Crawler Dozer 750J
(Serial No. - 141343)
Engine 6068HT058 and 850J
(Serial No. - 130885)
Engine 6081HT006

OPERATOR'S MANUAL

750J (S.N. —141343) and 850J (S.N. —130885) Crawler Dozers

OMT202117 ISSUE I9 (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
PRINTED IN U.S.A.

Foreword

READ THIS MANUAL carefully to learn how to operate and service machine correctly. Personal injury or equipment damage can result if manual is not read. This manual and safety signs on the machine may also be available in other languages; see an authorized John Deere dealer to order.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of the machine and should remain with machine when machine is sold.

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 if machine is ever stolen. A dealer also needs these numbers when parts are ordered. File the identification numbers in a secure place off machine.

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

This warranty provides the assurance that John Deere backs the 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 results in such action.

If current owner is not the original owner of this machine, contact an authorized John Deere dealer to inform them of this unit's serial number. This will help John Deere notify current owner of any issues or product improvements.

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Emission Control Statement

EMISSIONS CONTROL WARRANTY STATEMENT FOR NEW JOHN DEERE CONSTRUCTION EQUIPMENT (U.S. AND CANADA)

To determine if the engine in your machine qualifies for the additional warranties set forth below, look for the "Engine Information" label located on your engine. If you reside in the United States and the engine label states: "Engine conforms to US EPA regulations on heavy duty non road diesel cycle engines," you are entitled to the "U.S. Emission Control Warranty Statement." If you reside in California, and the engine label states: "Engine conforms to California regulations on heavy duty non road diesel cycle engines," you are entitled to the "California Emission Control Warranty Statement."

U.S. EPA EMISSIONS CONTROL WARRANTY STATEMENT

Emissions control-related parts and components are warranted by John Deere for five years or 3000 hours of operation, whichever occurs first. John Deere further warrants that the engine covered by this warranty was designed, built, and equipped so as to conform at the time of sale with all U.S. emissions standards at the time of manufacture, and that it is free of defects in materials and workmanship which would cause it not to meet these standards within the period of five years or 3000 hours of operations, whichever occurs first.

Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete machine warranty, less emisions-related parts and components, is provided separately as "John Deere "Secure Warranty" For New Construction Products."

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT

YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board (CARB) and John Deere are pleased to explain the emission control system on your new engine. In California, new heavy-duty 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 machine.

Your emissions control system includes:

Fuel Metering System
- Fuel Injection System

Air Induction System
- Intake Manifold
- Turbocharger System
- Charge Air Cooling System

Miscellaneous Items used in Above Systems

Where a warrantable condition exists, i.e. failure due to defect in John Deere-supplied material and/or workmanship, John Deere will repair your heavy-duty engine at no cost to you including diagnosis, parts and labor

JOHN DEERE'S WARRANTY COVERAGE:

The emission control system of your heavy-duty engine is warranted for five years or 3000 hours of operation, whichever occurs first. If any emission-related part on your engine is defective, the part will be repaired or replaced by John Deere. Warranties stated on this certificate refer only to emissions-related parts and components of your engine. The complete machine warranty, less emissions-related parts and components, is provided separately as the "John Deere "Secure Warranty" For New Construction Products."

OWNER'S WARRANTY RESPONSIBILITIES:

As the heavy-duty engine owner, you are responsible for the performance of the required maintenance as outlined in the Operator's Manual. John Deere recommends that you retain all receipts covering maintenance on your heavy-duty engine, but John Deere cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

However, as the heavy-duty engine owner, you should be aware that John Deere may deny you warranty coverage if your heavy-duty engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on diesel fuel only. Use of any other fuel may result in your engine no longer operating in compliance with California's emissions requirements.

You are responsible for initiating the warranty process. The CARB suggests that you present your machine to the nearest authorized John Deere dealer as soon as a problem is suspected. The warranty repairs should be completed by the service dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact John Deere at 1-319-292-5400, or the State of California Air Resources Board, Mobile Source Operation Division, PO Box 8001, El Monte, CA 91731-2900

The warranty period begins on the date the machine is delivered to an ultimate purchaser, or when otherwise put into service. John Deere warrants to the ultimate purchaser and each subsequent purchaser that the engine is designed, built and equipped so as to conform with all applicable regulations adopted by the Air Resources Board, and that it is free from defects in materials and workmanship which would cause the failure of a warranted part.

Any warranted part which is scheduled for replacement as required maintenance by the operator's manual is warranted by John Deere for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement point, the part shall be repaired or replaced under warranty. Any such part repaired or replaced under warranty is warranted for the remainder of the period prior to the first scheduled replacement point for that part.

Any warranted part which is not scheduled for replacement as required maintenance, or which is scheduled only for regular inspection to the effect of repairing or replacing as necessary, is warranted for the warranty period.

Repair or replacement of a warranted part will be performed at no charge to you by an authorized John Deere dealer. You will not be charged for diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed by a John Deere dealer.

John Deere is liable for damages to other engine components caused by failure under warranty of any warranted part.

John Deere is NOT liable for travel or mileage on extended emissions warranty service calls.

Any replacement part may be used in the performance of any maintenance or repairs, and such use will not reduce the warranty obligations of John Deere. However, the use of add-on or modified parts are grounds for disallowing a warranty claim.

T132126 —19—28JUN00

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Technical Information Feedback Form

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THANK YOU!

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A John Deere ILLUSTRUCTION ™ Manual
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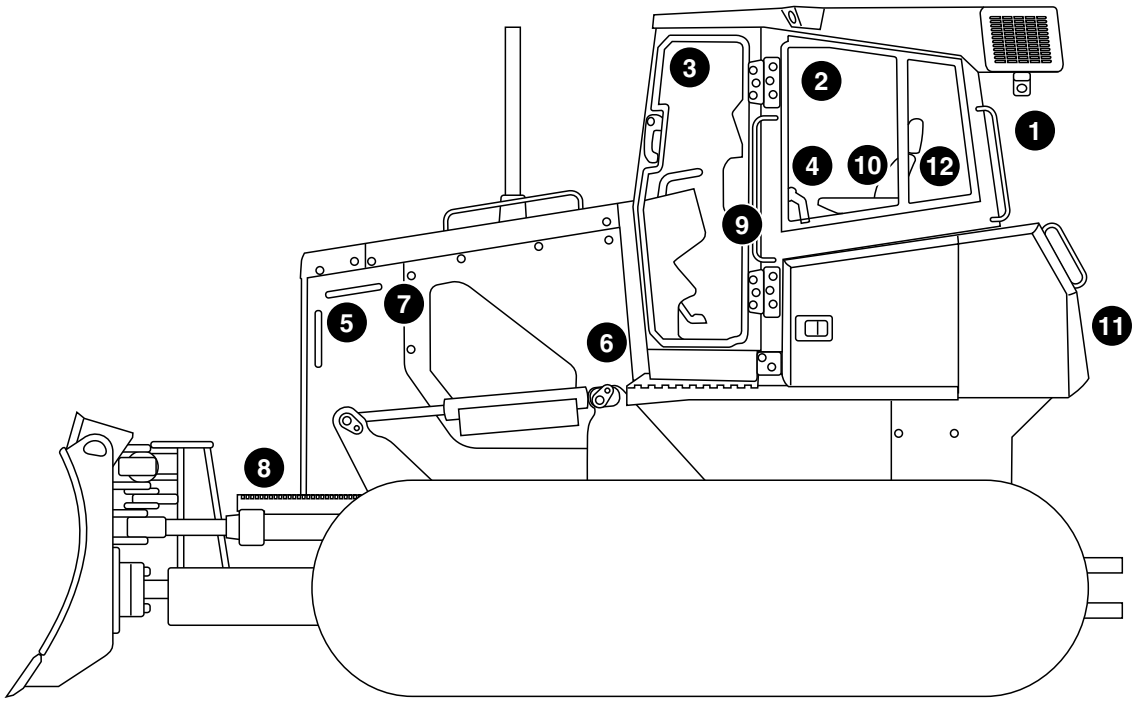
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Safety and Operator Convenience Features



TX1037086 —UN—03MAR08

TX1037086

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

1. **ROPS, FOPS, and OPS.** Structures designed to help protect the operator are certified to ISO and OSHA. Enclosures also deflect sun and rain.
2. **Pressurized Cab.** Positive pressure ventilation system circulates both outside and inside air through filters for a clean working environment. Built-in defroster vents direct air flow for effective window defogging/deicing.
3. **Interior Rear View Mirror.** Offers the operator a view of activity behind him.
4. **Transmission Start.** After the park lock lever has been moved to the down UNLOCKED position, the transmission control lever must have been in the neutral, N position, before the transmission is able to be 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. **Park Lock Start and Park Lock Lever.** Park lock start feature prevents the engine from being started unless the park lock lever is in the up LOCKED position. When park lock lever is placed in up LOCKED position, the transmission shifts to neutral, the hydrostatic system is deactivated, and the park brake is engaged.
10. **Automatic Seat Belt Retractors.** Seat belt retractors help keep belts clean and 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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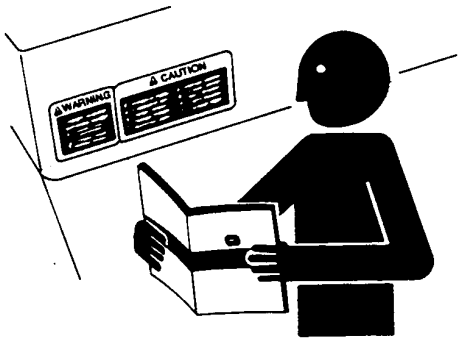
Follow Safety Instructions

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

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

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

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



TS201 —UN—15APR13

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

DX,READ -19-16JUN09-1/1

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.

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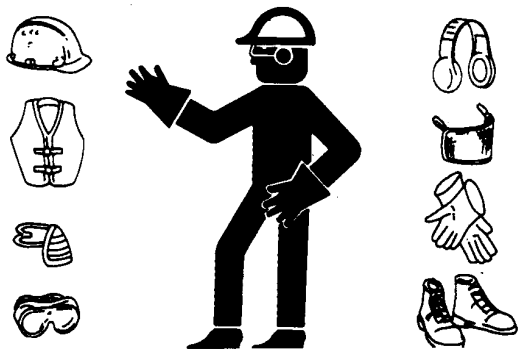
Wear Protective Equipment

Guard against injury from flying pieces or 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.



TS206 —UN—15APR13

OUT4001,0000570 -19-12FEB10-1/1

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.

AM40430,00000A9 -19-02JUN15-1/1

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.



T6607AQ —UN—15APR13

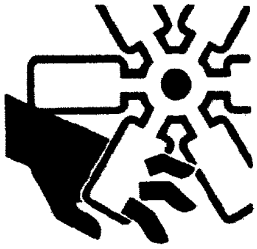
TX03679,0001734 -19-08JAN08-1/1

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.



T133592 —UN—15APR13

TX03679,00016D2 -19-08JAN08-1/1

Avoid High-Pressure Fluids

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

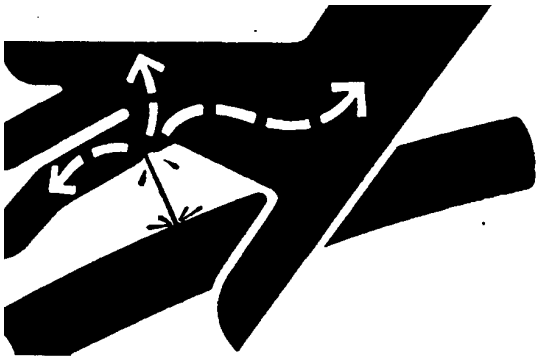
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

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

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

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



X9811 —UN—23AUG88

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

Avoid High-Pressure Oils

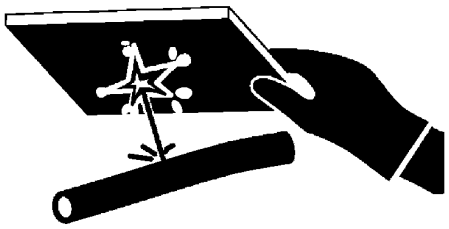
This machine uses a high-pressure hydraulic system. Escaping oil under pressure can penetrate the skin causing serious injury.

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

TX03679,00016D3 -19-03NOV08-1/1

Work In Ventilated Area

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

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



TS220 —UN—15APR13

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

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.

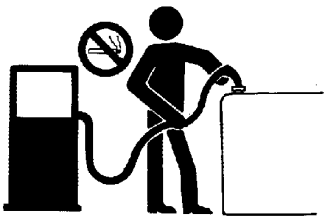
Maintain Hoses and Wiring: Replace hydraulic hoses immediately if they begin to leak, and clean up any oil spills. Examine electrical wiring and connectors frequently for damage.

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

Prevent Battery Explosions

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

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

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



TS204 —UN—15APR13

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

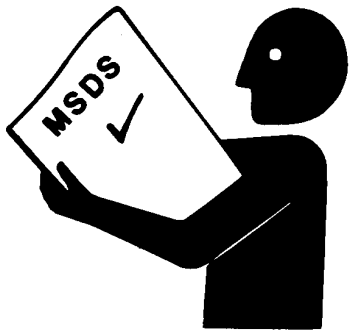
Handle Chemical Products Safely

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

(See your John Deere dealer for MSDS's on chemical products used with John Deere equipment.)



TS1132 —UN—15APR13

DX,MSDS,NA -19-03MAR93-1/1

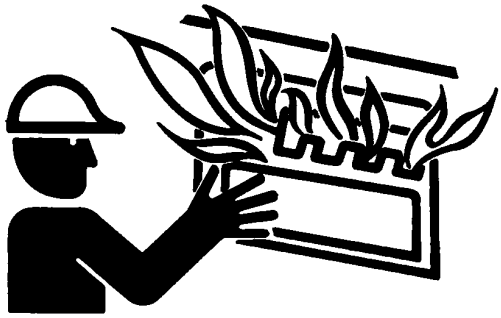
Clean Debris from Machine

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.



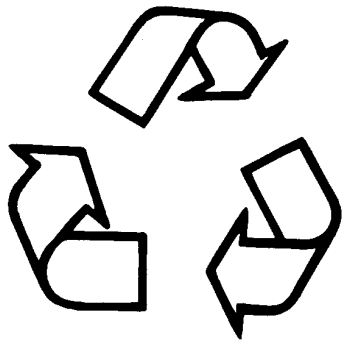
T6669AG —UN—15APR13

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

Decommissioning — Proper Recycling and Disposal of Fluids and Components

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

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



TS1133 —UN—15APR13

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

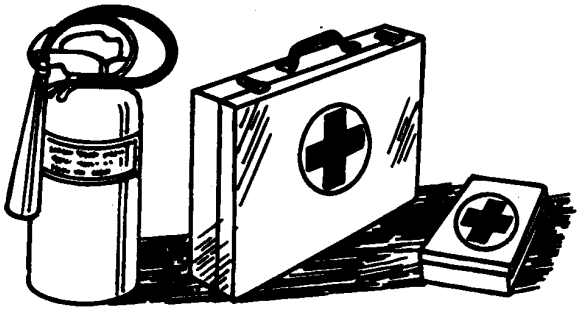
DX,DRAIN -19-01JUN15-1/1

Prepare for Emergencies

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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



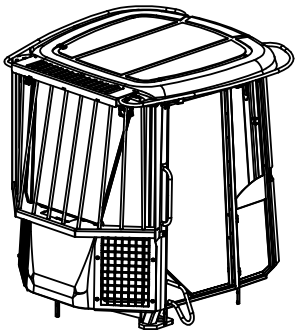
TS291 —UN—15APR13

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

Add Cab Guarding For Special Uses

Special work situations or machine attachments may create an environment with falling or flying objects. Working near an overhead bank, demolition work, using a hydraulic hammer or winch, working in a forestry application/wooded area, or working in a waste management application, for example, may require added guarding to protect the operator.

Additional level II FOPS (falling object protective structures), forestry protection packages, and/or special screens or guarding should be installed when falling or flying objects may enter or damage the machine. A rear screen should always be used with a winch to protect against a snapping cable. Before operating in any special work environments, follow the operator protection recommendations of the manufacturer of any specialized attachment or equipment. Contact your authorized John Deere dealer for information on protective guarding.



T141893 —UN—09JUN11

Cab Guarding

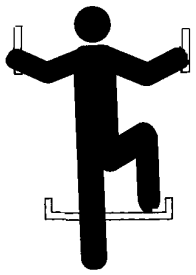
VD76477,0000504 -19-26JAN10-1/1

Safety—Operating Precautions

Use Steps and Handholds Correctly

Prevent falls by facing the machine when you get on and off. Maintain 3-point contact with steps and handrails. Never use machine controls as handholds.

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



T133468 —UN—15APR13

TX03679,00016F2 -19-12FEB07-1/1

Start Only From Operator's Seat

Avoid unexpected machine movement. Start engine only while sitting in operator's seat. Ensure all controls and working tools are in proper position for a parked machine.

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



T133715 —UN—15APR13

TX03679,0001799 -19-22APR10-1/1

Use and Maintain Seat Belt

Use seat belt when operating machine. Remember to fasten seat belt when loading and unloading from trucks and during other uses.

Examine seat belt frequently. Be sure webbing is not cut or torn. Replace seat belt immediately if any part is damaged or does not function properly.

The complete seat belt assembly should be replaced every three years, regardless of appearance.



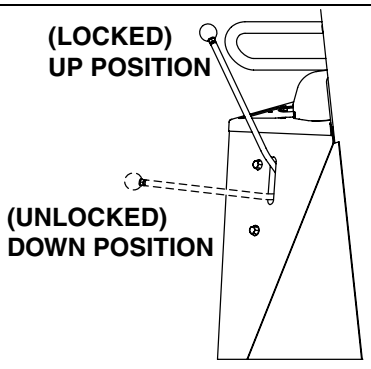
T133716 —19—17APR13

TX03679,00016DD -19-19MAR07-1/1

Prevent Unintended Machine Movement

Always move the park lock lever to the up (locked) position before leaving the operator's seat for any reason.

Be careful not to accidentally actuate controls when coworkers 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.



T207688 —19—31JAN05

TX03768,0000B72 -19-23NOV10-1/1

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.

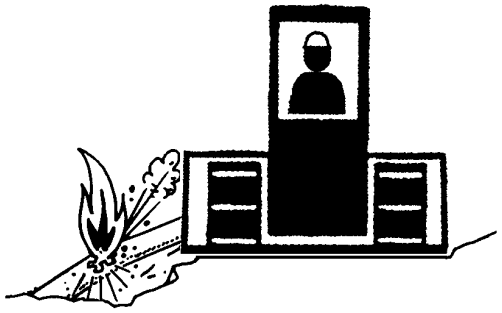
Avoid boom or attachment contact with overhead obstacles or overhead electrical lines. Never move machine closer than 3 m (10 ft) plus twice the line insulator length to overhead wires.

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.

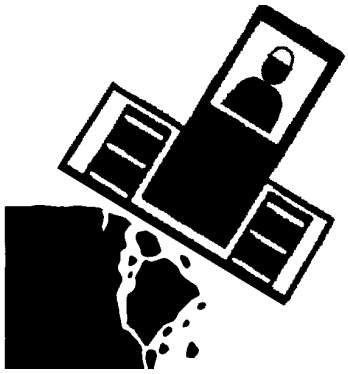
Operate only on solid footing with strength sufficient to support machine. Be especially alert working near embankments or excavations.

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

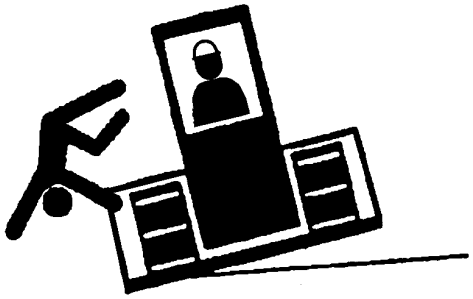
VD76477,00013C2 -19-14SEP09-1/1

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 the operator's ability to operate machine safely.



T137580 —UN—22FEB01

Keep Riders Off Machine

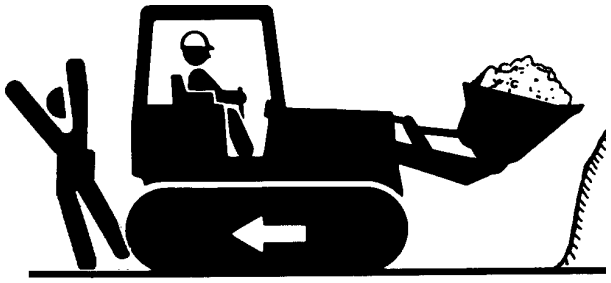
TX03768,0000B73 -19-03JUN15-1/1

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

Avoid Machine Tip Over and Machine Damage

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.

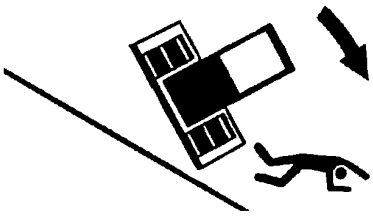
Be careful on slopes. Use extra care on soft, rocky, or frozen ground because machine may slip sideways in these conditions. When traveling up or down steep slopes, keep the bucket or blade on uphill side and just above ground level.

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.

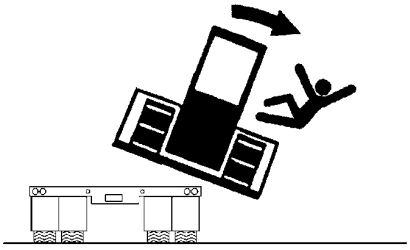
Avoid machine damage on slopes. Use extra care to operate machine.



T133716 —19—17APR13



T138416 —UN—22FEB01



T138415 —UN—22FEB01

AM40430,00000B7 -19-12FEB07-1/1

Add and Operate Attachments Safely

Always verify compatibility of attachments by contacting your authorized dealer. Adding unapproved attachments may affect machine stability or reliability and may create a hazard for others near the machine.

Ensure that a qualified person is involved in attachment installation. Add guards to machine if operator protection is required or recommended. Verify that all connections are secure and attachment responds properly to controls.

Carefully read attachment manual and follow all instructions and warnings. In an area free of bystanders and obstructions, carefully operate attachment to learn its characteristics and range of motion.

TX03679,00016F0 -19-12FEB07-1/1

Park and Prepare for Service Safely

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

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

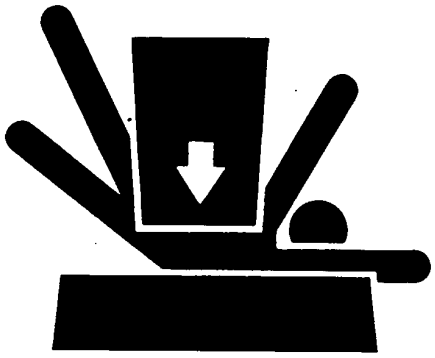
Securely support machine or attachment before working under it.

- Do not support machine with blade 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

TX,PARK,CRW -19-30JAN12-1/1

Service Cooling System Safely

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

Do not service radiator through the radiator cap. Only fill through the surge tank filler cap. Shut off engine. Only remove surge tank filler cap when cool enough to touch with bare hands. Slowly loosen cap to relieve pressure before removing completely.



TS281 —UN—15APR13

VD76477,0001157 -19-20DEC06-1/1

Remove Paint Before Welding or Heating

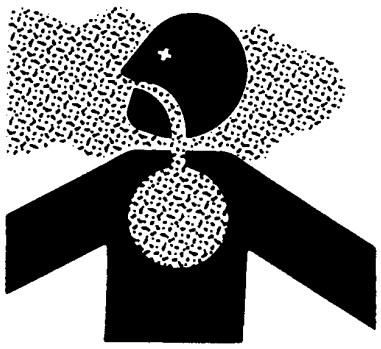
Avoid potentially toxic fumes and dust.

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

Remove paint before heating:

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

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



TS220 —UN—15APR13

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

Dispose of paint and solvent properly.

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

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

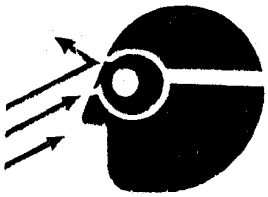
Make sure there is good ventilation. Wear eye protection and protective equipment when welding.

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.



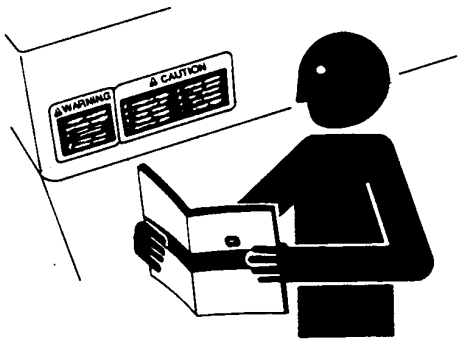
T133738 —UN—15APR13

TX03679,0001745 -19-07SEP06-1/1

Replace Safety Signs

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

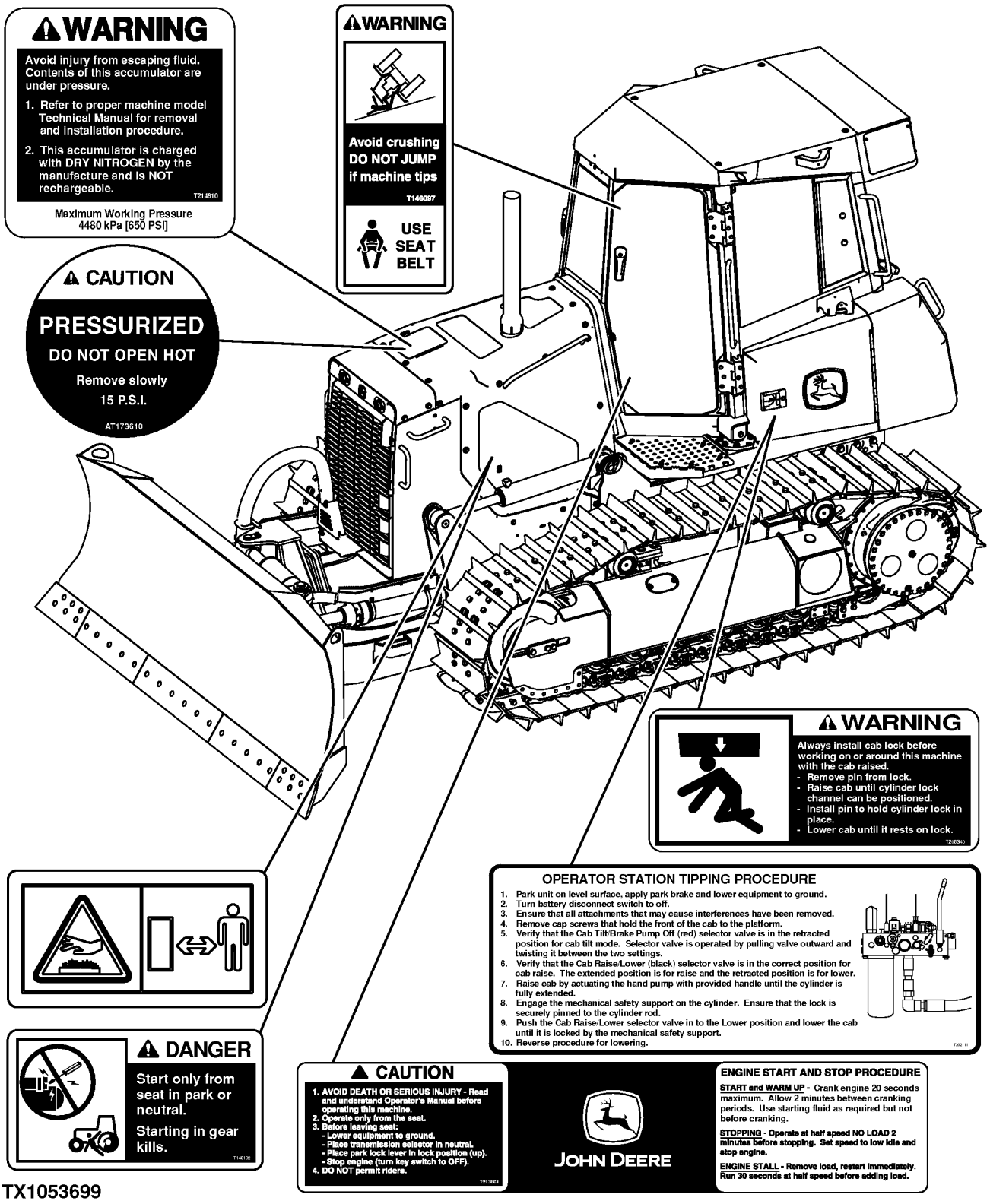
There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.



TS201 —UN—15APR13

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

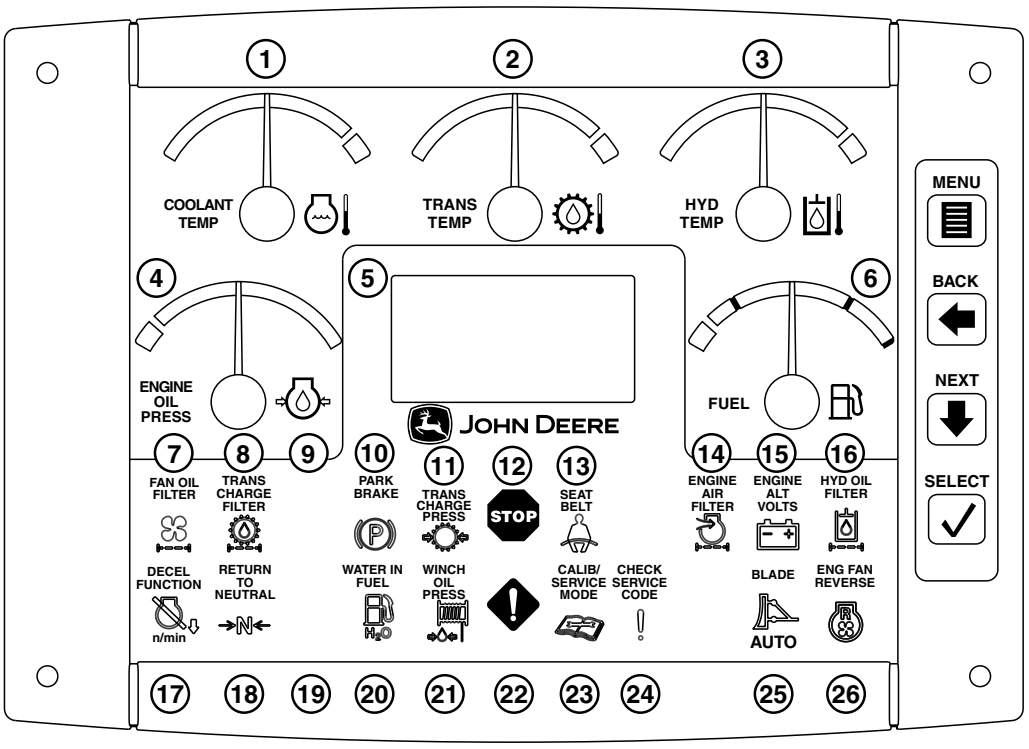
Safety Signs



TX1053699

AM40430,0000047 -19-23DEC08-1/1

Display Monitor



TX1009984 —19—13JUL06

TX1009984

1— Engine Coolant Temperature Gauge
2— Transmission Oil Temperature Gauge
3— Hydraulic Oil Temperature Gauge
4— Engine Oil Pressure Gauge
5— Display Window
6— Fuel Level Gauge
7— Fan Oil Filter Restriction Indicator
8— Transmission Oil Charge Filter Restriction Indicator
9— Not Used
10— Park Brake Indicator
11— Transmission Oil Charge Pressure Indicator
12— STOP Indicator
13— Fasten Seat Belt Indicator
14— Engine Air Filter Restriction Indicator
15— Engine Alternator Voltage Indicator
16— Hydraulic Oil Filter Restriction Indicator
17— No Engine Decel Indicator
18— Return to Neutral Indicator
19— Not Used
20— Water-In-Fuel Indicator
21— Winch Oil Pressure Indicator
22— Caution Indicator
23— Calibration/Service Mode Indicator
24— Check Service Code Indicator
25— Auto Blade Indicator
26— Reversing Fan Drive Indicator

NOTE: Battery disconnect switch must be in ON position for monitor to operate.

The display monitor has three modes of operation, they are:

Key Off Mode—With battery disconnect switch ON and key switch OFF, each time the SELECT button is pressed the following information is displayed: MODEL NUMBER, HOUR METER symbol, and VOLTMETER symbol. While SELECT button is pressed, backlighting is supplied to engine coolant temperature gauge, fuel tank level gauge, and engine oil pressure gauge. With SELECT button released, unswitched power is removed and information is no longer displayed.

Bulb Check Mode—With battery disconnect switch ON, key switch ON, and the engine not running, display monitor will go into bulb check mode. All indicator lights, including red STOP light and caution indicator, will illuminate. All gauges will sweep from “low” to “high” and gauge warning lights will illuminate. Monitor will display model number. Monitor alarm will begin to sound. Alarm sounds two times to allow operator time to see that all display elements are functional.

Engine Running Mode—Monitor determines engine is running when it detects engine oil pressure or engine rpm. Monitor will display status of machine functions through its indicators and gauges.

- MENU provides initial entry into machine settings, diagnostics, and monitor settings. Once a main menu has been selected, pressing MENU again will return to the normal display mode Menu.
- BACK will back out of a menu, one item each time the key is pressed. The BACK key will eventually return to the normal display.
- NEXT will move to the next selection within a menu or mode. Press NEXT to cycle through all the possible selections in a menu.

Continued on next page

MH66O88,0000200 -19-20APR11-1/2

- SELECT toggles between the hour meter, charge pressure, and voltmeter displays during normal operation. During menu modes, SELECT will activate the currently chosen menu, provide additional information on codes, make selection, reset timers, or turn job timer on/off.

MH66O88,0000200 -19-20APR11-2/2

Display Monitor Functions

1. **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.

2. **Transmission Oil Temperature Gauge—**If pointer is in red zone, indicator will light, STOP indicator will flash, and audible alarm will sound indicating that the temperature is too high. Stop machine and allow transmission to cool. Shut off engine and take corrective action.

3. **Hydraulic Oil Temperature Gauge—**If pointer is in red zone, indicator will light, STOP indicator will flash, and audible alarm will sound indicating that the temperature is too high.

4. **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.

5. **Display Window—**The display window will display the following functions.

- P or FNR
- Transmission Speed
- Tachometer
- Hour Meter
- Battery Voltage
- Transmission Charge Pressure

6. **Fuel Level Gauge—**Gauge will reflect fuel level in tank.

7. **Fan Oil Filter Restriction Indicator—**Indicator will light and caution indicator will illuminate when engine is running and fan oil filter becomes restricted. Replace fan oil filter as necessary.

8. **Transmission Oil Charge Filter Restriction Indicator—**Indicator will light and caution indicator will illuminate when engine is running and transmission oil charge filter becomes restricted. Replace transmission oil charge filter as necessary.

9. **Not Used.**

10. **Park Brake Indicator—**Indicator will light when machine is in PARK.

11. **Transmission Oil Charge Pressure Indicator—**Indicator will light, STOP indicator will light, and audible alarm will sound when charge pressure is too high or too low. Stop engine immediately.

12. **STOP Indicator—**STOP indicator flashes and alarm sounds when:

- Transmission charge pressure is too high or too low
- Water is in fuel system
- Hydraulic oil temperature is high
- Transmission oil temperature is high
- Engine coolant temperature is high
- Engine oil pressure is low

If indicators do not function correctly, see Troubleshooting. (Section 4-3.)

IMPORTANT: If STOP indicator flashes and alarm sounds for more than 10 seconds, stop machine immediately and investigate cause of problem.

13. **Fasten Seat Belt Indicator—**Indicator will light and stay on for 5 seconds when the machine is started.

14. **Engine Air Filter Restriction Indicator—**Indicator will light and caution indicator will illuminate when engine is running with air filter restricted.

Park machine in a safe area and shut engine off immediately.

Check air filters for restrictions.

15. **Engine Alternator Voltage Indicator—**Indicator will light when alternator voltage drops below 25 volts and when key switch is on and engine is not running.

16. **Hydraulic Oil Filter Restriction Indicator—**Indicator will light and caution indicator will illuminate when engine is running and hydraulic oil filter becomes restricted. Replace hydraulic oil filter as necessary.

NOTE: Restriction indicator may stay on for several minutes until hydraulic oil is warm.

17. **No Engine Decel Indicator—**Indicator will light when no engine deceleration feature is activated.

18. **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 return to neutral indicator to light. Transmission control lever must be moved back to neutral position for machine to start.

19. **Not Used.**

20. **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.

21. **Winch Oil Pressure Indicator—If Equipped**

22. **Caution Indicator—**If caution indicator lights, a problem is developing. It is not necessary to stop engine immediately, but the cause should be investigated as soon as possible.

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

Continued on next page

24. **Check Service Code Indicator—**Indicator will light when a problem is detected in the monitor, transmission, or engine controller electrical systems.

25. **Auto Blade Indicator—**Indicator will light when auto blade function is enabled (Integrated Ground Control (IGC) machines only).

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.

26. **Reversing Fan Drive Indicator—**Indicator will light when reversing fan function is enabled.

MH66O88,0000201 -19-15APR11-2/2

Front Console Switch Functions

1—Under Seat Heater—If Equipped: Push switch to turn on under seat heater.

2—Fan Reversing Switch—If Equipped: Push switch to manually reverse fan for 30 seconds.

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

4—Standard Light Switch: Push upper half of switch to turn standard lights on. Push lower half of switch to turn standard lights off.

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



T198361A —UN—15MAR04

Switches

1— Under Seat Heater—If Equipped
2— Fan Reversing Switch—If Equipped
3— Decelerator Mode Switch
4— Standard Light Switch
5— Optional Light Switch

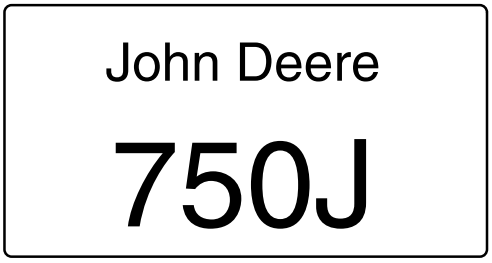
HG31779,0000359 -19-04MAY11-1/1

Monitor Display Unit—Normal Display

When key switch is turned on, all lights on display monitor will come on, all gauges will position gauge needle to the 12 o'clock position, and alarm will sound.

The basic display window will show the bulb check mode. After bulb check mode, the stop indicator and engine oil pressure indicator will flash.

The machine model number will show in the basic display window.



T202424 —19—09SEP04

750J Shown

Continued on next page

HG31779,0000320 -19-04MAY11-1/2

Approximately 5 seconds later, the normal display will be shown.

The transmission mode display (1) shows the forward (F), neutral (N), reverse (R), park (P) status. When the park brake lever is in the up LOCKED position, a P will be displayed. When a transmission controller unit malfunction occurs, the display will show neutral.

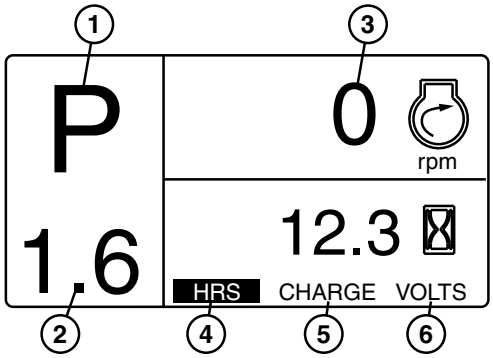
The transmission speed display (2) shows the transmission speed from 1.0 to 3.0 to the nearest tenth.

The tachometer display (3) shows the engine revolutions per minute to the nearest 5 rpm. When a transmission controller unit malfunction occurs, a "---" is displayed.

NOTE: Press SELECT or NEXT to toggle between hours, charge pressure, and system voltage.

The hour meter display (4) shows the machine hours to the nearest 1 decimal place. The hour meter accumulates hours only when the engine is on; and the icon flashes once per second. The hour meter displays up to 99,999.9 hours.

The transmission charge pressure display (5) will show transmission charge pressure in kPa or psi units.



T208648 —19—15FEB05

Normal Display Window

1— Transmission Mode Display
2— Transmission Speed Display
3— Tachometer Display
4— Hour Meter Display
5— Charge Pressure Display
6— System Voltage Display

The system voltage display (6) will show the vehicle's system voltage.

HG31779,0000320 -19-04MAY11-2/2

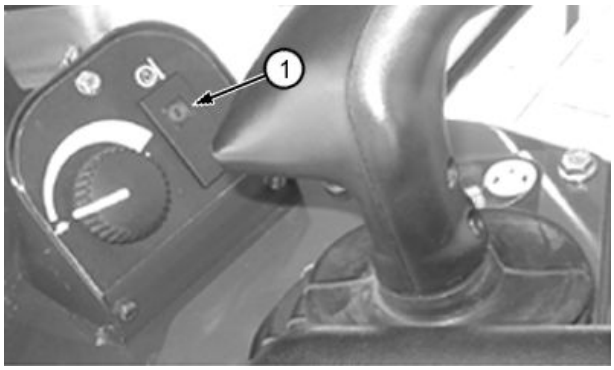
Warmup Indicator

The warmup 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 1200 to 1400 rpm

The indicator will remain lit, and engine speed will be limited until the transmission oil reaches a specified temperature, or the engine has run for 10 minutes. Indicator will turn off automatically when system has reached operating temperature.

For the final stage of the warmup cycle, the transmission speed will be limited to a maximum of 1.8 until the machine travels a combined distance of 91 m (300 ft). If speed is commanded faster than 1.8 prior to traveling 91 m (300 ft), the indicator will light and the speed will remain at 1.8.



T202721A —UN—18JAN05

Warmup Indicator

1— Warmup Indicator

HG31779,0000035 -19-21APR11-1/1

Air Conditioner and Heat—If Equipped

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

When warm weather begins, check refrigerant for proper charge before using air conditioner.

Push switch (A) to turn air conditioner on or off.

NOTE: To increase temperature, make sure heater hose shutoff valve (D) on engine water pump housing is open.

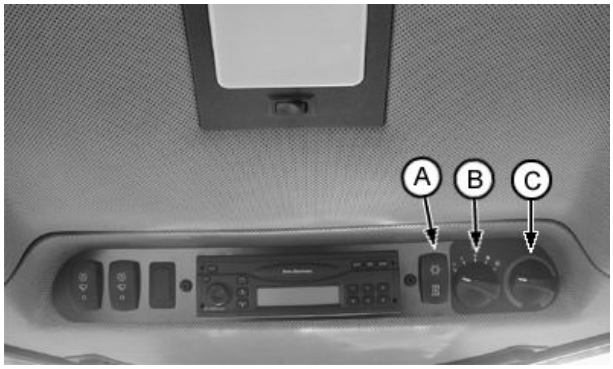
Turn temperature control knob (C) clockwise to increase temperature.

Turn blower control knob (B) clockwise to increase blower speed.

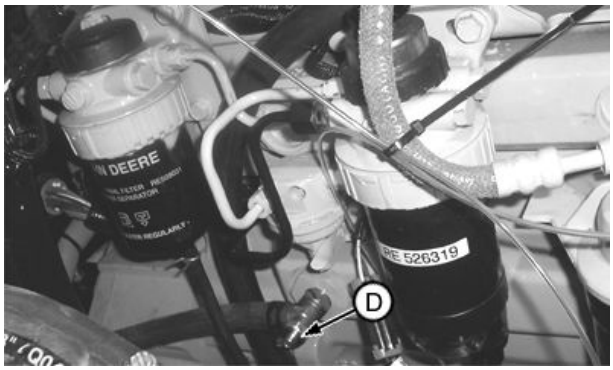
If temperature in cab becomes too cold, the temperature knob can be turned to add heat even though air conditioner is on.

Move louvers left or right to direct or restrict air flow.

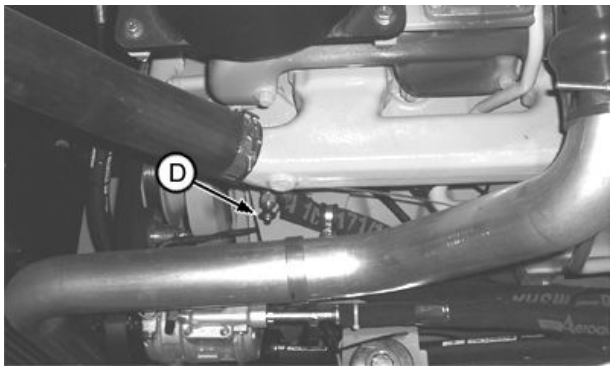
A—Air Conditioner Switch
B—Blower Control Knob
C—Temperature Control Knob
D—Heater Shutoff Valve



T198360B —UN—15MAR04



T207203A —UN—24JAN05



T206807A —UN—24JAN05

HG31779,0000358 -19-26JUL10-1/1

Windshield Wiper and Washer Controls

Push switch (1) to operate front windshield wipers. Push and hold upper half of switch momentarily to operate front windshield washer. Push switch (2) to operate door windshield wipers. Push and hold upper half of switch momentarily to operate door washer.

NOTE: Front wiper switch will operate rear wiper (if equipped).

1— Front Wiper/Washer Switch
2— Door Wiper/Washer Switch



T198360A —UN—15MAR04

Wiper and Washer Controls

HG31779,0000357 -19-17DEC08-1/1

Battery Disconnect Switch

Battery disconnect switch (1) is located next to machine batteries. Turn switch to OFF position to disconnect electrical power to machine.

1— Battery Disconnect Switch



T198348A —UN—15MAR04

Battery Disconnect

HG31779,000034F -19-21APR11-1/1

Door Latch

From inside of cab, push door latch lever (1) to open door.

From outside of cab, pull door latch lever (1) to open door.

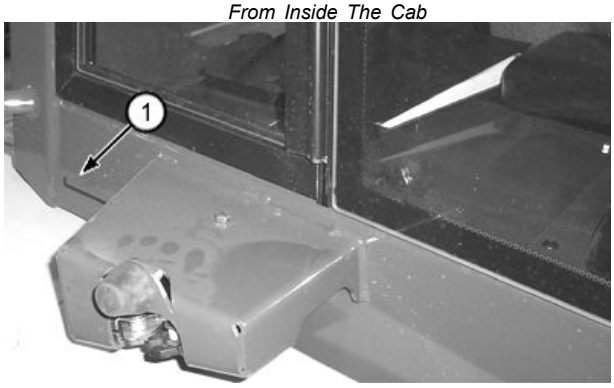
Doors can be latched in the open position when pushed back against the cab side.

1— Door Latch Lever



T206809A —UN—24JAN05

From Inside The Cab



T206808A —UN—24JAN05

From Outside The Cab

HG31779,0000061 -19-17DEC08-1/1

Secondary Exits—Cab Units Only

Exit cab through left-side door (1). Right-side door can be used as secondary exit.

1— Door



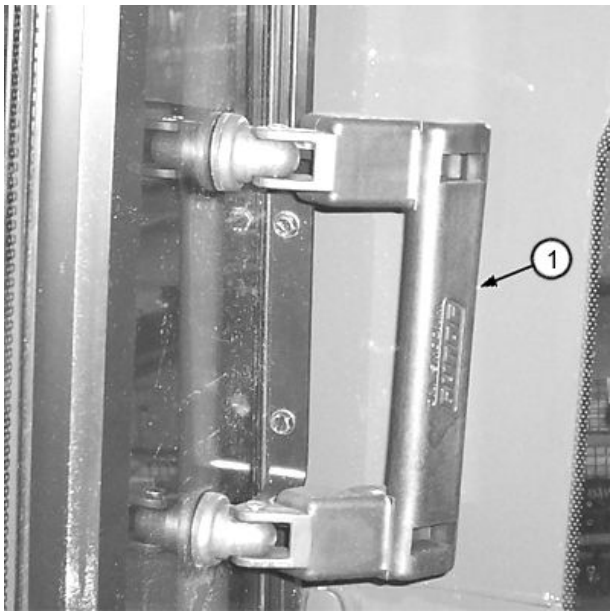
T206581A —UN—31JAN05

HG31779,0000063 -19-10DEC08-1/1

Cab Windows

Pull handle (1) forward and push out to open window.

