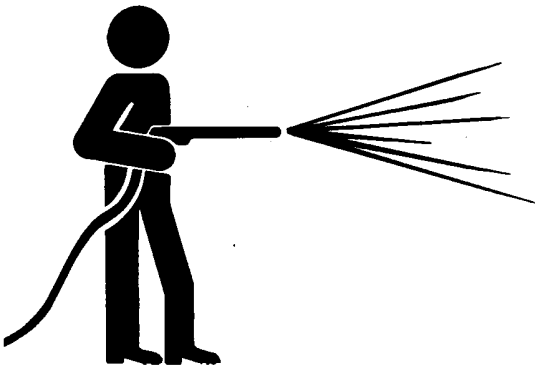
Never steam-clean or pour cold water on the high-pressure fuel pump while it is still warm; doing so may cause pump parts to seize. Also, avoid steam-cleaning electrical components, wiring, sensors, and the ECU.

Avoid using high-pressure washing when cleaning the exhaust stack to prevent damage to engine.

Avoid machine damage. Machine is equipped with a sealed and lubricated track, avoid water being forced between the plastic pins and rubber plugs while washing machine with pressure washer.

Steam-clean engine thoroughly. High-pressure washing is not recommended.

High-pressure washing greater than 1379 kPa (13.8 bar) (200 psi) can damage freshly painted finishes. Paint should be allowed to air-dry for 30 days minimum after receipt of machine before cleaning with high pressure. Use low-pressure wash operations until 30 days have elapsed.



Clean Machine Regularly

Do not spray oil cooler fins at an angle; doing so may bend the cooler fins.

BB11933,0000076-19-16NOV22-1/1

Pushbeams and Blade Installation

Power Pitch Machines

1. Park machine on level surface. Stop engine.

NOTE: Pushbeams should be assembled together before attaching to machine.

NOTE: All paint, rust, and dirt from pins, threads, and bearing connection points should be removed to achieve specified torques and assist with assembly.

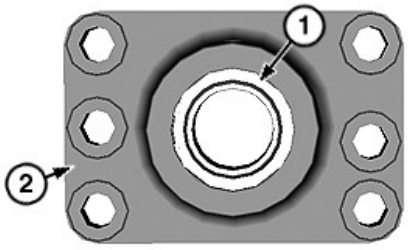
2. Block front corners and center section of pushbeams approximately 308 mm (12 in) off ground for alignment purposes. Block bottom rear shell bearings approximately 497 mm (20 in) off ground to align proper height to connect with trunnions.

CN93077,000062B-19-11OCT21-1/23

IMPORTANT: Leave pushbeam joining cap screws (5) loose on intermediate plate for centering pushbeams.

3. Install intermediate plate (2).

1—Bearing Lip **2—Intermediate Plate**



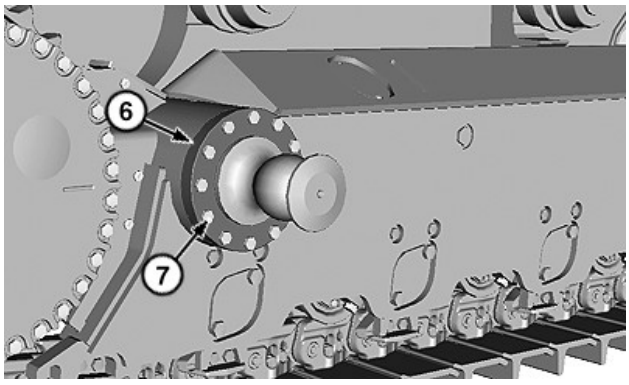
Bearing Lip on Intermediate Plate

Continued on next page

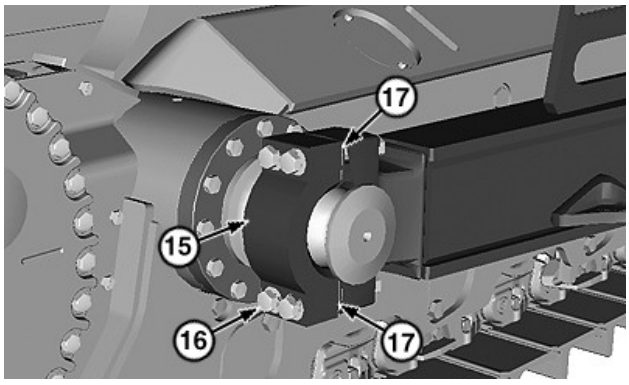
CN93077,000062B-19-11OCT21-2/23

8.

