450J, 550J, and 650J Crawler Dozer

(Serial No. - 159986)

OPERATOR'S MANUAL

450J, 550J, and 650J Crawler Dozer (S.N. —159986)

OMT204685 ISSUE F3 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

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

If this product contains a gasoline engine:

⚠ WARNING

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

Worldwide Construction And Forestry Division

LITHO IN U.S.A.

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Introduction

Foreword

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

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

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

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

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Machine Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

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

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

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CARB Non-road Emissions Control Warranty Statement—Compression Ignition

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 2013 through 2015 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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JOHN DEERE'S WARRANTY RESPONSIBILITY:

Where a warrantable condition exists, John Deere will repair or replace, as it elects, your off-road diesel engine at no cost to you, including diagnosis, parts or labor. Warranty coverage is subject to the limitations and exclusions set forth herein. The off-road diesel engine is warranted for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. The following are emissions-related parts:

Air Induction System

- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system

- Fuel injection system

Exhaust Gas Recirculation

- EGR valve

Catalyst or Thermal Reactor Systems

- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls

- Any device used to capture particulate emissions
- Any device used in the regeneration of the capturing system
- Enclosures and manifolding
- Smoke Puff Limiters

Positive Crankcase Ventilation (PCV) System

- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls

- NOx absorbers and catalysts

SCR systems and urea containers/dispensing systems

Miscellaneous Items used in Above Systems

- Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware

Any warranted emissions-related part scheduled for replacement as required maintenance is warranted by John Deere for the period of time prior to the first scheduled replacement point for the part. Any warranted emissions-related part not scheduled for replacement as required maintenance or scheduled only for regular inspection is warranted by John Deere for the stated warranty period.

OWNER'S WARRANTY RESPONSIBILITIES:

As the off-road diesel engine owner you are responsible for the performance of the required maintenance listed in your Operator's Manual. John Deere recommends that the owner retain all receipts covering maintenance on the off-road diesel engine, but John Deere cannot deny warranty solely for the lack of receipts or for the owner's failure to ensure the performance of all scheduled maintenance. However, as the off-road diesel engine owner, you should be aware that John Deere may deny you warranty coverage if your off-road diesel engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

The off-road diesel engine is designed to operate on diesel fuel as specified in the Fuels, Lubricants and Coolants section in the Operators Manual. Use of any other fuel may result in the engine no longer operating in compliance with applicable emissions requirements.

The owner is responsible for initiating the warranty process, and should present the machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the authorized John Deere dealer as quickly as possible.

Emissions regulations require the customer to bring the unit to an authorized servicing dealer when warranty service is required. As a result, John Deere is NOT liable for travel or mileage on emissions warranty service calls.

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JOHN DEERE

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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.

TS1722 —UN—17DEC12

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JOHN DEERE'S WARRANTY RESPONSIBILITY:

Where a warrantable condition exists, John Deere will repair or replace, as it elects, your off-road diesel engine at no cost to you, including diagnosis, parts or labor. Warranty coverage is subject to the limitations and exclusions set forth herein. The off-road diesel engine is warranted for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. The following are emissions-related parts:

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- NOx absorbers and catalysts

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The owner is responsible for initiating the warranty process, and should present the machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the authorized John Deere dealer as quickly as possible.

Emissions regulations require the customer to bring the unit to an authorized servicing dealer when warranty service is required. As a result, John Deere is NOT liable for travel or mileage on emissions warranty service calls.

TS1723 —UN—17DEC12

DX,EMISSIONS,CARB -19-12DEC12-4/4

Courtesy of Machine.Market

EPA Non-road Emissions Control Warranty Statement—Compression Ignition

DXLOGOV1 —UN—28APR09

JOHN DEERE

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

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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.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. REMEDIES UNDER THIS WARRANTY ARE LIMITED TO THE PROVISIONS OF MATERIAL AND SERVICES AS SPECIFIED HEREIN. WHERE PERMITTED BY LAW, NEITHER JOHN DEERE NOR ANY AUTHORIZED JOHN DEERE ENGINE DISTRIBUTOR, DEALER, OR REPAIR FACILITY OR ANY COMPANY AFFILIATED WITH JOHN DEERE WILL BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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Courtesy of Machine.Market

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TS1721 —UN—17DEC12

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

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Technical Information Feedback Form

We need your help to continually improve our technical publications. Please copy this page and FAX or mail your comments, ideas and improvements.

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18600 South John Deere Road
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Dubuque, IA 52004-0538
USA

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Publication Number:_____

Page Number:_____

Ideas, Comments:_____

Name: _____

Phone: _____

Email Address: _____

THANK YOU!

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Contents

Continued on next page

Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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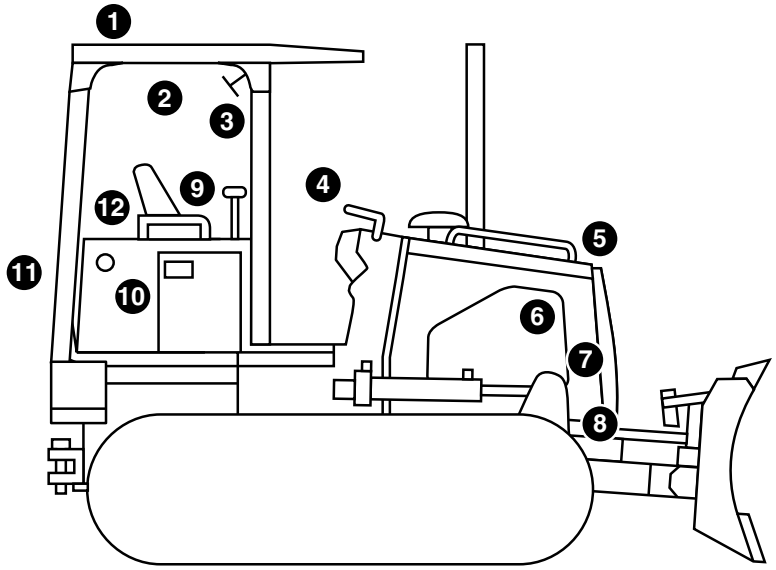
Safety and Operator Convenience Features



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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, SAE, 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 the operator a view of activity behind him.
4. **Park Lock Lever.** When park lock lever is placed in “lock” position, the transmission shifts to neutral and the park brake is engaged.
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. **Neutral Start.** Neutral start feature prevents the engine from being started unless transmission control is in neutral.
10. **Automatic Seat Belt Retractors.**Seat belt retractors help keep belts clean and 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.

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Safety—General Precautions

Recognize Safety Information

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

Follow the precautions and safe operating practices highlighted by this symbol.

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

On your machine, DANGER signs are red in color, WARNING signs are orange, and CAUTION signs are yellow. DANGER and WARNING signs are located near specific hazards. General precautions are on CAUTION labels.

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T133588 —19—28AUG00

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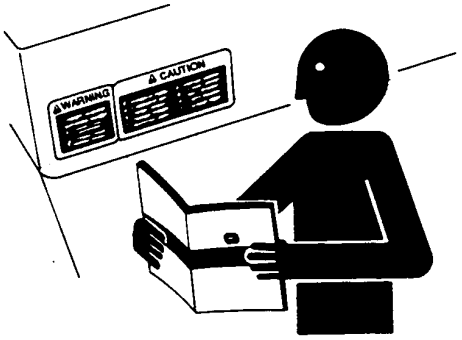
Follow Safety Instructions

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

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

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

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



TS201 —UN—15APR13

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

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Operate Only If Qualified

Do not operate this machine unless the operator's manual has been read carefully, and you have been qualified by supervised training and instruction.

Operator should be familiar with the job site and surroundings before operating. Try all controls and machine functions with the machine in an open area before starting to work.

Know and observe all safety rules that may apply to every work situation and work site.

TX03679,00016FA -19-03JAN07-1/1

Courtesy of Machine.Market

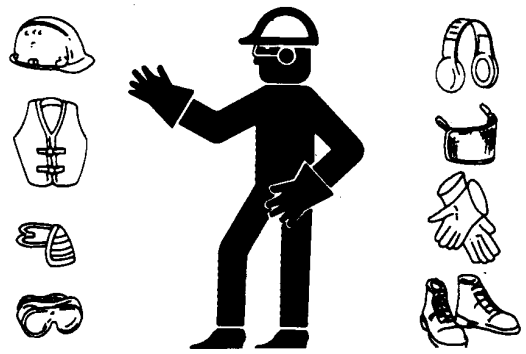
Wear Protective Equipment

Guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.

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

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

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protection such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises. Radio or music headphones are not suitable to use for hearing protection.



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Avoid Unauthorized Machine Modifications

John Deere recommends using only genuine John Deere replacement parts to ensure machine performance. Never substitute genuine John Deere parts with alternate parts not intended for the application as these can create hazardous situations or hazardous performance. Non-John Deere Parts, or any damage or failures resulting from their use are not covered by any John Deere warranty.

Modifications of this machine, or addition of unapproved products or attachments, may affect machine stability or reliability, and may create a hazard for the operator or others near the machine. The installer of any modification which may affect the electronic controls of this machine is responsible for establishing that the modification does not adversely affect the machine or its performance.

Always contact an authorized John Deere dealer before making machine modifications that change the intended use, weight or balance of the machine, or that alter machine controls, performance or reliability.

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Inspect Machine

Inspect machine carefully each day by walking around it before starting.

Keep all guards and shields in good condition and properly installed. Fix damage and replace worn or broken parts immediately. Pay special attention to hydraulic hoses and electrical wiring.

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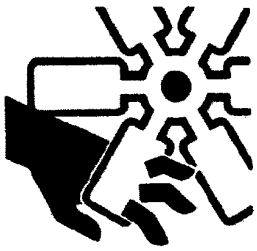
Stay Clear of Moving Parts

Entanglements in moving parts can cause serious injury.

Stop engine before examining, adjusting or maintaining any part of machine with moving parts.

Keep guards and shields in place. Replace any guard or shield that has been removed for access as soon as service or repair is complete.



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Courtesy of Machine.Market

Avoid High-Pressure Fluids

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

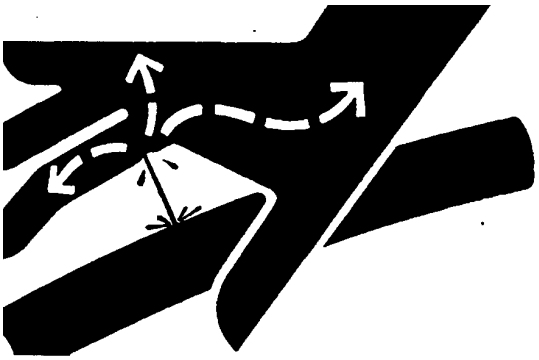
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

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

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

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.



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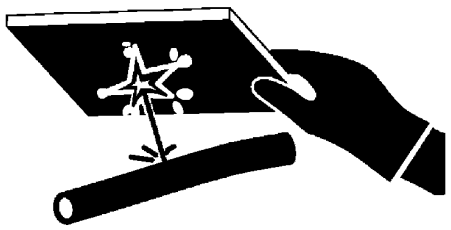
Avoid High-Pressure Oil

This machine uses a high-pressure hydraulic system. Escaping oil under pressure can penetrate the skin causing serious injury.

Never search for leaks with your hands. Protect hands. Use a piece of cardboard to find location of escaping oil. Stop engine and relieve pressure before disconnecting lines or working on hydraulic system.

If hydraulic oil penetrates your skin, see a doctor immediately. Injected oil must be removed surgically within hours or gangrene may result. Contact a knowledgeable medical source or the Deere & Company Medical Department in Moline, Illinois, U.S.A.

T133509 —UN—15APR13



T133840 —UN—20SEP00

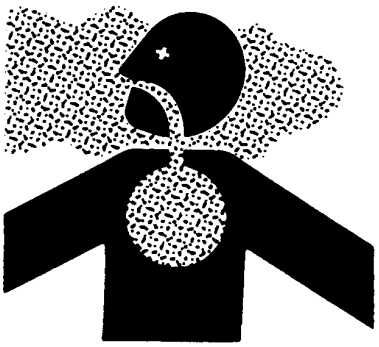
VD76477,00013A1 -19-14JAN08-1/1

Courtesy of Machine.Market

Work In Ventilated Area

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

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



TS220 —UN—15APR13

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

Prevent Fires

Handle Fuel Safely: Store flammable fluids away from fire hazards. Never refuel machine while smoking or when near sparks or flame.

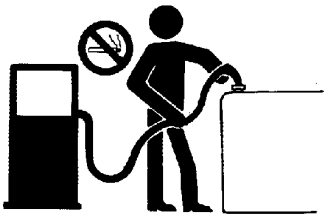
Clean Machine Regularly: Keep trash, debris, grease and oil from accumulating in engine compartment, around fuel lines, hydraulic lines, exhaust components and electrical wiring. Never store oily rags or flammable materials inside a machine compartment.

Maintain Hoses and Wiring: Replace hydraulic hoses immediately if they begin to leak, and clean up any oil spills. Examine electrical wiring and connectors frequently for damage.

Keep A Fire Extinguisher Available: Always keep a multi-purpose fire extinguisher on or near the machine. Know how to use extinguisher properly.

T133552 —UN—15APR13

T133553 —UN—07SEP00



T133554 —UN—07SEP00

TX03679,00016F5 -19-26JUN09-1/1

Courtesy of Machine.Market

Prevent Battery Explosions

Battery gas can explode. Keep sparks, lighted matches, and open flame away from the top of battery.

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

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

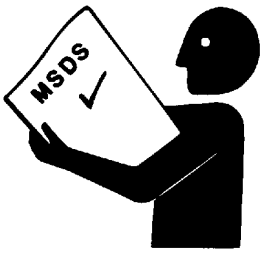
TS204 —UN—15APR13

TX03679,000174A -19-08JAN08-1/1

Handle Chemical Products Safely

Exposure to hazardous chemicals can cause serious injury. Under certain conditions, lubricants, coolants, paints and adhesives used with this machine may be hazardous.

If uncertain about safe handling or use of these chemical products, contact your authorized dealer for a Material Safety Data Sheet (MSDS) or go to internet website http://www.jdmsds.com. The MSDS describes physical and health hazards, safe use procedures, and emergency response techniques for chemical substances. Follow MSDS recommendations to handle chemical products safely.



T133580 —UN—25AUG00

TX03679,00016D7 -19-03JAN07-1/1

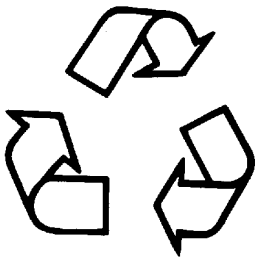
Dispose of Waste Properly

Improper disposal of waste can threaten the environment. Fuel, oils, coolants, filters and batteries used with this machine may be harmful if not disposed of properly.

Never pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants can damage the atmosphere. Government regulations may require using a certified service center to recover and recycle used refrigerants.

If uncertain about the safe disposal of waste, contact your local environmental or recycling center or your authorized dealer for more information.



T133567 —UN—25AUG00

TX03679,0001733 -19-08JAN08-1/1

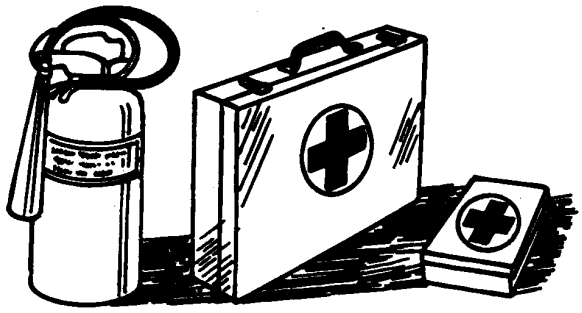
Courtesy of Machine.Market

Prepare for Emergencies

Be prepared if an emergency occurs or 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.



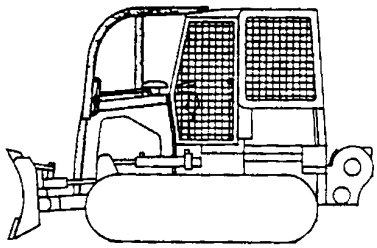
TS291 —UN—15APR13

TX03679,000174B -19-08JAN08-1/1

Add Cab Guarding For Special Uses

Special work situations or machine attachments may expose the operator to intruding or flying objects. Using this machine in a forestry application or woods environment, or with attachments such as a winch, requires added guarding to protect the operator.

Forestry protection packages or special screens should be installed when working in areas where logs or branches may strike the operator. A rear screen should always be used with a winch to protect against a snapping cable. Contact your authorized dealer for information on protective guarding before operating in any hazardous environment.



T139005 —UN—05MAR01

TX03768,0000B77 -19-14JAN08-1/1

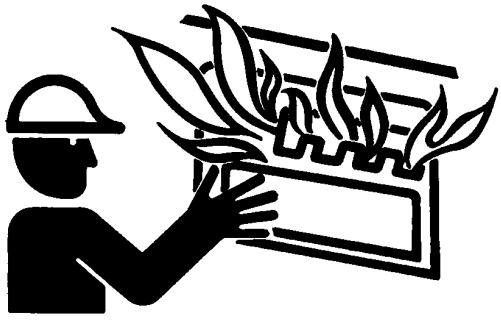
Clean Debris from Machine

Keep engine compartment, radiator, batteries, hydraulic lines, exhaust components, fuel tank, and operator's station clean and free of debris.

Clean any oil spills or fuel spills on machine surfaces.

Temperature in engine compartment may go up immediately after engine is stopped. BE ON GUARD FOR FIRES DURING THIS PERIOD.

Open access door(s) to cool the engine faster, and clean engine compartment.



T6669AG —UN—15APR13

OUT4001,00000E3 -19-20AUG09-1/1

Courtesy of Machine.Market

Safety—Operating Precautions

Start Only From Operator's Seat

Avoid unexpected machine movement. Before starting engine, sit in operator's seat. Ensure park lock lever is in “lock” position.

Never attempt to start engine from the ground or tracks. Do not attempt to start engine by shorting across the starter solenoid terminals.

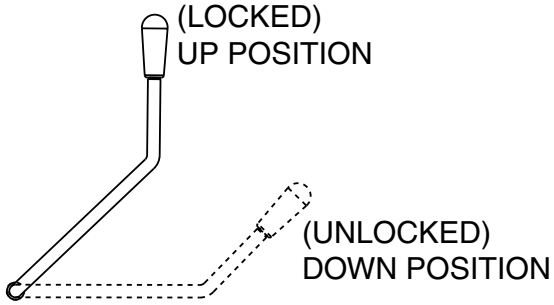
T133715 —UN—15APR13

TX03768,0000B71 -19-03NOV08-1/1

Prevent Unintended Machine Movement

Always move the park lock lever to the “lock” position before leaving the operator's seat for any reason.

Be careful not to accidentally actuate controls when co-workers are present. Engage park lock and lower work equipment to the ground during work interruptions. Stop the engine before allowing anyone to approach the machine. Follow these same precautions before standing up, leaving the operator's seat, or exiting the machine.



T159027 —19—30AUG02

TX03768,0000B72 -19-14JAN08-1/1

Avoid Work Site Hazards

Avoid contact with gas lines, buried cables and water lines. Call utility line location services to identify all underground utilities before starting work.

Prepare work site properly. Avoid operating near structures or objects that could fall onto the machine. Clear away debris that could move unexpectedly if run over.

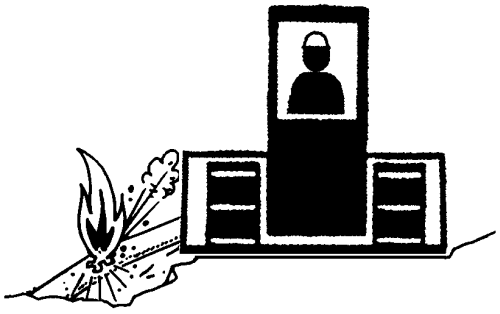
Avoid boom or attachment contact with overhead obstacles or overhead electrical lines. Never move machine closer than 3 m (10 ft) plus twice the line insulator length to overhead wires.

Keep bystanders clear at all times. Keep bystanders away from raised booms, attachments, and unsupported loads. Avoid swinging or raising booms, attachments, or loads over or near personnel. Use barricades or a signal person to keep vehicles and pedestrians away. Use a signal person if moving machine in congested areas or where visibility is restricted. Always keep signal person in view. Coordinate hand signals before starting machine.

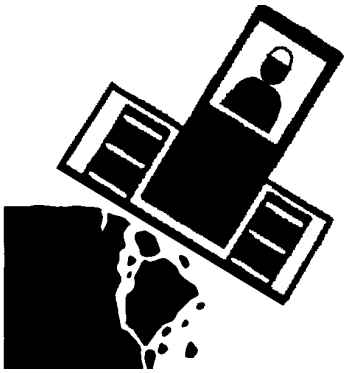
Operate only on solid footing with strength sufficient to support machine. Be especially alert working near embankments or excavations.

Avoid working under over-hanging embankments or stockpiles that could collapse under or on machine.

Reduce machine speed when operating with tool on or near ground when obstacles may be hidden (e.g., during snow removal or clearing mud, dirt, etc.). At high speeds hitting obstacles (rocks, uneven concrete or manholes) can cause a sudden stop. Always wear your seat belt.



T139002 —UN—05MAR01



T139003 —UN—05MAR01

VD76477,00013A2 -19-11SEP09-1/1

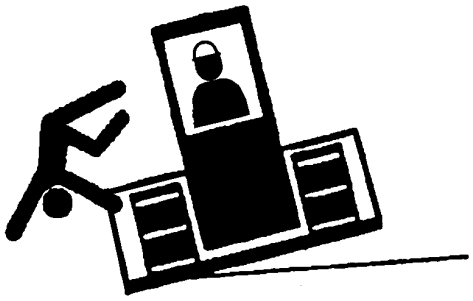
Courtesy of Machine.Market

Keep Riders Off Machine

Only allow operator on machine.

Riders are subject to injury. They may fall from machine, be caught between machine parts, or be struck by foreign objects.

Riders may obstruct operator's view or impair his ability to operate machine safely.



T137580 —UN—22FEB01

TX03768,0000B73 -19-03NOV08-1/1

Avoid Backover Accidents

Before moving machine, be sure all persons are clear of the machine path. Turn around and look directly for best visibility. Use mirror to assist in checking behind the machine. Keep windows and mirror clean and in good repair.

Be certain backup warning alarm is working properly.

Use a signal person when backing if view is obstructed or when in close quarters. Keep signal person in view at all times. Use prearranged hand signals to communicate.

T138441 —UN—22FEB01

TX03768,0000B69 -19-14JUN11-1/1

Courtesy of Machine.Market

Avoid Machine Tip Over

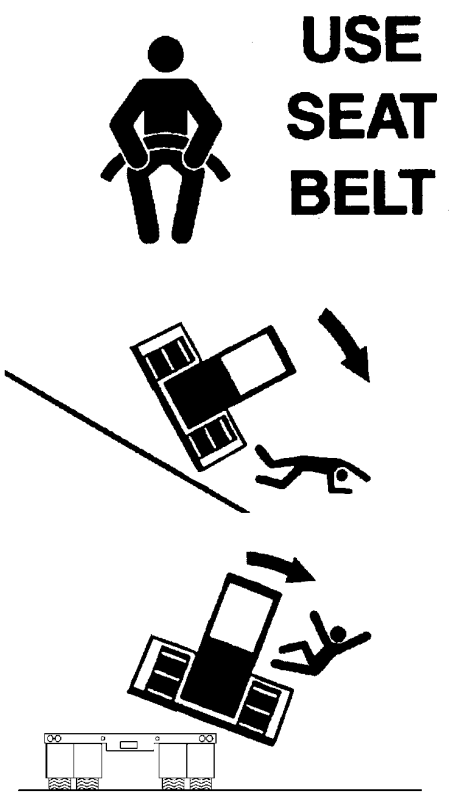
Use seat belt at all times.

Do not jump if the machine tips. You will be unlikely to jump clear and the machine may crush you.

Load and unload from trucks or trailers carefully. Be sure truck is wide enough and secured on a firm level surface. Use loading ramps and attach them properly to truck bed. Avoid trucks with steel beds because tracks slip more easily on steel.

Be careful on slopes. Use extra care on soft, rocky or frozen ground because machine may slip sideways in these conditions. When traveling up or down steep slopes, keep the bucket or blade on uphill side and just above ground level.

Ensure solid footing. Use extra care when operating on stockpile materials, or near banks or excavations that may cave-in and cause machine to tip or fall.



T133716 —19—17APR13

T138416 —UN—22FEB01

T138415 —UN—22FEB01

TX03768,0000B6B -19-03NOV08-1/1

Courtesy of Machine.Market

Park And Prepare For Service Safely

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

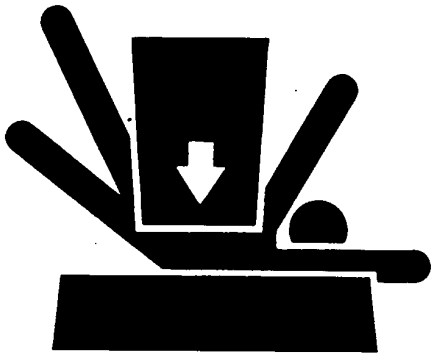
- Park machine on a level surface and lower blade/bucket and attachments to the ground.
- Place park lock lever in “lock” position. Stop engine and remove key.
- Attach a “Do Not Operate” tag in an obvious place in the operator's station.

Securely support machine or attachment before working under it.

- Do not support machine with blade/bucket or attachments.
- Do not support machine with cinder blocks or wooden pieces that may crumble or crush.
- Do not support machine with a single jack or other devices that may slip out of place.

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

T133332 —19—17APR13



TS229 —UN—23AUG88

TX03768,0000B6A -19-19OCT09-1/1

Service Cooling System Safely

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

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

TS281 —UN—15APR13

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

Courtesy of Machine.Market

Remove Paint Before Welding or Heating

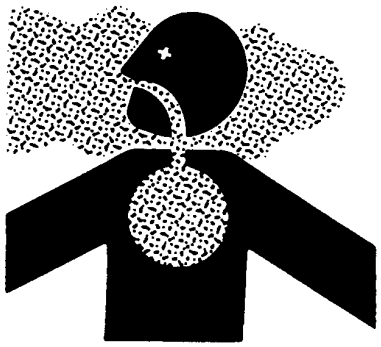
Avoid potentially toxic fumes and dust.

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

Remove paint before heating:

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

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



TS220 —UN—15APR13

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

Dispose of paint and solvent properly.

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

Make Welding Repairs Safely

IMPORTANT: Disable electrical power before welding. Turn off main battery switch or disconnect positive battery cable. Separate harness connectors to engine and vehicle microprocessors.

Avoid welding or heating near pressurized fluid lines. Flammable spray may result and cause severe burns if pressurized lines fail 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. Use a qualified welding technician for structural repairs.

T133547 —UN—15APR13

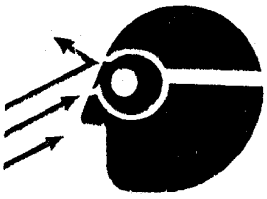
Make sure there is good ventilation. Wear eye protection and protective equipment when welding.

TX03679,00016D5 -19-11SEP09-1/1

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 may dislodge chips at high velocity.

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

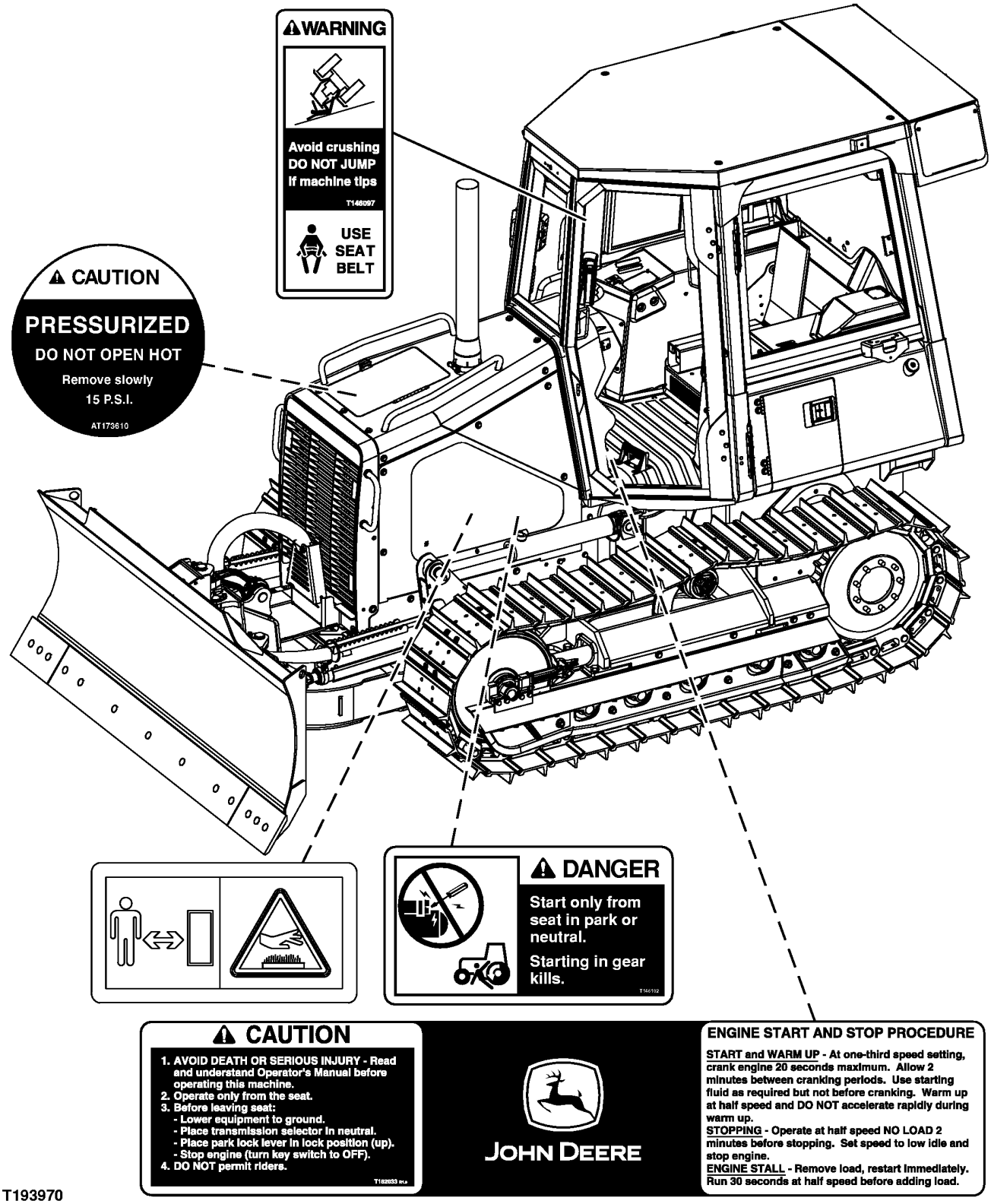


T133738 —UN—15APR13

OUO1065,0000090 -19-03NOV08-1/1

Courtesy of Machine.Market

Safety Signs



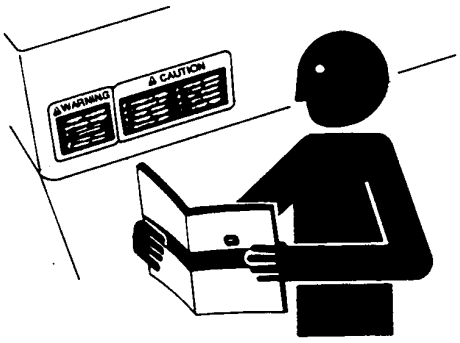
TX03768,0000B79 -19-14JAN08-1/1

Courtesy of Machine.Market

Replace Safety Signs

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

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

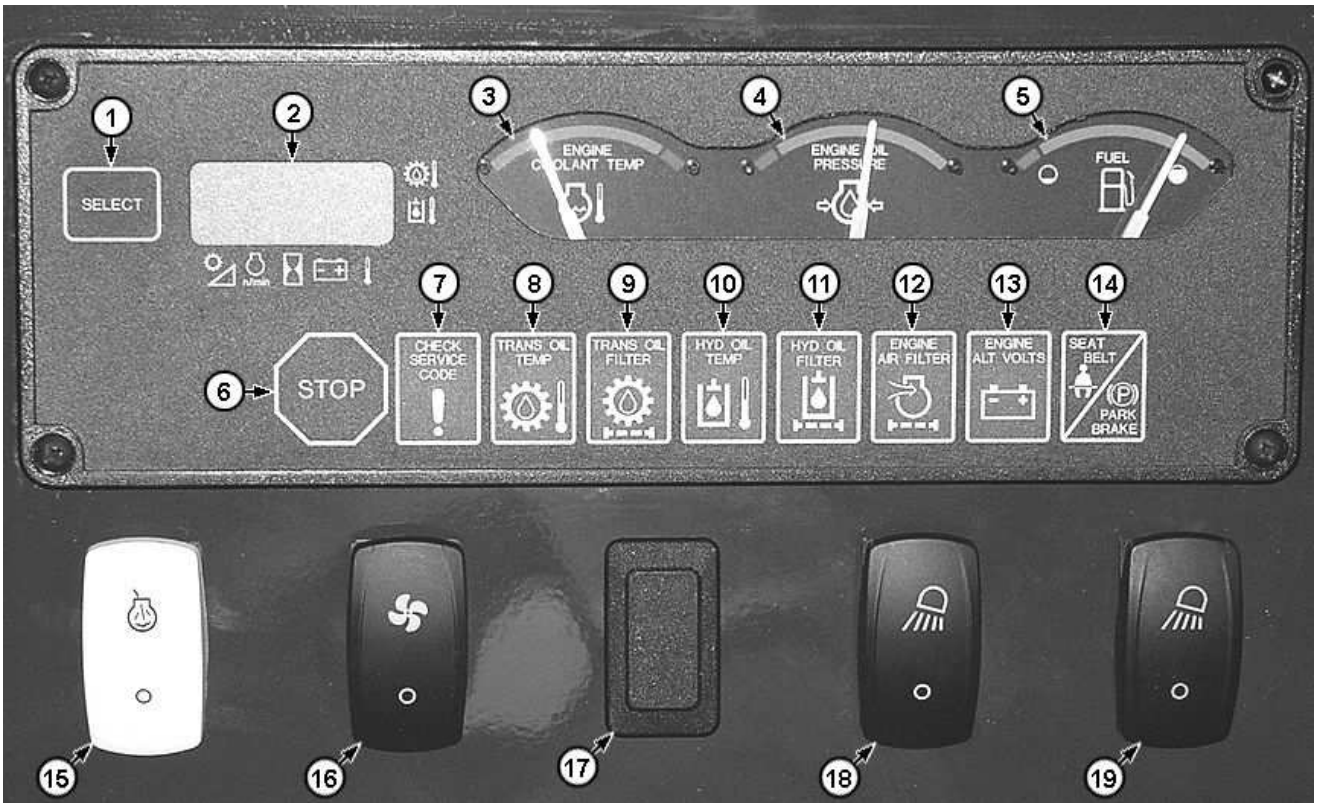


TS201—UN—15APR13

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

Courtesy of Machine.Market

Instrument Panel (S.N. —141178)



1— Select Button
2— Display Window
3— Engine Coolant Temperature Gauge
4— Engine Oil Pressure Gauge
5— Fuel Level Gauge
6— Stop Indicator (Red)
7— Check Diagnostic Trouble Code Indicator (Yellow)
8— Transmission Oil Temperature Indicator (Yellow)
9— Transmission Oil Filter Indicator (Yellow)
10— Hydraulic Oil Temperature (Yellow)
11— Hydraulic Oil Filter Indicator (Yellow)
12— Engine Air Filter Restriction Indicator (Yellow)
13— Engine Alternator Voltage Indicator (Yellow)
14— Seat Belt/Park Brake Indicator (Red)
15— Start Aid Button
16— Under-Seat Heater ON/OFF Switch
17— Not Used
18— Front and Rear Work Lights Switch
19— Optional Lights Switch—If Equipped

IMPORTANT: When the STOP indicator is activated, stop engine immediately and investigate cause of problem. DO NOT start engine until problem has been corrected.

When a red indicator lights, an audible alarm will sound. Stop the engine immediately and investigate the cause of the problem.

Each display indicator light is color-coded to indicate the severity of the situation. Red is a high-level warning, yellow is a low-level warning and clear indicates a condition.

VD76477,00012A5 -19-28MAR07-1/1

Courtesy of Machine.Market

Instrument Panel Functions (S.N. —141178)

1—Select Button: With key switch ON, press and hold the select button to cycle between displays on the display window.

2—Display Window: The display window has six displays. Press and hold the select button to cycle between displays on the display window when the monitor panel is active:

- Transmission Speed Setting
- Tachometer
- Hour Meter
- Voltmeter
- Hydraulic Oil Temperature
- Transmission Oil Temperature

3—Engine Coolant Temperature Gauge: When engine coolant temperature is too high the gauge needle will move to the red zone. Immediately take load off the machine and run engine at fast idle. If gauge needle stays in red zone after several minutes of idling, stop engine. See your authorized dealer.

4—Engine Oil Pressure Gauge: After engine is started, gauge needle must point to green zone immediately and not drop into red zone after warm-up. If gauge needle drops into red zone, stop engine. See your authorized dealer.

5—Fuel Level Gauge: Gauge will reflect fuel level in tank. Fuel level gauge needle will enter red zone when fuel level in tank is too low.

6—STOP Indicator:

IMPORTANT: If STOP indicator flashes and alarm sounds, in most cases stop engine immediately and investigate cause of problem. Do not start engine until problem has been corrected.

The STOP indicator flashes and alarm sounds when:

- Engine oil pressure is too low
- Transmission oil temperature is excessively high
- Engine coolant temperature is excessively high
- Hydraulic temperature is excessively high

If engine coolant temperature indicator lights indicating that the temperature is excessively high, DO NOT stop engine. Reduce load and run engine at fast idle for several minutes. Stop engine and service machine.

The STOP indicator will light and audible alarm will sound when hydraulic oil temperature reaches 112°C (235°F) until it drops below 110°C (230°F). Immediately park the machine in a safe environment, stop engine and investigate the problem.

7—Check Diagnostic Trouble Code Indicator: If diagnostic trouble code indicator stays lit, there is an electrical problem in the transmission control system. It is not necessary to stop the machine.

The transmission controller will automatically put the machine in an operational mode that will not harm the machine.

The diagnostic trouble code that is present is displayed in the transmission controller display window. This diagnostic trouble code number pinpoints the problem and is a very important aid for your authorized dealer to quickly diagnose the problem. Always relay this code number to your dealer when reporting your problem.

The diagnostic trouble code indicator will go out when the machine is shut down.

8—Transmission Oil Temperature Indicator: Indicator will light when transmission oil temperature reaches 93°C (200° F) and stay lit until temperature drops below 90° C (195° F). The display window will automatically default to current temperature. Reduce load and monitor temperature.

The STOP indicator will light and audible alarm will sound when transmission oil temperature reaches 95° C (205° F). Immediately take load off the machine and run engine at fast idle for several minutes. If indicator continues to stay on after several minutes of idling, stop engine and investigate the problem.

9—Transmission Oil Filter Indicator: Indicator will light when transmission filter element is restricted. It is not necessary to stop operation, but the cause should be investigated as soon as possible.

It is normal for this light to remain lit for several minutes after start-up in cold weather. In extremely cold weather, it is a good practice to operate at reduced engine speed so the light stays off.

10—Hydraulic Oil Temperature Indicator: Indicator will light when hydraulic oil temperature reaches 107° C (225° F) and stay lit until temperature drops below 104° C (220° F). The display window will automatically default to current temperature. It is not necessary to stop operation, but the temperature must be monitored.

11—Hydraulic Oil Filter Indicator: Indicator will light when hydraulic filter element is restricted. It is not necessary to stop operation, but the cause should be investigated as soon as possible.

It is normal for this light to remain lit for several minutes after start-up in cold weather. In extremely cold weather, it is a good practice to operate at reduced engine speed so the light stays off.

12—Engine Air Filter Restriction Indicator: Indicator will light when engine air filter element is restricted. It is not necessary to stop operation, but the cause should be investigated as soon as possible.

Continued on next page

Courtesy of Machine.Market

13—Engine Alternator Voltage Indicator: Indicator will light when battery/alternator is below 12-volts. It is not necessary to stop operation, but the cause should be investigated as soon as possible.

14—Seat Belt/Park Brake Indicator: Indicator will light when key switch is ON and park lock lever is in up LOCKED position.

15—Start Aid Switch: Push upper half of switch when engine is cold and cranking to inject starting fluid into engine during cold weather start-up.

16—Under-Seat Heater ON/OFF Switch: Push upper half of switch to turn heater on. Push lower half to turn heater off.

17—Not Used

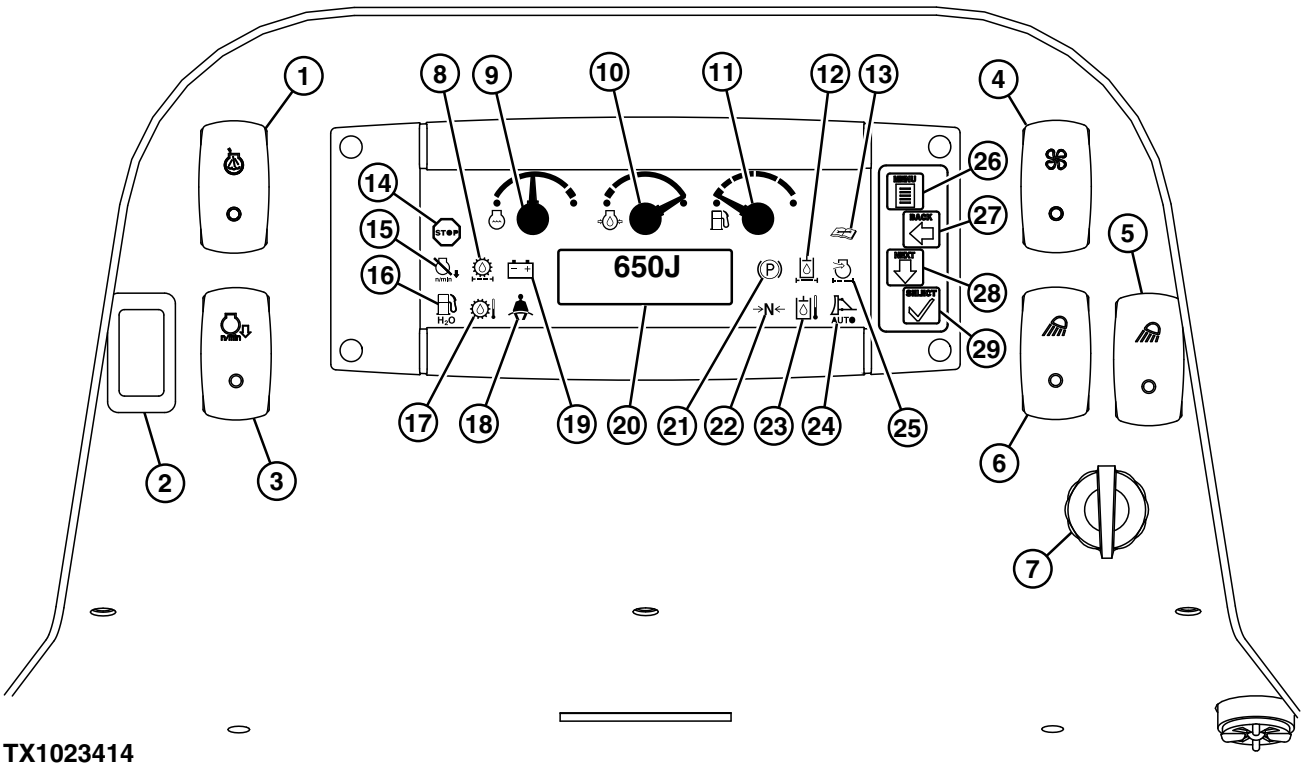
18—Front and Rear Work Lights Switch: Push upper half of switch to turn front and rear work lights on. Push lower half to turn lights off.

19—Optional Lights Switch: Push upper half of switch to turn optional lights on. Push lower half to turn lights off.

VD76477,00012A4 -19-29NOV07-2/2

Courtesy of Machine.Market

Instrument Panel (S.N. 141179—)



TX1023414

1— Start Aid Switch
2— Not Used
3— Decel Mode Switch
4— Under-Seat Heater Switch
5— Optional Lights Switch—If Equipped
6— Front and Rear Work Lights Switch
7— Key Switch
8— Transmission Oil Filter Restriction Indicator (Yellow)
9— Engine Coolant Temperature Gauge
10— Engine Oil Pressure Gauge
11— Fuel Level Gauge
12— Hydraulic Oil Filter Restriction Indicator (Yellow)
13— Calibration/Diagnostic Trouble Code Indicator (Yellow)
14— Stop Indicator (Red)
15— Decel Mode Indicator (Green)
16— Water in Fuel Indicator (Red)
17— Transmission Oil Temperature Indicator (Yellow)
18— Seat Belt Indicator (Red)
19— Engine Alternator Voltage Indicator (Red)
20— Display Window
21— Park Brake Indicator (Red)
22— Return to Neutral Indicator
23— Hydraulic Oil Temperature Indicator (Yellow)
24— Auto Blade Indicator
25— Engine Air Filter Restriction Indicator (Yellow)
26— MENU Button
27— BACK Button
28— NEXT Button
29— SELECT Button

IMPORTANT: When the STOP indicator is activated, stop engine immediately and investigate cause of problem. DO NOT start engine until problem has been corrected.

Each display indicator light is color-coded to indicate the severity of the situation. Red is a high-level warning, yellow is a low-level warning and green indicates a condition.

When a red indicator lights, an audible alarm will sound. Stop the engine immediately and investigate the cause of the problem.

VD76477,00012A6 -19-10MAY07-1/1

Courtesy of Machine.Market

Instrument Panel Functions (S.N. 141179—)

1—Start Aid Switch: Push upper half of switch when engine is cold and cranking to inject starting fluid into engine during cold weather start-up.

2—Not Used

3—Decel Mode Switch: Push upper half of switch for “transmission” decel mode. When the brake/decel pedal is pushed with the switch in transmission mode, the transmission speed will decrease but the engine speed will remain constant. Push lower half of switch for “engine” decel mode. When the decel/brake pedal is pushed with the switch in engine mode, the engine speed will be decreased and effectively decrease ground speed.

4—Under-Seat Heater Switch: The under-seat heater switch has 3 positions. Move switch to the middle position to turn heater on low. Push top of switch to turn heater on high. Push bottom of switch to turn heater off.

5—Optional Lights Switch—If Equipped: Push upper half of switch to turn optional lights on. Push lower half to turn lights off.

6—Front and Rear Work Lights Switch: Push upper half of switch to turn front and rear work lights on. Push lower half to turn lights off.

7—Key Switch: The key switch has 4 positions, Accessory, OFF, ON and Start.

8—Transmission Oil Filter Restriction Indicator: Indicator will light when transmission oil filter is restricted. Replace transmission oil filter as necessary.

It is normal for this light to remain lit for several minutes after start-up in cold weather. In extremely cold weather, it is a good practice to operate at reduced engine speed so the light stays off.

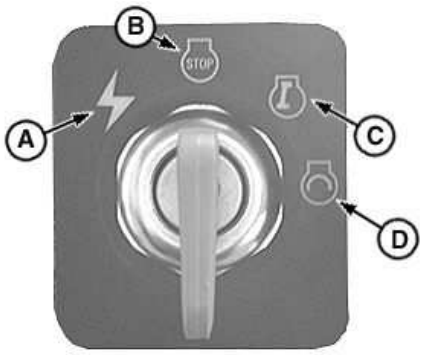
9—Engine Coolant Temperature Gauge: Indicator will light, STOP indicator will flash and audible alarm will sound when pointer is in red zone. Immediately take load off the machine and run engine at fast idle. If indicators continue to stay on after several minutes of operation, stop engine and check for problem.

10—Engine Oil Pressure Gauge: When engine is running and engine oil pressure drops below recommended pressure, a segment will light and flash, the STOP indicator will light, and an audible alarm will sound. Immediately park machine in a safe area and stop the engine.

When engine is not running and key switch is on, the gauge light will be on, STOP light will not be on, and audible alarm will not sound.

11—Fuel Level Gauge: Gauge will reflect fuel level in tank. Fuel level gauge needle will enter red zone when fuel level in tank is too low.

12—Hydraulic Oil Filter Restriction Indicator: Indicator will light when engine is running and hydraulic oil filter becomes restricted. Replace hydraulic oil filter as necessary.



TX10113002A —UN—05OCT06

A—Accessory
B—OFF
C—ON
D—Start

It is normal for this light to remain lit for several minutes after start-up in cold weather. In extremely cold weather, it is a good practice to operate at reduced engine speed so the light stays off.

13—Calibration/Service Mode Indicator: Indicator will light when machine is in a service mode or calibration.

14—STOP Indicator:

IMPORTANT: If STOP indicator flashes and alarm sounds, in most cases stop engine immediately and investigate cause of problem. Do not start engine until problem has been corrected.

The STOP indicator flashes and alarm sounds when:

- Engine oil pressure is too low
- Transmission oil temperature is excessively high
- Engine coolant temperature is excessively high
- Hydraulic temperature is excessively high

If engine coolant temperature indicator lights indicating that the temperature is excessively high, DO NOT stop engine. Reduce load and run engine at fast idle for several minutes. Stop engine and service machine.

The STOP indicator will light and audible alarm will sound when hydraulic oil temperature reaches 112°C (235°F) until it drops below 110°C (230°F). Immediately park the machine in a safe environment, stop engine and investigate the problem.

15—Decel Mode Indicator: Indicator will light when machine is in “transmission” decel mode.

16—Water in Fuel Indicator: Indicator will light, STOP indicator will light, and audible alarm will sound when water is detected in the fuel system. Stop engine immediately.

Continued on next page

VD76477,00012A7 -19-29NOV07-1/2

Courtesy of Machine.Market

17—Transmission Oil Temperature Indicator: Indicator will light when transmission oil temperature reaches 93°C (200° F) and stay lit until temperature drops below 90° C (195° F). The display window will automatically default to current temperature. Reduce load and monitor temperature.

The STOP indicator will light and audible alarm will sound when transmission oil temperature reaches 95° C (205° F). Immediately take load off the machine and run engine at fast idle for several minutes. If indicator continues to stay on after several minutes of idling, stop engine and investigate the problem.

18—Seat Belt Indicator: Indicator will light and stay on for five seconds when the machine is started.

19—Engine Alternator Voltage Indicator: Indicator will light when battery/alternator is below 12-volts and when key switch is on and engine is not running.

20—Display Window: The display window has four displays. Press and hold the select button to cycle between displays on the display window when the monitor panel is active:

- Hour Meter (HRS)
- Transmission Charge Pressure (CHR)
- Voltmeter (VOL)
- Tachometer (RPM)

21—Park Brake Indicator: Indicator will light when key switch is ON and park lock lever is in up LOCKED position.

22—Return to Neutral Indicator: With park lock levers in up position (locked) and transmission control lever out of neutral position, turning key switch ON will cause the return to neutral indicator to light. Transmission control lever must be moved back to neutral position for machine to start.

23—Hydraulic Oil Temperature Indicator: Indicator will light when hydraulic oil temperature reaches 107° C (225° F) and stay lit until temperature drops below 104° C (220° F). The display window will automatically default to current temperature. It is not necessary to stop operation, but the temperature must be monitored.

24—Auto Blade Indicator: Indicator will light when auto blade function is enabled.

NOTE: The auto blade indicator is functional only when third party global positioning system (GPS) and/or laser guidance equipment is installed on IGC-equipped machines.

25—Engine Air Filter Restriction Indicator: Indicator will light when engine is running with air filter restricted. Park machine in a safe area and shut engine off immediately. Check air filters for restrictions.

26—Menu Button: With key switch ON, press the menu button to display the Main Menu.

27—Back Button: Use the back button to return to the previous menu.

28—Next Button: Use the next button to navigate to menu items.

29—Select Button: With key switch ON, press the select button to cycle between displays on the display window and to select menu options.

VD76477,00012A7 -19-29NOV07-2/2

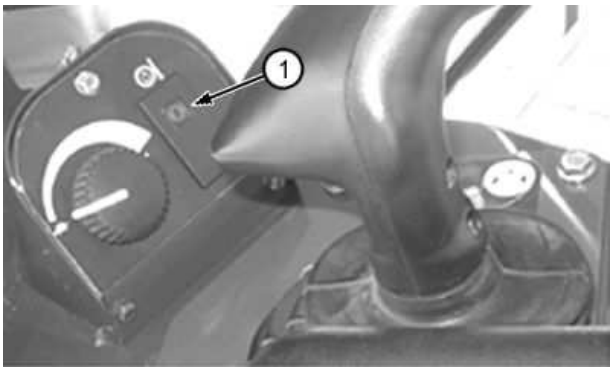
Warm-Up Indicator

The warm-up indicator (1) will light when the transmission oil temperature is too low for normal machine operation. While the indicator is lit the following will occur:

- Engine speed is limited to 1300 rpm in forward and reverse

The indicator will remain lit and engine RPM will be limited until the transmission oil reaches a specified temperature or the engine has run for ten minutes. Indicator light will turn off automatically when system is to operating temperature. Rotate control knob back to low idle to turn off light.

For the final stage of the warm-up cycle, the transmission speed will be limited to a maximum of 1.7 until the machine travels a combined distance of 91 m (300 ft). If speed is commanded faster than 1.7 prior to traveling 91 m (300 ft), the indicator will light and the speed will remain at 1.7.