1— Handle



T206810A —UN—24JAN05

Cab Window Handle

HG31779,0000062 -19-22NOV10-1/1

Adjusting Seat

Use weight adjustment crank lever (E) to turn weight adjustment knob (F). Turn knob clockwise for firm ride and counterclockwise for soft ride.

Rotate knob (C) to desired cushion position.

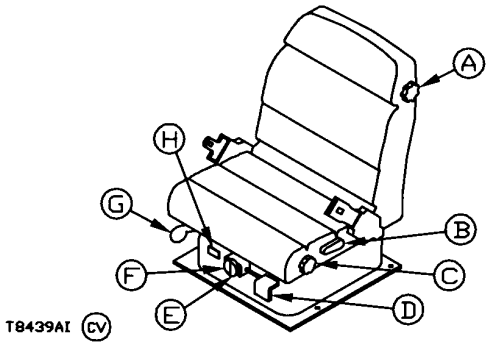
Lift seat fore-and-aft lever (G) to move seat forward and rearward. Release handle at one of several positions.

Remove your weight from seat. Lift up lever (D) 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 crank lever (E) to support weight. Check weight indicator (H) for appropriate weight setting and continue to turn until yellow pointer inside tube is flush with tube opening.

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

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



T8439AI —UN—22MAR95

Adjusting Seat

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

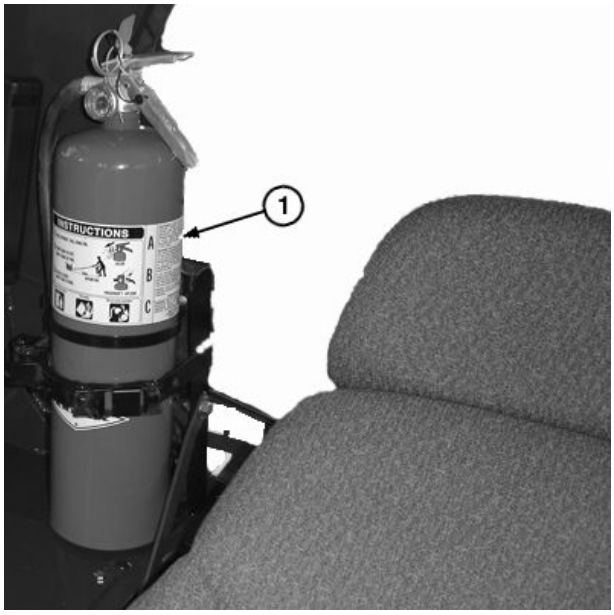
TX,10,RR,A33 -19-15APR11-1/1

Fire Extinguisher Location

NOTE: Be familiar with the operation of the fire extinguisher. Inspect the fire extinguisher and service the fire extinguisher regularly

The designated location for mounting the fire extinguisher is inside the cab and to the right of the steering console.

1— Fire Extinguisher



TX1081754A —UN—09SEP10

Fire Extinguisher Location

LB82152,0000584 -19-09SEP10-1/1

Inspect Machine Daily Before Starting

Do daily maintenance checks. See Maintenance—Every 10 Hours or Daily. (Section 3-4.)

- Inspect grille and radiator screens (1) for obstructions.
- Clean engine shields (2).
- Inspect precleaner (3), and clean as necessary.
- Clean operator station (4), check pedals for freedom of movement, and check fire extinguisher charge, if equipped.
- Check fuel level. Remove fuel tank cap (5), and fill with proper fuel, if necessary.

Inspect the following before starting:

ELECTRICAL SYSTEM: Check for worn or frayed wires and loose or corroded connections.

HYDRAULIC SYSTEM: Check for leaks, missing or loose clamps, kinked hoses, and lines or hoses that are making contact with each other or other machine parts.

FUEL SYSTEM: Drain fuel filter. See Drain Fuel Filter Sediment. (Section 4-1.)

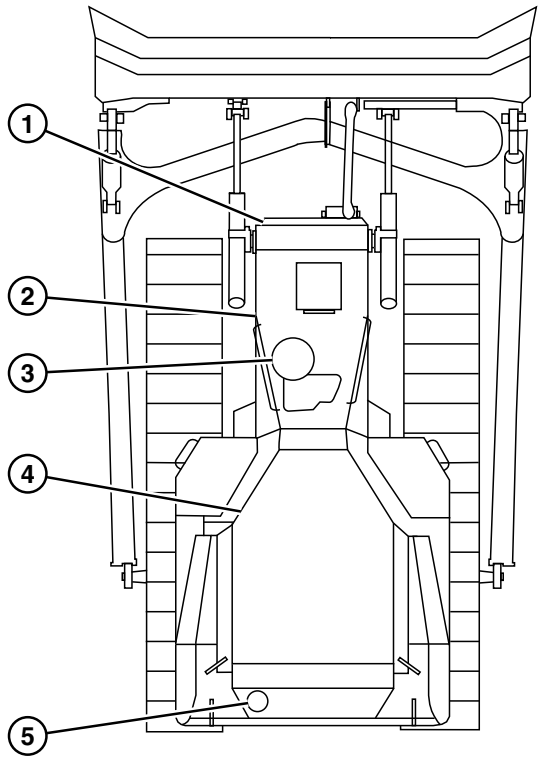
HARDWARE: Check for loose or missing parts.

LUBRICATION: Check lubrication points on Periodic Maintenance Chart. See Periodic Maintenance. (Section 3-2.)

SHEET METAL AND TRACKS: Check for bent, broken, loose, or missing parts.

PROTECTIVE DEVICES: Inspect guards, shields, ROPS, and seat belt.

SAFETY: Walk around machine to be sure all persons are away from machine area.



TX1010852 —UN—03AUG06

Inspect Machine Daily Before Starting

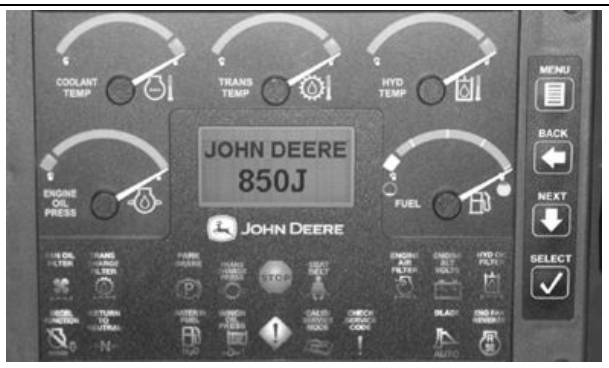
1— Grille and Radiator Screens
2— Engine Shields
3— Precleaner
4— Operator Station
5— Fuel Tank Cap

MH66O88,00001E4 -19-03MAY11-1/1

Check Instruments before Starting

With battery disconnect switch ON, key switch ON and engine not running, display monitor will go into bulb check mode. All warning indicators, red STOP light, and yellow caution indicator are illuminated.

All indicators and displays on monitor will light and monitor alarm will beep twice in one-second intervals. If lights do not come on, check bulbs.



TX1009988A —UN—13JUL06

Check Instruments Before Starting

MH66O88,00001E5 -19-22AUG06-1/1

Engine Break-In Period

IMPORTANT: To avoid engine damage, it is critical to observe the engine break-in period. Extra care during the first 250 hours of operation will result in more satisfactory long-term engine performance and life. DO NOT exceed 250 hours of operation with John Deere Break-In Plus™ engine oil.

This machine is factory filled with John Deere Break-In Plus engine oil.

1. Operate the machine at heavy or normal loads with minimal idling during the break-in period. During the first 20 hours, avoid prolonged periods of engine idling or sustained maximum load operation. If engine will idle longer than 5 minutes, stop engine.

IMPORTANT: DO NOT add make-up oil until the oil level is BELOW the ADD mark on the dipstick. John Deere Break-In Plus oil should be used to make up any oil consumed during the break-in period.

If John Deere Break-In Plus Engine Oil is not available, use a 10W-30 diesel engine oil meeting one of the following during the initial 125 hours of operation:

- **API Service Category CJ-4**
- **ACEA Oil Sequence E9**
- **ACEA Oil Sequence E6**

2. Check engine oil level more frequently during the engine break-in period.
3. Change oil and oil filter after first 250 hours of operation (maximum). Fill crankcase with the normal seasonal viscosity grade oil. See Diesel Engine Oil. (Section 3-1.)
4. Watch coolant temperature gauge closely. If coolant temperature rises above specified limits on the gauge, reduce load on engine. Unless temperature drops quickly, stop the engine and determine the cause before resuming operation. See Miscellaneous—Troubleshooting.
5. Watch oil pressure gauge for pressure within specification.
6. Check belt for proper alignment and seating in pulley grooves.

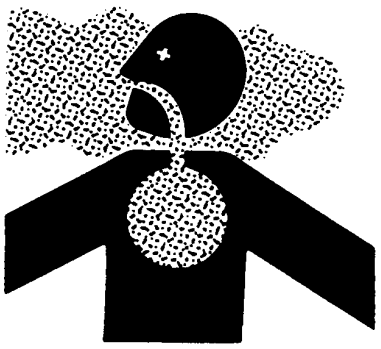
Break-In Plus is a trademark of Deere & Company

VD76477,00016F2 -19-22JAN16-1/1

Starting the Engine

CAUTION: Prevent asphyxiation. Engine exhaust fumes can cause sickness or death.

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

Asphyxiation

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

NEVER start engine while standing on ground. Start engine only from operator's seat with transmission in neutral and park lock lever up.



T6607AO —UN—18OCT88

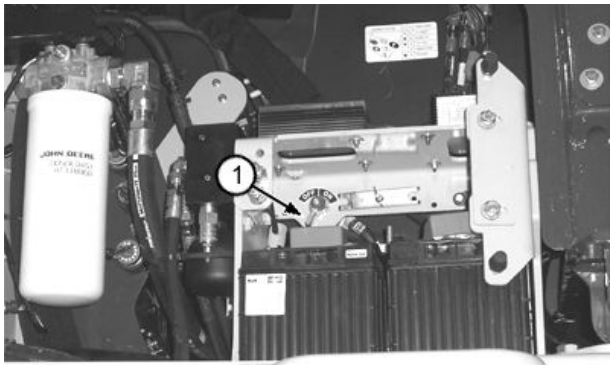
Runaway Machine

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MH66O88,00001E6 -19-26JUL10-1/4

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

1— Battery Disconnect Switch



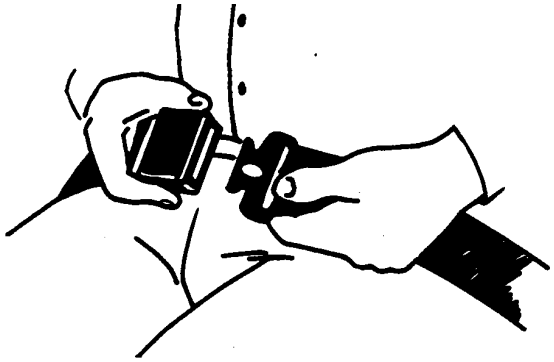
T206570A —UN—18JAN05

Battery Disconnect Switch

MH66O88,00001E6 -19-26JUL10-2/4

⚠ CAUTION: Use seat belt to avoid being injured or killed in case of accident such as an overturn.

2. Sit in seat and fasten seat belt.



TS175 —UN—23AUG88

Seat Belt

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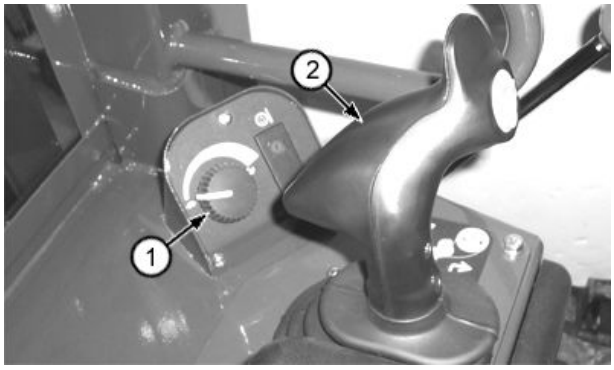
MH66O88,00001E6 -19-26JUL10-3/4

3. Place transmission control lever (TCL) (2) in neutral position.
4. Park lock lever (3) must be in up (locked) position.
5. Turn engine speed control knob (1) to slow idle.
6. Push horn button to sound horn.

IMPORTANT: Do not operate starter for more than 20 seconds at a time or starter may be damaged. If engine does not start, wait at least 2 minutes before trying again. If engine does not start in four attempts, refer to Troubleshooting section. (Section 4-3.)

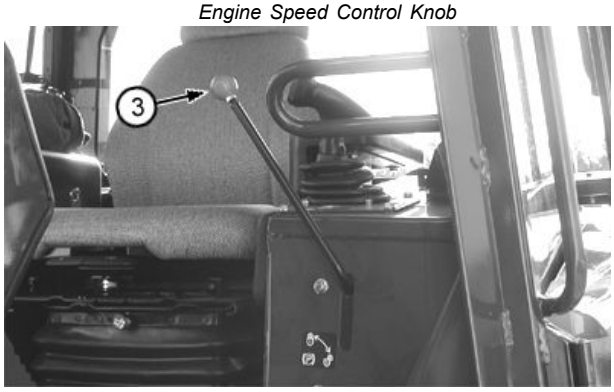
7. Turn key switch clockwise to turn engine until it starts. With engine running, adjust engine rpm to 1600 (1/2 speed). (See Engine Warmup in this section for proper warmup procedure.)

1— Engine Speed Control Knob
2— Transmission Control Lever (TCL)
3— Park Lock Lever



T206612A —UN—24JAN05

Engine Speed Control Knob



T198352B —UN—15MAR04

Park Lock Lever

MH66O88,00001E6 -19-26JUL10-4/4

Starting Fluid—Cold Weather Start Aid

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 start aid when temperatures are below 4.4°C (40°F) and only when engine is COLD.

Using Starting Fluid

IMPORTANT: To avoid engine damage, push start aid button only when engine is cold and cranking. Start aid fluid is being injected into engine as long as you push switch.

NOTE: Crank engine for 20 seconds maximum, allowing two minutes between cranking periods.

While cranking engine, push start aid switch (1).

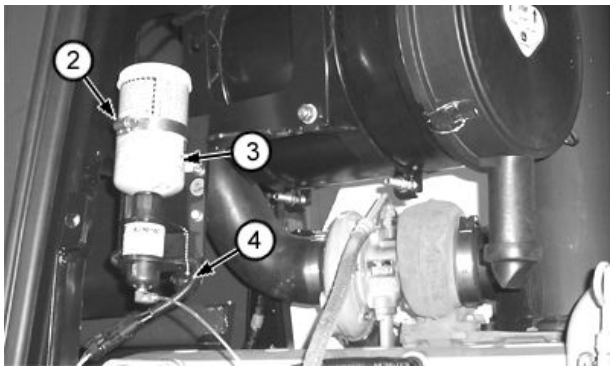
Replacing Start Aid Can

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.



T206615A —UN—24JAN05



T206614A —UN—24JAN05

1— Start Aid Switch
2— Clamp
3— Container
4— Dust Cap

4. If no starting fluid is needed, remove container and install dust cap (4).

HG31779,000035E -19-17FEB05-1/1

Engine Warmup

1. 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 -19-20JUL10-1/1

Cold Weather Warmup

IMPORTANT: If hydraulic oil is cold, hydraulic functions move slowly. Do not attempt machine operations until hydraulic functions move at close-to-normal cycle times.

In extremely cold conditions, an extended warmup period will be necessary. The transmission speed and engine rpm will be limited.

The warmup light indicates the crawler engine and ground speed are being limited due to extreme cold conditions. Engine rpm will be limited to between 1200 and 1400 rpm for up to 10 minutes. Additionally, transmission speed setting will be limited to 1.8 until crawler has moved 300 feet after completing the 10 minute engine warmup period.

Avoid sudden operation of hydraulic functions until engine is thoroughly warmed up. Remove ice, snow, and mud before operation.

NOTE: Use lower viscosity oil in the hydraulic and transmission system to help start the engine when ambient temperature is below -18°C (0°F). See Transmission, Hydraulic, and Hand Pump Reservoir Oil. (Section 3-1.)

Cycle all hydraulic functions to distribute warmed oil until all functions operate freely.

HG31779,0000075 -19-20JUL10-1/1

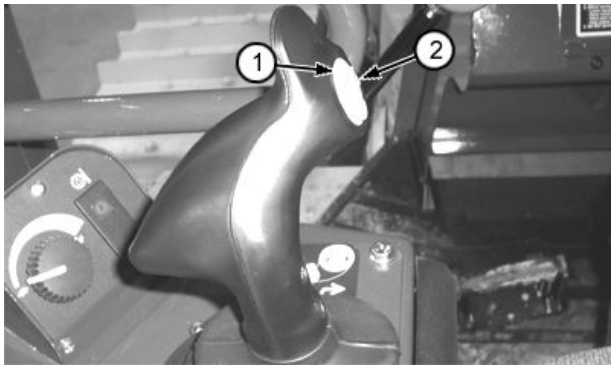
Transmission Control Lever

Push the top of the transmission speed-in-grip (SIG) 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 controls the direction (forward and reverse), steering (left turn, right turn), pivot turn, and counter rotation.

- Push lever forward to go forward.
- Pull lever back to go backward.
- Push lever to the right to go right.
- Push lever to the left to go left.



T206857A —UN—24JAN05

Transmission Control Lever

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

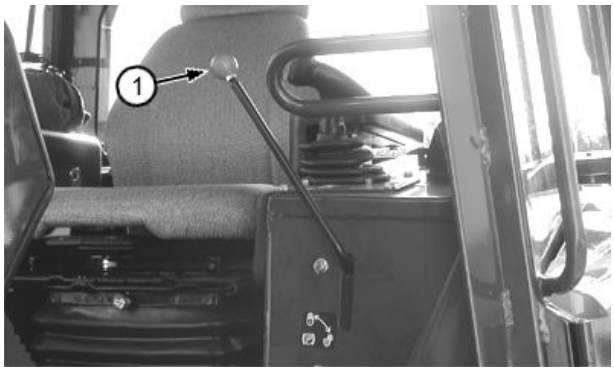
AM40430,0000013 -19-20APR11-1/1

Driving the Machine

1. Fasten seat belt.
2. Park lock lever (1) must be in the up LOCKED position.
3. Place transmission control lever (2) in neutral position.
4. Start engine.
5. Depress decelerator/brake pedal.
6. Move park lock lever to down UNLOCKED position. Speed gauge will display default transmission setting 1.6.

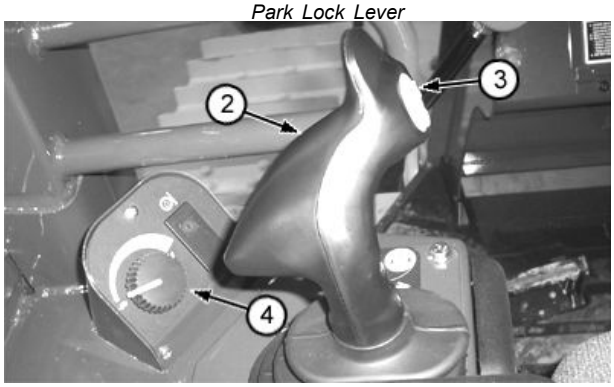
NOTE: Transmission speed-in-grip button adjusts travel speed and may be adjusted at any time.

7. Place in desired position.
8. Press transmission SIG button (3) to desired setting (1.0—3.0) as seen in display window. The transmission speed range is preset for a startup speed range of 1.6. The transmission speed range can vary depending on operator's preference from 1.0 to 3.0 (machine speed can vary from 0 to 6.0 mph).
9. Slowly release decelerator/brake pedal to move machine.
10. Turn engine speed control dial (4) to the desired engine speed setting.
11. Move in desired turning direction to steer.



T198352A —UN—18JAN05

Park Lock Lever



T206811A —UN—24JAN05

Transmission Control Lever

1— Park Lock Lever
2— Transmission Control Lever
3— Transmission Speed-In-Grip (SIG) Button
4— Engine Speed Control Dial

HG31779,0000065 -19-25APR11-1/1

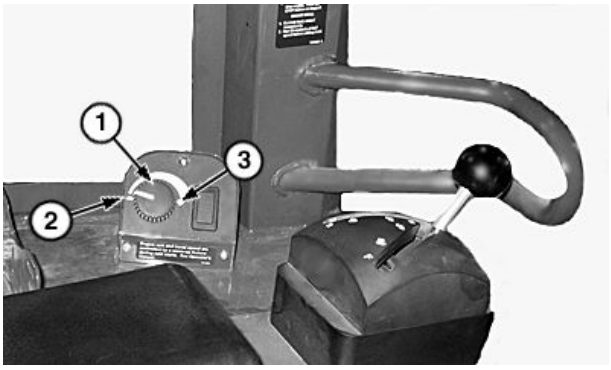
Using Engine Speed Control Dial

To decrease engine speed, turn engine speed control dial (1) counterclockwise to slow idle position (2) (turtle).

To increase engine speed, turn engine speed control dial clockwise to fast idle position (3) (rabbit).

NOTE: After starting engine, engine speed control dial must be set to slow idle before dial can be used to increase engine speed.

NOTE: When transmission control lever is in forward or reverse position, turning engine speed control dial clockwise may cause machine to move, or will increase machine travel speed.



TX1083142A —UN—08DEC10

Engine Speed Control Dial

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

AM40430,0000014 -19-17JAN13-1/1

Travel Speed Using Transmission Control Lever

Hydrostatic dual path transmission provides variable travel speed (1.0—3.0) ranging from 0—11 km/h (0—6.0 mph) in forward or reverse. Reverse speed ratios of 80%, 100%, 115%, and 130% until maximum mph is reached, from 0—11 km/h (0—6.0 mph) in reverse. Transmission speed default speed of 1.6 will be displayed by moving park lock lever, pushing transmission speed button, or pushing SELECT button on monitor.

HG31779,000035F -19-15MAY08-1/1

Decelerator/Brake Pedal and Decelerator Mode Switch

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

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

Engine Mode

Actuating the decelerator mode switch to the up position will set the foot pedal in Engine Mode. In Engine Mode, pressing on the decelerator/brake pedal will slow engine speed and reduce machine ground speed. Pushing pedal beyond a point of increase resistance will apply brakes and machine will stop abruptly.

Travel will resume as pedal is released.

NOTE: Decelerator mode switch position can be changed at any time. With transmission control lever (TCL) in neutral, mode change will take effect immediately. If TCL is not in neutral, return to neutral (RTN) light will light indicating TCL must be moved to neutral for Decelerator Mode change to take effect.

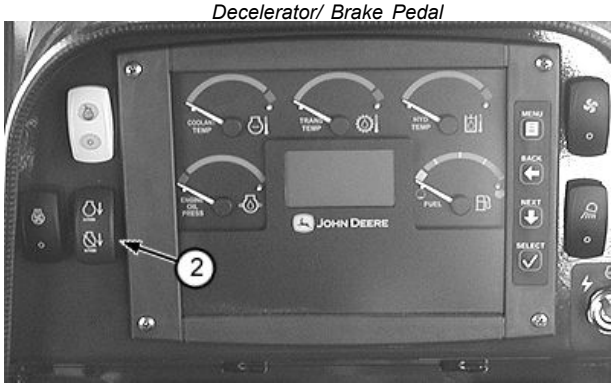
Transmission Mode

Actuating the decelerator mode switch to the down position will set the foot pedal in Transmission Mode. In Transmission Mode, pressing on the decelerator/brake pedal will reduce machine ground speed but does not slow engine speed. Pushing pedal beyond a point of increased resistance will apply brakes and machine will stop abruptly. **Travel will resume as pedal is released.**



Decelerator/ Brake Pedal

T198357A —UN—15MAR04



Decelerator Mode Switch

T207691A —UN—04FEB05

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

AM40430,0000037 -19-25APR11-1/1

Using Park Lock Lever

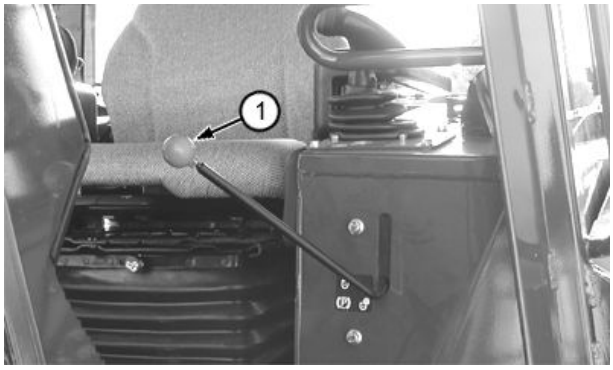
CAUTION: Prevent possible injury from unexpected machine movement. Always move park lock lever to up LOCKED position before starting or dismounting.

When park lock lever (1) is in up LOCKED position, transmission control lever (TCL) can move but will not operate the machine.

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

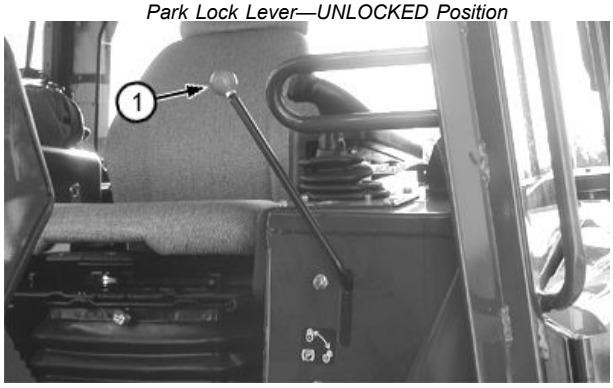
If park lock lever is pulled down while the TCL is in forward or reverse, the machine will not move. Put TCL in neutral, then raise and lower the park lever. Machine is now operable.

1— Park Lock Lever



T198353A —UN—18JAN05

Park Lock Lever—UNLOCKED Position



T198352A —UN—18JAN05

Park Lock Lever—LOCKED Position

AM40430,0000036 -19-19APR11-1/1

Hydraulic Enable Switch/Hydraulic Accumulator Discharge

CAUTION: Prevent possible injury from high pressure fluid. Discharge accumulator before servicing any hydraulic components. Hydraulic oil in accumulator can be stored at pressures equal to or above system relief pressures.

Hydraulic enable switch (1) is used to lock out blade hydraulic control lever.

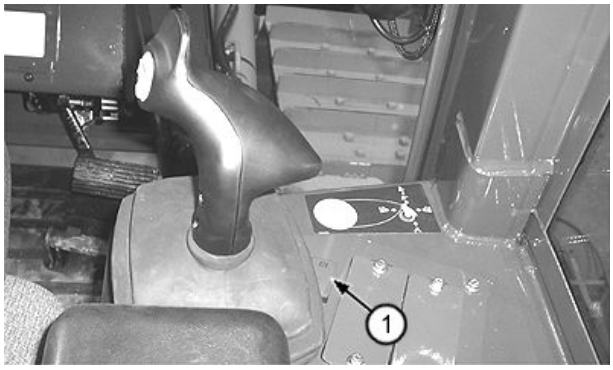
NOTE: Hydraulic enable switch (1) must be pressed and held down while moving control lever forward to lower blade with engine stopped.

Switching the position with forward half pressed down, enables all blade hydraulic control lever functions, if key is on and engine is running.

Switching position with rear half pressed down, locks out all blade hydraulic control lever functions in all conditions.

To remove stored energy from blade hydraulics and hydraulic control lever accumulator system:

1. Lower blade to ground and stop engine.
2. Turn key switch to ON but do not start engine.



T208165A —UN—08FEB05

Hydraulic Enable Switch

1— Hydraulic Enable Switch

3. Set hydraulic enable switch to enable position (front half of switch pressed down).
4. Cycle each function (lift up/down, tilt left/right and blade angle left/right) several times until accumulator pressure has been discharged.
5. Turn key switch to OFF.
6. Turn battery disconnect switch to OFF position.

AM40430,0000049 -19-19APR11-1/1

Stopping the Engine—Normal Shutdown

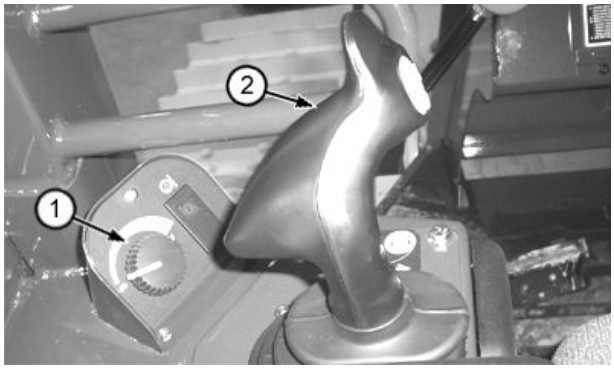
IMPORTANT: Before stopping engine that has been operating at working load, idle engine at 1/2 speed for 2 minutes to cool hot engine parts. If engine stalls while operating under load, restart it immediately and idle at 1/2 speed for 2 minutes before stopping to allow coolant to continue circulating through engine.

IMPORTANT: Turbocharger may be damaged if engine is not properly shut down.

1. Park machine on a level surface.
2. Lower all equipment to ground.
3. Place transmission control lever (TCL) (2) in neutral position.

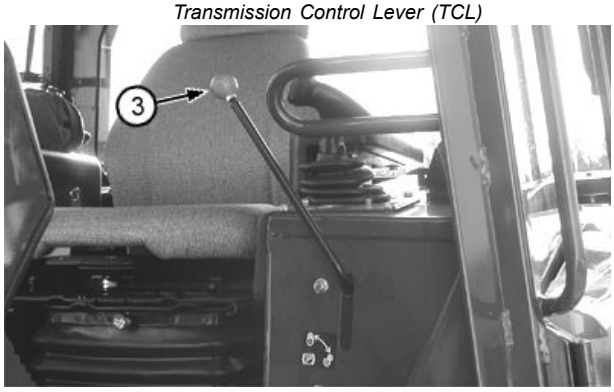
CAUTION: Prevent possible injury from unexpected machine movement. Never rely on TCL alone to keep machine from moving. Machine can unexpectedly roll or move under power, resulting in death or serious injury. Always engage park lock lever to hold machine.

4. Move park lock lever (3) to up LOCKED position.
5. Run engine at 1/2 speed without load for 2 minutes.
6. Turn engine speed control dial (1) to slow idle position.
7. Turn key off to stop engine. Remove key.
8. Release hydraulic pressure by moving control levers until equipment does not move.



T206811C —UN—24JAN05

Transmission Control Lever (TCL)



T198352C —UN—15MAR04

Park Lock Lever

1— Engine Speed Control Dial
2— Transmission Control Lever
3— Park Lock Lever

HG31779,000035D -19-20APR11-1/1

Stopping the Machine

NOTE: Brake automatically engages under the following conditions:

1. *When the engine is not running.*
2. *If transmission control lever (TCL) is in neutral (N) position and machine senses hydrostatic motor movement for more than 2 seconds.*
3. *If TCL is in forward (F) or reverse (R) position and decelerator/brake pedal is pushed all the way to the first stop position (not into brake range) and machine senses hydrostatic motor movement for more than 2 seconds.*

Stop crawler by doing one of the following:

CAUTION: Prevent possible injury from unexpected machine movement. Pushing on decelerator/brake pedal will stop machine abruptly. Brake will release as pedal is released. Pushing the park lock lever to up LOCKED position will stop machine abruptly.

- Place transmission control lever (TCL) in neutral.
- Push decelerator/brake pedal to second stop position (fully depress pedal).
- Push park lock lever to up LOCKED position.

CAUTION: Prevent possible injury from overturning the machine. If blade is dropped when moving rapidly down a steep hill, machine may overturn.

- As a last resort, drop blade to stop machine.

AM40430,0000023 -19-25APR11-1/1

Parking the Machine

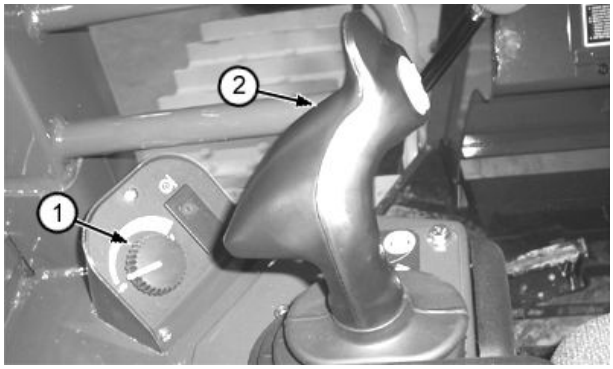
1. Park machine on a level surface.
2. Lower blade to ground.
3. Move transmission control lever (2) to NEUTRAL.

CAUTION: Prevent possible injury from unexpected machine movement. Never rely on transmission control lever alone to keep machine from moving. Machine can unexpectedly roll or move under power, resulting in death or serious injury. Always engage park lock lever to hold machine.

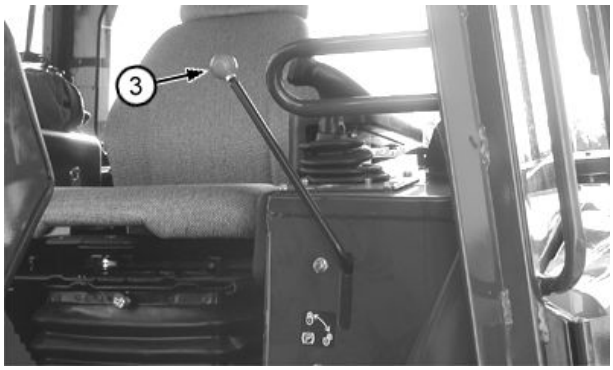
4. Move park lock lever (3) to up (locked) position.

IMPORTANT: To avoid damage to turbocharger, run engine at 1/2 speed with no load for 2 minutes.

5. Run engine at 1/2 speed with no load for 2 minutes.
6. Rotate engine speed control knob (1) to slow idle position.
7. Turn key OFF to stop engine.
8. Turn key switch to ON position.
9. Push hydraulic enable switch to unlock position.
10. Release hydraulic pressure by moving control lever(s) until equipment does not move.
11. Turn key OFF.
12. Turn battery disconnect switch to OFF position.



T206811D —UN—12JAN05



T198352D —UN—12JAN05

1— Engine Speed Control Knob
2— Transmission Control Lever
3— Park Lock Lever

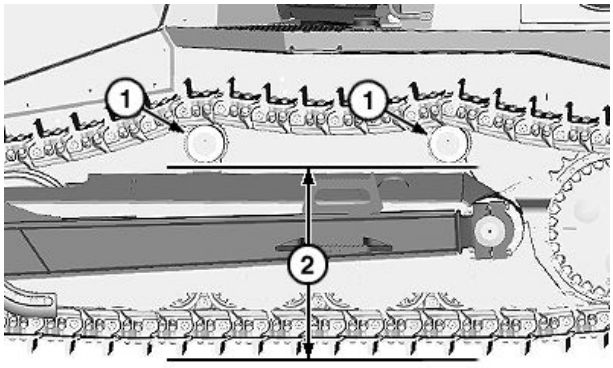
TX,30,RR,A26 -19-17OCT07-1/1

Operating in Water and Mud

IMPORTANT: Damage to the hydrostatic motors, hydrostatic pumps, cooling fan, and other components could occur if fording depth is exceeded. Never exceed maximum fording depth (2) higher than the lower edge of carrier rollers (1).

When it is necessary to operate or drive the machine in water or mud, water or mud must not go higher than the lower edge of carrier rollers (1).

After working in water or mud, lubricate all grease and lubrication points.



XJ1276622 —UN—16APR19

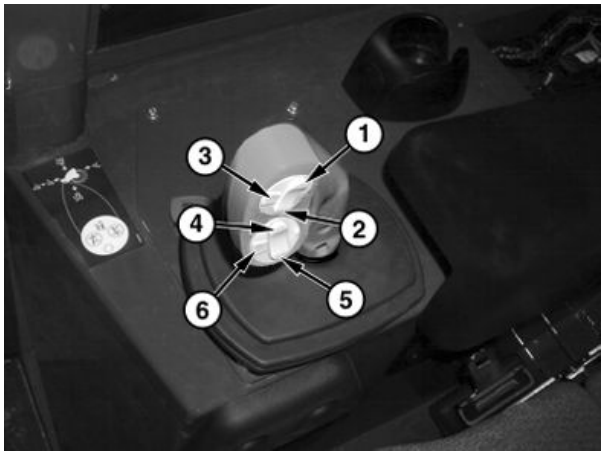
Maximum Fording Depth

1— Carrier Roller (4 used)
2— Maximum Fording Depth

SK32938,000000B -19-17APR19-1/1

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

VD76477,00013C8 -19-19OCT09-1/2

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

Blade pilot 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.

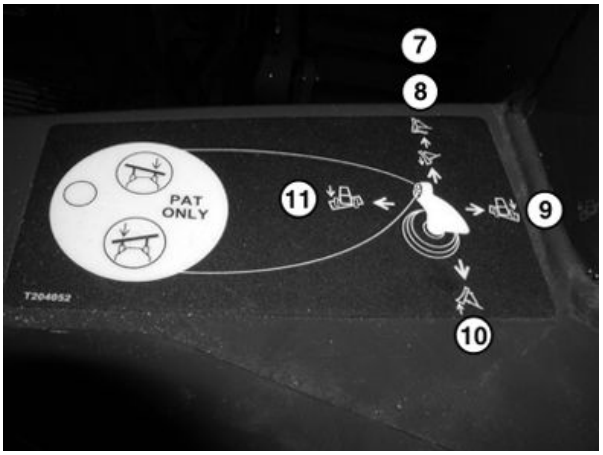
Electronic blade control lever is used for all hydraulic functions on IGC units.

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.

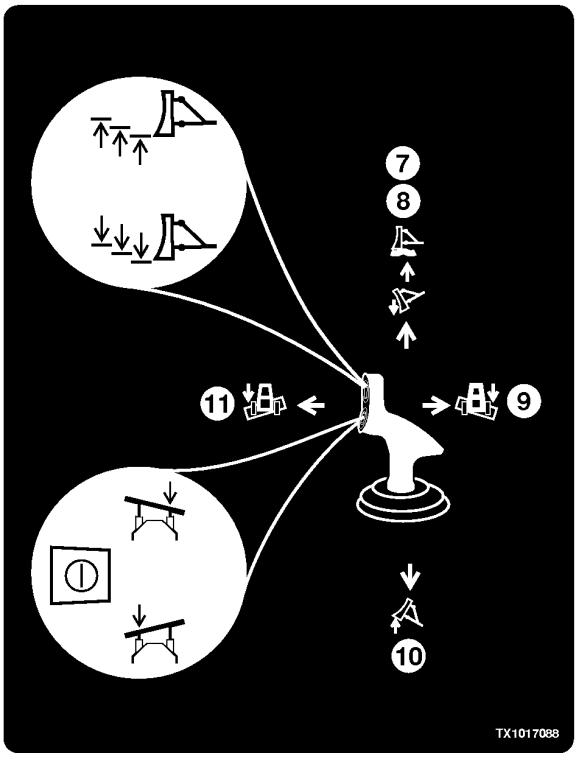
To disable blade float, push the lever forward or rearward after the joystick has returned to neutral. Moving the lever to the left or right will not disable blade float.

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

VD76477,00013C8 -19-19OCT09-2/2

Changing Blade Pitch

It may be necessary to change the pitch of the blade depending on the type of work being done and soil conditions being dozed, or to change the feel of the dozer to operator's preference.

Blade Pitch Forward Advantages:

With the blade pitched forward, 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 pitched forward, the dozer balance does not change as much with a full blade; therefore, the tendency for idlers to sink is reduced.

With blade pitched 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.

Blade Pitch Back Advantages:

With the blade pitched back, 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.

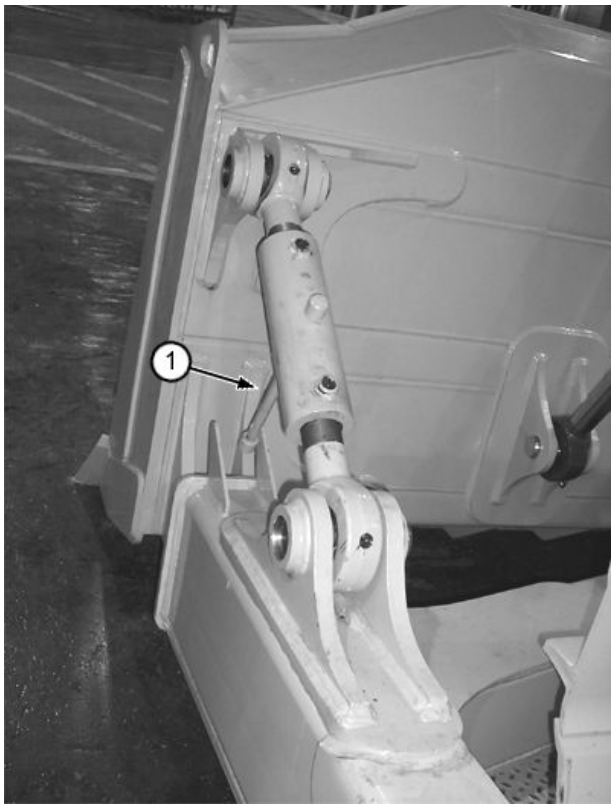
AM40430,0000015 -19-15MAY08-1/1

Changing Blade Pitch—Outside Dozer Linkage

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

To change blade pitch, insert adjusting bar (1) and turn adjusting jack to extend or retract jack. Then extend or retract tilt cylinder the same amount to obtain desired pitch.

1— Adjusting Bar



T207104A —UN—14JAN05

Blade Pitch

AM40430,0000017 -19-26APR11-1/1

Changing Blade Pitch—C-Frame Dozer Linkage

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

1. Raise blade approximately 152 mm (6 in.) off ground and support with blocks. Support C-frame with floor stands.

NOTE: It may be necessary to use a floor jack for relieving blade tension.

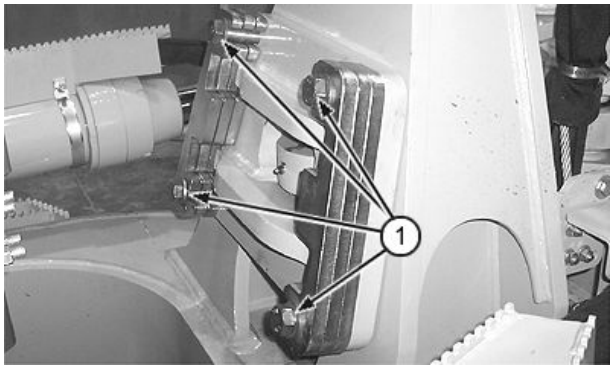
2. Loosen cap screws (1) to adjust shims.
3. Move shims to one of four desired positions: forward, mid-forward, mid-back, or back.

CAUTION: Wear gloves to prevent possible injury from pinching/crushing fingers in between shims.

4. Apply Loctite® to threads of cap screws.
5. Make sure shims are in the same position on each side. Tighten cap screws to specification.

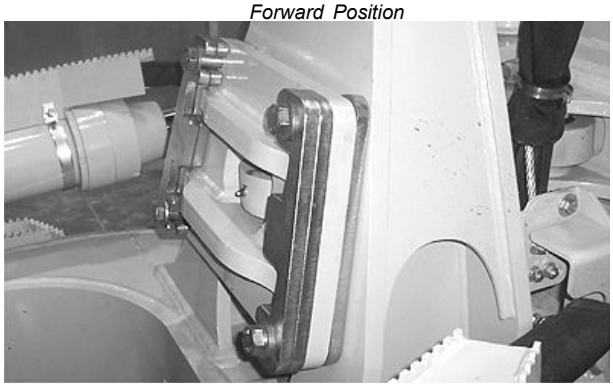
Specification	
Cap Screw—Torque	624 N·m 460 lb.-ft.

1— Cap Screw (4 used)



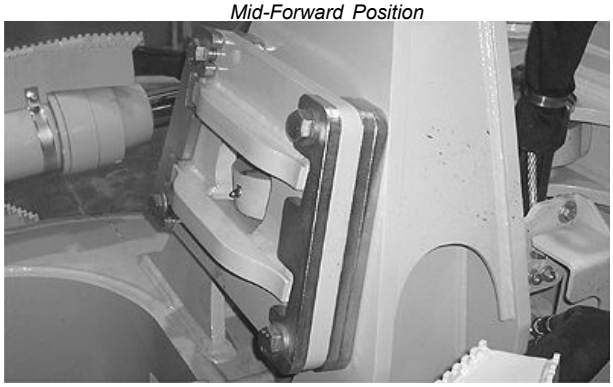
T207337A —UN—20JAN05

Forward Position



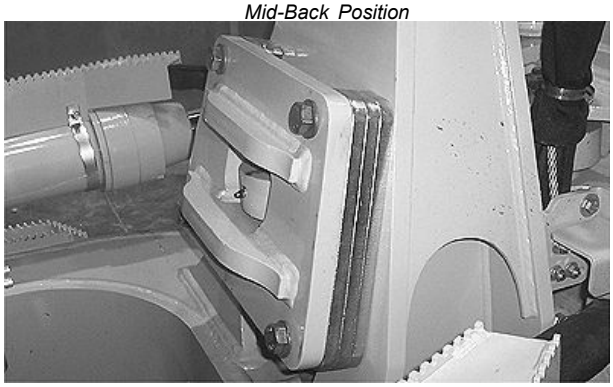
T207338A —UN—20JAN05

Mid-Forward Position



T207339A —UN—20JAN05

Mid-Back Position



T207340A —UN—20JAN05

Back Position

Loctite is a trademark of Henkel Corporation

AM40430,0000018 -19-16FEB17-1/1

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

Extend Undercarriage Life

Proper maintenance and adjustment of your machine's undercarriage will provide maximum wear life in many operating and soil conditions. You can and will make a difference in getting maximum wear life from the components. Here are some operating tips that will make a difference:

PROPER TRACK SAG ADJUSTMENT—Maintaining proper amount of track sag 51 mm (2.0 in.) is the most important adjustment to maintain. Tight tracks can reduce wear life by more than 50 percent and cause loading on undercarriage components, increasing the wear rate. Track sag should be adjusted as soil conditions change. Observe the amount of sag every day and adjust as needed. Refer to the periodic service interval in this manual or decal on machine for proper adjustment procedure.

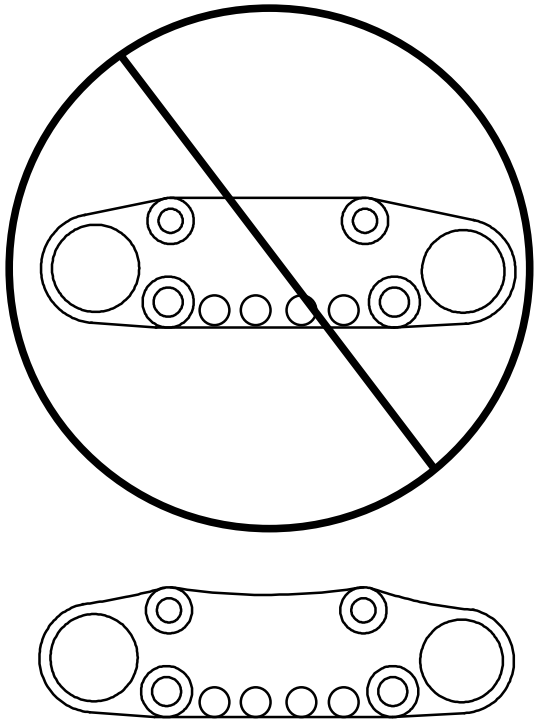
REDUCE OPERATING TIME IN REVERSE—On all track machines, bushing and sprocket wear rate increases significantly when operating in reverse rather than forward.