6—Trunnion (2 used)
7—Cap Screw (24 used)
15—Front Half-Shell Bearing Cap (2 used)
16—Cap Screw (8 used)
17—Upper and Lower Section (each side)



Trunnion—Fixed Undercarriage



Front Half-Shell Bearing Caps—Fixed Undercarriage

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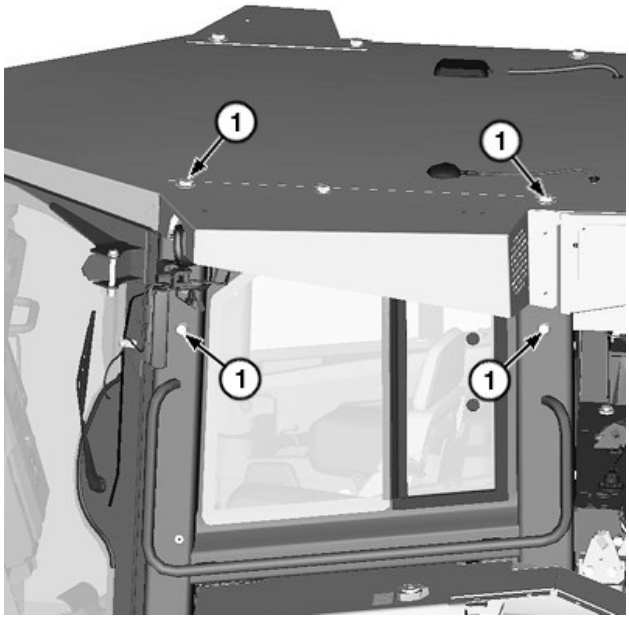
CN93077,000062B-19-11OCT21-17/23

Verified Anchor Point Information

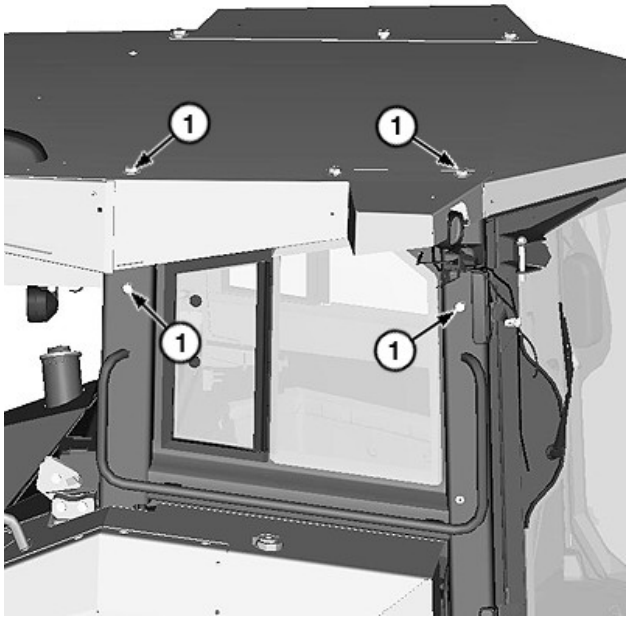
The tapped bosses (1) are tested and verified to withstand the following loads when fully torqued and properly sized Grade 10.9 hardware is installed:

- 1633 kg (3600 lb) each, applied in any direction, at a maximum of 76.2 mm (3 in) offset from the cab surface.
- 2268 kg (5000 lb) each, applied in any direction, with no offset from the cab surface.