T202721A —UN—18JAN05

1— Warm-Up Indicator

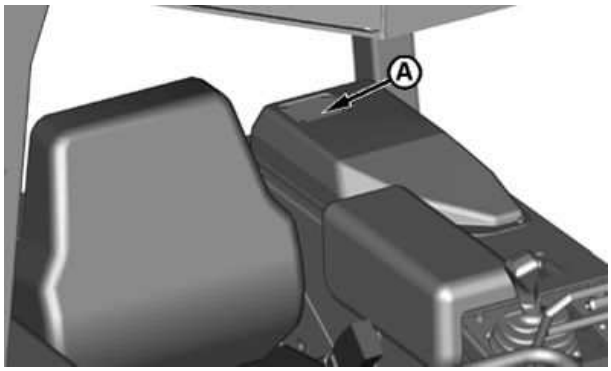
VD76477,00012B8 -19-30JAN08-1/1

Courtesy of Machine.Market

Transmission Controller Display Window

When an active diagnostic trouble code is received by the transmission control unit, the code will appear in the display window (A).

A—Transmission Controller Display Window



T118638 —UN—24NOV98

CED,OUO1032,1171 -19-04JAN07-1/6

Transmission Controller Display Window Structure

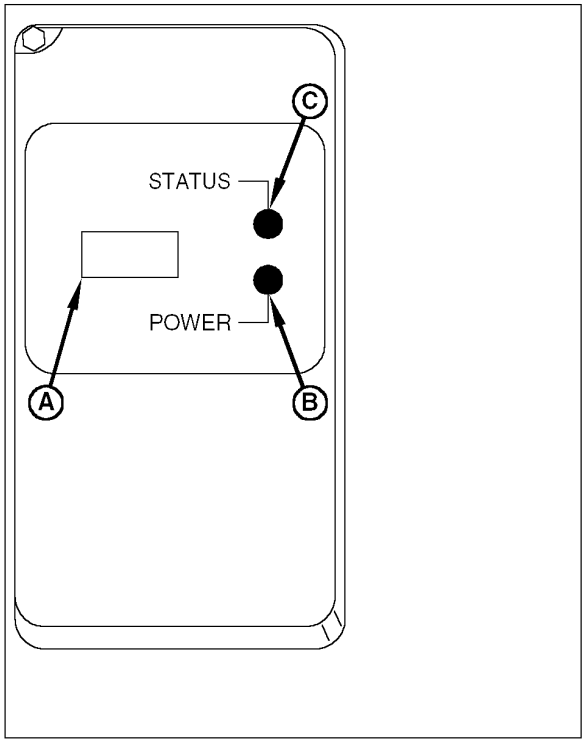
Status Light (Red): (C) Indicates an active diagnostic trouble code.

Power Light (Green): (B) Indicates power is supplied to transmission controller. Key ON or engine running.

Status Window: (A) The following codes will be displayed in the window during operation:

- PARK
- RUN
- PBrk
- Neut

A—Transmission Controller Display Window
B—Power Light (Green)
C—Status Light (Red)



T121140

T121140 —UN—23APR99

Continued on next page

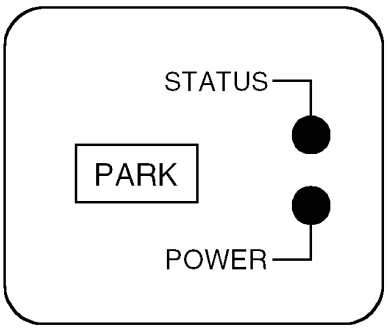
CED,OUO1032,1171 -19-04JAN07-2/6

Courtesy of Machine.Market

PARK: Display indicates park lock lever is in up LOCKED position. Machine can be started.

- Key ON
- Transmission control lever (TCL) is NEUTRAL

PARK will be displayed until park lock lever is in down UNLOCKED position.



T121141

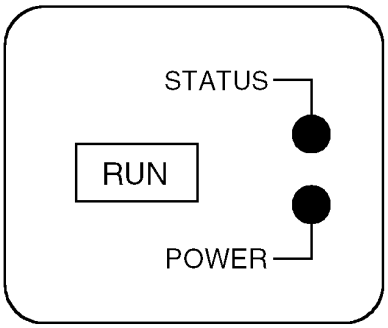
T121141 —UN—23APR99

CED,OUO1032,1171 -19-04JAN07-3/6

RUN: Display indicates the controller is operating, with the park lock lever in down UNLOCKED position.

- Engine running
- Park lock lever lowered
- TCL in NEUTRAL

To move machine, move TCL to forward or reverse. RUN will be displayed while machine is being operated.



T121142

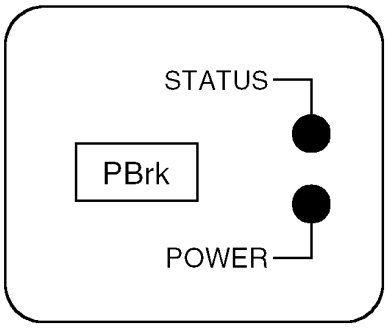
T121142 —UN—23APR99

CED,OUO1032,1171 -19-04JAN07-4/6

PBrk: Display indicates the following condition:

- Key ON
- Park lock lever lowered

The machine will not start until park lock lever is raised to up LOCKED position.



T121143

T121143 —UN—23APR99

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CED,OUO1032,1171 -19-04JAN07-5/6

Courtesy of Machine.Market

Neut: Display indicates the following condition:

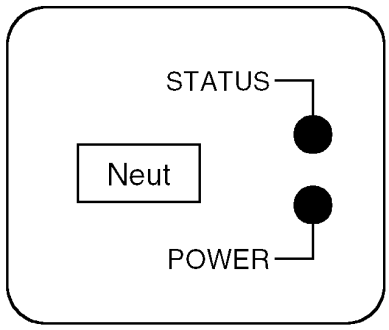
- Park lock lever can be up or down
- Key ON, engine not running
- TCL not in neutral

Machine will not start until TCL is moved to neutral and park lock lever is in up LOCKED position.

Neut display also indicates the following condition:

- Engine running
- TCL moved to forward or reverse before moving park lock lever to down UNLOCKED position.

To move machine, return TCL to neutral and move park lock lever down.



T121144

T121144 —UN—23APR99

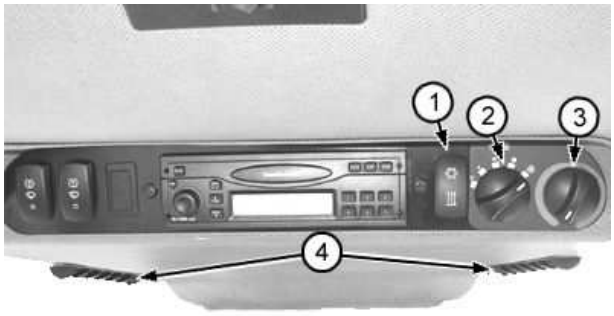
CED,OUO1032,1171 -19-04JAN07-6/6

Air Conditioning and Cab Heater

IMPORTANT: Do not operate air conditioner when air temperature is below –1°C (30°F).

Check refrigerant for proper charge before using air conditioner.

- Climate control switch (1) has three positions. Push upper half fully to activate the air conditioner mode. Push lower half fully to activate the heater mode. Center switch position turns climate control off.
- Turn temperature control knob (3) clockwise to increase temperature.
- Turn blower control knob (2) clockwise to increase blower speed.
- Move louvers (4) left or right to direct or restrict air flow.



T200589A —UN—02JUN04

1— Climate Control Switch
2— Blower Control Knob
3— Temperature Control Knob
4— Louvers

MD04263,0000382 -19-13APR09-1/1

Windshield Wiper and Washer Controls

Push front and rear windshield wiper switch (1) to operate front and rear (if equipped) windshield wiper. Push door wiper switch (2) to operate door wipers. Continue to push switch(es) to operate washer fluid.

1— Front and Rear Windshield Wiper Switch
2— Door Wiper Switch

T200589B —UN—02JUN04

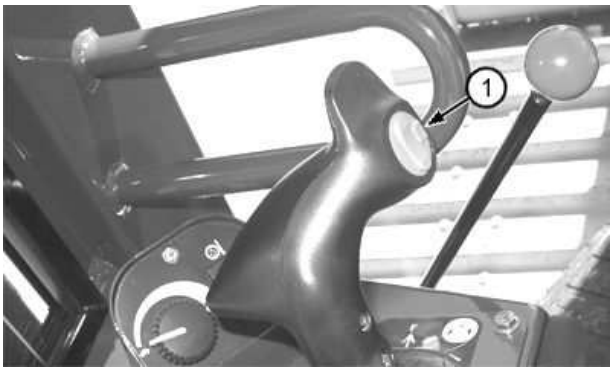
HG31779,000001B -19-14JAN08-1/1

Courtesy of Machine.Market

Horn Switch

Push horn switch (1) to sound horn.

1— Horn



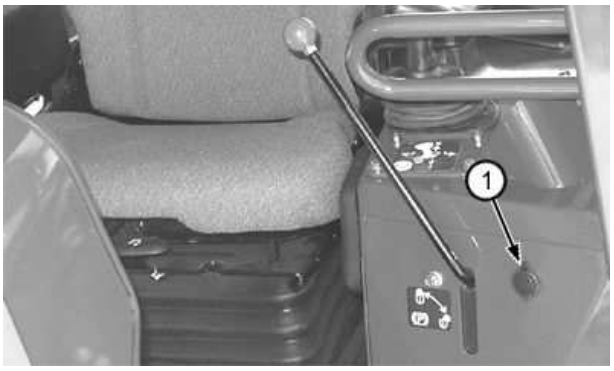
T200593A —UN—02JUN04

HG31779,000001C -19-14JAN08-1/1

Auxiliary Power Outlet—If Equipped

A 12-volt auxiliary power outlet (1) is located next to park brake lever.

1— Auxiliary Power Outlet



T200594A —UN—02JUN04

HG31779,000001D -19-30JAN08-1/1

Courtesy of Machine.Market

Side Windows—Secondary Exits

The side windows can be used as secondary exits.

To open windows, pull locking lever (B) down and squeeze two forward tabs (A). Slide window forward to desired position.

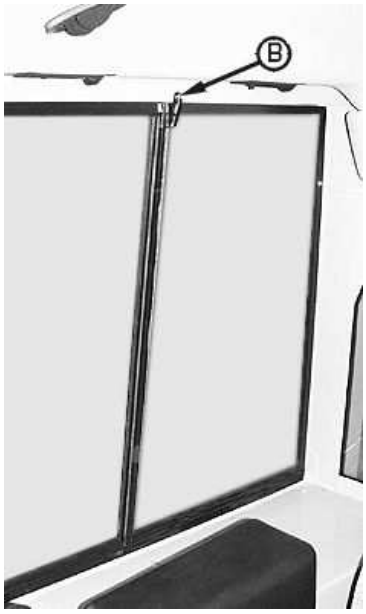
Raise locking lever (B) to lock window in place.

To close, pull locking lever down, squeeze tabs and slide window rearward until window latch engages.

A—Tabs

B—Lock Lever

T118726B —UN—15DEC98



T121302B —UN—03MAY99

CED,OUO1032,1404 -19-14JAN08-1/1

Adjust Non-Suspension Seat

Use flip-out lever to turn weight adjustment knob (C). Turn knob clockwise for firm ride and counterclockwise for soft ride.

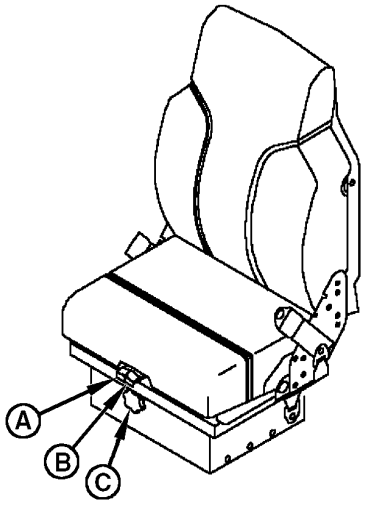
Lift lever (B) to adjust cushion position.

Lift seat fore-aft lever (A) to move seat forward and rearward. Release handle at one of several positions.

A—Fore-Aft Lever

B—Seat Cushion Adjustment Lever

C—Weight Adjustment Knob



T118251

T118251 —UN—16DEC98

CED,OUO1032,1128 -19-14JAN08-1/1

Courtesy of Machine.Market

Adjust Suspension Seat—If Equipped

Use flip-out lever to turn weight adjustment knob (E). Turn knob clockwise for firm ride and counterclockwise for soft ride.

Lift lever (D) to adjust cushion position.

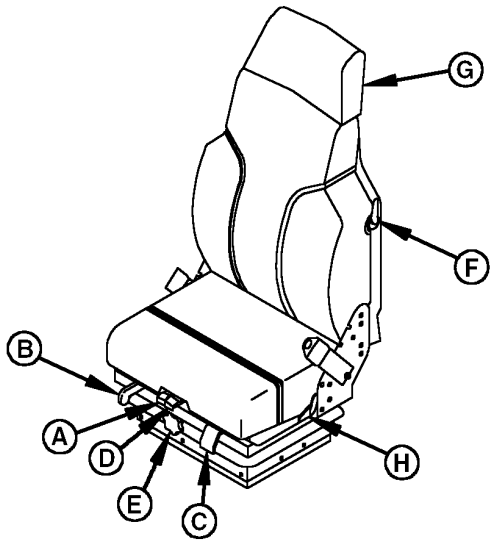
Lift seat fore-aft lever (A) to move seat forward and rearward. Release lever at one of several positions.

Remove your weight from seat. Lift up lever (C) and move seat to one of three positions for height adjustment.

Move seat to mid-to-aft position. While sitting in seat, turn weight adjustment knob (E) to support weight. Check weight indicator (B) for appropriate weight setting and continue to turn until yellow pointer inside tube is flush with tube opening.

While sitting in seat, lift lever (H) and allow cushion to angle forward or lean backward into desired position and release handle.

While sitting in seat, rotate lumbar support knob (F) to increase or decrease support to lower back.



T118252

T118252 —UN—16DEC98

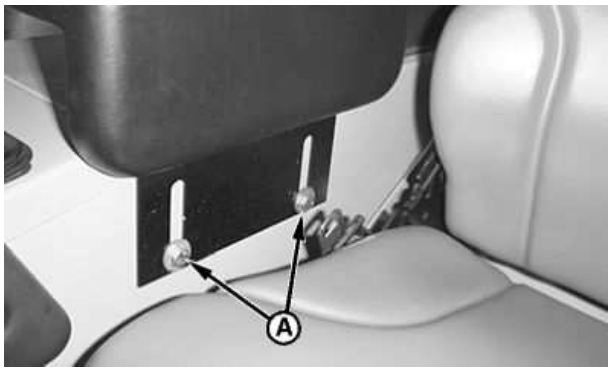
A—Fore-Aft Lever
B—Weight Indicator
C—Seat Height Adjustment Lever
D—Seat Cushion Adjustment Lever
E—Weight Adjustment Knob
F—Lumbar Support Knob
G—Head Rest
H—Back Cushion Angle Adjustment Lever

CED,OUO1032,1129 -19-14JAN08-1/1

Adjust Armrest

To adjust armrest, loosen cap screws (A) and slide armrest up or down.

A—Cap Screw (2 used)



T117826B —UN—20OCT98

CED,OUO1032,797 -19-30JAN08-1/1

Seat Belt

Seat belt and mounting hardware must be inspected for wear or damage before operating the machine. Replace the belt or mounting hardware if worn or damaged.

Replace the complete seat belt assembly every 3 years regardless of appearance.

TX,10,DH3548 -19-29APR08-1/1

Courtesy of Machine.Market

Inspect Machine Daily Before Starting

Safety and Protective Devices Checks

Walk around machine to clear all persons from machine area before starting machine.

Check condition of guards, shields, and covers.

Overall Machine Checks

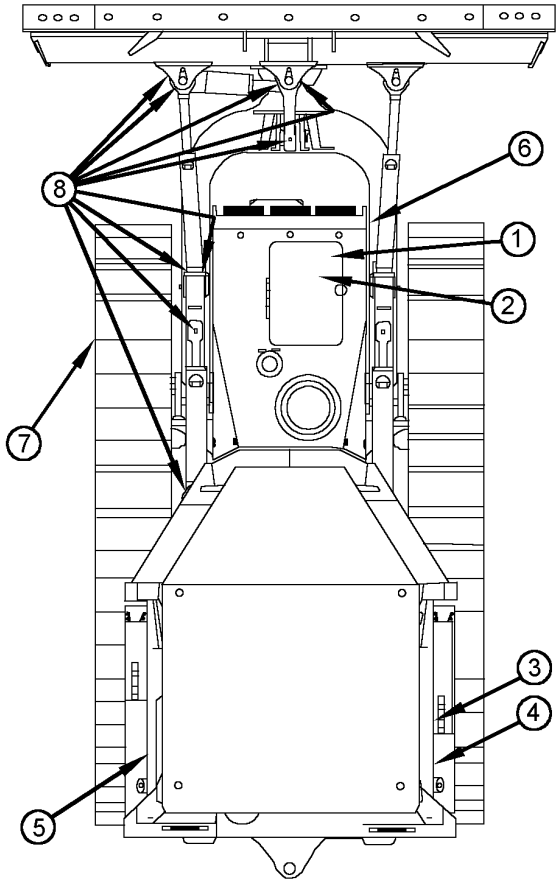
Check for worn or frayed electrical wires and loose or corroded connections.

Check for bent, broken, loose, or missing boom, bucket, sheet metal, track parts.

Check for loose or missing hardware.

Check for oil leaks, missing or loose hose clamps, kinked hoses, and lines or hoses that rub against each other or other parts.

1— Check engine coolant level in coolant recovery tank.
2— Check engine oil level.
3— Drain sediment from water separator.
4— Check hydraulic system oil level.
5— Check transmission oil level.
6— Check air cleaner dust unloader valve.
7— Check track sag.
8— Grease dozer linkage.



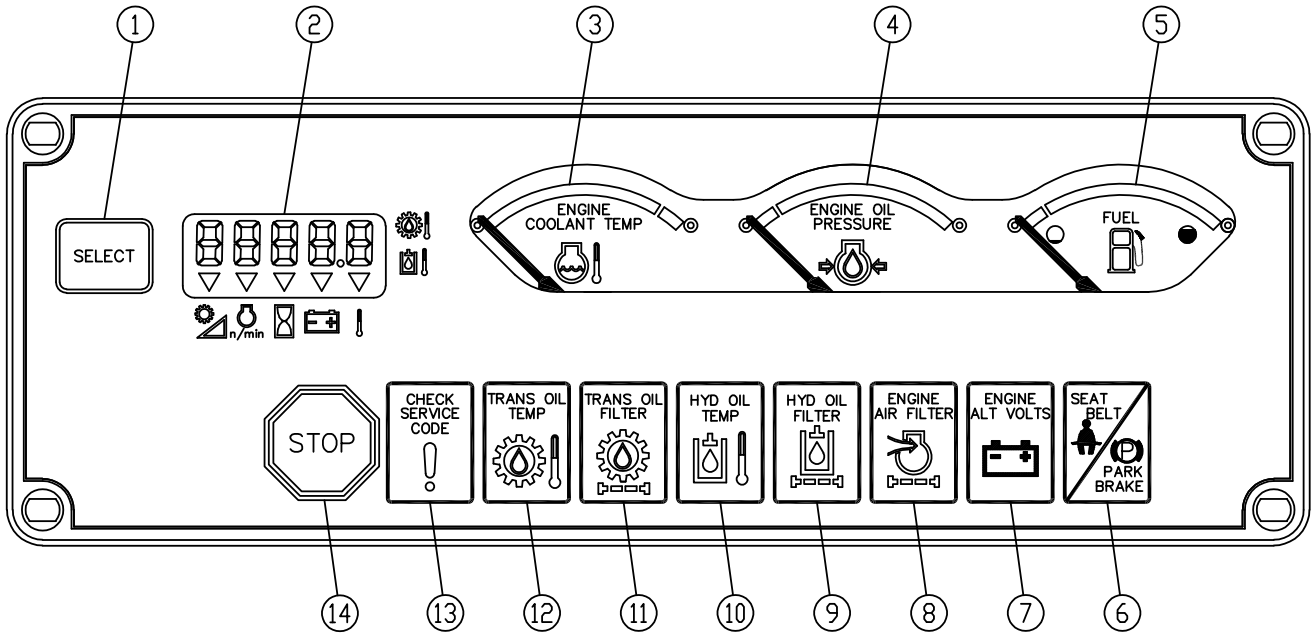
T121136

T121136 —UN—20APR99

TX14740,0001C9C -19-14JAN08-1/1

Courtesy of Machine.Market

Check Instruments Before Starting (S.N. —141178)



T142432

Turn key switch clockwise to ON. (Do not start engine.) The following must occur:

- The audible alarm must sound twice.
- All LCD segments in the display window (2) must light.
- All gauges (3—5) must be backlit, and all gauge needles must cycle from minimum (left) to maximum (right) in approximately one second.
- All indicators (6—14) must light for five seconds. With the engine not running, the alternator voltage indicator (7) must remain lit after other indicators go out.

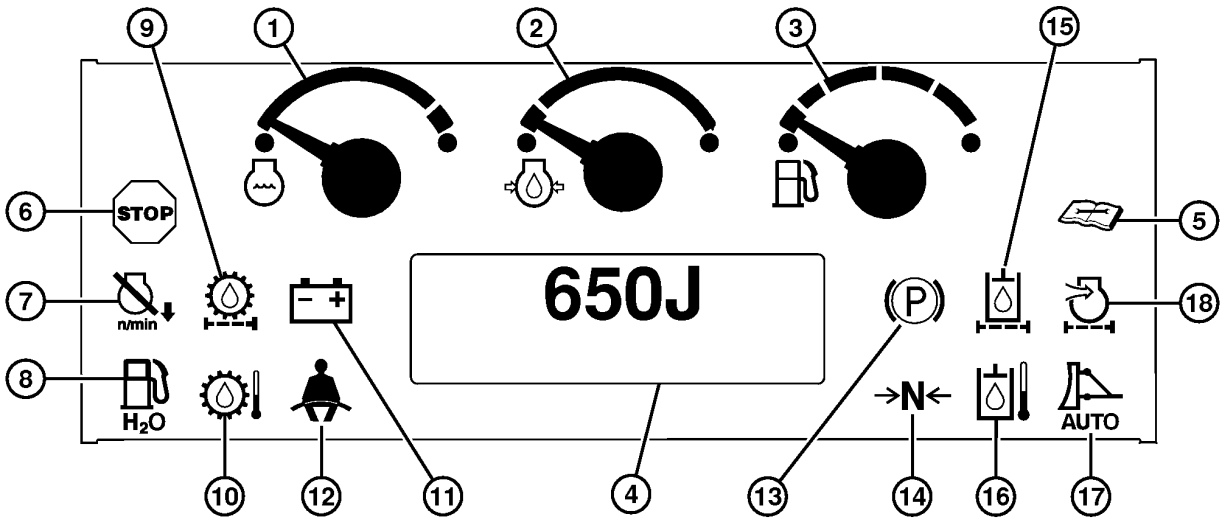
See Instrument Panel Functions for descriptions of indicators. (Section 2-1.)

If any indicator fails to light, check the bulb. If bulb is good but indicator still fails to light, see your authorized dealer.

VD76477,00012AA -19-28MAR07-1/1

Courtesy of Machine.Market

Check Instruments Before Starting (S.N. 141179—)



TX1022915 —UN—10MAY07

TX1022915

Turn key switch clockwise to on. (Do not start engine.) The following must occur:

- The audible alarm must sound twice.
- All LCD segments in the display window (4) must light.
- Gauges (1-3) must be backlit, and all gauge needles must cycle from minimum (left) to maximum (right) in approximately 1 second.
- All indicators (5-17) must light for 5 seconds. With the engine not running, the alternator voltage indicator (11), park brake indicator (13) must remain lit after other indicators go out.

See Instrument Panel Functions for descriptions of indicators. (Section 2-1.)

If any indicator fails to light, see your authorized dealer.

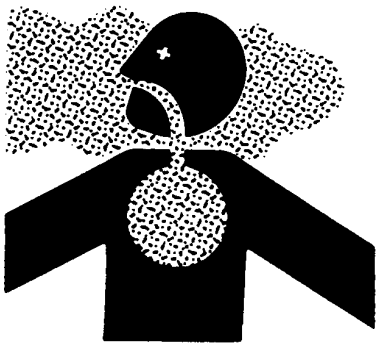
VD76477,00012A9 -19-10MAY07-1/1

Courtesy of Machine.Market

Starting the Engine

CAUTION: Prevent asphyxiation. Engine exhaust fumes can cause sickness or death to you or someone else.

If you must operate engine in a building, be positive there is adequate ventilation. Either use an exhaust pipe extension to remove the exhaust fumes or open doors and/or windows to bring enough outside air into the area.



TS220 —UN—15APR13

CAUTION: Avoid possible injury or death from a runaway machine. Do not start engine by shorting across starter terminals. Machine will move if normal starting circuitry is bypassed.

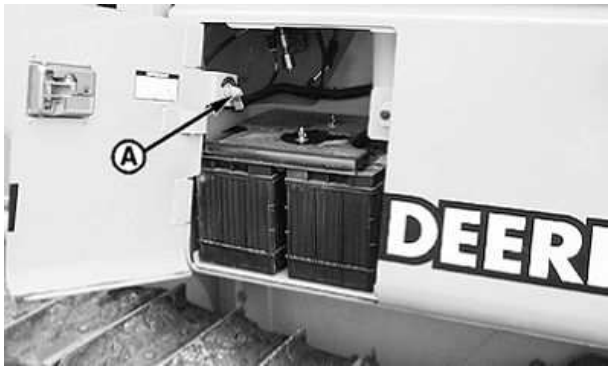
NEVER start engine while standing on ground. Start engine only from operator's seat with Transmission Control Lever (TCL) in N "Neutral" and park lock levers up.

T6607AO —UN—18OCT88

VD76477,00012AB -19-18JAN07-1/4

1. Turn battery disconnect switch (A) clockwise to ON position.

A—Disconnect Switch



T117483 —UN—04NOV98

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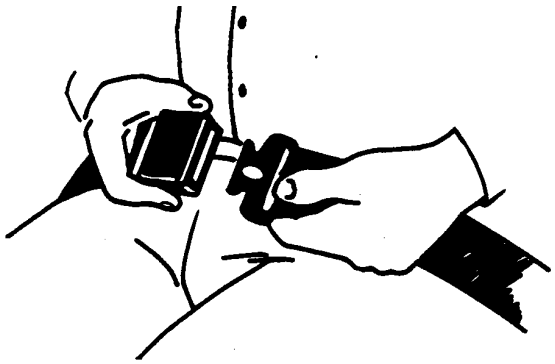
VD76477,00012AB -19-18JAN07-2/4

Courtesy of Machine.Market

2. Sit in seat and fasten seat belt.



TS175 —UN—23AUG88

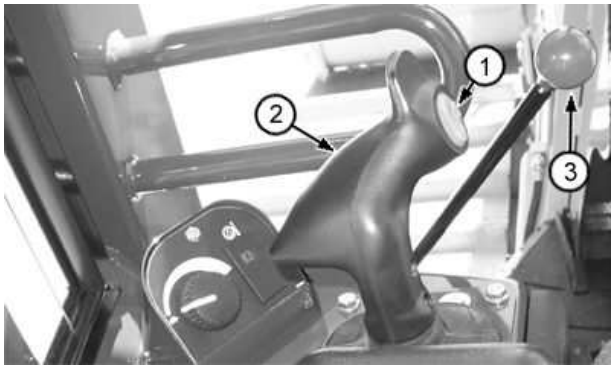
VD76477,00012AB -19-18JAN07-3/4

NOTE: Controls and switches must be in the positions described, before starting engine.

3. Move TCL (2) to neutral position (N).
4. Park lock lever (3) in up LOCKED position.
5. Push horn switch (1) to sound horn.

IMPORTANT: Do not operate starter more than 20 seconds at a time or starter may be damaged. If engine does not start, wait at least two minutes before trying again. If engine does not start in four attempts, refer to Troubleshooting section.

6. Turn key switch clockwise to turn engine until it starts. With engine running, adjust engine rpm to 1/2 speed (1600 rpm). See Engine Warm-Up in this section.



T200597A —UN—02JUN04

1— Horn
2— Transmission Control Lever
3— Park Lock Lever

VD76477,00012AB -19-18JAN07-4/4

Courtesy of Machine.Market

Starting Fluid (Cold Weather Start Aid)—If Equipped (S.N. —141178)

A coolant heater without starting fluid is sufficient for cold starting when temperature is down to -25°C (-13°F). The starting fluid option is required when ambient temperature is below 0°C (32°F) and the machine is not equipped with a coolant heater.

Using Starting Fluid

CAUTION: Prevent possible injury from exploding container. Starting fluid is highly flammable. Keep container away from heat, sparks, and open flame. Contents are pressurized. Do not puncture or incinerate container. Remove container from machine if engine does not need starting fluid.

IMPORTANT: Prevent damage to engine. Use starting aid if necessary when temperatures are below 0°C (32°F) and only when engine is COLD. Do not use ether aid and coolant heater together.

1. Turn key switch clockwise to “Start” position.

IMPORTANT: Excess starting fluid could damage engine; push starting aid button only when engine is cold and cranking. Starting aid fluid is being injected into engine as long as you push and hold button.

2. After one or two revolutions of engine crankshaft, push and hold starting aid switch (1) for short intervals.

TS281 —UN—15APR13

T200598A —UN—02JUN04

1— Start Aid Switch

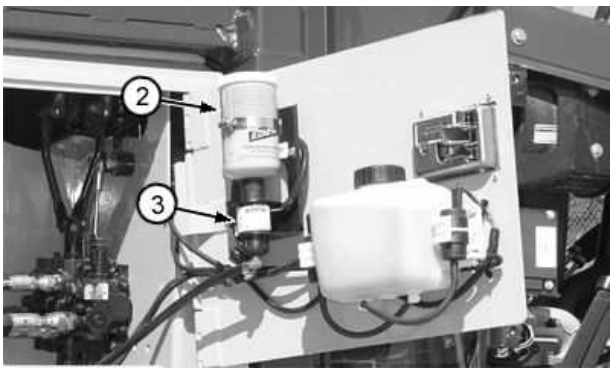
Crank engine for 20 seconds maximum, then allow 2 minutes between cranking periods.

VD76477,00012AC -19-28MAR07-1/3

Replacing Start Aid Can

1. Turn container (2) counterclockwise to remove the start aid can.
2. Remove safety cap and spray button from new can.
3. Turn can in start aid base (3) to install.

2— Container **3— Base**



T200591A —UN—02JUN04

Continued on next page

VD76477,00012AC -19-28MAR07-2/3

Courtesy of Machine.Market

Operating Machine Without Start Aid Container Installed

If no starting fluid is needed, remove container and install dust cap (D).

D—Dust Cap

T8594AF —UN—09NOV95

VD76477,00012AC -19-28MAR07-3/3

Starting Fluid (Cold Weather Start Aid)—If Equipped (S.N. 141179—)

A coolant heater without starting fluid is sufficient for cold starting when temperature is down to -25°C (-13°F). The starting fluid option is required when ambient temperature is below 0°C (32°F) and the machine is not equipped with a coolant heater.

Using Starting Fluid

CAUTION: Prevent possible injury from exploding container. Starting fluid is highly flammable. Keep container away from heat, sparks, and open flame. Contents are pressurized. Do not puncture or incinerate container. Remove container from machine if engine does not need starting fluid.

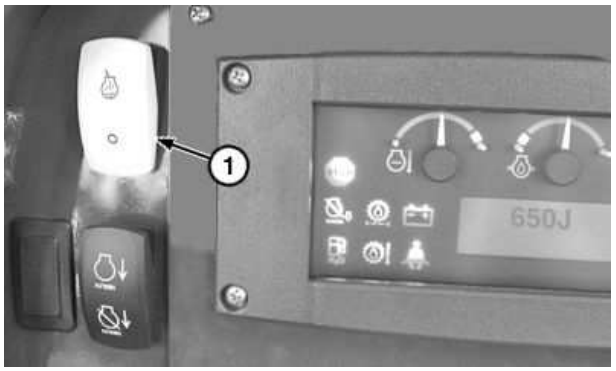
IMPORTANT: Prevent damage to engine. Use starting aid if necessary when temperatures are below 0°C (32°F) and only when engine is COLD. Do not use ether aid and coolant heater together.

1. Turn key switch clockwise to “Start” position.

IMPORTANT: Excess starting fluid could damage engine; push starting aid button only when engine is cold and cranking. Starting aid fluid is being injected into engine as long as you push and hold button.

2. After one or two revolutions of engine crankshaft, push and hold starting aid switch (1) for short intervals.

TS281 —UN—15APR13



TX1017213A —UN—04JAN07

1— Start Aid Switch

Crank engine for 20 seconds maximum, then allow 2 minutes between cranking periods.

Continued on next page

VD76477,00012AD -19-28MAR07-1/3

Courtesy of Machine.Market

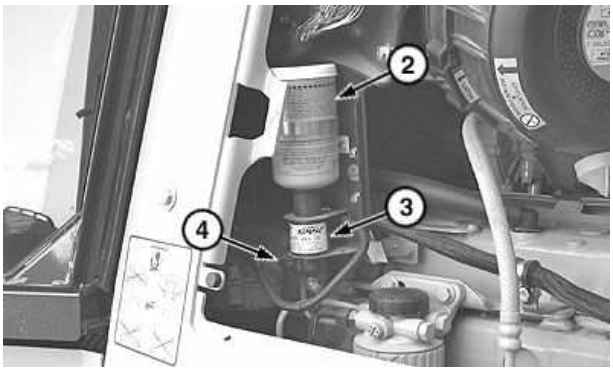
Replacing Starting Aid Can

1. Remove clamp (2) from container.
2. Turn container (3) counterclockwise to remove.
3. Install new container by turning clockwise into starting valve.

IMPORTANT: Protect start aid components from possible damage. Use dust cap on starting valve.

4. If no starting aid fluid is needed, remove starting aid can from machine and install dust cap (4) on starting aid base.

2— Starting Aid Can
3— Starting Aid Base
4— Dust Cap



TX1011933A —UN—27NOV06

Starting Aid Can Location

T8594AF —UN—09NOV95

Dust Cap

VD76477,00012AD -19-28MAR07-2/3

Operating Machine Without Start Aid Container Installed

If no starting fluid is needed, remove container and install dust cap (D).

D—Dust Cap

T8594AF —UN—09NOV95

VD76477,00012AD -19-28MAR07-3/3

Using Coolant Heater—If Equipped

CAUTION: Prevent possible personal injury from an electrical shock. Use a heavy-duty, grounded cord to connect heater to electrical power.

Connect the coolant heater to 115-volt electrical power 10 hours before you start the engine.

A coolant heater is recommended with the winch option when ambient temperature is below -18°C (0°F).

A coolant heater without the ether aid is sufficient for cold starting down to -25°C (-13°F).

CED,OUO1032,1401 -19-14JAN08-1/1

Courtesy of Machine.Market

Operating Fuel-Fired Coolant Heater—If Equipped

CAUTION: Prevent asphyxiation. Engine exhaust fumes can cause sickness or death to you or someone else.

If you must operate engine in a building, be positive there is adequate ventilation. Either use an exhaust pipe extension to remove the exhaust fumes or open doors and/or windows to bring enough outside air into the area.

CAUTION: Handle fuel carefully to reduce risk of fire. Do not fill the fuel tank with heater turned on.

Do not operate heater in enclosed areas where combustible fumes may be present. Operate heater only in open areas to keep combustible fumes away from machine.

Keep any flammable material a minimum distance of 50 mm (2.0 in.) from exhaust tube.

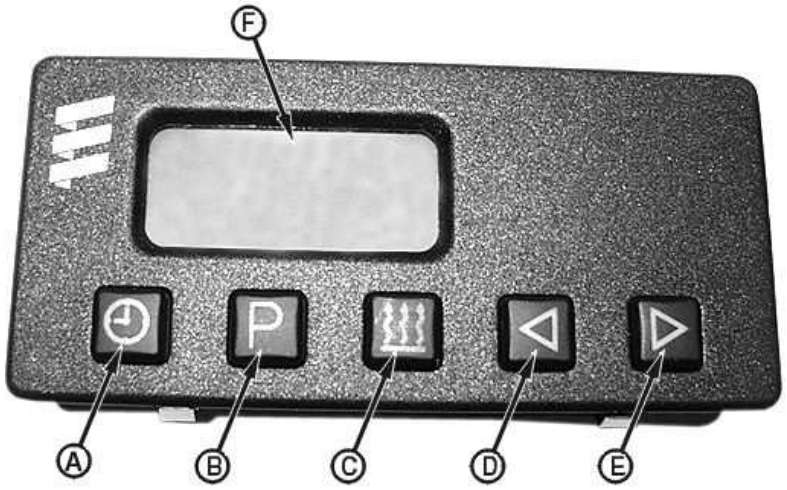
The diesel fuel burning heater draws fuel from machine fuel tank at a rate of approximately 0.1 gal/hr.

Ensure the fuel system is intact and there are no leaks.

Use proper coolant. Failure to do so may cause damage of engine and/or personal injury.

IMPORTANT: The coolant heater requires that the coolant in the system to be heated contain the proper mixture of water and coolant to prevent coolant from freezing or slushing. If the coolant becomes slushy or frozen, the heaters coolant pump cannot move the coolant causing a blockage of the circulating system.

Setting Time and Weekday:



T121396B —UN—11MAY99

A—Time
B—Program
C—Heating On
D—Backwards
E—Forwards
F—Display Window

1. Briefly press (A).
2. Time display 12:00 flashes.
3. Set the current time using (D) or (E).
4. When the time display stops flashing, the time has been stored.
5. The weekday then begins to flash. Set the current weekday using (D) or (E).
6. When the weekday display stops flashing, the weekday has been stored.
7. If the time is ON, the display continues to be displayed. If the time is OFF, the display disappears after 10 seconds.

Adjusting Time and Weekday:

1. Press and hold down (A) until the time flashes.
2. Follow steps 3—7. If only the time is to be adjusted, the flashing weekday display can be skipped by pressing (A) twice.

Continued on next page

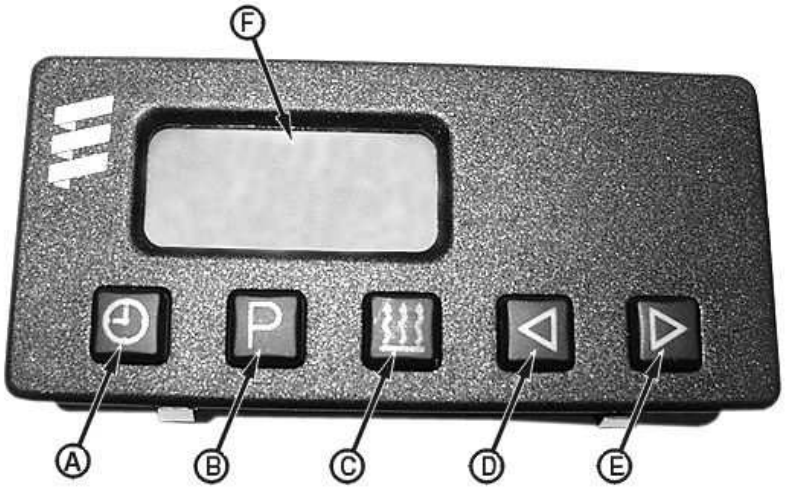
CED,OUO1032,1406 -19-14JAN08-1/9

Courtesy of Machine.Market

3. When the weekday has been adjusted, pressing (A) causes the display to stop flashing and the weekday to be stored.

CED,OUO1032,1406 -19-14JAN08-2/9

Heating Without Programming (Time OFF)

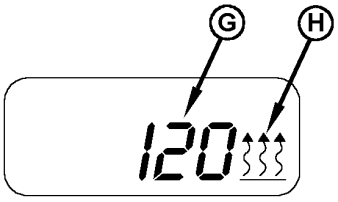


T121396B —UN—11MAY99

1. **Switch On Heating:** Briefly press (C).
2. Display window (F) will display (H) and heating time (G). The default heating time is set to 120 minutes. It can be changed permanently or temporarily.

1. **Temporarily Setting New Heating Time:** Briefly press (C).
2. To decrease heating time (1 minute increments), press (D).
3. To increase heating time (120 minutes maximum), press (E).

1. **Switch Off Heating:** Briefly press (C).
2. The status display (H) disappears. Automatic after-run for cool-down purposes will begin.



T121393

T121393 —UN—11MAY99

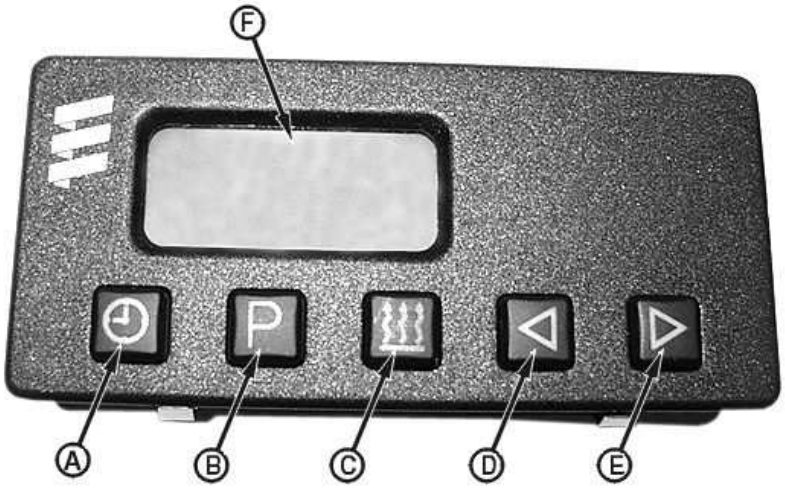
A—Time
B—Program
C—Heating On
D—Backwards
E—Forwards
F—Display Window
G—Heating Time Display
H—Heat Status Display

Continued on next page

CED,OUO1032,1406 -19-14JAN08-3/9

Courtesy of Machine.Market

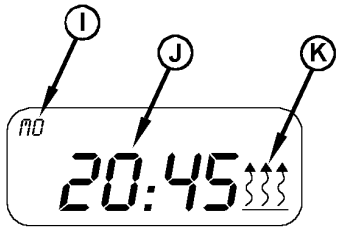
Heating Without Programming (Time ON):



T121396B —UN—11MAY99

1. **Switch On Heating:** Briefly press (C).
2. Display window (F) will display status (K), time (J) and weekday (I).
3. Heating remains operational until the time is switched off. If the time is switched off, the heating remains switched on for 15 minutes. This time can be increased (maximum of 120 minutes), by pressing (E) or decreased in one minute increments by pressing (D).

1. **Switch Off Heating:** Briefly press (C).
2. The status display (K) disappears. Automatic after-run for cool-down purposes will begin.



T121394

T121394 —UN—11MAY99

A—Time
B—Program
C—Heating On
D—Backwards
E—Forwards
F—Display Window
I— Weekday Display
J— Time Display
K—Heat Status Display

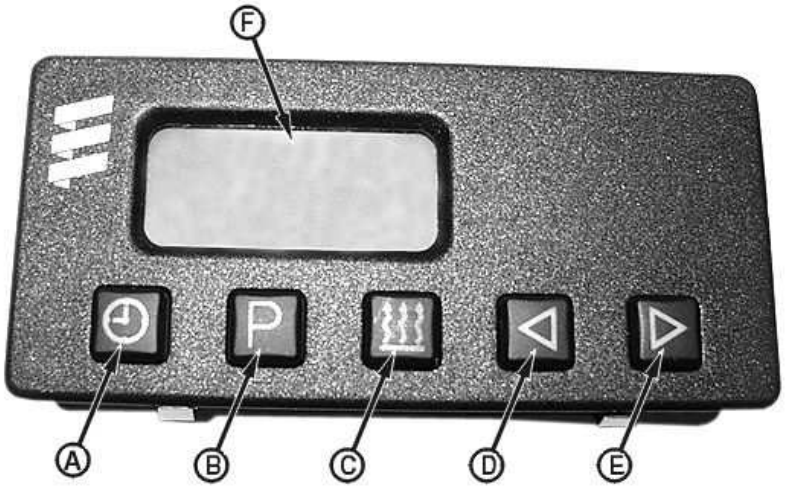
Continued on next page

CED,OUO1032,1406 -19-14JAN08-4/9

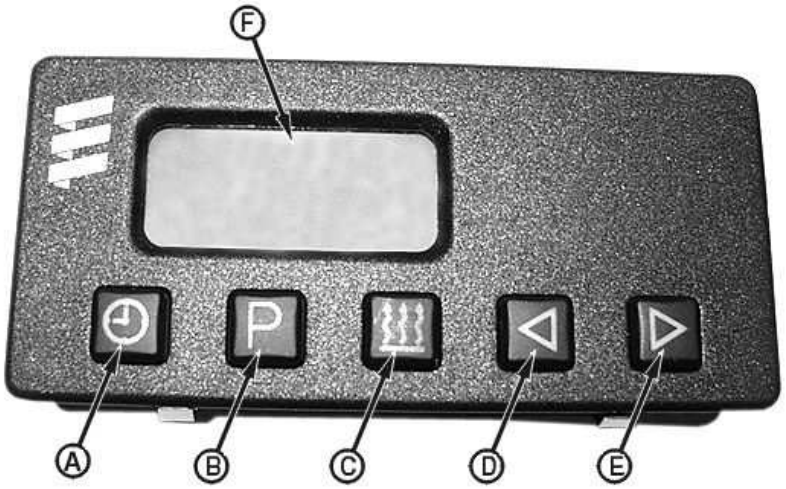
Courtesy of Machine.Market

Programming Start of Heating

Selecting and Activating Memory: Three switch-on times within the following 24-hour period or one switch-on time in seven days can be stored in memory. Only one switch-on time can be activated at a time.



T121396B —UN—11MAY99



T121396B —UN—11MAY99

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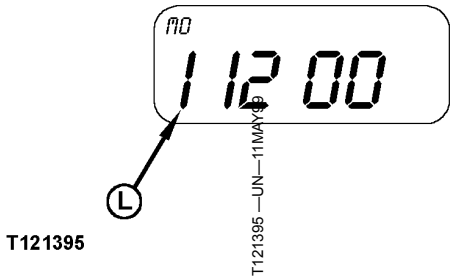
CED,OUO1032,1406 -19-14JAN08-5/9

Courtesy of Machine.Market



T121395

T121395 —UN—11MAY99

1. To activate first memory: Press (B) once. Memory display (L): 1 (default setting 12:00).
2. To activate second memory: Press (B) twice. Memory display (L): 2 (default setting 12:00).
3. To activate third memory: Press (B) once more. Memory display (L): 3 (default setting 12:00).

NOTE: Neutral status — no memory activated.

4. Press (B) repeatedly until the memory display disappears.

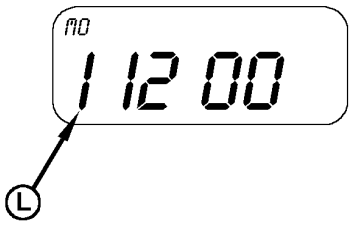
a. **Program Switch On Heating Within 24 Hours:** The correct program day is automatically displayed. No adjustment is necessary.

b. Set the program time:

1. Press (B) repeatedly until the desired memory display (L) flashes 1, 2 or 3.
2. Briefly press and release (D) or (E). The program time will flash.
3. Set the program time for heating using (D) or (E). Setting is only possible if the program time is flashing.
4. To select another memory, press (B).

a. **Program Switch On Heating After 24 Hours (Maximum Seven Days):** Set the program time:

1. Press (B) repeatedly until the desired memory display (L) flashes 1, 2 or 3.
2. Briefly press and release (D) or (E). The program time will flash.
3. Set the program time for heating using (D) or (E). Setting is only possible if the program time is flashing.
4. To select another memory, press (B).



T121395

T121395 —UN—11MAY99

A—Time
B—Program
C—Heating On
D—Backwards
E—Forwards
F—Display Window
L—Memory Display

A—Time
B—Program
C—Heating On
D—Backwards
E—Forwards
F—Display Window
L—Memory Display

b. Set the program day (the program day begins to flash approximately 5 seconds after the program time has been set).

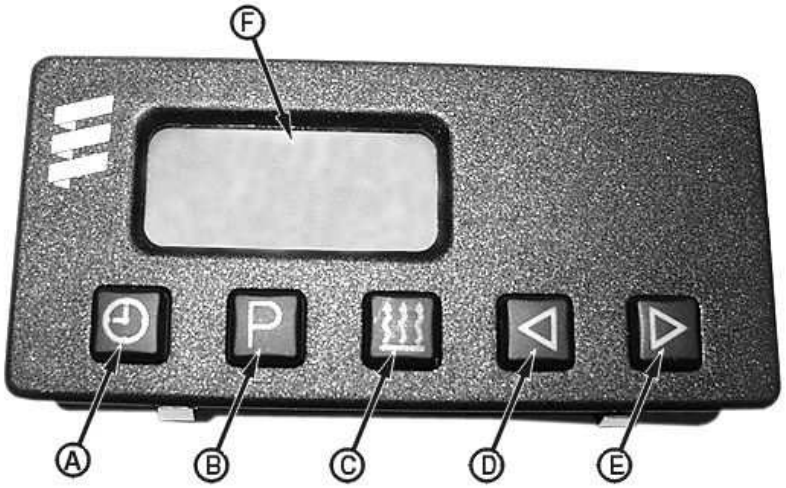
1. Set the program day for heating using (D) or (E).
2. The program time and program day are stored when the time display disappears or when the current time appears. The memory display (L) indicates the activated memory. The flashing heating-on symbol (K) also indicates that a memory has been activated.

Continued on next page

CED,OUO1032,1406 -19-14JAN08-6/9

Courtesy of Machine.Market

Checking Activated Memory:



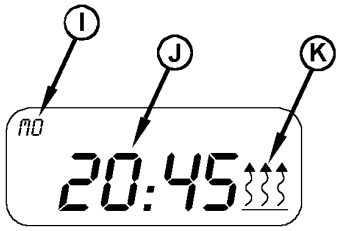
T121396B —UN—11MAY99

The program time of the displayed memory is displayed for approximately 5 seconds. The display then disappears or the current time is displayed (if the time is ON).

The program time display (J) and the program day (I) can then be called up by pressing (B) once for 5 seconds.

Temperature Display

If an ambient temperature sensor is connected and the time is activated, the temperature can be permanently displayed by pressing (A) once. If the time is OFF, the time temperature is displayed for 15 seconds by pressing (A) twice.



T121394

T121394 —UN—11MAY99

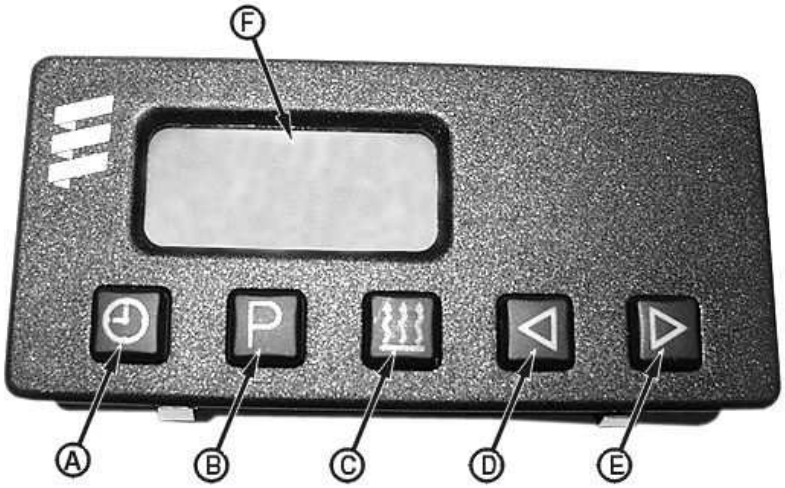
A—Time
B—Program
C—Heating On
D—Backwards
E—Forwards
F—Display Window
I— Weekday Display
J—Time Display
K—Heat Status Display

Continued on next page

CED,OUO1032,1406 -19-14JAN08-7/9

Courtesy of Machine.Market

Diagnostic Trouble Codes



T121396B —UN—11MAY99

A—Time
B—Program
C—Heating On
D—Backwards
E—Forwards
F—Display Window

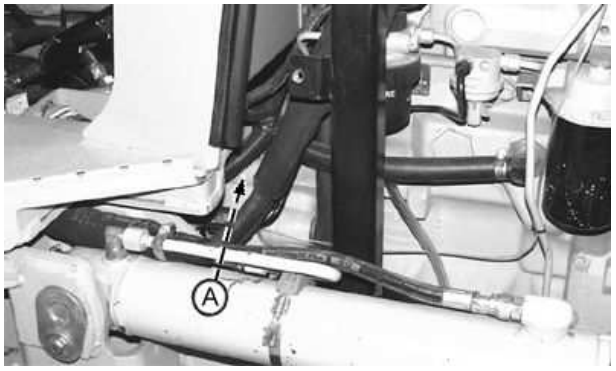
If a diagnostic trouble code appears in display window (F):

1. Press (C) to turn heater off and on (twice maximum).

CED,OUO1032,1406 -19-14JAN08-8/9

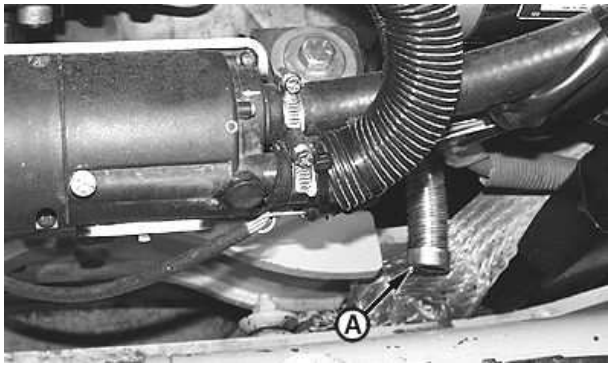
2. Check fuse (A).
3. Check exhaust tube (A) for blockage.
4. See your authorized dealer.