To get the most life out of undercarriage, minimize the amount of time operating in reverse.

REDUCE OPERATING AND TRAVEL SPEED WHEN POSSIBLE—As machine speed increases, wear rates increase. Operate at minimum ground speed required to match type of work. Excessive track slipping will also increase wear, particularly on grouser tips.

REDUCE UNNECESSARY ADDED WEIGHT—Additional machine weight due to attachments of counterweighting will cause faster wear rate.

USE PROPER CHAIN GUIDES OR GUARDS—Properly installed and maintained track guides or guards will keep chain aligned with roller and idler, extending wear life.



T207501 —UN—15FEB05

SELECT PROPER TRACK PAD WIDTH—Wider track pads increase loading and wear on undercarriage components. Use narrowest pad possible for operating conditions.

TX,30,RR,A3 -19-15MAY08-1/1

Loading Machine on a Trailer

1. Keep the trailer bed clean.
2. Install wheel chocks (1) 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.

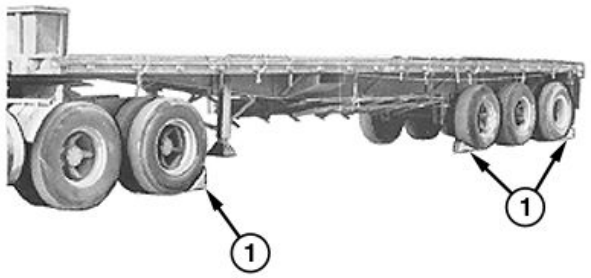
6. Drive the machine onto the ramps squarely.
7. The center line of the machine should be over the center line of the trailer.
8. Lower all equipment onto blocks.
9. Move transmission control lever (TCL) to neutral.

CAUTION: Prevent possible injury from unexpected machine movement. Never rely on transmission control lever alone to keep machine from moving. Machine can unexpectedly roll or move under power, resulting in death or serious injury. Always engage park lock lever to hold machine.

10. Move park lock lever to up (locked) position.

IMPORTANT: To avoid damage to turbocharger (if equipped), run engine at 1600 rpm no load for 2 minutes.

11. Run engine at 1600 rpm no load for 2 minutes.



TX1010855A —UN—03AUG06

Loading Machine on a Trailer

1— Wheel Chocks

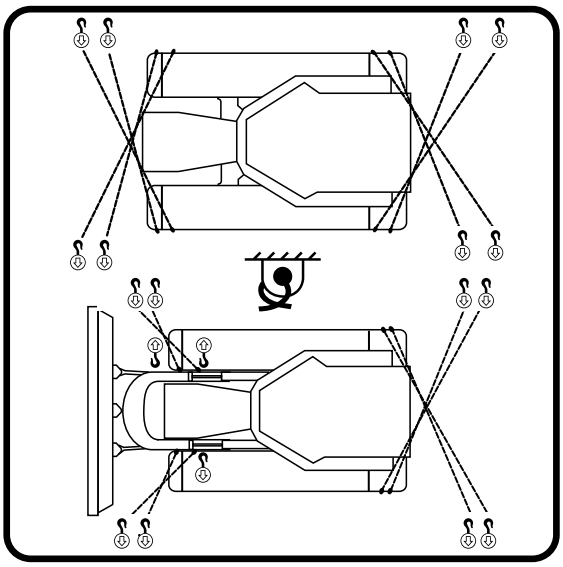
12. Rotate engine speed control knob counterclockwise to slow idle position.
13. Turn key switch to OFF. Stop engine.
14. Turn key switch to ON position.
15. Push hydraulic enable switch to unlock position.
16. Release hydraulic pressure by moving control lever(s) until equipment does not move.
17. Turn key switch to OFF.
18. Turn battery disconnect switch to OFF position.
19. Cover exhaust opening to prevent entry of wind and water.

Continued on next page

MH66O88,00001E9 -19-17OCT07-1/2

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.

20. Fasten each corner of the machine to the trailer with chains or cables.
    - Front: Use either the outside or inside of the track shoe as shown. In addition, it is permissible to use the tow hook eye on the bottom of the machine frame front end.
    - Side: Use inside edge of track shoe.
    - Rear: Use outer edge of track shoe. In addition, it is permissible to use the drawbar, if equipped.



T200748 —UN—07JUN04

Tie Downs

MH66O88,00001E9 -19-17OCT07-2/2

Releasing Park Brake to Tow the Machine

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

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.

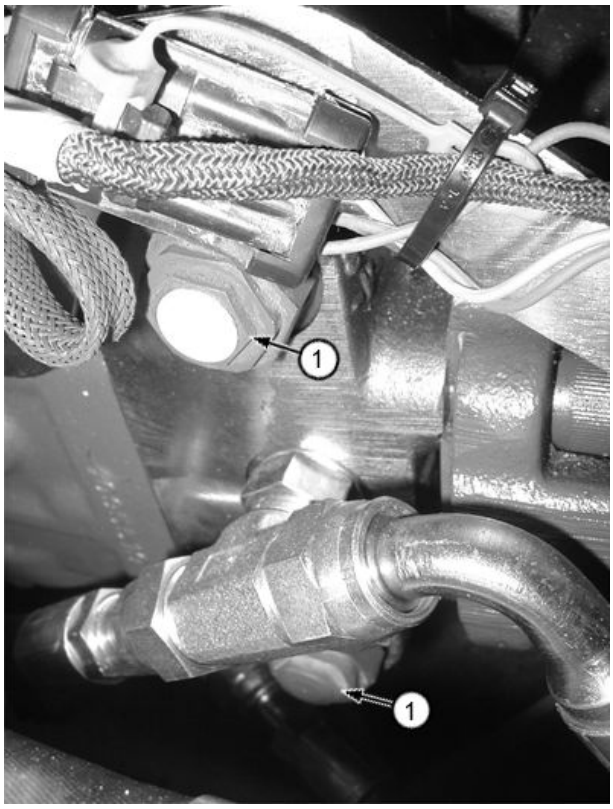
IMPORTANT: DO NOT tow machine faster than 2.4 km/h (1.5 mph) or extensive machine damage may result.

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

Towing Machine With Engine OFF

1. Tilt cab or ROPS up. See Cab or ROPS Tilting Procedure. (Section 4-1.)
2. **TO TOW MACHINE FORWARD** both front and rear pump bottom multi-function relief valves 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.)



T158857B —UN—26AUG02

Multi-function Valves

1— Multi-function Valve

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

3. Tilt cab down.

Continued on next page

TE14778,0000067 -19-27OCT09-1/2

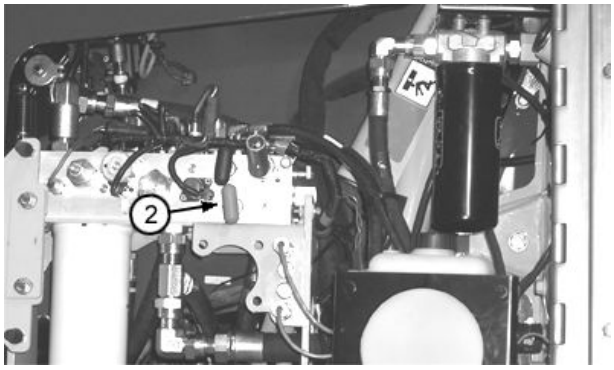
4. Turn key switch ON.
5. Put park lock lever in DOWN position and transmission control lever (TCL) in NEUTRAL.

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

6. Set brake control setting to Tow.
   a. Press MENU on monitor.
   b. Select MACHINE SETTINGS.
   c. Select BRAKE TOW.
   d. Select TOW.
7. Leave key in ON position.
8. Pull and turn the RED knob on Hydraulic Integrated Circuit (HIC) valve (2) to the extended [out] (tow) position.

NOTE: There's a relief valve for the park brake in the HIC valve. Oil can be heard flowing through relief, and an increased pressure can be felt on handle when brakes are totally released.

9. Use pump handle and apply pressure to release brakes.



T208215A —UN—08FEB05

2— Hydraulic Integrated Circuit (HIC) Valve

NOTE: Brakes can be applied in TOW mode by moving park lever "up", depressing decelerator pedal fully to floor, or turning key OFF.

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

10. Tow machine.

TE14778,0000067 -19-27OCT09-2/2

Operating on Steep Hills

IMPORTANT: Use caution when operating on steep hills. It is important to operate machine at slow transmission speeds to protect the engine and/or transmission from damage.

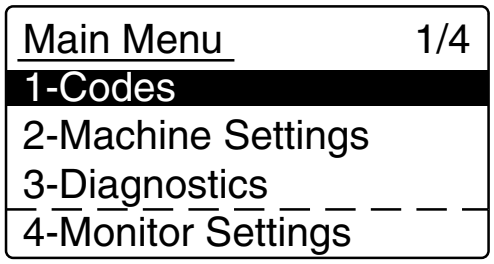
VD76477,000045E -19-15DEC10-1/1

CAN Monitor Unit (CMU) Main Menu

NOTE: The navigation keys MENU, BACK, NEXT, and SELECT are located at the right side of the CMU display.

The Main Menu provides the capability to select the next submenus. The Main Menu is accessed by pressing the MENU key. 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. Diagnostics 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 Settings menu allows the operator to make changes to various operating characteristics of the monitor.



T194565 —19—30SEP03

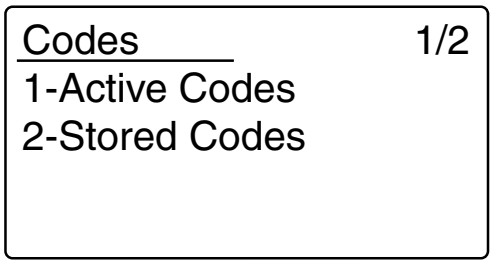
Main Menu

MH66O88,00001EA -19-22JUL10-1/1

CAN Monitor Unit (CMU) Main Menu—Codes

Codes menu consists of the following submenus:

1. Active Codes
2. Stored Codes



T193353 —19—22SEP03

Codes

MH66O88,00001EB -19-22JUL10-1/1

CAN Monitor Unit (CMU) 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.

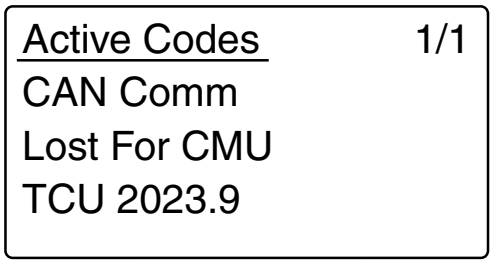
The following will be displayed:

- Text description of the DTC
- Source controller of fault (ECU, CMU, or TCU)
- SPN (Suspect Parameter Number)
- FMI (Failure Mode Indicator)

Press SELECT. An active diagnostic trouble code will be displayed.

Press SELECT to view occurrences.

Press SELECT to view circuit information to help diagnose the problem.



T202428 —19—09SEP04

Active Codes

Press NEXT to display next active code.

MH66O88,00001EC -19-15FEB12-1/1

CAN Monitor Unit (CMU) 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 following will be displayed:

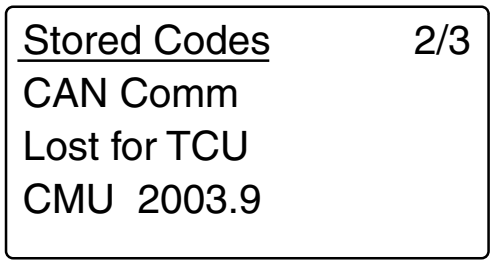
- Text description of the DTC with associated icon
- Source controller of fault (ECU, CMU, or TCU)
- SPN (Suspect Parameter Number)
- FMI (Failure Mode Indicator)
- Value of sensor at time of fault (if applicable)
- Current value of sensor (if applicable)
- Hour meter reading at first and last occurrence
- Total number of occurrences

Press SELECT. A stored diagnostic trouble code will be displayed.

Press SELECT again to view occurrences.

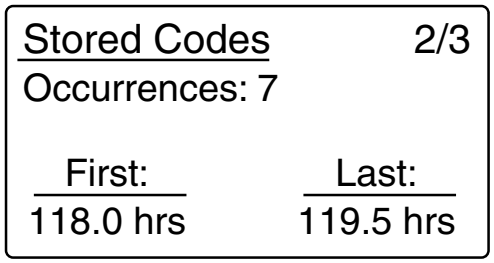
Press SELECT again to view circuit information to help diagnose problem.

Press NEXT to display next active code.



T193356 —19—08OCT03

Stored Codes



T195058 —19—23SEP03

Stored Codes

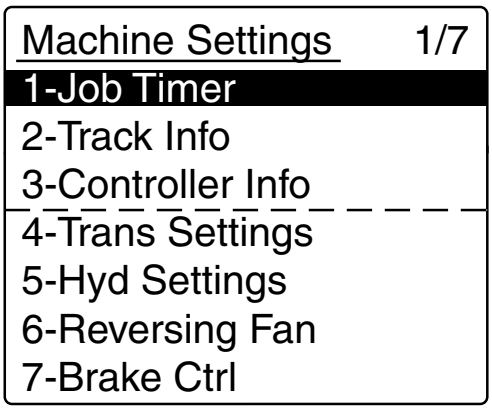
MH66O88,00001ED -19-15FEB12-1/1

CAN Monitor Unit (CMU) 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 Main Menu to highlight Machine Settings.

Press SELECT to display submenu.



TX1009761 —19—07JUL06

Machine Settings

MH66O88,00001EE -19-22JUL10-1/1

CAN Monitor Unit (CMU) Main Menu—Machine Settings—Job Timer

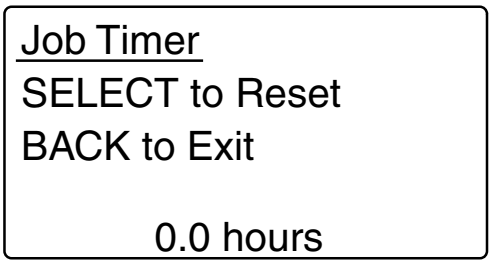
The job timer is a resettable hour meter that can be used to time tasks to the nearest tenth of an hour. The maximum capacity displayed is 999.9 hours. The job timer will stop and the value will be set to zero when it exceeds 999.9 hours. The job timer will run even when the Job Timer submenu is not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

At Main Menu Machine Settings, press NEXT to highlight Job Timer.

Press SELECT.

Press SELECT to reset the timer to zero.

Press BACK to exit.



Job Timer

T193360 —19—05AUG03

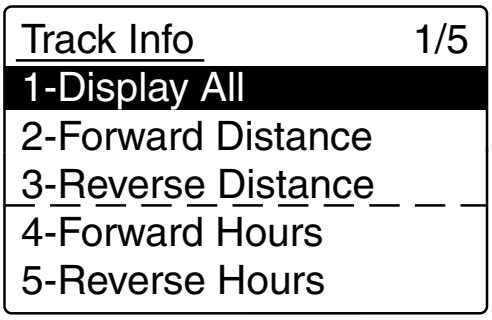
MH66O88,00001EF -19-15FEB12-1/1

CAN Monitor Unit (CAN) Main Menu—Machine Settings—Track Info

This menu displays track information calculated by the TCU.

Press SELECT to display all track information. The following information will be displayed:

- Forward Distance—The distance the machine has traveled in forward direction is displayed in miles.
- Reverse Distance—The distance the machine has traveled in reverse direction is displayed in miles.
- Forward Hours—The hours the machine has spent traveling in forward direction is displayed.
- Reverse Hours—The hours the machine has spent traveling in reverse direction is displayed.
- Press EXIT to return to submenu.



Track Info

T202433 —19—09SEP04

MH66O88,00001F0 -19-15FEB12-1/1

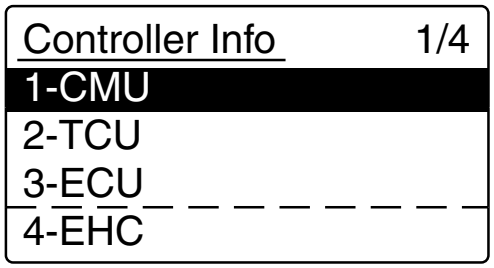
CAN Monitor Unit (CMU) Main Menu—Machine Settings—Controller Info

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

Press SELECT to display all controller information. The following information will be displayed:

- CMU—Software number, machine ID number, and CMU hardware part number will be displayed.
- TCU—Software number and TCU hardware part number will be displayed.
- ECU—Software number and ECU hardware part number will be displayed.

NOTE: The electrohydraulic controller (EHC) is available only on machines equipped with integrated grade control (IGC) systems.



Controller Info

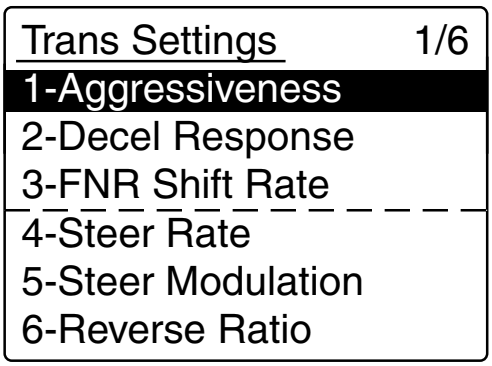
TX1009762 —19—07JUL06

- EHC—Software number and EHC hardware part number will be displayed. (Controller is available on IGC only.)

MH66O88,00001F1 -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Machine Settings—Trans Settings

This menu contains settings that affect transmission function and performance. You can fine-tune the feel of the dozer by adjusting the rates on the transmission controller unit. Listed below are the adjustable rates.



TX1009763 —19—07JUL06

Trans Settings

Rate	Description	Factory Setting	Operator Comment	Solution
Aggressiveness (Aggr)	Affects operator perception of machine power. Affects engine pull-down and opposite track movement when the track drive goes over relief.	LOW	“The engine doesn't sound like it's working.” “The tracks stop too soon.”	MED increases engine pull-down 100 rpm more than LOW. HIGH increases engine pull-down 100 rpm more than LOW, and opposite track moves when one track stalls over relief.
Decelerator Response	Affects decelerator responsiveness to pedal movement.	LOW	“The dozer is too jerky when I use the decelerator.” “The decelerator is too slow.”	Change to LOW. Change to HIGH.
FNR Shift Rate	Affects how quickly the dozer shifts between forward and reverse.	MED	“The direction shift is too jerky.” “The direction shift is too slow.”	Change to LOW. Change to HIGH.
Steer Rate	Affects steering response to steering lever movement.	MED	“The steering is too jerky.” “The steering is too slow.”	Change to LOW. Change to HIGH.
Steer Modulation	Affects amount of steering that occurs per amount of lever movement.	MED	“The steering is too long on this joystick.” “The steering throw is too short on this joystick and the steering is too jerky.”	Change to HIGH. Change to LOW.
Reverse Ratio	Affects the control of the decelerator/brake pedal. Eng = Engine and Transmission Decelerate. Tran = Transmission only Decelerates.	ENG	“I like the way the decelerator/brake pedal slows the speed of the machine, but I need to have faster hydraulic speeds.”	Change to Tran. The engine speed will stay set constant while the ground speed is decreased. This will maintain high hydraulic flow and function speed.

MH66O88,00001F2 -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Machine Settings—Hydraulic Settings (IGC Option)

The feel of the dozer can be fine-tuned by adjusting the rates on the hydraulic controller unit. Listed below are the adjustable rates.

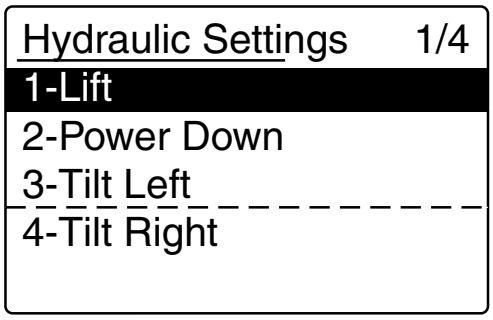
- Lift
- Power Down
- Tilt Left
- Tilt Right

Press SELECT to display submenu.

- Low
- Medium
- High

Hydraulic settings (IGC only): The hydraulic settings for the optional IGC system can be adjusted using this menu.

- Lift—Lift speed can be set to low, medium, or high.
- Power Down—Power down speed can be set to low, medium, or high.
- Tilt Left—Tilt left speed can be set to low, medium, or high.
- Tilt Right—Tilt right speed can be set to low, medium, or high.



TX1010947 —19—04AUG06

Hydraulic Settings

MH66O88,00001F3 -19-15FEB12-1/1

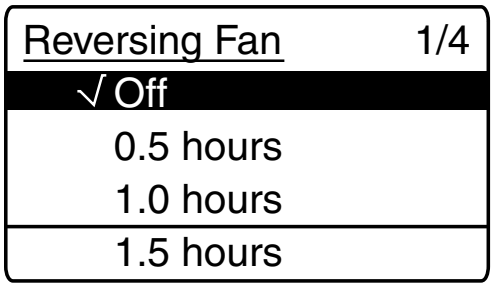
CAN Monitor Unit (CMU) Main Menu—Machine Settings—Reversing Fan

The interval between reverse cycles for the hydraulic fan can be set in this menu.

At the machine settings menu, press NEXT to highlight Reversing Fan.

Press SELECT to display submenu.

- Off—Turns the reversing function off.
- 0.5 hours—Fan will reverse every half hour when machine is in neutral or reverse.
- 1.0 hours—Fan will reverse every hour when machine is in neutral or reverse.
- 1.5 hours—Fan will reverse every hour and a half when machine is in neutral or reverse.



T205942 —19—16DEC04

Reversing Fan

MH66O88,00001F4 -19-15FEB12-1/1

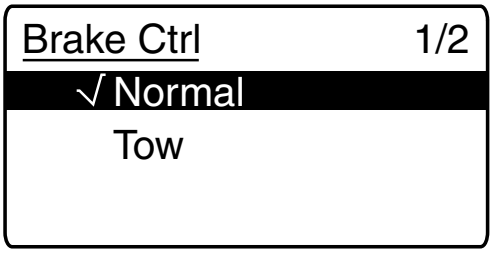
CAN Monitor Unit (CMU) Main Menu—Machine Settings—Brake Ctrl

This function will allow the machine to be towed without automatically applying the brakes (hill hold feature disabled).

Press NEXT at Machine Settings to highlight Brake Ctrl.

Select Brake Ctrl.

- Select Normal for normal machine operation.
- Select Tow to tow the machine.



TX1010948 —19—04AUG06

Brake Control

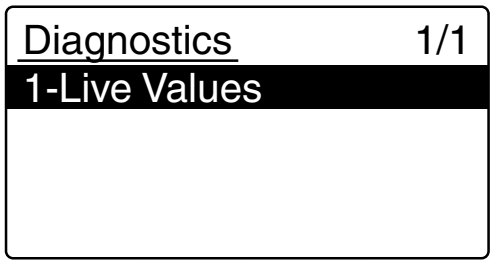
MH66O88,00001F5 -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Diagnostics

The Diagnostics 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 Diagnostics.

Press SELECT to display submenu.



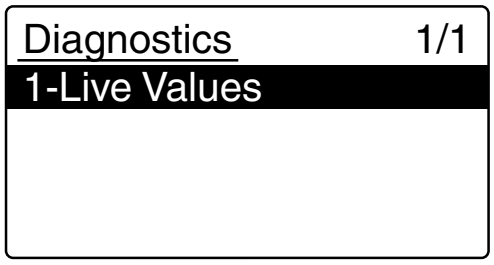
TX1009764 —19—07JUL06

Live Values

MH66O88,00001F6 -19-22JUL10-1/1

CAN Monitor Unit (CMU) Main Menu—Diagnostics—Live Values

Press SELECT to display Live Values.



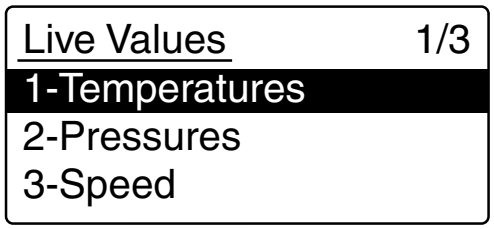
TX1009764 —19—07JUL06

Diagnostics

MH66O88,00001F7 -19-15FEB12-1/2

This menu displays the live values that the controllers see.

- Temperatures—Displays values for engine, transmission, and hydraulic temperatures.
- Pressures—Displays values for transmission and engine pressures.
- Speed—Displays values for engine, left motor, right motor, crankshaft, and camshaft speed.



TX1008962 —19—08JUN06

Live Values

MH66O88,00001F7 -19-15FEB12-2/2

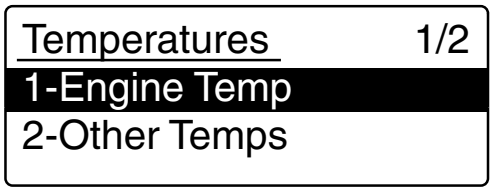
CAN Monitor Unit (CMU) Main Menu—Diagnostics Live Values—Temperatures

This menu displays the live values that the controllers see.

Press SELECT when Temperatures is highlighted.

Press SELECT to display Engine Temp. The following values will be displayed:

- Coolant—Coolant temperature will be displayed in °C or °F.
- Fuel—Fuel temperature will be displayed in °C or °F.
- Manifold Air—Manifold air temperature will be displayed in °C or °F.
- Comp Inlet—Compressor inlet air temperature will be displayed in °C or °F.
- EGR—EGR temperature will be displayed in °C or °F.
- Charge Air—Charge air temperature will be displayed in °C or °F.



TX1008619 —19—30MAY06

Temperatures

Press SELECT to display Other Temps. The following values will be displayed.

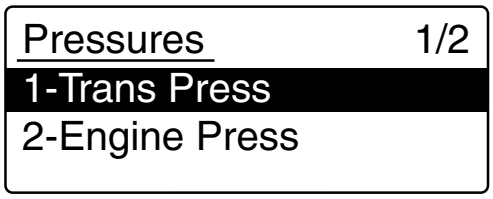
- Transmission—Transmission oil temperature will be displayed in °C or °F.
- Hydraulic—Hydraulic oil temperature will be displayed in °C or °F.

MH66O88,00001F8 -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Diagnostics Live Values—Pressures

Press NEXT to highlight Pressures.

This menu displays values for transmission and engine pressures.



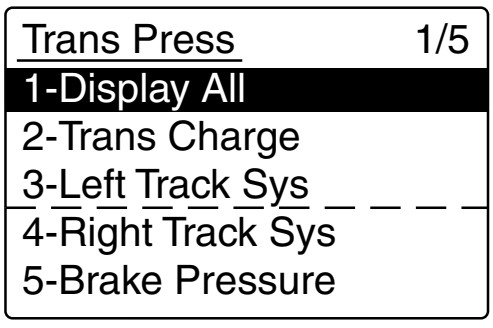
TX1008620 —19—30MAY06

Pressures

MH66O88,00001F9 -19-15FEB12-1/3

Press SELECT to display all trans pressures. The following values will be displayed:

- Trans Charge—Transmission charge pressure will be displayed in kPa or psi.
- Left Track Sys—Left track system pressure will be displayed in kPa or psi.
- Right Track Sys—Right track system pressure will be displayed in kPa or psi.
- Brake Pressure—Brake pressure will be displayed in kPa or psi.



TX1011133 —19—15AUG06

Trans Press

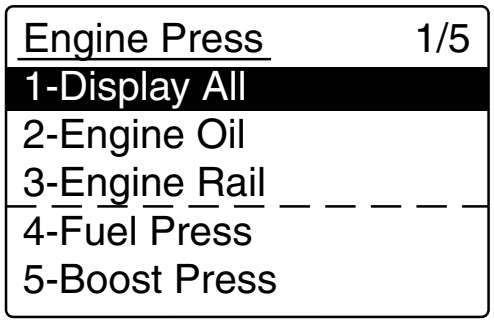
Continued on next page

MH66O88,00001F9 -19-15FEB12-2/3

Press SELECT to display all engine pressures. The following values will be displayed:

- Engine Oil—Engine oil pressure will be displayed in kPa or psi.
- Engine Rail—Engine fuel rail pressure will be displayed in kPa or psi.
- Fuel Press—Fuel pressure at transfer pump will be displayed in kPa or psi.
- Boost Press—Boost pressure will be displayed in kPa or psi.

Press BACK to return to submenu.



TX1011134 —19—15AUG06

Engine Press

MH66O88,00001F9 -19-15FEB12-3/3

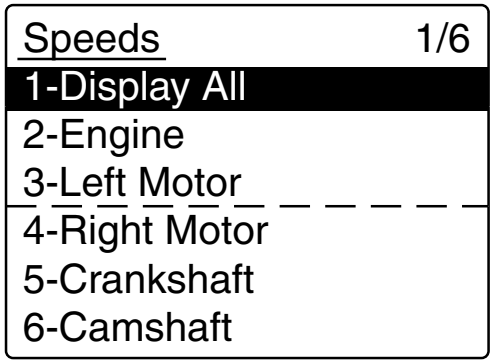
CAN Monitor Unit (CMU) Main Menu—Diagnostics Live Values—Speeds

Press NEXT to highlight Speeds.

Press SELECT to display all speeds. The following values will be displayed:

- Engine—Engine speed will be displayed in rpm.
- Left Motor—Left motor speed will be displayed in rpm.
- Right Motor—Right motor speed will be displayed in rpm.
- Crankshaft—Crankshaft speed will be displayed in rpm.
- Camshaft—Camshaft speed will be displayed in rpm.

Press BACK to return to submenu.



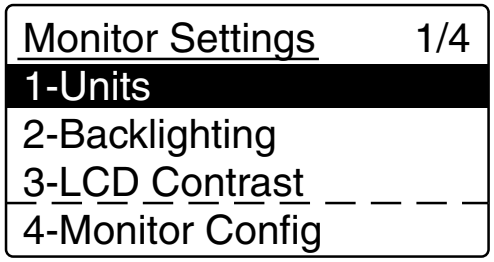
T202464 —19—15AUG06

Speeds

MH66O88,00001FA -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Monitor Settings

The Monitor Settings menu provides the capability to select submenus.



TX1009768 —19—07JUL06

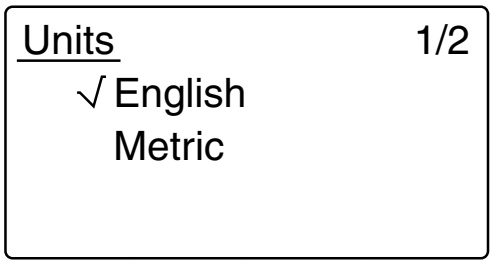
Monitor Settings

MH66O88,00001FB -19-22JUL10-1/1

CAN Monitor Unit (CMU) Main Menu—Monitor Settings—Units

Units: This menu sets the units for all functions of the CMU. Push SELECT to select the desired mode.

- English—All units will be English standard units.
- Metric—All units will be metric units.



T193395 —19—05AUG03

Units

MH66O88,00001FC -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Monitor Settings—Backlighting

Backlighting: This mode allows the operator to adjust the backlighting of the monitor. The backlight value is displayed in percentage and is incremented by 1. The range of adjustment is from 1 (no light) to 10 (brightest setting). The default backlight value is 10%.

Press NEXT to highlight Backlighting.

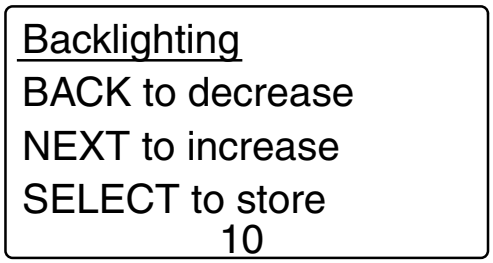
Press SELECT.

Press NEXT to increase backlighting by 1.

Press BACK to decrease backlighting by 1.

Press SELECT to store currently displayed value. The stored value will be used as the default backlight value until changed.

NOTE: Changing the backlight value without storing the setting with the SELECT key will affect the backlighting only until the key switch is turned off. The previously stored value will be used when the key switch is turned on again.



T193397 —19—15OCT03

Backlighting

Press MENU to exit.

MH66O88,00001FD -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Monitor Settings—LCD Contrast

LCD Contrast—This mode allows the operator to adjust the contrast setting of the monitor display. The range of adjustment is from 1 (lightest, or least contrast) to 10 (darkest, or most contrast). The default contrast value is 5.

Press NEXT at Monitor Settings menu to highlight LCD Contrast.

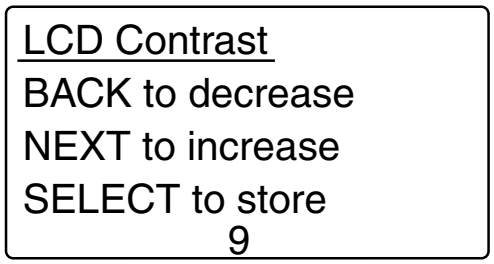
Press SELECT.

Press NEXT to increase contrast by 1.

Press BACK to decrease contrast by 1.

Press SELECT to store currently displayed value. The stored value will be used as the default contrast value until it is changed.

NOTE: Changing the contrast without storing the setting with the SELECT key will affect the contrast only until the key switch is turned off. The previously stored value will be used when the key switch is turned on again.



T193398 —19—22SEP03

LCD Contrast

Press MENU to exit.

MH66O88,00001FE -19-15FEB12-1/1

CAN Monitor Unit (CMU) Main Menu—Monitor Settings—Monitor Config

Monitor Config: This menu displays the type and performance level of the machine. These items are populated by the engine control unit (ECU).

Press MENU to exit.

MH66O88,00001FF -19-15FEB12-1/1

Diesel Fuel

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

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

Diesel fuels specified to EN 590 or ASTM D975 are recommended. Renewable diesel fuel produced by hydrotreating animal fats and vegetable oils is basically identical to petroleum diesel fuel. Renewable diesel that meets EN 590, ASTM D975, or EN 15940 is acceptable for use at all percentage mixture levels.

Required Fuel Properties

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

Cetane number of 40 minimum. Cetane number greater than 47 is preferred, especially for temperatures below –20 °C (–4 °F) or elevations above 1675 m (5500 ft.).

Cloud Point should be below the expected lowest ambient temperature or **Cold Filter Plugging Point** (CFPP) should be a maximum 10°C (18°F) below the fuel cloud point.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

Diesel fuel quality and sulfur content 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).

E-Diesel fuel

DO NOT use E-Diesel (Diesel fuel and ethanol blend). Use of E-Diesel fuel in any John Deere machine may void the machine warranty.

CAUTION: Avoid severe injury or death due to the fire and explosion risk from using E-Diesel fuel.

[1]See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2,EXT for more information on Engine Oil and Filter Service Intervals.

Sulfur content for Interim Tier 4, Final Tier 4, Stage III B, Stage IV Engines, and Stage V engines

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

Sulfur Content for Tier 3 and Stage III A Engines

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 1000—2000 mg/kg (1000—2000 ppm) REDUCES the oil and filter change interval.
- BEFORE using diesel fuel with sulfur content greater than 2000 mg/kg (2000 ppm), contact your John Deere dealer.

Sulfur Content for Tier 2 and Stage II Engines

- Use of diesel fuel with sulfur content less than 2000 mg/kg (2000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 2000—5000 mg/kg (2000—5000 ppm) REDUCES the oil and filter change interval.[1]
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.

Sulfur Content for Other Engines

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

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

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

DX,FUEL1 -19-13JAN18-1/1

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 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

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

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 -19-07FEB14-1/1

Handling and Storing Diesel Fuel

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

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

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

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

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

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

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

When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize the fuel. Keeping the free water drained and treating the bulk fuel storage tank quarterly with a maintenance dose of a biocide will prevent microbial growth. Contact your fuel supplier or John Deere dealer for recommendations.

DX,FUEL4 -19-13JAN18-1/1

Biodiesel Fuel

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

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

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

John Deere Stage V Engines Operating in the European Union

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

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

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

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

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

John Deere Engines Without Exhaust Filter

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

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

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

Biodiesel Use Requirements and Recommendations

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

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

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

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

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

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

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

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

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

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

Continued on next page

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

- Possible compatibility issues with other materials (including copper, lead, zinc, tin, brass, and bronze) used in fuel handling, distribution, and storage equipment
- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to biodiesel
- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system
- Because biodiesel blends above B20 contain more ash, using blends above B20 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present)

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

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

Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as calculated cetane index, fuel type, sulfur content, water content, appearance, suitability for cold weather operations, bacteria, cloud point, acid number, particulate contamination, and whether the fuel meets ASTM D975 or equivalent specification.

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

DX,FUEL6 -19-13JAN18-1/1

Minimizing the Effect of Cold Weather on Diesel Engines

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

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

Use Winter Grade Fuel

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

Cloud point is the temperature at which wax begins to form in the fuel. This wax causes fuel filters to plug. **Pour point** is the lowest temperature at which movement of the fuel is observed.

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

Air Intake Heater

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

Ether

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

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

Coolant Heater

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

Seasonal Viscosity Oil and Proper Coolant Concentration

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

Diesel Fuel Cold Flow Additive

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

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

Biodiesel

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

Winterfronts

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

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

Radiator Shutters

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

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

For more information, see your John Deere dealer.

DX,FUEL10 -19-13JAN18-1/1

Diesel Engine Oil — Tier 2 and Stage II

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.

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

John Deere Plus-50™ II oil is preferred.

John Deere Plus-50™ is also recommended.

John Deere Torq-Gard™ is also allowed.

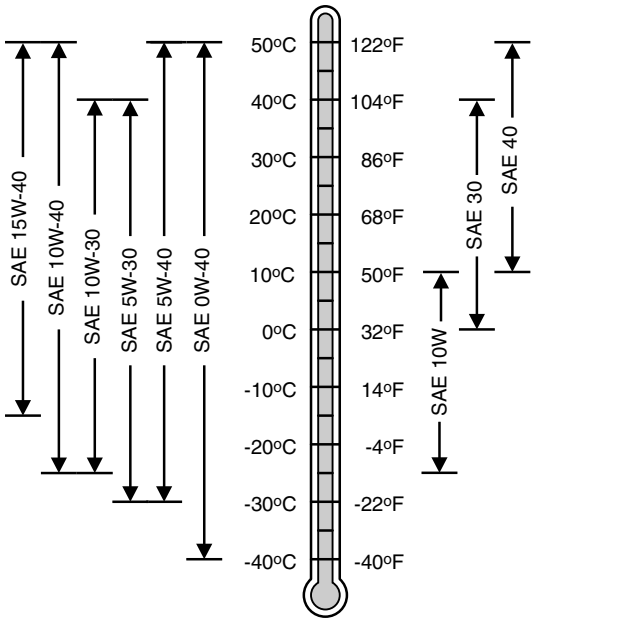
Other oils may be used if they meet one or more of the following standards:

- API Service Category CK-4
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- 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

Multi-viscosity diesel engine oils are preferred.

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

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



Oil Viscosities for Air Temperature Ranges

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

DX,ENOIL7 -19-23APR19-1/1

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

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Consult your John Deere dealer to obtain information and recommendations.

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

The temperature limits and service intervals shown in this manual apply to John Deere branded fluids or fluids that have been tested and/or approved for use in John Deere equipment.

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

DX,ALTER -19-13JAN18-1/1

System Oil

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

The following oil is preferred:

- John Deere PLUS-50™

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

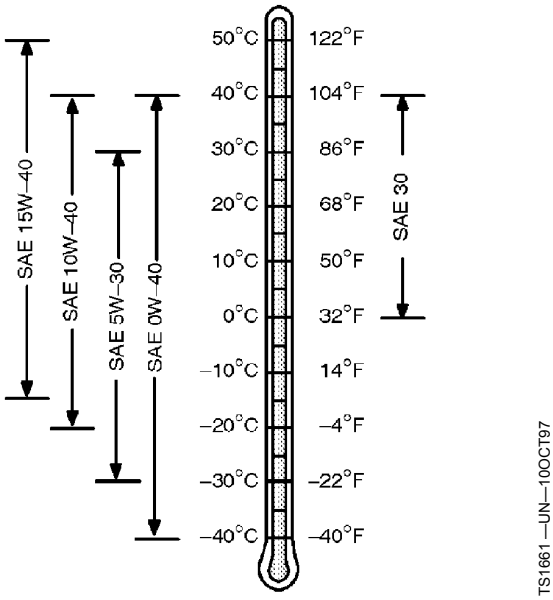
- API Service Classification CG-4
- API Service Classification CF-4
- ACEA Specification E3
- ACEA Specification E2

Multi-viscosity diesel engine oils are preferred.

If diesel fuel with sulfur content greater than 0.5% is used, reduce the service interval by 50%.

Extended service intervals may apply when John Deere preferred oils are used. Consult your John Deere dealer for more information.

PLUS-50 is a trademark of Deere & Company



AM40430,00000B6 -19-14SEP09-1/1

Transmission and Hydraulic Reservoir Oil

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

The following oils are preferred:

PLUS-50™ II

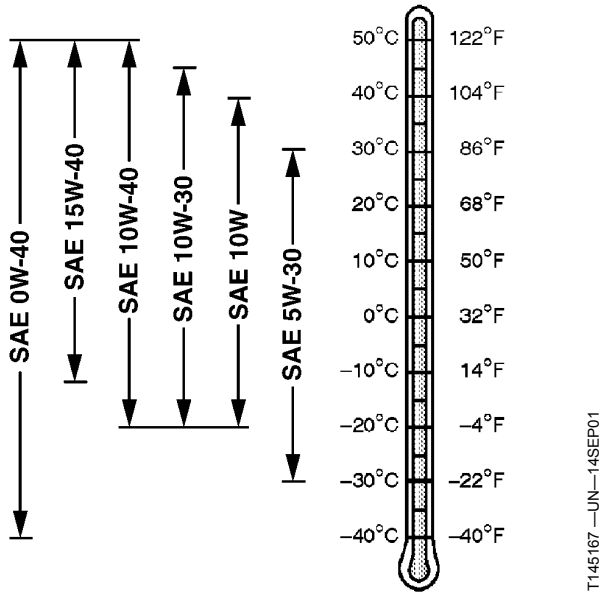
Torq-Gard™

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

API Service Classification CG-4

API Service Classification CH-4

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



TX03768,0000B91 -19-28FEB11-1/1

Inner and Outer Final Drive Oil

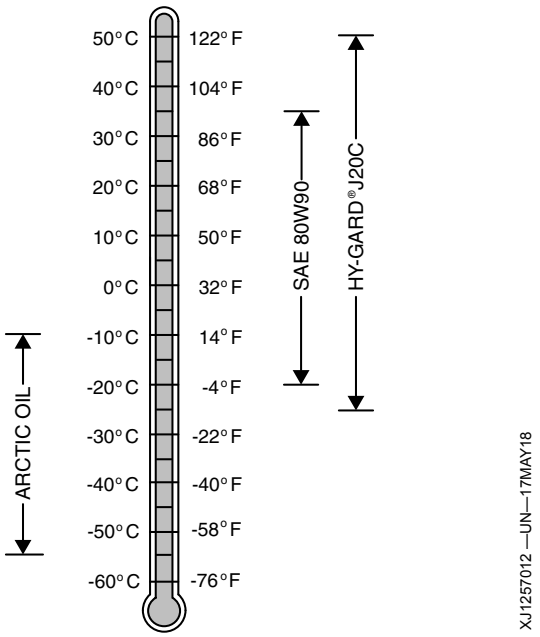
Depending on the expected air temperature range between oil changes, use oil viscosity shown on the chart.

John Deere Hy-Gard™ is preferred.

Other oils may be used if they meet the following:

- John Deere Gear Lubricant API GL-5 (SAE 80W90)

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



Inner and Outer Final Drive Oil Temperature Specifications

Hy-Gard is a trademark of Deere & Company

TX,45,RR5121 -19-17MAY18-1/1

Track Rollers, Front Idler, Carrier Roller and Track Frame Outer Pivot Oil

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

The following oils are preferred:

- John Deere GL-5 GEAR LUBRICANT (SAE 80W90)
- John Deere EXTREME-GARD

The following oils are recommended:

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

MD04263,0000057 -19-26NOV08-1/1

Multipurpose Extreme Pressure (EP) Grease

IMPORTANT: For automated lubrication systems different ambient air temperatures need to be considered.

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

John Deere SD Polyurea Grease is preferred.

The following greases are also recommended:

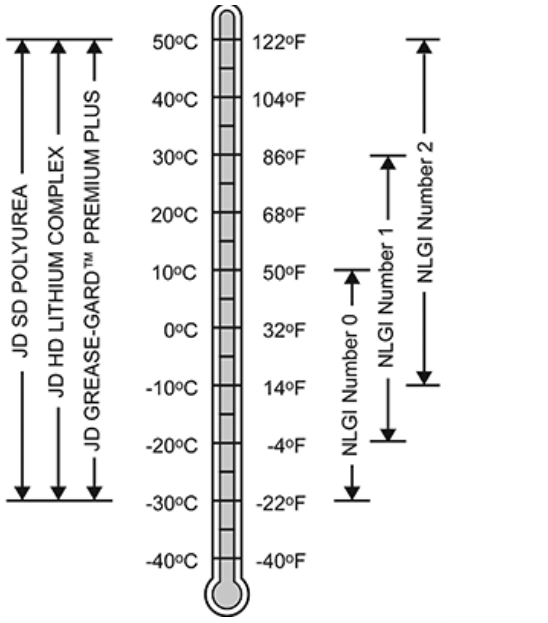
- John Deere HD Lithium Complex Grease
- John Deere Grease-Gard™ Premium Plus

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB
- ISO-L-X-BDHB 2 or DIN KP 2 N-10 Lithium Complex, Non-Synthetic Base Oil (100 to 220 mm2/s @ 40°C)

IMPORTANT: Some types of thickeners, base oils, and additives used in greases are not compatible with others. Mixing greases should be avoided. Consult your grease supplier before mixing different types of grease.

Grease-Gard is a trademark of Deere & Company



Greases for Air Temperature Ranges

DX,GREA1 -19-13JAN18-1/1

Diesel Engine Coolant (engine with wet sleeve cylinder liners)

Failure to follow applicable coolant standards and drain intervals can result in severe engine damage that may not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere coolants, parts or service.

Preferred Coolants

Failure to follow applicable coolant standards and drain intervals can result in severe engine damage that may not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere coolants, parts, or service.

The following pre-mix engine coolants are preferred:

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

COOL-GARD II pre-mix coolant is available in several concentrations with different freeze protection limits as shown in the following table.

COOL-GARD II Pre-Mix	Freeze Protection Limit
COOL-GARD II 20/80	-9°C (16°F)
COOL-GARD II 30/70	-16°C (3°F)
COOL-GARD II 50/50	-37°C (-34°F)
COOL-GARD II 55/45	-45°C (-49°F)
COOL-GARD II PG 60/40	-49°C (-56°F)
COOL-GARD II 60/40	-52°C (-62°F)

Not all COOL-GARD II pre-mix products are available in all countries.

Use COOL-GARD II PG when a non-toxic coolant formulation is required.

Additional Recommended Coolants

The following engine coolant is also recommended:

- John Deere COOL-GARD II Concentrate in a 40—60% mixture of concentrate with quality water.

IMPORTANT: When mixing coolant concentrate with water, do not use less than 40% or greater than 60% concentration of coolant. Less than 40% gives inadequate additives for corrosion protection. Greater than 60% can result in coolant gelation and cooling system problems.