1—Tapped Boss (8 used)



Anchor Points Information (left side shown)



Anchor Points Information (right side shown)

CN93077,000033F-19-16FEB17-1/1

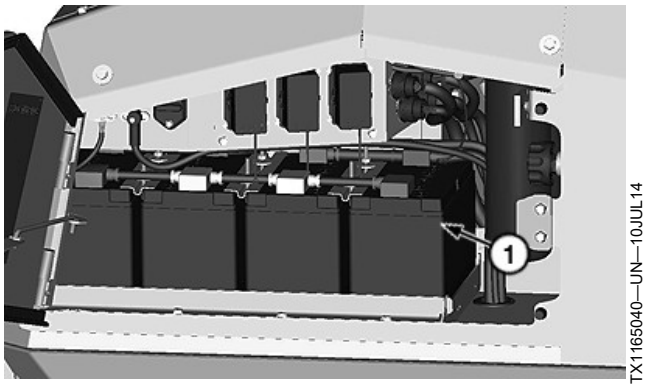
Replacing Batteries

CAUTION: Avoid personal injury from battery acid. Sulfuric acid in battery electrolyte is poisonous. Acid is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes. Always remove grounded (-) battery clamp first and replace clamp last.

The machine has four 12-volt batteries (1) with negative (-) ground connected in series and parallel to provide 24 volts.

Use only batteries which meet the following specifications:

BATTERY SPECIFICATIONS		
BCI Group	**Cold Cranking Amps 0°F (-18°C)**	**Reserve Capacity**
31	950	190



Batteries

1—Battery (4 used)

KR46761,0000C5D-19-22JAN20-1/1

Welding on Machine

CAUTION: Avoid potentially toxic fumes and dust. Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch. Do all work outside or in a well-ventilated area. Dispose of paint and solvent properly.

When sanding or grinding painted surfaces, avoid breathing the dust. Wear an approved respirator. When using 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.

IMPORTANT: Have only a qualified welder perform this job. Connect welder ground clamp close to each weld area so electrical current does not pass through any bearings, articulation joints, or pivot points. Remove or protect all parts that can be damaged by heat or weld splatter.

1. Remove paint before welding or heating.
   - When sanding or grinding paint, avoid breathing the dust.
   - Wear an approved respirator. When using 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.

IMPORTANT: Electrical current traveling from the welder through the machine electrical system may damage the machine electrical system, including battery and control units. Disconnect battery positive and negative cables before welding on machine.

2. Disconnect the negative (-) battery cables.
3. Disconnect the positive (+) battery cables.
4. Cover, protect, or move any wiring harness sections away from welding area.

For any repairs, see an authorized John Deere dealer.

VD76477,00005A0-19-21JUL17-1/1

Keep Electronic Control Unit Connectors Clean

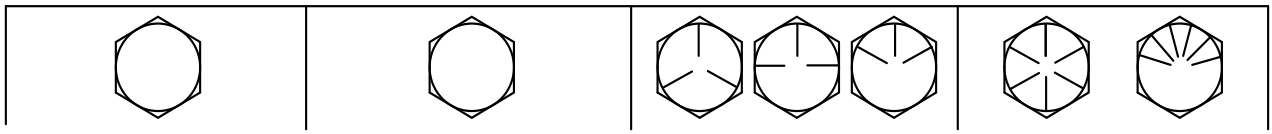
IMPORTANT: Do not open control unit and do not clean with a high-pressure spray. Moisture, dirt, and other contaminants may cause permanent damage.