A—Fuse



T121419B —UN—12MAY99

A—Exhaust Tube



T121410B —UN—11MAY99

CED,OUO1032,1406 -19-14JAN08-9/9

Courtesy of Machine.Market

Engine Warm-Up

1. Under normal operating temperatures, after engine starts, run at 1600 rpm for 2 minutes. Do not run at fast or slow idle.
2. Operate machine at less-than-normal loads and speeds until engine is at normal operating temperature.

HG31779,0000020 -19-14JAN08-1/1

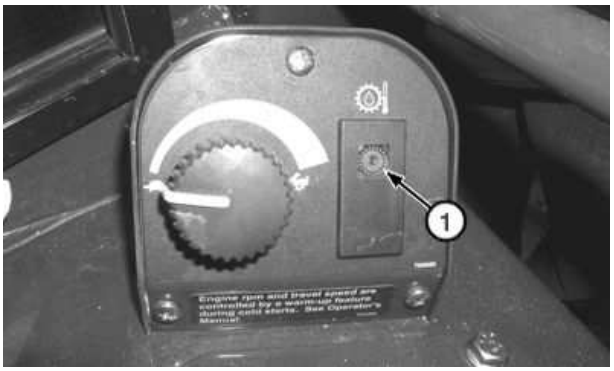
Cold Weather Warm-Up

The warm-up indicator (1) will light when the transmission oil temperature is too low for normal machine operation. While the indicator is lit the following will occur:

- Engine speed is limited to 1300 rpm in forward and reverse

The indicator will remain lit and engine rpm will be limited until the transmission oil reaches a specified temperature or the engine has run for ten minutes. Indicator light will turn off automatically when system is to operating temperature. Rotate engine speed control knob back to low idle to turn off light.

For the final stage of the warm-up cycle, the transmission speed will be limited to a maximum of 1.7 until the machine travels a combined distance of 91 m (300 ft). If speed is commanded faster than 1.7 prior to traveling 91 m (300 ft), the indicator will light and the speed will remain at 1.7.



TX1034225A —UN—08JAN08

1— Warm-Up Indicator

VD76477,00012B9 -19-30JAN08-1/1

Transmission Speed Reverse Ratio Knob

The reverse speed ratio knob (1) located to left of transmission control lever (TCL) with Transmission Speed-In-Grip lever adjusts the reverse speed as a percentage of the transmission speed setting. The reverse speed percentage settings are **80%, 100%, 115%, and 130%.** Transmission speed reverse setting, will not exceed transmission maximum speed of SP3.0 8 km/h (5.0 mph). [An example; If transmission speed is SP3.0, and the reverse ratio knob is set at 80%, then the reverse speed would be equivalent to 6.4 km/h (4.0 mph).]

T200602A —UN—02JUN04

1— Transmission Speed Reverse Ratio Knob

HG31779,0000022 -19-14JAN08-1/1

Courtesy of Machine.Market

Transmission Control Lever (TCL)

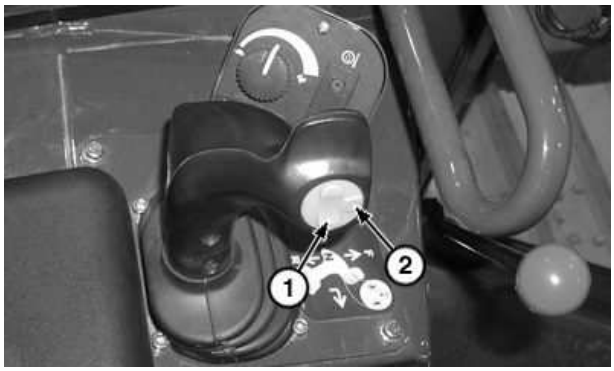
Push the top of the transmission speed-in-grip button (1) to increase transmission speed. Push the bottom of the switch to lower the machine transmission speed.

Push the horn button (2) to sound the machine horn when needed.

The Transmission Control Lever (TCL) controls the direction (forward and reverse), steering (left turn, right turn), pivot turn, and counter-rotation.

1— Transmission Speed-In-Grip (SIG) Button

2— Horn Button



TX1035499A —UN—28JAN08

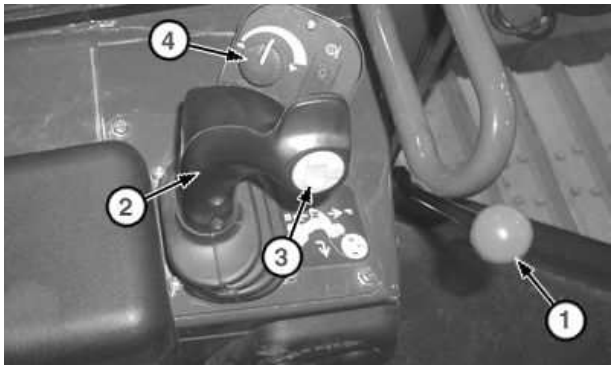
VD76477,00012AE -19-24JAN08-1/1

Driving the Machine

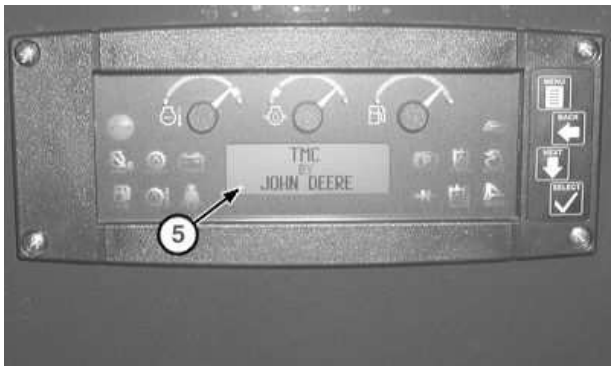
1. Fasten seat belt.
2. Park lock lever (1) must be in LOCKED position (up).
3. Place Transmission Control Lever (TCL) (2) to “Neutral” position.
4. Start engine.
5. Depress decelerator/brake pedal.
6. Move park lock lever to UNLOCKED position (down). Speed gauge will display default transmission setting SP1.6.

NOTE: Transmission speed-in-grip button and reverse speed ratio knob adjust travel speed and may be adjusted at any time.

7. Place TCL in desired position.
8. Press transmission speed-in-grip button (3) to desired setting (SP1.0—SP3.0) as seen in display window. The transmission speed range is pre-set for a startup speed range of SP1.6. The transmission speed range can vary depending on operator's preference from SP1 to SP3 (machine speed can vary from 0 to 5 mph).
9. Slowly release decelerator pedal to move machine.
10. Rotate engine speed control knob (4) to a desired rpm setting.
11. Move TCL in desired turning direction to steer.



TX1035052A —UN—16JAN08



TX1035053A —UN—16JAN08

1— Park Lock Lever
2— Transmission Control Lever (TCL)
3— Transmission Speed-In-Grip Button
4— Engine Speed Control Knob
5— Display Window

VD76477,00012AF -19-28JAN08-1/1

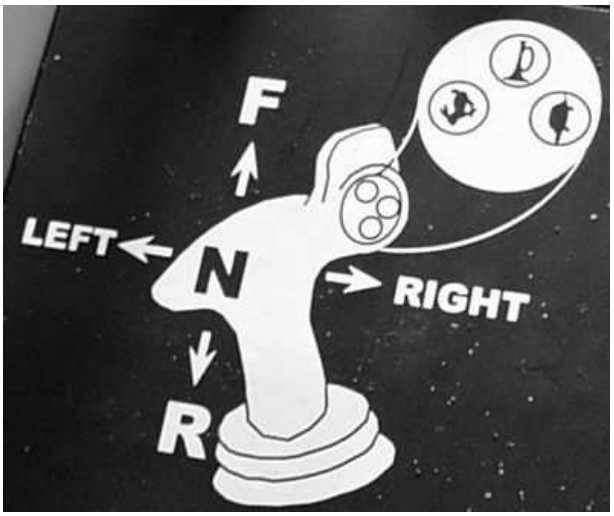
Courtesy of Machine.Market

Steering the Machine

The transmission control lever (TCL) (1) controls the direction (forward and reverse), the steering (left turn, right turn), pivot turn, and counter-rotation. Moving the TCL fully right or left will cause the machine to counter-rotate.

1— Transmission Control Lever

TX1035500A —UN—25JAN08



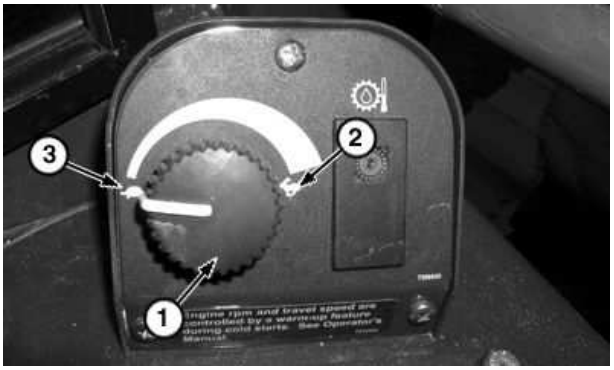
T122746B —UN—29JUL99

HG31779,0000023 -19-24JAN08-1/1

Using Engine Speed Control Knob

To increase engine speed, rotate engine speed control knob (1) clockwise to position (2) rabbit (fast idle). To decrease engine speed, rotate knob counterclockwise to position (3) turtle (slow idle).

1— Engine Speed Control Knob
2— Fast Idle Position
3— Slow Idle Position



TX1035504A —UN—25JAN08

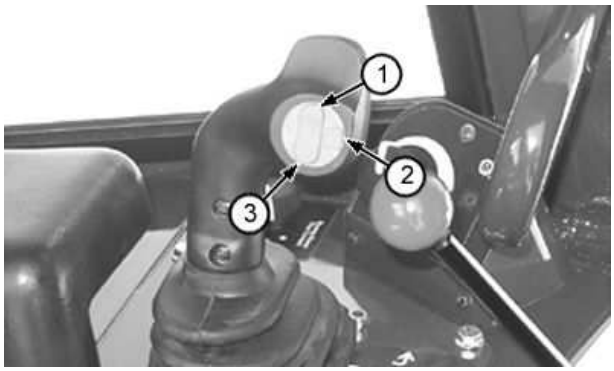
HG31779,0000024 -19-24JAN08-1/1

Courtesy of Machine.Market

Travel Speed Using Transmission Control Lever (TCL)

Hydrostatic dual path transmission provides variable travel speed (SP1.0—SP3.0) ranging from 0—8 km/h (0—5.0 mph) in forward or reverse. Reverse speed ratios of 80%, 100%, 115%, and 130% until maximum mph is reached, from 0—8 km/h (0—5 mph) in reverse. Transmission speed default speed of SP1.6 will be displayed by moving park lock lever or pushing transmission speed-in-grip button (1 and 3).

1— Transmission Speed-In-Grip Button (increase)
2— Horn Button
3— Transmission Speed-In-Grip Button (decrease)



T200614A —UN—04JUN04

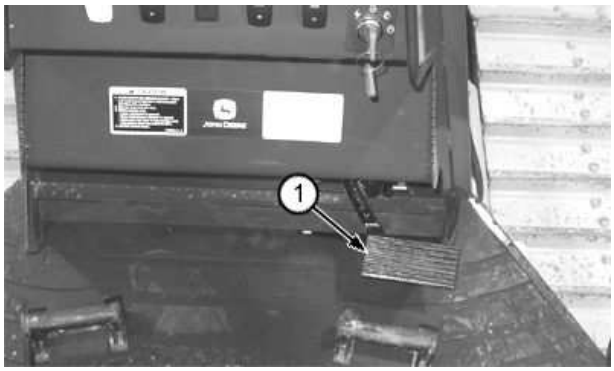
VD76477,00012B0 -19-14JAN08-1/1

Decelerator/Brake Pedal

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

Do not apply brakes to stop machine during normal operating conditions. Pushing on brake pedal will stop machine abruptly.

Pushing on decelerator/brake pedal (1) will slow engine rpm and reduce machine ground speed. Pushing pedal beyond a point of increased resistance will apply brakes and stop machine abruptly. **Travel will resume as pedal is released.**



T200615A —UN—04JUN04

1— Decelerator/Brake Pedal

CED,TX03768,2696 -19-24JAN08-1/1

Courtesy of Machine.Market

Using Park Lock Lever

CAUTION: Prevent possible injury from unexpected machine movement. Always move park lock lever to up LOCKED position before starting or dismounting.

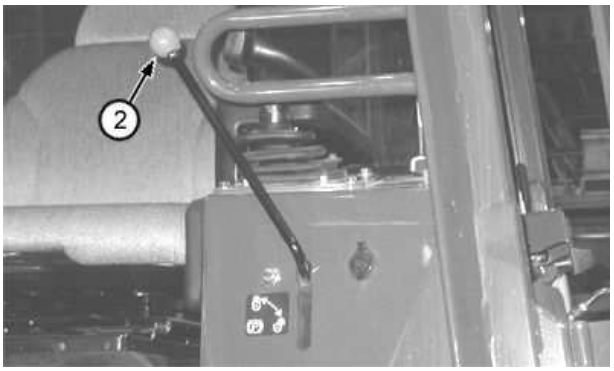
When park lock lever is in up LOCKED position (2), Transmission Control Lever (TCL) can move but will not operate the machine.

When park lock lever is in down UNLOCKED position (1), TCL can move machine.

If park lock lever is pulled down while the TCL is in forward or reverse, the machine will not move. Put TCL in neutral, then raise and lower the park lever. Machine is now operable.

1— UNLOCKED Park Lock Lever

2— LOCKED Park Lock Lever



T196490C —UN—19NOV03

T196491A —UN—19NOV03

VD76477,00012B1 -19-14JAN08-1/1

Stopping the Machine

NOTE: Park brake automatically engages when engine is not running.

Stop machine by doing one of the following:

- Push decelerator pedal past detent into brake range of travel.
- Turn key switch to OFF position.
- Move Transmission Control Lever (TCL) to N (only if motion is detected while in neutral).
- Push park lock lever to up LOCKED position.

CAUTION: Prevent possible injury from machine rollover. Machine may overturn if blade is dropped when moving rapidly down a steep hill.

- If all above methods have been tried and proven ineffective, drop blade to stop machine.

VD76477,00012B2 -19-23JAN08-1/1

Courtesy of Machine.Market

Parking the Machine

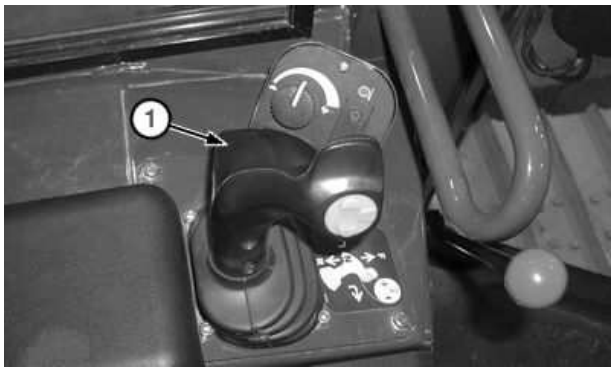
1. Park machine on a level surface.
2. Lower equipment to the ground.
3. Move Transmission Control Lever (1) to N.

NOTE: Park brake automatically engages when engine is not running or park lock lever is in up LOCKED position.

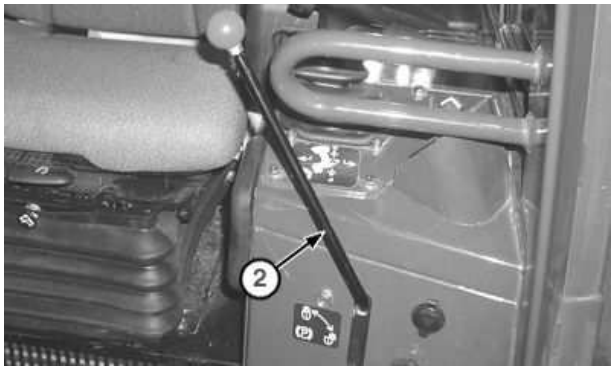
4. Move park lock lever (2) to up LOCKED position.

IMPORTANT: To avoid damage to turbocharger (if equipped), run engine at 1/2 speed no load for two minutes.

5. Run engine at 1600 rpm no load for 2 minutes.
6. Turn key switch to OFF to stop engine.
7. Remove key from switch.
8. Release hydraulic pressure by moving control lever until equipment does not move.
9. Turn battery disconnect switch off.



TX1035057A —UN—16JAN08



TX1035058A —UN—16JAN08

1— Transmission Control Lever (TCL) **2— Park Lock Lever**

VD76477,00012B3 -19-17JAN08-1/1

Blade Pitch Operation

You may want to change the pitch of the blade depending on the type of work you are doing and the soil conditions you are dozing, or to change the feel of the dozer to operator's preference.

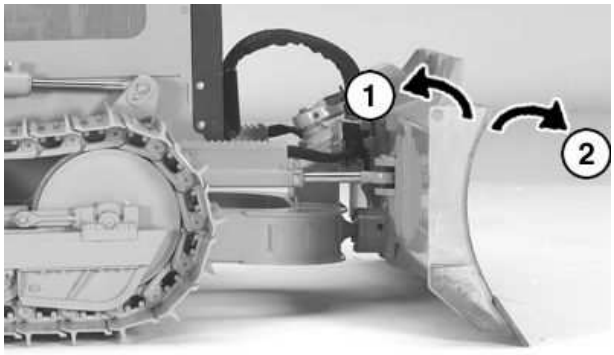
Pitching the Blade Forward Advantages:

With the top of blade pitched forward (2), the blade will not carry as much soil. The weight of the soil carried by the blade adds to the weight of the dozer and moves the balance of weight on the tracks forward. This can cause the front idlers of the crawler to sink in loose or soft soils. When the idlers sink, the blade cuts unevenly into the soil. With the blade forward, the dozer balance does not change as much with a full blade; therefore, the tendency for idlers to sink is reduced.

With the blade forward, there is less of a tendency for dirt to come over the back of the blade when dozing uphill. It is also easier to drop dirt at the end of a push when dozing uphill or when dozing very sticky materials.

Pitching the Blade Back Advantages:

With the blade pitched back (1), the cutting edge lies more horizontally resulting in a heavier cut into soils. Having the cutting edge more horizontal also provides a smoother cut in heavy soils. More soil is carried by the blade when it is pitched back. Carrying more soil on the blade adds to the weight of the dozer. This added weight can increase push force in heavy soils. The soil carried by the blade also moves the balance of weight forward on the machine. In heavy soils, this can be an advantage because the increased weight can help keep the front of the machine down and keep the cutting edge penetrating during heavy cutting.



TX1034969A —UN—25JAN08

A—Forward Pitch **B—Back Pitch**

Continued on next page

CED,OUO1032,1118 -19-10JUN11-1/2

Courtesy of Machine.Market

Changing the Pitch:

NOTE: All 450J crawlers come shipped from the factory with the blade in the mid-pitched position (56°).

Pitching the blade back:

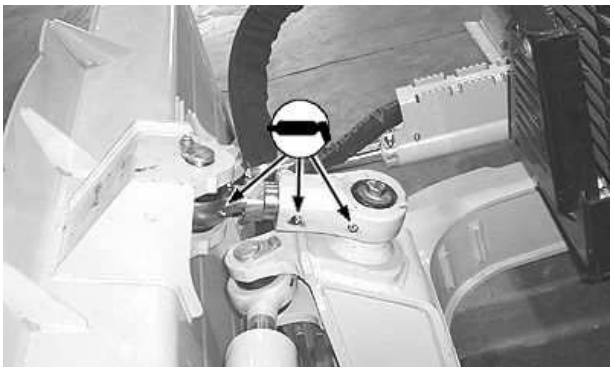
To pitch the blade back, rotate the adjusting nut counterclockwise (left handed threads). The blade can be pitched back to a minimum of 52°. To achieve minimum pitch, rotate adjusting nut counterclockwise until it bottoms out against the casting.

Pitching the blade forward:

To pitch the blade forward, rotate the adjusting nut clockwise. (left handed threads). The blade can be pitched forward to a maximum of 58°. To achieve maximum blade pitch, rotate adjusting nut clockwise until the internal snap ring bottoms out.

Setting blade at mid-pitch:

Depending on the pitch of the blade, rotate the adjusting nut clockwise (if pitched less than 56°), or counterclockwise (if pitched greater than 56°). Look for visual indication of ridge on adjusting nut to be in line with leading edge of casting.



T200336B —UN—14JUN04

NOTE: Blade pitch adjustment may require release of cylinder hydraulic pressure.

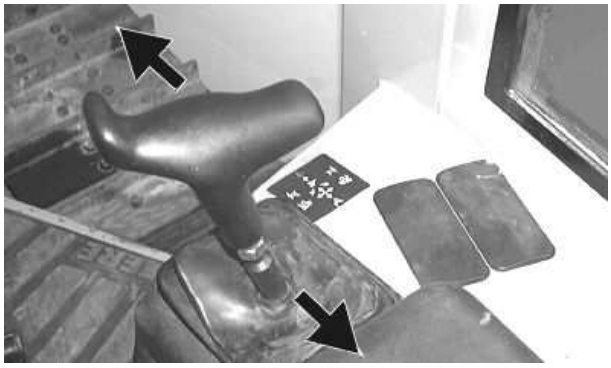
CED,OUO1032,1118 -19-10JUN11-2/2

Operating Blade

IMPORTANT: To avoid overheating of hydraulic oil, allow control lever to return to neutral when cylinders reach the end of their travel.

Move control lever rearward to raise blade. Move control lever forward to lower blade.

Move lever to full forward detent for float position. This position allows the blade to follow the contour of the ground. Manually release lever from this position.



T121338C —UN—11MAY99

CED,OUO1032,1119 -19-14JAN08-1/1

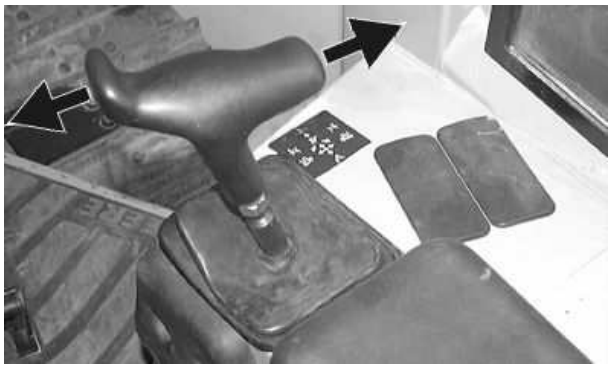
Courtesy of Machine.Market

Tilting Blade

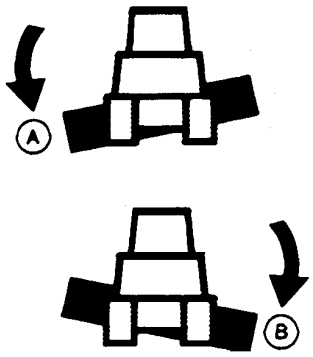
Move the blade control lever left to tilt the blade left.

Move the blade control lever right to tilt the blade right.

A—Tilt Blade Left **B—Tilt Blade Right**



T121338D —UN—11MAY99



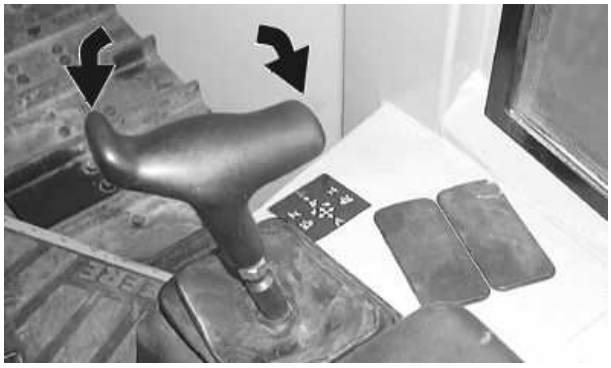
T6508AW —UN—19MAY89

CED,OUO1032,1120 -19-14JAN08-1/1

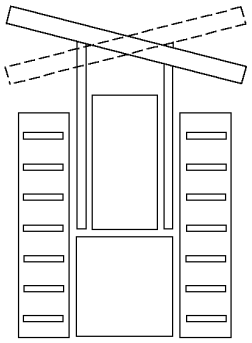
Angling Blade

Twist lever to right to angle blade to right.

Twist lever to left to angle blade to left.



T121338E —UN—11MAY99



T118641

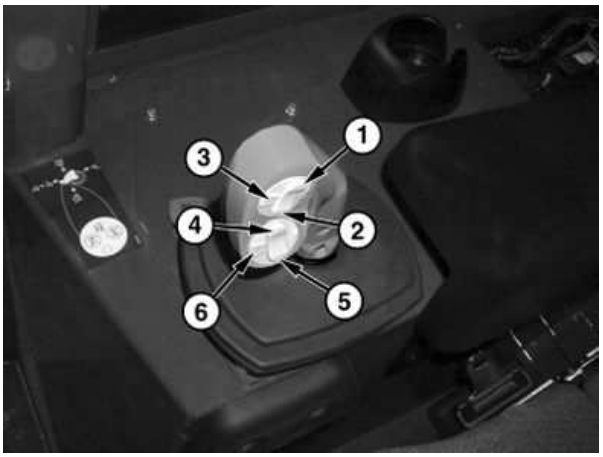
T118641 —UN—01DEC98

CED,OUO1032,1121 -19-14JAN08-1/1

Courtesy of Machine.Market

Blade Control Lever—Operation

1— Increment (Up) (IGC only)
2— Decrement (Down) (IGC only)
3— Not used
4— Blade Angle Clockwise
5— Blade Angle Counterclockwise
6— IGC On/Off (IGC only)



TX1010864A —UN—03AUG06

IGC Blade Control Lever Shown

Continued on next page

VD76477,0001373 -19-15JAN08-1/2

Courtesy of Machine.Market

IMPORTANT: To avoid overheating hydraulic oil, allow control lever to return to neutral position when cylinders reach end of stroke.

Blade control lever is used for all hydraulic functions on all non-IGC units.

Blade float detent position (7) is used for backblading. When blade control lever is put into float position, it must be moved manually back to neutral position.

- Push lever forward to float detent position (7) for blade float.
- Push lever forward one position (8) to lower blade.
- Pull lever rearward (10) to lift blade.
- Push lever to the left (11) to tilt blade to the left.
- Push lever to the right (9) to tilt blade to the right.

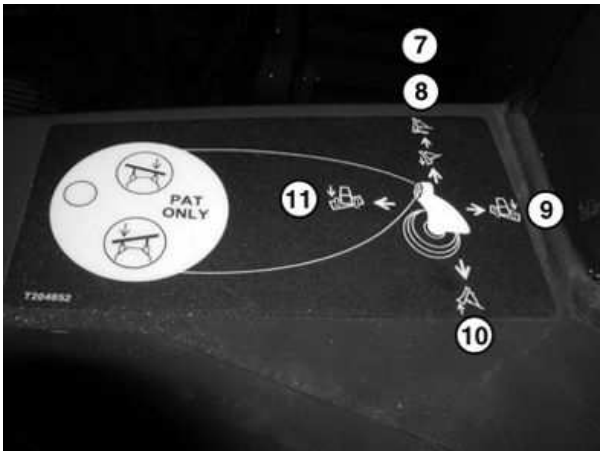
Electronic blade control lever is used for all hydraulic functions on IGC units.

Blade float detent position (7) is used for back blading.

When blade control lever is put into float position, it will return to neutral on its own.

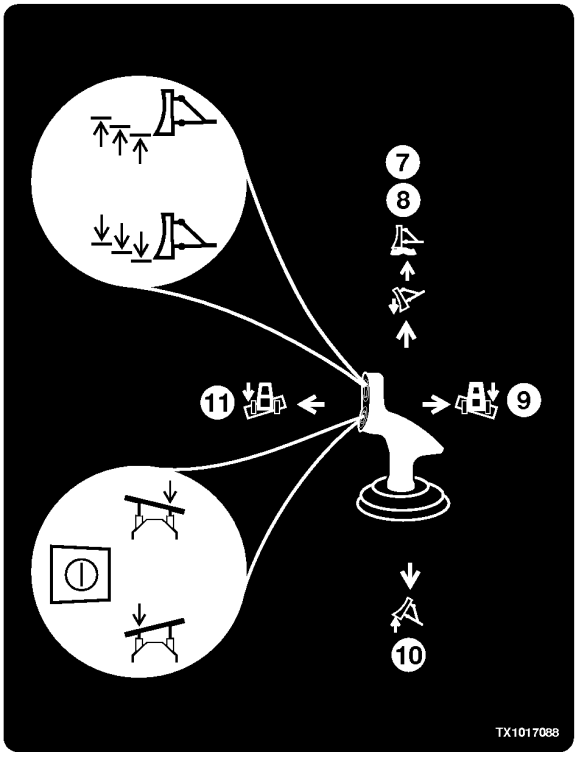
To disable blade float, push the lever forward or rearward after the joystick has returned to neutral. Moving the lever to the left or right will not disable blade float.

7— Blade Float Detent Position
8— Blade Lower
9— Blade Tilt Right
10— Blade Lift
11— Blade Tilt Left



TX1010863A —UN—07AUG06

Power Angle Tilt



TX1017088 —UN—27DEC06

IGC Machines

VD76477,0001373 -19-15JAN08-2/2

Avoid Track Damage

IMPORTANT: Avoid machine damage. If 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.

JH91824,00002EA -19-22JUL10-1/1

Courtesy of Machine.Market

Ripper Control Lever—If Equipped

IMPORTANT: When using the ripper, operate the machine in LOW travel speed.

Avoid machine damage. Do not turn machine with ripper engaged in material.

With multi-teeth rippers it is usually more beneficial to install multiple teeth than to select a higher travel speed.

Use only one ripper tooth to rip out difficult or large sized material.

Easy to rip material, which breaks into smaller pieces, can be removed with a multi-tooth ripper with two or three teeth.

During the ripper application, always make sure that both tracks are fully on the ground at all times. If necessary, prepare the site accordingly.

The ground should be ripped as deep as possible. If the ground is layered, proceed to rip one layer at a time. To reach the desired depth, it may be necessary to run over the same track several times.

In some cases, it may be necessary to cut crosswise.

TX1026010A —UN—05JUL07

1— Lower Direction (Forward Position)

2— Raise Direction (Rearward Position)

On slopes, always rip going downhill.

Operation Of The Ripper

- To lower ripper, push the ripper control lever forward (1).
- To raise ripper, pull the ripper control lever rearward (2).

OUT4001,000032A -19-14JAN08-1/1

Courtesy of Machine.Market

Operating Winch—If Equipped

CAUTION: Prevent possible injury from breaking cable. Always be sure rear screen between winch and operating compartment is in place before operating winch.

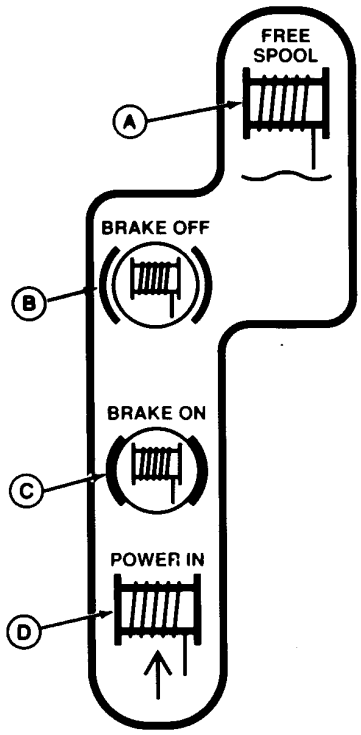
Operate the winch only from operator's station.

A coolant heater is recommended with winch option if ambient temperature is below -18°C (0°F).

Before operating winch, place winch control in free spool to circulate oil through winch until winch oil reaches operating temperature.

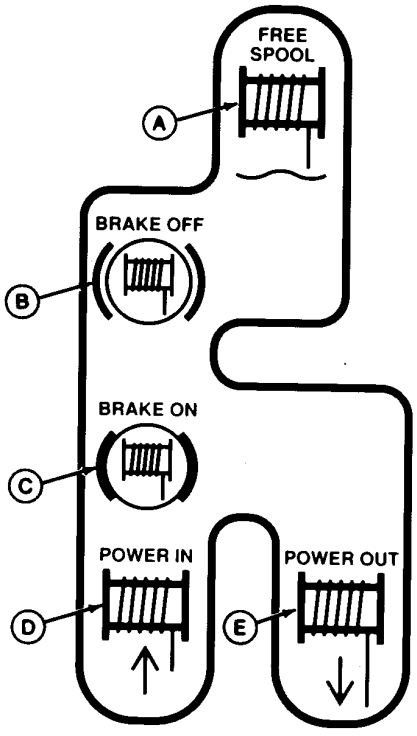
- Move lever to FREE SPOOL (A) position so cable can be pulled out freely.
- Move lever to the BRAKE OFF (B) position so cable can be pulled out with tension.
- Move lever to the BRAKE ON (C) position to hold cable.
- Move lever to POWER IN (D) position to wind cable on drum
- Move lever to POWER OUT (E) position (if equipped) to unwind cable from drum.

A—Free Spool
B—Brake Off
C—Brake On
D—Power In
E—Power Out



T7440BG —UN—20DEC90

Standard Control Pattern



T7440BH —UN—20DEC90

Power In, Power Out Control Pattern

TX,36,FF2210 -19-07JAN12-1/1

Courtesy of Machine.Market

Fasten Cable to Winch Drum—4000S Series

Maximum Cable Capacities	
Cable Size	**Winch Capacity**
15.88 mm (0.625 in.)	77.4 m (254 ft)
19.05 mm (0.75 in.)	54.6 m (179 ft)
22.23 mm (0.875 in.)	39.3 m (129 ft)

To conform with certain state laws, the cable must be attached to the drum so that it can come loose if the cable is unwound from winch drum.

Attach cable to winch drum using one of the following methods:

CAUTION: Prevent possible personal injury from cutting wire. Wear gloves when you handle cable to protect hands from cable wire cuts. DO NOT guide cable on winch with your hands.

IMPORTANT: If a ferruled cable is used, the drum plug (B) MUST be installed to prevent cable from bending cable slot.

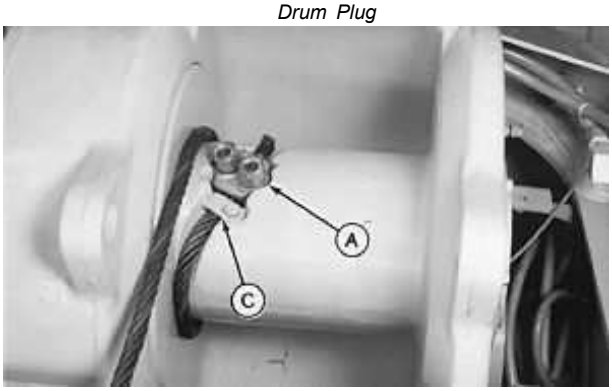
- **First Method—Breakaway Anchor:**

1. Attach a ferrule or cable clamp (A) to end of cable.
2. Wrap cable around the drum and slide the ferrule or cable clamp under the cable and into slot in drum and secure with tab (C).

A—Ferrule or Cable Clamp
B—Drum Plug
C—Tab

T7347AS —UN—27SEP90

Drum Plug



T7382AH —UN—03OCT90

Cable Clamp and Tab

Continued on next page

TX,35,RR,798 -19-07JAN12-1/3

Courtesy of Machine.Market

- **Second Method—Fixed Anchor:**

1. Remove drum plug.
2. Thread cable up through small hole and wrap cable around wedge (A). Insert cable back down through lower hole and pull wedge into drum (B).

- **Third Method:**

IMPORTANT: If you unwind cable below one turn on drum, cable will come off drum.

1. Remove drum plug (B).

CAUTION: Prevent possible injury from cable wire. Wear gloves when handling cable to protect hands from cable wire cuts. DO NOT guide cable on winch with your hands.

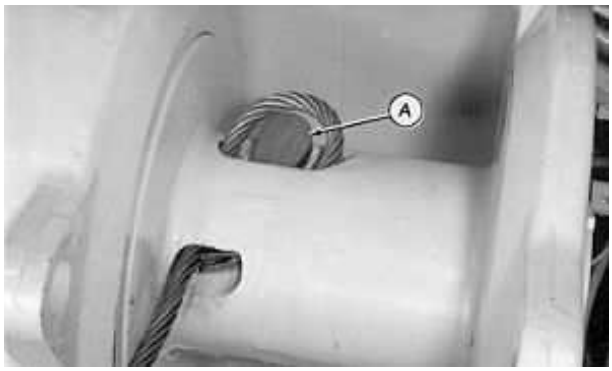
2. Thread cable up through small hole and insert cable back down through lower hole. Pull loop into drum.
3. Adjust free spool drag to operator's preference. See Winch Free Spool Drag Adjustment in this section.

NOTE: Factory free spool drag setting was done without cable; adjust free spool drag to operator's preference when cable is added.

A—Wedge

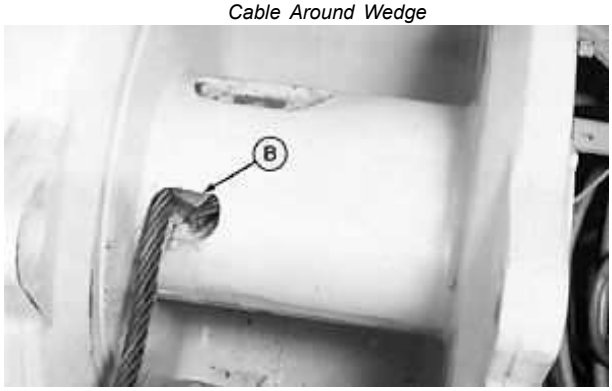
B—Drum

B—Drum Plug



T7382AK —UN—03OCT90

Cable Around Wedge



T7382AJ —UN—03OCT90

Drum

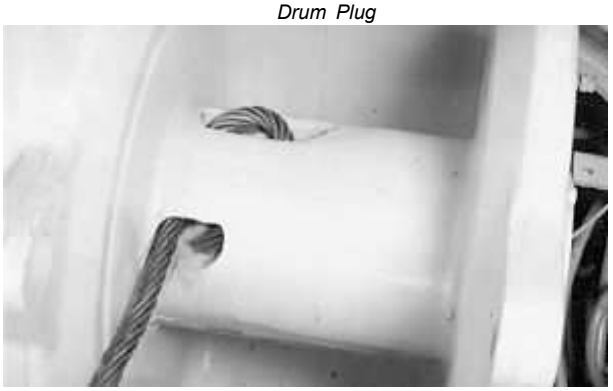
Continued on next page

TX,35,RR,798 -19-07JAN12-2/3

Courtesy of Machine.Market

T7347AS —UN—27SEP90

Drum Plug



T7382AI —UN—03OCT90

Loop in Drum

TX,35,RR,798 -19-07JAN12-3/3

Courtesy of Machine.Market

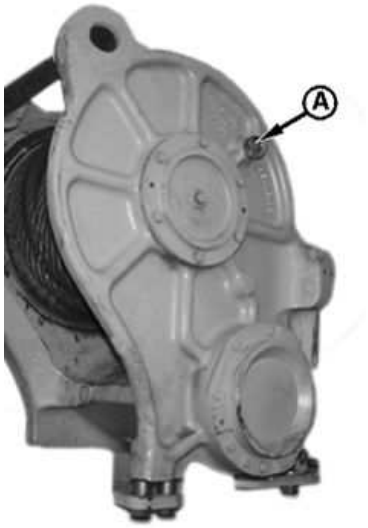
TX,35,RR,798 -19-07JAN12-4/3

Winch Free Spool Drag Adjustment

The winch drum drag can be adjusted to operator's preference.

1. Start engine.
2. Lower equipment to ground.
3. Engage park brake.
4. Place winch control handle in FREE SPOOL position.
5. Loosen nut (A).
6. Adjust slotted shaft to desired winch drum drag.
7. Tighten nut.

A—Nut



T118240B —UN—12NOV98

Winch (right side)

TX,35,RR4679 -19-10JAN12-1/1

Courtesy of Machine.Market

Loading Machine on a Trailer

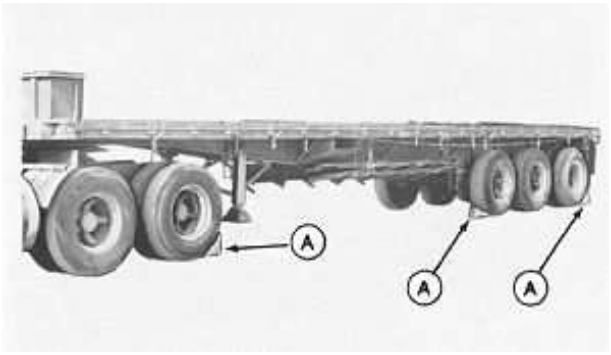
1. Keep the trailer bed clean.
2. Put chock blocks (A) against truck wheels.
3. Use a ramp or loading dock. Ramps must be strong enough, have a low angle, and be of correct height.
4. Fasten seat belt before starting engine.
5. Load and unload the machine on a level surface.

⚠ CAUTION: Prevent possible injury from unexpected machine movement. Whenever possible, back the machine onto the trailer to prevent possible tipping.

6. Drive the machine onto the ramps squarely.
7. The centerline of the machine should be over the centerline of the trailer.
8. Lower all equipment onto blocks.
9. Move transmission control lever to N.
10. Move park lock lever to lock position.

IMPORTANT: To avoid damage to turbocharger (if equipped), run engine at 1600 rpm no load for two minutes.

11. Run engine at 1600 rpm no load for 2 minutes.
12. Rotate engine speed control knob counterclockwise to slow idle position.



T87155 —UN—09NOV88

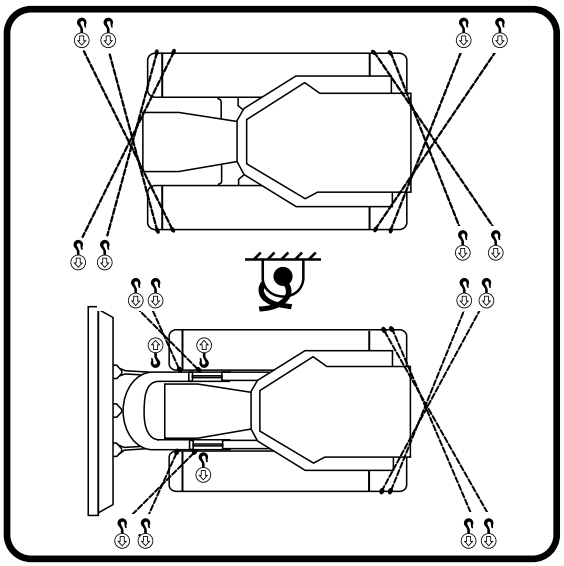
A—Chock Blocks

13. Turn key switch to OFF. Stop engine.
14. Remove key from switch.
15. Release hydraulic pressure by moving control lever until equipment does not move.
16. Turn battery disconnect switch off.
17. Cover exhaust opening to prevent entry of wind and water.

HG31779,0000368 -19-14JAN08-1/2

IMPORTANT: Fasten chains or cables to machine frame or track chain links. Do not place chains or cables over or against hydraulic lines or hoses.

18. Fasten each corner of the machine to the trailer with a chain or cable.
    - Front: Use towhook eye on bottom of the machine frame front end.
    - Side: Use inside edge of track shoe.
    - Rear: Use outer edge of track shoe or drawbar (if equipped).



T200748 —UN—07JUN04

HG31779,0000368 -19-14JAN08-2/2

Courtesy of Machine.Market

Releasing Park Brake to Tow the Machine

SPECIFICATIONS	
Brake Circuit Pressure	1379—2758 kPa 13.79—27.58 bar 200—400 psi
Multi-function Valve Lock Nut Torque	79 N·m 58 lb-ft

SERVICE EQUIPMENT AND TOOLS
JT03029 Plug
AM102420 Male Quick Coupler
AM102487 Female Quick Coupler
PD36BTL15UF Adapter
38H1023 Tee
38H1415 Cap
38H1067 Adapter

This procedure is used to release the park brakes for towing the machine.

NOTE: The tee assembly used to release the brakes is made from the parts listed in the Service Equipment and Tools.

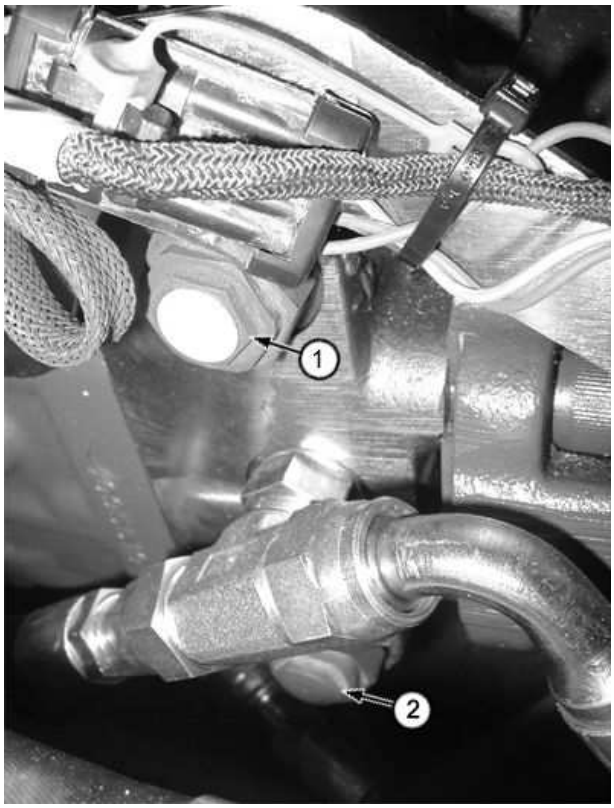
1. Remove rubber mat and floor plate from operator's station.

NOTE: Multi-function valves can be turned out using a 1 1/4 in. socket and a flexible head ratchet. Engine does not have to be running to tow machine.

NOTE: The bottom multi-function valves are in the reverse side of the closed loop circuit and must be loosened to tow the machine in forward. Likewise, the top multi-function valves are in the forward side of the closed loop circuit and must be loosened to tow the machine in reverse.

2. **TO TOW MACHINE FORWARD** both front and rear pump bottom multi-function relief valves (1) MUST be turned out (counterclockwise) 1/2 to 1 turn and blade must be raised off the ground. (If engine will crank but will not start, blade can be raised by cranking engine while holding blade raise function on control valve.)

   TO TOW MACHINE IN REVERSE both front and rear pump top multi-function valves (2) MUST be turned out (counterclockwise) 1/2 to 1 turn.



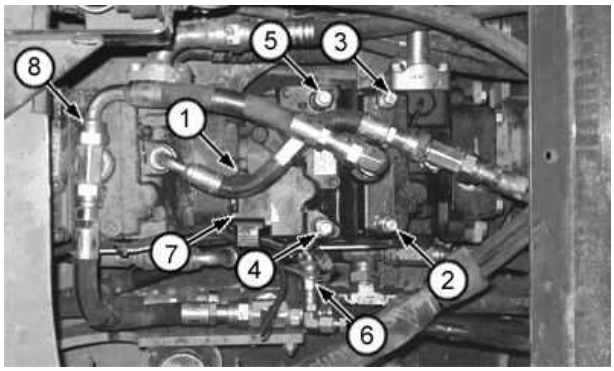
T158857C —UN—14JUN04

1— Top Multi-function Valve **2— Bottom Multi-function Valve**

TE14778,000002F -19-28MAY10-1/4

3. Disconnect quick coupler (6) from rear pump.

1— Pressure Control Pilot (PCP) Internal Adjustment Port
2— Reverse Servo Test Port
3— Forward Servo Test Port
4— Reverse Pump Displacement Control Valve (PDCV) Test Port
5— Forward Pump Displacement Control Valve (PDCV) Test Port
6— Park Brake Quick Coupler
7— Pressure Control Pilot (PCP) Manual Override Lever
8— Rear Pump Drain Line



T198205A —UN—01MAR04

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TE14778,000002F -19-28MAY10-2/4

Courtesy of Machine.Market

4. Install tee assembly using fittings (as necessary).
5. Install tee assembly using fittings (as necessary).
   a. Press SDM MENU button until “Machine Settings” appears. Press SELECT.
   b. Press NEXT until “Brake Mode” appears. Press SELECT.
   c. Press NEXT until “Tow” appears. Press SELECT.

NOTE: TOW will allow the machine to be towed without automatically applying the brakes (hill hold disabled).

6. Note pressure in brake circuit.
   a. Press SDM MENU button until “Diagnostic” appears. Press SELECT.
   b. Press NEXT until “Live Valves” appears. Press SELECT.
   c. Press NEXT until “Pressures” appears. Press SELECT.
   d. Press NEXT until “Trans Charge Oil” appears. Press SELECT.

NOTE: “Trans Charge Oil” will display pressure seen in the brake circuit.

7. Put park lock lever in DOWN position.

NOTE: The brakes initially start to release at approximately 1034 kPa (10.34 bar) (150 psi) and are fully released at approximately 1310 kPa (13.10 bar) (190 psi). The pressure can be monitored with the park lock lever down on the charge pressure gauge on the TCU.

IMPORTANT: Release brakes using port-a-power with a MINIMUM pressure of 1378 kPa (13.79 bar) (200 psi) and a MAXIMUM pressure of 2758 kPa (27.58 bar) (400 psi). DO NOT exceed the limits of the charge pressure gauge on TCU.

8. Pressurize brake circuit to specification.

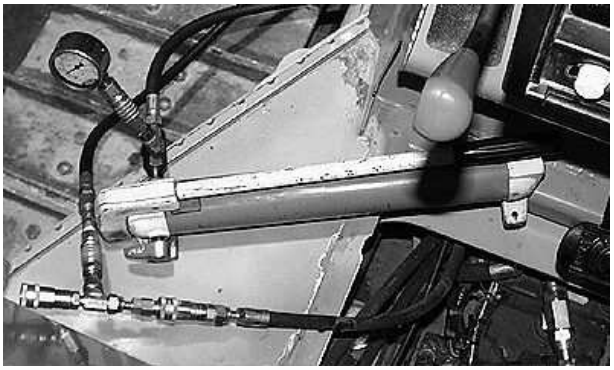
Specification	
Brake Circuit—Pressure	1379—2758 kPa 13.79—27.58 bar 200—400 psi

⚠ CAUTION: Prevent possible injury from unexpected machine movement. Place blocks at front and rear of tracks and secure machine to prevent it from rolling.

Do not allow an operator on the machine being towed unless the operator can control the steering and brakes.

IMPORTANT: DO NOT tow machine faster than 1.6 km/h (1 mph) (646 motor rpm max) for 10 minutes or not to exceed 305 m (1000 ft) of total tow distance. Failure to do this may result in extensive machine damage.

T200902A —UN—14JUN04



T119229B —UN—22DEC98

4— Plug
5— Male Quick Coupler
6— Female Quick Coupler
7— Adapter
8— Tee
9— Not Used
10— Cap
11— Adapter

9. Tow machine.

NOTE: Brake pressure will degrade due to internal brake valve leakage. Brake pressure will fall quickly from 2068 kPa (20.68 bar) (300 psi), however, the brake pistons won't need to be pumped up again until pressure drops below 1241 kPa (12.41 bar) (180 psi).

Continued on next page

TE14778,000002F -19-28MAY10-3/4

Courtesy of Machine.Market

10. Tighten multi-function valve lock nut to specification.

Specification	
Multi-function Valve Lock Nut—Torque	79 N·m 58 lb-ft

TE14778,000002F -19-28MAY10-4/4

Standard Display Monitor (SDM) Main Menu

The Main Menu provides the capability to select the next submenus. The Main Menu is accessed by pressing the MENU button. The submenus under Main Menu include:

1. Codes menu allows service personnel or operator to view active or stored diagnostic trouble codes.
2. Machine Settings menu allows the operator to make changes to various operating characteristics of the machine.
3. Diagnostic menu provides a limited set of tools, and is intended to be used by service personnel and machine operator for diagnostic and troubleshooting functions.
4. Monitor menu allows the operator to make changes to various operating characteristics of the monitor.

VD76477,0001361 -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Codes

Press the MENU button to display the Main Menu.

Codes will be highlighted. Press the SELECT button to display the Codes submenu.

The submenus under Codes include:

1. Active Codes
2. Stored Codes

Use the NEXT button to navigate to desired submenu. Press the SELECT button to display that submenu.

VD76477,0001362 -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Codes—Active Codes

This submenu displays the diagnostic trouble codes (DTCs) that are currently active on the machine. As the DTCs are resolved or fixed, the code will be removed from the active code list.

The source controller of the fault (ECU, EHC, SDM, or TCU) will be displayed, followed by the service code.

Use the NEXT button to navigate to a DTC and press SELECT to view the text description of the DTC.

Use the BACK button to return to the list of active codes.

VD76477,0001363 -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Codes—Stored Codes

The Stored Codes submenu will display up to 20 of the latest Diagnostic Trouble Codes (DTCs) that have occurred on the machine. Each diagnostic trouble code will be saved in the order it occurred. If 20 codes exist and another DTC is present, the listing will be adjusted first in/first out.

The source controller of the fault (ECU, EHC, SDM, or TCU) will be displayed, followed by the service code.

Navigate to a DTC using the NEXT button and press SELECT to view the text description of the DTC.

Press SELECT again to view occurrences.