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

Other Coolants

Other ethylene glycol or propylene glycol base coolants may be used if they meet the following specification:

- Pre-mix coolant meeting ASTM D6210 requirements
- Are nitrite-free
- Coolant concentrate meeting ASTM D6210 requirements in a 40—60% mixture of concentrate with quality water

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

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

Water Quality

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

Coolant Drain Intervals

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

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

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

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

Do not mix ethylene glycol and propylene glycol base coolants.

Do not use coolants that contain nitrites.

DX,COOL3 -19-13JAN18-1/1

Drain Intervals for Diesel Engine Coolant

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

John Deere COOL-GARD™ II Premix, COOL-GARD II PG Premix and COOL-GARD II Concentrate are maintenance free coolants for up to six years or 6000 hours of operation, provided that the cooling system is topped off using only John Deere COOL-GARD II Premix or COOL-GARD II PG Premix.

Test the coolant condition annually with Coolant Test Strips designed for use with John Deere COOL-GARD II coolants. If the test strip chart indicates that additive is required, add John Deere COOL-GARD II Coolant Extender as directed.

If John Deere COOL-GARD™ II Premix, COOL-GARD II PG Premix, or COOL-GARD II Concentrate is used, but the coolant is not tested OR additives are not replenished by adding John Deere COOL-GARD II Coolant Extender, the drain interval is four years or 4000 hours of operation. This drain interval only applies to COOL-GARD II coolants that have been maintained within a 40—60% mixture of concentrate with quality water.

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

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DX,COOL11 -19-14APR11-1/1

John Deere COOL-GARD™ II Coolant Extender

Some coolant additives gradually deplete during engine operation. For COOL-GARD™ II pre-mix and COOL-GARD II Concentrate, replenish coolant additives between drain intervals by adding COOL-GARD II Coolant Extender.

COOL-GARD II Coolant Extender should not be added unless indicated by COOL-GARD II Test Strips. These test strips provide a simple, effective method to check the freeze point, additive levels, and pH of your engine coolant.

Test the coolant solution at intervals of 12 months and whenever excessive coolant is lost through leaks or overheating.

IMPORTANT: Do not use COOL-GARD II Test Strips with COOL-GARD II PG.

COOL-GARD II Coolant Extender is a chemically matched additive system for use with all COOL-GARD II coolants.

COOL-GARD II Coolant Extender is not intended for use with nitrite-containing coolants.

IMPORTANT: Do not add a supplemental coolant additive when the cooling system is drained and refilled with any of the following:

- **John Deere COOL-GARD II**
- **John Deere COOL-GARD II PG**

The use of non-recommended supplemental coolant additives can result in additive drop-out, gelation of the coolant, or corrosion of cooling system components.

Add the recommended concentration of COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

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DX,COOL16 -19-15MAY13-1/1

Supplemental Coolant Additives

Some coolant additives will gradually deplete during engine operation. For nitrite-containing coolants, replenish coolant additives between drain intervals by adding a supplemental coolant additive as determined necessary by coolant testing.

John Deere Liquid Coolant Conditioner is recommended as a supplemental coolant additive for nitrite-containing coolants.

John Deere Liquid Coolant Conditioner is not designed for use with John Deere COOL-GARD™ II Premix, COOL-GARD II PG Premix, or COOL-GARD II Concentrate.

IMPORTANT: Do not add a supplemental coolant additive when the cooling system is drained and refilled with any of the following:

- **John Deere COOL-GARD II**
- **John Deere COOL-GARD II PG**

If other coolants are used, consult the coolant supplier and follow the manufacturer's recommendation for use of supplemental coolant additives.

The use of non-recommended supplemental coolant additives may result in additive drop-out and gelation of the coolant.

Add the manufacturer's recommended concentration of supplemental coolant additive. DO NOT add more than the recommended amount.

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DX,COOL4 -19-14APR11-1/1

Operating in Warm Temperature Climates

John Deere engines are designed to operate using recommended engine coolants.

Always use a recommended engine coolant, even when operating in geographical areas where freeze protection is not required.

IMPORTANT: Water may be used as coolant *in emergency situations only.*

Foaming, hot surface aluminum and iron corrosion, scaling, and cavitation occur when water is used as the coolant, even when coolant conditioners are added.

Drain cooling system and refill with recommended engine coolant as soon as possible.

DX,COOL6 -19-15MAY13-1/1

Additional Information About Diesel Engine Coolants and John Deere COOL-GARD™ II Coolant Extender

Engine coolants are a combination of three chemical components: ethylene glycol (EG) or propylene glycol (PG) antifreeze, inhibiting coolant additives, and quality water.

Coolant Specifications

John Deere COOL-GARD™ II Premix either EG or PG, are fully formulated coolants that contain all three components in their correct concentrations. DO NOT add an initial charge of John Deere COOL-GARD II Coolant Extender to COOL-GARD II Premix. DO NOT add any other supplemental coolant additive or water to COOL-GARD II Premix.

John Deere COOL-GARD II Concentrate contains both ethylene glycol and inhibiting coolant additives. Mix this product with quality water, but DO NOT add an initial charge of John Deere COOL-GARD II Coolant Extender or any other supplemental coolant additive.

Replenish Coolant Additives

Some coolant additives will gradually deplete during engine operation. Periodic replenishment of inhibitors is required, even when John Deere COOL-GARD II Premix or COOL-GARD II Concentrate is used. Follow the recommendations in this manual for the use of John Deere COOL-GARD II Coolant Extender.

Why use John Deere COOL-GARD II Coolant Extender?

Operating without proper coolant additives will result in increased corrosion, cylinder liner erosion and pitting, and other damage to the engine and cooling system. A simple mixture of ethylene glycol or propylene glycol and water will not give adequate protection.

John Deere COOL-GARD II Coolant Extender is a chemically matched additive system designed to fortify the proprietary additives used in John Deere COOL-GARD II Premix and COOL-GARD II Concentrate and to provide optimum protection for up to six years or 6000 hours of operation.

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Avoid Automotive-type Coolants

Never use automotive-type coolants (such as those meeting ASTM D3306). These coolants do not contain the correct additives to protect heavy-duty diesel engines. Do not treat an automotive engine coolant with supplemental coolant additives because the high concentration of additives can result in additive fallout.

Water Quality

Water quality is important to the performance of the cooling system. Distilled, deionized, or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.All water used in the cooling system should meet the following minimum specifications for quality:

Chlorides	<40 mg/L
Sulfates	<100 mg/L
Total dissolved solids	<340 mg/L
Total hardness	<170 mg/L
pH	5.5 to 9.0

Freeze Protection

The relative concentrations of glycol and water in the engine coolant determine its freeze protection limit.

Ethylene Glycol	Freeze Protection Limit
40%	-24°C (-12°F)
50%	-37°C (-34°F)
60%	-52°C (-62°F)
Propylene Glycol	**Freeze Protection Limit**
40%	-21°C (-6°F)
50%	-33°C (-27°F)
60%	-49°C (-56°F)

DO NOT use a coolant-water mixture greater than 60% ethylene glycol or 60% propylene glycol.

DX,COOL17 -19-20APR11-1/1

Testing Diesel Engine Coolant

Maintaining adequate concentrations of glycol and inhibiting additives in the coolant is critical to protect the engine and cooling system against freezing, corrosion, and cylinder liner erosion and pitting.

Test the coolant solution at intervals of 12 months or less and whenever excessive coolant is lost through leaks or overheating.

Coolant Test Strips

Coolant test strips are available from your John Deere dealer. These test strips provide a simple, effective method to check the freeze point and additive levels of your engine coolant.

When Using John Deere COOL-GARD II

John Deere COOL-GARD II Premix™ , COOL-GARD II PG Premix and COOL-GARD II Concentrate are maintenance free coolants for up to six years or 6000 hours of operation, provided that the cooling system is topped off using only John Deere COOL-GARD II Premix or COOL-GARD II PG premix. Test the coolant condition annually with coolant test strips designed for use with John Deere COOL-GARD II coolants. If the test strip chart indicates that additive is required, add John Deere COOL-GARD II Coolant Extender as directed.

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Add only the recommended concentration of John Deere COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

When Using Nitrite-Containing Coolants

Compare the test strip results to the supplemental coolant additive (SCA) chart to determine the amount of inhibiting additives in your coolant and whether more John Deere Liquid Coolant Conditioner should be added.

Add only the recommended concentration of John Deere Liquid Coolant Conditioner. DO NOT add more than the recommended amount.

Coolant Analysis

For a more thorough evaluation of your coolant, perform a coolant analysis. The coolant analysis can provide critical data such as freezing point, antifreeze level, pH, alkalinity, nitrite content (cavitation control additive), molybdate content (rust inhibitor additive), silicate content, corrosion metals, and visual assessment.

Contact your John Deere dealer for more information on coolant analysis.

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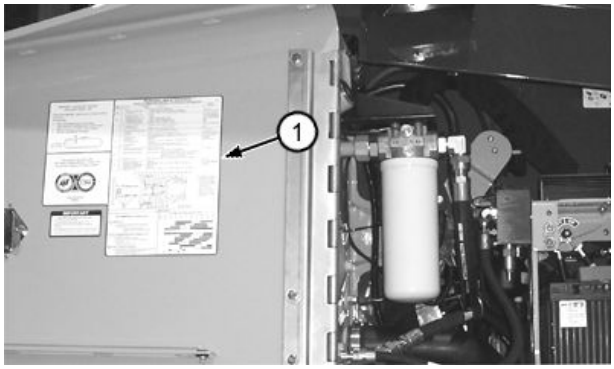
Service Machine at Specified Intervals

Lubricate and make service checks and adjustments at intervals shown on the periodic maintenance chart (1) and on the following pages.

The periodic maintenance chart is located on the inside of the right rear service door.

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.

1— Periodic Maintenance Chart



T206845A —UN—24JAN05

Periodic Maintenance Chart

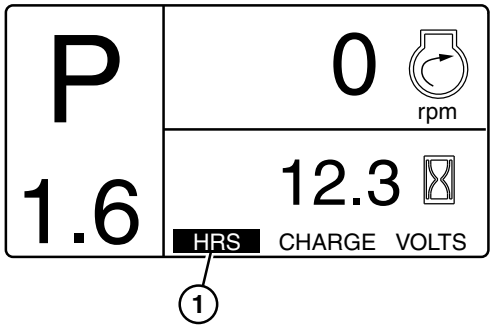
HG31779,0000068 -19-06OCT17-1/1

Check Hour Meter Regularly

Use the hour meter (1) to determine when your machine needs periodic maintenance. With key switch OFF, push SELECT button to display hour usage.

Intervals on the periodic maintenance chart are for operating in normal conditions. If operating machine in severe conditions, machine should be serviced at shorter intervals.

1— Hour Meter



T206891 —19—11JAN05

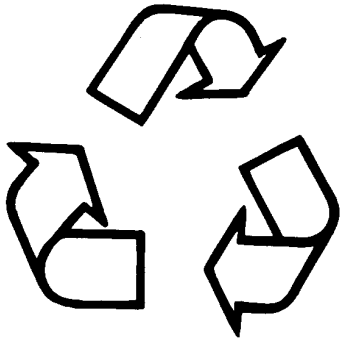
Check Hour Meter

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Prepare Machine for Maintenance

Before performing maintenance procedures in the following chapters and before leaving operator's seat, park machine as described below unless another position is specified in the procedure.

IMPORTANT: Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment includes such items as oil, fuel, coolant, brake fluid, filters, and batteries. Do not pour waste onto the ground, down a drain, or into any water source.



TS1133 —UN—15APR13

1. Park machine on a level surface.
2. Lower all equipment to ground.

Continued on next page

HG31779,0000069 -19-20APR11-1/2

3. Move transmission control lever (TCL) (1) to NEUTRAL position.

CAUTION: Prevent possible injury from unexpected machine movement. Never rely on transmission control lever alone to keep machine from moving. Machine can unexpectedly roll or move under power, resulting in death or serious injury. Always engage park lock lever to hold machine.

4. Move park lock lever (3) to up locked position.

IMPORTANT: Turbocharger may be damaged if engine is not properly shut down.

5. Run engine at 1/2 speed without load for 2 minutes.
6. Turn engine speed control dial (2) to slow idle position.
7. Stop engine.

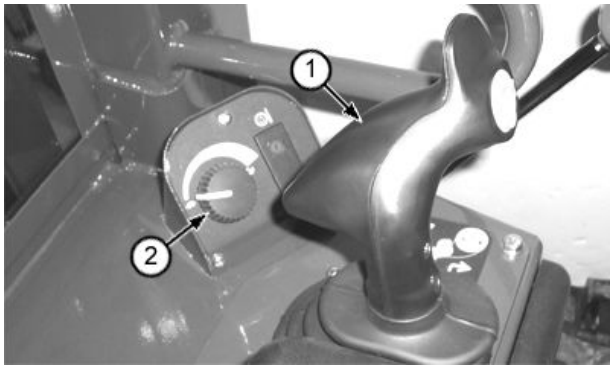
NOTE: If maintenance must be performed with engine running, do not leave machine unattended.

8. With key in ON position, turn hydraulic enable switch on.
9. Release hydraulic pressure by moving control lever(s) until equipment does not move.
10. Remove key from switch.

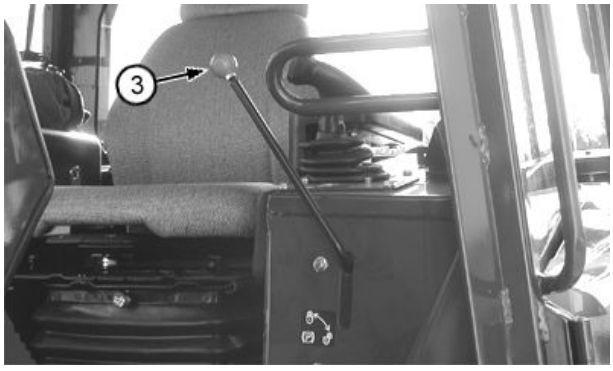
IMPORTANT: Before welding, avoid electronic component damage; turn battery disconnect switch OFF.

NOTE: Turn battery disconnect switch (4) OFF (counterclockwise) if making adjustments to electrical systems or welding on machine.

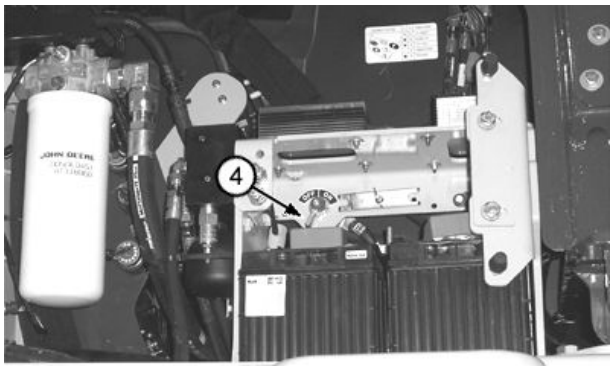
1— Transmission Control Lever (TCL)
2— Engine Speed Control Dial
3— Park Lock Lever
4— Battery Disconnect Switch



T206612B —UN—24JAN05



T198352E —UN—18JAN05



T206570B —UN—18JAN05

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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

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Service Intervals

Model: 750J (S.N. —141343) and 850J (S.N. —130885)	**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 2000 hours also service those items, if applicable, listed under 1000 hours, 500 hours, 250 hours and 10 hours or daily.	
FLUID SAMPLING	
Fluid samples should be taken from each system at its recommended change interval prior to actually draining the fluid. Regular oil sampling will extend the operational life of your machine.	
As Required	
□ Clean fresh cab air filter and air recirculation filter	□ Clean or replace engine air cleaner elements
□ Inspect belts	□ Check and clean radiator core and oil cooler core
□ Check air cleaner restriction indicator	□ Check and adjust track sag
□ Check and adjust trunnion bearing clearance—if equipped	□ Check and adjust pushbeam bearing clearance (if equipped)
□ Add coolant extender as indicated by COOL-GARD™ II test strips	
Every 10 Hours or Daily	
□ Check engine oil level	□ Check transmission oil level
□ Check coolant recovery tank	□ Check hydraulic system oil level
□ Grease C-frame dozer linkage	□ Grease pushbeam dozer linkage
□ Check and drain primary fuel filter/water separator (if equipped)	□ Check and drain auxiliary fuel filter/water separator (if equipped)
Every 50 Hours	
□ Grease left and right end crossbar pivot	□ Grease lift cylinder pivots
Initial Service - 250 Hours[1]	
□ Change break-in engine oil and replace filter	
Every 250 Hours	
□ Check coolant level	□ Check inner and outer final drive oil level
□ Check and adjust blade pivot clearance—if equipped	□ Take engine oil sample
Every 500 Hours	
□ Change engine oil and replace filter	□ Take hydraulic oil sample
□ Replace fuel filters	□ Take diesel fuel sample
□ Check battery water level; clean and tighten terminals	□ Take engine coolant sample
□ Check air intake hoses	□ Take transmission oil sample
□ Replace water separator\fuel filter (if equipped)	□ Take inner and outer final drive oil sample
Every 1000 Hours	
□ Clean engine crankcase vent tube	□ Check track frame pivot shaft oil
□ Change inner and outer final drive oil	□ Check coolant
Every 2000 Hours	
□ Check and adjust engine valve lash	□ Change hydrostatic transmission oil
□ Change hydraulic system oil and replace filter	□ Replace hydrostatic charge filter
□ Replace hydraulic fan oil return filter	
Every 4000 Hours	
□ Replace engine crankshaft dampener	

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LB82152,000055A -19-08MAR19-1/2

Every 6000 Hours
□ Drain and refill engine cooling system

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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**	**Every 4000 Hours**	**Every 6000 Hours**
Hydraulic Fan Oil Return Filter	T175002					1	1	1
Hydraulic Oil Filter	AT318160					1	1	1
Cab Fresh Air Filter	AT191102	As Required						
Cab Recirculating Filter	AT315957	As Required						
Hydrostatic Charge Oil Filter	AT318160					1	1	1
750J Engine 6068HT058								
• Engine Oil Filter	RE504836	1		1	1	1	1	1
• Primary Fuel Filter	RE509036			1	1	1	1	1
• Final Fuel Filter	RE509032			1	1	1	1	1
• Engine Rocker Arm Cover Gasket	R524481					1	1	1
• Engine Crankshaft Dampener	RE59355						1	
• Engine Air Filter Element—Primary	AT316334	As Required						
• Engine Air Filter Element—Secondary	AT316335	As Required						
• Engine Air Cleaner Dust Unloader Valve	R48568	As Required						
850J Engine 6081HT006								
• Engine Oil Filter								
- (Engine S.N.: —234688)	RE57394	1		1	1	1	1	1
- (Engine S.N.: 234689—)	RE521420	1		1	1	1	1	1
• Primary Fuel Filter	RE522687			1	1	1	1	1
• Final Fuel Filter	RE522688			1	1	1	1	1
• Engine Rocker Arm Cover Gasket	R502598					1	1	1
• Engine Crankshaft Dampener	RE500917						1	
• Engine Air Filter Element—Primary	AT223226	As Required						
• Engine Air Filter Element—Secondary	AT175224	As Required						
• Engine Air Cleaner Dust Unloader Valve	T158495	As Required						
John Deere PLUS-50™ II Oil:								
• 750J	TY26674[2]	26.5 L (7.0 gal)		26.5 L (7.0 gal)	26.5 L (7.0 gal)	26.5 L (7.0 gal)	26.5 L (7.0 gal)	26.5 L (7.0 gal)
• 850J	TY26674[2]	26.0 L (7.0 gal)		26.0 L (7.0 gal)	26.0 L (7.0 gal)	26.0 L (7.0 gal)	26.0 L (7.0 gal)	26.0 L (7.0 gal)
Hydraulic System Oil								
• 750J	TY6389[2]					106.0 L (28.0 gal)	106.0 L (28.0 gal)	106.0 L (28.0 gal)
• 850J	TY6389[2]					106.0 L (28.0 gal)	106.0 L (28.0 gal)	106.0 L (28.0 gal)
Hydrostatic Transmission Oil								
• 750J	TY6389[2]					106.0 L (28.0 gal)	106.0 L (28.0 gal)	106.0 L (28.0 gal)
• 850J	TY6389[2]					106.0 L (28.0 gal)	106.0 L (28.0 gal)	106.0 L (28.0 gal)
Inner Final Drive Oil (each side)								
• 750J and 750J LT	TY6354[2]				9.5 L (2.5 gal)	9.5 L (2.5 gal)	9.5 L (2.5 gal)	9.5 L (2.5 gal)
• 750J WT and 750J LGP	TY6354[2]				15.9 L (4.2 gal)	15.9 L (4.2 gal)	15.9 L (4.2 gal)	15.9 L (4.2 gal)

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LB82152,0000559 -19-11MAR19-1/2

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**	**Every 4000 Hours**	**Every 6000 Hours**
• 850J and 850J LT	TY6354[2]				9.5 L (2.5 gal)	9.5 L (2.5 gal)	9.5 L (2.5 gal)	9.5 L (2.5 gal)
• 850J WT and 850J WLT	TY6354[2]				15.9 L (4.2 gal)	15.9 L (4.2 gal)	15.9 L (4.2 gal)	15.9 L (4.2 gal)
• 850J LGP	TY6354[2]				18.9 L (5.0 gal)	18.9 L (5.0 gal)	18.9 L (5.0 gal)	18.9 L (5.0 gal)
Outer Final Drive Oil (each side)								
• 750J	TY6354[2]				15.1 L (4.0 gal)	15.1 L (4.0 gal)	15.1 L (4.0 gal)	15.1 L (4.0 gal)
• 850J	TY6354[2]				15.9 L (4.2 gal)	15.9 L (4.2 gal)	15.9 L (4.2 gal)	15.9 L (4.2 gal)
Track Frame Pivot Shaft Oil	TY6354[2]				1.7 L (1.75 qt)	1.7 L (1.75 qt)	1.7 L (1.75 qt)	1.7 L (1.75 qt)
COOL-GARD™ II Pre-mix								
• 750J	TY26575							21.6 L (5.7 gal)
• 850J	TY26575							35 L (9.2 gal)
Coolant Extender	TY26603	As Required						
Fluid Analysis Kit[3]								
• Diesel Engine Oil	AT317904		1	1	1	1	1	1
• Diesel Fuel	AT180344			1	1	1	1	1
• Transmission	AT303189			2	2	2	2	2
• Hydraulic	AT303189			1	1	1	1	1
• Final Drive	AT303189			4	4	4	4	4
• Engine Coolant	AT183016			1	1	1	1	1
• COOL-GARD™ II Test Strips	TY26605				1	1	1	1

[1]Perform initial service once after the first 250 hours of operation.

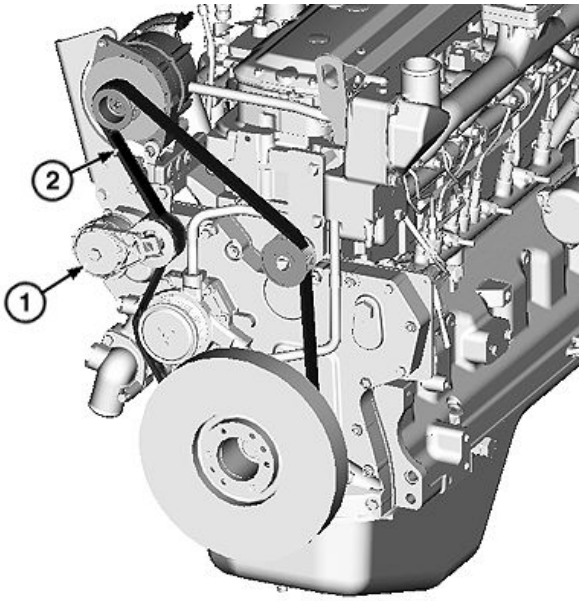
[2]For recommended oil type and oil viscosities based on operating temperatures, see Maintenance-Machine. (Section 3-1.)

[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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COOL-GARD is a trademark of Deere & Company

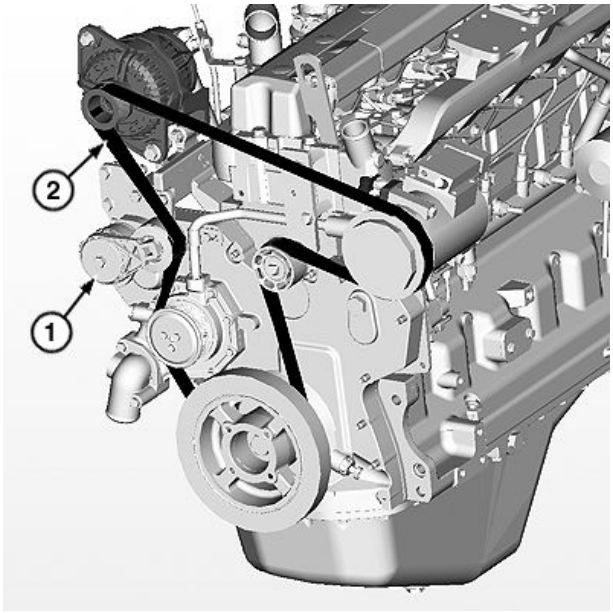
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Check Alternator Belt Tension



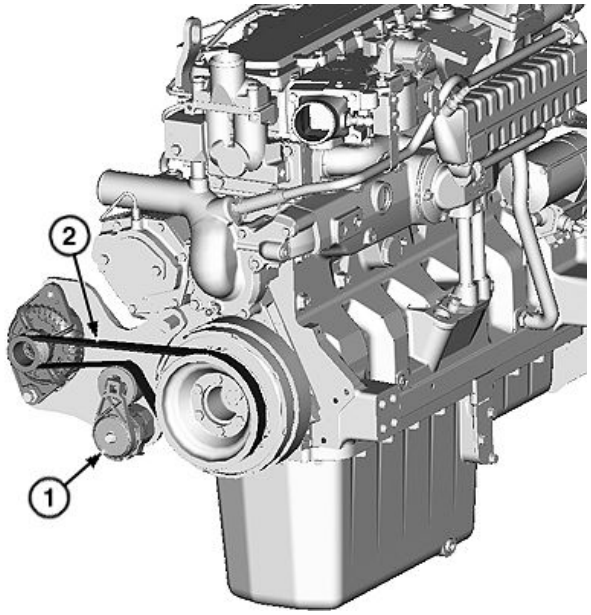
TX1137018 —UN—24MAY13

Belt Routing—750J



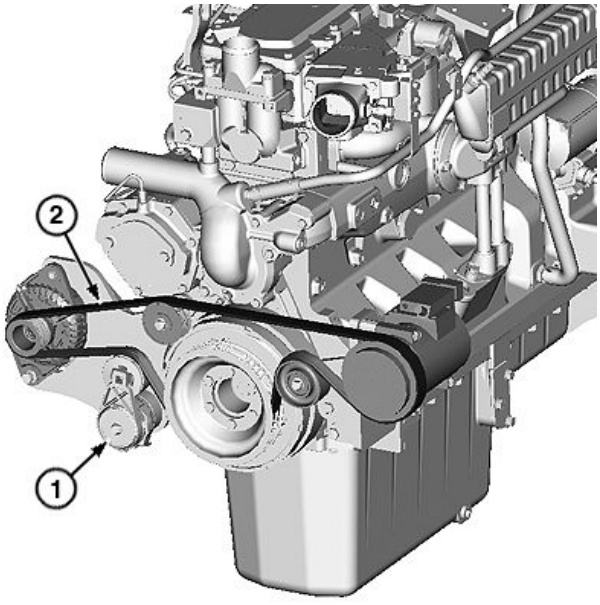
TX1137013 —UN—24MAY13

Belt Routing with Air Conditioning—750J



TX1137023 —UN—29MAY13

Belt Routing—850J



TX1137019 —UN—24MAY13

Belt Routing with Air Conditioning—850J

1— Automatic Belt Tensioner 2— 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.

Continued on next page

KR46761,000092C -19-29MAY13-1/2

KR46761,000092C -19-29MAY13-2/2

Check Track Sag

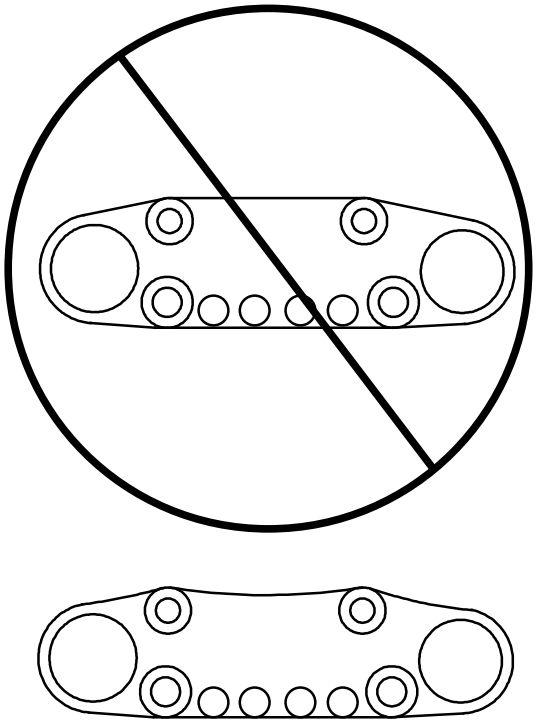
Maintaining proper track sag (3) to specification is the single most important adjustment. Tight tracks can reduce wear life by more than 50% over tracks which are properly maintained at 51 mm (2.0 in.) of sag. Tight tracks increase loading on undercarriage components and accelerate wear rate. Track sag should be adjusted as soil conditions change. See Track Sag General Information. (Section 4-1.)

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

Specification

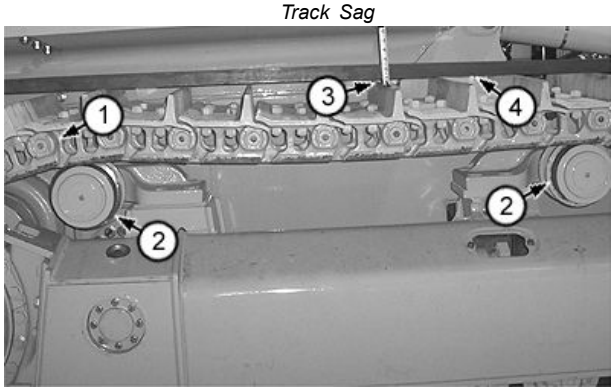
Track Sag—Distance.....45—57 mm
1.75—2.25 in.

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



T207501 —UN—15FEB05

Track Sag



T207100A —UN—01FEB05

Check Track Sag

HG31779,0000067 -19-18NOV10-1/1

Adjust Track Sag

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

If an accident occurs, see a doctor immediately. Any fluid injected into 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.

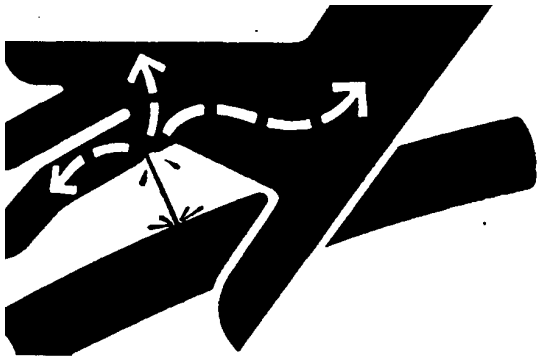
IMPORTANT: Prevent possible damage to track components. DO NOT clean track before adjusting chain if ground conditions cause packing around sprocket and idlers.

Grease fitting on check valve is used for track sag adjustment only.

Relief valve should not be tampered with. It is fitted with a cover.

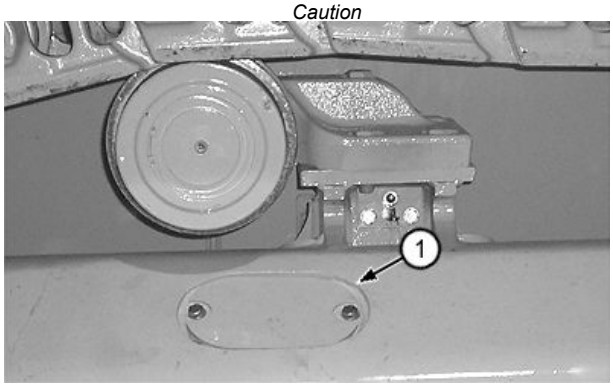
To move piston, an air assisted grease gun can be used. If piston does not move, check for seized track adjuster parts.

To decrease or increase track sag, loosen two cap screws and remove access cover (1).



X9811 —UN—23AUG88

Caution



T206820A —UN—07JAN05

Track Adjust

1— Access Cover

Continued on next page

AM40430,0000016 -19-20MAR15-1/2

Decrease Track Sag:

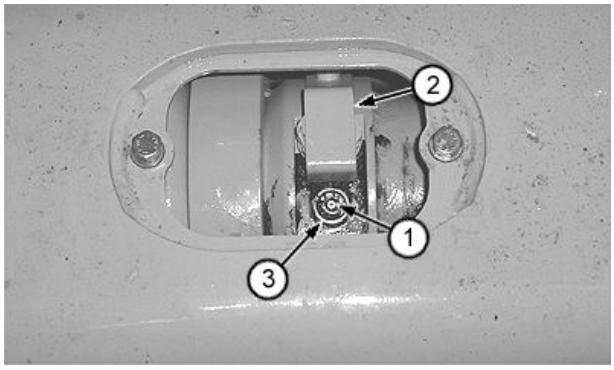
NOTE: Grease gun with 55 200 kPa (552 bar) (8000 psi) minimum capacity is required.

1. To decrease sag, apply grease to fitting (1) using grease gun.
2. After adding grease, operate unit to allow track adjuster cylinder to fully adjust and then check sag again.

Increase Track Sag:

CAUTION: Prevent possible serious injury from high-pressure grease penetrating your skin. Never remove grease fitting or check valve to release the grease. If grease does not escape immediately from vent hole when check valve nut is loosened, slowly drive machine in forward and reverse directions until grease escapes. DO NOT disassemble parts unless you know the correct procedure and have correct tools. See your authorized John Deere 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.



T206819C —UN—28JAN05

1— Grease Fitting
2— Relief Valve
3— Check Valve

1. To increase sag, turn check valve (3) two turns counterclockwise to release grease through vent hole.
2. Turn check valve clockwise to close it.
3. After releasing grease, operate unit to allow track adjuster cylinder to fully adjust and then check sag again.

Install access cover.

AM40430,0000016 -19-20MAR15-2/2

Check and Adjust Trunnion Bearing Clearance—If Equipped

NOTE: Maintaining trunnion bearing clearance within specification extends the functional life of trunnion bearing (5) and prevents unwanted binding of trunnion bearing.

The trunnion bearing is located on the left and right pushbeams between the trunnion (4) and the pushbeam (6). Shims are located between the cap (3) and pushbeam. Shims may be accessed by removing cap screws (2) from pushbeam.

To measure trunnion bearing clearance:

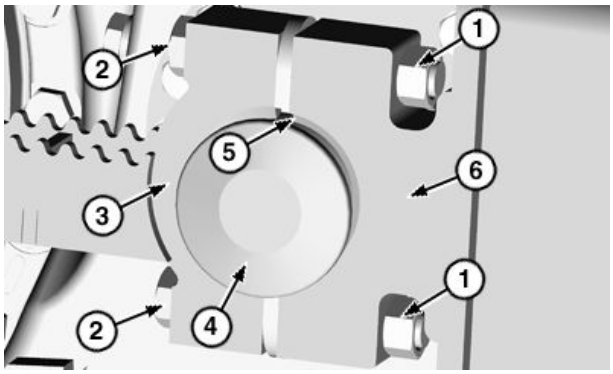
1. With blade on ground, backdrag machine 4.0 m (13.1 ft.).
2. Turn off engine.
3. Measure distance between trunnion and trunnion bearing.
4. If distance is greater than specification, remove shims.

Specification

Trunnion Bearing
Clearance—Distance.....1.0—2.0 mm
0.04—0.08 in.

To remove shims:

1. Loosen and remove nuts (1).
2. Remove cap.
3. Remove equal number of shims from top and bottom cap screws until clearance meets specification.



TX1118913A —UN—24JUL12

Trunnion (right pushbeam shown)

1— Nut (2 used)
2— Cap Screw (2 used)
3— Cap
4— Trunnion
5— Trunnion Bearing
6— Pushbeam

Specification

Trunnion Bearing
Clearance—Distance.....1.0—2.0 mm
0.04—0.08 in.

4. Install cap.
5. Tighten nut to specification. See bolt and screw torque values in Miscellaneous—Machine. (Section 4-1.)

If trunnion bearing clearance is greater than specification and all shims have been removed, see your authorized dealer.

ER93822,0000160 -19-11OCT12-1/1

Check and Adjust Pushbeam Bearing Clearance—If Equipped

NOTE: Maintaining pushbeam bearing clearance within specification extends the functional life of pushbeam bearing (5) and prevents unwanted binding of pushbeam bearing.

The pushbeam bearing is located on the left and right pushbeam between the pivot (4) and the pushbeam (6). Shims are located between the cap (3) and pushbeam. Shims may be accessed by removing cap screws (2) from pushbeam.

To measure pushbeam bearing clearance:

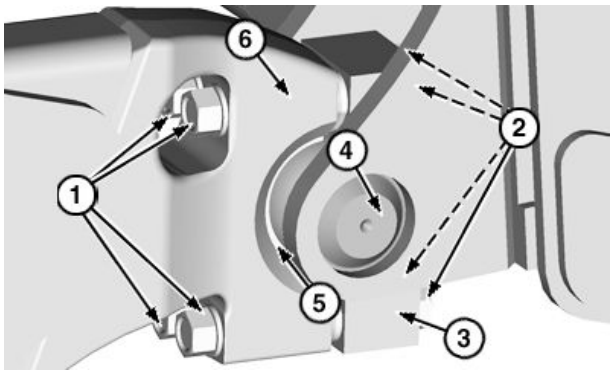
1. With blade on ground, backdrag machine 4.0 m (13.1 ft.).
2. Turn off engine.
3. Measure distance between pivot and pushbeam bearing.
4. If distance is greater than specification, remove shims.

Specification

Pushbeam Bearing
Clearance—Distance.....1.0—2.0 mm
0.04—0.08 in.

To remove shims:

1. Loosen and remove nuts (1).
2. Remove cap.
3. Remove equal number of shims from top and bottom cap screws until clearance meets specification.



TX1119874A —UN—07AUG12

Pushbeam Pivot Point (right pushbeam shown)

1— Nut (4 used)
2— Cap Screw (4 used)
3— Cap
4— Pivot
5— Pushbeam Bearing
6— Pushbeam

Specification

Pushbeam Bearing
Clearance—Distance.....1.0—2.0 mm
0.04—0.08 in.

4. Install cap.
5. Tighten nut to specification. See bolt and screw torque values in Miscellaneous—Machine. (Section 4-1.)

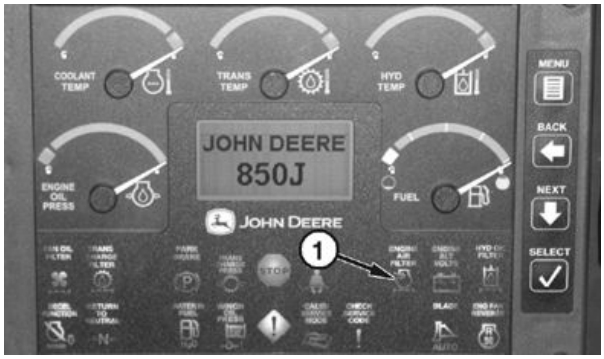
If pushbeam bearing clearance is greater than specification and all shims have been removed, see your authorized dealer.

ER93822,000016B -19-11OCT12-1/1

Check Air Restriction Indicator

Check air restriction indicator (1).

If indicator is on, replace air filter elements. See Remove and Inspect Air Filter Elements in Maintenance—Every 1000 Hours chapter.



TX1009986A —UN—13JUL06

Air Restriction Indicator

CS33148,0000C8F -19-27JUL06-1/1

Check and Clean Radiator Core and Oil Cooler Core

To ensure proper cooling functions, the radiator and oil cooler cores must be cleaned as necessary. In severe operating conditions, check the radiator and oil cooler cores daily and clean if necessary.

Clean Radiator Core

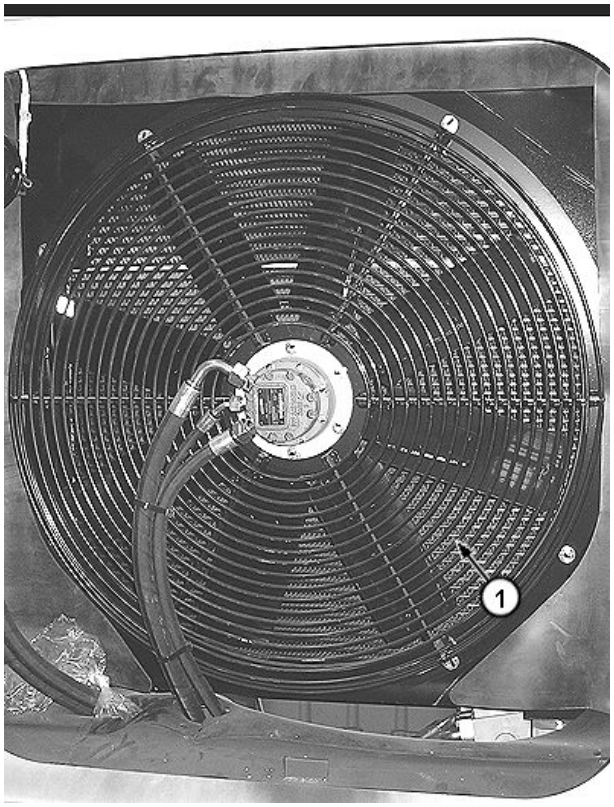
1. Park machine and shut off engine.
2. Open engine compartment doors.

CAUTION: Prevent possible injury from flying chips if compressed air is more than 210 kPa (2.1 bar) (30 psi). 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.

3. Clean radiator unit (1) with compressed air.

Specification	
Compressed Air—Pressure	Under 210 kPa 2.1 bar 30 psi

4. Close engine compartment doors.



TX1004352A —UN—03MAR06

1— Radiator Unit

AM40430,0000322 -19-27MAR06-1/2

Clean Oil Cooler Core

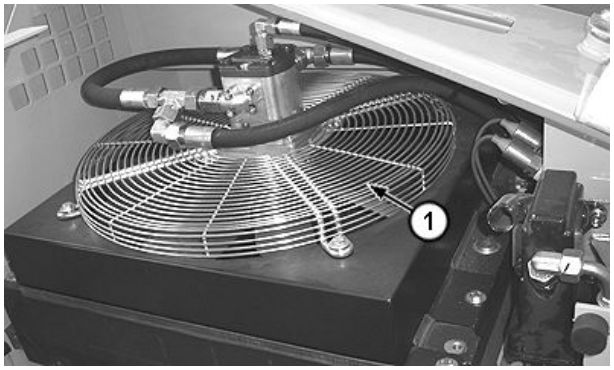
1. Park machine and shut off engine.
2. Open oil cooler reservoir door.

CAUTION: Prevent possible injury from flying chips if compressed air is more than 210 kPa (2.1 bar) (30 psi). 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.

IMPORTANT: Prevent possible machine damage. Do not use hard objects or excessive pressure for cleaning. Clean oil cooler with compressed air.

3. Clean oil cooler core (1) with compressed air.

Specification	
Compressed Air—Pressure	Under 210 kPa 2.1 bar 30 psi



TX10043544A —UN—03MAR06

1— Oil Cooler Core

4. Close oil cooler reservoir door.

AM40430,0000322 -19-27MAR06-2/2

Clean or Replace Cab Fresh Air Filter

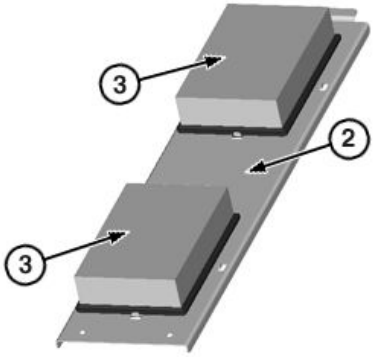
1. Loosen wing nuts (1) to open fresh air filter panel (2).
2. Remove fresh air filter elements (3).
3. Tap filter elements on flat surface with dirty side down to loosen and remove large portions of dirt.
4. Install filter elements.
5. Close fresh air filter panel and tighten wing nuts.

1— Wing Nut (2 used)
2— Fresh Air Filter Panel
3— Fresh Air Filter Element (2 used)



Fresh Air Filters Panel

TX1103251A —UN—20DEC11



Fresh Air Filters

TX1103241A —UN—09DEC11

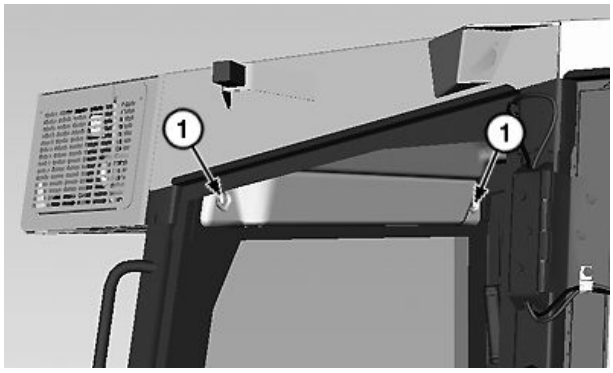
ER93822,0000009 -19-24SEP13-1/1

Clean or Replace Cab Recirculating Air Filter

Cab recirculating air filter is located inside the upper rear of the cab.

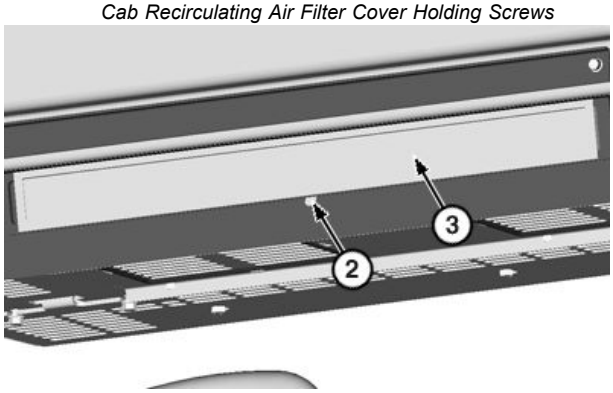
1. Remove cab air recirculating filter cover holding screws (1).
2. Remove filter cover.
3. Pull filter tab (2) to remove recirculating air filter (3).
4. Use compressed air under 210 kPa (2.1 bar) (30 psi). Direct air opposite to normal air flow.
5. Wash filter in warm, soapy water, rinse and dry.
6. If filter will not come clean, replace as necessary.
7. Install cover and tighten holding screws.

1— Holding Screw (2 used)
2— Filter Tab
3— Recirculating Air Filter



Cab Recirculating Air Filter Cover Holding Screws

TX1144481A —UN—24SEP13



Recirculating Air Filter and Tab

TX1103238A —UN—09DEC11

JS93577,0000670 -19-24SEP13-1/1

Check Coolant

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

Remove surge tank cap (3) only when engine is cold or when cool enough to touch with bare hands. Slowly loosen cap to relieve pressure before removing completely.