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

Unified Inch Bolt and Screw Torque Values

TS1671—UN—01MAY03



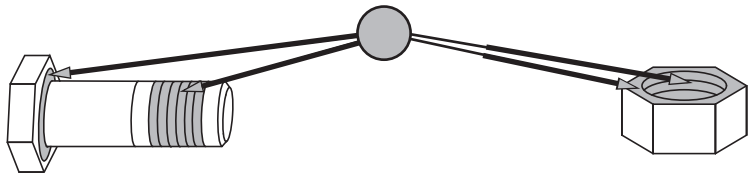
Bolt or Screw Size	SAE Grade 1[a]				SAE Grade 2[b]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
1/4	3.1	27.3	3.2	28.4	5.1	45.5	5.3	47.3	7.9	70.2	8.3	73.1	11.2	99.2	11.6	103
													N·m	lb·ft	N·m	lb·ft
5/16	6.1	54.1	6.5	57.7	10.2	90.2	10.9	96.2	15.7	139	16.8	149	22.2	16.4	23.7	17.5
									N·m	lb·ft	N·m	lb·ft				
3/8	10.5	93.6	11.5	102	17.6	156	19.2	170	27.3	20.1	29.7	21.9	38.5	28.4	41.9	30.9
					N·m	lb·ft	N·m	lb·ft								
7/16	16.7	148	18.4	163	27.8	20.5	30.6	22.6	43	31.7	47.3	34.9	60.6	44.7	66.8	49.3
	N·m	lb·ft	N·m	lb·ft												
1/2	25.9	19.1	28.2	20.8	43.1	31.8	47	34.7	66.6	49.1	72.8	53.7	94	69.3	103	75.8
9/16	36.7	27.1	40.5	29.9	61.1	45.1	67.5	49.8	94.6	69.8	104	77	134	98.5	148	109
5/8	51	37.6	55.9	41.2	85	62.7	93.1	68.7	131	96.9	144	106	186	137	203	150
3/4	89.5	66	98	72.3	149	110	164	121	230	170	252	186	325	240	357	263
7/8	144	106	157	116	144	106	157	116	370	273	405	299	522	385	572	422
1	216	159	236	174	216	159	236	174	556	410	609	449	785	579	860	634
1-1/8	305	225	335	247	305	225	335	247	685	505	751	554	1110	819	1218	898
1-1/4	427	315	469	346	427	315	469	346	957	706	1051	775	1552	1145	1703	1256
1-3/8	564	416	618	456	564	416	618	456	1264	932	1386	1022	2050	1512	2248	1658
1-1/2	743	548	815	601	743	548	815	601	1665	1228	1826	1347	2699	1991	2962	2185

The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench.
DO NOT use these values if a different torque value or tightening procedure is given for a specific application.
For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.

Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.

- Make sure that fastener threads are clean.
- Apply a thin coat of Hy-Gard™ or equivalent oil under the head and on the threads of the fastener, as shown in the following image.
- Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil.
- Properly start thread engagement.

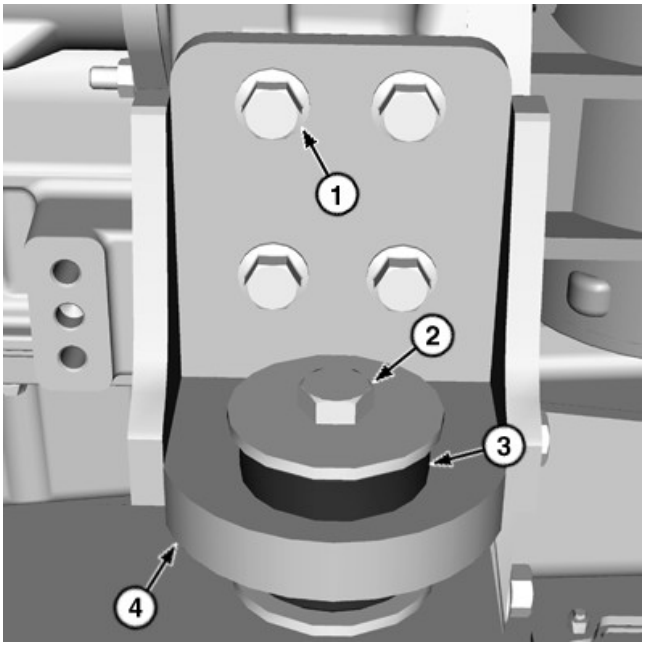
TS1741—UN—22MAY18



[a] Grade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.
[b] Grade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.
[c] Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[d] Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ1-19-09MAY22-1/1

Engine Mounts Check



TX1160518A—UN—14MAY14

Rear Engine Mount

1—Mount-to-Engine Cap Screw (4 used)
2—Isolator Cap Screw
3—Rubber Isolator
4—Engine Mounting Bracket

Open both engine compartment doors.

Inspect all engine mounts for wear, fretting, or loose hardware.

LOOK: Are engine mounts in good condition?

FEEL: Are cap screws tight?

YES: Go to next check.

NO: Replace engine mounts or tighten cap screws.

Continued on next page

KR46761,0001514-19-10APR17-13/67

Front Wiper Check

TX1159559A—UN—20JUN14

Front Wiper Switch

1—Front Window Wiper Switch
2—LED

Press front window wiper switch (1).

Observe wiper.

LOOK: Does wiper run at a constant speed?

LOOK: Does LED (2) illuminate?

Turn switch OFF.