Use the BACK button to return to the list of DTCs.

VD76477,0001364 -19-28JAN10-1/1

Courtesy of Machine.Market

Standard Display Monitor (SDM) Main Menu—Machine Settings

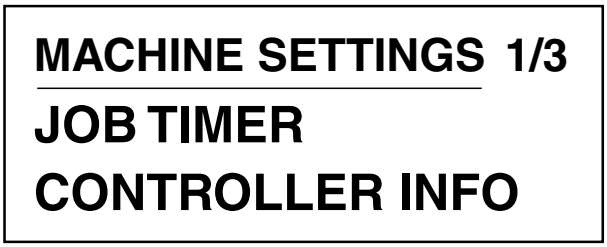
The Machine Settings menu allows the operator to make changes to various operating conditions of the machine. The last selection of the machine settings will be stored, and upon turning the ignition switch on, the last value will be retrieved.

Press NEXT at the Main Menu to highlight Machine Settings.

Press SELECT to display submenu.

The submenus under Machine Settings include:

1. Job Timer
2. Controller Info
3. Hydraulics will be an additional submenu if machine is equipped with electro-hydraulic controls.



TX1017224 —19—08JAN07

VD76477,00013A8 -19-14JAN08-1/1

Standard Display Monitor (SDM) Main Menu—Machine Settings—Job Timer

The job timer is a resettable meter that can be used to time tasks to the nearest tenth of an hour. The maximum capacity displayed is 999.9 hours. The job timer will stop and the value will be set to zero when it exceeds 999.9 hours. The job timer will run even when the Job Timer submenu is not active. The job timer value will be stored when the ignition switch is turned off.

At the Main Menu, press NEXT to highlight Machine Settings.

Job Timer will be highlighted. Press the SELECT button to display the Job Timer submenu.

The job timer submenu include the following options:

1. Show Timer-View the job time in hours.
2. Hide or Unhide-Hide or Unhide the job timer.
3. Reset Time-Navigate to the option Reset Time using the NEXT button, and press SELECT to reset. Press BACK to exit without resetting Job Timer.

VD76477,0001366 -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Machine Settings—Controller Info

This menu displays the software version numbers and hardware part numbers for various devices on the machine.

Navigate to the desired option using the NEXT button.

Press SELECT to view the software version number, then press NEXT to view the hardware part number.

The submenus under Controller Info include:

1. SDM
2. TCU
3. ECU
4. EHC will be an additional submenu if machine is equipped with electro-hydraulic controls.

VD76477,0001368 -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Machine Settings—Hydraulics (IGC Machines Only)

The Hydraulics menu will be displayed if machines is equipped with electro-hydraulics controls. This menu displays the hydraulic settings of machine.

Navigate to the Hydraulics submenu and press the SELECT button to display.

The Hydraulics submenu include the following options:

1. Lift
2. Power Down
3. Tilt Left
4. Tilt Right

The setting of each option can be set by the operator to low, medium or high.

VD76477,00013A7 -19-28JAN10-1/1

Courtesy of Machine.Market

Standard Display Monitor (SDM) Main Menu—Diagnostic

The Diagnostic menu provides a limited set of tools and is intended for use by service personnel and machine operators for diagnostic and troubleshooting functions.

Press NEXT at Main Menu to highlight Diagnostic.

Press SELECT to display submenu.

VD76477,000136A -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Diagnostic—Live Values

Press the MENU button to display Main Menu.

Use the NEXT button to navigate to the Diagnostic option.

Press SELECT to display Live Values.

This menu displays the live values that the controllers see.

1. Temps—Displays values for coolant, fuel, manifold air, transmission oil, and hydraulic oil temperatures.
2. Pressures—Displays values for transmission charge oil, engine oil, and fuel rail pressures.
3. Speeds—Displays values for engine, left hydrostatic motor, right hydrostatic motor, and crankshaft speed.

To display the values, navigate to the desired value using the NEXT button and press SELECT. Press the NEXT button to scroll through each live value within each category.

VD76477,000136B -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Monitor

The Monitor menu allows the operator to make changes to various monitor display options.

Press the MENU button to display Main Menu.

Use the NEXT button to navigate to Monitor.

Press SELECT to display submenu.

The submenus under Monitor include:

1. Units
2. Monitor Config
3. Contrast

VD76477,000136C -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Monitor—Units

Press the MENU button to display Main Menu.

Use the NEXT button to navigate to Monitor and press SELECT.

Units will be highlighted, press SELECT to display Units.

Use the NEXT button to navigate to English or Metric and press SELECT to choose desired setting.

VD76477,000136D -19-28JAN10-1/1

Standard Display Monitor (SDM) Main Menu—Monitor—Monitor Config

Press the MENU button to display Main Menu.

Use the NEXT button to navigate to Monitor and press SELECT.

Navigate to Monitor Config and press SELECT.

The machine configuration will be displayed on the monitor.

VD76477,0001371 -19-14JAN08-1/1

Courtesy of Machine.Market

Standard Display Monitor (SDM) Main Menu—Monitor—Contrast

Press the MENU button to display Main Menu.

Use the NEXT button to navigate to Monitor and press SELECT.

Navigate to Contrast and press SELECT.

Use the NEXT button to increase the contrast of the display window.

Use the BACK button to decrease the contrast of the display window.

Press the SELECT button to store setting.

VD76477,000136E -19-28JAN10-1/1

Courtesy of Machine.Market

Diesel Fuel

Consult your local fuel distributor for properties of the diesel fuel available in your area.

In general, diesel fuels are blended to satisfy the low temperature requirements of the geographical area in which they are marketed.

Diesel fuels specified to EN 590 or ASTM D975 are recommended. Renewable diesel fuel produced by hydrotreating animal fats and vegetable oils is basically identical to petroleum diesel fuel. Renewable diesel that meets EN 590 or ASTM D975 is acceptable for use at all percentage mixture levels.

Required Fuel Properties

In all cases, the fuel shall meet the following properties:

Cetane number of 43 minimum. Cetane number greater than 47 is preferred, especially for temperatures below –20°C (–4°F) or elevations above 1500 m (5000 ft.).

Cold Filter Plugging Point (CFPP) should be at least 5°C (9°F) below the expected lowest temperature or **Cloud Point** below the expected lowest ambient temperature.

Fuel lubricity should pass a maximum scar diameter of 0.45 mm as measured by ASTM D6079 or ISO 12156-1.

Diesel fuel quality and sulfur content must comply with all existing emissions regulations for the area in which the engine operates. DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

Sulfur content for Interim Tier 4 and Stage III B engines

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

Sulfur Content for Tier 3 and Stage III A Engines

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED
- Use of diesel fuel with sulfur content 1000–5000 mg/kg (1000–5000 ppm) REDUCES oil and filter change intervals.
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer

Sulfur Content for Tier 2 and Stage II Engines

- Use of diesel fuel with sulfur content less than 500 mg/kg (500 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 500–5000 mg/kg (500–5000 ppm) REDUCES the oil and filter change interval
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer

Sulfur Content for Other Engines

- Use of diesel fuel with sulfur content less than 5000 mg/kg (5000 ppm) is recommended.
- Use of diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm) REDUCES the oil and filter change intervals.

IMPORTANT: Do not mix used diesel engine oil or any other type of lubricating oil with diesel fuel.

IMPORTANT: Improper fuel additive usage may cause damage on fuel injection equipment of diesel engines.

DX,FUEL1 -19-11APR11-1/1

Lubricity of Diesel Fuel

Most diesel fuels manufactured in the United States, Canada, and the European Union have adequate lubricity to ensure proper operation and durability of fuel injection system components. However, diesel fuels manufactured in some areas of the world may lack the necessary lubricity.

IMPORTANT: Make sure the diesel fuel used in your machine demonstrates good lubricity characteristics.

Fuel lubricity should pass a maximum scar diameter of 0.45 mm as measured by ASTM D6079 or ISO 12156-1.

If fuel of low or unknown lubricity is used, add John Deere Fuel-Protect Diesel Fuel Conditioner (or equivalent) at the specified concentration.

Lubricity of Biodiesel Fuel

Fuel lubricity can improve significantly with biodiesel blends up to B20 (20% biodiesel). Further increase in lubricity is limited for biodiesel blends greater than B20.

DX,FUEL5 -19-14APR11-1/1

Courtesy of Machine.Market

Handling and Storing Diesel Fuel

CAUTION: Reduce the risk of fire. Handle fuel carefully. DO NOT fill the fuel tank when engine is running. DO NOT smoke while you fill the fuel tank or service the fuel system.

Fill the fuel tank at the end of each day's operation to prevent water condensation and freezing during cold weather.

Keep all storage tanks as full as practicable to minimize condensation.

Ensure that all fuel tank caps and covers are installed properly to prevent moisture from entering. Monitor water content of the fuel regularly.

When using biodiesel fuel, the fuel filter may require more frequent replacement due to premature plugging.

Check engine oil level daily prior to starting engine. A rising oil level may indicate fuel dilution of the engine oil.

IMPORTANT: The fuel tank is vented through the filler cap. If a new filler cap is required, always replace it with an original vented cap.

When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize the fuel and prevent water condensation. Contact your fuel supplier for recommendations.

DX,FUEL4 -19-14APR11-1/1

Courtesy of Machine.Market

Biodiesel Fuel

Biodiesel fuel is comprised of mono-alkyl 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.

All John Deere Engines with Exhaust Filter (Released 2011 and After)

While 5% blends (B5) are preferred, biodiesel concentrations up to a 20% blend (B20) in petroleum diesel fuel can be used. 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 approved fuel conditioners, which contain detergent and dispersant additives, are required when using B20, and are recommended when using lower biodiesel blends.

All John Deere Engines Excluding Exhaust Filter (Primarily Released Prior to 2012)

While 5% blends (B5) are preferred, biodiesel concentrations up to a 20% blend (B20) in petroleum diesel fuel can be used. 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 approved fuel conditioners, which contain detergent and dispersant additives, are required when using B20, 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 standards.

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. If used, 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 approved fuel conditioners 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 approved fuel conditioners are not used
- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures
- Possible compatibility issues with other materials (including copper, lead, zinc, tin, brass, and bronze) used in fuel handling equipment
- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to biodiesel

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DX,FUEL7 -19-29AUG12-1/2

Courtesy of Machine.Market

- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system
- Because biodiesel blends above B20 contain more ash, using blends above B20 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present)

IMPORTANT: Raw pressed vegetable oils are NOT acceptable for use as fuel in any concentration in John Deere engines. Their use could cause engine failure.

DX,FUEL7 -19-29AUG12-2/2

Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as cetane number, fuel type, sulfur content, water content, appearance, suitability for cold weather operations, bacteria, cloud point, acid number, particulate contamination, and whether the fuel meets specification.

Contact your John Deere dealer for more information on diesel fuel analysis.

DX,FUEL6 -19-14APR11-1/1

Courtesy of Machine.Market

Minimizing the Effect of Cold Weather on Diesel Engines

John Deere diesel engines are designed to operate effectively in cold weather.

However, for effective starting and cold weather operation, a little extra care is necessary. The information below outlines steps that can minimize the effect that cold weather may have on starting and operation of your engine. See your John Deere dealer for additional information and local availability of cold weather aids.

Use Winter Grade Fuel

When temperatures fall below 0°C (32°F), winter grade fuel (No. 1-D in North America) is best suited for cold weather operation. Winter grade fuel has a lower cloud point and a lower pour point.

Cloud point is the temperature at which wax will begin to form in the fuel and this wax causes fuel filters to plug. **Pour point** is the lowest temperature at which movement of the fuel is observed.

NOTE: On average, winter grade diesel fuel has a lower Btu (heat content) rating. Using winter grade fuel may reduce power and fuel efficiency, but should not cause any other engine performance effects. Check the grade of fuel being used before troubleshooting for low power complaints in cold weather operation.

Air Intake Heater

An air intake heater is an available option for some engines to aid cold weather starting.

Ether

An ether port on the intake is available to aid cold weather starting.

CAUTION: Ether is highly flammable. Do not use ether when starting an engine equipped with glow plugs or an air intake heater.

Coolant Heater

An engine block heater (coolant heater) is an available option to aid cold weather starting.

Seasonal Viscosity Oil and Proper Coolant Concentration

Use seasonal grade viscosity engine oil based on the expected air temperature range between oil changes and a proper concentration of low silicate antifreeze as recommended. (See DIESEL ENGINE OIL and ENGINE COOLANT requirements in this section.)

Diesel Fuel Flow Additive

Use John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula), which contains anti-gel chemistry, or equivalent fuel conditioner to treat non-winter grade fuel (No. 2-D in North America) during the cold weather season. This generally extends operability to about 10°C (18°F) below the fuel cloud point. For operability at even lower temperatures, use winter grade fuel.

IMPORTANT: Treat fuel when outside temperature drops below 0°C (32°F). For best results, use with untreated fuel. Follow all recommended instructions on label.

BioDiesel

When operating with biodiesel blends, wax formation can occur at warmer temperatures. Begin using John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula) at 5°C (41°F) to treat biodiesel fuels during the cold weather season. Use B5 or lower blends at temperatures below 0°C (32°F). Use only winter grade petroleum diesel fuel at temperatures below -10°C (14°F).

Winterfronts

Use of fabric, cardboard, or solid winterfronts is not recommended with any John Deere engine. Their use can result in excessive engine coolant, oil, and charge air temperatures. This can lead to reduced engine life, loss of power and poor fuel economy. Winterfronts may also put abnormal stress on fan and fan drive components potentially causing premature failures.

If winterfronts are used, they should never totally close off the grill frontal area. Approximately 25% area in the center of the grill should remain open at all times. At no time should the air blockage device be applied directly to the radiator core.

Radiator Shutters

If equipped with a thermostatically controlled radiator shutter system, this system should be regulated in such a way that the shutters are completely open by the time the coolant reaches 93°C (200°F) to prevent excessive intake manifold temperatures. Manually controlled systems are not recommended.

If air-to-air aftercooling is used, the shutters must be completely open by the time the intake manifold air temperature reaches the maximum allowable temperature out of the charge air cooler.

For more information, see your John Deere dealer.

DX,FUEL10 -19-20APR11-1/1

Courtesy of Machine.Market

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual. Some John Deere brand coolants and lubricants may not be available in your location.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to both conventional and synthetic oils.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

Avoid mixing different brands or types of oils. Oil manufacturers blend base stock and additives to create their oils and to meet certain specifications and performance requirements. Mixing different oils can interfere with proper functioning of these formulations and degrade lubricant performance.

Consult your authorized John Deere dealer to obtain specific information and recommendations.

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Diesel Engine Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

John Deere Plus-50™ II oil is preferred.

John Deere Plus-50™ is also recommended.

Other oils may be used if they meet one or more of the following:

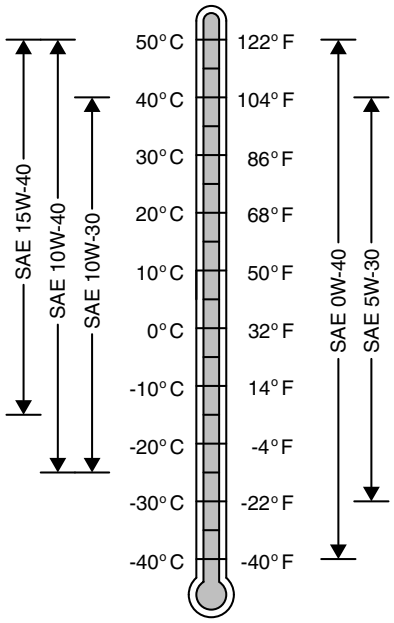
- John Deere Torq-Gard™
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- API Service Category CH-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E7
- ACEA Oil Sequence E6
- ACEA Oil Sequence E5
- ACEA Oil Sequence E4
- ACEA Oil Sequence E3

Multi-viscosity diesel engine oils are preferred.

Diesel fuel quality and fuel sulfur content must comply with all existing emissions regulations for the area in which the engine operates.

DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

Plus-50 is a trademark of Deere & Company
Torq-Gard is a trademark of Deere & Company



Oil Viscosities for Air Temperature Ranges

DX,ENOIL7 -19-11APR11-1/1

Courtesy of Machine.Market

Diesel Engine Oil and Filter Service Intervals

The oil and filter service intervals in the following table should be used as guidelines. Actual service intervals also depend on operation and maintenance practices. It is suggested to use oil analysis to determine the actual useful life of the oil and to aid in selection of the proper oil and filter service interval.

Oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel.

Engine Oil and Filter Service Intervals		
	Standard Drain Oil Pan	**Extended Drain Oil Pan**
Fuel Sulfur	Less than 0.05% (500 mg/kg)	
Plus-50	375 hours	500 hours
Other Oils	250 hours	250 hours
Fuel Sulfur	0.05 - 0.50% (500 - 5000 mg/kg)	
Plus-50	275 hours	400 hours
Other Oils	150 hours	150 hours
Fuel Sulfur	0.50 - 1.00% (5000 - 10 000 mg/kg)	
Plus-50	187 hours	250 hours
Other Oils	125 hours	125 hours
The service interval of “Other Oils” may be extended only if oil analysis is performed to determine the actual service life, to a maximum not to exceed that of Plus-50.		

Diesel fuel sulfur level will affect engine oil and filter service intervals. Higher fuel sulfur levels reduce oil and filter service intervals as shown in the table.

- Use of diesel fuel with sulfur content less than 0.05% (500 mg/kg) is strongly recommended.
- Use of diesel fuel with sulfur content 0.05% (500 mg/kg) to 0.50% (5000 mg/kg) may result in REDUCED oil and filter change intervals as shown in the table.
- BEFORE using diesel fuel with sulfur content greater than 0.50% (5000 mg/kg), contact your John Deere dealer.

IMPORTANT: When using biodiesel blends greater than B20, reduce the oil and filter service interval by 50% or monitor engine oil based on test results from Oilscan.

Oil types in the table include:

- John Deere Plus-50™ II and John Deere Plus-50 oils.
- “Other Oils” include John DeereTorq-Gard Supreme™, API CJ-4, API CI-4 PLUS, API CI-4, API CH-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, ACEA E4, or ACEA E3 oils.

NOTE: The 500 hour extended oil and filter change interval is only allowed if all the following conditions are met:

- *Engine equipped with an extended drain interval oil pan*
- *Use of diesel fuel with sulfur content less than 0.05% (500 mg/kg)*
- *Use of John Deere Plus-50™ II or John Deere Plus-50 oil*
- *Use of an approved John Deere oil filter*

Plus-50 is a trademark of Deere & Company
Torq-Gard Supreme is a trademark of Deere & Company

DX,ENOIL12 -19-03AUG09-1/1

Track Rollers, Front Idler and Carrier Roller Oil

Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere GEAR LUBRICANT (SAE 80W90)
- John Deere EXTREME-GARD

The following oils are recommended:

- API Service Classification GL-5 gear oil (SAE 80W90)
- Arctic oils such as (MIL-L-10324A) may be used at temperatures below –30°C (–11°F).

TX,45,RR5122 -19-14JAN08-1/1

Courtesy of Machine.Market

Transmission and Hydraulic Oil

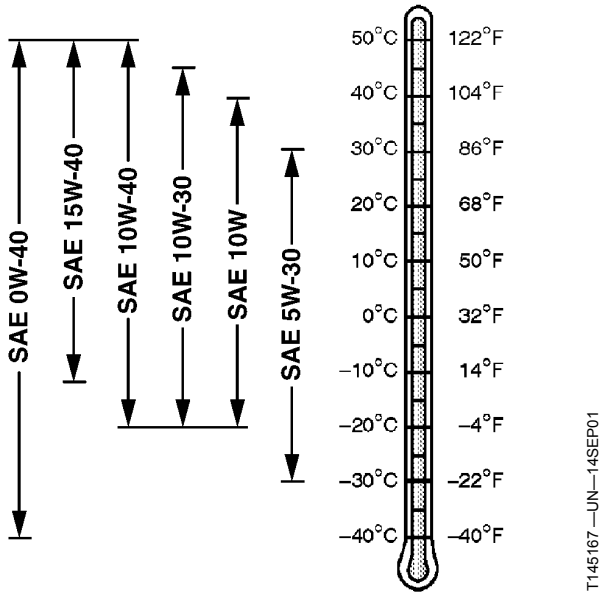
Use oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

Torq-Gard™

Other oils may be used if they meet one or more of the following:

API Service Classification CI-4



Torq-Gard is a trademark of Deere & Company

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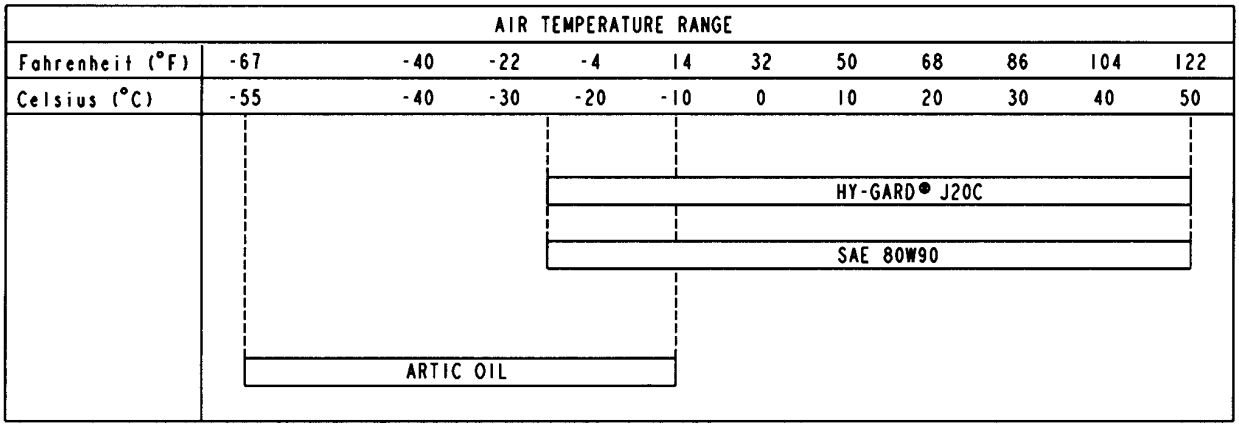
Courtesy of Machine.Market

Final Drive and Winch Oil



T8448AT —19—26JUN95

T8448AT

Depending on the expected air temperature range between oil changes, use oil viscosity shown on the chart above.

John Deere HY-GARD™ is preferred.

HY-GARD is a trademark of Deere & Company

Other oils may be used if they meet the following:

Arctic oils (such as Military Specifications MIL-L-46167B) may be used at temperatures below - 30°C (-22°F).

JH91824,00002FA -19-13OCT08-1/1

Courtesy of Machine.Market

Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere SD Polyurea Grease is preferred.

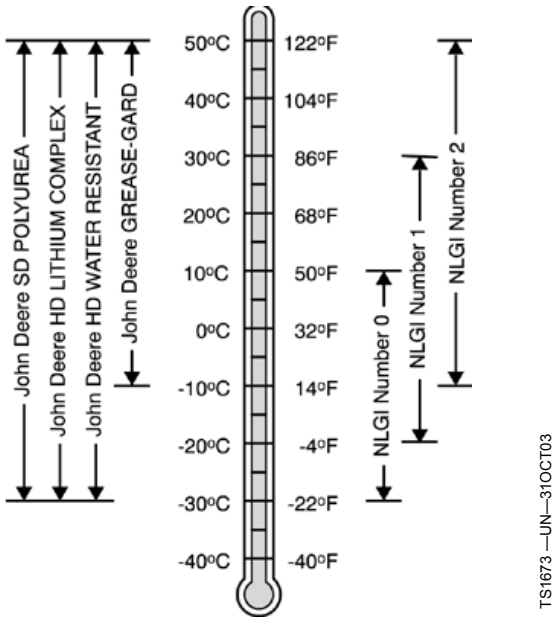
The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere HD Water Resistant Grease
- John DeereGREASE-GARD™

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB

IMPORTANT: Some types of grease thickeners are not compatible with others. Consult your grease supplier before mixing different types of grease.



Greases for Air Temperature Ranges

GREASE-GARD is a trademark of Deere & Company

DX,GREA1 -19-14APR11-1/1

Courtesy of Machine.Market

Heavy Duty Diesel Engine Coolant

The engine cooling system is filled to provide year-round protection against corrosion and cylinder liner pitting, and winter freeze protection to -37°C (-34°F). If protection at lower temperatures is required, consult your John Deere dealer for recommendations.

The following engine coolants are preferred:

- John Deere COOL-GARD™ II Premix
- John Deere COOL-GARD II PG Premix

Use John Deere COOL-GARD II PG Premix 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.

John Deere COOL-GARD II Premix, COOL-GARD II PG Premix, and COOL-GARD II Concentrate coolants do not require use of supplemental coolant additives.

Other Coolants

John Deere COOL-GARD II and COOL-GARD II PG coolants might not be available in the geographical area where service is performed.

If these coolants are unavailable, use a coolant concentrate or prediluted coolant intended for use with heavy duty diesel engines and with a minimum of the following chemical and physical properties:

- Is formulated with a quality nitrite-free additive package.
- 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
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion

The additive package must be part of one of the following coolant mixtures:

- ethylene glycol or propylene glycol base prediluted (40—60%) heavy duty coolant
- ethylene glycol or propylene glycol base heavy duty coolant concentrate in a 40—60% mixture of concentrate with quality water

Water Quality

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

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.

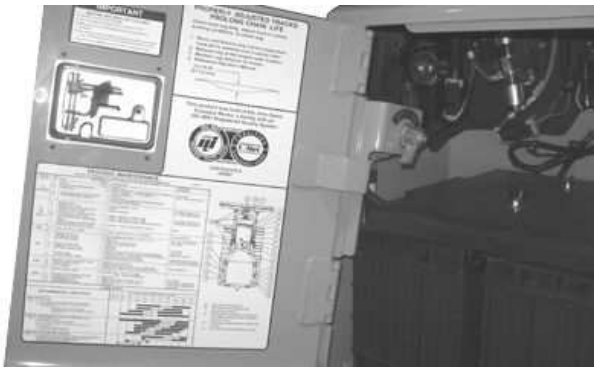
COOL-GARD is a trademark of Deere & Company

DX,COOL3 -19-14APR11-1/1

Courtesy of Machine.Market

Service Your Machine at Specified Intervals

Lubricate and make service checks and adjustments at intervals shown on the periodic maintenance chart and on the following pages.



TX10341135A —UN—08JAN08

450J Shown

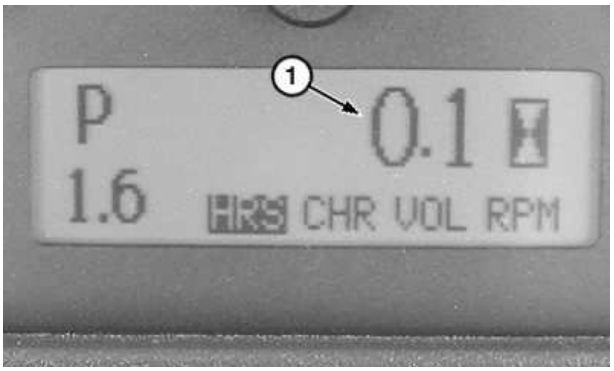
03T,50,M75 -19-14JAN08-1/1

Check the Hour Meter Regularly

Use the hour meter (1) to determine when your machine needs periodic maintenance.

Intervals on the periodic maintenance chart are for operating in normal conditions. If you operate your machine in difficult conditions, you should service it at SHORTER INTERVALS.

1— Hour Meter



TX10128665A —UN—05OCT06

Hour Meter

VD76477,00012B4 -19-14JAN08-1/1

Prepare Machine for Maintenance

1. Park machine on a level surface.
2. Turn key switch to OFF to stop engine. (If maintenance must be performed with engine running, do not leave machine unattended.)
3. Attach a "Do Not Operate" tag on the park lock lever.

CED,OUO1032,1025 -19-14JAN08-1/1

Fuel Tank

⚠ CAUTION: Handle fuel carefully. If the engine is hot or running, do not fill the fuel tank. Do not smoke while you fill fuel tank or work on fuel system.

To avoid condensation, fill the fuel tank at the end of each day's operation.

Specification

450J Fuel Tank—Capacity	178 L 47 gal

TS185 —UN—23AUG88

AM40430,000035C -19-10JUN11-1/1

Courtesy of Machine.Market

Fluid Analysis Program Test Kits and 3-Way Coolant Test Kit

Fluid Analysis Program Test Kits and the 3-Way Coolant Test Kit are John Deere fluid sampling products to help you monitor machine maintenance and system condition. The objective of a fluid sampling program is to ensure machine availability when you need it and to reduce repair costs by identifying potential problems before they become critical.

Engine, hydraulic, power train, and coolant samples should be taken from each system on a periodic basis, usually prior to a filter and/or fluid change interval. Certain systems require more frequent sampling. Consult your authorized John Deere dealer on a maintenance program for your specific application. Your authorized John Deere dealer has the sampling products and expertise to assist you in lowering your overall operating costs through fluid sampling.

Fluid Analysis Kits

TX1003513A —UN—20FEB06

AM40430,00002FE -19-19OCT11-1/1

Courtesy of Machine.Market

Service Intervals

Models: 450J, 550J, and 650J (S.N. —159986)	**PIN/Serial Number:**
Hour Meter Reading:	
SERVICE INTERVALS	
Service your 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	
Take fluid samples from each system as indicated on this form. The manufacturer of the fluid analysis kits will provide maintenance recommendations based upon the results of the fluid analysis and the operating information you supply. Regular fluid sampling extends the operational life of your machine.	
As Required	
□ Inspect belts	□ Check ball and socket joint
□ Check and adjust track sag	□ Clean undercarriage of debris around cylinders and tracks
□ Check engine air cleaner restriction indicator and replace elements if necessary	
Every 10 Hours or Daily	
□ Check coolant level at surge tank	□ Check winch oil (if equipped)
□ Check engine oil level	□ Check and clean dust unloader valve
□ Drain sediment from water separator bowl on primary fuel filter	□ Lubricate dozer linkage and blade socket
□ Check hydraulic system oil level	□ Lubricate adjustable pitch link
□ Check transmission oil level	
Every 50 Hours	
□ Lubricate ripper (if equipped)	
Initial Service—250 Hours[1]	
□ Drain and refill engine break-in oil and replace filter element	
[1]Perform initial service once after the first 250 hours of operation.	
Every 250 Hours	
□ Check final drives oil level	□ Take engine oil sample
□ Drain final fuel filter sediment	□ Check and adjust blade pivot clearance—if equipped
Every 500 Hours	
□ Drain and refill engine oil and replace filter element	□ Take transmission oil sample
□ Check air intake hoses	□ Take final drives oil sample
□ Replace primary and final fuel filter	□ Take hydraulic oil sample
□ Replace cold weather fuel filter (if equipped)	□ Take engine coolant sample
□ Check battery water level, clean and tighten terminals	□ Take diesel fuel sample
□ Replace winch oil filter (if equipped)	
Every 1000 Hours	
□ Clean engine crankcase vent tube	□ Replace engine air cleaner filter elements and dust unloader valve
□ Drain and refill final drives oil	□ Drain and refill winch oil and replace filter (if equipped)
□ Check coolant	□ Replace winch hydraulic reservoir breather filter (if equipped)
Every 2000 Hours	
□ Check and adjust engine valve lash	□ Drain and refill transmission system oil and replace filter
□ Drain and refill hydraulic system oil and replace filter	

CS58540,000006A -19-07FEB13-1/1

Courtesy of Machine.Market

Required Parts

REQUIRED PARTS						
Insure machine performance and availability; use only genuine John Deere parts. Verify part numbers are current and that any associated parts are also on-hand, i.e., filter O-rings.						
Description	**Part Number**	**Initial Service—250 Hours[1]**	**Every 250 Hours**	**Every 500 Hours**	**Every 1000 Hours**	**Every 2000 Hours**
Engine Oil Filter	RE504836	1		1	1	1
Final Fuel Filter	RE509031			1	1	1
Cold Weather Fuel Filter (if equipped)	RE516477			1	1	1
Winch Oil Filter (if equipped)	AT219961			1	1	1
Primary Fuel Filter						
• (S.N. —114080)	RE517181			1	1	1
• (S.N.114081—)	RE509036			1	1	1
Engine Air Cleaner Elements (450J)						
• Engine Air Filter Element—Primary	AT171853				1	1
• Engine Air Filter Element—Secondary	AT171854				1	1
• Engine Air Cleaner Dust Unloader Valve	R48568				1	1
Engine Air Cleaner Elements (550J & 650J)						
• Engine Air Filter Element—Primary	AT175344				1	1
• Engine Air Filter Element—Secondary	AT175345				1	1
• Engine Air Cleaner Dust Unloader Valve	T158495				1	1
Winch Hydraulic Reservoir Breather Filter (if equipped)	AT101565				1	1
Hydraulic Oil Filter	T175002					1
Transmission Oil Filter	T175002					1
Engine Rocker Arm Cover Gasket						
• Use with RE70401 Engine Rocker Arm Cover	R524480					1
• Use with RE69335 Engine Rocker Arm Cover	R123542					1
John Deere Plus-50™ II Oil						
• Engine	TY26674[2]	14.0 L (3.75 gal.)		14.0 L (3.75 gal.)	14.0 L (3.75 gal.)	14.0 L (3.75 gal.)
• Hydraulic	TY26674[2]					32.0 L (8.5 gal.)
• Transmission	TY26674[2]					43.0 L (11.0 gal.)
Final Drive Oil	TY6354[2]				17.0 L (4.5 gal.)	17.0 L (4.5 gal.)
Winch Oil (if equipped)	TY6354[2]				38.0 L (10.0 gal.)	38.0 L (10.0 gal.)
Coolant Extender	TY26603	As Required				
Fluid Analysis Kits[3]						
• Diesel Engine Oil	AT346594		1	1	1	1
• Hydraulic Oil	AT346594			1	1	1
• Transmission Oil	AT346594			1	1	1
• Final Drives Oil	AT346594			2	2	2
• Diesel Fuel	AT180344			1	1	1
• Engine Coolant	TY26873			1	1	1
• COOL-GARD™ II 3-Way Test Strips	TY26605			1	1	1

[1]Perform initial service once after the first 250 hours of operation.
[2]For recommended oil type and oil viscosities based on operating temperatures, see Maintenance—Machine. (Section 3-1.)
[3]Based on fluid analysis results, intervals may need to be adjusted for your operating conditions. Consult your local John Deere dealer.

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CS58540,000006E -19-05FEB13-1/1

Courtesy of Machine.Market

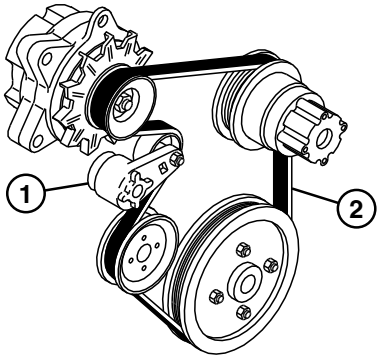
Inspect Serpentine Belt

Belt drive systems equipped with automatic belt tensioner (1) cannot be adjusted or repaired. The automatic belt tensioner is designed to maintain proper belt tension over the life of the belt.

A belt tension gauge will not give an accurate measure of the belt tension when automatic spring tensioner is used.

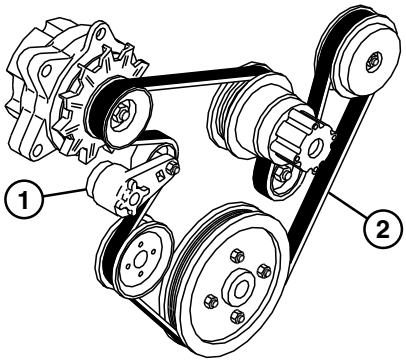
1. Start engine and run at fast idle.
2. Belt (2) must not emit a loud squealing sound at slow idle, fast idle, or rapid acceleration. If belt produces a squealing sound under any of these conditions, see your authorized dealer. If belt does not produce a squealing sound, proceed to next step.
3. Turn on air conditioning (if equipped) and lights. If belt produces a squealing sound under any of these conditions, see your authorized dealer. If belt does not produce a squealing sound, proceed to next step.
4. Visually inspect belt for wear, cracks, or fraying. If belt shows signs of excessive wear, see your authorized dealer.

1— Automatic Belt Tensioner **2— Belt**



TX1136899 —UN—22MAY13

Belt Routing



TX1136897 —UN—22MAY13

Belt Routing with Air Conditioning

KR46761,000092A -19-23MAY13-1/1

Courtesy of Machine.Market

Check Track Sag

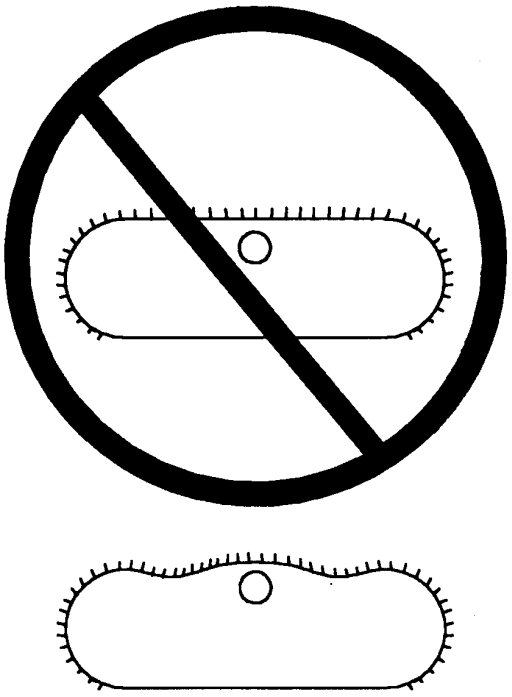
Maintaining the proper amount of track sag is the single most important adjustment the operator can make. Tight tracks can reduced the amount of wear life by more than 50% over tracks which are properly maintained at 51 mm (2 in.) of sag. Tight tracks increase the loading on the undercarriage components and accelerate the wear rate. Track sag should be adjusted as the soil conditions change. See Track Sag General Information. (Section 4-1.)

1. Position track so that a track pin is centered over the carrier roller.
2. Measure sag of track between carrier roller and front idler from the top of track grouser (A) to a straight edge (B). If adjustment is needed, see Adjust Track Sag in this section.

Specification

Track Sag—Distance..... 51 ± 6 mm
2 ± 0.250 in.

A—Grouser **B—Straight-Edge**



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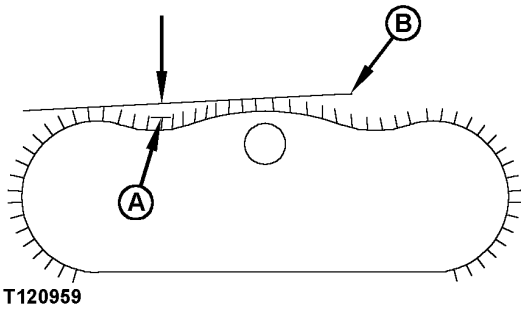

T120959

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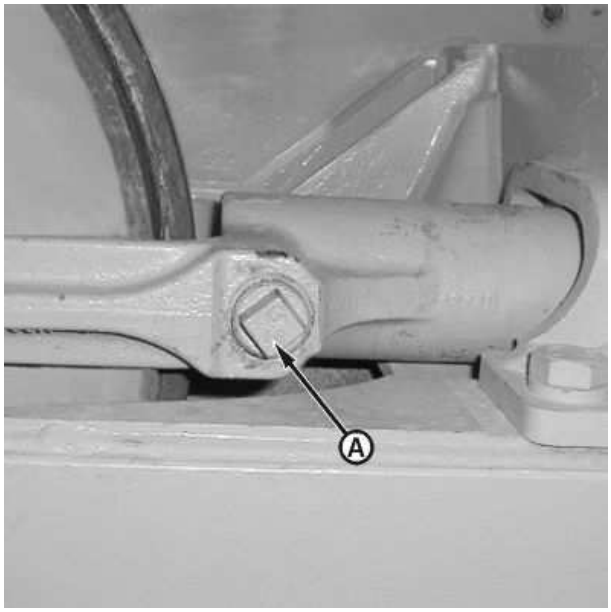
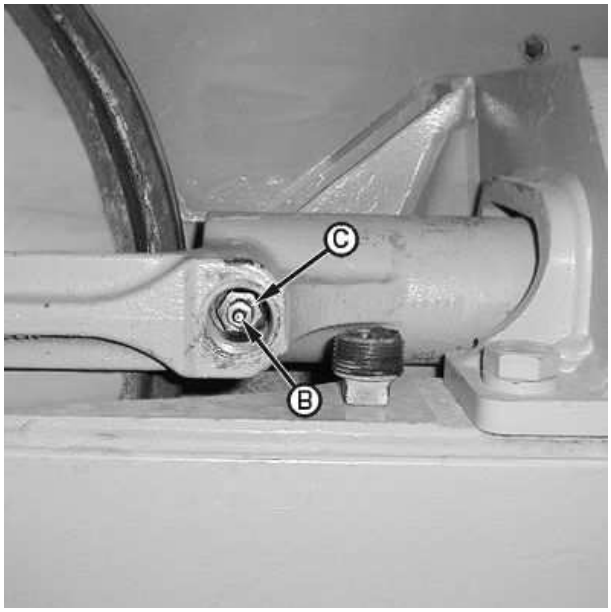
Courtesy of Machine.Market

Adjust Track Sag



T118011B —UN—11NOV98

Access Plug



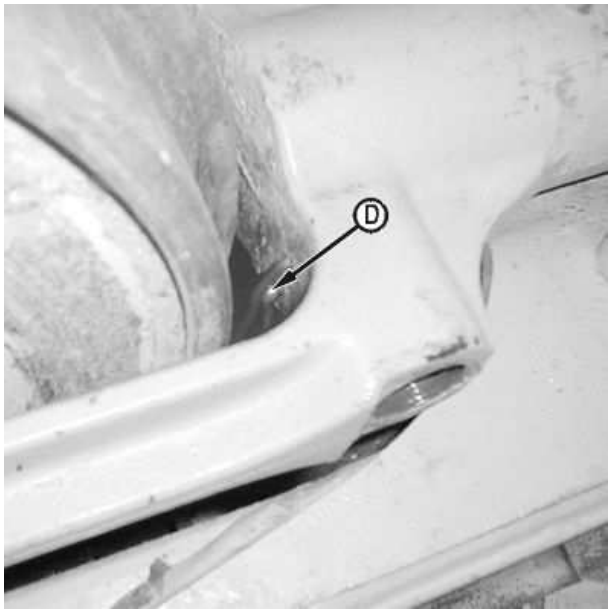
T118012B —UN—01DEC98

Grease Fitting

CAUTION: Prevent possible injury from high pressure grease. Grease for track adjuster cylinder is under high pressure. Never remove grease fitting to release the grease. If grease does not escape immediately from vent hole when fitting has been loosened, slowly drive unit in forward and reverse until grease escapes. DO NOT disassemble parts unless you know the correct procedure and have correct tools. (See your authorized dealer.)

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.

1. Remove access plug (A).
2. To decrease track sag:
   a. Apply grease to grease fitting (B) using a 55 200 kPa (550 bar) (8000 psi) capacity grease gun.
   b. After adding grease, move machine forward and reverse to allow track adjuster cylinder to fully adjust.
   c. Check sag again. See Check Track Sag in this section.
3. To increase track sag:
   a. Loosen fitting (C) (not the grease fitting), one to two turns counterclockwise to release grease through vent hole (D).



T118013B —UN—11NOV98

Vent Hole

A—Access Plug
B—Grease Fitting
C—Fitting
D—Vent Hole

   b. Tighten fitting.
   c. Move machine forward and reverse to allow track adjuster cylinder to fully adjust.
   d. Check sag again. See Check Track Sag in this section.
4. Install plug.

Continued on next page

CED,OUO1032,1028 -19-05FEB13-1/2

Courtesy of Machine.Market

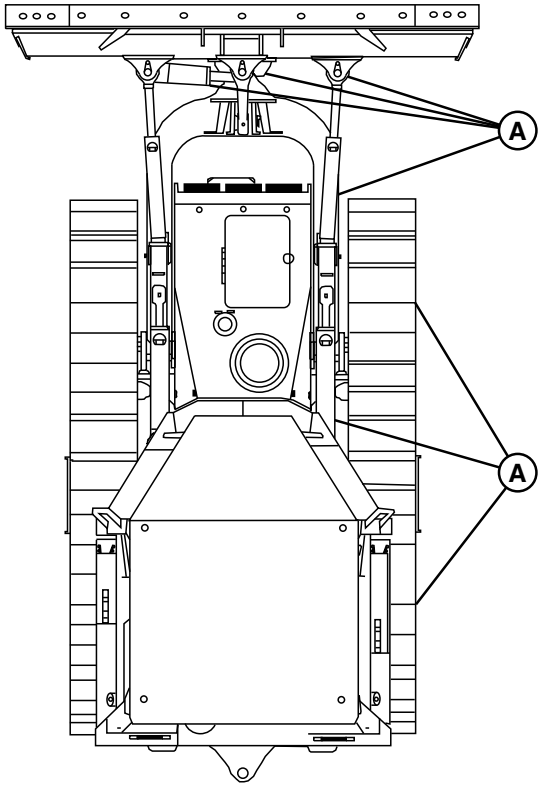
CED,OUO1032,1028 -19-05FEB13-2/2

Operating in Mud or Snow

IMPORTANT: Prevent machine damage to cylinders and tracks due to debris. If operating crawler in deep mud or snow, clean the undercarriage around the machine (A) daily. Remove debris and mud from around the cylinders and tracks to prevent machine damage.

Use appropriate tools to remove mud and debris, being extra aware of material that may freeze around cylinders.

A—Undercarriage



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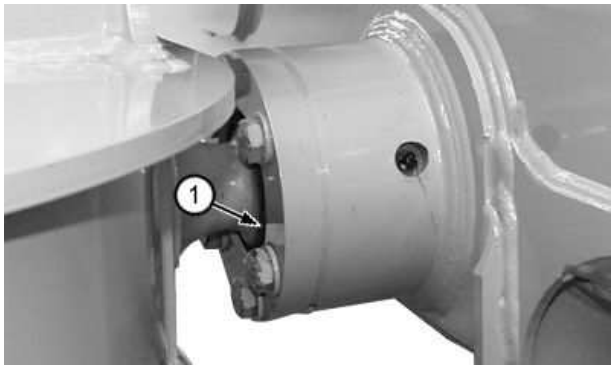
Check Blade Ball and Socket Joint

Check ball and socket joint (1) for wear or excessive play.

If there is excessive play or wear, see Check and Adjust Blade Pivot Clearance—If Equipped. (Section 3-7.)



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Courtesy of Machine.Market

Inspecting and Cleaning Dusty Primary Element

IMPORTANT: A damaged or dirty element may cause engine damage.

Install new elements:

- **If the element shows damage and needs to be replaced.**
- **If element is visibly dirty and will not clean.**
- **After 1000 hours service or annually.**

DO NOT clean a secondary element. Install a new element carefully centering it in the canister.

1. Tap element with the palm of your hand, NOT ON A HARD SURFACE.

⚠ CAUTION: Prevent possible injury from flying chips. Reduce compressed air 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.

2. If this does not remove dust, use compressed air under 210 kPa (2.1 bar) (30 psi).

NOTE: Air restriction indicator will not signal correctly if an element has a break or is not correctly sealed in air cleaner housing. Throw away element that has the slightest damage. If gasket is broken or missing, install a new element.

T90684 —UN—10NOV88

T47764 —UN—09NOV88

3. Direct air up and down the pleats from inside to outside. Be careful not to make a break in the element.

CC28724,0000160 -19-16SEP09-1/1

Courtesy of Machine.Market

Check Coolant

CAUTION: Prevent possible injury from hot spraying fluids. Shut off engine. Remove filler cap only when cool enough to touch with bare hands. Slowly loosen cap to relieve pressure before removing completely.

TS281 —UN—15APR13

IMPORTANT: John Deere COOL-GARD™ II Coolant Extender does not protect against freezing. Coolant extender prevents rust, scale, and liner cavitation.

NOTE: Check coolant every 1000 hours or 1 year, or when replacing 1/3 or more of coolant. Add coolant extender as indicated by John Deere COOL-GARD™ II test strips.

1. Remove surge tank cap (1) and test coolant solution. Use one of the following kits to check coolant:

   - **COOL-GARD II Test Strips**
     Coolant test strips provide an effective method to check freeze point and additive levels of engine coolant. See your authorized dealer for COOL-GARD II test strips and follow instructions on kit.

2. Add John Deere COOL-GARD II Coolant Extender as necessary. Follow instructions on container for amount.

Specification	
Cooling System—Capacity	16 L 17 qt

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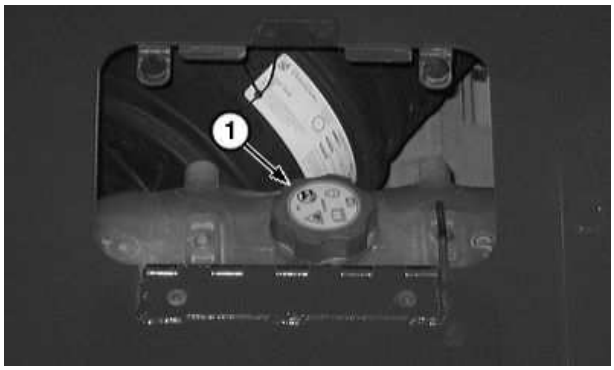

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1— Surge Tank Cap

3. Install surge tank cap.

CC28724,0000036 -19-20MAR13-1/1

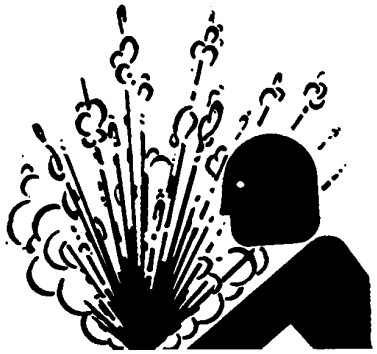
Courtesy of Machine.Market

Check Coolant Level

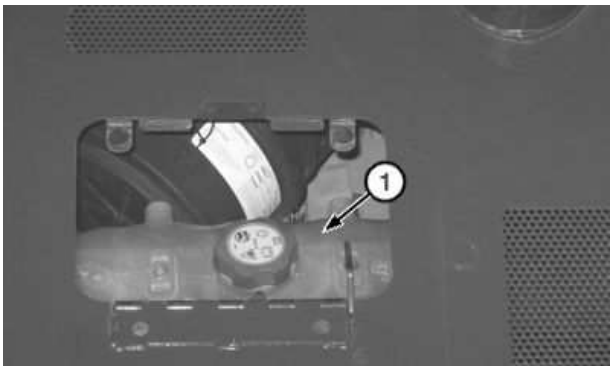
CAUTION: Prevent injury from hot spraying coolant. Do not remove radiator filler cap unless engine is cool. Loosen cap slowly to the stop. Release all pressure before removing cap.

1. With the engine cold, coolant level must be between HOT and COLD marks on surge tank (1).
2. If coolant is below the COLD mark, add coolant to the surge tank.
3. If there is no coolant in the surge tank, add coolant to the surge tank and the radiator.

1— Surge Tank



T6464AV —UN—18OCT88



TX1034228A —UN—08JAN08

450J Shown

CED,OUO1032,774 -19-28JAN08-1/1

Courtesy of Machine.Market

Check Engine Oil Level

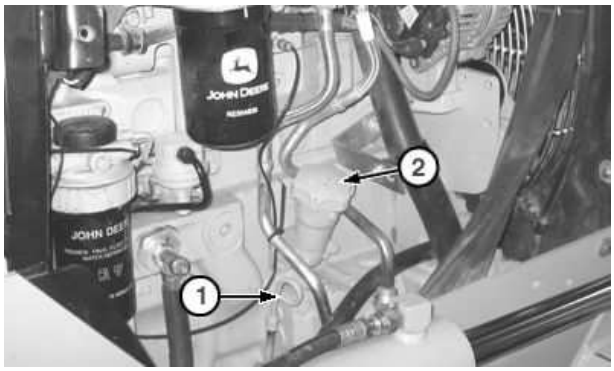
IMPORTANT: Do not run engine when oil level is below the ADD mark.

The most accurate oil level reading is obtained when the engine is cold before starting the engine for the day's operation.

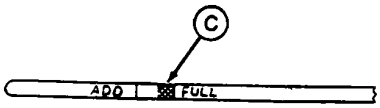
1. Park machine on a level surface.
2. Engage the park lock lever in the up LOCKED position.
3. Make sure dipstick is fully seated.
4. Remove dipstick (A) to check oil level.

   BEFORE THE ENGINE IS STARTED: The engine is full when oil level is in the cross-hatch area (C). It is acceptable to run the engine when the oil level is above the ADD mark.

   AFTER THE ENGINE HAS BEEN RUN: Allow the oil to drain into the oil pan for 10 minutes before checking the oil level. Ten minutes after shutdown the engine oil level must be above the ADD mark.
5. If necessary, remove the filler cap (B) to add oil. See Diesel Engine Oil. (Section 3-1.)
6. Check oil on dipstick again.



TX1034231A —UN—08JAN08



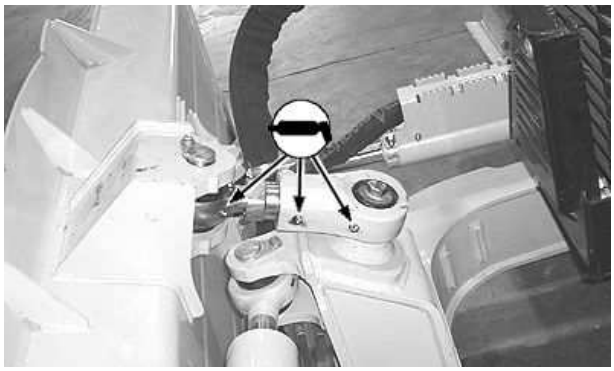
RG5421 —UN—15DEC88

1— Dipstick
2— Filler Cap
C—Dipstick Cross-Hatch Area

03T,60,K96 -19-14JAN08-1/1

Grease Adjustable Pitch Link

1. Lower blade to ground.
2. Using a grease gun, lubricate each grease fitting until grease escapes at joints. See Grease. (Section 3-1.)