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 (3) and test coolant solution. Use the following kit 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 (base)—Capacity	26.1 L 6.89 gal
Cooling System (side entry cab)—Capacity	27.1 L 7.16 gal
Cooling System (rear entry cab)—Capacity	28.6 L 7.56 gal

COOL-GARD is a trademark of Deere & Company



TS281 —UN—15APR13



TX10635I7A —UN—26AUG09

3— Surge Tank Cap

3. Install surge tank cap.

LB82152,000055C -19-23JUL10-1/1

Check Engine Oil Level

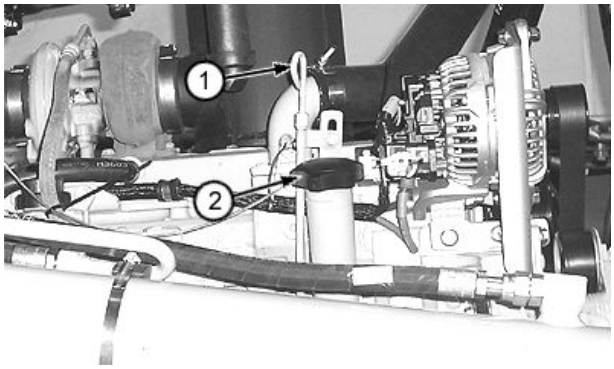
IMPORTANT: Do not run engine when oil level is below the ADD mark.

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 (1) is fully seated.
4. Remove dipstick to check oil level.

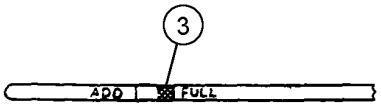
   BEFORE THE ENGINE IS STARTED: The engine is full when oil level is in the cross-hatch area (3). It is acceptable to run the engine when the oil level is above the ADD mark.

   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 (2) to add oil. See Diesel Engine Oil. (Section 3-1.)
6. Check oil on dipstick again.



750J Shown

T206617A —UN—06JAN05



Dipstick Cross-Hatch Area

T206736 —UN—10JAN05

1— Dipstick
2— Filler cap
3— Dipstick Cross-Hatch Area

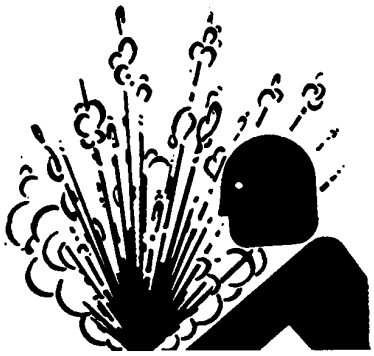
AM40430,000000E -19-13JAN05-1/1

Check Coolant Level

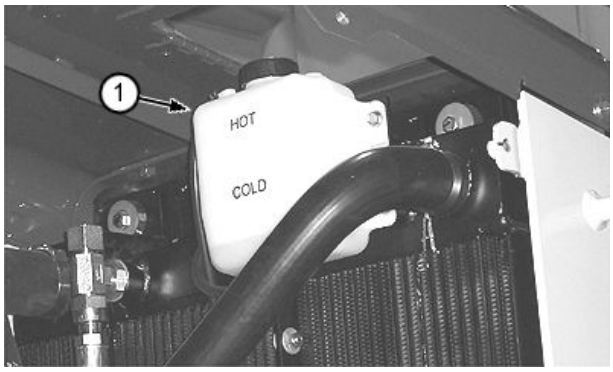
CAUTION: Prevent injury from hot spraying coolant. Do not remove radiator filler cap unless engine is cool. Loosen cap slowly to the stop. Release all pressure before removing cap.

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

1— Recovery Tank



T6464AV —UN—18OCT88



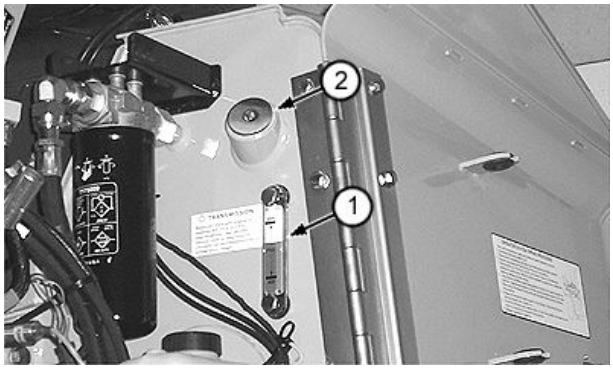
T206632A —UN—06JAN05

AM40430,000000D -19-13JAN05-1/1

Check Transmission Oil Level

IMPORTANT: DO NOT operate engine without oil in reservoir.

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 (1).
4. If necessary, add oil to fill port (2). See Transmission, Hydraulic, and Hand Pump Reservoir Oil. (Section 3-1.)
5. Check O-ring on cap before installing.



T206638A —UN—05JAN05

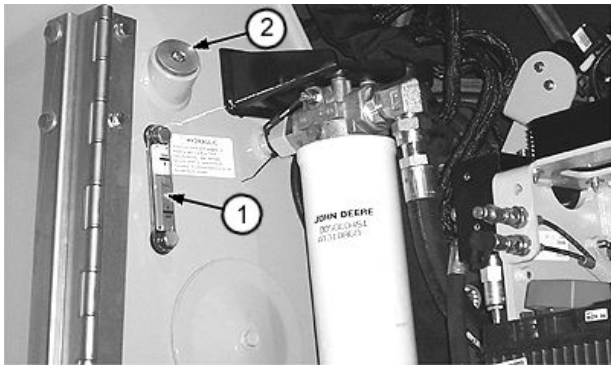
1— Sight Glass Tube **2— Fill Port**

AM40430,0000009 -19-26JUL10-1/1

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 (1).
4. If necessary, remove cap and add oil to fill port (2). See Transmission, Hydraulic, and Hand Pump Reservoir Oil. (Section 3-1.)
5. Check O-ring on cap before installing.



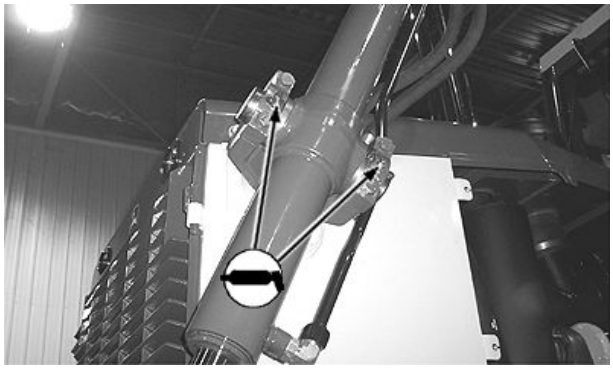
T206640A —UN—06JAN05

1— Sight Glass Tube **2— Fill Port**

AM40430,000000A -19-26JUL10-1/1

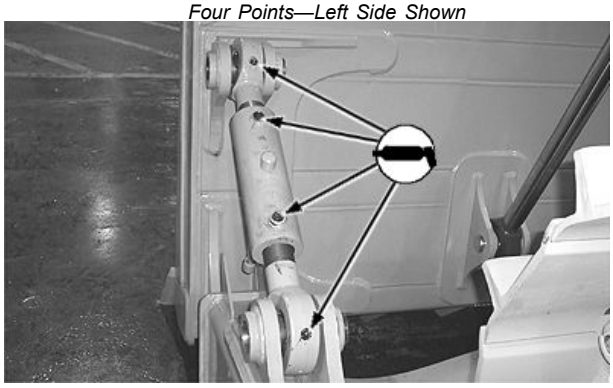
Grease Outside Dozer (OSD) Linkage

Apply grease to lubrication fittings until it escapes at joints. See Grease. (Section 3-1.)



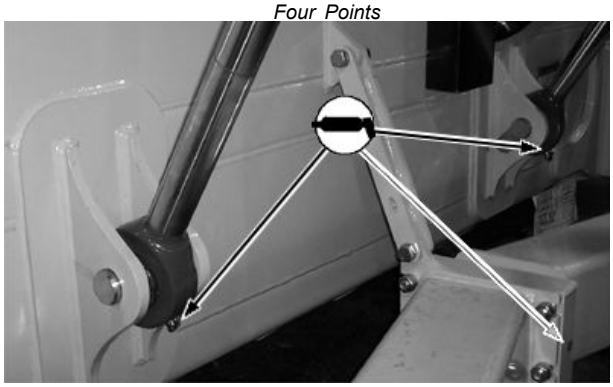
T206699A —UN—19JAN05

Four Points—Left Side Shown



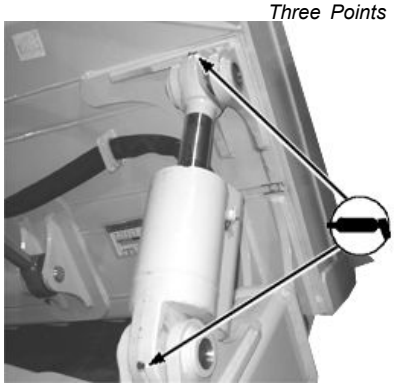
T206698A —UN—10JAN05

Four Points



T206697A —UN—10JAN05

Three Points



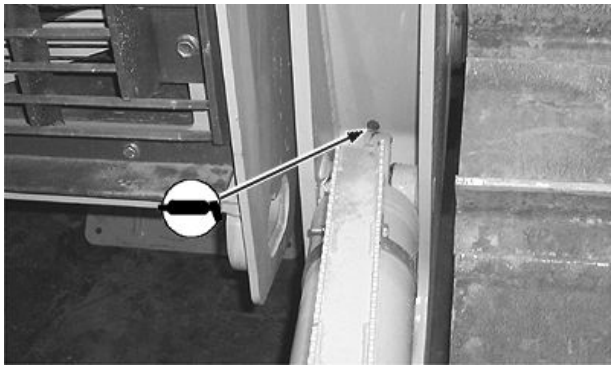
T206696A —UN—19JAN05

Two Points

AM40430,000000B -19-29APR11-1/1

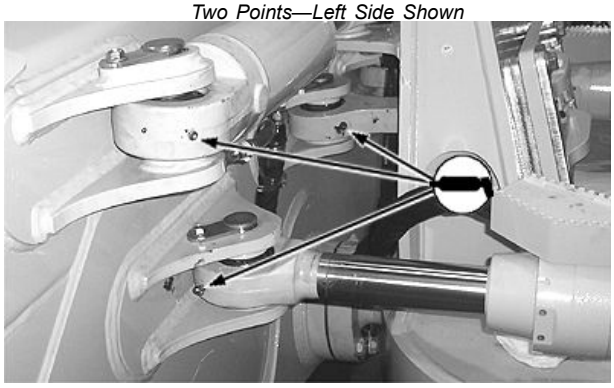
Lubricate C-Frame Dozer Linkage—If Equipped

Apply grease to lubrication fittings until it escapes joints. See Grease. (Section 3-1.)



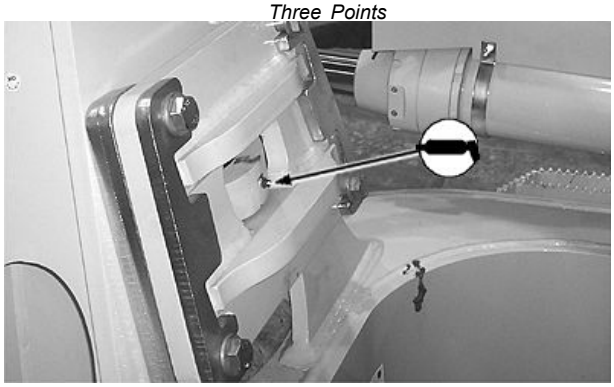
T206936A —UN—11JAN05

Two Points—Left Side Shown



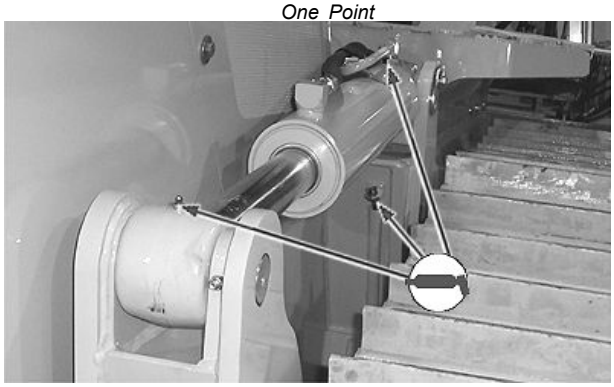
T206651A —UN—05JAN05

Three Points



T206666A —UN—05JAN05

One Point

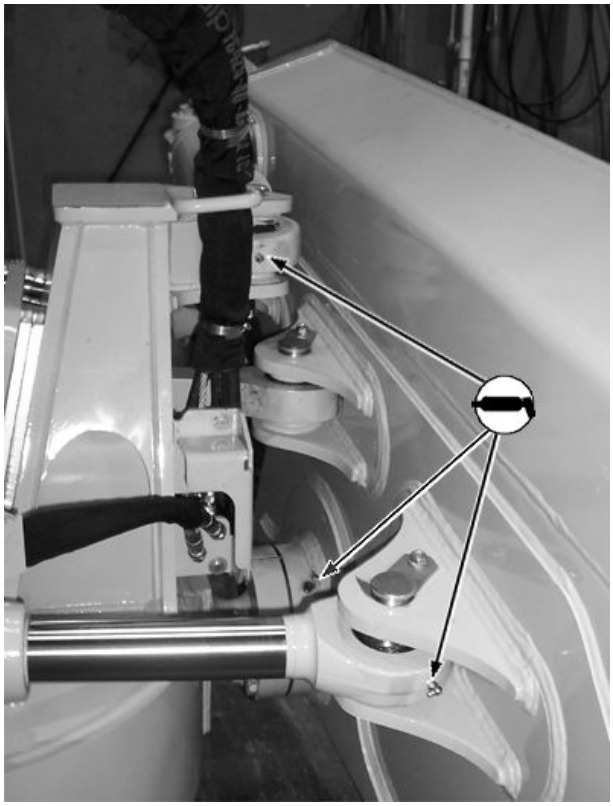


T206720A —UN—06JAN05

Six Points—Left Side Shown

Continued on next page

Apply grease to lubrication fittings until it escapes joints. See Grease. (Section 3-1.)



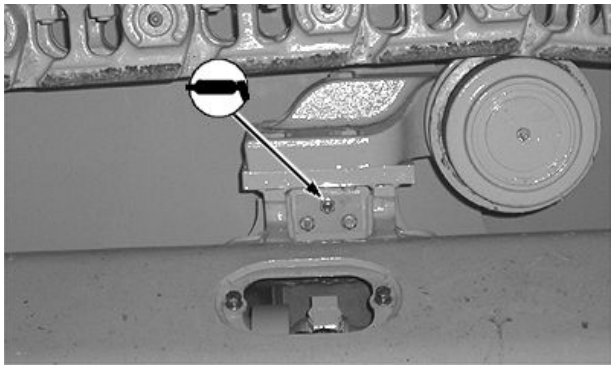
T206643A —UN—05JAN05

Three Points

AM40430,000000C -19-16DEC11-2/2

Lubricate Right and Left End Crossbar Pivot

Apply grease to lubrication fittings until it escapes at joints. See Grease. (Section 3-1.)



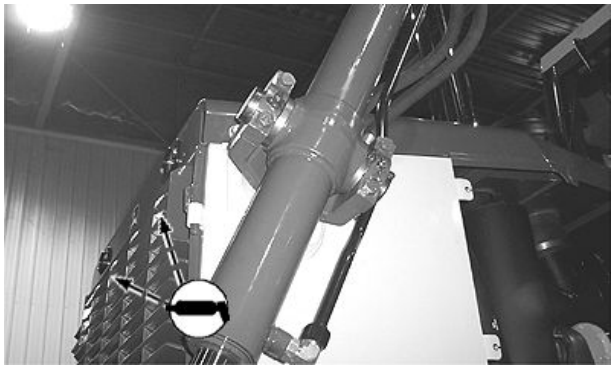
T206689A —UN—05JAN05

Two Points—Right Side Shown

AM40430,000001E -19-16DEC11-1/1

Grease Push Beam Lift Cylinder Pivots

Apply grease to lubrication fittings until it escapes at joints. See Grease. (Section 3-1.)



T206699B —UN—19JAN05

Two Points

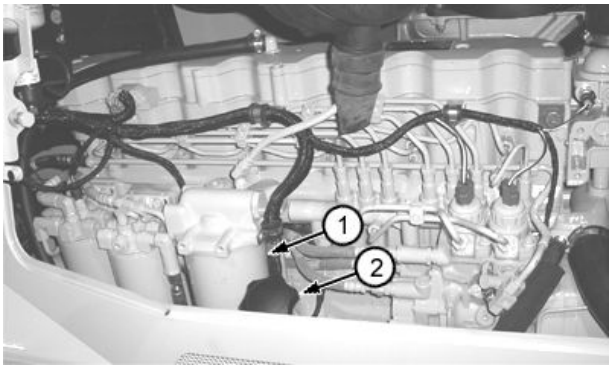
AM40430,0000021 -19-27OCT10-1/1

Change Engine Break-In Oil and 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. Turn engine oil filter (1) counterclockwise to remove.
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 at fill tube (2). See Diesel Engine Oil. (Section 3-1.)

Specification	
Engine Oil—750J	
Capacity	26.5 L 7 gal
Engine Oil—850J	
Capacity	26 L 7 gal

IMPORTANT: Before starting engine after a filter change, operate starter motor for 20 seconds without starting engine to refill the elements.



T206846A —UN—24JAN05

850J Shown

1— Engine Oil Filter **2— Fill Tube**

NOTE: On 850J machines, disconnect fuel shutoff solenoid wire at starter.

10. Disconnect wiring lead at injection pump so engine will not start. Crank engine for 20 seconds, using starter motor and attach wiring lead to pump.
11. Run engine for 2 minutes and then stop engine. Check for leaks around filter and drain plug. Tighten enough only to stop leaks.
12. Check oil level.

VD76477,000139D -19-26JUL10-1/1

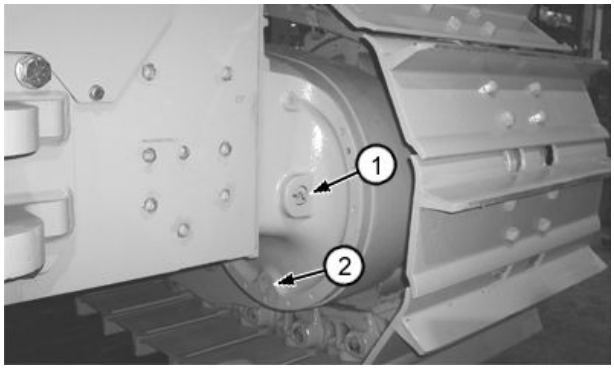
Check Inner and Outer Final Drive Housings Oil Level

1. Park machine on a level surface so that sprocket oil level line (3) is parallel with ground and drain plugs (2) are at bottom of sprocket.
2. Remove filler plugs (1).
3. Oil level must be within 13 mm (1/2 in.) of bottom of hole.

IMPORTANT: Avoid overheating and damage to components. Do not overfill final drives. If specified fill volumes are not met, malfunction of final drive can occur.

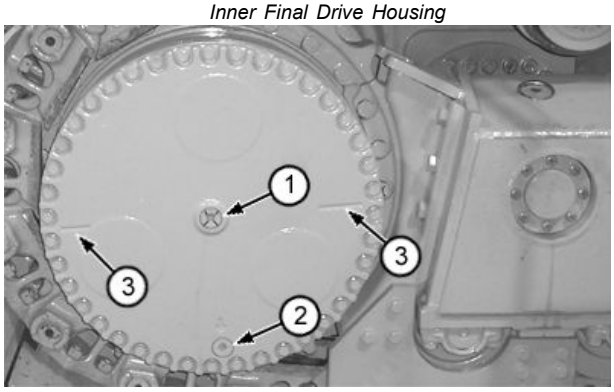
4. Add oil as necessary. See Inner and Outer Final Drive Oil. (Section 3-1.)
5. Install and tighten plugs.

1— Filler Plug
2— Drain Plug
3— Oil Level Line



T206849A —UN—24JAN05

Inner Final Drive Housing



T206850A —UN—24JAN05

Outer Final Drive Housing

HG31779,000006D -19-11MAY16-1/1

Check Radiator Coolant Level

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

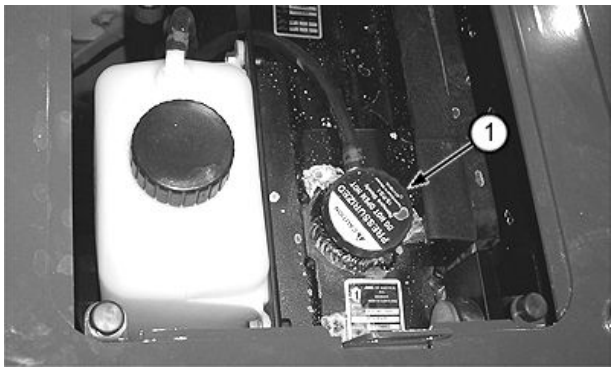
Remove filler cap only when engine is cold or when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

1. Remove radiator cap (1) and check coolant level. Coolant must be level with bottom of filler neck.
2. Add coolant if necessary.

1— Radiator Cap



TS281 —UN—15APR13



T206636A —UN—05JAN05

TX,75,BG1011 -19-18JAN05-1/1

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.

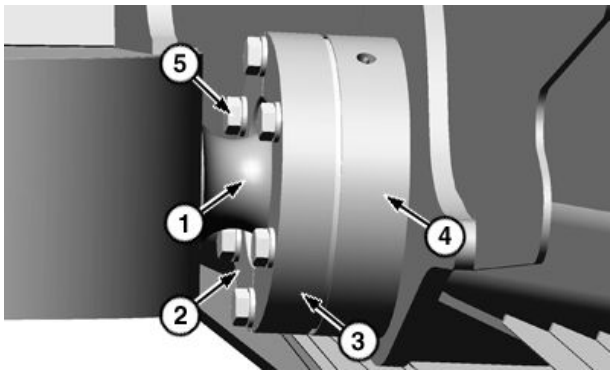
Specification

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

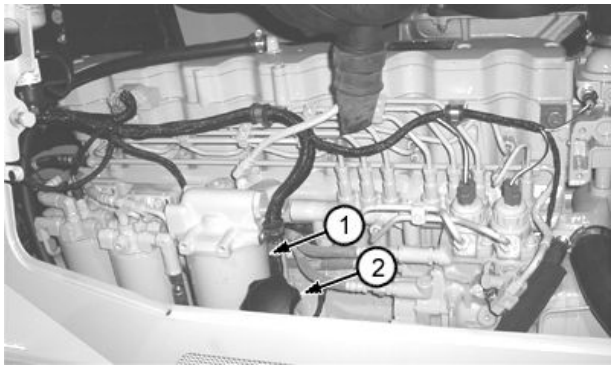
Change Engine Oil and Filter

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. Turn engine oil filter (1) counterclockwise to remove.
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 at fill tube (2). See Diesel Engine Oil. (Section 3-1.)

Specification	
Engine Oil—750J	
Capacity	26.5 L
	7 gal
Engine Oil—850J	
Capacity	26 L
	7 gal

IMPORTANT: Before starting engine after a filter change, operate starter motor for 20 seconds without starting engine to refill the elements.

IMPORTANT: Do not prefill fuel filters. Debris in unfiltered fuel will damage fuel system components.



T206846A —UN—24JAN05

850J Shown

1— Engine Oil Filter **2— Fill Tube**

NOTE: On 850J machines, disconnect fuel shutoff solenoid wire at starter.

10. Disconnect wiring lead at injection pump so engine will not start. Crank engine for 20 seconds, using starter motor and attach wiring lead to pump.
11. Run engine for 2 minutes and then stop engine. Check for leaks around filter and drain plug. Tighten enough only to stop leaks.
12. Check oil level.

LB82152,0000561 -19-27JUL10-1/1

Replace Primary and Final Fuel Filters—750J

IMPORTANT: Do not prefill fuel filters. Debris in unfiltered fuel will damage fuel system components.

NOTE: Dispose of waste properly.

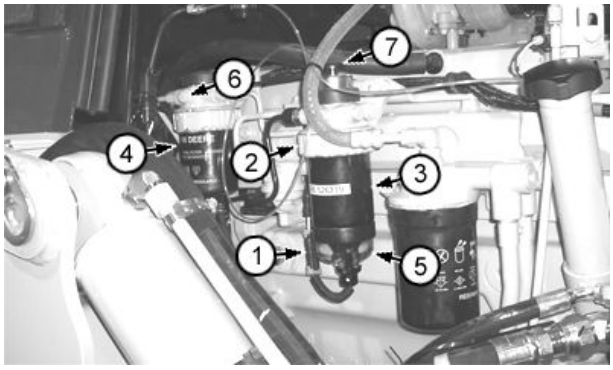
1. Disconnect sensor (1) from wiring harness.
2. Thoroughly clean primary and final fuel filters, water separator assembly and surrounding area.
3. Turn retaining ring (2) counterclockwise and remove the primary fuel filter element (3).
4. Turn retaining ring on final fuel filter element (4) counterclockwise and remove filter element.
5. Remove water separator bowl (5) from primary fuel filter. Drain and clean separator bowl.
6. Install water separator bowl onto new primary fuel filter element. Tighten securely.
7. Fill element with fuel.

NOTE: Fuel Filter must be indexed properly and the key on canister must be oriented in slot of mounting base for correct installation.

8. Clean filter base and thoroughly inspect filter base seal ring. Replace as needed.

NOTE: Do not attempt to turn the filter element into base.

9. Install new primary and final fuel filter elements by aligning vertical locators into slots on filter base. Push filter elements up firmly until filter snaps against base.



T206847A —UN—24JAN05

1— Sensor
2— Retaining Ring
3— Primary Fuel Filter Element
4— Final Fuel Filter Element
5— Water Separator Bowl
6— Air Vent
7— Filter Pump

10. Turn retaining ring clockwise onto filter base until retaining ring clicks tightly into place.
11. Connect sensor to wiring harness.
12. Place pan under filter.
13. Loosen air vent (6) on final fuel filter by turning knob counterclockwise.
14. Operate primer pump (7) on primary fuel filter until fuel flow from air vent is free of air bubbles.
15. Tighten air vent as hand primer is held in downward position.

LB82152,0000562 -19-27JUL10-1/1

Replace Primary and Final Fuel Filters—850J

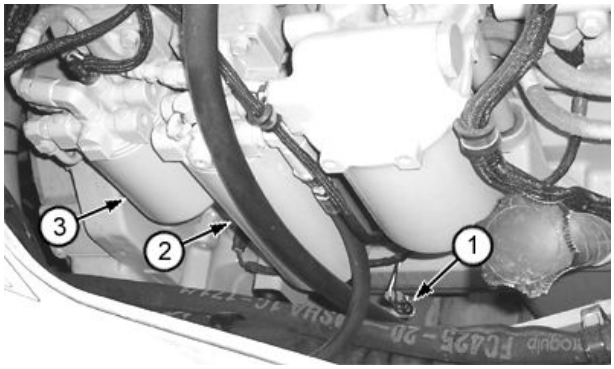
IMPORTANT: Do not prefill fuel filters. Debris in unfiltered fuel will damage fuel system components.

NOTE: Dispose of waste properly.

1. Thoroughly clean primary and final fuel filters and surrounding area.

NOTE: Sensor is located on the bottom of the primary fuel filter.

2. Disconnect sensor (1) from wiring harness.
3. Rotate primary fuel filter (2) counterclockwise and remove.
4. Remove sensor from the primary fuel filter.
5. Install sensor onto new primary fuel filter.
6. Rotate final fuel filter (3) counterclockwise and remove.
7. Clean filter base.
8. Install new primary and final fuel filter elements.



T207189A —UN—24JAN05

1— Sensor
2— Primary Fuel Filter
3— Final Fuel Filter

9. Reconnect sensor on the primary fuel filter to the wiring harness.
10. Bleed the fuel system. See Bleeding The Fuel System—850J. (Section 4-1.)

LB82152,0000563 -19-27JUL10-1/1

Check Battery Electrolyte Level; Clean and Tighten Terminals

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:

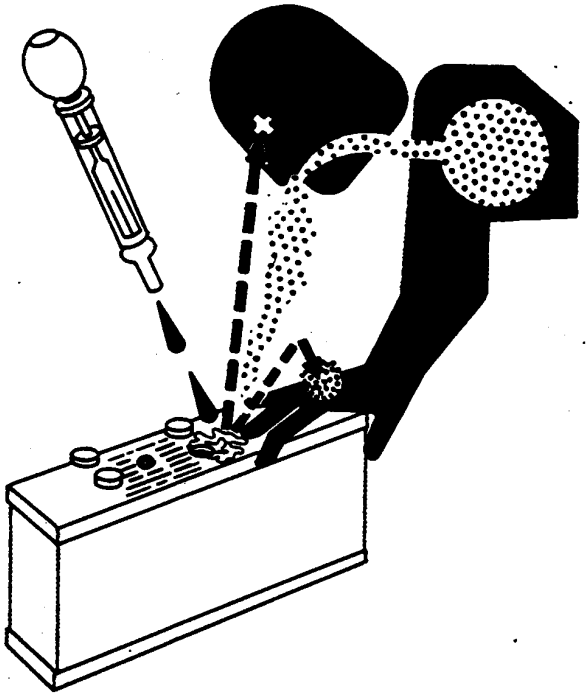
1. **Filling batteries in a well-ventilated area.**
2. **Wearing eye protection and rubber gloves.**
3. **Avoiding breathing fumes when electrolyte is added.**
4. **Avoiding spilling or dripping electrolyte.**
5. **Using proper jump start procedure.**

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.**



TS203 —UN—23AUG88

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

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

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



TS204 —UN—15APR13

1. Remove hold-down clamps.

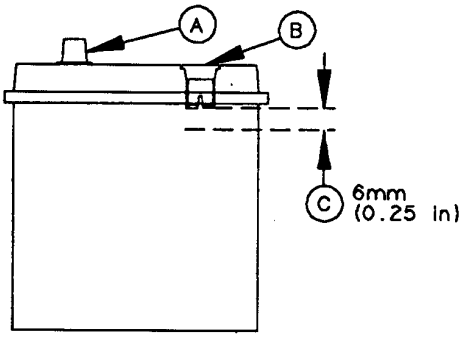
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TX,70,RR,A7 -19-09DEC10-1/3

IMPORTANT: Add water to batteries in freezing weather before you begin operating your machine for the day, or else charge the batteries.

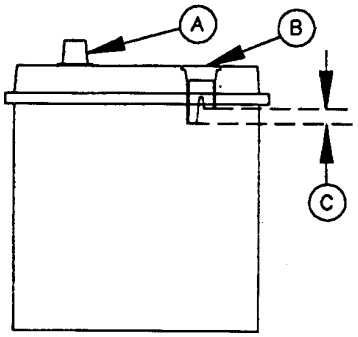
2. Fill each cell to within specified range (C) with distilled water. DO NOT overfill.

A—Battery Post
B—Fill Tube
C—Electrolyte Level Range



T6996DB —UN—10FEB89

Single Level Fill Tube Application



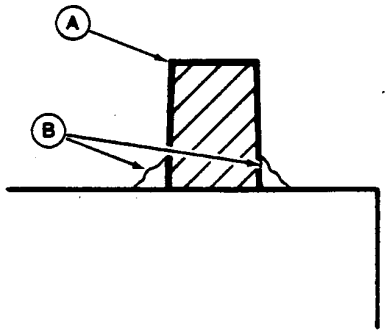
T6996DA —UN—10FEB89

Dual Level Fill Tube Application

TX,70,RR,A7 -19-09DEC10-2/3

3. Disconnect battery clamps, grounded clamp first.
4. Clean battery terminals (A) and clamps with a stiff brush.
5. Apply lubricating grease (B) around battery terminal base only.
6. Install and tighten clamps, grounded clamp last.
7. Install hold-down clamps.

A—Battery Terminals
B—Lubricating Grease



T6758AA —UN—21OCT88

TX,70,RR,A7 -19-09DEC10-3/3

Check Air Intake Hose

1. Check air intake hose (1) for cracks and replace as necessary.
2. Check for loose connections and tighten clamps as necessary.

1— Air Intake Hose



T207198A —UN—24JAN05

850J Shown

TX,70,RR,A10 -19-18JAN05-1/1

Take Fluid Samples

See your authorized dealer for taking the following fluid samples:

- Diesel Fuel
- Coolant
- Hydraulic Oil
- Transmission Oil
- Inner and Outer Final Drive Oil

LB82152,0000553 -19-22MAR19-1/1

Clean Engine Crankcase Vent Tube

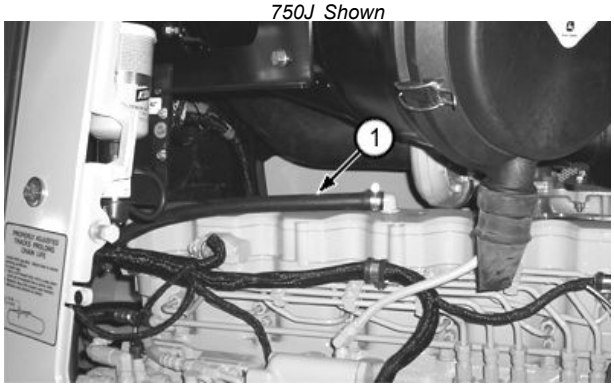
1. Remove vent tube (1) and clean interior using diesel fuel.
2. Check condition of O-ring in rocker arm cover and replace as necessary.

1— Vent Tube



T207196A —UN—24JAN05

750J Shown



T207197A —UN—24JAN05

850J Shown

AM40430,000001F -19-19JAN05-1/1

Change Final Drive Oil

1. Park machine on a level surface so that sprocket oil level line (3) is parallel to ground with outer drive drain plug (B) to bottom.

NOTE: Dispose of oil properly.

2. Remove drain plugs (2) and filler plugs (1) to drain oil.
3. Install and tighten drain plugs.

IMPORTANT: Avoid overheating and damage to components. Do not overfill final drives. If specified fill volumes are not met, malfunction of final drive can occur.

4. Fill final drives per specification until oil flows from fill port. See Inner and Outer Final Drive Oil. (Section 3-1.)

Inner Final Drive Oil (each side)—Specification

Inner Final Drive Oil (750J and 750J LT)—Capacity..... 9.5 L 2.5 gal

Inner Final Drive Oil (750J WT and 750J LGP)—Capacity..... 15.9 L 4.2 gal

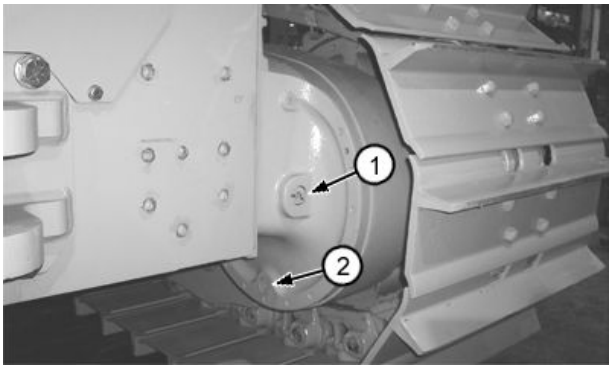
Inner Final Drive Oil (850J and 850J LT)—Capacity..... 9.5 L 2.5 gal

Inner Final Drive Oil (850J WT and 850J WLT)—Capacity..... 15.9 L 4.2 gal

Inner Final Drive Oil (850J LGP)—Capacity..... 18.9 L 5.0 gal

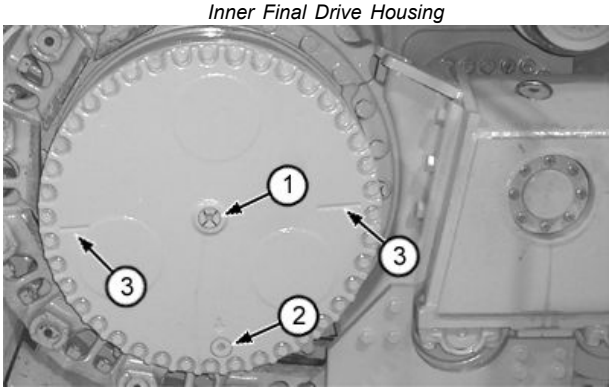
Outer Final Drive Oil (each side)—Specification

Outer Final Drive Oil (750J, 750J LT, 750J WT, and 750J LGP))—Capacity..... 15.1 L 4.0 gal



T206849A —UN—24JAN05

Inner Final Drive Housing



T206850A —UN—24JAN05

Outer Final Drive Housing

1— Filler Plug
2— Drain Plug
3— Oil Level Line

Outer Final Drive Oil (850J, 850J LT, 850J WT, 850J WLT, and 850J LGP)—Capacity..... 15.9 L 4.2 gal

5. Install and tighten filler plugs.

HG31779,000006C -19-11MAR19-1/1

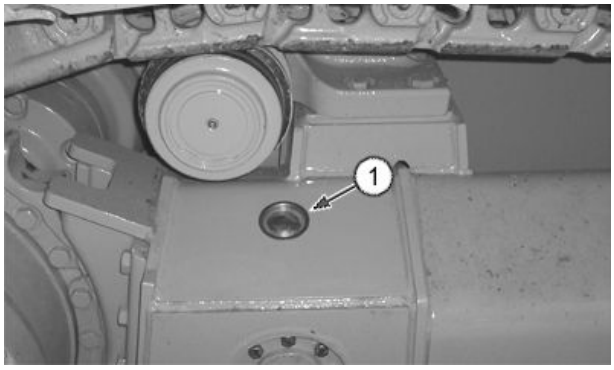
Check Track Frame Pivot Shaft Bushing Oil

1. Remove cap (1).
2. Remove plug (2).
3. Check oil level and fill completely. See Final Drive and Track Frame Pivot Oil. (Section 3-1.)

Specification	
Track Frame Pivot Shaft Bushing Oil (per side)—Capacity	1.7 L 1.75 qt.

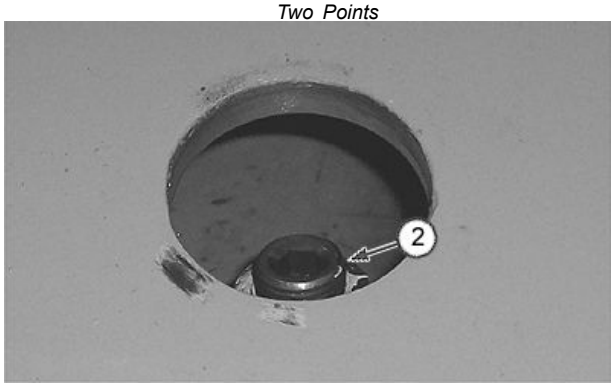
4. Install plug.
5. Install cap.

1— Cap **2— Plug**



T206712A —UN—07JAN05

Two Points



T206713A —UN—06JAN05

Plug

AM40430,0000020 -19-31JUL17-1/1

Check Coolant

See Check Coolant. (Section 3-3.)

OUT4001,0000365 -19-28JUL14-1/1

Change Hydraulic System Oil and Replace Filter

IMPORTANT: Replace filter before recommended service interval if hydraulic oil filter indicator stays on after oil is warm.

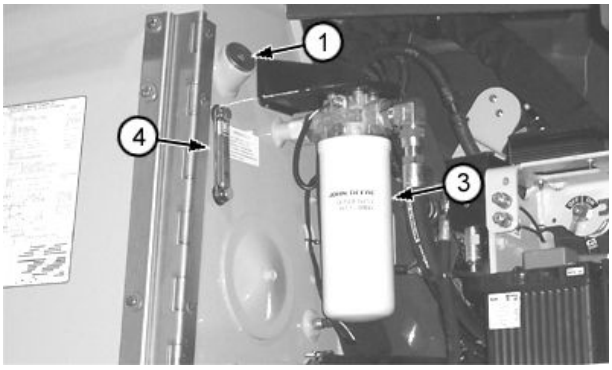
1. Open right rear access door.
2. Loosen filler plug (1) to relieve pressure.
3. Remove rear access panel (2) below fuel tank.

NOTE: Dispose of waste oil properly.

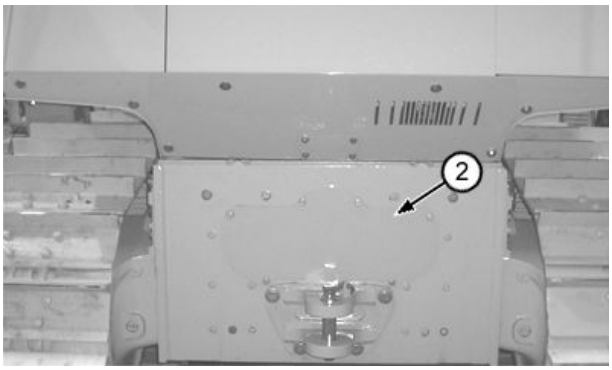
4. Drain oil into container through environmental drain hose.
5. Clean area around housing and remove filter (3) by turning counterclockwise.
6. Apply a film of oil to sealing ring on new filter. Install so gasket touches mounting surface and tighten an additional 3/4 to one turn with a suitable wrench.
7. Fill reservoir with oil to specification and install plug.

Specification	
750J Hydraulic System Oil—Capacity	106.0 L 28.0 gal
850J Hydraulic System Oil—Capacity	106.0 L 28.0 gal

8. Move transmission control lever to neutral. Start engine and run at slow idle for five minutes before operating machine. This will allow filter element to refill and air to be purged from charge circuit.
9. Check for any leakage around element and tighten as necessary to stop leakage.



T207252A —UN—24JAN05



T207253A —UN—28JAN05

1— Filler Plug
2— Rear Access Panel
3— Filter
4— Sight Glass

10. Check oil level in sight glass (4). Oil should be to midpoint.

HG31779,000007E -19-11MAR19-1/1

Change Hydrostatic Transmission Oil and Replace Hydrostatic Charge and Fan Oil Filters

IMPORTANT: Replace filter before recommended service interval if hydraulic oil filter indicator stays on after oil is warm.

1. Open left rear access door.
2. Loosen filler plug (1) to relieve pressure.
3. Remove rear access panel (2) below fuel tank.

NOTE: Dispose of waste oil properly.

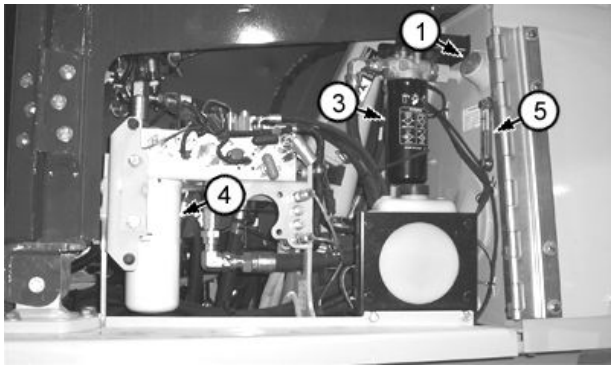
4. Drain oil into container through environmental drain hose.
5. Clean area around housing and remove fan oil filter (3) by turning counterclockwise.
6. Apply a film of oil to sealing ring on new filter. Install so gasket touches mounting surface and tighten an additional 3/4 to one turn with a suitable wrench.
7. Clean area around housing and remove charge filter (4) by turning counterclockwise.
8. Apply a film of oil to sealing ring on new filter. Install so gasket touches mounting surface and tighten an additional 3/4 to one turn with a suitable wrench.
9. Fill reservoir with oil to specification and install plug.

Specification

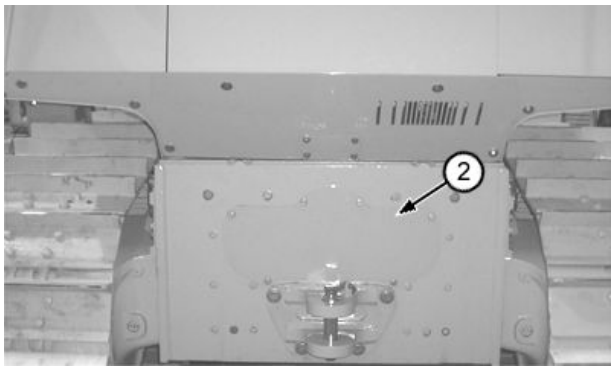
750J Hydrostatic System
Oil—Capacity..... 106.0 L
28.0 gal

850J Hydrostatic System
Oil—Capacity..... 106.0 L
28.0 gal

10. Move transmission control lever to neutral. Start engine and run at slow idle for five minutes before operating machine. This will allow filter element to refill and air to be purged from charge circuit.
11. Check for any leakage around element and tighten as necessary to stop leakage.
12. Check oil level in sight glass (5). Oil should be to midpoint.



T207457A —UN—26JAN05



T207253A —UN—28JAN05

1— Filler Plug
2— Rear Access Panel
3— Fan Oil Filter
4— Charge Filter
5— Sight Glass

HG31779,000007F -19-11MAR19-1/1

Adjust Engine Valve Lash

See your authorized dealer.

VD76477,00004DC -19-16JUN06-1/1

Maintenance—Every 4000 Hours

Replace Engine Crankshaft Dampener

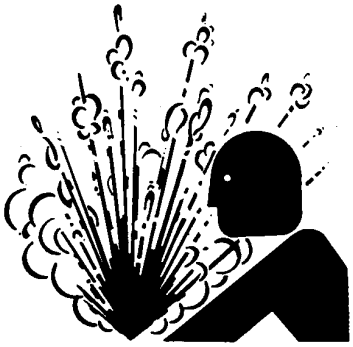
The crankshaft dampener assembly is not repairable and should be replaced every four years or 4000 hours, whichever occurs first, or whenever crankshaft is replaced. See your authorized dealer.

VD76477,000139F -19-10NOV09-1/1

Draining the Cooling System

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

Shut off engine. Remove radiator cap only when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



TS281 —UN—15APR13

Every 6 years or 6000 hours (if John Deere Coolant is used), replace thermostats, drain and flush cooling system using clean water and refill with new coolant.

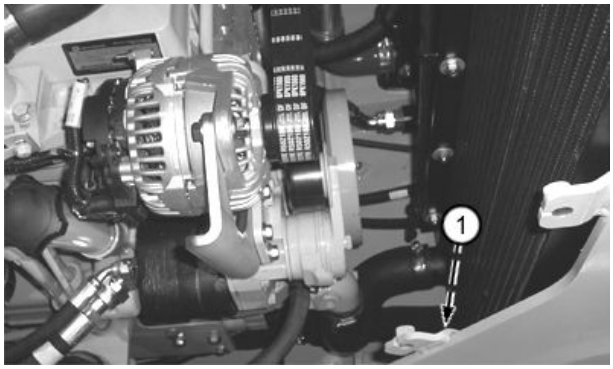
Specification	
750J Coolant—Capacity	21.6 L 5.7 gal
850J Coolant—Capacity	35 L 9.2 gal

Continued on next page

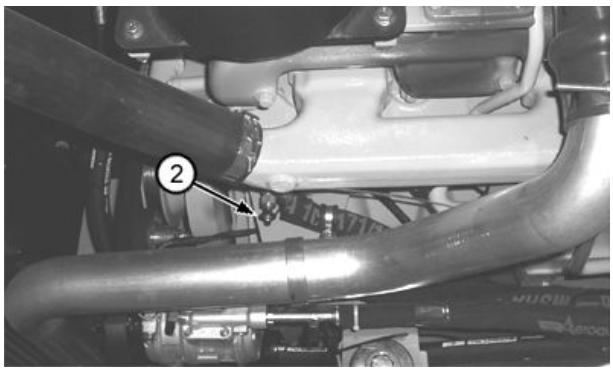
CC28724,0000059 -19-10NOV09-1/2

1. Remove left engine side shield.
2. Open radiator valve (1) to drain radiator.
3. Open drain plug (2) to drain engine block.
4. Open heater valve (3) to drain heater core.
5. After coolant has drained, install plugs and close valve.