LOOK: Does wiper return to park position?

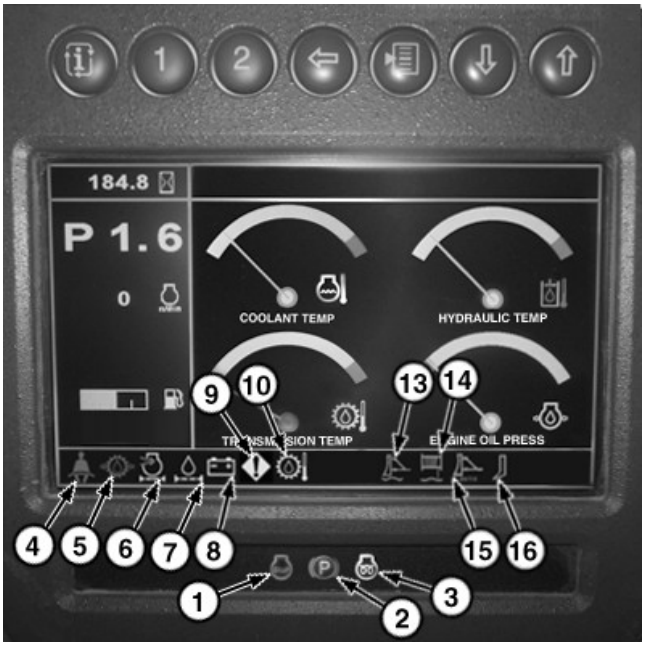
YES: Go to next check.

NO: See an authorized John Deere dealer.

Continued on next page

KR46761,0001514-19-10APR17-29/67

Monitor Status After Bulb Check



TX1195734A—UN—11JUN15

Indicators

1—STOP Engine Indicator
2—Park Brake Indicator
3—Wait-to-Start Indicator
4—Fasten Seat Belt Indicator
5—Transmission Oil Pressure Indicator
6—Engine Air Filter Restriction Indicator
7—Oil Filter Restriction Indicator
8—Engine Alternator Voltage Indicator
9—Caution Indicator
10—Transmission Oil Temperature Indicator
13—Blade Float Indicator
14—Winch Controls Mode
15—Auto Blade Control Indicator (if equipped)
16—Rear Auxiliary Mode

After bulb check with engine running, check the following:

NOTE: Park brake indicator stays illuminated, due to machine being in park.

LOOK: Do all indicators except park brake indicator (2) turn off?

LOOK: Does display show engine speed?

YES: Go to next check.

NO: See an authorized John Deere dealer.

Continued on next page

KR46761,0001514-19-10APR17-40/67

Tracking Check

CAUTION: Prevent possible injury from machine movement. Make sure that there is adequate room and be aware of bystanders.

NOTE: Track sag must be at specification and machine must be driven on a level surface for all tracking checks.

With engine speed at fast idle, slowly move transmission lever to maximum forward travel.

Drive machine forward on a level surface in a straight line.

Stop machine.

With engine speed at fast idle, slowly move transmission lever to maximum reverse travel.

Drive machine reverse on a level surface in a straight line.

LOOK: Does machine track in a straight line in forward and reverse?

LOOK/FEEL: Does machine smoothly change direction and follow the same track imprint?

YES: Go to next check.

NO: See an authorized John Deere dealer.

KR46761,0001514-19-10APR17-55/67

Reverse Ratio Check

TX1159620A—UN—20JUN14

Reverse Ratio Switch

1—Reverse Ratio Switch
2—Left LED
3—Middle LED
4—Right LED

Run engine at fast idle.

NOTE: The reverse ratio has three settings. The left LED (2) is 100%, the left and middle LEDs (3) is 115%, and the left, middle, and right LEDs (4) is 130%.

Press reverse ratio switch (1) three times so left, right, and middle LEDs are illuminated.

Push transmission control lever (TCL) to forward.

Pull TCL to reverse.

LOOK/FEEL: Does machine operate faster in reverse than forward?

YES: Go to next check.

NO: See an authorized John Deere dealer.