T200336B —UN—14JUN04

HG31779,000002F -19-14JAN08-1/1

Courtesy of Machine.Market

Drain Water Separator Sediment

1. Loosen drain valve (A). Drain liquid for several seconds or until water and sediment is removed.
2. Tighten drain valve.
3. Bleed fuel system. See Replace Primary Fuel Filter. (Section 3-7.)

A—Drain Valve

T118231C —UN—25NOV98

HG31779,00000CF -19-03SEP02-1/1

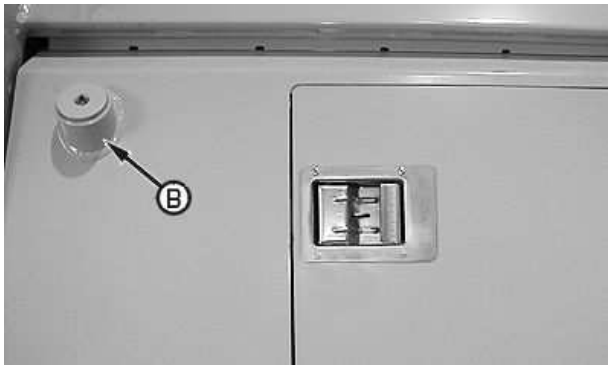
Check Hydraulic Oil Level

IMPORTANT: DO NOT operate engine without oil in reservoir.

1. Park machine on level surface and lower all equipment to ground.
2. Turn key switch to OFF.
3. The hydraulic oil reservoir, fill port and sight glass are located on the right side of machine. Oil must be between ADD and FULL marks in sight glass tube (A).
4. If necessary, remove cap and add oil to fill port (B). See Transmission and Hydraulic Oil. (Section 3-1.)
5. Check O-ring on cap before installing.

A—Sight Glass Tube **B—Fill Port**

T117862B —UN—26OCT98



T117860B —UN—26OCT98

CED,OUO1032,1029 -19-05FEB13-1/1

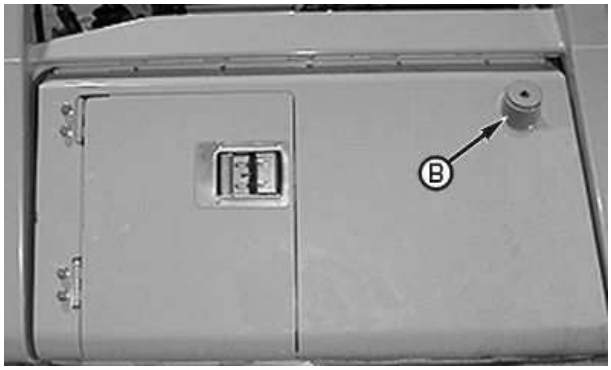
Courtesy of Machine.Market

Check Transmission Oil Level

1. Park machine on level ground.
2. Turn key switch to OFF.
3. The transmission oil reservoir, fill port and sight glass are located on the left side of the machine. Oil must be within the ADD mark and FULL mark on sight glass tube (A).
4. If necessary, add oil to fill port (B). See Transmission and Hydraulic Oil. (Section 3-1.)
5. Check O-ring on cap before installing.

A—Sight Glass Tube **B—Fill Port**

T117861B —UN—26OCT98



T117892B —UN—26OCT98

03T,60,K97 -19-05FEB13-1/1

Clean Dust Unloader Valve

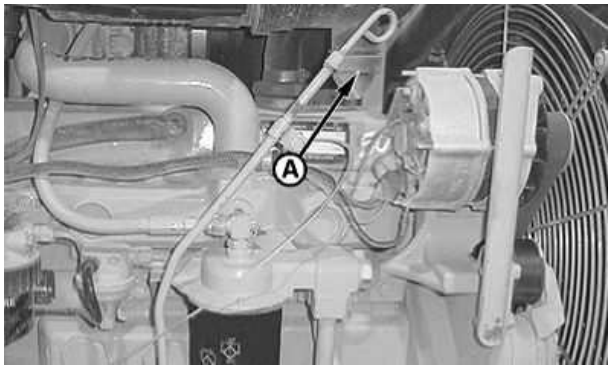
IMPORTANT: A missing, damaged or hardened dust unloader valve will make engine air screen ineffective, causing very short element life. Valve should suck closed above 1/3 engine speed.

It is not necessary to remove engine side shield to clean dust unloader valve. The valve can be accessed through service panel in hood.

Squeeze dust valve (A) to remove dust from air cleaner.

If operating in high dust conditions, clean dust valve every couple of hours of operation to release dust.

A—Dust Valve



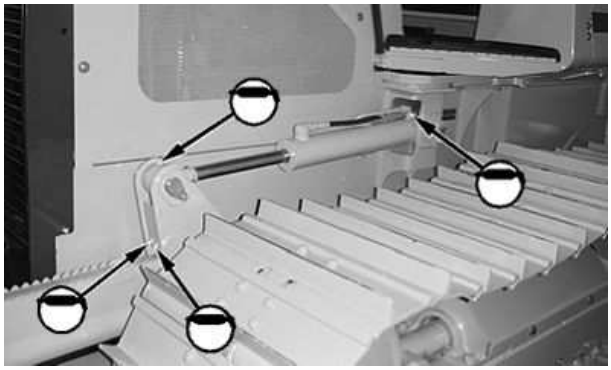
T117894B —UN—03NOV98

Hood and Side Shield Removed for Clarity of Photo

CED,OUO1032,1032 -19-14JAN08-1/1

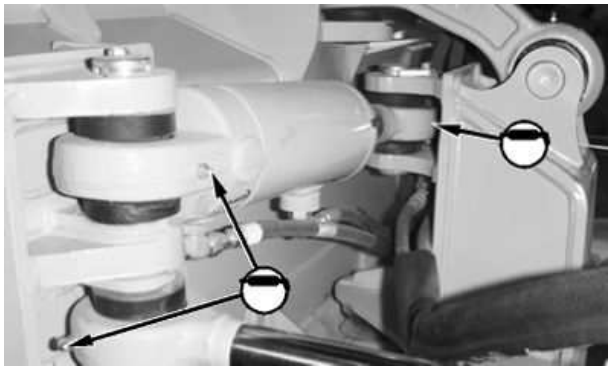
Courtesy of Machine.Market

Grease Dozer Linkage and Blade Socket



T118192B —UN—12NOV98

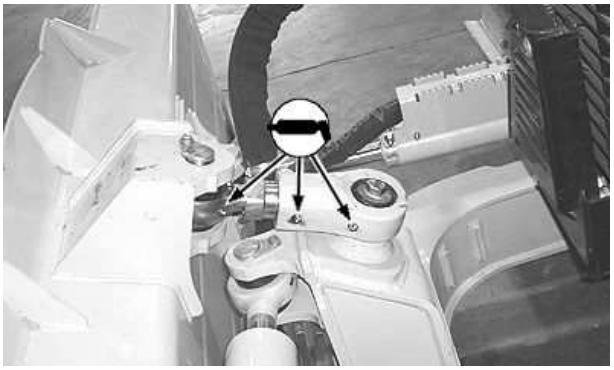
Eight Points



T118190B —UN—12NOV98

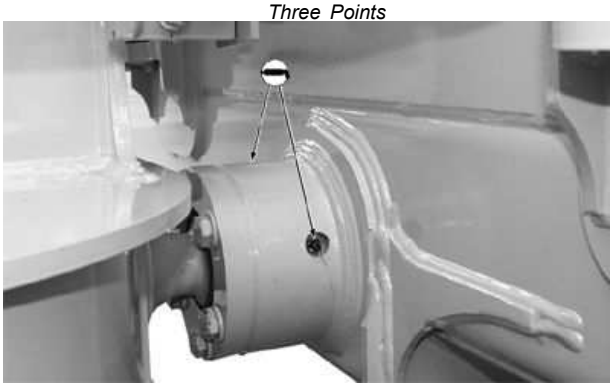
Four Points

Using a grease gun, lubricate each grease fitting until grease escapes at joints. See Grease. (Section 3-1.)



T200336B —UN—14JUN04

Three Points



T158711B —UN—28AUG02

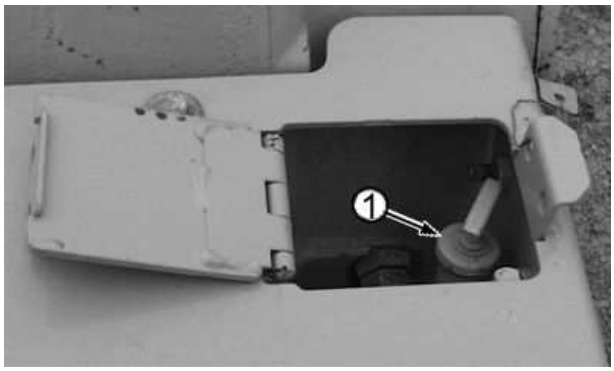
Two Points

CED,OUO1032,1123 -19-14JAN08-1/1

Courtesy of Machine.Market

Check Winch Oil—If Equipped

1. Park machine on level surface and lower all equipment to ground.
2. With engine running, move engine speed lever to fast idle. Make sure transmission control lever is in neutral position (N).
3. Loosen winch oil dipstick (1) and remove.
4. Check dipstick.
5. Oil must be between ADD and FULL marks on dipstick.
6. If necessary, add oil. See Final Drive and Winch Oil. (Section 3-1.)



T133718B —UN—07SEP00

Winch Oil Dipstick

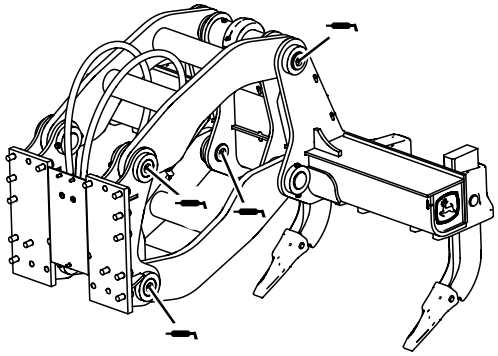
1— Winch Oil Dipstick

VD76477,00013C6 -19-05FEB13-1/1

Courtesy of Machine.Market

Grease Ripper—If Equipped

Using a grease gun, lubricate each grease fitting until grease escapes at joints. See Grease. (Section 3-1.)



TX1032677 —UN—29NOV07

8 Points Total; 4 per side

OUT4001,0000025 -19-14JAN08-1/1

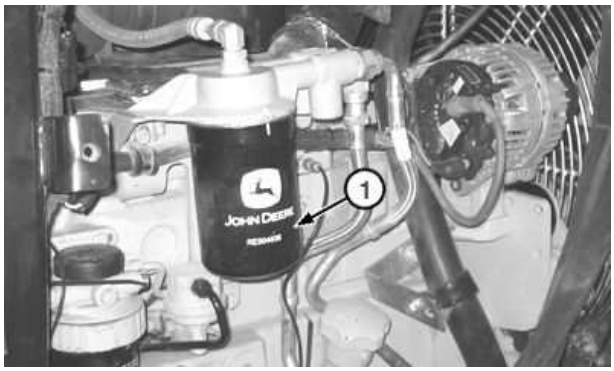
Courtesy of Machine.Market

Drain and Refill Engine Break-In Oil and Replace Filter

1. Run engine to warm oil. Stop engine.
2. Remove cap screws and remove oil pan access cover (located below engine).
3. Remove drain plug or open drain valve, if equipped, and allow oil to drain into a container. Dispose of waste oil properly.
4. Install drain plug.
5. Remove oil filter (1).
6. Apply thin film of oil to gasket of new filter.
7. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
8. Tighten 1/2 turn more.
9. Fill engine with oil. See Diesel Engine Oil. (Section 3-1.).

Specification

Engine Oil (Including Filter)—Capacity..... 15 L Approximate
3.9 gal Approximate



TX1034323A —UN—08JAN08

Engine Oil Filter

1— Oil Filter

10. Run engine for 2 minutes and then stop engine. Check for leaks around filter and drain plug. Tighten enough only to stop leaks.
11. Check oil level.

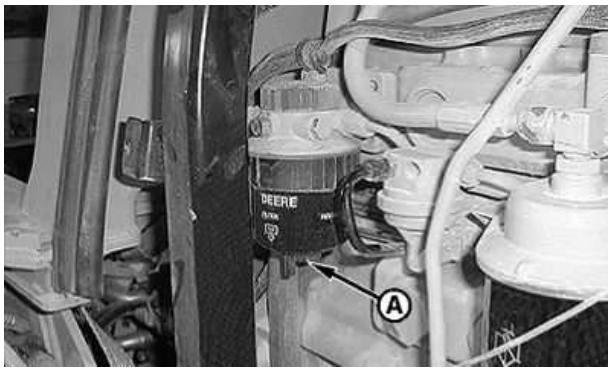
HG31779,000008C -19-05FEB13-1/1

Courtesy of Machine.Market

Drain Final Fuel Filter Sediment

1. Loosen drain valve (A). Drain liquid for several seconds or until water and sediment is removed.
2. Tighten drain valve.
3. Bleed fuel system. See Replace Final Fuel Filter. (Section 3-7.)

A—Drain Valve



T117912B —UN—02NOV98

CED,OUO1032,1173 -19-03SEP02-1/1

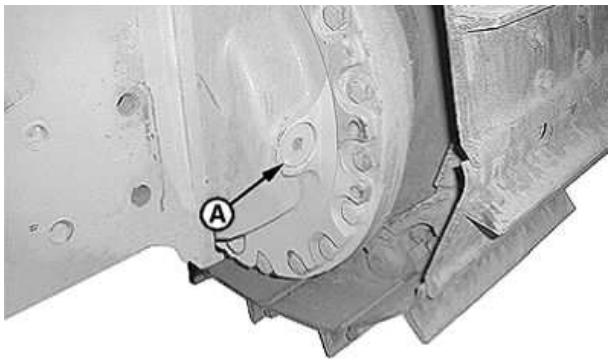
Check Final Drives Oil Level

1. Park machine on a level surface and turn engine off.
2. Remove oil level and filler plug (A). Oil MUST be within 13 mm (0.5 in.) of bottom of filler hole.

IMPORTANT: Avoid overheating and damage to components. Do not overfill final drives.

3. Add oil if needed. See Final Drive and Winch Oil. (Section 3-1.)
4. Install plug.

A—Filler Plug



T117889B —UN—03NOV98

Right Side Shown

CED,OUO1032,1034 -19-05FEB13-1/1

Courtesy of Machine.Market

Check and Adjust Blade Pivot Clearance—If Equipped

NOTE: Maintaining blade pivot clearance within specification extends the functional life of blade pivot (1) and prevents unwanted binding of blade pivot.

The blade pivot is located directly behind the blade. Shims are located between the blade pivot retainer cap (2 and 3) and blade pivot socket (4). Shims may be accessed by removing cap screws (5) from blade pivot retainer cap.

To measure blade pivot clearance:

1. With blade on ground, move machine forward 4.0 m (13.1 ft.).
2. Turn off engine.
3. Measure distance between blade pivot and retainer caps.
4. If distance is greater than specification, remove shims.

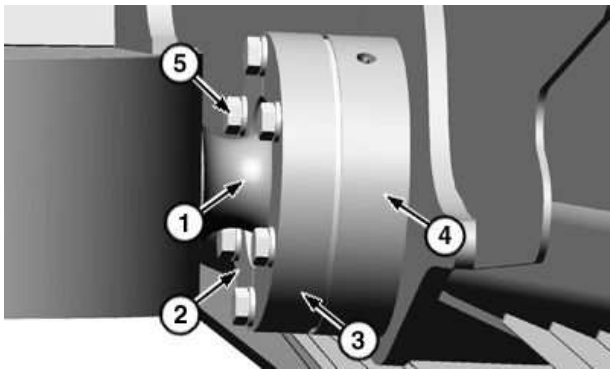
Specification

Blade Pivot
Clearance—Distance.....1.0—2.0 mm
0.04—0.08 in.

To remove shims:

CAUTION: Avoid personal injury from falling objects. The retainer cap is comprised of two parts. Use care when removing cap screws.

1. Loosen and remove cap screws.
2. Remove both sides of retainer cap.
3. Remove equal number of shims from both sides until clearance meets specification.



TX1123984A —UN—10OCT12

Blade Pivot

1— Blade Pivot
2— Blade Pivot Retainer Cap (left half)
3— Blade Pivot Retainer Cap (right half)
4— Blade Pivot Socket
5— Cap Screw (6 used)

Specification

Blade Pivot
Clearance—Distance.....1.0—2.0 mm
0.04—0.08 in.

4. Install and secure both sides of retainer caps.
5. Tighten cap screws to specification. See bolt and screw torque values in Miscellaneous—Machine. (Section 4-1.)

If blade pivot clearance is greater than specification and all shims have been removed, see your authorized dealer.

ER93822,000018F -19-21JAN13-1/1

Take Engine Oil Sample

See your authorized dealer.

OUT4001,000039B -19-14MAR12-1/1

Courtesy of Machine.Market

Drain and Refill Engine Oil and Replace Filter

1. Run engine to warm oil. Stop engine.
2. Remove cap screws and remove oil pan access cover (located below engine).
3. Remove drain plug or open drain valve, if equipped, and allow oil to drain into a container. Dispose of waste oil properly.
4. Install drain plug.
5. Remove oil filter (A).
6. Apply thin film of oil to gasket of new filter.
7. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
8. Tighten 1/2 turn more.
9. Fill engine with oil. See Diesel Engine Oil. (Section 3-1.)

Specification

Engine Oil (Including Filter)—Capacity..... 14 L Approximate
15 qt Approximate

T117875B —UN—03NOV98

A—Oil Filter

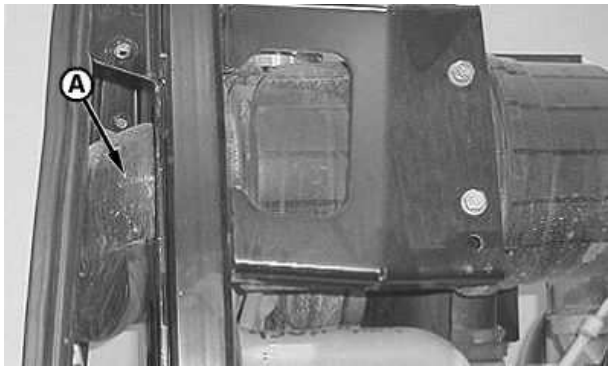
10. Run engine for 2 minutes and then stop engine. Check for leaks around filter and drain plug. Tighten enough only to stop leaks.
11. Check oil level.

HG31779,00000F7 -19-05FEB13-1/1

Check Air Intake Hose

1. Check hose (A) for cracks.
2. Check for loose hose clamps.
3. Replace damaged or missing parts.

A—Hose



T118663B —UN—02DEC98

Turbocharged Engine Shown

03T,80,K91 -19-05FEB13-1/1

Courtesy of Machine.Market

Replace Final Fuel Filter

1. Turn retaining ring (A) counterclockwise and remove filter element (B). Allow sediment to drain into a container.

NOTE: Dispose of waste properly.

2. Remove fuel drain knob (C) from filter element and install on new filter.
3. Clean filter base (D).

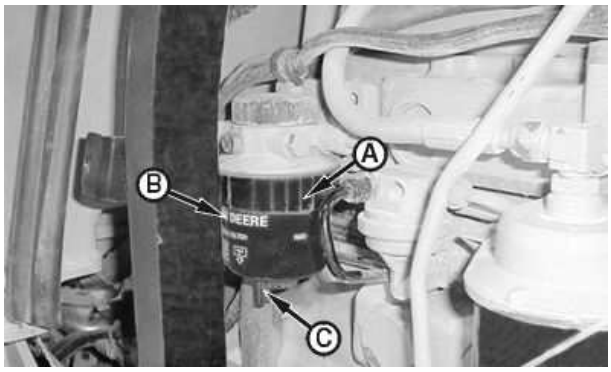
NOTE: Do not attempt to turn filter element into base.

4. Install new fuel element by aligning vertical locators (F) into slots (E) on filter base. Push filter element up firmly until filter snaps against base.
5. Turn retaining ring clockwise into filter base until retaining ring clicks tightly into place.
6. Loosen bleed screw (G) by turning knob counterclockwise.
7. Operate primer lever (H) until fuel flow from bleed screw is free of air bubbles.

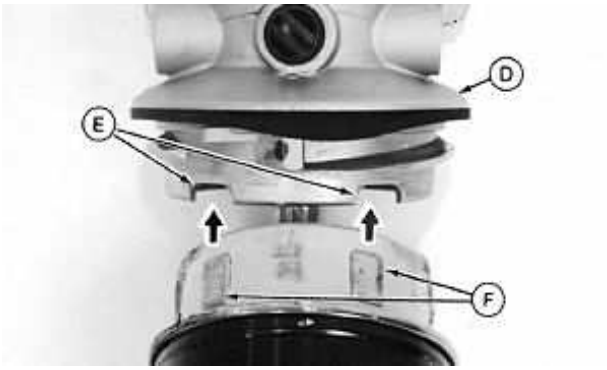
NOTE: If there is no fuel flow, push primer lever up and turn crankshaft using start motor to reposition camshaft. Repeat step 7.

8. Tighten bleed screw.
9. Push primer lever up as far as possible.

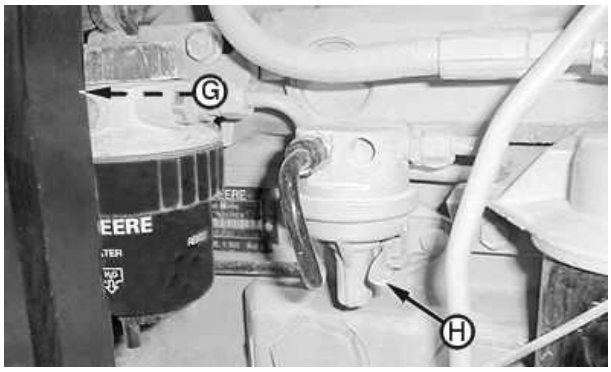
A—Retaining Ring
B—Filter
C—Drain Knob
D—Filter Base
E—Slots
F—Vertical Locators
G—Bleed Screw
H—Primer Lever



T117912C —UN—11NOV98



T7896AJ —UN—25NOV92



T118083B —UN—11NOV98

CED,OUO1032,1124 -19-28AUG02-1/1

Courtesy of Machine.Market

Replace Primary Fuel Filter

1. Thoroughly clean primary fuel filter and water separator assembly and surrounding area.
2. Connect a drain line (A) to filter drain adapters and drain all fuel from filters.
3. Firmly grasp the retaining ring and rotate it counterclockwise 1/4 turn. Remove ring with filter element (B).
4. Inspect filter mounting base for cleanliness. Clean as required.
5. Remove water separator bowl (C). Drain and clean separator bowl. Dry with compressed air.
6. Install water separator bowl onto new filter element. Tighten securely.

NOTE: The fuel filter must be indexed properly and the key on canister must be oriented in slot of mounting base for correct installation.

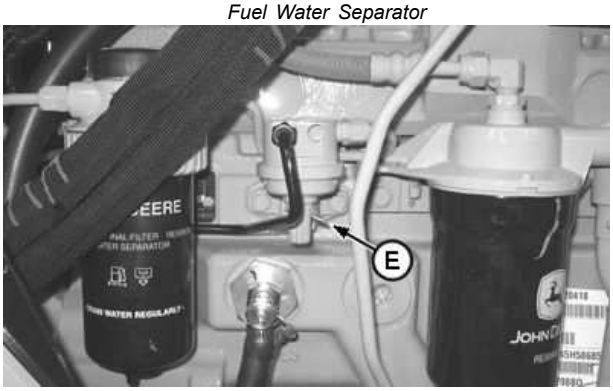
7. Thoroughly inspect filter base seal ring. Replace as needed.

NOTE: Fill the new filter with fuel prior to installation.

8. Install new filter element onto mounting base and position element using a slight rocking motion. Be sure element is properly indexed on mounting base.
9. Install retaining ring onto mounting base and tighten about 1/3 turn until ring “snaps” into the detent. DO NOT overtighten the retaining ring.
10. Open bleed screw (D) two full turns by hand.
11. Pump the mechanical pump (E) on the engine until a noticeable amount of fuel and air comes out of vent opening. Continue pumping and close vent screw when fuel starts to flow.

T118016B —UN—11NOV98

Fuel Water Separator



TX1009870A —UN—12JUL06

Mechanical Pump

A—Drain Line
B—Filter Element
C—Separator Bowl
D—Bleed Screw
E—Mechanical Pump

12. Pump the mechanical pump several times until resistance is felt. Continue pumping and open air bleed vent screw again.
13. Close air bleed vent screw and pump the mechanical pump several times until resistance is felt again.

VD76477,0000505 -19-05FEB13-1/1

Courtesy of Machine.Market

Check Battery Electrolyte Level and Terminals

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

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

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

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

Avoid the hazard by:

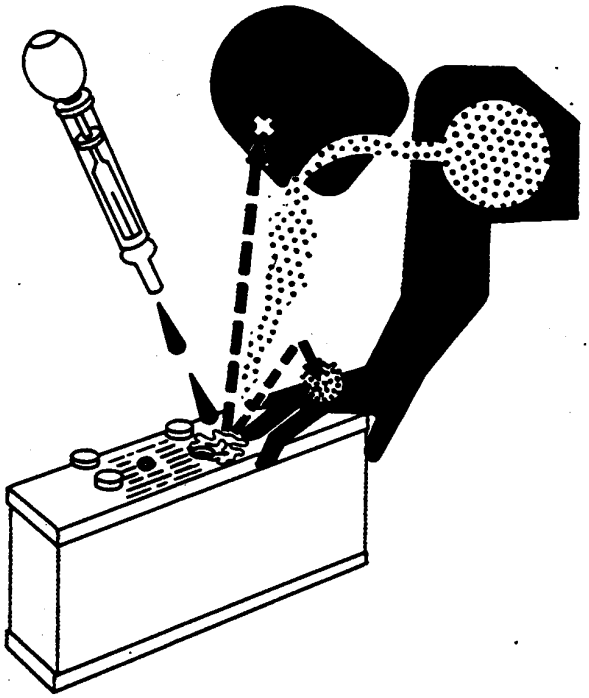
- **Filling batteries in a well-ventilated area.**
- **Wearing eye protection and rubber gloves.**
- **Avoiding breathing fumes when electrolyte is added.**
- **Avoiding spilling or dripping electrolyte**
- **Using proper jump start procedure.**

If you spill acid on yourself:

1. **Flush your skin with water.**
2. **Apply baking soda or lime to help neutralize the acid.**
3. **Flush your eyes with water for 10—15 minutes. Get medical attention immediately.**

If acid is swallowed:

1. **Drink large amounts of water or milk.**
2. **Then drink milk of magnesia, beaten eggs, or vegetable oil.**
3. **Get medical attention immediately.**



TS203 —UN—23AUG88

1. Remove hold-down clamps.
2. Remove battery covers.
3. Clean all excess dirt or debris from top of battery(s) before removing cell caps.

Continued on next page

TX,9015,RB21 -19-14JAN08-1/2

Courtesy of Machine.Market

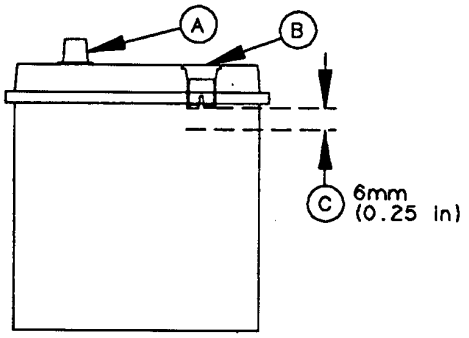
IMPORTANT: During freezing weather, batteries must be charged after water is added to prevent battery freezing. Charge battery using a battery charger or by running the engine.

4. Fill each cell to within specified range with distilled water. DO NOT overfill.

CAUTION: Battery gas can explode from sparks of battery causing personal injury. Always remove grounded (—) battery clamp first and replace it last.

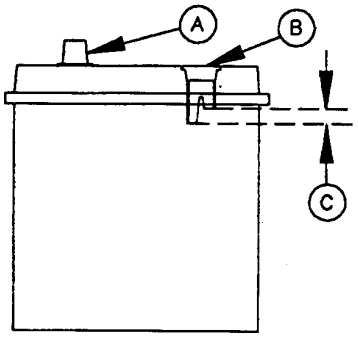
5. Disconnect battery clamps, grounded clamp first.
6. Clean battery terminals (A) and clamps with a stiff brush.
7. Apply lubricating grease around battery terminal base only.
8. Install and tighten clamps, grounded clamp last.
9. Install hold-down clamps.

A—Battery Terminal
B—Fill Tube
C—Electrolyte Level Range



T6996DB —UN—10FEB89

Single Level Fill Tube Application



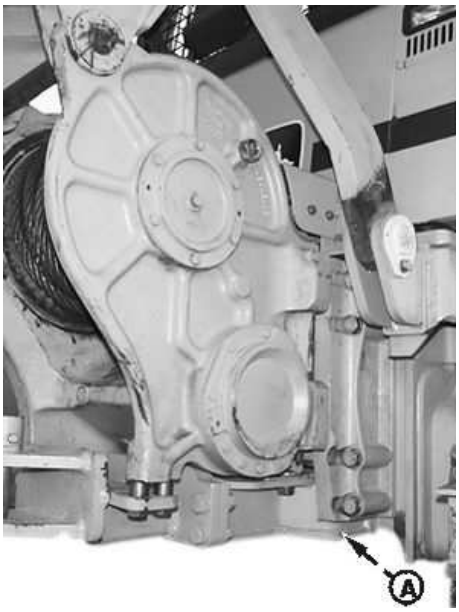
T6996DA —UN—10FEB89

Dual Level Fill Tube Application

TX,9015,RB21 -19-14JAN08-2/2

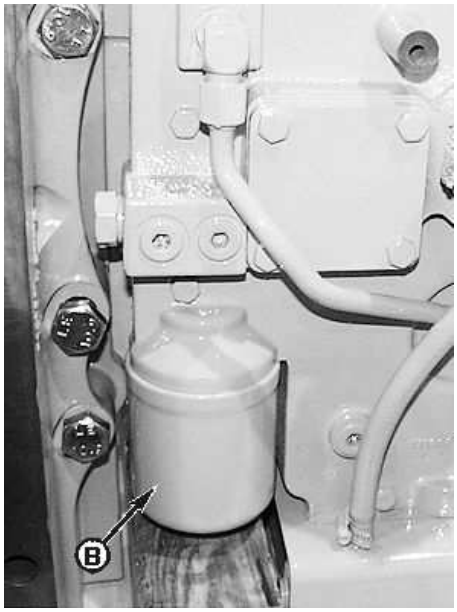
Courtesy of Machine.Market

Replace Winch Oil Filter—If Equipped



T118733B —UN—03DEC98

Winch Oil Filter Location



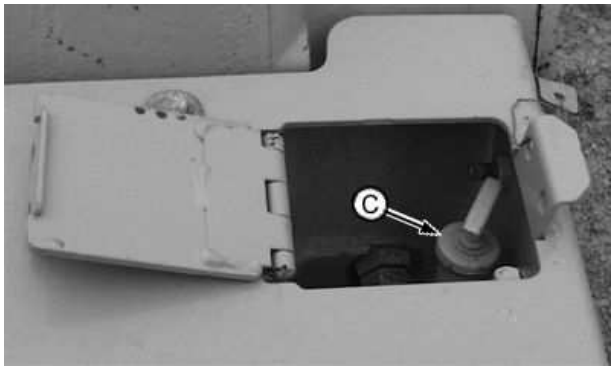
T118732C —UN—16DEC98

Winch Shown Removed for Clarity of Photo

1. The winch oil filter is located on right side between winch and crawler (A).
2. Remove three cap screws from oil filter access cover.

NOTE: The filter canister has a recessed 1/2 in. drive on bottom to assist removal of filter.

3. Remove oil filter access cover.
4. Remove filter (B) by turning counterclockwise.
5. Apply a thin film of oil to gasket of new filter.
6. Install new filter.
7. Install oil filter access cover with three cap screws.
8. Check winch oil. See Check Winch Oil—If Equipped. (Section 3-4.)



T133718E —UN—30AUG02

Dipstick Fill Port

A—Oil Filter Location
B—Filter
C—Dipstick Fill Port

HG31779,00000CE -19-05FEB13-1/1

Take Fluid Samples

See your authorized dealer for taking the following fluid samples:

- Hydraulic Oil
- Final Drive Oil
- Transmission Oil
- Coolant
- Diesel Fuel

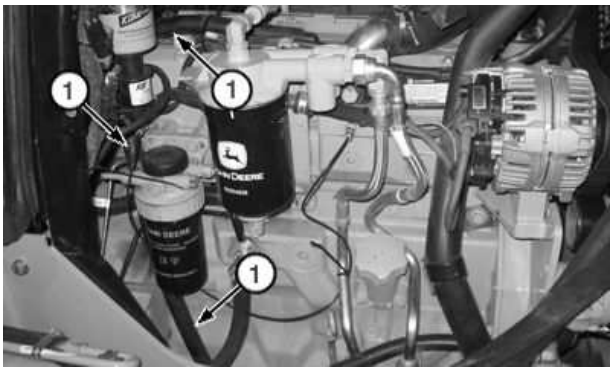
CS58540,000006B -19-24JUN10-1/1

Courtesy of Machine.Market

Clean Engine Crankcase Ventilation Tube

Remove tube (1). Clean and install.

1— Tube



TX1034222A —UN—08JAN08

Engine Crankcase Tube

TX,85,FF1956 -19-28JAN08-1/1

Change Final Drives Oil

1. Remove drain plug (B) on each side of machine.
2. Drain all oil. Allow oil to drain into a container. Dispose of waste oil properly.

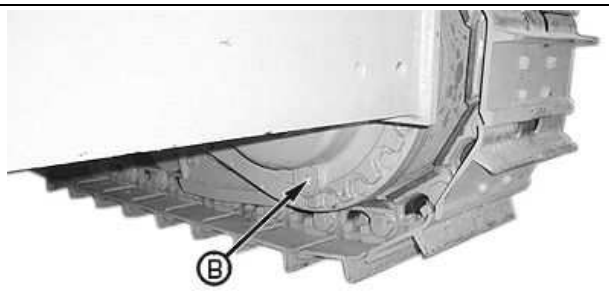
Specification	
Final Drives Oil (Each Side)—Capacity	6.6 L 7.0 qt

3. Install drain plugs.
4. Remove fill plugs (A).

IMPORTANT: Avoid overheating and damage to components. Do not overfill final drives.

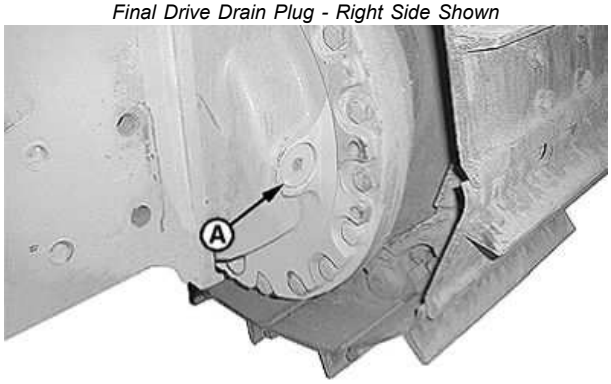
5. Fill housing with oil until oil flows from fill plug opening. See Final Drive and Winch Oil. (Section 3-1.)
6. Install fill plugs.

A—Fill Plug **B—Drain Plug**



T117898B —UN—05NOV98

Final Drive Drain Plug - Right Side Shown



T117889B —UN—03NOV98

Right Side Shown

TX,85,RR2733 -19-05FEB13-1/1

Courtesy of Machine.Market

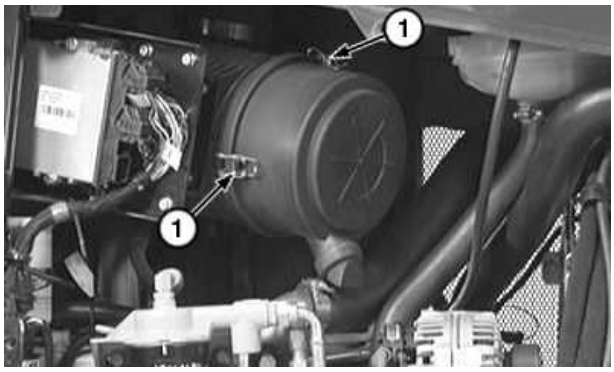
Replace Air Cleaner Elements

1. Unfasten latches (1). Remove cover.
2. Remove primary element (2).
3. Remove secondary element (3).
4. Clean air cleaner housing.

IMPORTANT: Do not install secondary element backward.

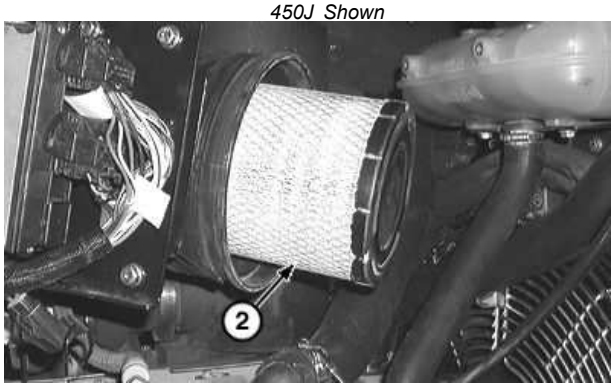
5. Install new elements. Make sure elements are fully seated into housing.
6. Install cover with the dust unloader valve in the 6 o'clock position. Latch three latches to secure cover.

1— Latch (3 used)
2— Primary Element
3— Secondary Element

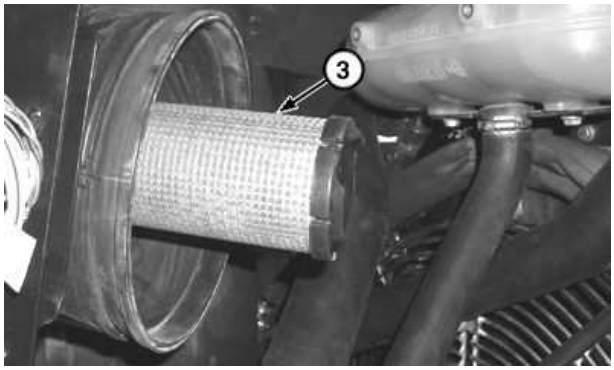


TX1034328A —UN—09JAN08

450J Shown



TX1034329A —UN—09JAN08



TX1034330A —UN—09JAN08

CED,OUO1032,783 -19-11SEP09-1/1

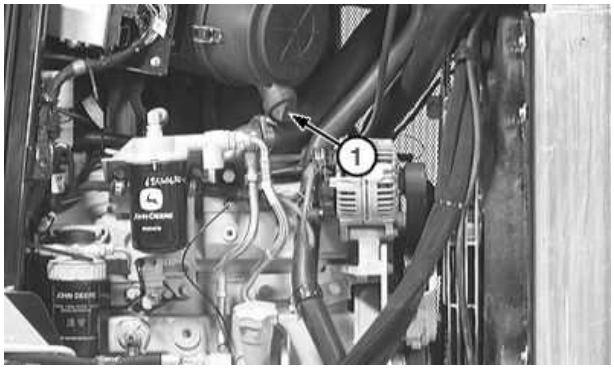
Replace Dust Unloader Valve

To remove dust unloader valve, pry collar of unloader valve (1) from tube of air cleaner housing.

Install new unloader valve by stretching collar over flange on tube of air cleaner housing. Be sure there are no gaps between valve collar and tube.

Valve should remain closed above 1/3 engine speed.

1— Unloader Valve

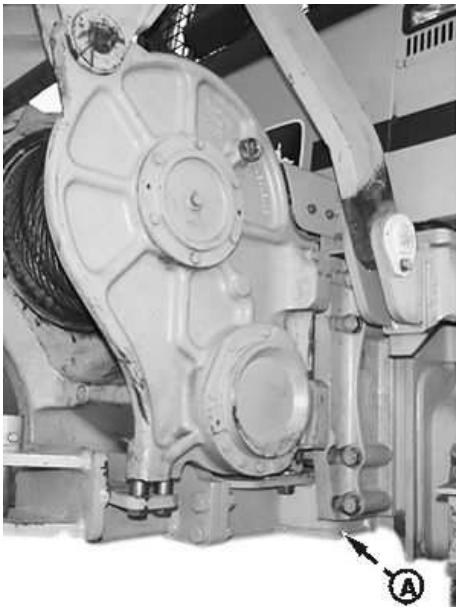


TX1034224A —UN—08JAN08

CED,OUO1032,1158 -19-14JAN08-1/1

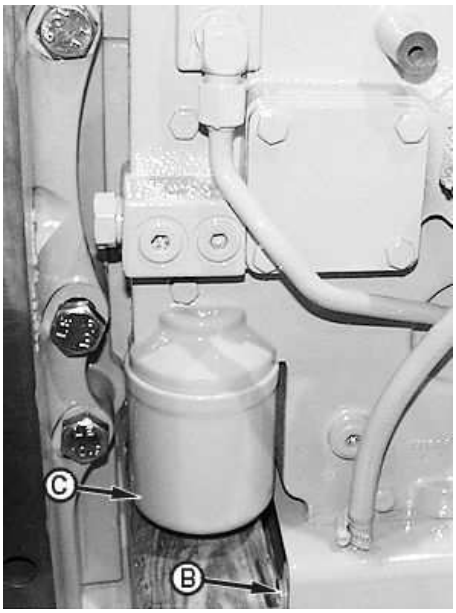
Courtesy of Machine.Market

Drain and Refill Winch Oil and Replace Filter—If Equipped



T118733B —UN—03DEC98

Winch Oil Filter



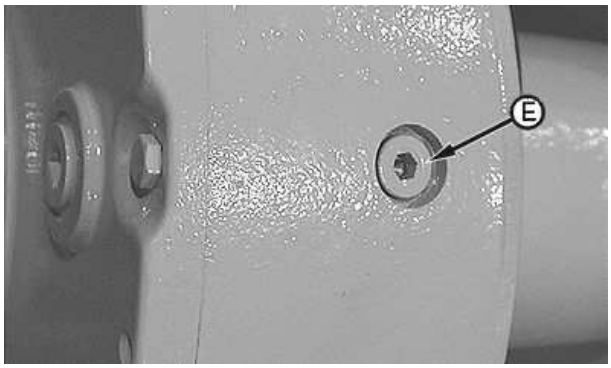
T118732D —UN—27APR99

Winch Shown Removed for Clarity of Photo

Winch oil filter (A) is located on right side between winch and crawler .

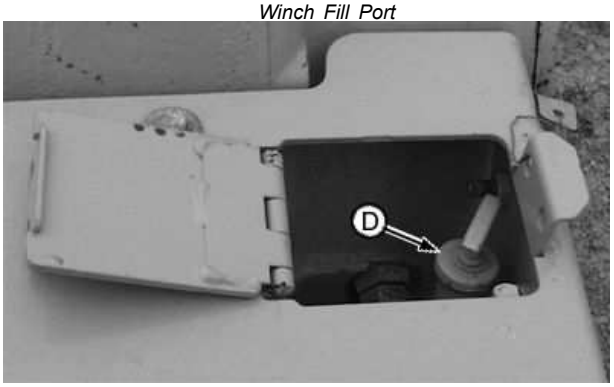
1. Remove three cap screws from oil filter access cover.
2. Remove oil filter access cover.
3. Remove filter (C) by turning counterclockwise.
4. Remove drain plug (B). Allow oil to drain into container. Dispose of waste properly.
5. Install drain plug.
6. Apply a thin film of oil to gasket of new filter.
7. Install new filter.
8. Fill winch oil reservoir through fill port located at top of winch (E) with 34 L (9 gal) of oil. See Final Drive and Winch Oil. (Section 3-1.)
9. Add remaining 4 L (1 gal) of oil through dipstick fill port (D).
10. Check winch oil. See Check Winch Oil—If Equipped. (Section 3-4.)
11. Install oil filter access cover with three cap screws.

A—Oil Filter
B—Drain Plug
C—Filter
D—Dipstick Fill Port
E—Fill Port



T119546B —UN—14JAN99

Winch Fill Port



T133718D —UN—29AUG02

Dipstick Fill Port

CED,OUO1032,1179 -19-05FEB13-1/1

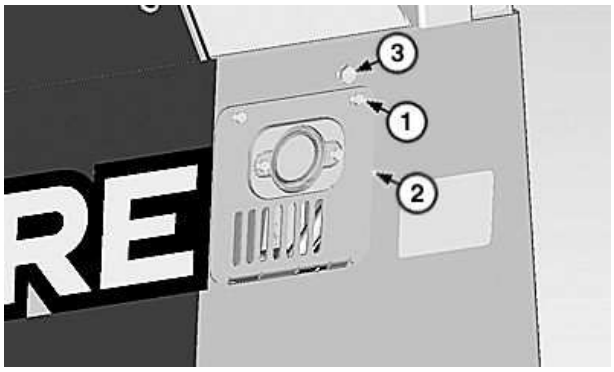
Courtesy of Machine.Market

Clean or Replace Winch Hydraulic Breather Filter—If Equipped

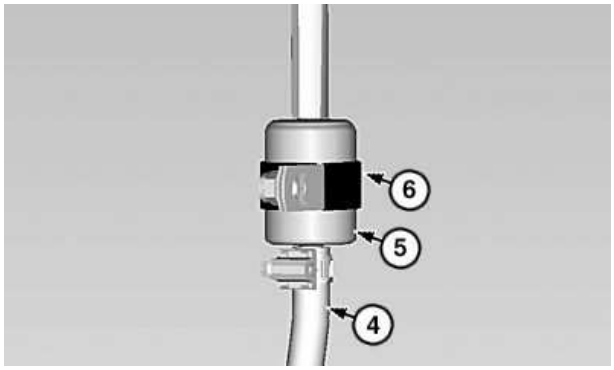
The breather filter is located behind the back up alarm cover (2).

1. Remove cover cap screws (1) and back up alarm cover.
2. Loosen clamp cap screw (3).
3. Remove hose (4) from breather filter (5).
4. Using compressed air, clean filter. If filter can not be cleaned, replace filter.
5. Install hose end on filter making sure arrow points in same direction (toward reservoir).
6. Tighten clamp (3) with cap screw.
7. Install back up alarm cover and cover cap screws.

1— Cover Cap Screw (2 used)
2— Back Up Alarm Cover
3— Clamp Cap Screw
4— Hose
5— Breather Filter
6— Clamp



TX1093972A —UN—27JUN11



TX1093973A —UN—27JUN11

CED,OUO1047,4 -19-27JUN11-1/1

Check Coolant

See Check Coolant. (Section 3-3.)

OUT4001,0000365 -19-12APR11-1/1

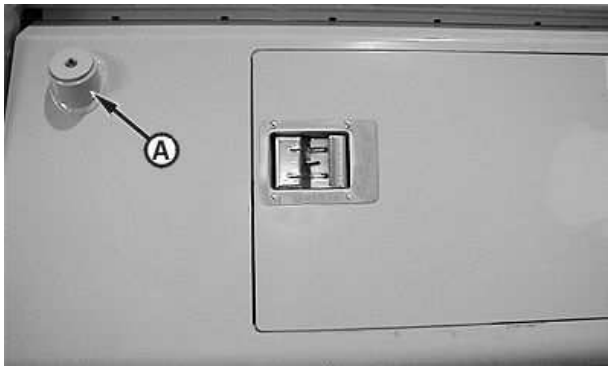
Courtesy of Machine.Market

Adjust Engine Valve Lash (Clearance)

See your authorized dealer.

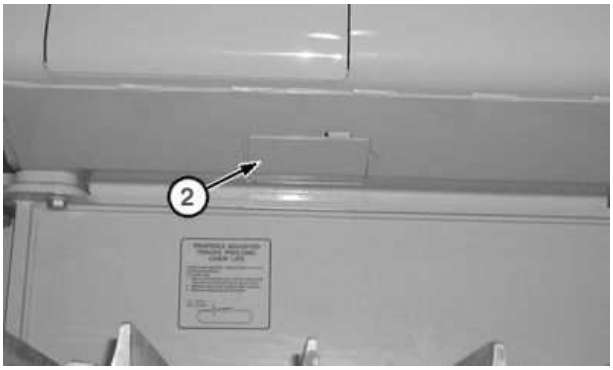
CED,OUO1032,1136 -19-14JAN08-1/1

Drain and Refill Hydraulic Oil and Replace Filter



T117860C —UN—26OCT98

Hydraulic Filter



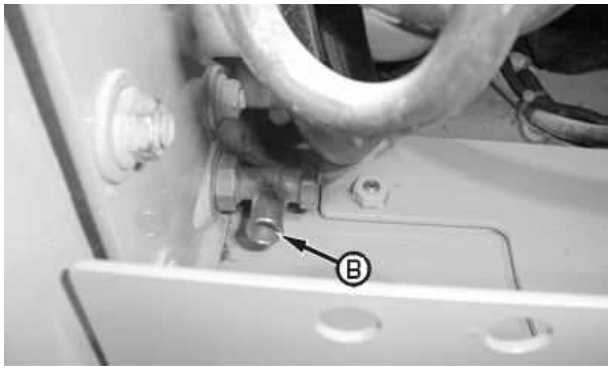
TX1035061A —UN—16JAN08

450J Shown

IMPORTANT: DO NOT operate engine without oil in reservoir.

1. The hydraulic reservoir, filter and drain are located on right side of machine. Remove fill cap (A).
2. Remove hydraulic drain access panel (2).
3. Attach hose to drain valve (B), if equipped, or remove drain plug and route hose to container. Drain oil. Dispose of waste oil properly.

A—Fill Cap
B—Drain Valve
2— Access Panel



T117896B —UN—05NOV98

Optional Drain Valve Shown

Continued on next page

CED,OUO1032,1125 -19-05FEB13-1/2

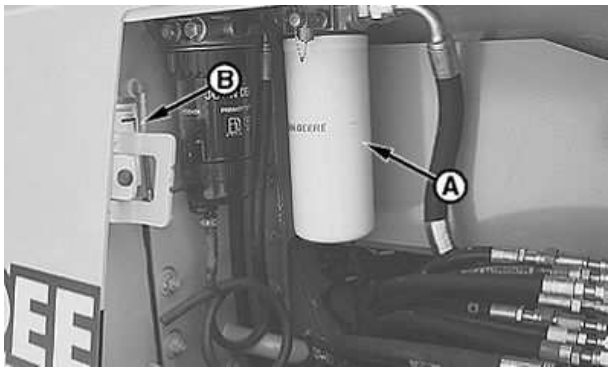
Courtesy of Machine.Market

4. Remove filter (A) by turning counterclockwise.
5. Apply thin film of oil to gasket of new filter.
6. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
7. Tighten additional 1/2 turn.
8. Fill reservoir with oil. See Transmission and Hydraulic Oil. (Section 3-1.)

Specification

Hydraulic Oil
Reservoir—Capacity..... 32 L Approximate
8.5 gal. Approximate

9. Check O-ring on fill cap and install fill cap.
10. Start engine and run for 2 minutes. Stop engine and check for leaks around filter base. Tighten filter only enough to stop leaks.
11. Check oil level in sight tube (B). Oil level must be between the ADD and FULL marks on tube. If necessary, add more oil.



T117893B —UN—03NOV98

Hydraulic Oil Filter

A—Filter **B—Sight Tube**

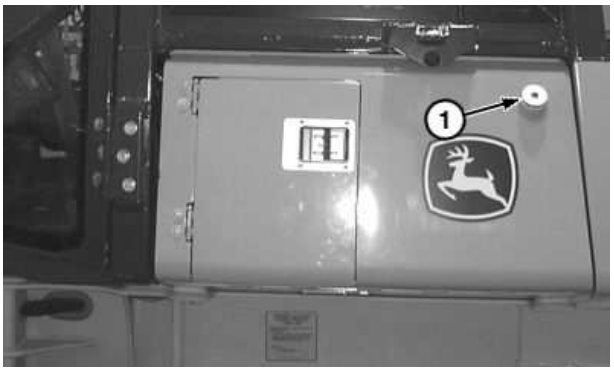
CED,OUO1032,1125 -19-05FEB13-2/2

Courtesy of Machine.Market

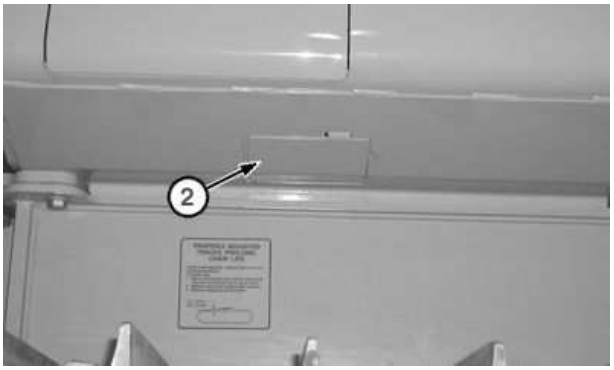
Change Transmission Oil and Filter

1. Transmission hydrostatic reservoir, filter and drain are located on left side of machine. Remove fill cap (1).
2. Remove transmission drain access panel (2).
3. Attach hose to drain valve (3), if equipped, or remove drain plug and route hose to container. Drain oil. Dispose of waste oil properly.
4. Put shallow pan on battery cover to prevent oil from transmission filter from dripping on battery(s).