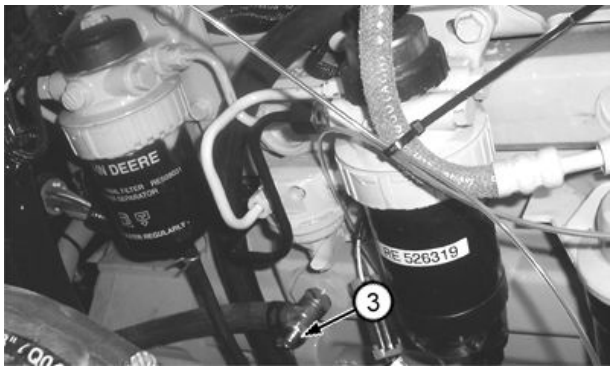
1— Radiator Valve
2— Drain Plug
3— Heater Valve



T207395A —UN—24JAN05



T206807B —UN—24JAN05



T207203B —UN—24JAN05

CC28724,0000059 -19-10NOV09-2/2

Filling the Cooling System

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

If radiator cap must be removed, do not remove when engine is hot. Shut off engine and wait until cap is cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure, before removing completely.

Specification	
750J Coolant—Capacity	21.6 L 5.7 gal
850J Coolant—Capacity	35 L 9.2 gal

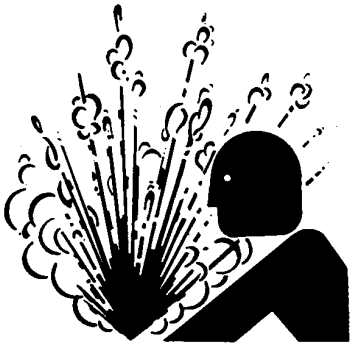
Fill system so coolant level is to bottom of filler neck.

NOTE: John Deere COOL-GARD™ II Pre-Mix coolant is recommended when adding new coolant to cooling system.

Follow directions on container for correct mixture ratio.

All machines are shipped from the factory with a 50-50 mixture for protection to —34°C (—30°F). Adjust mixture accordingly to provide freeze protection for your machine.

COOL-GARD is a trademark of Deere & Company



TS281 —UN—15APR13

FREEZING TEMPERATURES: Fill with permanent-type low silicate, ethylene glycol antifreeze (without stop-leak additive) and clean, soft water. Add John Deere COOL-GARD™ II Coolant Extender as required.

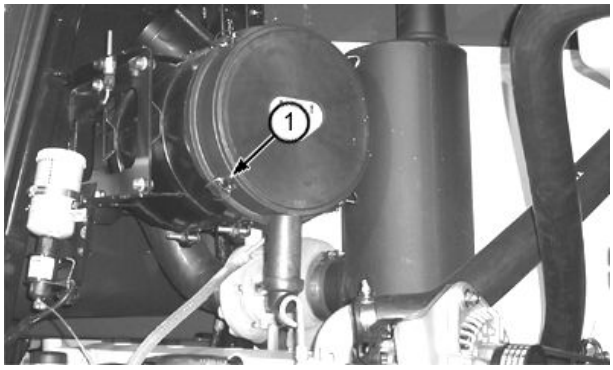
After filling radiator, operate engine 15—30 minutes to purge air from engine block. Shut off engine and add coolant to radiator as necessary. Warm engine to normal operating temperature, stop engine and verify that radiator is completely full, and that recovery tank is at normal level. Add coolant to recovery tank as necessary.

CC28724,000005A -19-10NOV09-1/1

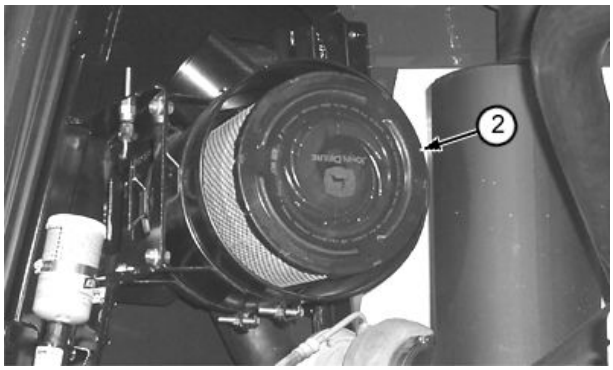
Replace Air Filter Elements

1. Unfasten clips (1).
2. Remove cover.
3. Remove primary element (2).
4. Remove secondary element (3).
5. Clean air cleaner canister.
6. Install new filter elements into housing one at a time making sure secondary element is centered in canister.
7. Attach cover and fasten clips.

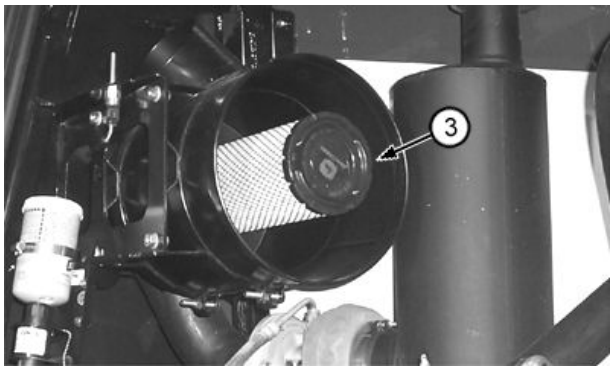
1— Clips (4 used)
2— Primary Element
3— Secondary Element



T207199A —UN—24JAN05



T207200A —UN—24JAN05



T207201A —UN—24JAN05

AM40430,000002E -19-26JAN05-1/1

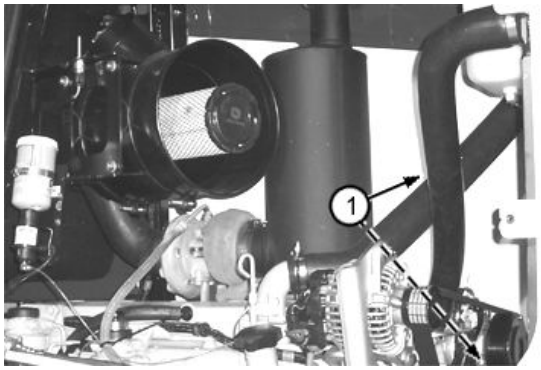
Checking Coolant Hoses

Check hoses (1) for cracks and leaks.

Tighten clamps.

Check radiator for dirt, damage, leaks, and loose or broken mountings. Clean radiator fins.

1— Hoses



T207205A —UN—24JAN05

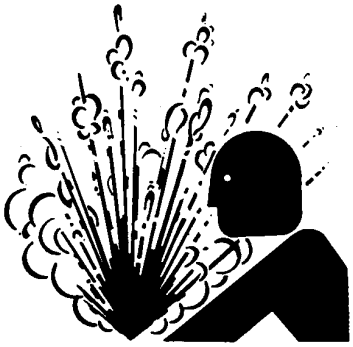
HG31779,000007C -19-18JAN05-1/1

Servicing the Cooling System

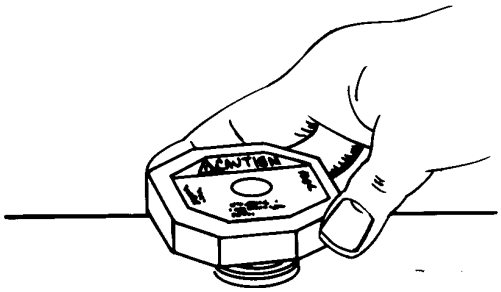
CAUTION: Explosive release of fluids from pressurized cooling system can cause serious burns.

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

Drain and fill the cooling system every three years or 3000 hours if John Deere Coolant is used. See Check Radiator Coolant Level in Maintenance—Every 250 Hours chapter.



TS281 —UN—15APR13



T8214BE

T8214BE —UN—27APR94

TX,90,BG1025 -19-09SEP98-1/1

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

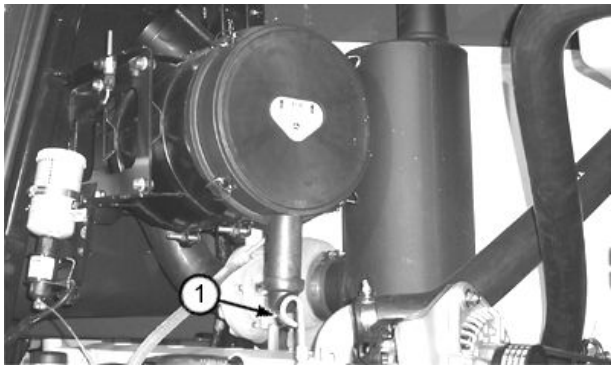
Clean Dust Unloader Valve

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

Squeeze valve (1) to remove dust from air cleaner.

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

1— Valve



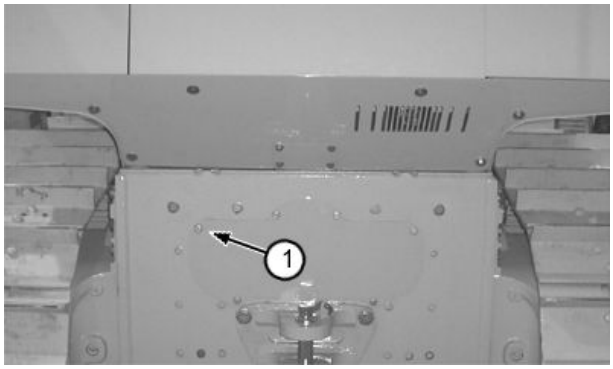
T207199B —UN—25JAN05

AM40430,0000031 -19-26JAN05-1/1

Fuel Drain and Shutoff Valve

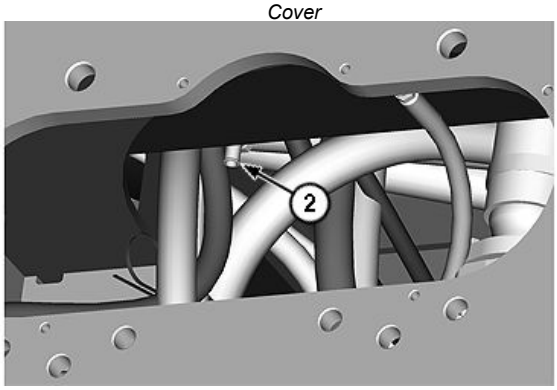
1. Remove six cap screws (1) to remove cover at rear of machine.
2. Attach hose to environmental drain valve (2).
3. Open drain valve. Drain fuel into appropriate container. Dispose of waste properly. See Safety-General Precautions. (Section 1-2.)
4. Close drain valve.
5. Disconnect hose from drain valve.
6. Replace cover.

1— Cap Screw (6 used) **2— Environmental Drain Valve**



T207206A —UN—24JAN05

Cover



TX1051602A —UN—14NOV08

Environmental Drain Valve

MD04263,000001D -19-29APR11-1/1

Discharge Pilot Control System Hydraulic Pressure

CAUTION: Prevent injury from unexpected machine movement. Turn engine off. Keep bystanders clear of machine.

Before servicing or performing maintenance on the machine, discharge hydraulic oil pressure from the pilot control system as follows:

1. Ensure that area around blade is clear.
2. Turn off engine.
3. Turn key switch to ON position.
4. Without starting engine and hydraulic enable switch in unlocked position, cycle hydraulic control lever in all directions.

HG31779,00001BD -19-22JUL10-1/1

Precautions for Alternator and Regulator

When batteries are connected, follow these rules:

1. Disconnect negative (-) battery cable when working on or near alternator or regulator.
2. DO NOT TRY TO POLARIZE ALTERNATOR OR REGULATOR.
3. Be sure alternator wires are correctly connected BEFORE connecting 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. If machine has more than one battery, each battery must be charged separately.

CED,OUO1021,185 -19-30MAR17-1/1

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:

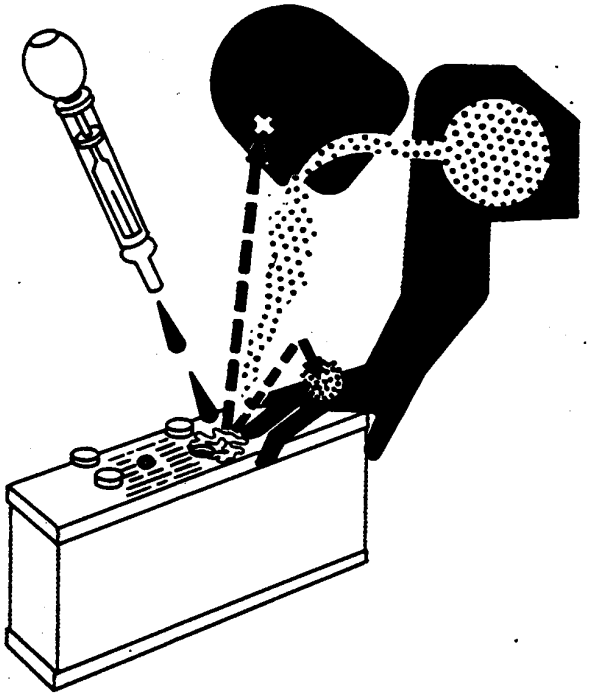
1. **Do not induce vomiting.**
2. **Drink large amounts of water or milk, but do not exceed 1.9 L (2 qt).**
3. **Get medical attention immediately.**

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

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 charging batteries in the machine to prevent damage to electrical components.

A battery charger may be used as a booster to start engine.

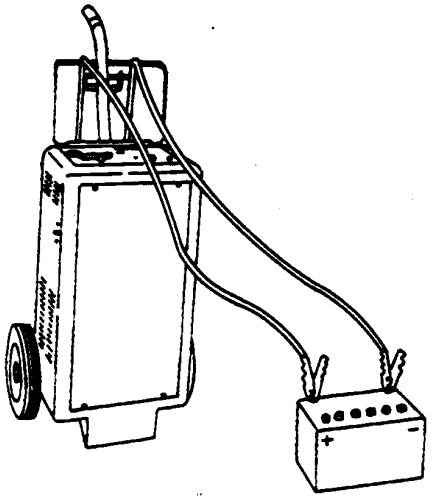
Ventilate the area where batteries are being charged.

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 -19-13JAN16-1/1

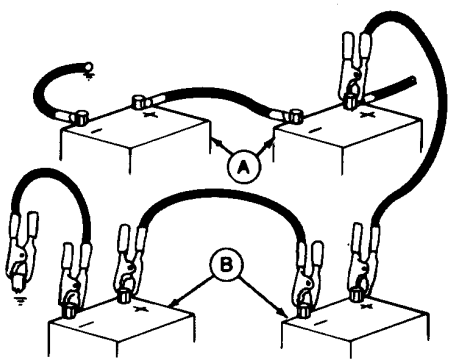
Using Booster Batteries—24-Volt System

Before boost starting, machine must be properly shut down 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.

IMPORTANT: The machine electrical system is a 24-volt negative (-) ground. Connect two 12-volt booster batteries together as shown for 24 volts.

1. Connect one end of the positive (+) cable to the positive (+) terminal of the machine batteries (A) and the other end to the positive (+) terminal of the booster batteries (B).
2. Connect one end of the negative (-) cable to the negative (-) terminal of the booster batteries. Connect the other end of the negative (-) cable to the machine frame as far away from the machine batteries as possible.
3. Start engine.



T7233JN —UN—21MAY90

Booster Batteries, 2-Battery Application

A—Machine Battery (2 used) **B—Booster Battery (2 used)**

4. Immediately after starting engine, disconnect the end of the negative (-) cable from the machine frame. Then 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.

OUT4001,0000238 -19-09MAR17-1/1

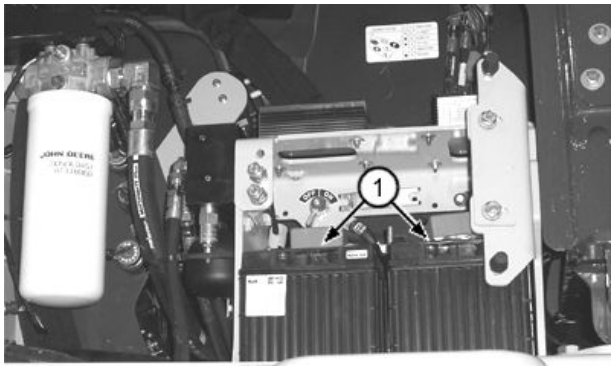
Replacing Batteries

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.

Your machine has two 12-volt batteries (1) with negative (—) ground connected in series to provide 24-volts.

Use only batteries which meet the following specifications.

BATTERY SPECIFICATIONS		
BCI Group	**Cold Cranking Amps 0°F (—18°C)**	**Reserve Capacity (Minute of 25 Amp)**
31	950	190



T206570C —UN—18JAN05

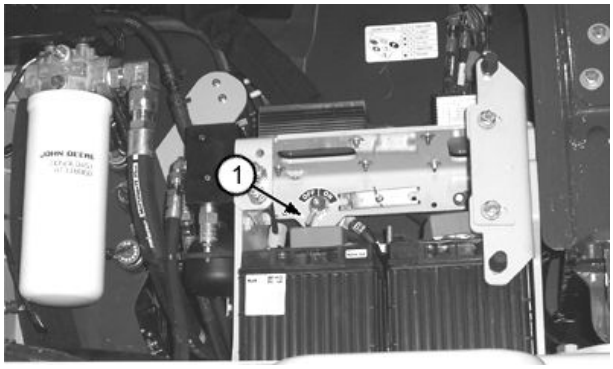
1— Battery (2 used)

HG31779,000006F -19-03MAY11-1/1

Removing Batteries

CAUTION: Prevent possible injury from exploding battery. Always remove grounded (—) battery clamp first and replace it last.

1. Turn battery disconnect switch (1) to OFF.
2. Disconnect negative (—) battery cables first, then positive (+) cables.
3. Remove nuts and hold-down frames. Lift batteries from machine.
4. Check cables and clamps for damage and wear. Make certain the batteries are fully charged.
5. Install batteries making sure they are level.
6. Install hold-down frames. Connect cables, positive then negative.



T206570A —UN—18JAN05

1— Battery Disconnect Switch

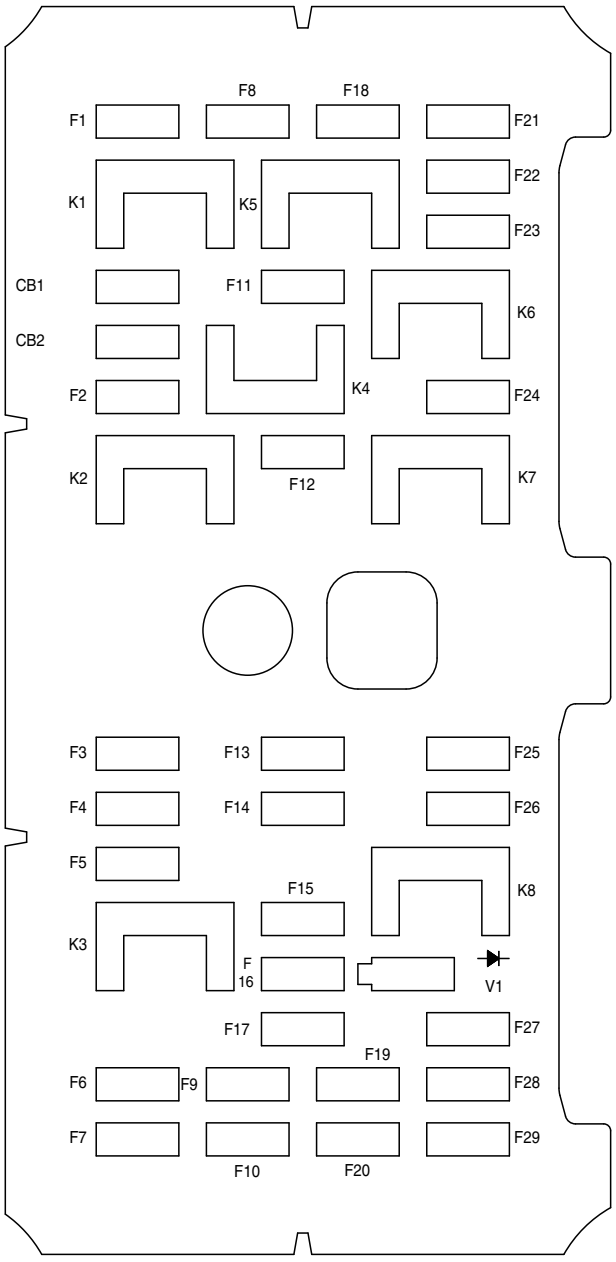
7. Turn battery disconnect switch to ON.

HG31779,0000070 -19-04DEC06-1/1

Replacing Fuses

IMPORTANT: Install fuse with correct amperage rating to prevent electrical system damage from overload.

The vehicle electrical center (VEC) is located in the operator's station. (Group 9015-10.)



T203636

T203636 —UN—30SEP04

Vehicle Electrical Center (VEC)

Continued on next page

F1— Condenser Fan Motor 2 10-Amp Fuse
F2— Condenser Fan Motor 1 10-Amp Fuse
F3— Service ADVISOR Power 5-Amp Fuse
F4— CMU Power 5-Amp Fuse
F5— Alternator Excitation 5-Amp Fuse
F6— TCU Power 10-Amp Fuse
F7— Auto Blade 10-Amp Fuse
F8— Dome Light 5-Amp Fuse
F9— Pilot Enable Ignition Power 5-Amp Fuse
F10— Under-Seat Heater 15-Amp Fuse
F11— Winch Switch/Solenoids 5-Amp Fuse
F12— Heater Blower 10-Amp Fuse
F13— Start Aid 15-Amp Fuse
F14— Air Seat 10-Amp Fuse
F15— Switch LED (Backlight) Circuit 5-Amp Fuse
F16— Optional Powerport 10-Amp Fuse
F17— Spare 10-Amp Fuse
F18— Heater Valve 5-Amp Fuse
F19— Horn 5-Amp Fuse
F20— Radio Memory 5-Amp Fuse
F21— Front/Rear Wiper Motor 10-Amp Fuse
F22— Right/Left Wiper Motor 10-Amp Fuse
F23— Standard Powerport 10-Amp Fuse
F24— Air Conditioning Compressor Clutch 5-Amp Fuse
F25— Start Relay 10-Amp Fuse
F26— ECU Ignition Power 5-Amp Fuse
F27— Spare 10-Amp Fuse
F28— CMU Battery Power 10-Amp Fuse
F29— ECU Battery Power 15-Amp Fuse
F30— Auxiliary Work Light 20-Amp Circuit Breaker (Marked CB1)
F31— Standard Work Light 15-Amp Circuit Breaker (Marked CB2)
K1—Condenser Fan 2 Relay
K2—Condenser Fan 1 Relay
K3—10-Amp Optional Convertor Relay
K4—Auxiliary Work Light Relay
K5—Wiper Relay
K6—Standard Work Light Relay
K7—Air Conditioning Compressor Clutch Relay
K8—Horn Relay
V1—Alternator Excitation 3-Amp Diode

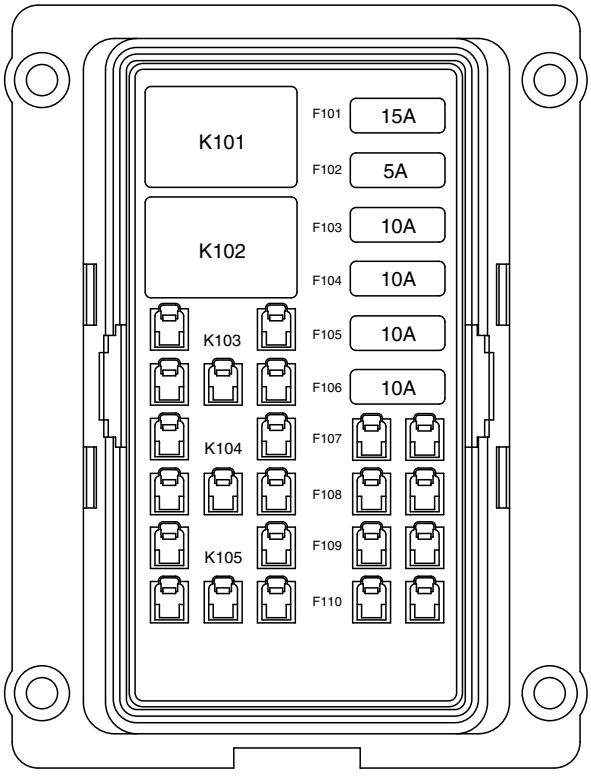
NOTE: The following items are located outside of the VEC:

- *IGC Fuse and Relay Box (IGC Machines Only)*
- *F33—Main 125-Amp Fuse (Later Machines)*

The main 125-amp fuse (F33) and IGC fuse and relay box (if equipped with integrated grade control) are located in the battery compartment.

DZ80269,0000206 -19-22JUL10-2/3

F101— IGC Switched Power 15-Amp Fuse (IGC option)
F102— BCJ Switched Power 5-Amp Fuse (IGC option)
F103— EHC Switched Power 10-Amp Fuse (IGC option)
F104— IGC Unswitched Power_1 10-Amp Fuse (IGC option)
F105— IGC Unswitched Power_2 10-Amp Fuse (IGC option)
F106— IGC Unswitched Power_3 10-Amp Fuse (IGC option)
K101— IGC Switched Power Relay (IGC option)
K102— BCJ and EHC Switched Power Relay (IGC option)



IGC Fuse and Relay Box (If Equipped)

DZ80269,0000206 -19-22JUL10-3/3

Fuse (Blade-Type) Color Codes

Amperage Rating	Color
1	Black
3	Violet
4	Pink
5	Tan
7-1/2	Brown
10	Red
15	Light Blue
20	Yellow
25	Natural (White)
30	Light Green

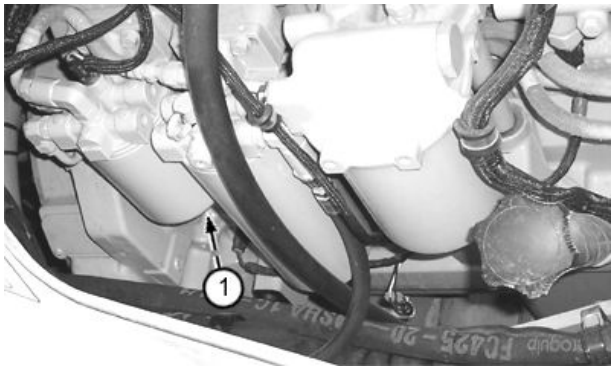
DZ80269,0000209 -19-07AUG06-1/1

Drain Fuel Filter Sediment—850J

Drain water and sediment as necessary.

1. Loosen drain screw (1). Drain liquid for several seconds.
2. Tighten drain screw.
3. Bleed fuel system. See Change Fuel Filter in Maintenance—Every 500 Hours chapter for bleeding instructions.

1— Drain Screw



T207189B —UN—26JAN05

AM40430,000004A -19-17FEB05-1/1

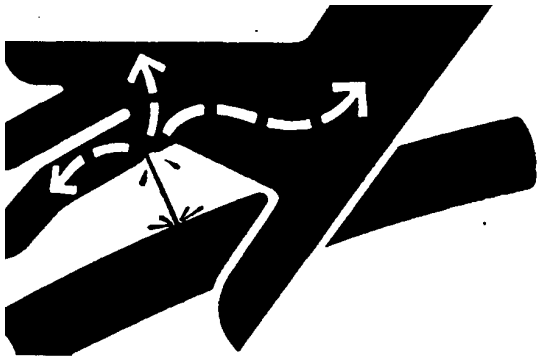
Bleeding Fuel System—750J

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting fuel or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles that eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If ANY fluid is injected into the skin, a doctor familiar with this type of injury must surgically remove it 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.

High-pressure fluid remaining in fuel lines can cause serious injury. Before disconnecting fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system, wait a minimum of 15 minutes after engine is stopped.

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



X9811 —UN—23AUG88

High Pressure Fluids



TS1343 —UN—18MAR92

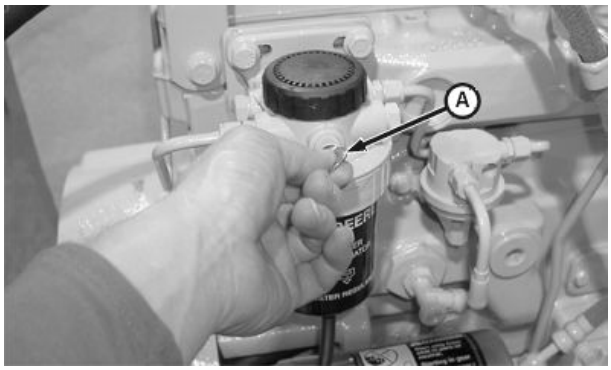
IMPORTANT: Do not prefill fuel filters. Debris in unfiltered fuel will damage fuel system components.

Whenever the fuel system has been opened up for service (lines disconnected or filters removed), it will be necessary to bleed air from the system.

LB82152,0000564 -19-27JUL10-1/3

1. Loosen the air bleed vent screw (A) two full turns by hand on the fuel filter base.

A—Bleed Vent Screw



RG11805 —UN—25OCT01

Final Fuel Filter Bleed Vent Screw

Continued on next page

LB82152,0000564 -19-27JUL10-2/3

2. Operate fuel supply pump prime lever (B) or primer button on fuel filter base (if equipped).
3. Tighten bleed plug securely; continue operating primer until pumping action is not felt.
4. Start engine and check for leaks.

   If engine will not start, it may be necessary to bleed air from fuel system at fuel injection pump or injection nozzles as explained next.

At Fuel Injection Pump

1. Loosen fuel return line (A) at fuel injection pump.
2. Operate fuel supply pump primer lever or primer button on fuel filter base (if equipped).
3. As soon as fuel flow is free from air bubbles, tighten fuel return line to specifications. Primer lever is spring-loaded and will return to normal position.

Specification	
Fuel Injection Pump Return Line—Torque	27 N·m 20 lb-ft

At Fuel Injection Nozzles

1. Place throttle lever in half-throttle position.

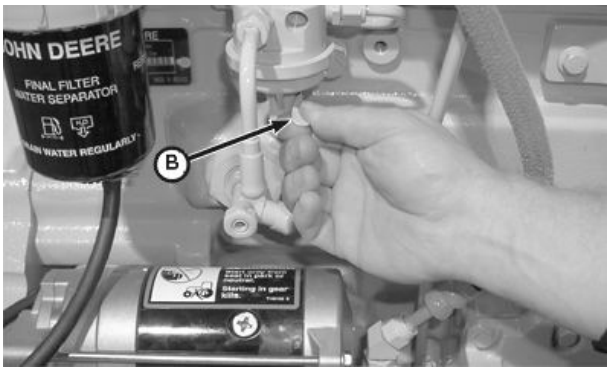
IMPORTANT: Always use a backup wrench when loosening or tightening fuel lines at nozzles and/or injection pump to avoid damage.

2. Using **two** open-end wrenches, loosen two fuel line connections at injection nozzles.
3. Crank engine over with starter motor for 15 seconds (but do not start engine) until fuel without any air bubbles flows out of loosened connection. Retighten connection to specifications.

Specification	
Fuel Injection Nozzle Delivery Lines—Torque	27 N·m 20 lb-ft

4. Repeat procedure for remaining injection nozzles (if necessary) until all air has been removed from fuel system.

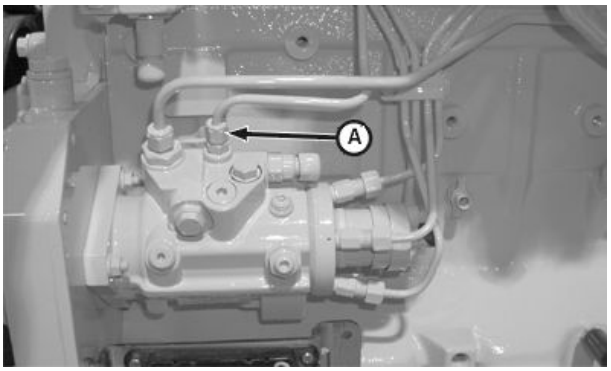
   If engine will not start, see your authorized dealer.



RG11806 —UN—25OCT01

Fuel Supply Pump Primer Lever

B—Primer Lever



RG11807 —UN—25OCT01

Fuel Injection Pump Return Line

A—Fuel Return Line



RG11808 —UN—25OCT01

Nozzle Fuel Pressure Line

LB82152,0000564 -19-27JUL10-3/3

Bleeding Fuel System—850J

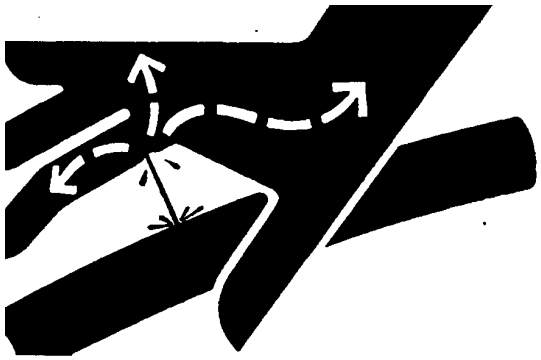
IMPORTANT: Do not prefill fuel filters. Debris in unfiltered fuel will damage fuel system components.

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting fuel or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles that eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If ANY fluid is injected into the skin, a doctor familiar with this type of injury must surgically remove it 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.

High-pressure fluid remaining in fuel lines can cause serious injury. Before disconnecting fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system, wait a minimum of 15 minutes after engine is stopped.

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



X9811 —UN—23AUG88

High Pressure Fluids



TS1343 —UN—18MAR92

Whenever the fuel system has been opened up for service (lines disconnected or filters removed), it will be necessary to bleed air from the system.

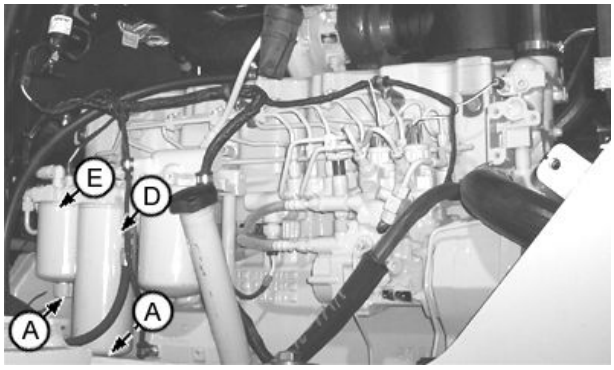
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LB82152,0000565 -19-27JUL10-1/3

When fuel filters are being removed or replaced they must be prefilled.

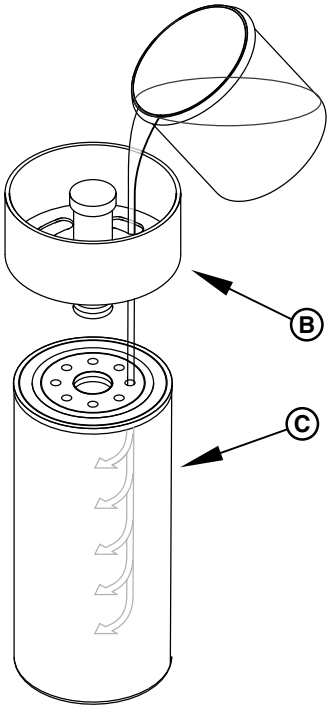
IMPORTANT: When draining water from fuel filters the drain valve must be unthreaded completely and valve drops down approximately 12 mm (0.5 in.) to properly drain water from filter.

1. Drain water and contaminates from water separator bowl by opening the drain valve (A) on the primary (D) and secondary (E) filters.
2. Prefill fuel filters (C) using prefill cup (B).



T207375A —UN—26JAN05

A—Drain Valve
B—Prefill Cup
C—Fuel Filter
D—Primary Fuel Filter
E—Secondary Fuel Filter



RG13296 —UN—22JUN05

Prefilling Fuel filter

Continued on next page

LB82152,0000565 -19-27JUL10-2/3

3. Loosen the fuel outlet (A) of the transfer pump. Unlock and operate hand primer (B) until a steady flow of fuel (without bubbles) flows out of connection. This could take 270 - 330 strokes until steady fuel flow is free of air bubbles. Retighten fuel line.

Specification

Fuel Outlet Lines—Torque.....24 N·m 18 lb-ft

4. Unlock and operate hand primer (B) until a steady flow of fuel (without bubbles) flows out of hose.
5. Continue to pump hand primer while disconnecting JT03472 coupler from diagnostic port.
6. Loosen the high-pressure fuel supply line (C) and operate the hand pump until a steady flow of fuel (without bubbles) flows out. Tighten the high-pressure fuel supply line to specification.

Specification

High Pressure Fuel Supply Line—Torque.....24 N·m 18 lb-ft

7. Loosen one of the high-pressure fuel supply line (D) and operate the hand pump until a steady flow of fuel (without bubbles) flows out. Tighten the high-pressure fuel supply line to specification.

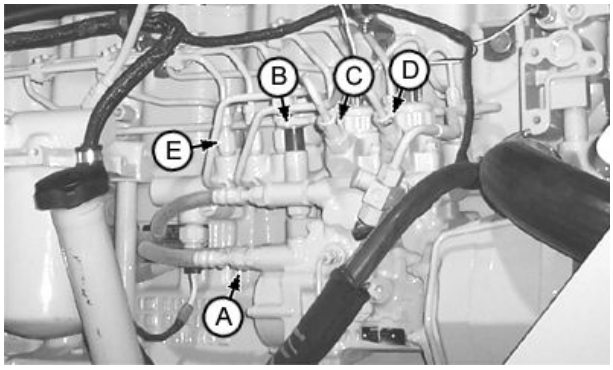
Specification

High Pressure Fuel Line—Torque.....24 N·m 18 lb-ft

8. Loosen fuel line fitting on fuel rail flow limiter #6 (E). Place rag around fitting to absorb fuel. Pump hand primer (B) until steady flow of fuel escapes the flow limiter. Tighten fuel line to specification.

Specification

Pressure Limiter—Torque.....24 N·m 18 lb-ft



T207377A —UN—26JAN05

A—Fuel Transfer Pump Outlet
B—Hand Primer
C—High Pressure Fuel Supply Line
D—High Pressure Fuel Supply Line
E—Fuel Line Fitting On Fuel Rail Flow Limiter #6

9. Pump hand primer approximately 30 more times. Lock hand primer (B) (pull up, then push down and lock).
10. Crank engine up to 15 seconds. If engine does not start, wait 15 seconds and then crank for an additional 15 seconds. If engine starts, run at 1200-1500 rpm for 3-5 minutes
11. If engine fails to start, loosen fuel line fitting on HPCR flow limiter #6 (E on previous page). Place rag around fitting to absorb fuel. Pump hand primer (B) until steady flow of fuel escapes the flow limiter. Tighten fuel lines to specification below and lock hand primer (pull up, then push down and lock).

Specification

High Pressure Fuel Lines—Torque.....24 N·m 18 lb-ft

NOTE: It may also be necessary to squeeze off the fuel return line.

LB82152,0000565 -19-27JUL10-3/3

Check Engine Speeds

1. Warm engine to normal operating temperature.
2. Check engine speeds using display monitor.

Specification

Slow Idle (with decelerator pedal pressed)—Speed..... 880—910 rpm

Fast Idle—Speed..... 2255—2285 rpm

If adjustment is necessary, see your authorized dealer.

HG31779,0000072 -19-03MAY11-1/1

Do Not Service Control Valves, Cylinders, Pumps, or Motors

Special tools and information are needed to service control valves, cylinders, pumps, or motors.

If these parts need service, see an authorized John Deere dealer.

TX,90,DH2537 -19-27JUL15-1/1

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.

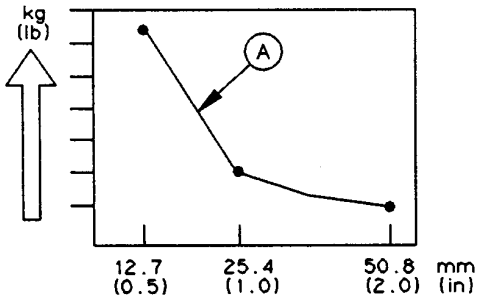
Tracks should always be adjusted in the actual operating conditions. If material packs in the undercarriage, the tracks should be adjusted with the material packed in the components.

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.

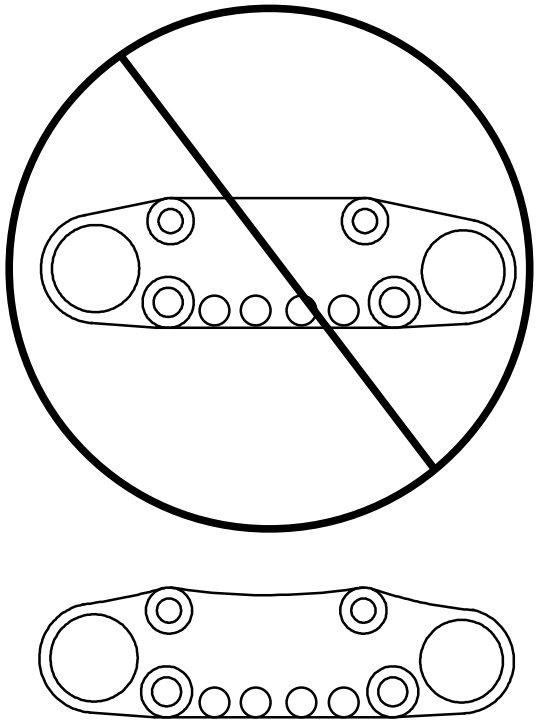
Lubricated chain is different due to the absence of internal pin and bushing wear. It is absolutely essential to keep sag adjusted to prevent accelerated bushing outside diameter wear.

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.)



T207501 —UN—15FEB05

TX,90,RR2516 -19-19SEP08-1/1

Checking Idlers and Rollers for Oil Leakage

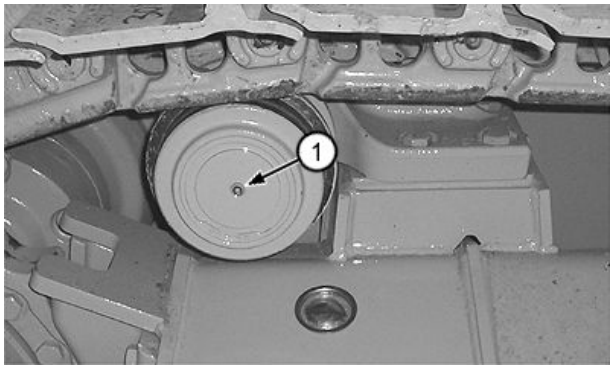
Check carrier rollers, front idlers, and track rollers for leaks. If any leaks are found, see an authorized John Deere dealer.

AM40430,0000019 -19-07NOV16-1/1

Checking Carrier Roller Oil Level

1. Remove plug (1) from carrier roller. Oil must flow from hole.
2. Add oil as necessary. See Track Rollers, Front Idler, and Carrier Roller Oil. (Section 3-1.)
3. Install plug.

1— Plug



T207177A —UN—18JAN05

Carrier Roller

AM40430,000001A -19-31JUL17-1/1

Cab or ROPS Tilting Procedure

1. Park machine on level surface.
2. Move park lock lever to up LOCKED position.
3. Lower equipment to ground.
4. Remove all 10 cap screws (1) that hold front of the cab to the platform.

NOTE: Selector valve is operated by pulling valve outward and twisting it between the two settings.

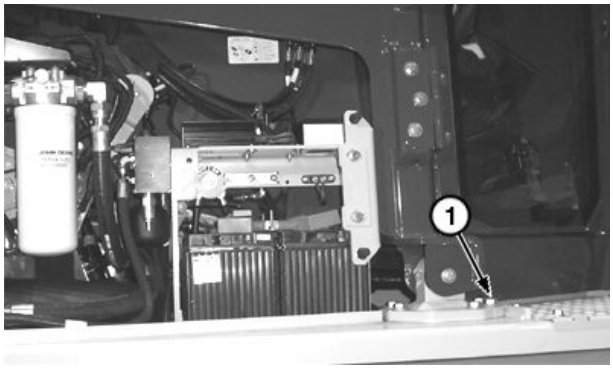
5. Verify that the cab/tilt brake pump off (red) selector valve (2) is the retracted position for cab tilt mode.
6. Pull cab raise/lower (black) selector valve (3) outward and rotate counterclockwise 1/4 turn to the extended position to raise the cab. The extended position is for raise and the retracted position is for lower.

NOTE: Make sure the mounts are flat as the cab is being lowered.

7. Insert handle (4) into hand pump (5).
8. Actuate hand pump until the cylinder is fully extended.
9. Engage the mechanical safety support (6) on the cylinder. Ensure that the lock is securely pinned to the cylinder rod.
10. Pull cab raise/lower selector valve outward and rotate clockwise 1/4 turn to the retracted position to lower the cab until it is locked by the mechanical safety support.
11. Reverse procedure for lowering.
12. Tighten cap screws to specification.

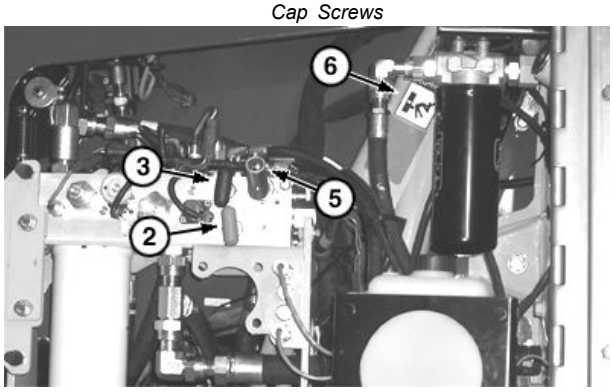
Specification

Cap Screw—Torque	350 N·m
	255 lb-ft



T206852A —UN—01JUN10

Cap Screws



T206851A —UN—01JUN10

Cab Tilt

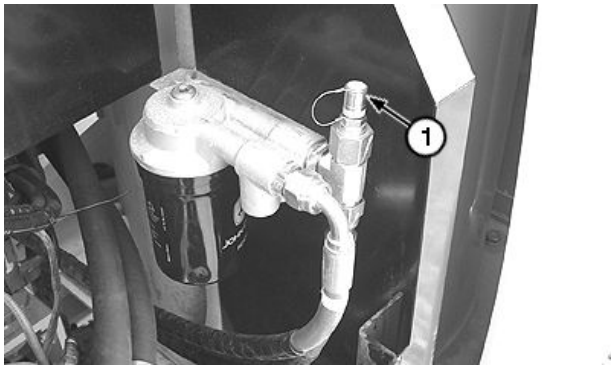
1— Cap Screw (10 used)
2— Cab Tilt/Brake Pump Off (red) Selector Valve
3— Cab Raise/Lower (black) Selector Valve
4— Handle
5— Hand Pump
6— Mechanical Safety Support

AM40430,0000032 -19-03MAY11-1/1

Fluid Sampling Test Ports—If Equipped

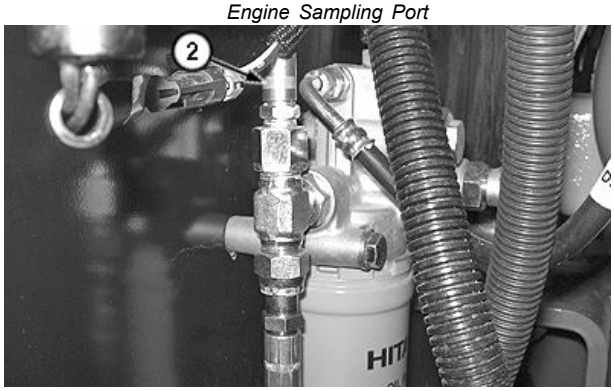
To access the fluid sampling test ports, open the right side engine compartment door.