Continued on next page

KR46761,0001514-19-10APR17-56/67

Engine

Symptom	Problem	Solution
Primary Display Unit (PDU) Message Displayed	Generated display message on PDU	See an authorized John Deere dealer.
Engine Will Not Crank	Park lock levers not in up (LOCKED) position	Move park lock levers to up (LOCKED) position.
	Battery cables making poor connection	Clean and tighten battery terminals.
	Battery disconnect switch is in the OFF position	Turn battery disconnect switch to the ON position. See Battery Disconnect Switch. (Section 2-2.)
	Starter	Repair or replace starter.
	Low battery power	Charge or replace battery.
Engine Cranks but Will Not Start or Hard to Start	No fuel	Add correct fuel. Bleed air. See Bleed Fuel System. (Section 4-1.)
	Fuel shutoff valve is closed	Open fuel shutoff valve.
	Incorrect fuel	Drain fuel tank and refill with correct fuel.
	Fuel filters restricted	Replace filters. Bleed air.
	Water in fuel tank	Check, drain, and refill.
	Low battery power	Charge or replace battery.
	Slow cranking speed (poor electrical connection)	Clean and tighten battery and starter connections.
	Fuel filter not installed correctly	Install new filter and O-ring. Ensure proper O-ring seal. Bleed air.
Engine Knocks, Runs Irregularly, or Stops	Contaminated fuel	Drain fuel tank. Change primary fuel filter. Bleed air. Add clean fuel.
	Air filters restricted or dirty	Replace filter elements. See Replace Primary and Secondary Engine Air Filter Elements. (Section 3-3.)
	Fuel filters restricted	Replace filters. Bleed air.
	Air in fuel system	Bleed air from fuel system. See Bleed Fuel System. (Section 4-1.)
	Fuel filter not installed correctly	Install new filter and O-ring. Ensure proper O-ring seal. Bleed air.
Engine Does Not Develop Full Power	Air filters restricted or dirty	Replace filter elements. See Replace Primary and Secondary Engine Air Filter Elements. (Section 3-3.)
	Fuel filters restricted	Replace filters. Bleed air.

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KR46761,0000EFC-19-08JUN15-1/3

Monthly Storage Procedure

NOTE: The following procedure is used monthly when the machine has not been prepared for long-term storage.

CAUTION: Prevent possible injury or death from asphyxiation. Engine exhaust fumes can cause sickness or death. ONLY start engine in a well-ventilated area.

1. Clear area around machine to allow for movement
2. Charge and install batteries.
3. Turn battery disconnect switch to the ON position. See Battery Disconnect Switch (2-2).
4. Remove LPS 3 Rust Inhibitor from cylinder rods with a cleaning solvent.
5. For machines with tires, check condition of tires and tire pressure. For machines with tracks, check condition of tracks and track sag. For non-sealed and lubricated track chains, apply oil to the pin-to-bushing joints.
6. Inspect engine compartment and remove any foreign material.
7. Check belts.

IMPORTANT: Prevent possible engine damage. During cold temperatures, check fluidity of engine oil on dipstick. If the oil appears waxy and/or jelly like rather than liquid, DO NOT attempt to start engine. Use external heat source to warm the crankcase until oil appears fluid.

8. Check all fluid levels. If low, check for leaks and add oil as required.
9. Check condition of all hoses and connections.

CAUTION: Prevent possible injury from unexpected machine movement. Clear the area of all persons before operating the machine.

NOTE: If the batteries are kept disconnected for more than 1 month, resetting of the monitor may be required. Contact an authorized John Deere dealer.

Start engine and run until machine reaches normal operating temperature.

- If engine does not start or runs poorly after starting, change fuel filters. Bleed fuel system.

10. Operate all controls, levers, seat adjustments, etc.
    - If equipped, operate air conditioning system for 2 minutes.
11. Run machine back and forth several times.
12. Park the machine with cylinder rods retracted, if possible. Shut off engine.
13. Place a DO NOT OPERATE tag in operator's station
14. Check condition of all hoses and connections.
15. Drain water and sediment from fuel tank.

IMPORTANT: LPS 3 Rust Inhibitor can destroy painted finish. DO NOT spray LPS 3 Rust

Inhibitor on painted areas.

16. Apply LPS 3 Rust Inhibitor to exposed cylinder rod areas.
17. Lock all covers and doors if equipped

TX,MONTHLY,STORE,PROC-19-14AUG23-1/1

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