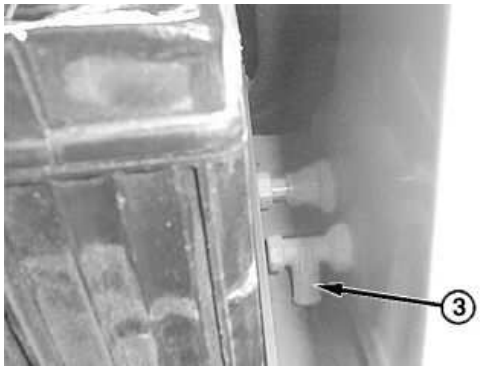
1— Fill Cap
2— Access Panel
3— Drain Valve



TX1035512A —UN—25JAN08



TX1035061A —UN—16JAN08



TX1035514A —UN—25JAN08

Optional Drain Valve Shown

Continued on next page

HG31779,00000D0 -19-28JAN08-1/2

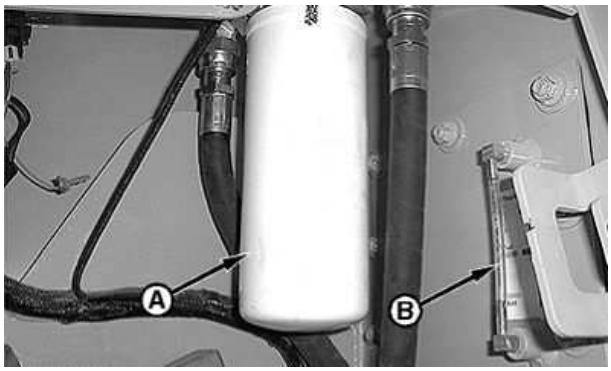
Courtesy of Machine.Market

5. Remove oil filter (A) by turning counterclockwise.
6. Apply a thin film of oil to gasket of new filter.
7. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
8. Tighten additional 1/2 turn.
9. Fill reservoir with oil. See Transmission and Hydraulic Oil. (Section 3-1.)

Specification

Transmission Oil
Reservoir—Capacity..... 43 L
11 gal

10. Check O-ring on fill cap and install fill cap.
11. Start engine and run for 2 minutes. Stop engine and check for leaks around filter base. Tighten filter only enough to stop leaks.
12. Check oil level in sight glass tube (B). Oil level should be between the ADD and FULL marks. Add oil if necessary.



T117891B —UN—03NOV98

A—Oil Filter **B—Sight Glass**

HG31779,00000D0 -19-28JAN08-2/2

Courtesy of Machine.Market

Drain the Cooling System

Every three years or 3000 hours, if John Deere Coolant is used, drain and flush cooling system using commercial products, replace thermostats, and fill with new coolant.

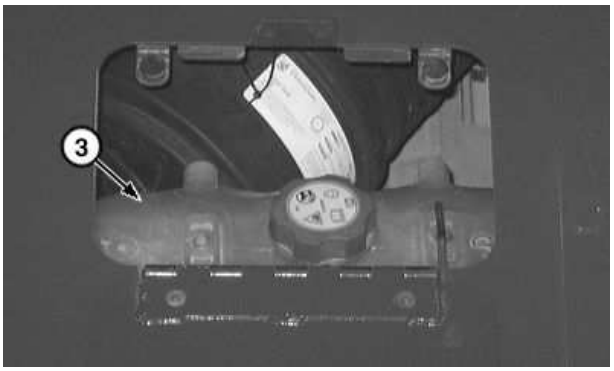
CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. Remove filler cap only when engine is cold or when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

1. Release pressure and then remove radiator cap (3).

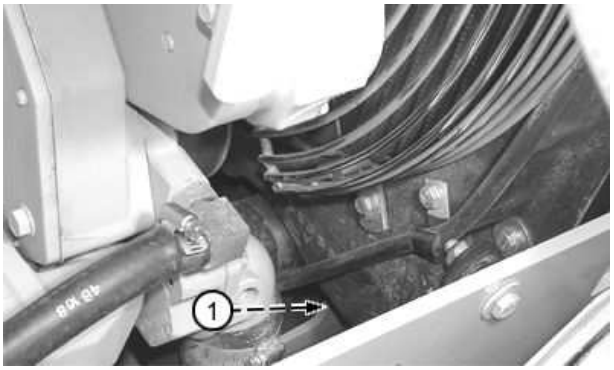
NOTE: Allow coolant to drain into a container. Dispose of waste coolant properly.

2. Open radiator drain valve (1).
3. Open drain valve (2) to drain engine block.
4. Flush system using commercial product.
5. Close all drain valves.
6. Add new coolant. See Diesel Engine Coolant. (Section 3-1.)

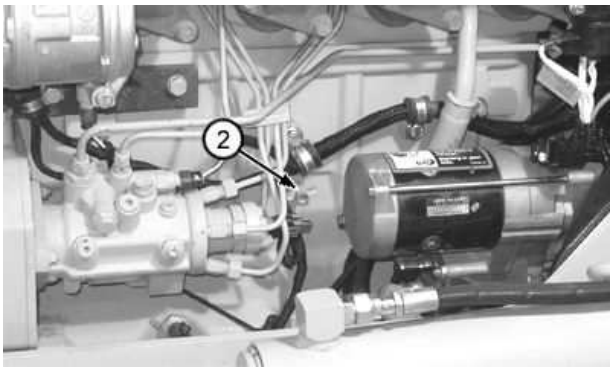
1— Radiator Drain Valve
2— Engine Drain Valve
3— Radiator Cap



TX10355134 —UN—25JAN08



T200626A —UN—04JUN04



T200628A —UN—04JUN04

450J Shown

CED,OUO1032,781 -19-24JAN08-1/1

Courtesy of Machine.Market

Fill the Cooling System

TS281 —UN—15APR13

CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. Remove filler cap only when engine is cold or when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

With engine COLD, coolant level must be between HOT and COLD marks on surge tank (1).

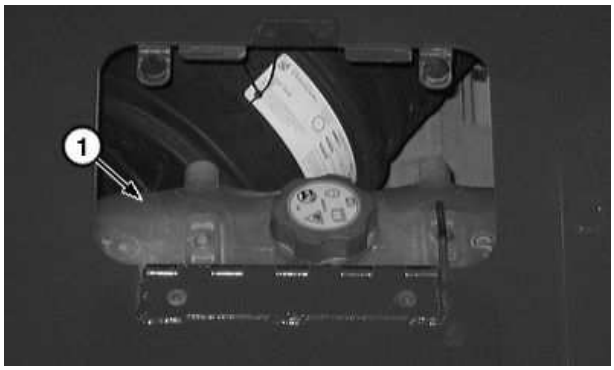
If coolant is below COLD mark, add coolant to the surge tank.

If there is no coolant in surge tank, add coolant to surge tank and radiator.

FREEZING TEMPERATURES: Fill with permanent-type, low silicate, ethylene glycol antifreeze (without stop-leak additive) and clean, soft water. Add TY16004 John Deere Coolant Conditioner or equivalent.

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

NOTE: All machines are shipped from the factory with a 50-50 mixtures (antifreeze and soft water) for protection to –34°C (–30°F). Adjust mixture accordingly to provide freeze protection for your machine.



TX1034333A —UN—09JAN08

450J Shown

1— Surge Tank

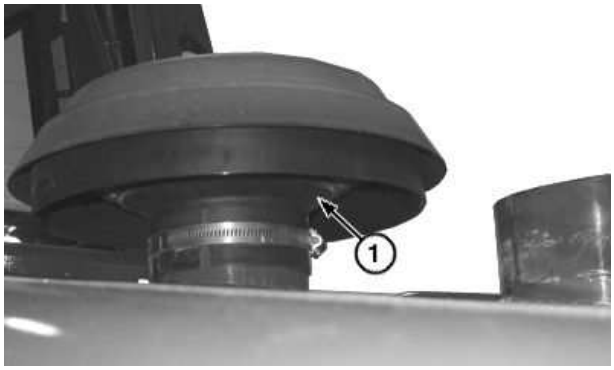
CED,OUO1032,782 -19-30JAN08-1/1

Clean the Engine Air Precleaner Screen

To clean the engine air screen (1), remove hose clamp and bowl. Shake bowl to remove debris.

IMPORTANT: The engine air screen removes only part of the dirt as air goes into the engine. You must still clean the air cleaner regularly.

1— Air Screen

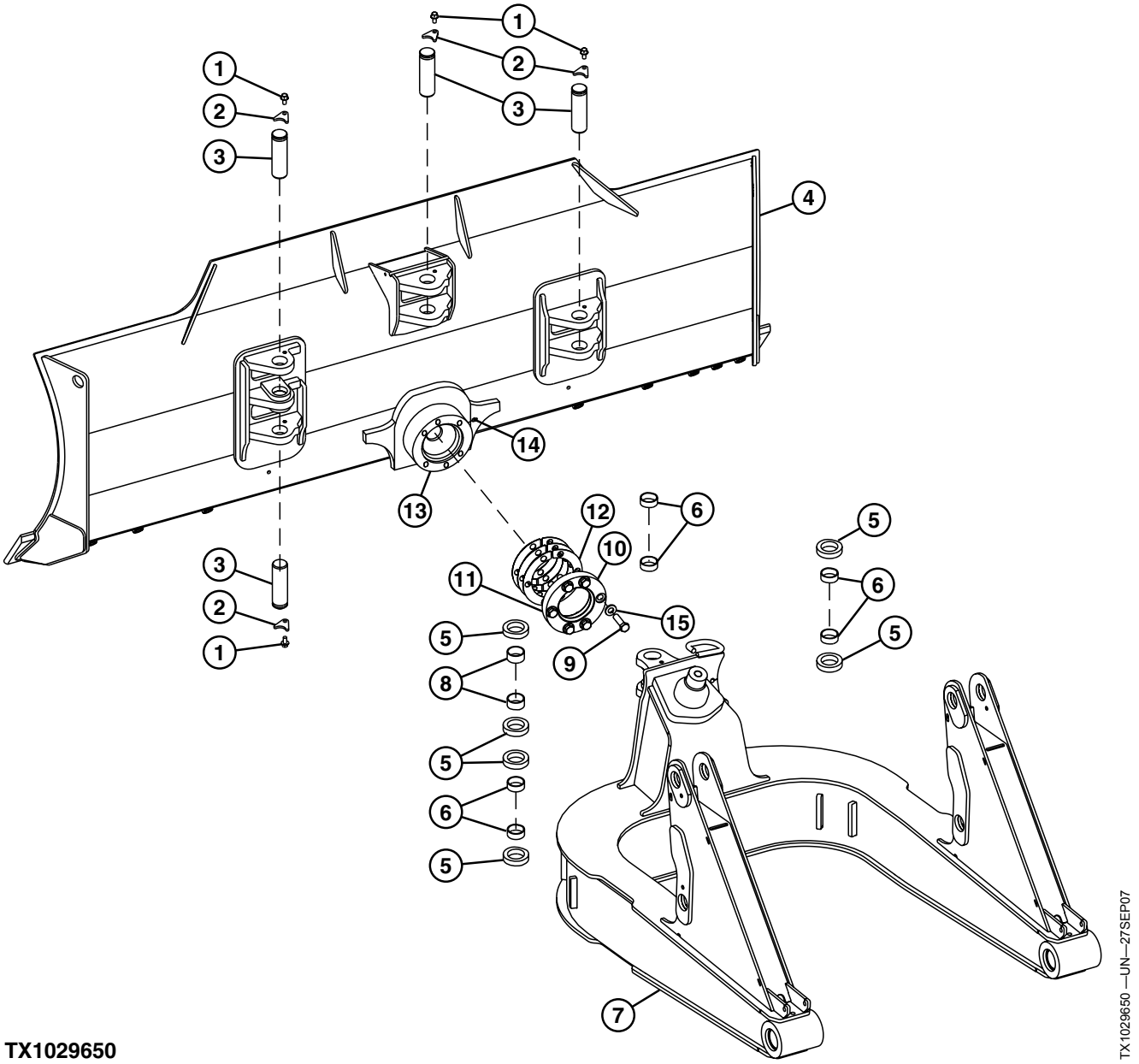


TX1034334A —UN—09JAN08

HG31779,000036A -19-14JAN08-1/1

Courtesy of Machine.Market

Blade Installation—Initial



TX1029650

Blade Installation

1— 19M7784 Hex Flange Screw (4 used)
2— T170880 Pin Flag (4 used)
3— T170879 Pin (4 used)
4— Blade Weldment
5— T178620 Rubber Bushing (6 used) (Angle and Tilt)
6— T170884 Metal Spacer (Angle and Pitch) (6 used)
7— C-Frame
8— T174256 Metal Spacer (Tilt) (2 used)
9— 19M7759 Cap Screw (6 used)
10— T227960 Solid Outer Retaining Ring
11— T227961 Inner Split Bearing
12— T180582 Shim (6 included)
13— Blade Socket
14— JD7759 Lubrication Fitting
15— 24M7241 Washer (6 used)

1. Raise C-Frame and support with shop stands. Shut off engine.

CAUTION: Blade is heavy. Use appropriate lifting device.

Continued on next page

Courtesy of Machine.Market

2. Dip cap screw threads (9) into clean engine oil. Install blade to C-frame with shims (12), cap screws (9), and washers (15). Tighten cap screws to specifications.

Specification	
Blade Pivot Cap Screws—Torque	255 N·m 189 lb-ft

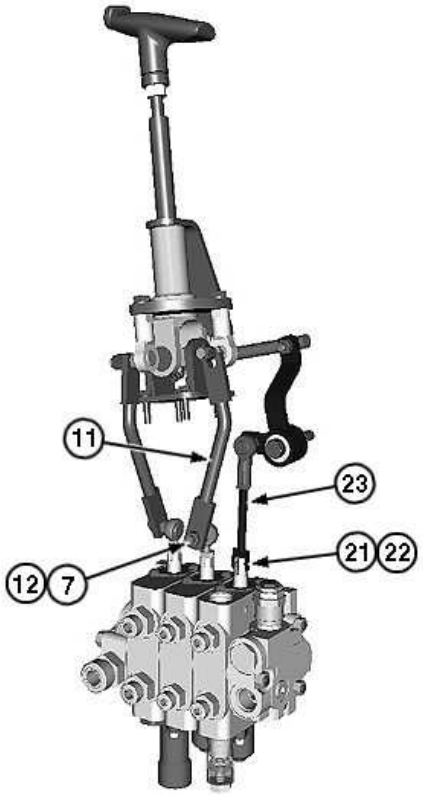
3. Connect rod ends of angle cylinders and head end of tilt cylinder to blade with pins (3), metal spacers (6 and 8), rubber bushings (5), cap screws (1) and pin flags (2).
4. Connect pitch link to blade with pin (3), metal spacers (6), cap screw (1) and pin flag (2).

OUT4001,0000028 -19-27OCT08-2/4

NOTE: Angle and tilt functions have been disconnected for shipping.

5. Remove cotter pin (21) and pin (22) from angle link (23) and connect angle link to valve spool.
6. Remove lock nut (7) from ball joint (12) and connect tilt link (11) to ball joint (12).

7— Lock Nut
11— Tilt Link
12— Ball Joint
21— Cotter Pin
22— Pin
23— Angle Link



TX1029829A —UN—24SEP07

OUT4001,0000028 -19-27OCT08-3/4

7. Install torque specification decal (1) to rear of blade as shown.

IMPORTANT: Grease socket and ball joint every ten hours or daily. Only use grease specified on machines periodic maintenance chart. Add grease until it escapes at joint.

1— Torque Specification Decal

T212395A —UN—22JUN05

Torque Specification Decal

OUT4001,0000028 -19-27OCT08-4/4

Courtesy of Machine.Market

Blade Pitch Linkage Adjustment

This machine has an adjustable pitch link that can vary the pitch of the blade (angle cutting edge makes with ground) from 52° to 60°. The pitch link has a threaded turnbuckle with left and right hand threads.

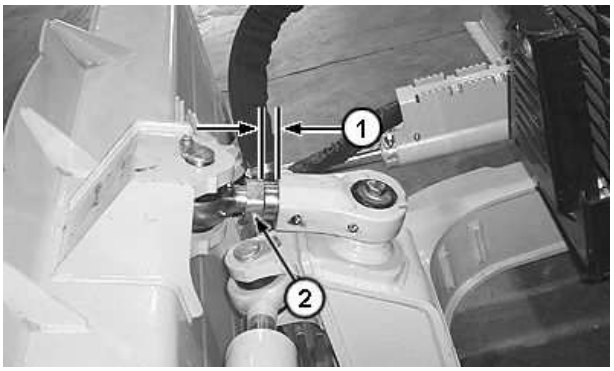
1. Raise blade off the ground. Support blade with a floor jack.
2. Relieve all hydraulic system pressure.
3. Turn threaded turnbuckle (2) in or out until desired pitch is achieved.

Blade Pitch—Specification

Forward—Pitch	42 mm
	1.65 in.
Mid—Pitch	21 mm
	0.83 in.
Back—Pitch	0 mm
	0 in.

Forward pitch is used for maximum material carrying.

Mid pitch is used for a combination between maximum material carrying and fine grading.



T200336A —UN—27MAY04

1— 42 mm (1.65 in.) Minimum Pitch
21 mm (0.83 in.) Mid Pitch
0 mm (0 in.) Maximum Pitch

2— Threaded Turnbuckle

Back pitch is used for fine grading.

4. Remove floor jack and lower blade to the ground.

BR81691,000005B -19-14JAN08-1/1

Do Not Service or Adjust Injection Nozzles or Injection Pump

If injection nozzles are not working correctly or are dirty, the engine will not run normally. See your authorized dealer for service.

Changing the injection pump in any way not approved by the manufacturer will end the warranty. See your copy of the John Deere warranty on this machine.

Do not service an injection pump that is not operating correctly. See your authorized injection pump service center.

TX,90,FF3116 -19-03NOV08-1/1

Courtesy of Machine.Market

Inspecting and Cleaning Dusty Primary Element

IMPORTANT: A damaged or dirty element may cause engine damage.

Install new elements:

- **If the element shows damage and needs to be replaced.**
- **If element is visibly dirty and will not clean.**
- **After 1000 hours service or annually.**

DO NOT clean a secondary element. Install a new element carefully centering it in the canister.

1. Tap element with the palm of your hand, NOT ON A HARD SURFACE.

CAUTION: Prevent possible injury from flying chips. Reduce compressed air 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.

2. If this does not remove dust, use compressed air under 210 kPa (2.1 bar) (30 psi).

NOTE: Air restriction indicator will not signal correctly if an element has a break or is not correctly sealed in air cleaner housing. Throw away element that has the slightest damage. If gasket is broken or missing, install a new element.

T90684 —UN—10NOV88

T47764 —UN—09NOV88

3. Direct air up and down the pleats from inside to outside. Be careful not to make a break in the element.

VD76477,00012BA -19-14JAN08-1/1

Precautions for Alternator and Regulator

When batteries are connected, follow these rules:

1. Disconnect negative (–) battery cable when you work on or near alternator or regulator.
2. DO NOT TRY TO POLARIZE ALTERNATOR OR REGULATOR.
3. Be sure alternator wires are correctly connected BEFORE you connect batteries.
4. Do not ground alternator output terminal.
5. Do not disconnect or connect any alternator or regulator wires while batteries are connected or while alternator is operating.
6. Connect batteries or a booster battery in the correct polarity (positive [+] to positive [+] and negative [–] to negative [–]).
7. Do not disconnect the batteries when engine is running and alternator is charging.
8. Disconnect battery cables before connecting battery charger to the batteries.

T82,EXMA,I -19-19SEP08-1/1

Courtesy of Machine.Market

Handling, Checking and Servicing Batteries Carefully

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

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

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

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

Avoid the hazard by:

1. **Filling batteries in a well-ventilated area.**
2. **Wearing eye protection and rubber gloves.**
3. **Avoiding breathing fumes when electrolyte is added.**
4. **Avoiding spilling or dripping electrolyte.**
5. **Use proper jump start procedure.**

If you spill acid on yourself:

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

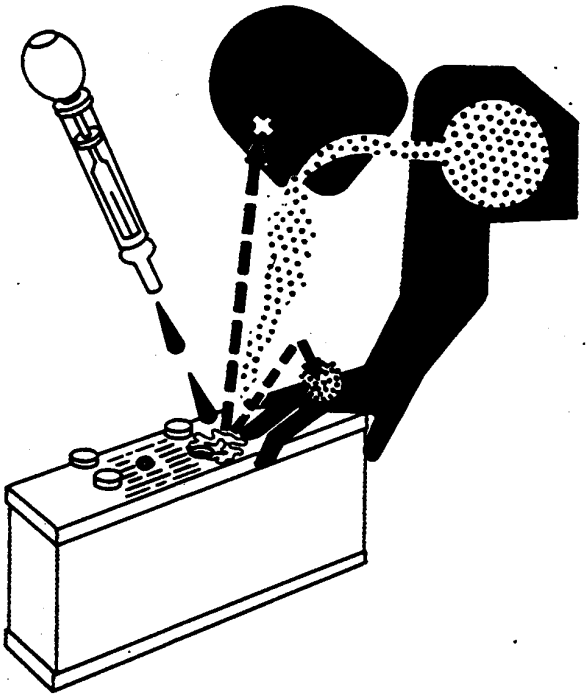
If acid is swallowed:

1. **Do not induce vomiting.**
2. **Drink large amounts of water or milk, but do not exceed 1.9 L (2 qt).**
3. **Get medical attention immediately.**

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

If electrolyte spills on the floor, use one of the following mixtures to neutralize the acid: 0.5 kg (1 lb) baking soda in 4 L (1 gal) water, or 0.47 L (1 pt) household ammonia in 4 L (1 gal) water.

TS204 —UN—15APR13



TS203 —UN—23AUG88

IMPORTANT: Do not overfill the battery cells.

Check the specific gravity of electrolyte in each battery cell.

Continued on next page

TX03679,0001788 -19-29APR11-1/2

Courtesy of Machine.Market

See your authorized dealer for JT05460 SERVICEGARD™ battery and coolant tester. Follow directions included with the tester.

A fully charged battery will have a corrected specific gravity reading of 1.260. If the reading is below 1.200, charge the battery.

T85402 —UN—10NOV88

Battery And Coolant Tester

SERVICEGARD is a trademark of Deere & Company

TX03679,0001788 -19-29APR11-2/2

Using Battery Charger

CAUTION: Prevent possible injury from exploding battery. Do not charge a battery if the battery is frozen or it may explode. Warm battery to 16°C (60°F) before charging.

Turn off charger before connecting or disconnecting it.

IMPORTANT: Do not use battery charger as a booster if a battery has a 1.150 specific gravity reading or lower.

Disconnect battery ground (-) clamp before you charge batteries in the machine to prevent damage to electrical components.

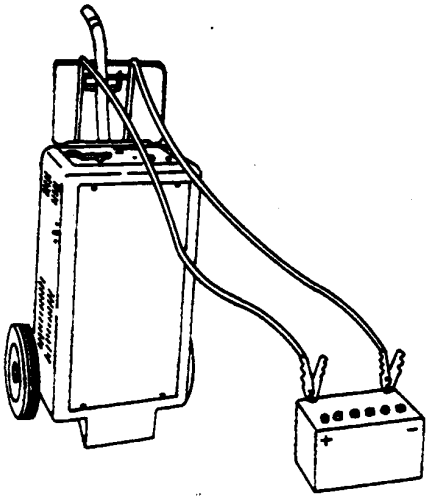
A battery charger may be used as a booster to start engine.

Ventilate the area where batteries are being charged.

Stop or cut back charging rate if battery case feels hot, or is venting electrolyte. Battery temperature must not exceed 52°C (125°F).

TS204 —UN—15APR13

Prevent Battery Explosions



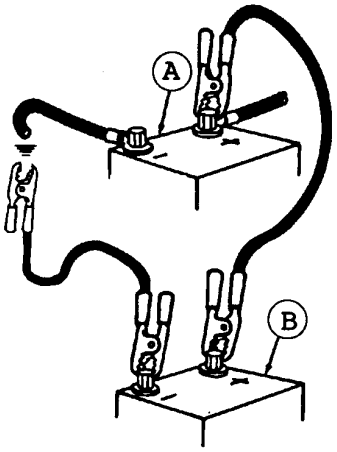
N36890 —UN—07OCT88

Charger

OUT4001,0000239 -19-03JAN12-1/1

Courtesy of Machine.Market

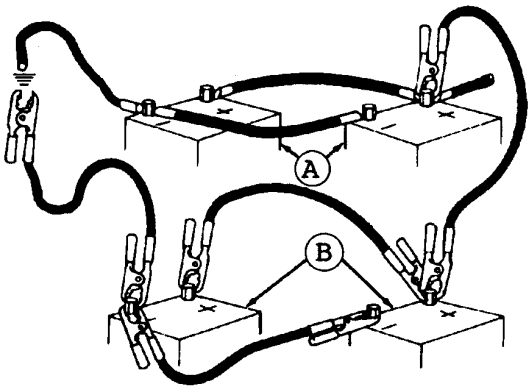
Using Booster Batteries—12 Volt System



T6508AE1 —UN—24OCT91

T6508AE1 CV

Single Battery Application



T6713AI1 —UN—24OCT91

T6713AI1 CV

Two Battery Application

A—Machine Battery(s) **B—Booster Battery(s)**

Before boost starting, machine must be properly shut down and secured to prevent unexpected machine movement when engine starts.

CAUTION: An explosive gas is produced while batteries are in use or being charged. Keep flames or sparks away from the battery area. Make sure the batteries are charged in a well ventilated area.

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

IMPORTANT: The machine electrical system is a 12-volt negative (—) ground. Use only 12-volt booster batteries.

1. Connect one end of the positive cable to the positive terminal of the machine batteries and the other end to the positive terminal of the booster batteries.
2. Connect one end of the negative cable to the negative terminal of the booster batteries. Then connect other end of the negative cable to the machine frame as far away from the machine batteries as possible.
3. Start engine.
4. Immediately after starting engine, disconnect end of the negative cable from the machine frame and disconnect the other end of the negative cable from the negative terminal of the booster batteries.
5. Disconnect positive cable from booster batteries and machine batteries.

TX,25,BD2079 -19-14JAN08-1/1

Courtesy of Machine.Market

Replacing Batteries

The dual battery option is required when the ambient temperature is below 0°C (32°F).

Batteries are located in left side service compartment.

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

Avoid the hazard by:

1. **Filling batteries in a well-ventilated area.**
2. **Wearing eye protection and rubber gloves.**
3. **Avoiding breathing fumes when electrolyte is added.**
4. **Avoiding spilling or dripping electrolyte.**
5. **Using proper jump start procedure.**

If you spill acid on yourself:

1. **Flush your skin with water.**
2. **Apply baking soda or lime to help neutralize the acid.**
3. **Flush your eyes with water for 10—15 minutes. Get medical attention immediately.**

If acid is swallowed:

1. **Drink large amounts of water or milk.**
2. **Then drink milk of magnesia, beaten eggs, or vegetable oil.**
3. **Get medical attention immediately.**

Your machine will have one or two 12-volt batteries with negative (–) ground. Use only batteries meeting the following specifications:

TS281 —UN—15APR13

T117482 —UN—20OCT98

Dual Battery Option Shown

Single Battery	**Battery Group 31**
925 cold cranking amps at –18°C (0°F)	190 minutes reserve capacity at 25 amps
Dual Battery—If Equipped	**Battery Group 31**
1850 cold cranking amps at –18°C (0°F)	380 minutes reserve capacity at 25 amps

TX,90,RB82 -19-14JAN08-1/1

Courtesy of Machine.Market

Removing Batteries

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

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

1. Turn battery disconnect switch to “Off”.
2. Remove battery cover.
3. Disconnect negative battery cable(s) first then positive (+) cable(s).
4. Remove nuts to remove hold down frame(s).
5. Lift out battery/batteries.
6. Check cables and clamps for damage and wear.
7. Make certain that the battery/batteries are fully charged.
8. Set the battery/batteries in the compartment making sure they are level.
9. Install hold down frames.
10. Connect cables; positive then negative.
11. Install battery cover.
12. Turn battery disconnect switch to ON.

TS204 —UN—15APR13

T117482 —UN—20OCT98

Dual Battery Option Shown

TX,90,RB83 -19-14JAN08-1/1

JDLink™ Machine Monitoring System (MMS)—If Equipped

JDLink™ is an equipment monitoring and information delivery system. JDLink™ automatically collects and manages information about where and how construction and forestry equipment is being used, as well as critical machine health data and service status.

For more information, see your authorized dealer or visit www.deere.com (browse to Construction, Services and Support, JDLink™).

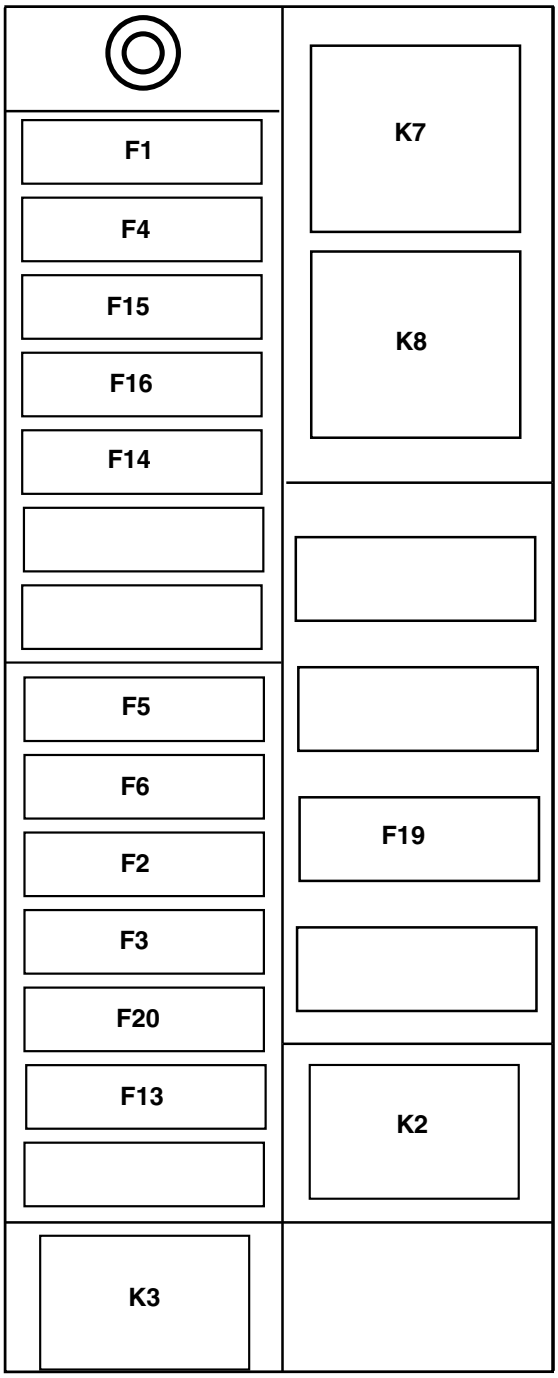
JDLink is a trademark of Deere & Company

VD76477,0001541 -19-20JUL12-1/1

Courtesy of Machine.Market

Courtesy of Machine.Market

Fuse Specifications for ROPS Units (S.N. —153833)



TX1079223

ROPS Fuses

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HG31779,00000AE -19-25JUN10-1/2

Courtesy of Machine.Market

F1 — 10A Start Fuse
F2— 15A Spare/Fuel Filter Heater Fuse
F3— 15A Start Aid/Alternator Excitation Fuse
F4 — 10A Horn Fuse
F5— 10A Transmission Controller Fuse
F6— 7.5A Monitor/Gauge Fuse
F13— 15A Spare Fuse (Auxiliary Light)
F14— 10A Spare Fuse
F15 — 20A Rops (Under Seat) Heater Fuse
F16— 20A Light Circuit Breaker
F19— 10A Service Expert Fuse
F20— 20A Engine Controller Switched Power Fuse
F21— 15A Engine Controller Unswitched Power Fuse (Located By Alternator)
F23— 10A Fuel Shut-Off Fuse (650J)
K2— Accessory Relay #1
K3— Accessory Relay #3
K7— Horn Relay
K8— Transmission Controller/Monitor Relay

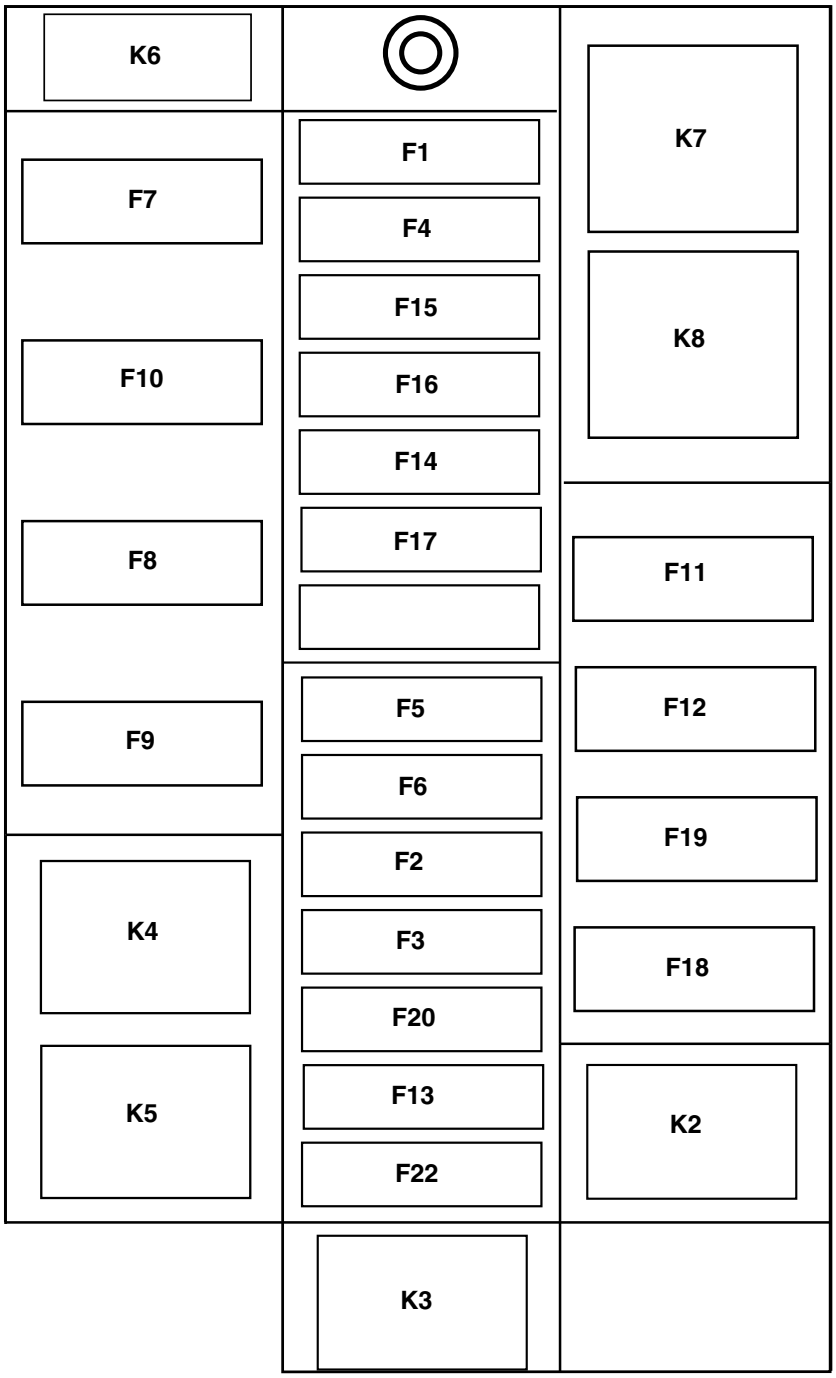
IMPORTANT: Install fuse with correct amperage rating to prevent electrical system damage from overload.

The fuse block is located on right side of machine through fuse panel access cover.

HG31779,00000AE -19-25JUN10-2/2

Courtesy of Machine.Market

Fuse Specifications for Cab Units—If Equipped (S.N. —150490)



TX1079224 —UN—29JUN10

TX1079224

Fuse Locations For Cab

Continued on next page

HG31779,00000AF -19-25JUN10-1/2

Courtesy of Machine.Market

F1— Start 10 A Fuse
F2— Power Outlet 10 A Fuse
F3— Start Aid/Alternator Excitation 15 A Fuse
F4— Horn 10 A Fuse
F5— TCU 10 A Fuse
F6— MDU 7.5 A Fuse
F7— Heater Blower 15 A Fuse
F8— Condenser Fan 15 A Fuse
F9— Condenser Fan 15 A Fuse
F10— A/C Compressor 10 A Fuse
F11— Front/Rear Wiper 15 A Fuse
F12— Left/Right Wiper 15 A Fuse
F13— Auxiliary Light 20 A Circuit Breaker
F14— Spare 10 A Fuse
F15— Under-Seat Heater 20 A Fuse
F16— Light 20 A Circuit Breaker
F17— Dome Light/Radio 10 A Fuse (Ignition Power)
F18— Dome Light/Radio 10 A Fuse (Battery Power)
F19— Service ADVISOR 10 A Fuse
F20— ECU 5 A Fuse (Ignition Power)
F21— ECU/MDU 10 A Fuse (Battery Power) (located by alternator) (not shown)
F22— Spare 15 A Fuse
K1—Start Relay (located by starter) (not shown)
K2—Accessory Relay #1
K3—Accessory Relay #3
K4—Heater Blower Relay
K5—A/C Relay
K6—Accessory Relay #2
K7—Horn Relay
K8—TCU/MDU Relay

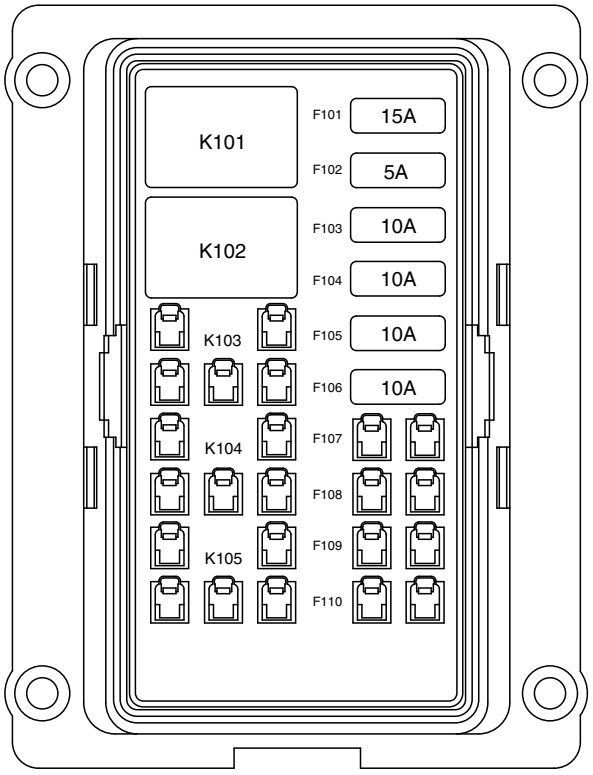
IMPORTANT: Install fuse with correct amperage rating to prevent electrical system damage from overload.

The fuse block is located on right side of machine through access cover.

HG31779,00000AF -19-25JUN10-2/2

Fuse Specification—IGC Machines

F101— IGC Switched Power 15-Amp Fuse
F102— BCJ Switched Power 5-Amp Fuse
F103— EHC Switched Power 10-Amp Fuse
F104— IGC Unswitched Power_1 10-Amp Fuse
F105— IGC Unswitched Power_2 10-Amp Fuse
F106— IGC Unswitched Power_3 10-Amp Fuse
K101— IGC Switched Power Relay
K102— BCJ and EHC Switched Power Relay

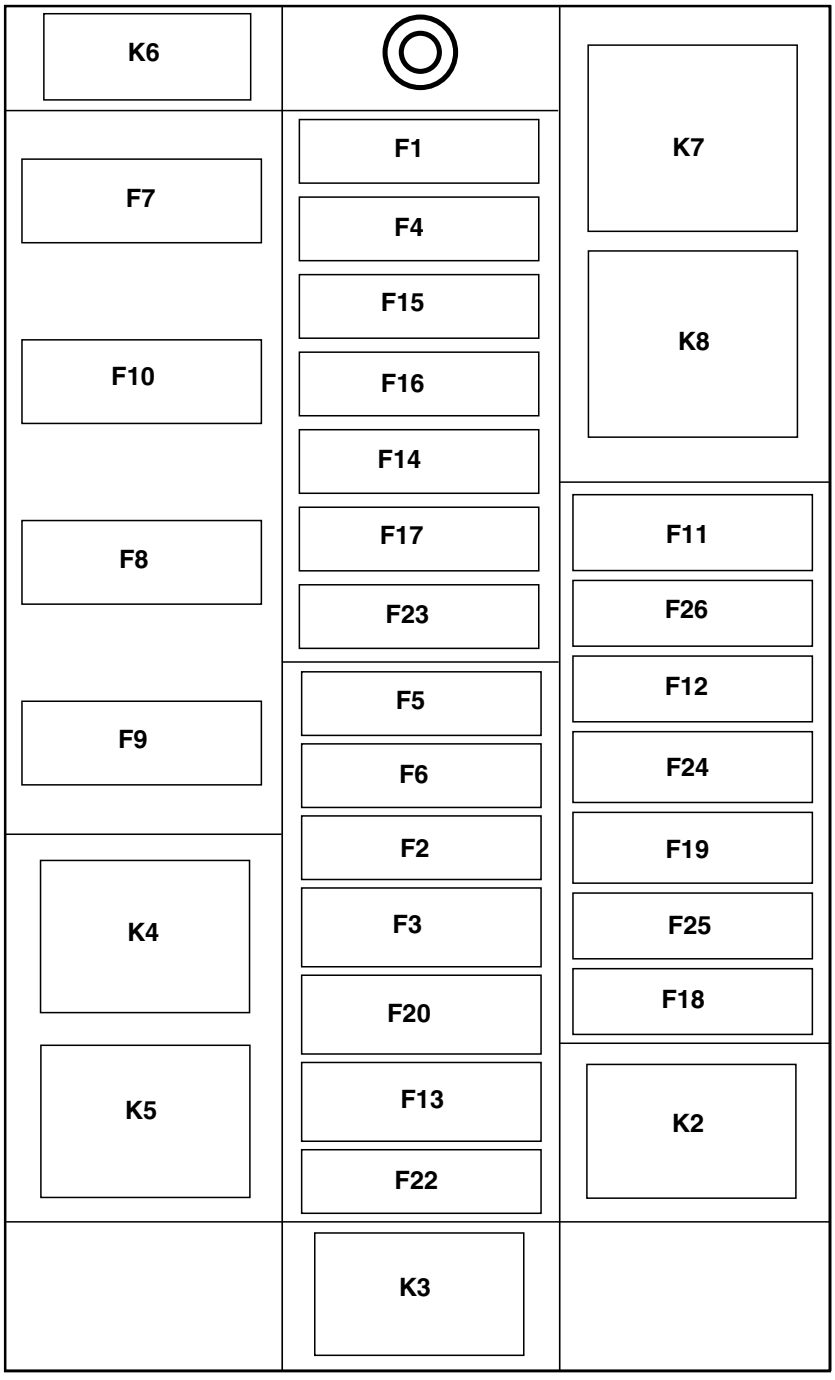


IGC Fuse and Relay Box (If Equipped)

VD76477,0001381 -19-24JAN08-1/1

Courtesy of Machine.Market

Fuse Specifications (S.N. 150491—)



TX1079222 —UN—29JUN10

TX1079222

Fuse Locations

Continued on next page

Courtesy of Machine.Market

F1— Start 10 A Fuse
F2— Power Outlet 10 A Fuse
F3— Start Aid/Alternator Excitation 15 A Fuse
F4— Horn 10 A Fuse
F5— Trans Controller 10 A Fuse
F6— Monitor 7.5 A Fuse
F7— Heater Blower 15 A Fuse
F8— Condenser Fan 15 A Fuse
F9— Condenser Fan 15 A Fuse
F10— A/C Compressor 10 A Fuse
F11— Front/Rear Wipers 15 A Fuse
F12— Door Wipers 15 A Fuse
F13— CB Lights (Optional) 25 A Fuse
F14— Air Seat 15 A Fuse
F15— Rops Heater 20 A Fuse
F16— CB Light 20 A Fuse
F17— Radio/Dome Light 10 A Fuse
F18— Radio Unswitched 10 A Fuse
F19— Service Expert 10 A Fuse
F20— ECU Switched 5 A Fuse
F22— Spare 15 A Fuse
F23— Spare 10 A Fuse
F24— JDLink™ Switched Power 5 A Fuse (If Equipped)
F25— JDLink™ Unswitched Power 5 A Fuse (If Equipped)
F26— IGC 5 A Fuse
K1—Start Relay (located by starter) (not shown)
K2—Accessory Relay #1
K3—Accessory Relay #3
K4—Heater Blower Relay
K5—A/C Relay
K6—Accessory Relay #2
K7—Horn Relay
K8—Trans Controller/Monitor Relay

IMPORTANT: Install fuse with correct amperage rating to prevent electrical system damage from overload.

The fuse block is located on right side of machine through access cover.

JDLink is a trademark of Deere & Company

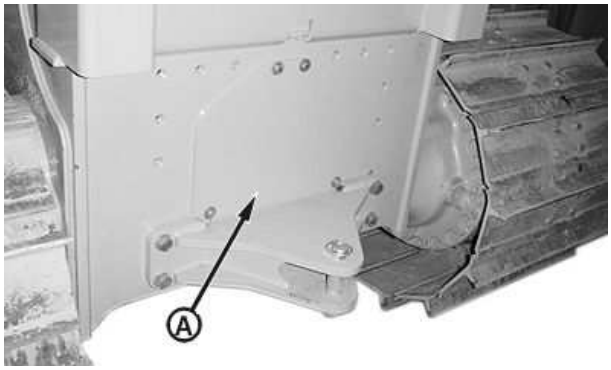
OUT4001,00002E8 -19-25JUN10-2/2

Drain Fuel Tank Sump

CAUTION: Handle fuel carefully. Shut the engine OFF. Do not smoke while you work on fuel system.

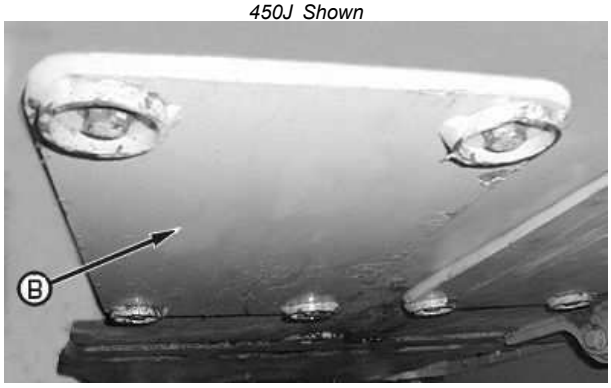
1. Remove rear access panel (A).
2. Remove left fuel sump access panel (B). If equipped with winch, remove both left and right fuel sump access panels.
3. Attach hose to drain valve (C) and route through sump opening. Open drain valve for several seconds to drain water and sediment.
4. Close drain valve. Replace fuel sump panel(s) and tighten cap screws.
5. Install rear access panel, if removed. Tighten cap screws.

A—Rear Access Panel
B—Left Fuel Sump Access Panel
C—Drain Valve



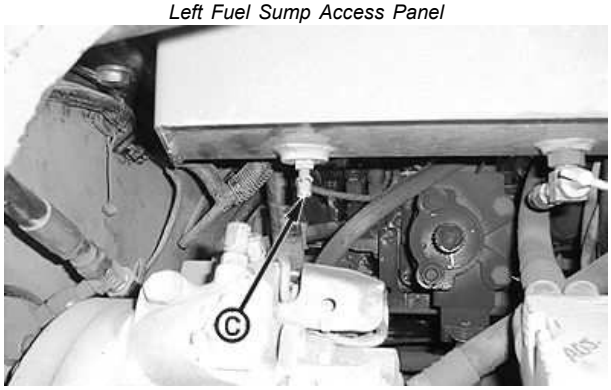
T117851B —UN—26OCT98

450J Shown



T117852B —UN—26OCT98

Left Fuel Sump Access Panel



T117853B —UN—26OCT98

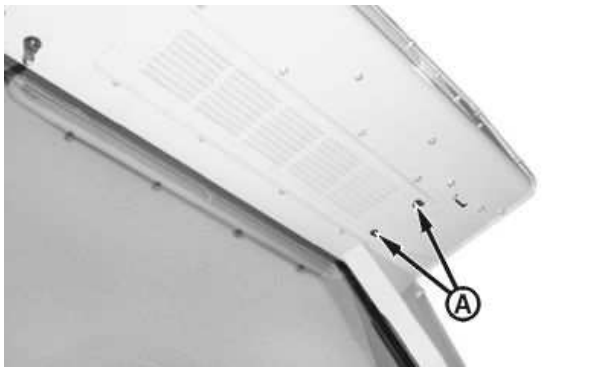
03T,55,K88 -19-13JUN11-1/1

Courtesy of Machine.Market

Cleaning Fresh Cab Air Filter—If Equipped

1. Loosen wing nuts (A) to remove access cover.
2. Remove filter holder from compartment. Remove filter element.
3. Tap filter on flat surface with dirty side down to loosen and remove large portions of dirt.
4. Install filter. Tighten wing nuts.

A—Wing Nuts (2 used)



T118218B —UN—11NOV98

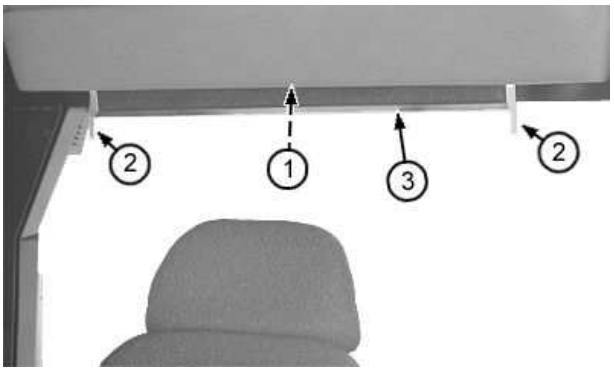
T120688B —UN—23MAR99

CED,OUO1032,1138 -19-18FEB08-1/1

Cleaning Cab Air Recirculation Filter—If Equipped

1. Rotate latch (1) in center of filter housing.
2. Pull filter tabs (2) to remove filter (3).
3. Use compressed air under 210 kPa (2.1 bar) (30 psi). Direct air opposite to normal air flow.
4. Wash filter in warm, soapy water, rinse and dry.
5. If filter will not come clean, replace as necessary.
6. Fasten latch.

1— Latch
2— Filter Tabs (2 used)
3— Filter



T200657A —UN—04JUN04

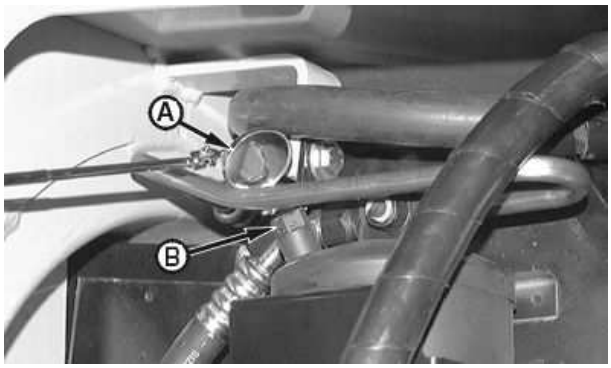
HG31779,0000028 -19-14JAN08-1/1

Courtesy of Machine.Market

Check Air Conditioner Refrigerant Level—If Equipped

IMPORTANT: Prevent possible compressor damage. If receiver-dryer moisture eye color indicates "wet" (pink), dryer is saturated and should be changed within the next 100 machine hours to prevent further buildup of moisture in refrigerant.

1. Remove left side access cover of air conditioning compartment.
2. Using a mirror (A), check color of sight glass (B) to see if receiver/dryer is wet (pink) or dry (blue).
3. If wet (pink), see your authorized dealer within the next 100 machine hours to service receiver/dryer.



T121303B —UN—03MAY99

A—Mirror **B—Sight Glass**

CED,OUO1032,1175 -19-14JAN08-1/1

Courtesy of Machine.Market

Track Sag General Information

Properly adjusted tracks prolong chain life. To get the maximum life out of track bushings, keep the track sag properly adjusted. Improperly adjusted track wears at a more rapid rate.

A tight track causes higher loading which will increase wear on the pins, bushings, links, sprocket and front idler. The graph (A) shows how the loading on the track chain increases significantly when tracks are too tight. Also, a tight track requires more horsepower, increasing fuel consumption and decreasing productivity.

Periodically check track sag. In some applications, tracks may require adjustment several times during a working day. This is especially true when working in different conditions on the same job site, as moisture content of the soil changes.

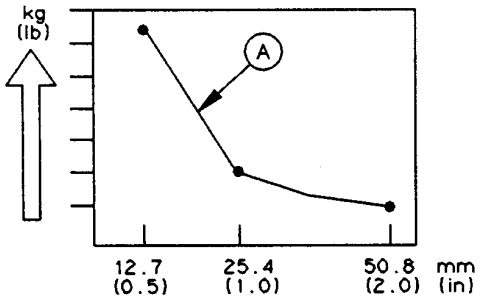
Tracks should always be adjusted in the actual operating conditions. If material packs in the undercarriage, the tracks should be adjusted with the material packed in the components.