1— Engine Sampling Port **2— Hydraulic Sampling Port**



TX1000760A —UN—28NOV05

Engine Sampling Port



TX1020296A —UN—08MAR07

Hydraulic Sampling Port

DW90712,00005DA -19-14DEC07-1/1

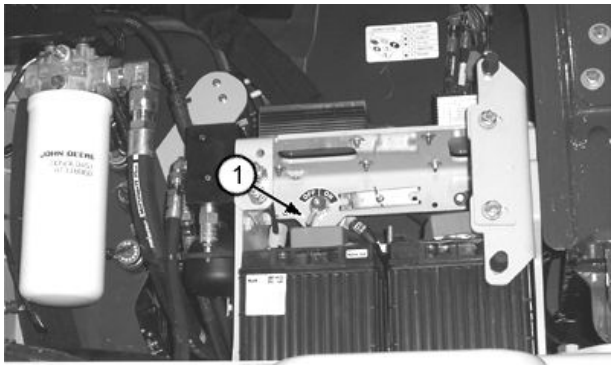
Welding Procedure

IMPORTANT: To avoid electronic component damage, turn battery disconnect switch to OFF position before welding on machine.

1. Turn battery disconnect switch (1) to OFF position.
2. Clamp welding ground clamp as close to point of welding as possible.

IMPORTANT: Before welding on machines with an engine control unit (ECU), protect the ECU from high-current damage as follows:

1. Disconnect ECU-to-vehicle frame ground connection.
2. Disconnect all other connectors from ECU. Also disconnect module connector at injector pump.
3. Connect welder ground close to welding point and make sure ECU and other electrical components are not in the ground path.



T206570A —UN—18JAN05

Battery Disconnect Switch

1— Battery Disconnect Switch

HG31779,0000071 -19-03MAY11-1/1

Checking Fire Extinguisher—If Equipped

IMPORTANT: Charge fire extinguisher after each use.

Check gauge regularly for correct charge. Pointer must be in green zone. If not, see your authorized dealer to get extinguisher charged.

TX,85,RR,A43 -19-04DEC06-1/1

Checking 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. Check color of sight glass (1), to see if receiver/dryer is wet (pink) or dry (blue).
2. If wet (pink), see your authorized dealer within the next 100 machine hours to service receiver/dryer.

1— Sight Glass



T207429A —UN—25JAN05

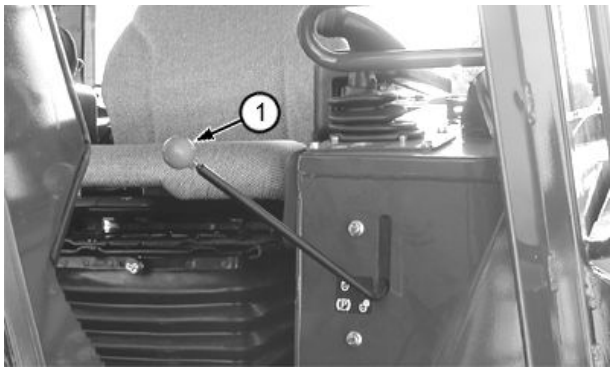
Air Conditioner Sight Glass

AM40430,0000027 -19-29APR11-1/1

Checking Park Lock Start System

CAUTION: Avoid possible injury or death. Be sure all people are away from machine when park lock start checks are performed.

1. Place transmission control lever (TCL) in NEUTRAL position.
2. Move park lock lever (1) to down UNLOCKED position.
3. Turn key switch to start position. Starter must not engage. If engine starts, return park lock lever to up LOCKED position and see your John Deere dealer.
4. Move park lock lever to up LOCKED position.
5. Turn key switch to start position. Starter should engage, turning engine over. If engine does not turn over, see your John Deere dealer.



T198353A —UN—18JAN05

1— Park Lock Lever (unlocked position)

HG31779,000006E -19-03MAY11-1/1

Checking Transmission Start System

CAUTION: Avoid possible injury or death. Be sure all people are away from machine when park lock start checks are performed.

1. With engine running on a level surface, place park lock lever in up LOCKED position.
2. Move transmission control lever (TCL) to forward F or reverse R position.
3. Set engine speed to 1500 rpm.
4. Move park lock lever to down UNLOCKED position.
5. Monitor should display “Return to N” and machine should not move.
6. Move TCL to neutral N position and “Return to N” light should turn off on monitor.

AM40430,0000033 -19-29APR11-1/1

Checking Track Shoe Cap Screw Torque

NOTE: Track shoe bolt torque specifications do not apply to split master link.

Item	Measurement	Specification
750J Track Shoe 3/4 in. Cap Screw	Torque	270 ± 30 N·m 200 ± 20 lb-ft
	Torque Turn	1/3 turn (120°)

Item	Measurement	Specification
850J Track Shoe 3/4 in. Cap Screw	Torque	270 ± 30 N·m 200 ± 20 lb-ft
	Torque Turn	1/3 turn (120°)

Track shoe cap screw torque should be periodically checked. If cap screws do not meet minimum torque specifications, remove shoes and clean mating surfaces of shoes and links before tightening.

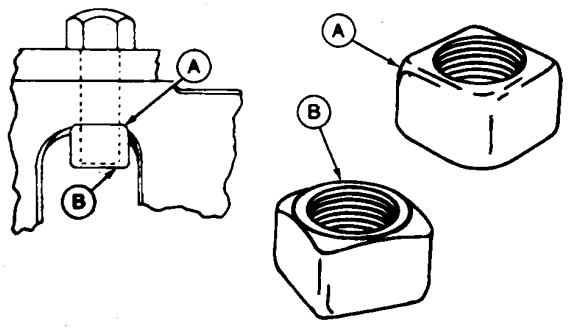
If machine is operated with loose track shoes, cap screw holes in the shoes and links will wear, making it difficult to keep the shoes tight. Loose shoes can also cause hardware failure and loss of shoes.

Install all nuts with rounded edges (A) against the link and chamfered edges (B) away. Be sure nut is properly positioned in link so there is full contact between nut and link.

If cap screws check less than above specification, remove shoes and clean paint or other foreign material from chain and shoe mating surfaces.

Lubricate cap screws and assemble shoes.

Cap screw threads and bearing surface under head must be lubricated with SAE 30 oil.



T6794AM —UN—23FEB89

A—Rounded Edge **B—Chamfered Edge**

TX,85,RR,A47 -19-17FEB05-1/1

Checking Track Shoe Cap Screw Torque—Master Link

If cap screws check less than specification, remove shoe and clean paint or other foreign material from chain and shoe mating surfaces.

Lubricate cap screw threads and bearing surface of cap screw head using PT569 John Deere NEVER-SEEZ® Lubricant or equivalent.

IMPORTANT: DO NOT use impact wrench to start master shoe cap screws to avoid cross-threading.

Use only the torque turn method described below when assembling master track shoe. This method provides the optimum tightness level for this critical area.

Install master shoe on master links and start cap screws by hand to avoid cross-threading.

Tighten master cap screws in a crisscross sequence (A). Repeat sequence a second time. Use same tightening sequence for additional turns.

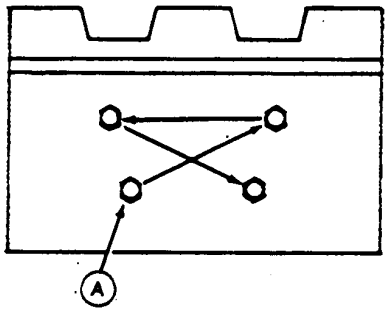
Specification

750J Master Link 3/4 in.

Cap Screw—Torque.....270 ± 30 N·m
200 ± 20 lb-ft

Torque Turn ..... 1/2 turn (180°)

NEVER-SEEZ is a registered trademark of Emhart Chemical Group



T96302 —UN—01NOV88

A—Master Link Tightening Sequence

Specification

850J Master Link 3/4 in.

Cap Screw—Torque.....270 ± 30 N·m
200 ± 20 lb-ft

Torque Turn ..... 1/2 turn (180°)

TX,85,RR,A48 -19-17FEB05-1/1

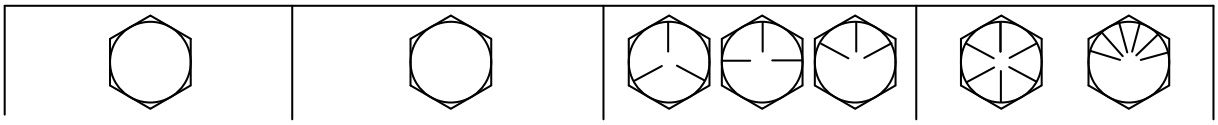
Hardware Torque Specifications

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

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

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.

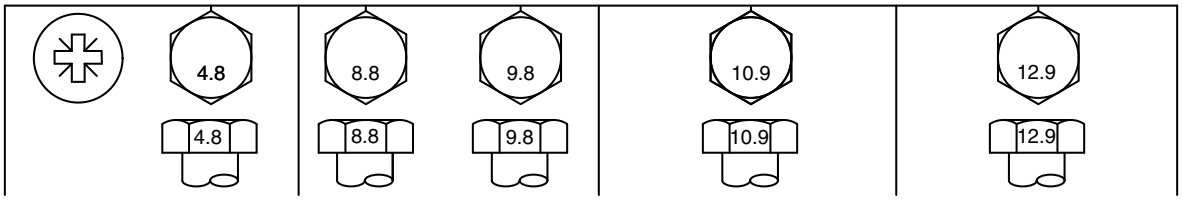
[b] "Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C zinc flake coating.

[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

Metric Bolt and Screw Torque Values

TS1742 —UN—31MAY18



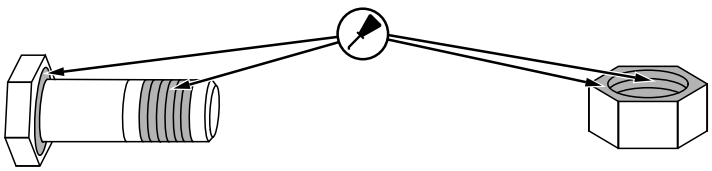
Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497
M24	—	—	—	—	468	345	518	382	666	491	738	544	780	575	864	637
M27	—	—	—	—	683	504	758	559	973	718	1080	797	1139	840	1263	932
M30	—	—	—	—	932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265
M33	—	—	—	—	1258	928	1398	1031	1788	1319	1986	1465	2092	1543	2324	1714
M36	—	—	—	—	1617	1193	1789	1319	2303	1699	2548	1879	2695	1988	2982	2199

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

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

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

TS1741 —UN—22MAY18



[a]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[b]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2 -19-30MAY18-1/1

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.

LB82152,0000546 -19-28SEP10-1/36

❶ Engine Off Checks

LB82152,0000546 -19-28SEP10-2/36

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.**	
	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.
	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.

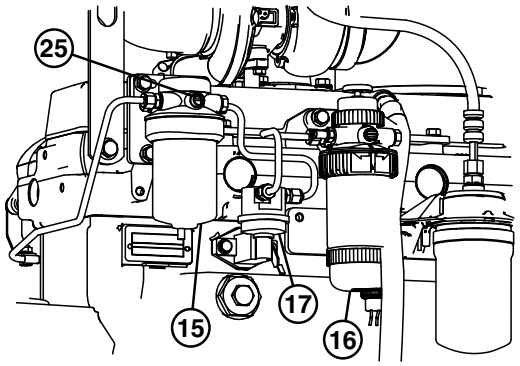
LB82152,0000546 -19-28SEP10-3/36

Start Aid Check	Open right front engine service door.	
	Check position of canister.	
	Inspect plastic line from bottom of starting aid to air intake manifold.	
	Press and release 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.	**YES:** Check complete.
	LOOK: Is dot at 12 o'clock position on the fitting of air intake manifold?	**NO:** Adjust fitting so dot is in correct position. Replace plastic line if kinks are present.

Continued on next page

LB82152,0000546 -19-28SEP10-4/36

Final Fuel Filter Checks



T206264 —UN—10JAN05

15— Final Fuel Filter
16— Water Separator
17— Fuel Supply Pump
25— Final Fuel Filter Bleed Screw

Open drain valve on bottom of final fuel filter (15) to drain sediment.

Slowly open bleed screw (25) on fuel filter and operate hand primer on fuel supply pump (17).

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 supply pump.

FEEL: Is resistance felt when fuel is being pumped?

YES: Check complete.

NO: Clean or replace fuel filter.

LB82152,0000546 -19-28SEP10-5/36

Water Separator Check—750J

Loosen drain knob on bottom of water separator 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.

LB82152,0000546 -19-28SEP10-6/36

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.

LOOK: Are grouser bars worn excessively? Are track shoes bent?

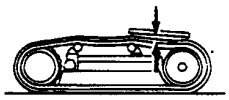
YES: If shoe hardware is loose, remove shoe and clean joint before tightening. If worn or bent, replace.

NO: Check complete.

Continued on next page

LB82152,0000546 -19-28SEP10-7/36

Track Sag, Roller and Idler Leakage Checks



T6513AF —UN—19OCT88

Measure track sag at longest span of unsupported track.

Inspect rollers and front idler.

LOOK: Is track sag between 45—57 mm (1-3/4 — 2-1/4 in.)?

LOOK: Are rollers and idlers free of oil seepage?

YES: Check complete.

NO: Adjust track sag.

NO: Repair or replace roller or idler.

LB82152,0000546 -19-28SEP10-8/36

Battery Disconnect Switch Check



T118722B —UN—01DEC98

NOTE: Battery disconnect switch is located inside of the right rear service 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: Check complete.

NO: Check battery disconnect switch.

LB82152,0000546 -19-28SEP10-9/36

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

LB82152,0000546 -19-28SEP10-10/36

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.

LB82152,0000546 -19-28SEP10-11/36

Horn Check	With key off, push horn button. *LISTEN: Does horn work with key off?*	**YES:** Check complete. **NO:** Check horn circuit.

LB82152,0000546 -19-28SEP10-12/36

Seat Control Checks	Does seat raise and lower easily? Does seat angle change easily? 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:** Check complete. **NO:** Inspect linkage and repair.

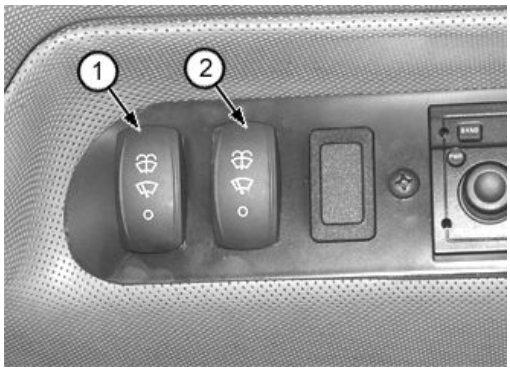
LB82152,0000546 -19-28SEP10-13/36

Reverse Warning Alarm Check	Key switch on, engine off. Put park lock lever down position. Move transmission control lever to reverse. *LISTEN: Does reverse warning alarm sound in reverse?*	**YES:** Check complete. **NO:** Check for voltage at backup alarm. If no voltage is present, calibrate machine.

Continued on next page

LB82152,0000546 -19-28SEP10-14/36

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.

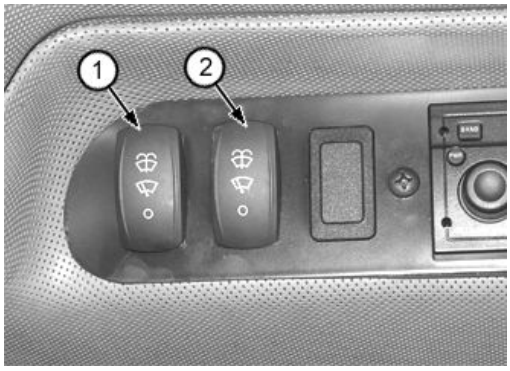
LOOK: Do both front/rear wipers and washer pumps operate?

YES: Check complete.

NO: Check fuse. Washer fluid may be empty.

LB82152,0000546 -19-28SEP10-15/36

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?

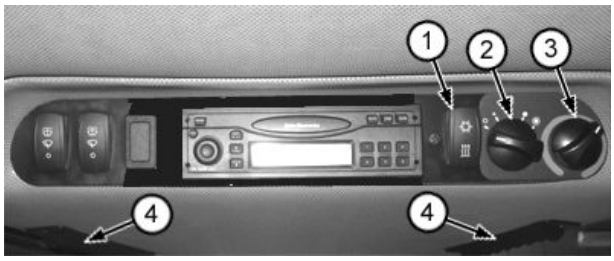
YES: Check complete.

NO: Check fuse.

Continued on next page

LB82152,0000546 -19-28SEP10-16/36

Heater Blower Motor Check—If Equipped



T199304A —UN—16APR04

1— Air Conditioning Switch
2— Blower Switch
3— Temperature Control
4— Air Duct (8 used)

Engine off. Key switch on.

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 if necessary.

NO: Check wiring harness.

LB82152,0000546 -19-28SEP10-17/36

Battery Check

Key switch off.

Push and hold SELECT button until battery volts are displayed.

LOOK: Do battery volts read a minimum of 24 volts?

YES: Check complete.

NO: Check voltage on each battery before recharging.

If one battery will not hold a charge, replace both batteries.

LB82152,0000546 -19-28SEP10-18/36

Monitor Check

Key switch on.

Observe monitor and note changes for first 3 seconds (bulbs, indicators and gauges).

LOOK/LISTEN: Do all lights come on and does alarm sound?
Does the LCD display show John Deere and the model number?
Do all the gauge indicators point to approximately 12 o'clock position?
Is backlighting of gauges on?

After four seconds observe changes in monitor.

LOOK: Do gauge indicators change from 12 o'clock to normal readings?

YES: Check complete.

NO: Check CMU ignition power 5 A fuse.

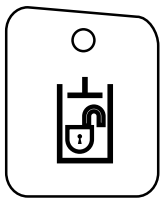
LB82152,0000546 -19-28SEP10-19/36

❷ Engine On Checks

Continued on next page

LB82152,0000546 -19-28SEP10-20/36

Pilot Control Enable Circuit Check



T194312 —UN—11SEP03

Run machine at idle.

Push pilot control enable switch to the LOCKED position to disable the pilot controls.

Move blade control lever to all positions.

LOOK: Do any blade functions operate?

YES: See your authorized dealer.

NO: Continue check.

Push pilot control enable switch to the UNLOCKED position to enable the pilot controls.

Move blade control lever to all positions.

LOOK: Do all blade functions operate?

YES: Check complete.

NO: See your authorized dealer.

LB82152,0000546 -19-28SEP10-21/36

Blade Float Check

Raise front of crawler off ground using blade hydraulics.

Push blade control lever into float detent.

LOOK: Does front of crawler lower to ground?

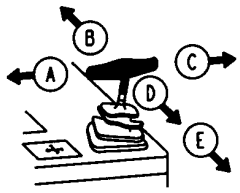
FEEL: Does blade control lever stay in float detent position?

YES: Check complete.

NO: See your authorized dealer.

LB82152,0000546 -19-28SEP10-22/36

Blade Control Lever Check



T8404AC —UN—14FEB95

A—Blade Tilt Right
B—Blade Lift
C—Blade Tilt Left
D—Blade Down
E—Blade Float

Move control lever to each position (A—D) and release.

LOOK/FEEL: Does control lever move to all positions easily and return to neutral when released?

NOTE: Blade control lever will not return to neutral when moved to blade float position (E). Lever must be manually pulled from float position.

YES: Check complete.

NO: See your authorized dealer.

LB82152,0000546 -19-28SEP10-23/36

Blade Hydraulic Control Check

Run engine at slow idle.

Slowly move blade control lever to all positions except blade float detent.

For machines equipped with PAT and IGC, push blade angle buttons on joystick handle to rotate blade clockwise and counterclockwise.

LOOK/FEEL: Do all blade functions operate smoothly, without hesitation?

YES: Check complete.

NO: See your authorized dealer.

Continued on next page

LB82152,0000546 -19-28SEP10-24/36

Transmission Speed Check

Start engine.

Check transmission speed. Transmission speed should be defaulted to 1.6.

LOOK: Is transmission speed defaulted to 1.6?

Increase transmission speed to 3.0.

LOOK: Does transmission speed increase to 3.0?

YES: Check complete.

NO: Calibrate machine.

LB82152,0000546 -19-28SEP10-25/36

Quick-Drop Valve Check (Outside Dozers Only)

Engine at fast idle.

Record time to lower blade to ground from maximum height.

NOTE: Quick-Drop is activated when control lever is in float position.

LOOK: Maximum times:

- Float down Quick-Drop activated — 1.0 sec.

Raise blade after blade has been lowered with Quick Drop valve.

LOOK: Blade must raise immediately.

YES: Check complete.

NO: See your authorized dealer.

LB82152,0000546 -19-28SEP10-26/36

Slow and Fast Idle Check

Run at slow and fast idle and record rpm reading on monitor.

LOOK: Are slow and fast idle displayed correctly on monitor?

Engine—Specification

Slow Idle—Speed	880—910 rpm
Fast Idle—Speed	2255—2285 rpm

YES: Check complete.

NO: See your authorized dealer.

LB82152,0000546 -19-28SEP10-27/36

Air Conditioner Check—If Equipped



T199304A —UN—16APR04

1— Air Conditioning Switch
2— Blower Switch
3— Heater Temperature Control
4— Air Duct (8 used)

Start engine and run at fast idle.

Turn air conditioner switch (1) to on position. On position is up (Snow Flake). Position down is not used for this test.

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.

LB82152,0000546 -19-28SEP10-28/36

Alternator Check

Key switch on.

Start engine.

LOOK: Is ENGINE ALT VOLTS indicator light on?

YES: Check and recharge batteries.

NO: Check complete.

Continued on next page

LB82152,0000546 -19-28SEP10-29/36

Air Restriction Indicator Check



T206395 —UN—21DEC04

Air Restriction Indicator Light

Start engine.

LOOK: Does indicator light come on?

YES: Clean or replace air cleaner elements.

NO: Check complete.

LB82152,0000546 -19-28SEP10-30/36

Transmission Control Lever 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?

YES: Check complete.

NOTE: Transmission control lever shift rate can be set to operator preference. Low has a slower reaction time and high has a quicker reaction time.

NO: See your authorized dealer.

LB82152,0000546 -19-28SEP10-31/36

Decelerator/Brake Pedal and Park Brake Check

Start engine.

CAUTION: Prevent possible injury from unexpected machine braking. Pushing on decel/brake pedal will stop machine abruptly.

Park lock lever down.

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.

Depress decel/brake pedal until spring resistance is felt.

Adjust engine speed to fast idle.

Transmission speed to 3.0.

Transmission control lever in forward position.

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.

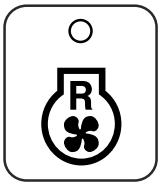
NO: Inspect park brake valve and calibrate machine.

Continued on next page

LB82152,0000546 -19-28SEP10-32/36

Park Brake Valve Leakage Check	Hydrostatic oil must be at operating temperature 66°C (150°F). View in monitor.	
	Adjust engine speed control to slow idle with park lock lever up.	
	LOOK: Observe charge pressure reading on monitor 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. See your authorized dealer.
	LOOK: Do tracks creep or move?	**NO:** Check complete.

LB82152,0000546 -19-28SEP10-33/36

Reverse Fan Check—If Equipped		
	T194319 —UN—11SEP03	
	Press the reverse fan switch to turn on manual mode (reverse engine fan indicator light illuminated).	
	NOTE: Reverse fan function cannot be operated twice within 1 minute. Wait 1 minute before attempting to reverse fan direction again. Fan won't reverse until transmission control lever is moved out of forward.	
	LISTEN/LOOK: Does fan reverse direction and operate at full speed for 15 seconds?	**YES:** Check complete.
	Fan will change directions and operate at normal speed.	**NO:** Verify that function is enabled in CAN Monitor Unit (CMU) machine configuration. See your authorized dealer.

Continued on next page

LB82152,0000546 -19-28SEP10-34/36

Cycle Time Check	Use the CAN Monitor Unit (CMU) or SERVICE ADVISOR™ application to read engine rpm and hydraulic oil temperature. **Specification** Hydraulic Oil—Temperature ..... 57—66°C 135—150°F **Specification** Engine—Speed ..... Fast Idle **Blade Raise—Specification** 750J OSD—Cycle Time ..... 2.8 seconds 750J PAT—Cycle Time ..... 2.9 seconds 850J OSD—Cycle Time ..... 2.6 seconds 850J PAT—Cycle Time ..... 2.3 seconds **Blade Power Down—Specification** 750J OSD—Cycle Time ..... 2.2 seconds 750J PAT—Cycle Time ..... 1.8 seconds 850J OSD—Cycle Time ..... 2.0 seconds 850J PAT—Cycle Time ..... 1.6 seconds **Blade Tilt Left—Specification** 750J OSD—Cycle Time ..... 1.0 seconds 750J PAT—Cycle Time ..... 1.4 seconds 850J OSD—Cycle Time ..... 0.8 seconds 850J PAT—Cycle Time ..... 1.1 seconds **Blade Tilt Right—Specification** 750J OSD—Cycle Time ..... 1.0 seconds 750J PAT—Cycle Time ..... 1.4 seconds 850J OSD—Cycle Time ..... 0.9 seconds 850J PAT—Cycle Time ..... 1.2 seconds **Blade Angle Left—Specification** 750J PAT—Cycle Time ..... 4.0 seconds 850J PAT—Cycle Time ..... 3.8 seconds **Blade Angle Right—Specification** 750J PAT—Cycle Time ..... 4.1 seconds 850J PAT—Cycle Time ..... 4.0 seconds Are cycle times faster than specification?	**YES:** Check complete. **NO:** Check hydraulic pump.

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LB82152,0000546 -19-28SEP10-35/36

Tracking and Maximum Speed Check	**IMPORTANT: Track sag must be at specification and machine must be driven on a level surface for all tracking checks.** Transmission speed at 3.0, transmission control lever in forward position. Depress decel/brake pedal and adjust engine speed to fast idle. *LOOK: Machine speed should increase as engine rpm increases. Tracking should be straight at all speeds.* Repeat check in reverse.	 **YES:** Check complete. **NO:** Calibrate machine.

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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. Notify your supervisor.

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Engine

Symptom	Problem	Solution
Engine Will Not Start or Starts Hard	Fuel tank empty	Check fuel quantity.
	Fuel tank vent pipe plugged	Loosen cap and listen for air rushing into tank. Replace cap.
	Fuel tank shutoff not fully open	Open fuel tank shutoff.
	Water in fuel or water frozen in fuel line	Drain water from fuel tank. Inspect fuel filter(s) for water. Change filter(s).
	Fuel filter(s) plugged	Inspect and replace fuel filter(s).
	Incorrect grade of fuel	Drain fuel tank and add correct fuel.
	Air leak on suction side of fuel system	Check and tighten connection. Check fuel lines for damage. See your authorized dealer.
	Valve clearance	Check and adjust valve clearance.
	Valves sticking or burned	See your authorized dealer.
Engine Surges or Stalls Frequently	Fuel tank cap vent pipe plugged	Remove fuel cap and listen for air rushing into tank. Replace cap.
	Fuel tank shutoff not fully open	Open fuel tank shutoff.
	Incorrect grade of fuel	Drain fuel tank and add correct fuel.
	Water in fuel or water frozen in line	Drain water from fuel tank. Inspect fuel filter(s) for water. Change filter(s).
	Fuel filter(s) plugged	Replace filter(s).
	Air leak on suction side of fuel system	Check and tighten connections. Check fuel lines for damage.
	Fuel pump	Repair or replace fuel pump. See your authorized dealer.
	Fuel return line from injection pump to tank restricted	Disconnect fuel return line from injection pump. Connect a hose to pump and route fuel into a container. If engine now operates normally, return hose is restricted.
	Worn or broken compression rings; cylinder head gasket leaking	See your authorized dealer.
Engine Will Not Start	Engine overheating	Test cooling system. See your authorized dealer.

Continued on next page

Symptom	Problem	Solution
	Injection nozzles	See your authorized dealer.
	Injection pump	See your authorized dealer.
Engine Misses	Air in fuel	Disconnect return hose from leak-off lines. Crank engine and check for air in fuel at leak-off lines. Tighten connections. Check fuel lines for damage.
	Incorrect grade of fuel	Drain fuel tank and add correct fuel.
	Slow idle speed too low	Check slow idle speed. See your authorized dealer.
	Fuel pump	Repair or replace fuel pump. See your authorized dealer.
	Engine overheats	Test cooling system. See your authorized dealer.
	Incorrect valve clearance	Check and adjust valve clearance. See your authorized dealer.
	Bent push rods	Inspect and replace. See your authorized dealer.
	Valve sticking or burned	Disconnect fuel injection pump solenoid wire connector.
		Crank engine and listen for air leaking past valves or an uneven starter speed. See your authorized dealer.
	Cylinder head gasket leaking	See your authorized dealer.
	Worn or broken compression rings	See your authorized dealer.
	Injection nozzles	Test nozzles. See your authorized dealer.
	Injection pump	Remove and test injection pump. See your authorized dealer.
Engine Does Not Develop Full Power	Fuel tank cap vent pipe plugged	Remove fuel cap and listen for air rushing into tank. Replace fuel cap.
	Fuel tank shutoff not fully open	Open fuel tank shutoff.
	Air intake system restricted	Check air filter elements and air filter restriction indicator. See Maintenance—As Required chapter.

Continued on next page

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Symptom	Problem	Solution
	Incorrect grade of fuel	Drain fuel tank and add correct fuel. See Fuels and Lubricants chapter.
	Tracks too tight	Check and adjust track tension.
	Excess drag in brakes	Check service and brake drag. See your authorized dealer.
	Fast idle speed set too low	Check and adjust fast idle. See your authorized dealer.
	Fuel filter plugged	Change filter.
	Fuel line restricted	Check for pinched or kinked lines or debris in lines. Route return line into separate container. If engine operation returns to normal, repair fuel return system lines.
	Air leak in intake manifold	Test air intake system for leaks. See your authorized dealer.
	Incorrect valve clearance	Check and adjust valve clearance. See your authorized dealer.
	Fuel transfer pump	See your authorized dealer.
	Excessive restriction in hydraulic system or control valve unloading valve malfunction	See your authorized dealer.
	Turbocharger	Remove air intake hose and exhaust elbow. Leading edge of compressor vanes must be sharp and straight. Spin compressor wheel and listen for noisy bearings. Turbine and compressor wheels must not rub in housing.
	Muffler restricted	Run engine without muffler. If engine operation is now normal, install a new muffler.
	Low compression	Disconnect fuel injection pump solenoid wire connector. Crank engine and listen for air leaking past valves or an uneven starter speed. Start engine and observe blow-by from vent tube. See your authorized dealer.
	Injection nozzles	Remove and test nozzles. See your authorized dealer.
	Incorrect camshaft timing	Check timing. See your authorized dealer.

Continued on next page

Symptom	Problem	Solution
	Injection pump	Remove and test pump. See your authorized dealer.
Engine Emits Excessive Black or Gray Exhaust Smoke	Restricted air filter	Check air filter restriction indicator and air filters. See Maintenance—As Required chapter. Replace.
	Incorrect grade of fuel	Drain fuel tank and add correct fuel. See Fuels and Lubricants chapter.
	Air leak between turbocharger and manifold	Test air intake system for leaks. See your authorized dealer.
	Excessive fuel delivery	Remove and test fuel injection pump. See your authorized dealer.
	Injection nozzles	Remove and test nozzles. See your authorized dealer.
	Turbocharger	Remove air intake hose and exhaust elbow. Leading edge of compressor vanes must be sharp and straight. Spin compressor wheel and listen for noisy bearings. Turbine and compressor wheels must not rub in housing.
Engine Emits Excessive Blue or White Smoke	Cranking speed too slow	Check batteries and connections.
	Incorrect grade of fuel	Drain fuel tank and add correct fuel. See Fuel and Lubricants chapter.
	Engine running too cold	Check thermostats. See your authorized dealer.
	Injection nozzles	Remove and test nozzles. See your authorized dealer.
	Low compression	Disconnect fuel injection pump solenoid wire connector. Crank engine and listen for air leaking past valves. Start engine and observe blow-by from vent tube. See your authorized dealer.
	Excessive wear in liners and/or piston rings stuck	Inspect and repair. See your authorized dealer.
	Worn valve guides	Inspect and repair. See your authorized dealer.
Slow Acceleration	Incorrect grade of fuel	Drain fuel tank and add correct fuel. See Fuels and Lubricants chapter.

Continued on next page

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Symptom	Problem	Solution
	Fuel injection pump	Remove and test fuel injection pump. See your authorized dealer.
	Injection nozzles	Remove and test nozzles. See your authorized dealer.
Detonation	Starting aid solenoid stuck open	Inspect and repair. See your authorized dealer.
	Incorrect injection pump advance	Repair advance. See your authorized dealer.
Abnormal Engine Noise	Low or incorrect engine oil	Add correct oil.
	Start aid solenoid stuck	Remove start aid can from bracket and restart engine.
	Engine oil diluted with fuel	Inspect engine oil. Inspect fuel pump spindle, seal, and housing.
	Turbocharger	Remove air intake hose and check compressor wheel clearance between housing and wheel. Spin compressor wheel; check for worn bearings. Repair turbocharger.
	Excessive valve clearance	Adjust valve clearance. See Maintenance—Every 1000 Hours chapter.
	Bent push rods	Replace. See your authorized dealer.
	Worn rocker arm shafts	Replace. See your authorized dealer.
	Loose connecting rod caps	Inspect and tighten connecting rod cap screws. See your authorized dealer.
	Loose main bearing caps	Inspect and tighten main bearing cap screws. See your authorized dealer.
	Worn main bearing	Replace bearings. See your authorized dealer.
	Worn connecting rod bearings	Replace bearings. See your authorized dealer.
	Incorrect camshaft timing	Check camshaft timing. See your authorized dealer.
	Scored piston	Replace. See your authorized dealer.
	Worn piston pin bushings and pins	Replace pins and bushings. See your authorized dealer.

Continued on next page

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Symptom	Problem	Solution
Low Oil Pressure	Low oil level	Add oil.
	Wrong viscosity oil or oil diluted with diesel fuel	Change oil.
	Oil pressure gauge or sensor	Test gauge and sensor. See your authorized dealer.
	Oil pressure regulating valve	Replace or adjust regulating valve. See your authorized dealer.
	Turbocharger shaft seal leaking	Inspect and repair. See your authorized dealer.
	Plugged oil pump intake screen	Inspect and clean. See your authorized dealer.
	Loose oil pump drive gear	Inspect and repair. See your authorized dealer.
	Worn oil pump gear or housing	Remove, inspect and repair. See your authorized dealer.
	Excessive main bearing clearance	Replace main bearings. See your authorized dealer.
	Excessive connecting rod bearing clearance	Replace connecting rod bearings. See your authorized dealer.
	Piston cooling orifice missing	Inspect piston cooling orifices. See your authorized dealer.
	Leakage at internal oil passage	Check all possible internal leakage paths. Repair. See your authorized dealer.
	Cracked cylinder block	Replace cylinder block. See your authorized dealer.
High Oil Pressure	Wrong viscosity oil (too thin)	Check for antifreeze in oil. Change oil.
	Oil pressure gauge or sender	Test gauge and sender. See your authorized dealer.
	Oil pressure regulating valve	Repair or adjust regulating valve. See your authorized dealer.
Engine Overheats	Low coolant level	Fill cooling system and check for leaks.
	Low engine oil level	Add oil.
	Fan on backwards, damaged, or wrong fan installed	Check for correct fan installation.

Continued on next page

Symptom	Problem	Solution
	Radiator or oil cooler dirty, plugged, or fins damaged	Check air flow. Clean radiator. Straighten fins.
	Radiator shroud missing, damaged, or baffles missing	Inspect. Repair or replace.
	Engine overloaded	Reduce load.
	Incorrect grade of fuel	Drain fuel tank and add correct fuel.
	Radiator cap	Replace cap.
	Fuel gauge or sender	Test, repair, or replace. See your authorized dealer.
	Thermostats (stuck)	Inspect thermostats. See your authorized dealer.
	Thermostats missing	Install thermostats. See your authorized dealer.
	Cooling system coated with lime deposits	Flush cooling system.
	Excessive brake drag	Check brake drag. See your authorized dealer.
	Water pump	Repair. See your authorized dealer.
	Excessive fuel delivery	Remove injection pump. Check for proper fuel delivery. Adjust. See your authorized dealer.
	Scored piston	Replace piston. See your authorized dealer.
	Combustion leak into cooling system.	Remove radiator cap. Start engine and check for bubbles in radiator.
Engine Runs Cold	Temperature gauge or sender	Test gauge and sender. See your authorized dealer.
	Thermostat stuck open	Replace thermostat. See your authorized dealer.
Oil in Coolant or Coolant in Oil	Leaking heat exchanger	Air test and repair or replace.
	Leaking cylinder head gasket	Replace gasket. See your authorized dealer.
	Leaking cylinder liner packings	Replace packings. See your authorized dealer.
	Cracked cylinder liner	Replace liner. See your authorized dealer.

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Symptom	Problem	Solution
	Cracked cylinder block	Replace cylinder block. See your authorized dealer.
Excessive Fuel Consumption	Air system restricted	Check filter restriction indicator and air filters. Replace. See Maintenance—As Required chapter.
	Leakage in fuel system	Inspect and repair.
	Incorrect grade of fuel	Drain and refill with correct fuel.
	Turbocharger	Remove air intake hose and exhaust elbow. Leading edge of compressor vanes must be sharp and straight. Spin compressor wheel to check for rough bearings. Turbine and compressor wheels must not rub in housing.
	Worn injection nozzles	Test nozzles. Repair. See your authorized dealer.
Turbocharger Excessively Noisy or Vibrates	Bearings not lubricated	Insufficient oil pressure. Check for restricted turbocharger oil line.
	Air leak in engine, intake or exhaust manifold	Inspect and repair. See your authorized dealer.
	Incorrect clearance between turbine wheel and turbine housing	Remove exhaust elbow and air inlet hose. Inspect and repair.
	Broken blades on turbine	Remove exhaust elbow and air inlet hose. Inspect and repair.
Oil Dripping from Turbocharger Adapter	Damaged or worn bearings and/or worn seals	Inspect compressor and turbine wheel for damaged blades. Check for proper engine service intervals or dirt entering engine.
	Excessive crankcase pressure	Check for plugged vent tube. Clean.
	Carbon build-up in turbocharger oil return line where line passes exhaust manifold	Remove line. Inspect and clean.
Excessive Drag in Turbocharger Rotating Members	Carbon build-up behind turbine wheel caused by combustion deposits	Inspect and clean. See your authorized dealer.

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Symptom	Problem	Solution
	Dirt build-up behind compressor wheel caused by air intake leaks	Inspect and repair. See your authorized dealer.
	Bearing seizure of dirty or worn bearings caused by excessive temperature, unbalanced wheel, dirty oil, oil starvation, or insufficient lubrication	See your authorized dealer.

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Electrical System

Symptom	Problem	Solution
Nothing Works	Power circuit components	See your authorized dealer.
	Battery undercharged or dead	See your authorized dealer.
	Disconnect switch	Check switch knob position.
	Start fuse failure	Replace fuse.
	Battery cables making poor connections	Clean cable connections at battery and starter solenoid.
Starter Will Not Crank Engine	Battery undercharged or dead	See your authorized dealer.
	Battery cables making poor connection	Clean connections at battery, starter, and ground to frame.
	Starter relay problem	See your authorized dealer.
	Starter solenoid problem	See your authorized dealer.
	Starter motor problem	See your authorized dealer.
	Starter motor pinion stuck in flywheel gear	Repair starter motor. See your authorized dealer.
	Key switch	See your authorized dealer.
	Major engine problem	See your authorized dealer.
Engine Cranks Slowly	Batteries undercharged	See your authorized dealer.
	Starter armature bearings worn causing starter "drag"	Repair or replace starter. See your authorized dealer.
	Battery cable connections loose or corroded	Clean and/or tighten connections.
Starting Motor Turns, but Engine Will Not Crank	Starter pinion not engaging flywheel ring gear	See your authorized dealer.
	Starter pinion or flywheel gear teeth broken	See your authorized dealer.
Starting Motor Continues to Run after Engine Starts	Starter solenoid stuck	See your authorized dealer.
	Starter not disengaging	See your authorized dealer
	Starter relay stuck	See your authorized dealer.
	Key switch problem	See your authorized dealer.
	Wiring harness shorted	See your authorized dealer.

Continued on next page

Symptom	Problem	Solution
Battery Using Too Much Water	Battery being overcharged	See your authorized dealer.
	High ambient temperature	Refill with distilled water.
	Cracked battery case	Replace battery. Install hold-down correctly.
Low Battery Output	Low water level	See Battery Using Too Much Water in this group.
	Dirty or wet battery top, causing discharge	Clean battery and wipe dry.
	Corroded or loose battery cable ends	Clean and tighten cable end clamps. Recharge battery. If machine has two batteries, recharge separately.
	Broken or loose battery posts	Wiggle posts by hand. If posts are loose or will turn, replace battery. If machine has two batteries, replace both batteries.
	Loose fan/alternator belt or worn pulleys	Inspect belt or pulley. Adjust or replace as necessary.
Starter Solenoid Chatters	Poor connections at batteries or starter	Clean connections.
	Low battery charge	Recharge or replace batteries.
	Starter solenoid "hold-in" windings open	See your authorized dealer.
Engine Cranks but Does Not Start	Key switch problem	See your authorized dealer.
	Engine circuit electrical problem	Check Diagnostic Trouble Codes
	Wiring harness problem	See your authorized dealer.
Start Aid Does Not Work	Empty or misaligned start aid can	A click, not a hiss, is heard when start aid button is pushed. Replace or adjust can.
	Start aid switch	See your authorized dealer.
	Start aid solenoid	See your authorized dealer.
Noisy Alternator	Start aid solenoid	See your authorized dealer.
	Worn drive belt	Inspect and replace.
	Pulley misaligned	Adjust alternator mount.

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Symptom	Problem	Solution
	Alternator bearing worn	Loosen alternator belts. Turn pulley by hand. If any roughness is felt, repair alternator.
	Internal alternator failure	See your authorized dealer.
Voltage Indicator Light Remains On	Loose or glazed alternator belt	Check belt. Replace if glazed; tighten if loose.
	Engine rpm low	Raise engine rpm. If light remains on, see your authorized dealer.
	Excessive electrical load from added accessories	Remove accessories or install higher output alternator.
	Loose or corroded electrical connections on battery, ground strap, starter or alternator	Inspect, clean, or tighten electrical connections.
	Alternator Excition Diode	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.
	Alternator problem	See your authorized dealer.
	Display monitor problem	See your authorized dealer.
Fuel Gauge Does Not Work	Fuse	Replace fuse.
	Fuel gauge problem	See your authorized dealer.
	Fuel gauge sender problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.
Hydraulic Oil Filter Restriction Light Does Not Work, Key On, Engine Off	Wiring harness or bulkhead connector	See your authorized dealer.
	Hydraulic oil filter restriction switch	See your authorized dealer.
	Bulb or bulb socket	See your authorized dealer.
Transmission Oil Filter Restriction Indicator Light Does Not Work, Key On, Engine Off	Bulb	Replace bulb.
	Wiring harness or bulkhead connector	See your authorized dealer.
	Transmission oil filter restriction switch	See your authorized dealer.
Hydraulic Fan Oil Filter Restriction Indicator Light Does Not Work, Key On, Engine Off	Bulb	Replace bulb.
	Wiring harness or bulkhead connector	See your authorized dealer.

Continued on next page

Symptom	Problem	Solution
	Transmission return filter restriction switch	See your authorized dealer.
Transmission Oil Filter Restriction Indicator Light Stays On All the Time	Wiring harness or connection at bulk head connector	See your authorized dealer.
	Filter	Remove, inspect and replace.
	Pin in filter housing	Make sure pin is not stuck against switch.
Hydraulic Oil Filter Restriction Indicator Light Stays On All the Time	Restricted hydraulic oil filter	Replace filter.
	Hydraulic oil filter restriction switch	See your authorized dealer.
Hydraulic Fan Oil Filter Restriction Indicator Light Stays On All the Time	Wiring harness or connection at bulk head connector	See your authorized dealer.
	Filter	Remove, inspect and replace.
	Pin in filter housing	Make sure pin is not stuck against switch.
Monitor Does Not Work	Monitor fuse	Replace fuse.
	Wiring harness	See your authorized dealer.
Voltage Indicator Indicates Low Charge	Regulator	See your authorized dealer.
	Wiring harness or connectors	See your authorized dealer.
Transmission Oil Temperature Gauge Always Indicates HOT	Gauge	See your authorized dealer.
	Sender	See your authorized dealer.
	Wiring harness	See your authorized dealer.
Engine Oil Pressure Gauge Always Indicates HIGH	Wire harness or bad connection at bulkhead connector	See your authorized dealer.
	Indicator	See your authorized dealer.
	Sender	See your authorized dealer.
	Wiring harness	See your authorized dealer.
	High oil viscosity	Drain and add correct oil.
Engine Oil Pressure Indicator Indicates Low	Wiring harness	See your authorized dealer.
	Sender	See your authorized dealer.

Continued on next page

Symptom	Problem	Solution
	Low oil level	Stop engine. Check level.
	Low oil viscosity	Drain and add correct oil.
Transmission Oil Pressure Indicator Reads HOT	Gauge	See your authorized dealer.
	Sender	See your authorized dealer.
Horn Does Not Sound	Wiring harness	See your authorized dealer.
	Horn	See your authorized dealer.
	Horn fuse	See your authorized dealer.
	Horn relay	See your authorized dealer.
	Horn switch	See your authorized dealer.
Reverse Alarm Does Not Sound	Wiring harness	See your authorized dealer.
	Reverse alarm	See your authorized dealer.
Front or Rear Wiper Does Not Work	Wiper fuse	Replace fuse.
	Wiper switch problem	See your authorized dealer.
	Wiper motor problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.
Defrost Fan Motor Does Not Work	Fuse	Replace fan fuse.
	Fan switch problem	See your authorized dealer.
	Fan motor resistor problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.
Blower Motor Does Not Work	Fan motor switch problem	See your authorized dealer.
	Fan motor resistor problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.
Cab Work Lights Do Not Operate	Fuse or Circuit breaker	Replace fuse or reset breaker.
	Light switch problem	See your authorized dealer.
	Cab work light relay problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.

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TX,100,RR4834 -19-04DEC06-5/6

Symptom	Problem	Solution
Driving Lights Do Not Work	Fuse or Circuit breaker	Replace fuse or reset breaker.
	Driving light switch problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.
Dome Light Does Not Work	Bulb	Replace bulb.
	Fuse	Replace fuse.
	Dome light switch problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.

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Hydraulic System

Symptom	Problem	Solution
Blade Lifts and/or Blade Tilts Too Slowly	Cold oil	Allow oil to warm up.
	Oil viscosity	Use correct oil.
	Wrong engine speed (too slow)	Check speed control. Check engine speeds. (See Miscellaneous—Machine.)
	System relief valve stuck open	See your authorized dealer.
	Excessive internal leakage in cylinders or control valve circuits	Check components for excessive leakage.
	Air leak in pump suction line	Inspect. Repair.
	Suction line to hydraulic pump restricted	Inspect. Repair.
	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.
	System relief valve poppet stuck open or not closing after start-up	See your authorized dealer.
	Failed hydraulic pump drive shaft or internal pump failure	See your authorized dealer.
	Quick-drop spool stuck in open position	See your authorized dealer.
Blade Drifts Down or Tilt Cylinder Extends under Load	Leaking hydraulic oil lines	Inspect. Repair.
	Failed cylinder packings or O-ring	See your authorized dealer.
	Control valve rod end relief cartridge (blade) leaking or relief plug seals leaking (tilt) or control valve spool worn	See your authorized dealer.
	Quick-drop valve spool stuck or leaking	See your authorized dealer.
Blade Will Not Penetrate (Lift Cylinders Lift Up under Load)	Leaking hydraulic oil lines	Inspect. Repair.
	Blade control valve head-end relief cartridge or O-rings leaking	See your authorized dealer.
	Leaking cylinder packings or O-rings leaking	See your authorized dealer.
	Control valve spool worn	See your authorized dealer.
	Quick drop spool stuck in open position	See your authorized dealer.
Blade Hard to Control	Front idler loose on side frames	Adjust front idler to side frame clearance. See Miscellaneous—Machine.