When packing occurs, track sag is taken up and must be loosened to extend wear life. The track spring will recoil and the machine will continue to operate with tight track. However, continued operation without loosening the tracks will result in excessive pin and bushing wear, sprocket popping, tooth tip wear, and excessive loads on the entire undercarriage and final drive system.

With sealed chain, internal pin and bushing wear creates sag which reduces the effects of packing. However, if a sealed chain is too tight, accelerated bushing wear occurs.

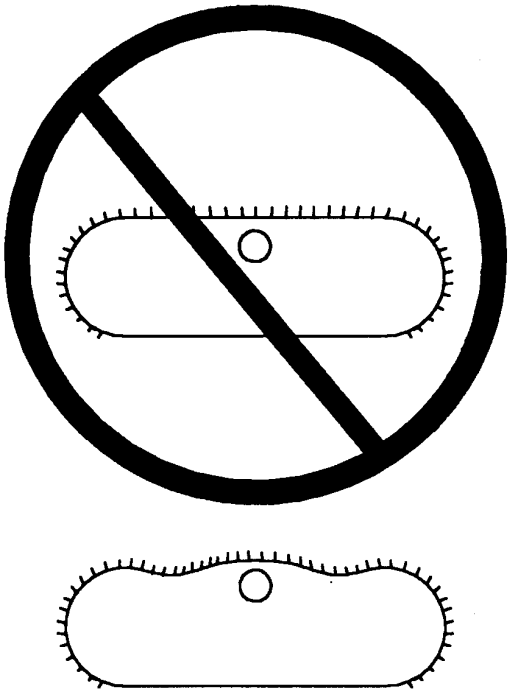
Lubricated chain is different due to the absence of internal pin and bushing wear. It is absolutely essential to keep sag adjusted to prevent accelerated bushing outside diameter wear.

Maintaining track sag is very important regardless of the type of track being used.



T7800AJ —UN—31JUL92

Track Tension kg (lb) vs. Track Sag mm (in.)



T7800AH —UN—31JUL92

Proper Track Sag

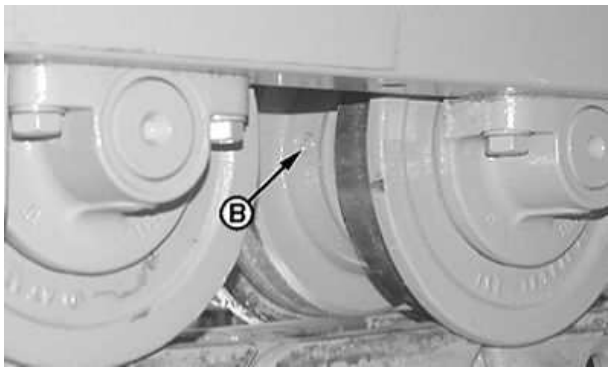
TX,90,RR2516 -19-10JAN12-1/1

Courtesy of Machine.Market

Adding Oil to the Roller

NOTE: Rollers are serviced off of the machine.

1. Remove plug (B) from roller.
2. Rotate plug opening to 45° angle.
3. Fill roller with oil until the oil starts to drip out. See Track Rollers, Front Idler and Carrier Roller Oil. (Section 3-1.)
4. Apply pipe sealant or TEFLON® tape to new plug. Install plug.



T113532 —UN—17FEB98

B—Plug

TEFLON is a registered trademark of Du Pont Co.

CED,OUO1032,1041 -19-14JAN08-1/1

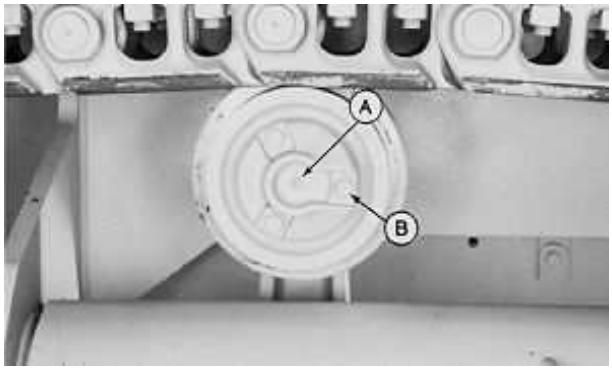
Checking Track Carrier Roller Oil Level

Removing the oil level check plug (B) in the roller does not always show oil, due to a vacuum in the oil cavity. Components that appear low or out of oil may have sufficient oil. A small amount of low-volume air forced into the roller will overcome the vacuum inside the roller and force a small amount of oil to flow out.

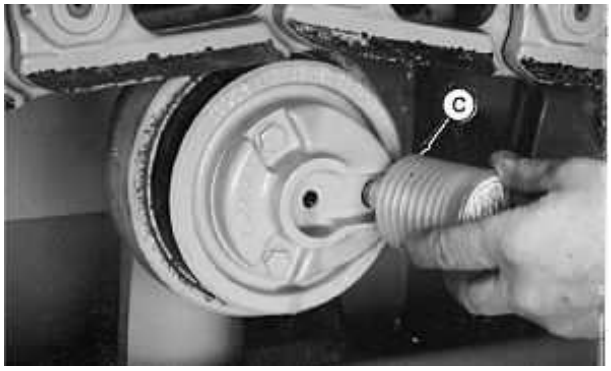
1. Position the oil level check plug at the 3 o'clock or 9 o'clock position.
2. Remove the oil level fill plug (A). If oil runs out, oil level is correct.

   If oil does not run out of the fill hole, remove the oil level check plug. Insert the nozzle of the plastic bottle (C) into the check hole and squeeze air pressure inside the roller assembly. A slight amount of air pressure inside the roller will relieve any vacuum inside the assembly and allow oil to flow out fill hole.

   Oil must be level with fill hole or not more than 3 mm (0.12 in.) below the bottom of the hole.
3. Install plugs.



T6499EF1 —UN—09FEB89



T7883AN —UN—09NOV92

A—Oil Level Fill Plug
B—Oil Level Check Plug
C—Plastic Bottle

Continued on next page

TX,90,RR2741 -19-14JAN08-1/2

Courtesy of Machine.Market

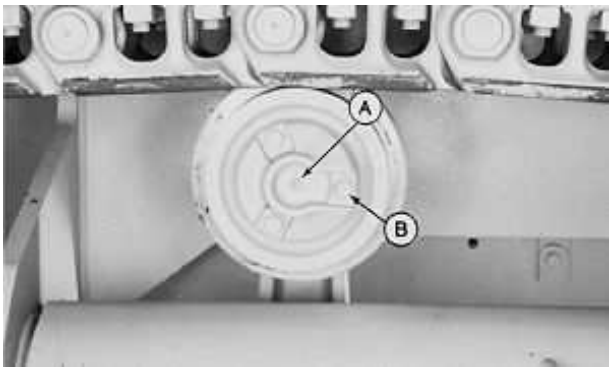
Adding Oil to Track Carrier Roller

1. To add oil, remove the oil level check plug (B).
2. Remove the oil level fill plug (A) and IMMEDIATELY install a John Deere adapter fitting AN142253 or equivalent adapter (male 7/16 x 20 O-ring thread to female 1/8 in. NPT grease fitting into the adapter) (E).
3. Fill a grease gun with oil. See Track Rollers, Front Idler and Carrier Roller Oil. (Section 3-1.)
4. Add oil to grease fitting until it comes out of the oil level check port (C).
5. Install oil level check plug. Tighten to specification.

Specification	
Carrier Roller Oil Level Check Plug—Torque	41 N·m 30 lb-ft

6. Remove grease fitting and adapter. Install oil level fill plug.

A—Oil Level Fill Plug
B—Oil Level Check Plug
C—Oil Level Check Port
D—Oil Level Fill Port
E—Adapter Fitting



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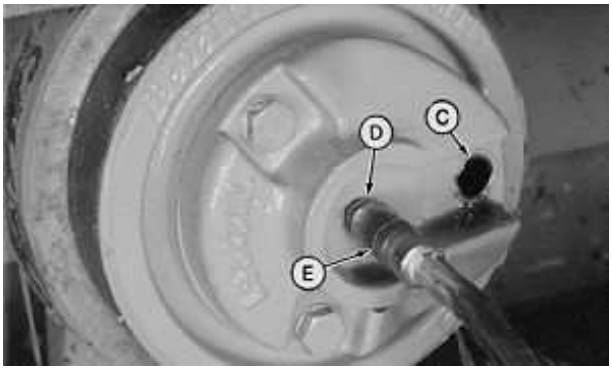


T8059CG —UN—03AUG93

TX,90,RR2741 -19-14JAN08-2/2

Do Not Service Control Valves and Cylinders

Special tools and information are needed to service control valves and cylinders.

If these parts need service, see your authorized dealer.

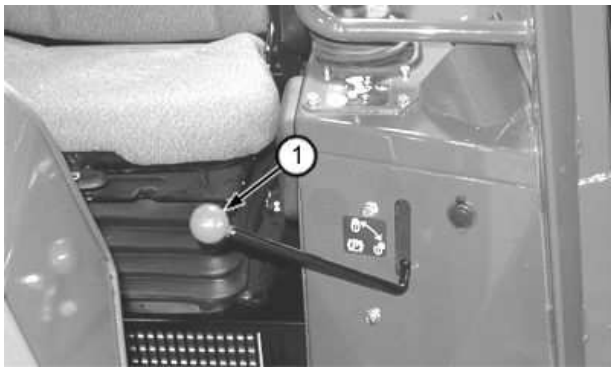
T82,BHMA,K -19-14JAN08-1/1

Courtesy of Machine.Market

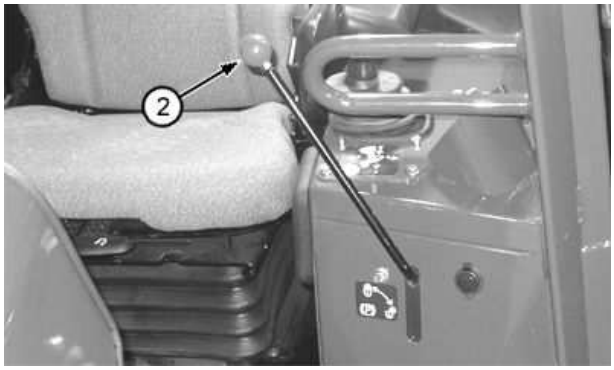
Checking Neutral Start System (S.N. —141178)

CAUTION: Avoid possible injury or death. Be sure all people are away from machine when neutral start checks are performed.

1. Move Transmission Control Lever (TCL) to N.
2. Move park lock lever to down UNLOCKED position (1).
3. Turn key switch to START. Starter must not engage. If engine starts, see your authorized dealer.
4. Move park lock lever to up LOCKED position (2).
5. Turn key switch to START. Starter should engage. If engine does not start, see your authorized dealer.
6. Move TCL to F or R.
7. Turn key switch to START position. Starter must not engage.
8. Move TCL to N.
9. Turn key switch to START position. Starter should engage. If starter does not engage, see your authorized dealer.



T200648A —UN—04JUN04



T200647A —UN—04JUN04

1— UNLOCKED Position **2— LOCKED Position**

VD76477,00012B5 -19-28MAR07-1/1

Courtesy of Machine.Market

Keep ROPS Installed Properly

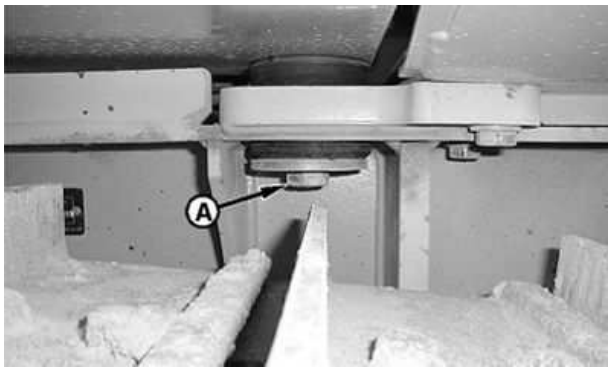
Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts (A) to proper torque.

Specification

ROPS Mounting Bolts—Torque	624 N·m 460 lb-ft

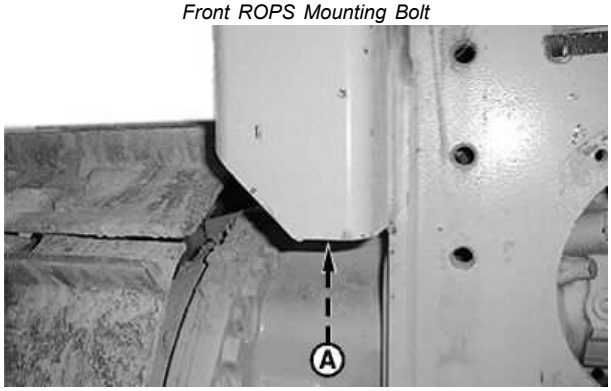
The protection offered by the ROPS will be impaired if the ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

A—Bolts



T117812B —UN—20OCT98

Front ROPS Mounting Bolt



T117813B —UN—20OCT98

Rear ROPS Mounting Bolt

TX,90,RB48 -19-14JAN08-1/1

Checking Track Shoe Cap Screw Torque

Track shoe bolt torque should be periodically checked. If the cap screws do not meet the minimum torque specifications, remove the shoes and clean the mating surfaces of the shoes and links before tightening the bolts.

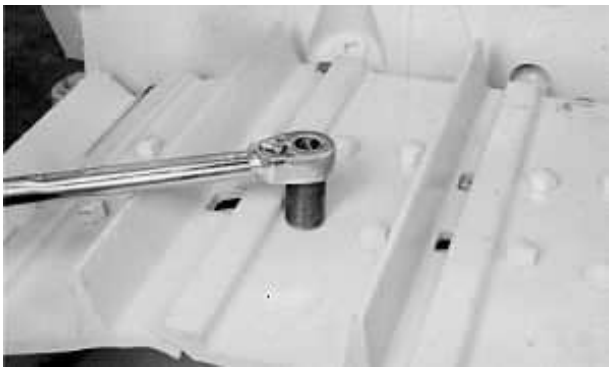
Specification

450J Track Shoe Minimum Checking—Torque	305 ± 14 N·m 225 ± 10 lb-ft

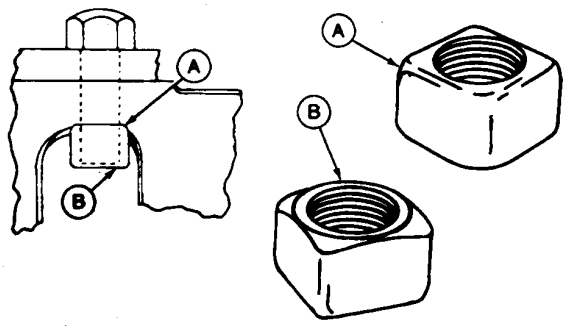
If unit is operated with loose track shoes, the cap screw holes in the shoes and links will wallow out and it may be difficult to keep the track shoes tight. Loose shoes can also cause hardware failure and loss of track shoes.

Install all track shoe nuts with rounded edges against the link and chamfered edges away from the link. Be sure nut is properly positioned in the link so there is full contact area between the nut and the link.

A—Rounded Edge **B—Chamfered Edge**



T6009AN —UN—09FEB89



T6794AM —UN—23FEB89

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TX,90,FF1972 -19-13JUN11-1/2

Courtesy of Machine.Market

IMPORTANT: Tighten cap screws to torque specification using a criss-cross pattern. Then repeat torque pattern again.

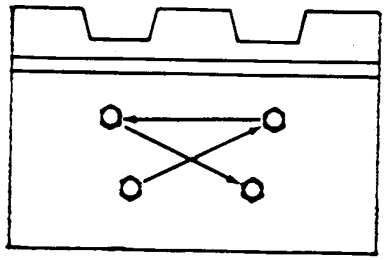
Tighten cap screws using torque-turn torque method.

Track Shoes—Specification

450J Track Shoe Cap Screw (9/16 in.)—Torque ..... 88 N·m (65 lb-ft) Second Pass—Additional 1/3 (120°) turn

450J Master Split Link Cap Screw (9/16 in.)—Torque ..... 88 N·m (65 lb-ft) Second Pass—Additional 1/3 (120°) turn

NOTE: Replacement hardware should be lubricated and tightened to above specification.



T6352AH —UN—23FEB89

TX,90,FF1972 -19-13JUN11-2/2

Hardware Torque Specifications

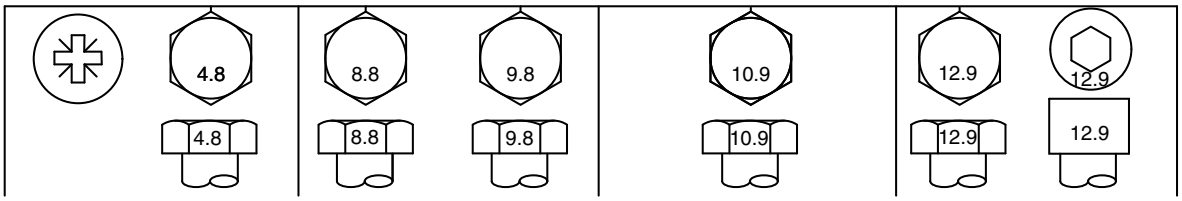
Check cap screws and nuts to be sure they are tight. If hardware is loose, tighten to torque shown on the following charts unless a special torque is specified.

T82,SKMA,AT -19-01AUG94-1/1

Courtesy of Machine.Market

Metric Bolt and Screw Torque Values

TS1670 —UN—01MAY03



Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]	
	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N·m	lb.-ft.														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. 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 fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a] *"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.*

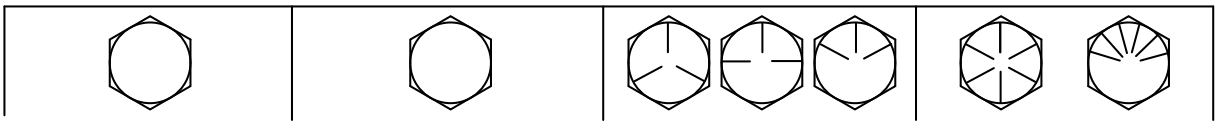
[b] *"Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.*

DX,TORQ2 -19-12JAN11-1/1

Courtesy of Machine.Market

Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



Bolt or	SAE Grade 1				SAE Grade 2[a]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
Screw	Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]	
Size	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	3,7	33	4,7	42	6	53	7,5	66	9,5	84	12	106	13,5	120	17	150
													N·m	**lb-ft**	**N·m**	**lb-ft**
5/16	7,7	68	9,8	86	12	106	15,5	137	19,5	172	25	221	28	20.5	35	26
									N·m	**lb-ft**	**N·m**	**lb-ft**				
3/8	13,5	120	17,5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			N·m	**lb-ft**	**N·m**	**lb-ft**	**N·m**	**lb-ft**								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	N·m	**lb-ft**														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a]Grade 2 applies for hex cap screws (not hex bolts) up to 6. in (152 mm) long. Grade 1 applies for hex cap screws over 6 in. (152 mm) long, and for all other types of bolts and screws of any length.

[b]"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C zinc flake coating.

[c]"Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B zinc flake coating.

TORQ1 -19-24APR03-1/1

Courtesy of Machine.Market

Miscellaneous—Operational Checkout

Operational Checkout

Use this procedure to make a quick check of machine operation by doing a walk around inspection and performing specific checks from operator's seat.

Complete visual checks (oil levels, oil condition, external leaks, loose hardware, linkage, wiring, etc.) before performing checkout.

Most checks will require machine systems to be at normal operating temperatures and a level area with adequate space to operate machine. Some checks may require varied surfaces.

No special tools are necessary to perform the checkout.

If no problem is found, go to next check. If problem is indicated, an additional check or repair procedure will be suggested.

MD04263,0000384 -19-13APR09-1/31

❶ Engine Off Checks

MD04263,0000384 -19-13APR09-2/31

Service Decal Check

TX1034135A —UN—08JAN08

Check service decal on inside of engine access door.

LOOK: Is service decal legible?

YES: Check complete.

NO: Replace decal.

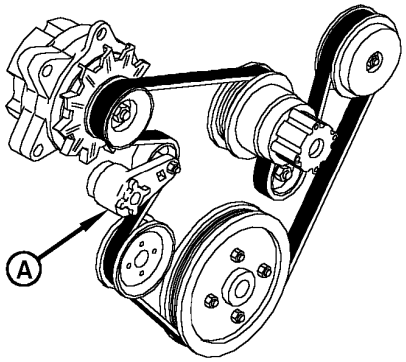
Continued on next page

MD04263,0000384 -19-13APR09-3/31

Courtesy of Machine.Market

Radiator Cap, Coolant Level, Coolant Condition Checks	**CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns. DO NOT remove radiator cap unless engine is cool. Then turn cap slowly to the stop. Release all pressure before you remove cap.**	
	Remove engine side shields.	
	Open radiator cap.	
	FEEL: The radiator cap must have a stop position and must be pushed down to turn when removing.	**YES:** Check complete.
	LOOK: Does radiator cap have a good seal and gasket? The seal must move freely and the spring must not be corroded.	**NO:** If vacuum release valve is plugged or spring corroded, replace radiator cap.
	Inspect coolant level and coolant condition.	**NO:** If coolant is rusty, oily, or foamy, drain, flush and replace coolant. See Fill the Cooling System. (Section 4-1.)
	LOOK: Is coolant clean and not oily, foamy, or rusty?	**NO:** If radiator is low and coolant tank has coolant in it, check for leak on recovery hose.

MD04263,0000384 -19-13APR09-4/31

Fan Belt Checks	 T118314	
	T118314 —UN—01DEC98 **A—Belt Tensioner**	
	Inspect condition of belt. Belt tensioner (A) will automatically adjust to belt wear.	
	LOOK: Is there any oil or grease on fan belt or pulley?	
	LOOK: Inside surface of belt must not have any cracks.	
	Check fan belt for tightness.	**YES:** Replace fan belt. See Inspect Serpentine Belt. (Section 3-3.)
	LOOK: Does serpentine belt tension stop on swing arm contact fixed stops on belt tensioner (A)?	**NO:** Check complete.

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MD04263,0000384 -19-13APR09-5/31

Courtesy of Machine.Market

Start Aid Checks

T118188B —UN—02NOV98

T118723B —UN—01DEC98

A—Canister

On machines (S.N. —141178), open right rear service door. On machines (S.N. 141179—), open right engine access door.

Check position of canister (A).

Inspect plastic line from bottom of starting aid to air intake manifold.

Press and hold starting aid button down to operate starting aid.

LOOK: There must NOT be any kinks or breaks in line and ends must be installed securely.

Check for dot on ether starting aid nozzle in air intake manifold.

LOOK: Is dot at 12 o'clock position on the fitting of air intake manifold?

YES: Check complete.

NO: Adjust fitting so dot is in correct position. Replace plastic line if kinks are present.

MD04263,0000384 -19-13APR09-6/31

Fuel Cap

T118247C —UN—24NOV98

Remove fuel cap.

NOTE: Air "hiss" from tank is normal when cap is removed.

Inspect fuel cap seal.

LOOK: Is seal on fuel cap damaged and vents closed.

YES: Replace fuel cap and open vent.

NO: Check complete.

Continued on next page

MD04263,0000384 -19-13APR09-7/31

Courtesy of Machine.Market

Water Separator Check

T119033B —UN—15DEC98

Open right rear service access door.

Loosen drain knob and drain fuel for several seconds or until water and sediment are removed.

Tighten drain knob.

LOOK: Does fuel flow from drain tube?

YES: Check complete.

NO: No flow, clean or replace valve.

MD04263,0000384 -19-13APR09-8/31

Final Fuel Filter Checks

T119034B —UN—15DEC98

Open drain valve to drain sediment.

T119041B —UN—15DEC98

T119032B —UN—15DEC98

Slowly open bleed screw on fuel filter and operate hand primer on fuel transfer pump.

LOOK: Does fuel come out of bleed screw when hand primer is operated?

Tighten fuel filter bleed screw and again operate hand primer on fuel pump.

FEEL: Is resistance felt when fuel is being pumped?

YES: Check complete.

NO: Clean or replace fuel filter. See Replace Final Fuel Filter. (Section 3-9.)

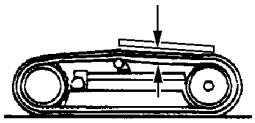
Continued on next page

MD04263,0000384 -19-13APR09-9/31

Courtesy of Machine.Market

Grouser Wear, Bent Track Shoe, and Loose Hardware Checks	Inspect for worn grousers, bent track shoes and loose shoe hardware.	
	Hardware must be tight.	
	NOTE: Excessive grouser wear weakens track shoes and may result in track shoes bending.	**YES:** If shoe hardware is loose, remove shoe and clean joint before tightening. See Checking Track Shoe Cap Screw Torque. (Section 4-1.) If worn or bent, replace.
	LOOK: Are grouser bars worn excessively? Are track shoes bent?	**NO:** Go to next check.

MD04263,0000384 -19-13APR09-10/31

Track Sag, Roller and Idler Leakage Checks	 T119010 —UN—14DEC98	
	Measure track sag at longest span of unsupported track.	
	Inspect rollers and front idler.	**YES:** Go to next check.
	LOOK: Is track sag between 45—57 mm (1-3/4 — 2-1/4 in.)?	**NO:** Adjust track sag. See Adjust Track Sag. (Section 3-3.)
	LOOK: Are rollers and idlers free of oil seepage?	**NO:** Repair or replace roller or idler.

MD04263,0000384 -19-13APR09-11/31

Visual Inspection of All Lines and Hoses	Inspect all lines and hoses.	
	LOOK: Hydraulic oil must be visible in sight glass located inside right rear access door.	
	LOOK: Cylinder seals must not seep or leak oil.	
	Are lines and hoses straight, not kinked or worn from rubbing on other machine parts or "weather checked"?	
	Are hose and line connections clean, not showing signs of leakage, such as oil or dust accumulation at fittings?	**YES:** Check complete.
	LOOK: Are all hose and line clamps in place and tight? Do clamps have rubber inserts or cushions in place to prevent clamps from crushing or wearing into hoses or lines?	**NO:** Reposition hoses or lines and tighten or replace clamps. Tighten fittings or replace O-rings in fittings. Replace hoses or lines as required.

Continued on next page

MD04263,0000384 -19-13APR09-12/31

Courtesy of Machine.Market

Cab Door and Window Seals Check	Open and close door and windows. Inspect seals. *LOOK: Do door and windows contact seals evenly?* *LOOK: Are seals in position and in good condition?* *LOOK: Are latches aligned with strikers?* *FEEL/LOOK: Are the door and window latches and door hold-open-latches easy to operate?*	**YES:** Check complete. **NO:** Adjust door and windows to close against seals properly. Replace seals as necessary.

MD04263,0000384 -19-13APR09-13/31

Horn Check	With key off, push horn button. *LISTEN: Does horn work with key off?*	**YES:** Check complete. **NO:** Check horn circuit.

MD04263,0000384 -19-13APR09-14/31

Seat Control Checks	Does seat raise and lower easily? Does seat angle change easily? Does lever unlock easily and then lock to hold seat and console in position? Does lever move easily to unlock seat support? Does seat move forward and rearward easily? Does lever lock seat support in position when released? Does seat back tilt forward and rearward easily? Does lever unlock and lock easily to hold seat back in position?	**YES:** Go to next check. **NO:** Inspect linkage and repair. See Adjust Non-Suspension Seat. (Section 2-1.)

MD04263,0000384 -19-13APR09-15/31

Battery Disconnect Switch Check	 T118722B —UN—01DEC98 *NOTE: Disconnect switch is located on left side of machine through the battery access door.* Turn battery disconnect switch OFF. Turn key switch ON. *LOOK: Do indicator lights illuminate?*	 **YES:** Check battery disconnect switch. **NO:** Continue check.
	Turn battery disconnect switch ON. Turn key switch ON, but do not start engine. *LOOK: Do indicator lights illuminate?*	 **YES:** Go to next check. **NO:** Check battery disconnect switch.

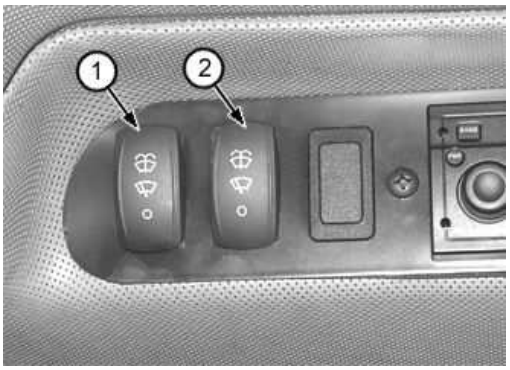
Continued on next page

MD04263,0000384 -19-13APR09-16/31

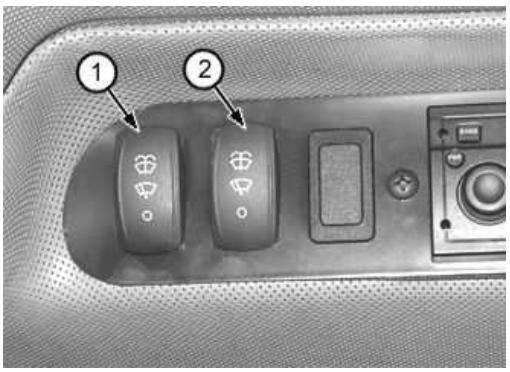
Courtesy of Machine.Market

Reverse Warning Alarm Check	Key switch ON, engine off. Pull park lock lever down UNLOCKED position. Move TCL to reverse. *LISTEN: Does reverse warning alarm sound in reverse?*	 **YES:** Go to next check. **NO:** Calibrate machine. See your authorized dealer.

MD04263,0000384 -19-13APR09-17/31

Front/Rear Wiper and Washer Motor Check—If Equipped	 T199302A —UN—15APR04 **1— Left/Right Wiper Rocker Switch** **2— Front/Rear Wiper Rocker Switch** Key switch ON. Push rocker switch (2) to first detent, middle position. Push rocker switch all the way in and hold. *LOOK: Do both front/rear wipers and washer pumps operate?*	 **YES:** Go to next check. **NO:** Check fuse. Washer fluid may be empty.

MD04263,0000384 -19-13APR09-18/31

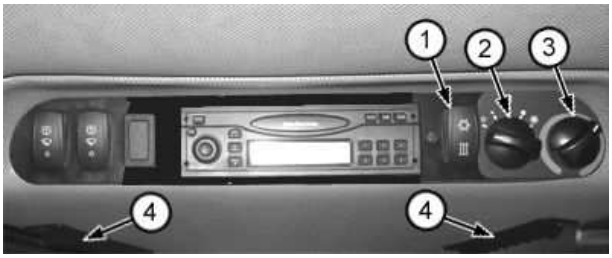
Left/Right Wiper and Washer Motor Check—If Equipped	 T199302A —UN—15APR04 **1— Left/Right Wiper Rocker Switch** **2— Front/Rear Wiper Rocker Switch** Key switch ON. Push rocker switch (1) to first detent, middle position. Push rocker switch all the way in and hold. *LOOK: Do both left/right wiper and washer pumps operate?*	 **YES:** Go to next check. **NO:** Check fuse.

Continued on next page

MD04263,0000384 -19-13APR09-19/31

Courtesy of Machine.Market

Heater Blower Motor Check—If Equipped



T199304A —UN—16APR04

1— Climate Control Switch
2— Blower Switch
3— Temperature Control
4— Air Duct (8 used)

Start engine. Push lower half of climate control switch (1) fully.

Turn blower switch (2) to position (1, 2, 3 and 4).

FEEL: Does air exit all ducts from roof?

YES: Check complete.

NO: Check fuse. Replace.

NO: Check wiring harness.

MD04263,0000384 -19-13APR09-20/31

❷ Engine On Checks

MD04263,0000384 -19-13APR09-21/31

Transmission Speed Check

Start engine.

Check transmission speed. Transmission speed should be defaulted to 1.6.

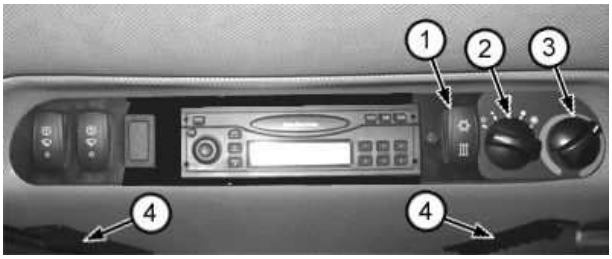
LOOK: Is transmission speed defaulted to 1.6?

YES: Check complete.

NO: See your authorized dealer.

MD04263,0000384 -19-13APR09-22/31

Air Conditioner Check—If Equipped



T199304A —UN—16APR04

1— Climate Control Switch
2— Blower Switch
3— Heater Temperature Control
4— Air Duct (2 used)

Start engine and run at fast idle.

Push upper half of climate control switch (1) fully.

Turn blower switch (2) to 4th position.

Wait for any warm air in duct system to dissipate.

FEEL: Is air from ducts cool?

YES: Check complete.

NO: See your authorized dealer.

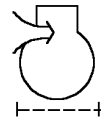
Continued on next page

MD04263,0000384 -19-13APR09-23/31

Courtesy of Machine.Market

Alternator Check	Key on. Start engine. *LOOK: Is ENGINE ALT VOLTS indicator light on?*	 **YES:** Check and recharge batteries. **NO:** Go to next check.

MD04263,0000384 -19-13APR09-24/31

Air Restriction Indicator Check	 **T117820** T117820 —UN—25NOV98 Start engine. *LOOK: Does indicator light come on?*	 **YES:** Clean or replace air cleaner elements. See Replace Air Cleaner Elements. (Section 8.) **NO:** Go to next check.

MD04263,0000384 -19-13APR09-25/31

TCL Check	**CAUTION: Prevent possible injury from machine movement. Make sure there is adequate room and be aware of bystanders.** Engine speed at 1500 rpm. Transmission speed to 2.0. Make several shifts from neutral to forward, neutral to reverse and then forward to reverse. **Specification** Engine—Speed.....1500 rpm *LOOK: Does machine shift smoothly?* *LOOK: Does machine operate in forward and reverse?* *NOTE: TCL shift rate can be set to operator preference. Low has a slower reaction time and high has a quicker reaction time. See your authorized dealer to change transmission rates.*	 **YES:** Check complete. **NO:** Test TCL sensor.

Continued on next page

MD04263,0000384 -19-13APR09-26/31

Courtesy of Machine.Market

Decelerator/Brake Pedal and Park Brake Operational Check

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

Operate machine slowly in forward. Fully depress decel/brake pedal and then release.

LOOK: Machine must stop when pedal is depressed and must move when pedal is released.

Start engine.

Park lock lever down.

Depress decel/brake pedal until spring resistance is felt.

Adjust engine speed to fast idle.

Transmission speed to 3.0.

TCL in forward.

Release decel/brake pedal.

LOOK: Does machine accelerate smoothly to maximum speed?

YES: Check complete.

NOTE: Decel/brake response time can be set to operator preference.

NO: Inspect park brake valve and calibrate machine. See your authorized dealer.

MD04263,0000384 -19-13APR09-27/31

Park Brake Valve Leakage Check

Hydraulic oil must be at operating temperature 66°C (150°F).

Adjust engine speed control to slow idle with park lock lever up.

LOOK: Observe charge pressure reading on Transmission Control Unit (TCU) display.

LOOK: Pressure should drop as park lock lever is moved down, then return to original value.

Fully depress decel/brake pedal.

YES: Isolate park brakes, brake valve to locate leakage.

LOOK: Pressure should drop as decel/brake pedal is released, then return to original value.

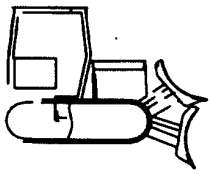
YES: Tracks move in neutral. Inspect park brake valve.

LOOK: Do tracks creep or move?

NO: Check complete.

MD04263,0000384 -19-13APR09-28/31

Hydraulic Pump Performance Check



T6583AE —UN—23AUG93

Hydraulic oil must be at operating temperature 66°C (150°F).

Operate engine at fast idle.

Place blade on ground.

YES: Go to next check.

Record time required to raise blade.

NO: Check oil level and condition. See Check Hydraulic Oil Level. (Section 3-4.)

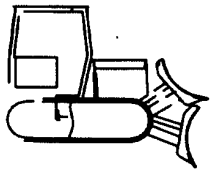
LOOK: Is maximum cycle time 2.2—2.5 seconds?

NO: See your authorized dealer.

Continued on next page

MD04263,0000384 -19-13APR09-29/31

Courtesy of Machine.Market

Control Valve Lift Check Test	 T6583AE —UN—23AUG93 Raise dozer blade approximately 305 mm (1.0 ft) above ground. Stop engine. Move blade to full up position. *LOOK: Does blade lower?* Start engine and raise front of machine, tilt full right. Stop engine. Push blade level control lever to power down position and tilt right. *LOOK: Does machine lower?* Start engine and tilt blade full left. Stop engine. Push hydraulic control lever to tilt left. *LOOK: Does machine lower?*	**YES:** Inspect lift check in valve. **NO:** Go to next check.

MD04263,0000384 -19-13APR09-30/31

Blade Float Check	Raise front of crawler off of ground with blade. Push hydraulic control lever into float detent. *LOOK: Does front of crawler lower to ground?* *FEEL: Does hydraulic control lever stay in float detent position?*	**YES:** Go to next check. **NO:** Inspect and repair valve detents.

MD04263,0000384 -19-13APR09-31/31

Courtesy of Machine.Market

Miscellaneous—Troubleshooting

Troubleshooting Procedure

NOTE: Troubleshooting charts are arranged from the simplest to verify, to least likely, more difficult to verify. When diagnosing a problem, use all possible means to isolate the problem to a single component or system. Use the following steps to diagnose problems:

Step 1. Operational Checkout Procedure

Step 2. Troubleshooting Charts

Step 3. Adjustments

Step 4. See your authorized John Deere dealer.

HG31779,0000020 -19-06MAY10-1/1

Courtesy of Machine.Market

Engine

Symptom	Problem	Solution
Engine Will Not Start or Starts Hard	Battery disconnect switch off	Turn switch on.
	Fuel shut off	Open fuel shut-off valve.
	Fuel tank empty	Check fuel quantity.
	Fuel tank vent plugged	Remove cap and listen to sound of air entering tank. Replace cap.
	No electrical power to injection pump solenoid	Turn key switch to ON position. Must hear click at injection pump. See your authorized dealer.
	Water in fuel or water frozen in fuel line	Drain water from fuel filter(s). Change filter(s). Inspect fuel filter(s) for water.
	Debris in fuel or wrong grade of fuel	Check fuel/water separator for debris. Check fuel grade.
	Air leak on suction side of fuel system	Check for bubbles in fuel filter and tighten connections. Inspect fuel lines for damage. See your authorized dealer.
	Fuel transfer pump diaphragm leaking	Check engine oil for fuel dilution.
	Slow cranking speed	Check battery and connections.
	Restricted air filter	Check air filter restriction indicator light and air filters.
	Fuel tank shutoff not fully open	Open fuel tank shutoff.
	Valve clearance	Check and adjust valves.
Engine Surges or Stalls Frequently	Air in fuel	Inspect filter for evidence of air in fuel. Tighten connections and bleed fuel system.
	Fuel partially shut off	Open fuel shutoff valve.
	Fuel tank vent plugged	Remove cap and listen to sound of air entering tank. Replace cap.
	Debris in fuel or wrong grade of fuel	Check fuel/water separator for debris. Check fuel grade.
	Water in fuel	Drain water from fuel filter(s). Change filter(s).
	Fuel filter plugged	Replace filter(s).

Continued on next page

Courtesy of Machine.Market

Symptom	Problem	Solution
Engine Misses	Air in fuel	Check for evidence of air in filter. Tighten connections and bleed fuel system.
	Fuel partially shut off	Open fuel shutoff valve.
	Debris in fuel or wrong fuel grade	Check fuel filter(s) for debris. Clean. Check grade of fuel.
Engine Does Not Develop Full Power	Fuel partially shut off	Open fuel shutoff valve.
	Fuel filter clogged	Replace fuel filter(s).
	Wrong grade of fuel	Drain and add correct fuel.
	Air system restricted	Check air filter restriction indicator and air filters.
Engine Emits Excessive Black or Gray Exhaust Smoke	Restricted air filter	Check air filter restriction indicator and air filters. Replace.
	Incorrect grade of fuel	Use correct grade of fuel.
Engine Emits Excessive Blue or White Smoke	Cranking speed too slow	Check batteries and connections.
	Incorrect grade of fuel	Use correct grade of fuel.
	Engine running too cold	Check thermostat operation. See your authorized dealer.
Slow Acceleration	Improper fuel	Use correct grade of fuel.
Abnormal Engine Noise	Low or incorrect engine oil	Add correct oil to proper level.
	Loose or worn hydraulic pump	Inspect. See your authorized dealer.
	Engine oil diluted	Inspect engine oil. Determine cause.
Low Oil Pressure (Oil Pressure Light On, Red STOP Indicator Flashing)	Low oil level	Add oil to proper level. Inspect engine oil.
	Wrong viscosity oil/oil diluted with diesel fuel	Change oil.
Engine Overheats (Engine Coolant Indicator and Red STOP Indicator Flashing)	Low coolant level	Fill cooling system and check for leaks.
	Low engine oil level	Add oil.
	Loose or broken fan belt	Tighten or replace belt.
	Fan on backwards	Check for correct fan installation.

Continued on next page

Courtesy of Machine.Market

Symptom	Problem	Solution
	Radiator dirty or plugged	Check air flow. Clean radiator.
	Radiator shroud missing or damaged	Inspect. Repair or replace.
	Engine overloaded	Reduce load.
	Wrong fuel	Use correct grade of fuel.
	Radiator cap	Replace cap.
	Thermostat missing, cooling system coated with lime deposits	Flush cooling system. See your authorized dealer.
Excessive Fuel Consumption	Air system restricted	Check filter restriction indicator and air filters. Replace.
	Leakage in fuel system	Inspect. Repair.
	Incorrect grade of fuel	Drain and fill with correct fuel.
	Operator holding hydraulics in relief mode	Return control levers to neutral position.

HG31779,00000D2 -19-15JAN08-3/3

Courtesy of Machine.Market

Electrical System

Symptom	Problem	Solution
Starter Will Not Crank Engine	Battery disconnect switch turned off	Turn switch on.
	Starter	Listen for click from starter solenoid. If click is heard, the starter control circuit is functioning. If click is not heard, see your authorized dealer.
	Starter relay	With vehicle in neutral, open right engine service door and listen for click from starter relay when the key switch is in START position. If click is heard, the key switch, circuit breaker, start fuse connectors, and neutral start switch are functioning and the starter relay, relay ground, or starter is defective. See your authorized dealer.
Starter Solenoid Chatters	Poor or corroded connections at battery, battery ground strap, or starter	Inspect, clean, and tighten if necessary.
Engine Cranks Slowly	Loose or corroded battery cables	Inspect and clean or tighten.
	Loose battery ground cable	Open battery cover and inspect and tighten battery ground cable.
	Excessive engine load	Change engine oil to proper grade for temperature.
Starter Continues to Run	Starter solenoid stuck	Shut engine off. See your authorized dealer.
	Starter relay stuck on	Shut engine off. See your authorized dealer.
Battery Uses Too Much Water	Cracked battery case	Replace battery.
	High ambient temperature	Fill with distilled water.
Cracked Battery Case	No battery hold down clamp	Replace battery and install hold down clamp.
	Loose battery hold down clamp	Replace battery and install hold down clamp.
	Battery hold down clamp too tight	Replace battery and install battery hold down clamp correctly.
	Frozen battery	Keep battery fully charged in cold weather.
Low Battery Output	Low water level	Add distilled water.

Continued on next page

HG31779,00000D3 -19-15JAN08-1/2

Courtesy of Machine.Market

Symptom	Problem	Solution
	Dirty or wet battery top causing discharge	Clean and wipe battery top dry.
	Corroded or loose battery cables	Clean and tighten battery cables.
	Broken battery post	Wiggle battery post by hand. If post wiggles or turns, replace battery.
Charge Indicator and Low Oil Pressure Indicator Stays On with Key Off	Broken ground wire to alternator	Inspect and repair.
	Worn alternator	Repair or replace alternator.
Voltage Indicator Light (Remains On with Engine Running)	Loose or glazed belt. Engine rpm low	Check belt. Replace if glazed. Raise engine rpm above 1200 rpm. If light remains on, see your authorized dealer.
	Diode or phase winding	Increase engine rpm to fast idle. If light goes out or gets dim, it indicates a defective diode or phase winding. See your authorized dealer.
	Loose or corroded electrical connections on battery, ground strap, starter, or alternator	Inspect, clean, or tighten electrical connections.
Alternator Light Out, but Low Charging System Voltage	Indicator light bulb	Inspect and replace.
	Loose wiring connector	Inspect and repair.
Noisy Alternator	Worn or defective bearings in alternator	Remove belt and feel for rough bearing while turning alternator pulley.
	Drive belt	Inspect and replace if necessary.
	Pulley not aligned	Inspect.

HG31779,00000D3 -19-15JAN08-2/2

Courtesy of Machine.Market

Hydraulic System

Symptom	Problem	Solution
Blade Lifts and/or Blade Tilts Too Slowly	Cold oil	Allow oil to warm up.
	Oil viscosity too high (too thick)	Use correct oil.
	Control valve linkage	Inspect linkage. Repair or adjust. See your authorized dealer.
	Worn hydraulic pump	Check blade raise cycle time.
Blade Fails to Lift and Blade Fails to Tilt	Low hydraulic oil level	Check. Add hydraulic oil.
Blade Hard to Control	Front idler vertical movement excessive	Adjust front idler to side frame clearance.
Pump Excessively Noisy	Cold oil	Allow unit to warm up.
	Low oil level	Check, add oil.
	Oil viscosity too high (oil too thick)	Change oil to correct viscosity oil.
Hydraulic Oil Overheats	Operator holds control valve open too long, causing system relief valve to open	Instruct operator on correct operation of dozer.
	Oil viscosity too high (oil too thick)	Change oil to correct viscosity.
Hydraulic Oil Foams	Water in oil	Inspect oil. Change.
	Using wrong oil	Inspect. Change oil.

HG31779,00000D4 -19-14JAN08-1/1

Courtesy of Machine.Market

Hydrostatic Transmission

Symptom	Problem	Solution
Transmission Oil Filter Restriction Indicator Light Remains On with the Unit at Operating Temperature	Plugged filter	Change filter.
	Sender wire grounded	Remove wires from sender. If light remains on, circuit is grounded. See your authorized dealer.
Transmission Oil Overheats	Low oil level	Check and add transmission oil.
	Oil cooler core restricted with debris or fins damaged	Clean core. Add sand screen to protect core.
		Check oil temperature sensor.
Low Transmission Oil Pressure (Filter Restriction Indicator Light May or May Not Be On)	Low oil level	Check. Add oil.
	Wrong oil viscosity	Drain and fill with correct oil.
	Oil overheated	Check temperature sensor. See your authorized dealer.
		Check pressure sensor.
Crawler Will Not Move	Park lock switch	Check diagnostic trouble codes. See your authorized dealer.
	Transmission problem	Check diagnostic trouble codes. See your authorized dealer.
Crawler Mistracks	Air in transmission control circuit	See your authorized dealer.
	Misadjusted motor	Check diagnostic trouble codes. See your authorized dealer.
	TCL sticks or does not return to non-steer position	Check TCL boot. See your authorized dealer.
	Left and right track sag not adjusted the same	Adjust track sag to specifications.

HG31779,00000D5 -19-14JAN08-1/1

Courtesy of Machine.Market

Gauges and Indicators

Symptom	Problem	Solution
Engine Coolant Temperature Indicator Light Does Not Indicate Overheating or Bulb Does Not Light in BULB CHECK Position	Indicator light open circuit	Turn key to BULB CHECK. If no light, see your authorized dealer.
Transmission Temperature Indicator Light Bulb Does Not Indicate Overheating or Bulb Does Not Light in BULB CHECK Position	Indicator light open circuit	Turn key to BULB CHECK. If no light, see your authorized dealer.
Engine Oil Pressure Indicator Will Not Light	Indicator light open circuit	Turn key to BULB CHECK. If no light, see your authorized dealer.
Alternator Indicator Will Not Light	Indicator light open circuit	Turn key to BULB CHECK. If no light, see your authorized dealer.
Horn Does Not Sound	Horn ground	Ground horn to tractor frame. See your authorized dealer.
	Horn	Replace horn. See your authorized dealer.
	Horn Relay	Replace relay.
	Horn fuse.	Replace fuse.
	Horn button	Replace horn button. See your authorized dealer.
Windshield Wiper Does Not Operate	Wiper fuse	Check and replace.
Heater Fan Does Not Operate	Heater fuse	Check and replace.
No Work Lights	Bulb burned out	Replace bulb.
	Poor ground light switch	Inspect and tighten. See your authorized dealer.
Rear Light Does Not Operate	Loose connector in wiring harness of ROPS	Inspect and reconnect. See your authorized dealer.
Dim Lights	Low battery charge	Check battery connections.
	Low alternator output	Check belt tension.
	Poor ground at lights	Clean and tighten.

NOTE: If any other problems are encountered which require special tools or machine knowledge to correct, see your authorized dealer.

HG31779,00000D6 -19-14JAN08-1/1

Courtesy of Machine.Market

Access Diagnostic Trouble Codes (DTCs) (S.N. —141178)

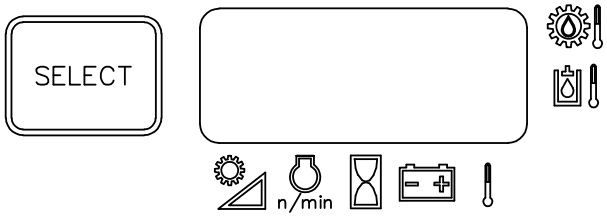
Monitor Display Unit (MDU) and Engine Control Unit (ECU) DTCs

1. Engine off, park lock on.
2. Press the **SELECT** button and hold while turning the key switch ON, continue to hold the **SELECT** button until the hour meter icon appears in display window then release the **SELECT** button.
3. Press and hold the **SELECT** button until the battery icon appears in display window (approximately 5 seconds) and then release.
4. Press and hold the **SELECT** button until the hour meter icon appears in display window (approximately 5 seconds) then release the **SELECT** button. **DIAG** will be displayed in the display window.
5. Press the **SELECT** button and release within 5 seconds after **DIAG** appears to view stored diagnostic trouble codes.

   If you wait more than five seconds to press the **SELECT** button , the MDU displays **PROG** and then goes back to hour meter and you must start procedure over again.
6. If there are no monitor or engine diagnostic trouble codes stored, **END** will be displayed in the display window. DTCs will be displayed as follows:

   MDU DTCs: Will be displayed with prefix F9 in the MDU window.

   ECU DTCs: Will be displayed with prefix F4 in the MDU window.



T145345 —UN—08SEP01

If there is more than one DTC, the MDU will scroll through all stored codes. Each DTC will be displayed in sequence for 5 seconds, starting with most recent code showing first. A maximum of thirty DTCs can be stored. DTCs will remain in memory until they are deleted.

NOTE: This procedure cannot be performed when the engine is running.

To clear all stored DTCs, once the display window shows **END**, press and hold the **SELECT** button down for five seconds. The display window will show **CLrd**. Turn key switch off to exit.

NOTE: The display window will display **nCLrd** *if the procedure was unsuccessful. Turn key off and repeat the procedure.*

Continued on next page

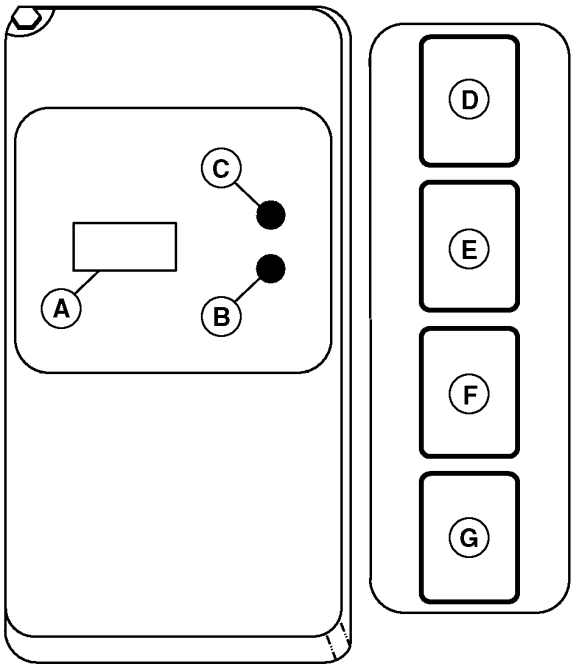
VD76477,00013D1 -19-25JUN10-1/2

Courtesy of Machine.Market

Transmission Control Unit (TCU) DTCs

1. Remove the TCU cover and turn key switch ON.
2. Press the menu button until **CODE** is display and press **SELECT**.
3. The most recent of any stored DTCs will be displayed. If no DTCs are stored, **End** will be displayed.
4. If a DTC is displayed, press **NEXT** to view the next code or **SELECT** to view the occurrence then 1.5 seconds later, the number of occurrences will be displayed.
5. To clear all stored DTCs, press **NEXT** until **End** is displayed. Hold down **SELECT** for five seconds and **F300** will display to indicate that all stored codes have been cleared.

A—Transmission Control Unit (TCU) Display Window
B—STATUS Light (red)
C—POWER Light (green)
D—MENU Button
E—SELECT Button
F—NEXT Button
G—BACK Button



TX1079225 —UN—30JUN10

TX1079225

Transmission Control Unit (TCU)

VD76477,00013D1 -19-25JUN10-2/2

Access Diagnostic Trouble Codes (DTCs)

1. Engine off, park lock on.
2. Press the MENU button to display the Main Menu.
3. Codes will be highlighted. Press the SELECT button to display the Codes submenu.
4. The submenus under Codes include Active and Stored codes. Use the NEXT button to navigate to desired submenu.
5. Use the NEXT button to navigate to a DTC and press SELECT to view a description of the DTC.
6. Press the BACK button to return to the list of codes.

VD76477,00013D2 -19-14JAN08-1/1

Engine Control Unit (ECU) Diagnostic Trouble Codes

NOTE: Engine Control Unit (ECU) diagnostic trouble codes will display when a problem occurs. When a DTC appears, shut engine off and restart to check if the DTC is an intermittent problem. Recall and record all DTCs from Standard Display Monitor (SDM). See your authorized John Deere dealer.

The diagnostic trouble code number is indicated by an F4 plus two other digits.

The diagnostic trouble code number is indicated by a Suspect Parameter Number (SPN) and a Failure Mode Indicator (FMI) number. In the example **96.03**, 96 is the SPN and 03 is the FMI number.

VD76477,0001398 -19-24JAN08-1/1

Courtesy of Machine.Market

Monitor Display Unit (MDU) Diagnostic Trouble Codes (S.N. —141178)

NOTE: Monitor Display Unit (MDU) diagnostic trouble codes (DTCs) will display when a problem occurs.

When a DTC appears, shut engine off and restart to check if the DTC is an intermittent problem. Recall and record all diagnostic trouble codes from monitor. See your authorized dealer.

The diagnostic trouble code number is indicated by an F9 plus two other digits.

The letter F means that a problem has occurred. The number “9” means the MDU has diagnosed a problem and is displayed.

The last two digits of diagnostic trouble code number indicate specific problems.

VD76477,0001383 -19-14JAN08-1/1

Standard Display Monitor (SDM) Diagnostic Trouble Codes

NOTE: Standard Display Monitor (SDM) diagnostic trouble codes (DTCs) will display when a problem occurs.

When a DTC appears, shut engine off and restart to check if the DTC is an intermittent problem.

Recall and record all diagnostic trouble codes from monitor. See your authorized dealer.

The diagnostic trouble code number is indicated by a Suspect Parameter Number (SPN) and a Failure Mode Indicator (FMI) number. In the example **96.03**, 96 is the SPN and 03 is the FMI number.

VD76477,0001382 -19-14JAN08-1/1

Transmission Controller Unit (TCU) Diagnostic Trouble Codes

If the Check Diagnostic Trouble Code indicator lights and stays lit, there is an electrical problem in the transmission control system. The transmission controller will automatically put the machine in an operational mode that will not harm the machine. The diagnostic trouble code number is indicated by a Suspect Parameter Number (SPN) and a Failure Mode Indicator (FMI) number. In the example **96.03**, 96 is the SPN and 03 is the FMI number. The diagnostic trouble code number pinpoints the problem and is a very important aid for your dealer to quickly diagnose the problem. Always relay this code number to your dealer when reporting a problem.

T117818

T117818 —UN—25NOV98

VD76477,0001384 -19-24JAN08-1/1

Courtesy of Machine.Market

Prepare Machine for Storage

1. Before storage, operate engine on at least one complete tank of petroleum diesel fuel to purge the fuel system. Ensure that the fuel tank is full during storage to prevent water build up due to condensation.

NOTE: For up to and including B20, it is recommended that biodiesel be used within 3 months of its manufacture. For blends greater than B20, it is recommended that the biodiesel be used within 45 days. The poor oxidation stability characteristic of biodiesel can result in longterm storage problems. John Deere does not recommend using biodiesel in engines powering standby applications or vehicles operating on a seasonal basis. Consult your John Deere dealer or fuel supplier for additives to improve fuel storage and performance of biodiesel fuels. These additives must be added to the biodiesel close to its time of production for them to be effective.

2. Repair worn or damaged parts. Install new parts, if necessary, to avoid needless delays later.
3. Clean primary engine air cleaner element.

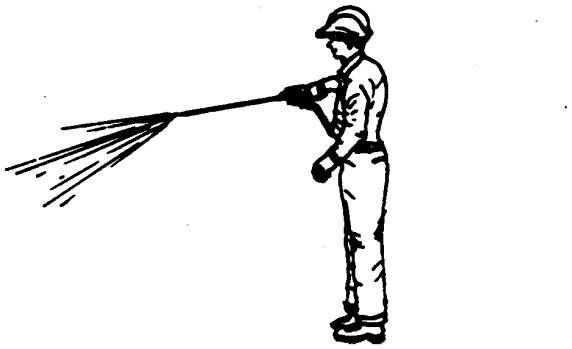
IMPORTANT: High pressure washing greater than 1379 kPa (13.8 bar) (200 psi) can damage freshly painted finishes. Paint should be allowed to air dry for 30 days minimum after receipt of machine before cleaning parts or machines with high pressure. Use low pressure wash operations until 30 days have elapsed.

IMPORTANT: Avoid damage to hydraulic cylinder seals and rods. High pressure washing of cylinder seal areas can force moisture and debris past seals, causing damage to seals and rod. Use low pressure wash to clean cylinder seal areas.

4. Wash the machine. Use low pressure wash operations (less than 1379 kPa (13.8 bar) (200 psi) until 30 days after receipt of machine have elapsed. Paint areas to prevent rust. Replace decals, where needed.
5. Apply oil to track chains. Run machine back and forth several times. Park machine on a hard surface to prevent tracks from freezing to ground.

LPS is a trademark of the Holt Lloyd Corporation.

T47764 —UN—09NOV88



T5813AM —UN—09FEB89

6. Fill fuel tank to prevent condensation.
7. Store machine in a dry, protected place. If stored outside, cover with a waterproof material.

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

8. Retract all hydraulic cylinders, if possible. If not, coat exposed cylinder rods with LPS® 3 Rust Inhibitor.
9. Place a DO NOT OPERATE tag on the right control lever.
10. Lubricate all grease points.
11. Remove batteries.
12. Remove seat cushion and other perishable items.
13. Remove keys and lock all covers and doors.

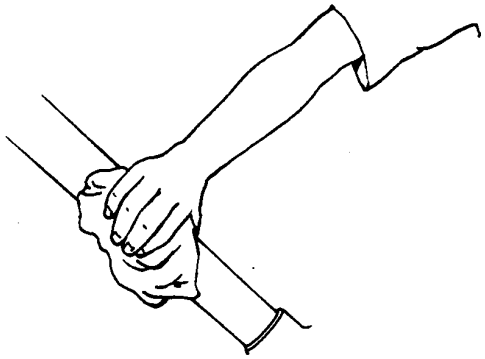
OUT4001,0000027 -19-07FEB13-1/1

Courtesy of Machine.Market

Monthly Storage Procedure

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

1. Drain water and sediment from fuel tank when air temperature is above freezing.
2. Remove LPS 3® Rust Inhibitor from cylinder rods with a cleaning solvent.



T6191AA —UN—18OCT88

Clean Cylinder Rods

LPS 3 Rust Inhibitor is a trademark of Illinois Tool Works.

VD76477,0000003 -19-04JAN13-1/2

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.

3. Check all fluid levels. If low, check for leaks and add oil as required.
4. Check belts.
5. Check condition of all hoses and connections.
6. Check battery electrolyte level. Charge and install battery.
7. For machines with **tires**, check condition of tires and tire pressure.

   For machines with **tracks**, check condition of tracks and track sag.

   On crawler machines with non sealed-and-lubricated track chains, apply oil to the pin-to-bushing joints. Run machine back and forth several times.
8. Park machine on a hard surface to prevent tracks from freezing to ground.
9. Fill fuel tank.
10. Pre-lubricate turbocharger bearings, if equipped:

    a. Disconnect fuel shutoff fuse.

    b. Crank engine for 10 seconds.

    c. Connect fuel shutoff fuse.
11. Inspect engine compartment, and remove any foreign material that may have accumulated. Start engine and run until it reaches operating temperature. Run at 1/2 speed for 5 minutes. Do not run at fast or slow idle.

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

T6181AU —UN—18OCT88

Check Oil on Dipstick

12. Operate all controls, levers, seat adjustments, etc.

⚠ CAUTION: Prevent possible injury from unexpected machine movement. Clear the area of all persons before running machine through the operation procedure.

13. Make sure the area is clear to allow for movement. Cycle all hydraulic functions several times. Check condition of all hoses and connections.
14. Park the machine with cylinder rods retracted, if possible. Shut engine off.
15. Apply LPS 3 Rust Inhibitor to exposed cylinder rod areas.

VD76477,0000003 -19-04JAN13-2/2

Courtesy of Machine.Market

Avoid Track Damage

IMPORTANT: Avoid machine damage. If 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.

JH91824,00002EB -19-27OCT10-1/1

Courtesy of Machine.Market

Miscellaneous—Machine Numbers

General

Record Product Identification Number (PIN).

The PIN plate is located on the left side of machine below engine side shield.

Purchase Date:

NOTE: Record all 13 characters of the Product Identification Number.

T121298B —UN—27APR99

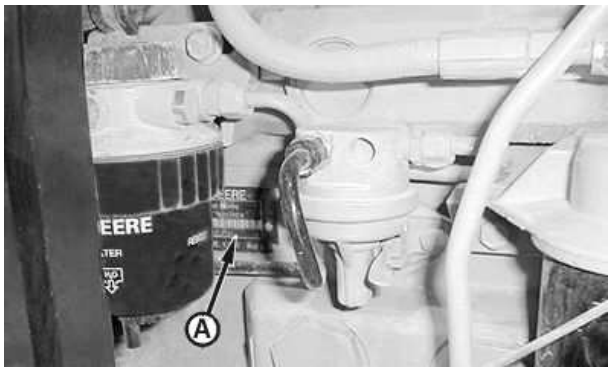
450J Shown

TX,120,RB51 -19-14JAN08-1/1

Record Engine Serial Number

The engine serial number is located on right side of engine.

Engine Serial Number (A):

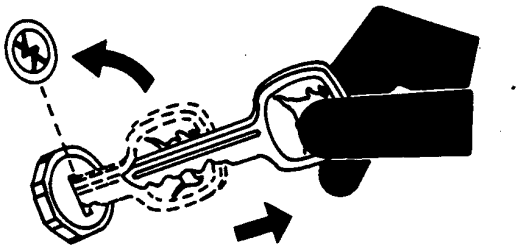


T118006B —UN—11NOV98

CED,OUO1032,1042 -19-14JAN08-1/1

Keep Machines Secure

1. Install vandal-proof devices.
2. When machine is in storage:
   - Lower equipment to the ground
   - Set wheels to widest position to make loading more difficult
   - Remove any keys and batteries
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When parking outdoors, store in a well-lighted and fenced area.
5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
6. Notify your John Deere dealer of any losses.



TS230 —UN—24MAY89

DX,SECURE2 -19-18NOV03-1/1

Courtesy of Machine.Market

Keep Proof of Ownership

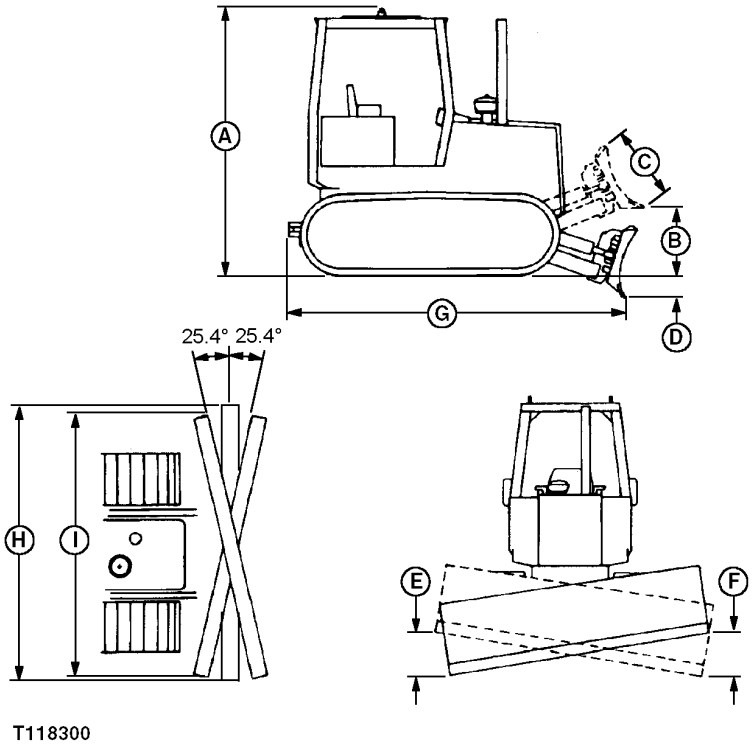
1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:
   - Mark your machine with your own numbering system
   - Take color photographs from several angles of each machine

TS1680 —UN—09DEC03

DX,SECURE1 -19-18NOV03-1/1

Courtesy of Machine.Market

450J-LT Crawler Dozer Dimensions



T118300

T118300 —UN—11NOV98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
A—Overall Height—ROPS or Cab	Height	2590 mm 8 ft 6 in.
B—Blade	Height	826 mm 2 ft 8.6 in.
C—Blade Lift	Height	773 mm 2 ft 6 in.
D—Digging	Depth	528 mm 1 ft 9 in.
E—Blade Tilt		
90 inch (Narrow) Blade (Right Side)	Distance	313 mm 1 ft
97 inch (Standard) Blade (Right Side)	Distance	337 mm 1 ft 1.3 in.
115 inch Blade (Right Side)	Distance	400 mm 1 ft 3.8 in.
F—Blade Tilt		
90 inch (Narrow) Blade (Left Side)	Distance	313 mm 1 ft

Continued on next page

CED,OUO1032,1353 -19-21JAN13-1/2

Courtesy of Machine.Market

Item	Measurement	Specification
97 inch (Standard) Blade (Left Side)	Distance	337 mm 1 ft 1.3 in.
115 inch Blade (Left Side)	Distance	400 mm 1 ft 3.8 in.
G—Overall (Without Winch)	Length	4013 mm 13 ft 2 in.
G—Overall (With Winch)	Length	4496 mm 14 ft 9 in.
H—Blade Width (90 inch Blade)	Width	2286 mm 7 ft 6 in.
H—Blade Width (97 inch Blade)	Width	2464 mm 8 ft 1 in.
H—Blade Width (115 inch Blade)	Width	2921 mm 9 ft 7 in.
I—Blade Angle (90 inch Blade)	Width	2106 mm 6 ft 10.9 in.
I—Blade Angle (97 inch Blade)	Width	2267 mm 7 ft 5.3 in.
I—Blade Angle (115 inch Blade)	Width	2680 mm 8 ft 9.5 in.
90 inch (Narrow) Blade	Capacity	1.4 m^3
97 inch (Standard) Blade	Capacity	1.5 m^3
115 inch Blade	Capacity	1.75 m^3

CED,OUO1032,1353 -19-21JAN13-2/2

Courtesy of Machine.Market

450J-LT Crawler Dozer Specifications

Item	Measurement	Specification
John Deere PowerTECH® 4045D 4-Cylinder Diesel Engine		
Engine	Type	Naturally Aspirated
Fuel Consumption, Typical	Consumption	4.9—8.7 L/h 1.5—2.3 gph
Rated Power at 2200 rpm	Power	52 kW (70 hp) SAE net horsepower
Piston	Displacement	4.52 L 276 cu in.
Maximum Net Torque at 1300 rpm	Torque Rise	313 N·m 230 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	65 amp
Alternator—Cab with Air Conditioning	Amperage	95 amp
Transmission	Speed	0—8 km/h 0—5 mph
Hydraulic System	Pressure	20 685 kPa 3000 psi
	Flow Rate	56.8 L/min (15 gpm) @ 2200 rpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 16 in. Shoes)	Area	17 755 cm^2
Track	Pitch	160 mm 6.29 in.
	Gauge	1450 mm 57 in.
Minimum Ground (with Single Bar Grouser)	Clearance	345 mm 13.6 in.
Minimum Ground (with Swamp Shoes)	Clearance	366 mm 14.4 in.
Ground Pressure	Pressure	38.6 kPa 0.39 bar 5.6 psi

PowerTECH is a registered trademark of Deere & Company

CED,OUO1032,1354 -19-14JAN08-1/1

Courtesy of Machine.Market

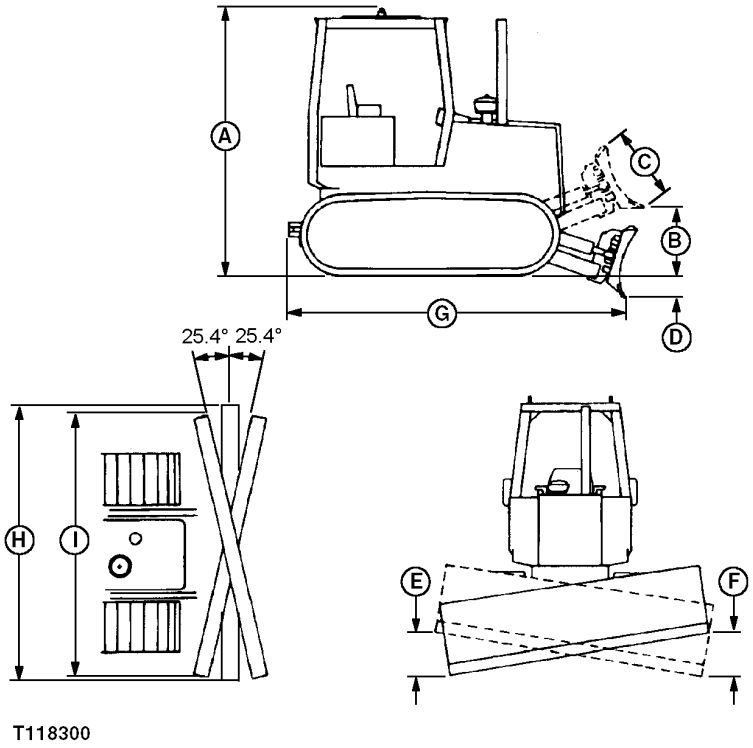
450J-LT Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	6804 kg 15 000 lb
Optional Equipment		
Rock Guards (4)	Weight	131 kg 288 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab with Heater (add)	Weight	268 kg 590 lb
Cab with Air Conditioning (add)	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Front Tow Hook	Weight	15 kg 33 lb
Rigid Draw Bar	Weight	23 kg 50 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb

OUT4001,0000016 -19-14JAN08-1/1

Courtesy of Machine.Market

450J-LGP Crawler Dozer Dimensions



T118300

T118300 —UN—11NOV98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
A—Overall Height—ROPS or Cab	Height	2590 mm 8 ft 6 in.
B—115 inch Blade	Height	826 mm 2 ft 8.6 in.
B—124 inch Blade	Height	767 mm 2 ft 6.2 in.
C—Blade Lift	Height	773 mm 2 ft 6 in.
D—Digging	Depth	528 mm 1 ft 9 in.
E—Blade Tilt		
115 inch Blade (Right Side)	Distance	400 mm 1 ft 3 in.
124 inch Blade (Right Side)	Distance	432 mm 1 ft 5 in.
F—Blade Tilt		
115 inch Blade (Left Side)	Distance	400 mm 1 ft 3 in.

Continued on next page

HG31779,000002B -19-21JAN13-1/2

Courtesy of Machine.Market

Item	Measurement	Specification
124 inch Blade (Left Side)	Distance	432 mm 1 ft 5 in.
G—Overall (Without Winch)	Length	4013 mm 13 ft 2 in.
G—Overall (With Winch)	Length	4496 mm 14 ft 9 in.
H—Blade Width (115 inch blade)	Width	2921 mm 9 ft 7 in.
H—Blade Width (124 inch blade)	Width	3150 mm 10 ft 4 in.
I—Blade Angle (115 inch blade)	Width	2639 mm 8 ft 8 in.
I—Blade Angle (124 inch blade)	Width	2845 mm 9 ft 3 in.
115 inch Blade	Capacity	1.75 m^3
124 inch Blade	Capacity	1.64 m^3

HG31779,000002B -19-21JAN13-2/2

Courtesy of Machine.Market

450J-LGP Crawler Dozer Specifications

Item	Measurement	Specification
SAE Operating Weight	Weight	7484 kg 16 500 lb
Optional Equipment		
Rock Guards (4)	Weight	131 kg 288 lb
Swamp Shoe	Weight	11 kg 25 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab with Heater (add)	Weight	268 kg 590 lb
Cab with Air Conditioning (add)	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Front Tow Hook	Weight	15 kg 33 lb
Rigid Draw Bar	Weight	23 kg 50 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb

HG31779,000002C -19-14JAN08-1/1

Courtesy of Machine.Market

450J-LGP Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	7949 kg 17 525 lb
Optional Equipment		
Rock Guards (4)	Weight	131 kg 288 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Front Tow Hook	Weight	15 kg 33 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb

OUT4001,0000017 -19-14JAN08-1/1

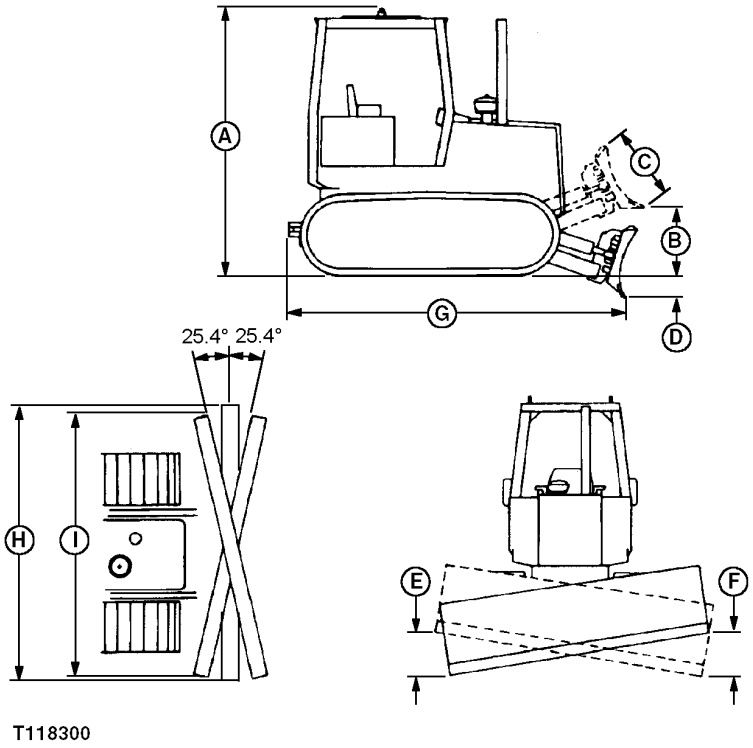
450J-LT and 450J-LGP Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System	Capacity	16.0 L 4.2 gal
Fuel Tank	Capacity	178.0 L 47.0 gal
Engine Oil (Including Filter)	Capacity	14.0 L 3.75 gal
Final Drive (Each Side)	Capacity	6.6L 7.0 qt
Hydraulic Reservoir (Including Filter)	Capacity	32.0 L 8.5 gal
Transmission Reservoir (Including Filter)	Capacity	43.0 L 11.0 gal
Winch—If Equipped	Capacity	38.0 L 10.0 gal

JH91824,00002FB -19-04FEB13-1/1

Courtesy of Machine.Market

550J-LT Crawler Dozer Dimensions



T118300

T118300 —UN—11NOV98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
A—Overall Height—ROPS or Cab	Height	2743 mm 9 ft
B—Blade	Height	826 mm 2 ft 8.6 in.
C—Blade Lift	Height	797 mm 2 ft 7.4 in.
D—Digging	Depth	523 mm 1 ft 8.6 in.
E—Blade Tilt		
105 inch (Standard) Blade (Right Side)	Distance	364 mm 1 ft 2.3 in.
97 inch (Narrow) Blade (Right Side)	Distance	337 mm 1 ft 1.3 in.
F—Blade Tilt		
105 inch (Standard) Blade (Left Side)	Distance	313 mm 1 ft
97 inch (Narrow) Blade (Left Side)	Distance	337 mm 1 ft 1.3 in.

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CED,OUO1032,1376 -19-21JAN13-1/2

Courtesy of Machine.Market

Item	Measurement	Specification
G—Overall (Without Winch)	Length	4040 mm 13 ft 3 in.
G—Overall (With Winch)	Length	4549 mm 14 ft 11 in.
H—Blade Width (105 inch Standard Blade)	Width	2667 mm 8 ft 9 in.
H—Blade Width (97 inch Narrow Blade)	Width	2464 mm 8 ft 1 in.
I—Blade Angle (105 inch Standard Blade)	Width	2507 mm 8 ft 2.7 in.
I—Blade Angle (97 inch Narrow Blade)	Width	2318 mm 7 ft 7.2 in.
105 inch (Standard) Blade	Capacity	1.61 m^3
97 inch (Narrow) Blade	Capacity	1.5 m^3

CED,OUO1032,1376 -19-21JAN13-2/2

Courtesy of Machine.Market

550J-LT Crawler Dozer Specifications

Item	Measurement	Specification
John Deere PowerTECH® 4045T 4-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	6.4—9.8 L/h 1.7—2.6 gph
Rated Power at 2200 rpm	Power	60 kW (80 hp) SAE net horsepower
Piston	Displacement	4.52 L 276 cu in.
Maximum Net Torque at 1300 rpm	Torque Rise	351 N·m 259 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	65 amp
Alternator—Cab with Air Conditioning	Amperage	95 amp
Transmission	Speed	0—8 km/h 0—5 mph
Hydraulic System	Pressure	20 685 kPa 3000 psi
	Flow Rate	56.8 L/min (15 gpm) @ 2200 rpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 18 in. Shoes)	Area	19 974 cm^2
Track	Pitch	160 mm 6.29 in.
	Gauge	1550 mm 61 in.
Minimum Ground (with Single Bar Grouser)	Clearance	345 mm 13.6 in.
Minimum Ground (with Swamp Shoes)	Clearance	366 mm 14.4 in.
Ground Pressure	Pressure	37.2 kPa 0.37 bar 5.4 psi
Standard Grouser	Width	457 mm 18 in.

PowerTECH is a registered trademark of Deere & Company

HG31779,000002D -19-14JAN08-1/1

Courtesy of Machine.Market

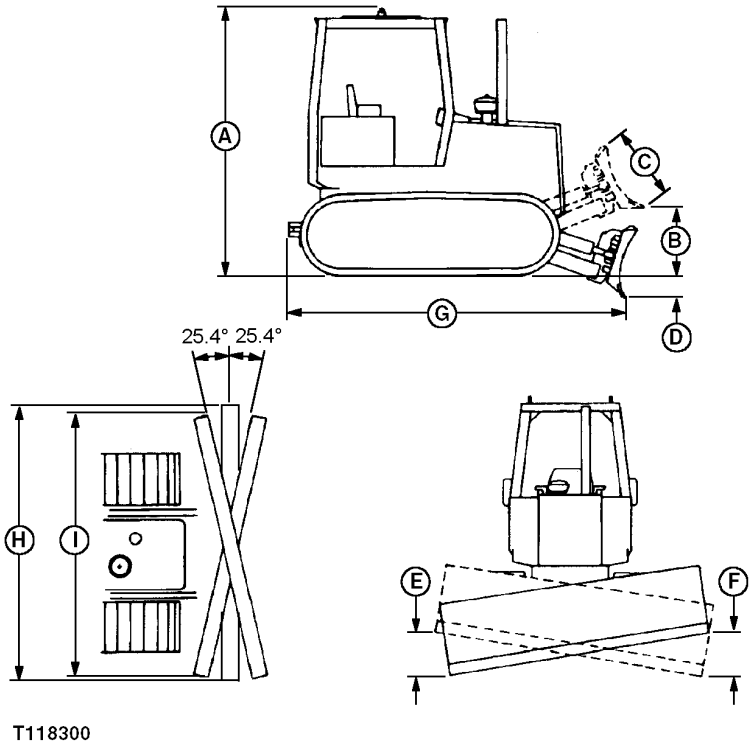
550J-LT Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	7620 kg 16 800 lb
Optional Equipment		
Rock Guards (4)	Weight	131 kg 288 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab with Heater (add)	Weight	268 kg 590 lb
Cab with Air Conditioning (add)	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Retrieval Hitch	Weight	23 kg 50 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb
Parallelogram Ripper	Weight	981 kg 2163 lb

OUT4001,0000018 -19-14JAN08-1/1

Courtesy of Machine.Market

550J-LGP Crawler Dozer Dimensions



T118300

T118300 —UN—11NOV98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
A—Overall Height—ROPS or Cab	Height	2743 mm 9 ft
B—115 inch Blade	Height	826 mm 2 ft 8.6 in.
B—128 inch Blade	Height	767 mm 2 ft 6.2 in.
C—Blade Lift	Height	797 mm 2 ft 7.4 in.
D—Digging	Depth	523 mm 1 ft 8.6 in.
E—Blade Tilt		
115 inch Blade (Right Side)	Distance	399 mm 1 ft 3 in.
128 inch Blade (Right Side)	Distance	444 mm 1 ft 5.5 in.
F—Blade Tilt		
115 inch Blade (Left Side)	Distance	399 mm 1 ft 3 in.

Continued on next page

CED,OUO1032,1377 -19-14JAN08-1/2

Courtesy of Machine.Market

Item	Measurement	Specification
128 inch Blade (Left Side)	Distance	444 mm 1 ft 5.5 in.
G—Overall (Without Winch)	Length	4040 mm 13 ft 3 in.
G—Overall (With Winch)	Length	4549 mm 14 ft 11 in.
H—Blade Width (115 inch Blade)	Width	2921 mm 9 ft 7 in.
H—Blade Width (128 inch Blade)	Width	3251 mm 10 ft 8 in.
I—Blade Angle (115 inch Blade)	Width	2742 mm 8 ft 11.9 in.
I—Blade Angle (128 inch Blade)	Width	3070 mm 10 ft 0.9 in.
115 inch Blade	Capacity	1.75 m^3
128 inch Blade	Capacity	1.69 m^3

CED,OUO1032,1377 -19-14JAN08-2/2

Courtesy of Machine.Market

550J-LGP Crawler Dozer Specifications

Item	Measurement	Specification
John Deere PowerTECH® 4045T 4-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	6.4—9.8 L/h 1.7—2.6 gph
Rated Power at 2200 rpm	Power	63 kW (84 hp) SAE net horsepower
Piston	Displacement	4.52 L 276 cu in.
Maximum Net Torque at 1200 rpm	Torque Rise	372 N·m 276 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	65 amp
Alternator—Cab with Air Conditioning	Amperage	95 amp
Transmission	Speed	0—8 km/h 0—5 mph
Hydraulic System	Pressure	20 685 kPa 3000 psi
	Flow Rate	56.8 L/min (15 gpm) @ 2200 rpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 24 in. Shoes)	Area	26 632 cm^2
Track	Pitch	160 mm 6.29 in.
	Gauge	1753 mm 69 in.
Minimum Ground (with Single Bar Grouser)	Clearance	345 mm 13.6 in.
Minimum Ground (with Swamp Shoes)	Clearance	366 mm 14.4 in.
Ground Pressure	Pressure	29 kPa 0.29 bar 4.2 psi

PowerTECH is a registered trademark of Deere & Company

CED,OUO1032,1379 -19-14JAN08-1/1

Courtesy of Machine.Market

550J-LGP Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	7938 kg 17 500 lb
Optional Equipment		
Rock Guards (4)	Weight	131 kg 288 lb
Swamp Shoe	Weight	73 kg 160 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab with Heater (add)	Weight	268 kg 590 lb
Cab with Air Conditioning (add)	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Front Tow Hook	Weight	15 kg 33 lb
Retrieval Hitch	Weight	23 kg 50 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb
Parallelogram Ripper	Weight	981 kg 2163 lb

OUT4001,0000019 -19-14JAN08-1/1

Courtesy of Machine.Market

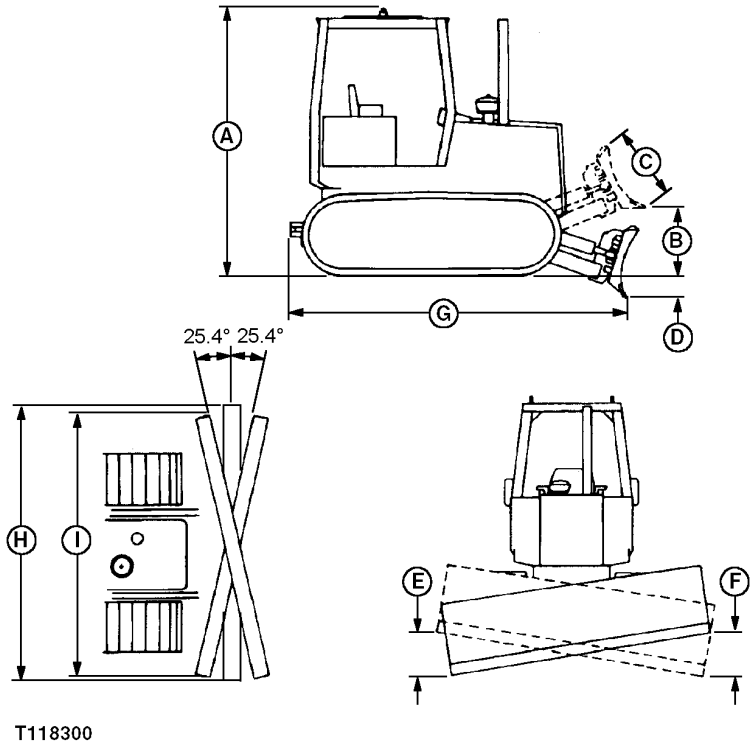
550J-LT and 550J-LGP Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System	Capacity	16.0 L 4.2 gal
Fuel Tank	Capacity	178.0 L 47.0 gal
Engine Oil (Including Filter)	Capacity	14.0 L 3.75 gal
Final Drive (Each Side)	Capacity	6.6 L 7.0 qt
Hydraulic Reservoir (Including Filter)	Capacity	32.0 L 8.5 gal
Transmission Reservoir (Including Filter)	Capacity	43.0 L 11.0 gal
Winch—If Equipped	Capacity	38.0 L 10.0 gal

JH91824,00002FC -19-04FEB13-1/1

Courtesy of Machine.Market

650J-LT Crawler Dozer Dimensions



T118300

T118300 —UN—11NOV98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
A—Overall Height—ROPS or Cab	Height	2768 mm 9 ft 1 in.
B—105 inch (Standard) Blade	Height	933 mm 3 ft 0.7 in.
B—97 inch (Narrow) Blade	Height	826 mm 2 ft 8.6 in.
C—Blade Lift	Height	819 mm 2 ft 8.2 in.
D—Digging	Depth	500 mm 1 ft 7.7 in.
E—Blade Tilt		
105 inch (Standard) Blade (Right Side)	Distance	364 mm 1 ft 2.3 in.
97 inch (Narrow) Blade (Right Side)	Distance	337 mm 1 ft 1.3 in.
F—Blade Tilt		
105 inch (Standard) Blade (Left Side)	Distance	364 mm 1 ft 2.3 in.

Continued on next page

CED,OUO1032,1376 -19-14JAN08-1/2

Courtesy of Machine.Market

Item	Measurement	Specification
97 inch (Narrow) Blade (Left Side)	Distance	337 mm 1 ft 1.3 in.
G—Overall (Without Winch)	Length	4070 mm 13 ft 4 in.
G—Overall (With Winch)	Length	4547 mm 14 ft 11 in.
H—Blade Width (105 inch Standard Blade)	Width	2667 mm 8 ft 9 in.
H—Blade Width (97 inch Narrow Blade)	Width	2464 mm 8 ft 1 in.
I—Blade Angle (105 inch Standard Blade)	Width	2507 mm 8 ft 2.7 in.
I—Blade Angle (97 inch Narrow Blade)	Width	2318 mm 7 ft 7.2 in.
105 inch (Standard) Blade	Capacity	1.99 m^3
97 inch (Narrow) Blade	Capacity	1.5 m^3

CED,OUO1032,1376 -19-14JAN08-2/2

Courtesy of Machine.Market

650J-LT Crawler Dozer Specifications

Item	Measurement	Specification
John Deere PowerTECH® 4045T 4-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	7.2—11.2 L/h 1.9—3.0 gph
Rated Power at 2200 rpm	Power	67 kW (90 hp) SAE net horsepower
Piston	Displacement	4.52 L 276 cu in.
Maximum Net Torque at 1200 rpm	Torque Rise	405 N·m 316 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	65 amp
Alternator—Cab with Air Conditioning	Amperage	95 amp
Transmission	Speed	0—8 km/h 0—5 mph
Hydraulic System	Pressure	20 685 kPa 3000 psi
	Flow Rate	56.8 L/min (15 gpm) @ 2200 rpm
Undercarriage		
Track Shoes (Each Side)	Quantity	38
Ground Contact Area (with 18 in. Shoes)	Area	19 974 cm^2
Track	Pitch	171 mm 6.73 in.
	Gauge	1550 mm 61 in.
Minimum Ground (with Single Bar Grouser)	Clearance	363 mm 14.3 in.
Minimum Ground (with Swamp Shoes)	Clearance	384 mm 15.1 in.
Ground Pressure	Pressure	40.6 kPa 0.41 bar 5.9 psi
Standard Grouser	Width	457 mm 18 in.

PowerTECH is a registered trademark of Deere & Company

CED,OUO1032,1385 -19-14JAN08-1/1

Courtesy of Machine.Market

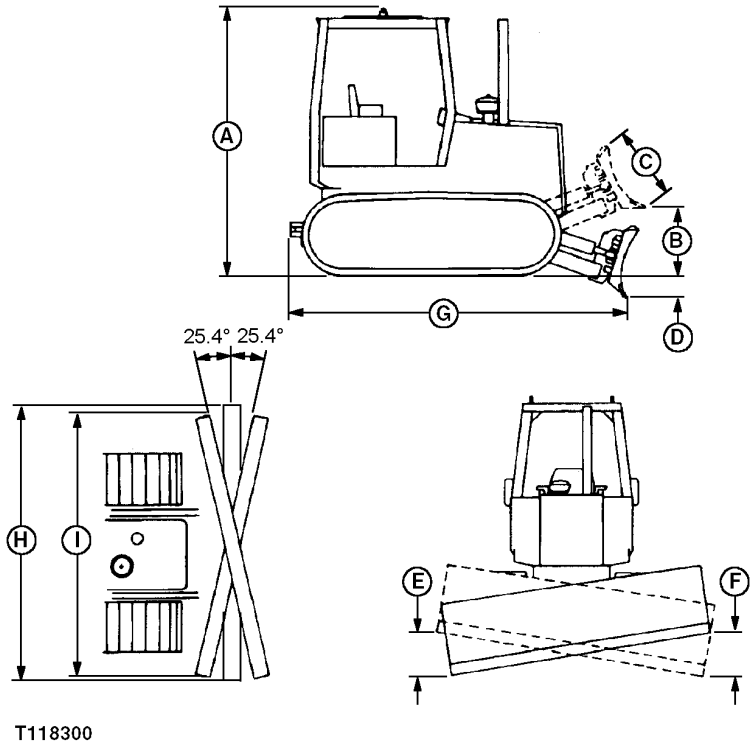
650J-LT Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	8391 kg 18 500 lb)
Optional Equipment		
Rock Guards (4)	Weight	118 kg 260 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab with Heater (add)	Weight	268 kg 590 lb
Cab with Air Conditioning (add)	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Retrieval Hitch	Weight	23 kg 50 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb
Parallelogram Ripper	Weight	981 kg 2163 lb

OUT4001,000001A -19-14JAN08-1/1

Courtesy of Machine.Market

650J-LGP Crawler Dozer Dimensions



T118300

T118300 —UN—11NOV98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
A—Overall Height—ROPS or Cab	Height	2768 mm 9 ft 1 in.
B—Blade	Height	826 mm 2 ft 8.6 in.
C—Blade Lift	Height	819 mm 2 ft 8.2 in.
D—Digging	Depth	500 mm 1 ft 7.7 in.
E—Blade Tilt		
115 inch Blade (Right Side)	Distance	399 mm 1 ft 3 in.
128 inch Blade (Right Side)	Distance	444 mm 1 ft 5.5 in.
F—Blade Tilt		
115 inch Blade (Left Side)	Distance	399 mm 1 ft 3 in.
128 inch Blade (Left Side)	Distance	444 mm 1 ft 5.5 in.

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CED,OUO1032,1384 -19-14JAN08-1/2

Courtesy of Machine.Market

Item	Measurement	Specification
G—Overall (Without Winch)	Length	4070 mm 13 ft 4 in.
G—Overall (With Winch)	Length	4547 mm 14 ft 11 in.
H—Blade Width (115 inch Blade)	Width	2921 mm 9 ft 7 in.
H—Blade Width (128 inch Blade)	Width	3251 mm 10 ft 8 in.
I—Blade Angle (115 inch Blade)	Width	2742 mm 8 ft 11.9 in.
I—Blade Angle (128 inch Blade)	Width	3070 mm 10 ft 0.9 in.
115 inch Blade	Capacity	1.75 m^3
128 inch Blade	Capacity	1.93 m^3

CED,OUO1032,1384 -19-14JAN08-2/2

Courtesy of Machine.Market

650J-LGP Crawler Dozer Specifications

Item	Measurement	Specification
John Deere PowerTECH® 4045T 4-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	7.2—11.2 L/h 1.9—3.0 gph
Rated Power at 2200 rpm	Power	67 kW (90 hp) SAE net horsepower
Piston	Displacement	4.52 L 276 cu in.
Maximum Net Torque at 1200 rpm	Torque Rise	405 N·m 316 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	65 amp
Alternator—Cab with Air Conditioning	Amperage	95 amp
Transmission	Speed	0—8 km/h 0—5 mph
Hydraulic System	Pressure	20 685 kPa 3000 psi
	Flow Rate	56.8 L/min (15 gpm) @ 2200 rpm
Undercarriage		
Track Shoes (Each Side)	Quantity	38
Ground Contact Area (with 28 in. Shoes)	Area	31 432 cm^2
Track	Pitch	171 mm 6.73 in.
	Gauge	1753 mm (69 in.)
Minimum Ground (with Single Bar Grouser)	Clearance	363 mm 14.3 in.
Minimum Ground (with Swamp Shoes)	Clearance	384 mm 15.1 in.
Ground Pressure	Pressure	26.9 kPa 0.27 bar 3.9 psi

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CED,OUO1032,1386 -19-14JAN08-1/1

Courtesy of Machine.Market

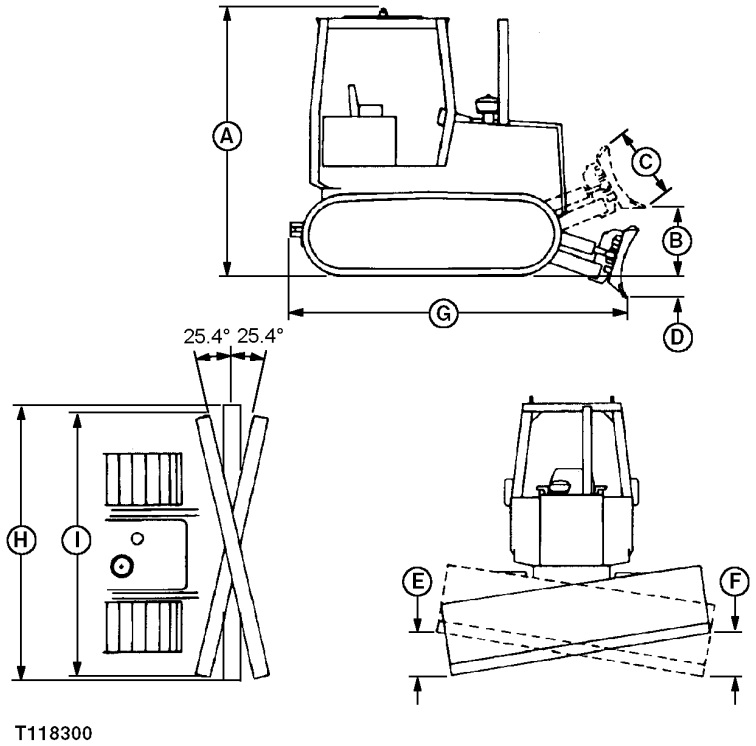
650J-LGP Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	8664 kg 19 100 lb
Optional Equipment		
Rock Guards (4)	Weight	131 kg 288 lb
Swamp Shoe	Weight	72 kg 158 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab with Heater (add)	Weight	268 kg 590 lb
Cab with Air Conditioning (add)	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Front Tow Hook	Weight	15 kg 33 lb
Retrieval Hitch	Weight	23 kg 50 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb
Parallelogram Ripper	Weight	981 kg 2163 lb

OUT4001,000001B -19-14JAN08-1/1

Courtesy of Machine.Market

650J-XLT Crawler Dozer Dimensions



T118300

T118300 —UN—11NOV98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
A—Overall Height—ROPS or Cab	Height	2768 mm 9 ft 1 in.
B—105 inch (Standard) Blade	Height	933 mm 3 ft 0.7 in.
B—97 inch (Narrow) Blade	Height	826 mm 2 ft 8.6 in.
C—Blade Lift	Height	819 mm 2 ft 8.2 in.
D—Digging	Depth	500 mm 1 ft 7.7 in.
E—Blade Tilt		
105 inch (Standard) Blade (Right Side)	Distance	364 mm 1 ft 2.3 in.
97 inch (Narrow) Blade (Right Side)	Distance	337 mm 1 ft 1.3 in.
F—Blade Tilt		
105 inch (Standard) Blade (Left Side)	Distance	364 mm 1 ft 2.3 in.

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Courtesy of Machine.Market

Item	Measurement	Specification
97 inch (Narrow) Blade (Left Side)	Distance	337 mm 1 ft 1.3 in.
G—Overall (Without Winch)	Length	4260 mm 13 ft 11 in.
G—Overall (With Winch)	Length	4737 mm 15 ft 7 in.
H—Blade Width (105 inch Standard Blade)	Width	2667 mm 8 ft 9 in.
H—Blade Width (97 inch Narrow Blade)	Width	2464 mm 8 ft 1 in.
I—Blade Angle (105 inch Standard Blade)	Width	2507 mm 8 ft 2.7 in.
I—Blade Angle (97 inch Narrow Blade)	Width	2318 mm 7 ft 7.2 in.
105 inch (Standard) Blade	Capacity	1.99 m^3
97 inch (Narrow) Blade	Capacity	1.5 m^3

HG31779,0000094 -19-14JAN08-2/2

Courtesy of Machine.Market

650J-XLT Crawler Dozer Specifications

Item	Measurement	Specification
John Deere PowerTECH® 4045T 4-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	7.2—11.2 L/h 1.9—3.0 gph
Rated Power at 2200 rpm	Power	67 kW (90 hp) SAE net horsepower
Piston	Displacement	4.52 L 276 cu in.
Maximum Net Torque at 1200 rpm	Torque Rise	405 N·m 316 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	65 amp
Alternator—Cab with Air Conditioning	Amperage	95 amp
Transmission	Speed	0—8 km/h 0—5 mph
Hydraulic System	Pressure	20 685 kPa 3000 psi
	Flow Rate	56.8 L/min (15 gpm) @ 2200 rpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 18 in. Shoes)	Area	21 368 cm^2
Track	Pitch	171 mm 6.73 in.
	Gauge	1550 mm 61 in.
Minimum Ground (with Single Bar Grouser)	Clearance	363 mm 14.3 in.
Minimum Ground (with Swamp Shoes)	Clearance	384 mm 15.1 in.
Ground Pressure	Pressure	38.5 kPa 0.38 bar 5.6 psi
Standard Grouser	Width	457 mm 18 in.

PowerTECH is a registered trademark of Deere & Company

HG31779,0000095 -19-14JAN08-1/1

Courtesy of Machine.Market

650J-XLT Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	8437 kg 18 600 lb
Optional Equipment		
Rock Guards (4)	Weight	134 kg 295 lb
Deluxe Seat (add)	Weight	9 kg 20 lb
Cab with Heater (add)	Weight	268 kg 590 lb
Cab with Air Conditioning (add)	Weight	306 kg 675 lb
ROPS Heater	Weight	12 kg 26 lb
High Intensity Lights	Weight	4 kg 9 lb
Retrieval Hitch	Weight	23 kg 50 lb
Extended Draw Bar	Weight	33 kg 72 lb
4000S Winch	Weight	653 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb
Parallelogram Ripper	Weight	981 kg 2163 lb

OUT4001,000001C -19-14JAN08-1/1

Courtesy of Machine.Market

650J, 650J-LGP and 650J-XLT Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System	Capacity	16.0 L 4.2 gal
Fuel Tank	Capacity	178.0 L 47.0 gal
Engine Oil (Including Filter)	Capacity	14.0 L 3.75 gal
Final Drive (Each Side)	Capacity	6.6 L 7.0 qt
Hydraulic Reservoir (Including Filter)	Capacity	32.0 L 8.5 gal
Transmission Reservoir (Including Filter)	Capacity	43.0 L 11.0 gal
Winch—If Equipped	Capacity	38.0 L 10.0 gal

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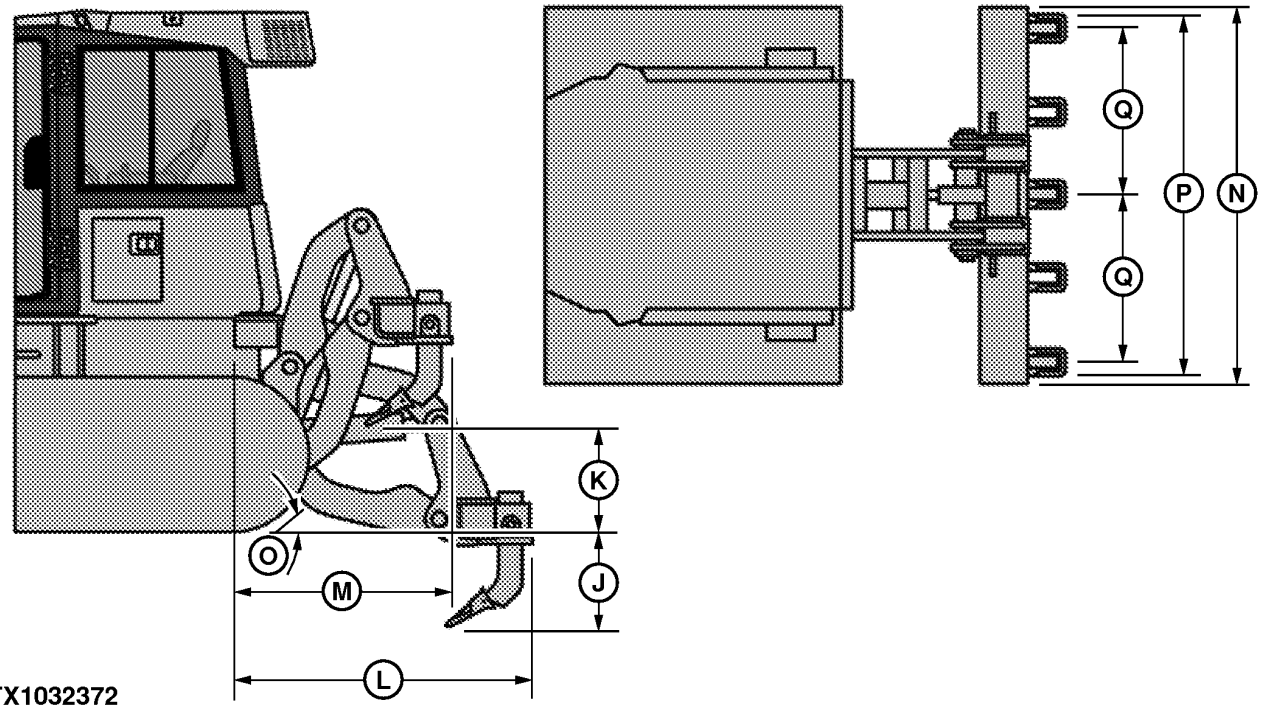
Courtesy of Machine.Market

550J and 650J Parallelogram Ripper



TX1032372

TX1032372 —UN—27NOV07

Parallelogram linkage with manual valve control and hydraulic float, tool bar, five ripper shanks.

Item	Measurement	Specification
J—Ripping Depth	Maximum Depth	520 mm 1 ft. 8 in.
K—Clearance	Maximum Clearance Under Tip	504 mm 1 ft. 8 in
L—Overall Length, Attachment Lowered	Length	1450 mm 4 ft. 9 in.
M—Overall Length, Attachment Raised	Length	1015 mm 3 ft. 4 in.
N—Overall Beam Width	Width	1830 mm 6 ft.
O—Slope Angle (full raise)	Degrees	40°
P—Ripping Width	Width	1670 mm 5 ft. 6 in.
Q—Distance Between Shanks (three installed)	Distance	806 mm 2 ft. 8 in.
Parallelogram Ripper	Weight	981 kg 2163 lb

OUT4001,000001D -19-14JAN08-1/1

Courtesy of Machine.Market

4000S Winch

Maximum Cable Capacities	
Cable Size	**Winch Capacity**
15.88 mm (0.625 in.)	77.4 m (254 ft)
19.05 mm (0.75 in.)	54.6 m (179 ft)
22.23 mm (0.875 in.)	39.3 m (129 ft)

TX,115,RR2763 -19-14JAN08-1/1

Courtesy of Machine.Market

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Index

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Courtesy of Machine.Market

E

F

Continued on next page

Courtesy of Machine.Market

Continued on next page

Courtesy of Machine.Market

Continued on next page

Courtesy of Machine.Market

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