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Symptom	Problem	Solution
Blade Drops as Control Lever Is Slowly Moved from Hold to Raise Position with Engine at Low Speed	Control valve lift check poppet damaged or leaking	See your authorized dealer.
Control Lever Will Not Remain in Float Position	Pilot controller	See your authorized dealer.
Pump Excessively Noisy	Cold oil	Allow unit to warm up.
	Low oil level	Check, add oil.
	Oil viscosity	Change oil to correct viscosity oil.
	System relief valve set too low	See your authorized dealer.
	Intake hose to hydraulic pump restricted	See your authorized dealer.
	Hydraulic pump failed	See your authorized dealer.
	Low oil level	Check, correct.
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.
	System relief set too low	See your authorized dealer.
	Oil lines damaged, causing excessive internal restriction	Inspect, repair.
Hydraulic Oil Foams	Water in oil	Inspect oil. Change.
	Using wrong oil	Inspect. Change oil.
	Damaged hydraulic oil lines	Inspect. Change.
	Air leak in suction line to hydraulic pump or pump shaft seal leaking	Inspect. Repair.
Blade Drops Slowly, when Solenoid Is Actuated, on Quick-Drop Valve Equipped Machine (Quick-Drop Valve Is Not Used on All Hydraulic Dozer Machines)	No electrical power to solenoid	See your authorized dealer.
	Quick-drop valve spool stuck in closed position	See your authorized dealer.
	Solenoid does not work	See your authorized dealer.

TX,100,RR4795 -19-12FEB07-2/2

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.
Hydraulic Fan 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.
	Damaged oil cooler fins	See your authorized dealer.
	Failed sensor or wiring	See your authorized dealer.
	Fan installed backwards	See your authorized dealer.
Low Transmission Oil Pressure (Filter Restriction Indicator Light May or May Not Be On)	Low oil level	Check. Add oil.
	Failed coupler between hydrostatic pumps	See your authorized dealer.
	Failed engine coupler	See your authorized dealer.
	Failed park brake solenoid	See your authorized dealer.
Crawler Will Not Move	Park lock switch	See your authorized dealer.
	Transmission problem	See your authorized dealer.
	Park brake problem	See your authorized dealer.
Crawler Mistracks	Left and right track sag not adjusted the same	Adjust track sag to specifications.
	Machine out of calibration	See your authorized dealer.
	Low charge pressure	See your authorized dealer.
	Failed motor sensor	See your authorized dealer.

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Air Conditioning

Symptom	Problem	Solution
Air Conditioning System Does Not Operate	Accessory relay	See your authorized dealer.
	Fuse	Replace fuse.
	Fan motor switch problem	See your authorized dealer.
	Fan motor resistor problem	See your authorized dealer.
	Fan motor problem	See your authorized dealer.
	A/C Freeze control switch problem	See your authorized dealer.
	Wiring harness problem	See your authorized dealer.
	Temperature control switch problem	See your authorized dealer.
	Low pressure switch	See your authorized dealer.
	High pressure switch	See your authorized dealer.
	Compressor clutch coil	See your authorized dealer.
	Relay	See your authorized dealer.
	Circuit breaker	See your authorized dealer.
	Condenser fan motor	See your authorized dealer.
	Wiring harness failure	See your authorized dealer.

05T,100,C171 -19-04DEC06-1/1

Integrated Grade Control (IGC) System— If Equipped

NOTE: For diagnosing general hydraulic symptoms, see Hydraulic System in this section.

Symptom	Problem	Solution
All Blade Functions Do Not Operate in Manual or Auto Modes	Blown Fuse	Check optional powerport 10-amp fuse F16 and EHC switched power 10-amp fuse F103. Replace if necessary.
	Pilot Control Enable Switch Malfunction	See your authorized dealer.
	Relay K102 Malfunction	See your authorized dealer.
	Wiring Is Disconnected or Shorted	See your authorized dealer.
	Hydraulic Malfunction	See Hydraulic System diagnostics in this section.
	Electro-Hydraulic Controller (EHC) Malfunction	See your authorized dealer.
All Blade Functions Operate Normally in Manual Mode, But Not in Auto Mode	Poor Reception From Satellite or From Other Guidance Equipment	Consult documentation of supplier's grade control equipment. If problem cannot be resolved, see your authorized dealer.
	Blown Fuse	Check fuses F101, F104, F105, and F106. Replace if necessary.
	Wiring Disconnected or Shorted	See your authorized dealer.
	Relay (K101) Malfunction	See your authorized dealer.
	IGC On/Off Switch Malfunction	See your authorized dealer.
	CAN Termination Resistor Missing or Malfunctioning	See your authorized dealer.
	Grade Control Supplier's Equipment Malfunctioning	See your authorized dealer.
	Electro-Hydraulic Controller (EHC) Malfunction	See your authorized dealer.
All Blade Functions Operate Normally in Auto Mode, But Not in Manual Mode	IGC On/Off Switch Malfunction	See your authorized dealer.
	Electro-Hydraulic Controller (EHC) Malfunction	See your authorized dealer.
Blade Lift and Tilt Operate Normally in Auto Mode, But Not in Manual Mode	CAN Joystick Module Malfunction	See your authorized dealer.
	Electro-Hydraulic Controller (EHC) Malfunction	See your authorized dealer.
Blade Lift and Tilt Operate Normally, But Blade Angle Does Not	Wiring Disconnected or Shorted	See your authorized dealer.

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Symptom	Problem	Solution
	Blade Angle Switch Malfunction	See your authorized dealer.
	Hydraulic Malfunction	See Hydraulic System diagnostics in this section.
	Blade Angle Actuator Malfunction	See your authorized dealer.
	Electro-Hydraulic Controller (EHC) Malfunction	See your authorized dealer.
Blade Response Is Not Smooth	Valve Calibration or Valve Offset and Gain Not Set Correctly (Auto Mode Only)	Perform valve calibration procedure or adjust valve offset and gain procedures per grade control supplier's instructions. If problem cannot be resolved, see your authorized dealer.
	Low Hydraulic Oil Level	Check hydraulic oil level and add oil if necessary. See Transmission and Hydraulic Reservoir Oil in Section 3-1.
	CAN Termination Resistor Missing or Malfunctioning (Manual Mode Only)	See your authorized dealer.
	Wiring to Affected Electro-Hydraulic Actuator Has Intermittent Connection	See your authorized dealer.
	Actuator Spool Sticking or Actuator Solenoid Malfunctioning	See your authorized dealer.
	Pump Load Sense Not Set Correctly or Load Sense Spool Sticking	See your authorized dealer.
	Control Valve Load Sense Relief Valve Sticking	See your authorized dealer.
All Blade Functions Are Slow or Sluggish	Valve Calibration or Valve Offset and Gain Not Set Correctly (Auto Mode Only)	Perform valve calibration procedure or adjust valve offset and gain procedures per grade control supplier's instructions. If problem cannot be resolved, see your authorized dealer.
	Pump Load Sense Not Set Correctly or Load Sense Spool Sticking	See your authorized dealer.
	Control Valve Load Sense Relief Valve Sticking	See your authorized dealer.
	Hydraulic Malfunction	See Hydraulic System diagnostics in this section.
Blade Response Is Too Fast	Valve Calibration or Valve Offset and Gain Not Set Correctly (Auto Mode Only)	Perform valve calibration procedure or adjust valve offset and gain procedures per grade control supplier's instructions. If problem cannot be resolved, see your authorized dealer.
	Pump Load Sense Not Set Correctly or Load Sense Spool Sticking	See your authorized dealer.

Continued on next page

Symptom	Problem	Solution
	Control Valve Load Sense Relief Valve Sticking	See your authorized dealer.
Blade Moves Quickly (Jumps) to One Side, Then Slowly Comes Back on Grade	Valve Calibration or Valve Offset and Gain Not Set Correctly (Auto Mode Only)	Perform valve calibration procedure or adjust valve offset and gain procedures per grade control supplier's instructions. If problem cannot be resolved, see your authorized dealer.
	Wiring to Affected Electro-Hydraulic Actuator Has Intermittent Connection	See your authorized dealer.
	Actuator Spool Sticking or Actuator Solenoid Malfunctioning	See your authorized dealer.
Waves in Graded Surface	Poor Reception From Satellite or From Other Guidance Equipment (Auto Mode Only)	Consult documentation provided by the grade control supplier. If problem cannot be resolved, see your authorized dealer.
	Valve Calibration or Valve Offset and Gain Not Set Correctly (Auto Mode Only)	Perform valve calibration procedure or adjust valve offset and gain procedures per grade control supplier's instructions. If problem cannot be resolved, see your authorized dealer.
	Grade Control Supplier's Equipment Malfunctioning (Auto Mode Only)	Consult documentation provided by the grade control supplier. If problem cannot be resolved, see your authorized dealer.
	Wiring to Affected Electro-Hydraulic Actuator Has Intermittent Connection	See your authorized dealer.
	Actuator Spool Sticking or Actuator Solenoid Malfunctioning	See your authorized dealer.

OUO1010,000087B -19-22JUL10-3/3

Miscellaneous—Storage

Prepare Machine for Storage

IMPORTANT: Avoid machine damage, do not use biodiesel during machine storage. When using biodiesel blends, switch to petroleum diesel for long term 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 blends up to and including B20, it is recommended that biodiesel be used within three 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 long-term 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 air cleaner.

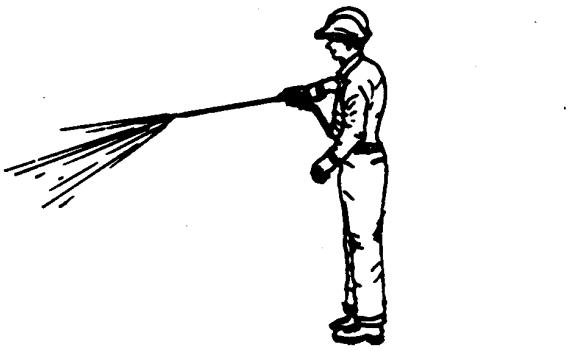
IMPORTANT: High pressure washing greater than 1379 kPa (13.8 bar) (200 psi) can damage freshly painted finishes. Paint should be allowed to air dry for 30 days minimum after receipt of machine before cleaning parts or machines with high pressure. Use low pressure wash operations until 30 days have elapsed.

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.

LB82152,0000558 -19-22JUL10-1/1

Avoid Track Damage

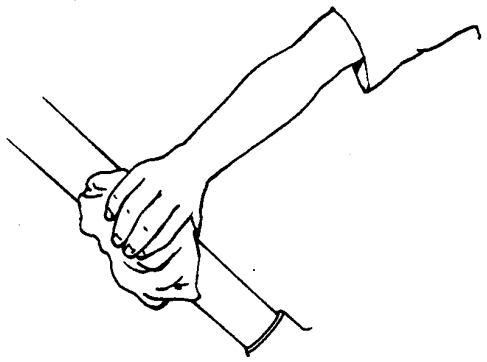
IMPORTANT: Avoid machine damage. If machine is equipped with a sealed and lubricated track, avoid water being forced between the plastic pins and rubber plugs while washing machine with pressure washer.

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

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.

VD76477,00016A3 -19-24FEB14-1/2

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 five minutes. Do not run at fast or slow idle.

    - If engine fails to start or runs poorly after starting, change fuel filter(s). Bleed fuel system.
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. Turn key switch to OFF.
15. Apply LPS 3 Rust Inhibitor to exposed cylinder rod areas.



T6181AU —UN—18OCT88

Check Oil on Dipstick

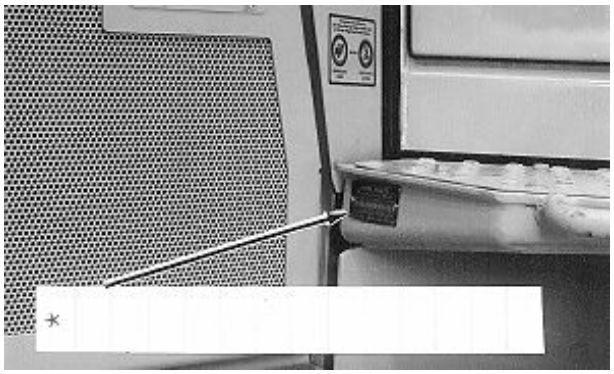
VD76477,00016A3 -19-24FEB14-2/2

Miscellaneous—Machine Numbers

Record Product Identification Number (PIN)

Purchase Date

NOTE: Make sure to record all 13 digits of the PIN number.*



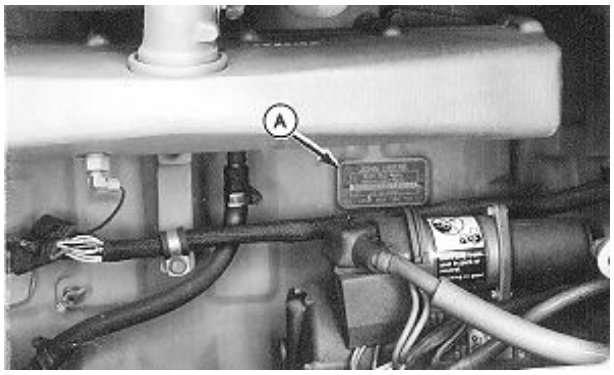
T8432AC —UN—02MAR95

TX,110,RR5066 -19-04DEC06-1/1

Record Engine Serial Number

Engine Serial Number (A)

A—Engine Serial Number Plate



T8432AD —UN—02MAR95

TX,110,RR5067 -19-31MAR95-1/1

Keep Proof of Ownership

1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:
   - Mark your machine with your own numbering system
   - Take color photographs from several angles of each machine

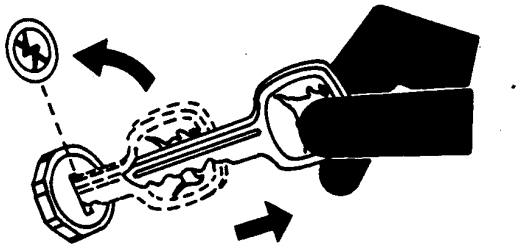


TS1680 —UN—09DEC03

DX,SECURE1 -19-18NOV03-1/1

Keep Machines Secure

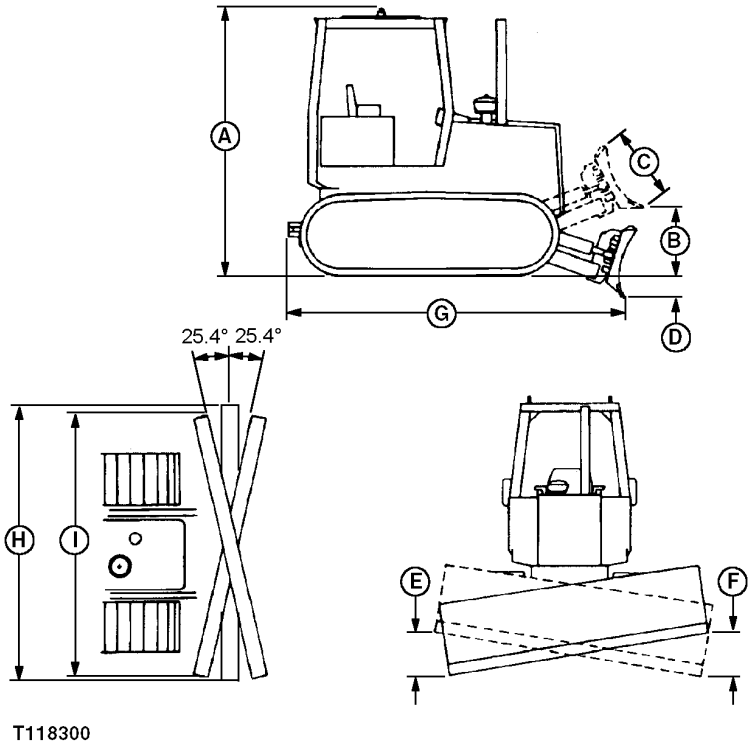
1. Install vandal-proof devices.
2. When machine is in storage:
   - Lower equipment to the ground
   - Set wheels to widest position to make loading more difficult
   - Remove any keys and batteries
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When 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

750J 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	3099 mm 122 in.
B—Blade	Height	1194 mm 47 in.
C—Blade Lift	Height	978 mm 39 in.
D—Digging	Depth	620 mm 24 in.
E—Blade Tilt	Distance	721 mm 28 in
F—Blade Tilt	Distance	721 mm 28 in
G—Overall Length With Blade	Length	5207 mm 205 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5269.5 mm 207.5 in.
H—Blade Width	Width	3296 mm 130 in.
I—Blade Angle	Angle	23.5°

Continued on next page

AM40430,000004C -19-29APR11-1/2

Item	Measurement	Specification
129.75 inch PAT Blade	Capacity	3.23 m^3

AM40430,000004C -19-29APR11-2/2

750J Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6068H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 2100 rpm	Power	108 kW SAE net horsepower 145 hp
Piston	Displacement	6.8 L 414 $in.^3$
Maximum Net Torque at 1400 rpm	Torque Rise	700 N·m 420 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	132.4 L/min @ unloaded high idle 35 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 22 in. Shoes)	Area	28 955 cm^2
Track	Pitch	190.5 mm 7.5 in.
	Gauge	1880 mm 74 in.
Ground Pressure	Pressure	49.9 kPa 7.24 psi 0.49 bar

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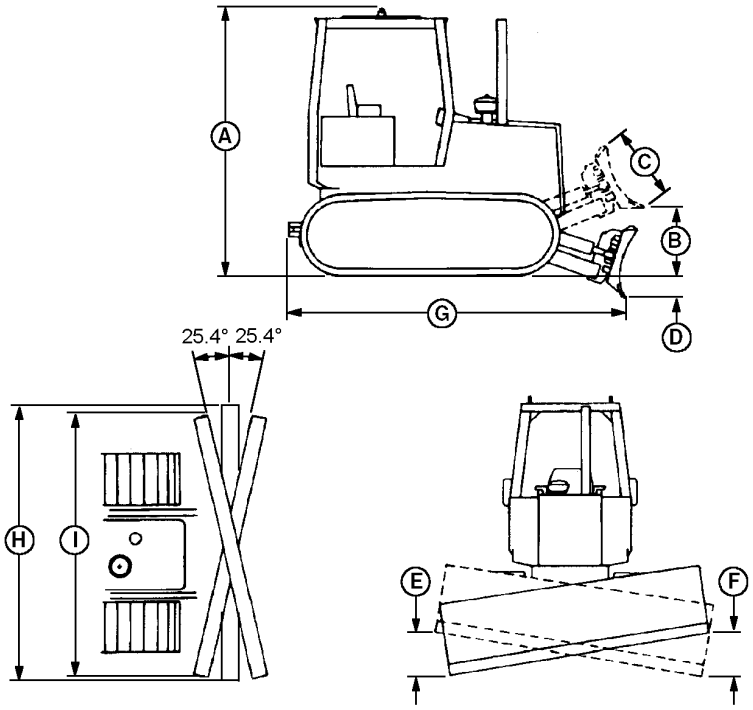
VD76477,0000465 -19-14SEP09-1/1

750J Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	14 780 kg 32 585 lb
Optional Equipment		
Rock Guards (4)	Weight	174 kg 384 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,000004E -19-29APR11-1/1

750J-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	3095 mm 122 in.
B—Blade	Height	1194 mm 47 in.
C—Blade Lift	Height	1025 mm 40.3 in.
D—Digging	Depth	650 mm 25.6 in.
E—Blade Tilt	Distance	437 mm 17.2 in
F—Blade Tilt	Distance	437 mm 17.2 in
G—Overall Length With Blade	Length	5300 mm 208.5 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5579.5 mm 219.5 in.
H—Blade Width	Width	3296 mm 129.75 in.
I—Blade Angle	Angle	23.5°

Continued on next page

AM40430,000004F -19-29OCT07-1/2

Item	Measurement	Specification
129.75 inch PAT Blade	Capacity	3.23 m^3

AM40430,000004F -19-29OCT07-2/2

750J-LT Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6068H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 2100 rpm	Power	108 kW SAE net horsepower 145 hp
Piston	Displacement	6.8 L 414 $in.^3$
Maximum Net Torque at 1400 rpm	Torque Rise	700 N·m 420 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	132.4 L/min @ unloaded high idle 35 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	45
Ground Contact Area (with 22 in. Shoes)	Area	34 348 cm^2
Track	Pitch	190.5 mm 7.5 in.
	Gauge	1880 mm 74 in.
Ground Pressure	Pressure	44.4 kPa 6.45 psi 0.45 bar

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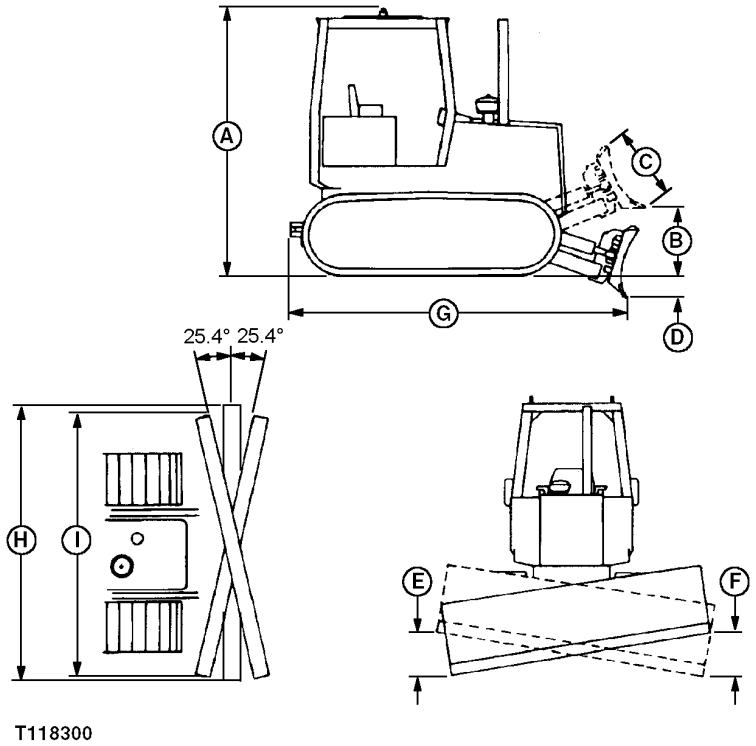
AM40430,0000050 -19-14SEP09-1/1

750J-LT Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	15 601 kg 34 395 lb
Optional Equipment		
Rock Guards (4)	Weight	154 kg 340 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,0000051 -19-05MAY11-1/1

750J-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	3099 mm 122 in.
B—Blade	Height	1171 mm 46 in.
C—Blade Lift	Height	1024 mm 40 in.
D—Digging	Depth	650 mm 25.6 in.
E—Blade Tilt	Distance	523 mm 20.6 in
F—Blade Tilt	Distance	524 mm 20.6 in
G—Overall Length With Blade	Length	5296 mm 209 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5579.5 mm 219.5 in.
H—Blade Width	Width	3962 mm 156 in.
I—Blade Angle	Angle	23.5°

Continued on next page

AM40430,0000052 -19-28APR11-1/2

Item	Measurement	Specification
156 inch PAT Blade	Capacity	3.81 m^3

AM40430,0000052 -19-28APR11-2/2

750J-LGP Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6068H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 2100 rpm	Power	116 kW SAE net horsepower 155 hp
Piston	Displacement	6.8 L 414 $in.^3$
Maximum Net Torque at 1400 rpm	Torque Rise	700 N·m 420 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	132.4 L/min @ unloaded high idle 35 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	45
Ground Contact Area (with 34 in. Shoes)	Area	53 084 cm^2
Track	Pitch	190.5 mm 7.5 in.
	Gauge	2134 mm 84 in.
Ground Pressure	Pressure	30.7 kPa 4.45 psi 0.30 bar

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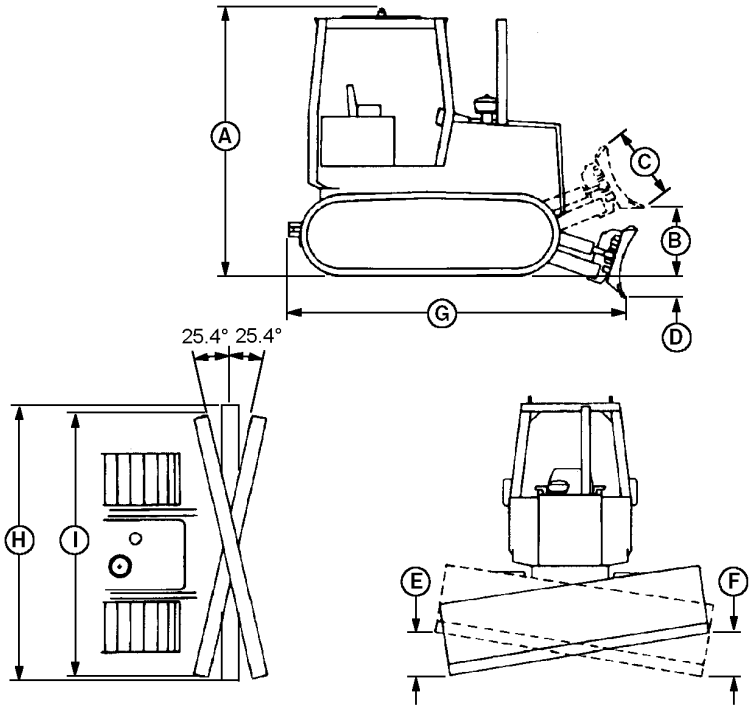
AM40430,0000053 -19-14SEP09-1/1

750J-LGP Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	16 658 kg 36 725 lb
Optional Equipment		
Rock Guards (4)	Weight	154 kg 340 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,0000054 -19-05MAY11-1/1

750J Pushbeam 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	3099 mm 122 in.
B—Blade	Height	1194mm 47 in.
C—Blade Lift	Height	978 mm 39 in.
D—Digging	Depth	574 mm 23 in.
E—Blade Tilt	Distance	721 mm 28 in
F—Blade Tilt	Distance	721 mm 28 in
G—Overall Length With Blade	Length	5207 mm 205 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5484.5 mm 216 in.
H—Blade Width	Width	3251 mm 128 in.

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AM40430,0000055 -19-28APR11-1/2

Item	Measurement	Specification
128 inch Semi-U Blade	Capacity	4.27 m^3

AM40430,0000055 -19-28APR11-2/2

750J Pushbeam Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6068H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 2100 rpm	Power	108 kW SAE net horsepower 145 hp
Piston	Displacement	6.8 L 414 $in.^3$
Maximum Net Torque at 1400 rpm	Torque Rise	700 N·m 420 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	132.4 L/min @ unloaded high idle 35 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 22 in. Shoes)	Area	28 955 cm^2
Track	Pitch	190.5 mm 7.5 in.
	Gauge	1880 mm 74 in.
Ground Pressure	Pressure	51.9 kPa 7.53 psi 0.51 bar

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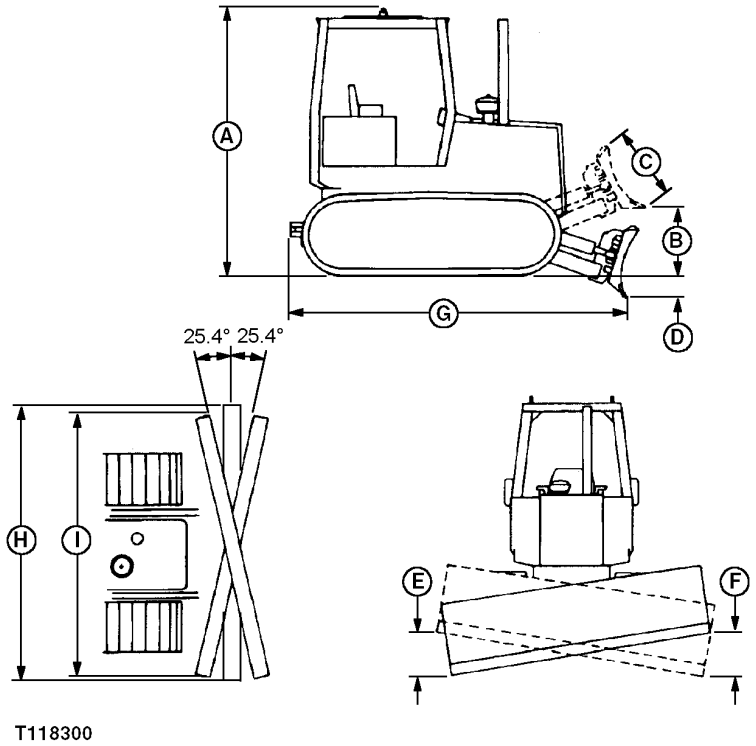
AM40430,0000056 -19-14SEP09-1/1

750J Pushbeam Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	16 031 kg 35 344 lb
Optional Equipment		
Rock Guards (4)	Weight	174 kg 384 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,0000057 -19-05MAY11-1/1

750J-WT Pushbeam 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	3095 mm 122 in.
B—Blade	Height	1170 mm 46.1 in.
C—Blade Lift	Height	1050 mm 41.3 in.
D—Digging	Depth	575 mm 22.6 in.
E—Blade Tilt	Distance	653 mm 25.7 in
F—Blade Tilt	Distance	653 mm 25.7 in
G—Overall Length With Blade	Length	5205 mm 205 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5484.5 mm 216 in.
H—Blade Width	Width	3759 mm 148 in.
148 inch Semi-U Blade	Capacity	4.51 m^3

Continued on next page

AM40430,0000058 -19-29OCT07-1/2

Item	Measurement	Specification
150 inch Straight Blade	Capacity	4.01 m^3

AM40430,0000058 -19-29OCT07-2/2

750J-WT Pushbeam Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6068H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 2100 rpm	Power	108 kW SAE net horsepower 145 hp
Piston	Displacement	6.8 L 414 $in.^3$
Maximum Net Torque at 1400 rpm	Torque Rise	700 N·m 420 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	132.4 L/min @ unloaded high idle 35 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 34 in. Shoes)	Area	44 748 cm^2
Track	Pitch	190.5 mm 7.5 in.
	Gauge	2134 mm 84 in.
Ground Pressure	Pressure	36.1 kPa 5.24 psi 0.36 bar

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AM40430,0000059 -19-14SEP09-1/1

750J-WT Pushbeam Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	16 658 kg 36 725 lb
Optional Equipment		
Rock Guards (4)	Weight	174 kg 384 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,000005A -19-05MAY11-1/1

750J and 750J-LT Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System With Recovery Tank	Capacity	21.6 L 5.7 gal
Fuel Tank	Capacity	371.0 L 98.0 gal
Engine Oil (including filter)	Capacity	26.5 L 7.0 gal
Inner Final Drive (each side)	Capacity	9.5 L 2.5 gal
Outer Final Drive (each side)	Capacity	15.1 L 4.0 gal
Hydraulic Reservoir	Capacity	106.0 L 28.0 gal
Hydrostatic Reservoir	Capacity	106.0 L 28.0 gal

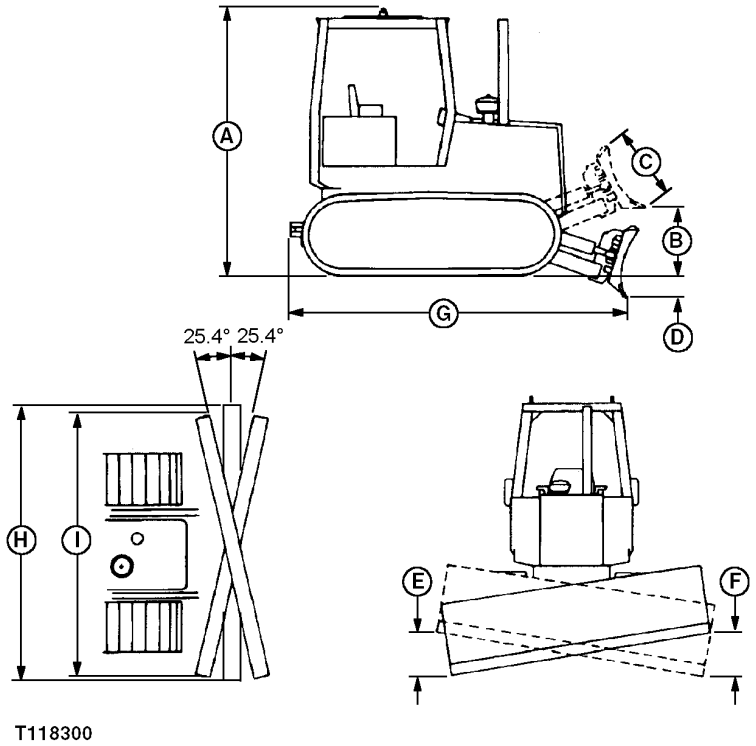
VD76477,00013BD -19-11MAR19-1/1

750J-WT and 750J-LGP Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System With Recovery Tank	Capacity	21.6 L 5.7 gal
Fuel Tank	Capacity	371 L 98.0 gal
Engine Oil (including filter)	Capacity	26.5 L 7.0 gal
Inner Final Drive (each side)	Capacity	15.9 L 4.2 gal
Outer Final Drive (each side)	Capacity	15.1 L 4.0 gal
Hydraulic Reservoir	Capacity	106.0 L 28.0 gal
Hydrostatic Reservoir	Capacity	106.0 L 28.0 gal

VD76477,00013BE -19-11MAR19-1/1

850J-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	3180 mm 125 in.
B—Blade	Height	1230 mm 48.4 in.
C—Blade Lift	Height	1071 mm 42.2 in.
D—Digging	Depth	703 mm 27.7 in.
E—Blade Tilt	Distance	498 mm 19.6 in
F—Blade Tilt	Distance	498 mm 19.6 in
G—Overall Length With Blade	Length	5726 mm 225.5 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5967.5 mm 235 in.
H—Blade Width	Width	3708 mm 146 in.
I—Blade Angle	Angle	23.8°

Continued on next page

AM40430,000005D -19-29OCT07-1/2

Item	Measurement	Specification
146 inch PAT Blade	Capacity	3.94 m^3

AM40430,000005D -19-29OCT07-2/2

850J-LT Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6081H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 1800 rpm	Power	137 kW SAE net horsepower 185 hp
Piston	Displacement	8.1 L 496 $in.^3$
Maximum Net Torque at 1000 rpm	Torque Rise	800 N·m 590 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	163 L/min @ unloaded high idle 43 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	45
Ground Contact Area (with 24 in. Shoes)	Area	40 077 cm^2
Track	Pitch	203.2 mm 8 in.
	Gauge	2083 mm 82 in.
Ground Pressure	Pressure	47.3 kPa 6.87 psi 0.47 bar

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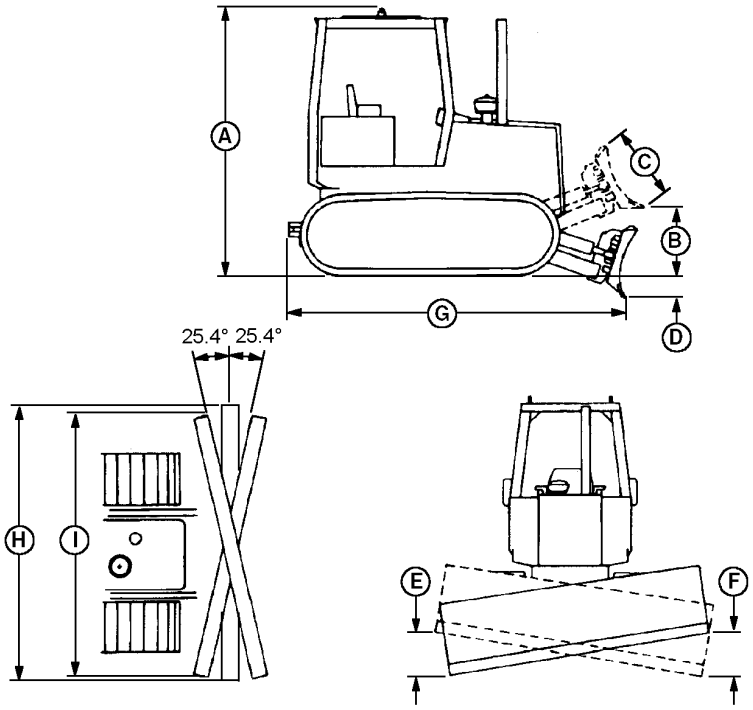
AM40430,000005E -19-14SEP09-1/1

850J-LT Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	19 338 kg 42,640 lb
Optional Equipment		
Rock Guards (4)	Weight	222.4 kg 490.2 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,000005F -19-17JAN07-1/1

850J-WLT 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	3180 mm 125 in.
B—Blade	Height	1230 mm 48.4 in.
C—Blade Lift	Height	1071 mm 42.2 in.
D—Digging	Depth	703 mm 27.7 in.
E—Blade Tilt	Distance	538 mm 21.2 in
F—Blade Tilt	Distance	538 mm 21.2 in
G—Overall Length With Blade	Length	5726 mm 225.5 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5967.5 mm 235 in.
H—Blade Width	Width	4013 mm 158 in.
I—Blade Angle	Angle	23.8°

Continued on next page

AM40430,0000060 -19-29OCT07-1/2

Item	Measurement	Specification
158 inch PAT Blade	Capacity	4.26 m^3

AM40430,0000060 -19-29OCT07-2/2

850J-WLT Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6081H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 1800 rpm	Power	137 kW SAE net horsepower 185 hp
Piston	Displacement	8.1 L 496 $in.^3$
Maximum Net Torque at 1000 rpm	Torque Rise	800 N·m 590 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	163 L/min @ unloaded high idle 43 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	45
Ground Contact Area (with 30 in. Shoes)	Area	49 932 cm^2
Track	Pitch	203.2 mm 8 in.
	Gauge	2235 mm 88 in.
Ground Pressure	Pressure	39.1 kPa 5.65 psi 0.39 bar

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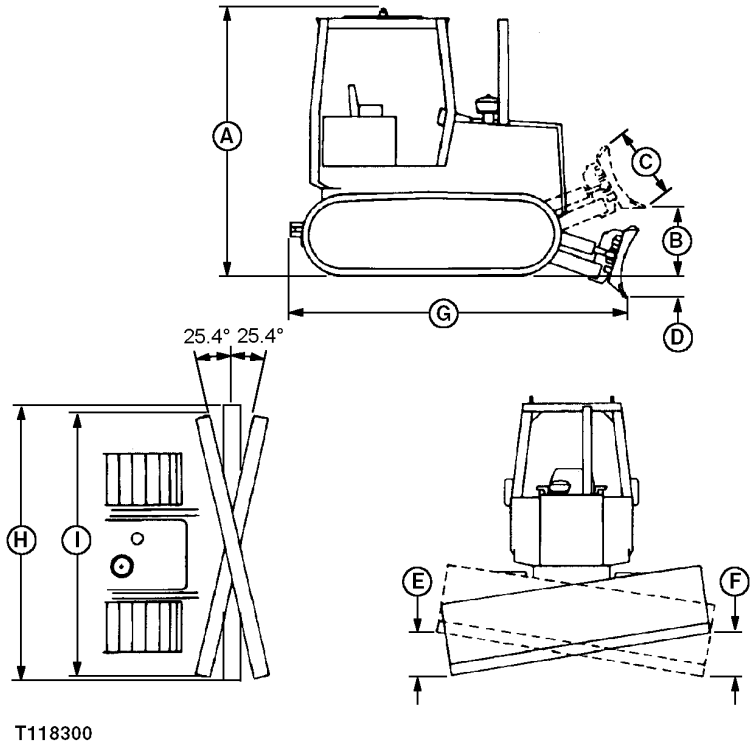
AM40430,0000061 -19-14SEP09-1/1

850J-WLT Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	19 887 kg 43,850 lb
Optional Equipment		
Rock Guards (4)	Weight	222.4 kg 490.2 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,0000062 -19-17JAN07-1/1

850J-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	3180 mm 125 in.
B—Blade	Height	1230 mm 48.4 in.
C—Blade Lift	Height	1071 mm 42.2 in.
D—Digging	Depth	703 mm 27.7 in.
E—Blade Tilt	Distance	572 mm 22.5 in
F—Blade Tilt	Distance	572 mm 22.5 in
G—Overall Length With Blade	Length	5726 mm 225.5 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5967.5 mm 235 in.
H—Blade Width	Width	4267 mm 168 in.
I—Blade Angle	Angle	23.8°

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AM40430,0000063 -19-29OCT07-1/2

Item	Measurement	Specification
156 inch PAT Blade	Capacity	4.49 m^3

AM40430,0000063 -19-29OCT07-2/2

850J-LGP Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6081H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 1800 rpm	Power	151 kW SAE net horsepower 200 hp
Piston	Displacement	8.1 L 496 $in.^3$
Maximum Net Torque at 1000 rpm	Torque Rise	880 N·m 650 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	163 L/min @ unloaded high idle 43 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	45
Ground Contact Area (with 36 in. Shoes)	Area	59 787 cm^2
Track	Pitch	203.2 mm 8 in.
	Gauge	2388 mm 94 in.
Ground Pressure	Pressure	33.5 kPa 4.83 psi 0.33 bar

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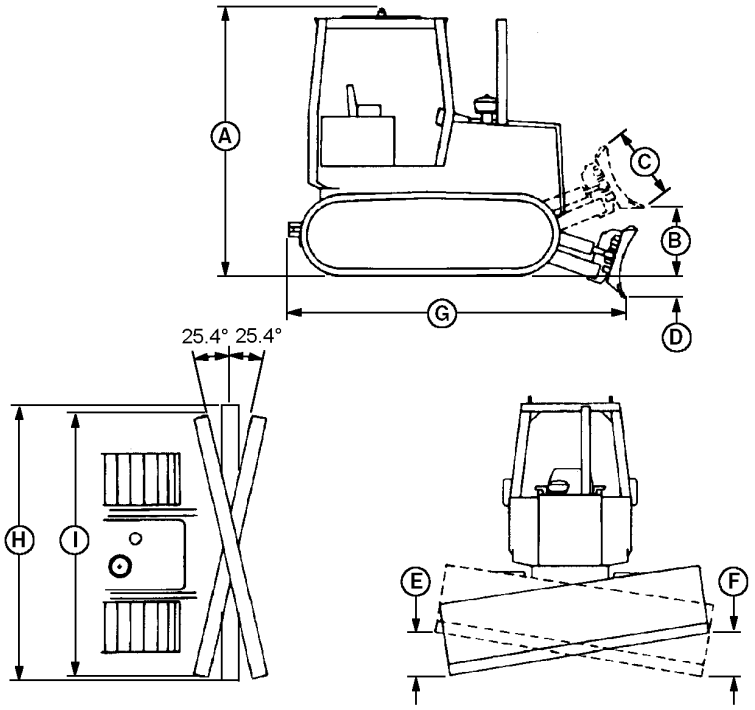
AM40430,0000064 -19-14SEP09-1/1

850J-LGP Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	20 408 kg 45,000 lb
Optional Equipment		
Rock Guards (4)	Weight	222.4 kg 490.2 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,0000065 -19-17JAN07-1/1

850J Pushbeam 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	3180 mm 125 in.
B—Blade	Height	1422 mm 56 in.
C—Blade Lift	Height	1150 mm 45.3 in.
D—Digging	Depth	600 mm 23.6 in.
E—Blade Tilt	Distance	753 mm 29.6 in
F—Blade Tilt	Distance	753 mm 29.6 in
G—Overall Length With Blade	Length	5377 mm 212 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5618.5 mm 221.5 in.
H—Blade Width	Width	3251 mm 128 in.

Continued on next page

Item	Measurement	Specification
128 inch Semi-U Blade	Capacity	5.57 m^3

AM40430,0000066 -19-29OCT07-2/2

850J Pushbeam Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6081H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 1800 rpm	Power	137 kW SAE net horsepower 185 hp
Piston	Displacement	8.1 L 496 $in.^3$
Maximum Net Torque at 1000 rpm	Torque Rise	800 N·m 590 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	163 L/min @ unloaded high idle 43 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 24 in. Shoes)	Area	33 794 cm^2
Track	Pitch	203.2 mm 8 in.
	Gauge	1880 mm 74 in.
Ground Pressure	Pressure	52.4 kPa 7.61 psi 0.52 bar

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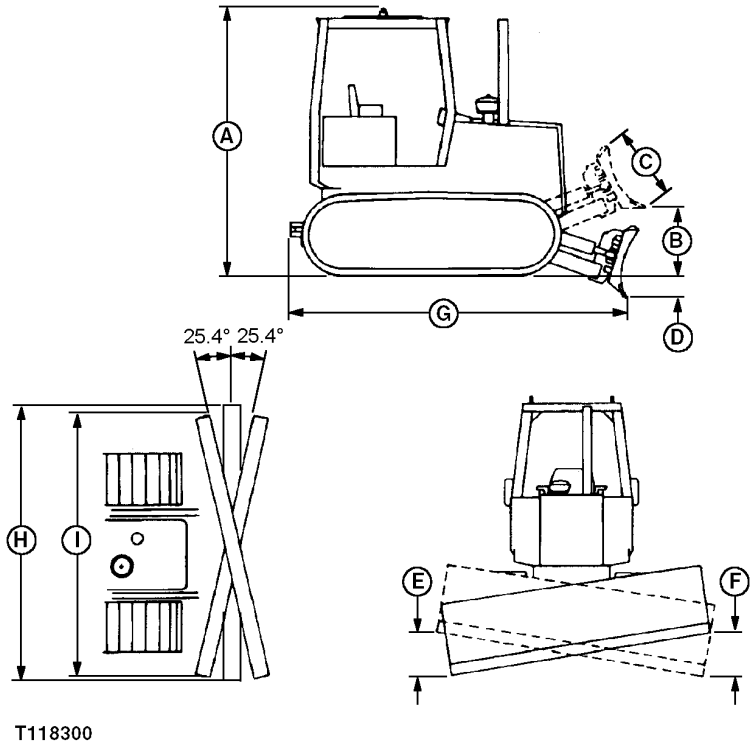
AM40430,0000067 -19-14SEP09-1/1

850J Pushbeam Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	18 045 kg 39,790 lb
Optional Equipment		
Rock Guards (4)	Weight	224.3 kg 534 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,0000068 -19-17JAN07-1/1

850J-WT Pushbeam 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	3180 mm 125 in.
B—Blade	Height	1375 mm 54.1 in.
C—Blade Lift	Height	1150 mm 45.3 in.
D—Digging	Depth	600 mm 23.6 in.
E—Blade Tilt	Distance	753 mm 29.6 in
F—Blade Tilt	Distance	753 mm 29.6 in
G—Overall Length With Blade	Length	5377 mm 212 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	5618.5 mm 221.5 in.
H—Blade Width	Width	3556 mm 140 in.

Continued on next page

AM40430,0000069 -19-29OCT07-1/2

Item	Measurement	Specification
140 inch Semi-U Blade	Capacity	5.82 m^3

AM40430,0000069 -19-29OCT07-2/2

850J-WT Pushbeam Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6081H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 1800 rpm	Power	137 kW SAE net horsepower 185 hp
Piston	Displacement	8.1 L 496 $in.^3$
Maximum Net Torque at 1000 rpm	Torque Rise	800 N·m 590 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	163 L/min @ unloaded high idle 43 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	40
Ground Contact Area (with 30 in. Shoes)	Area	42 104 cm^2
Track	Pitch	203.2 mm 8 in.
	Gauge	2032 mm 80 in.
Ground Pressure	Pressure	43.2 kPa 6.26 psi 0.43 bar

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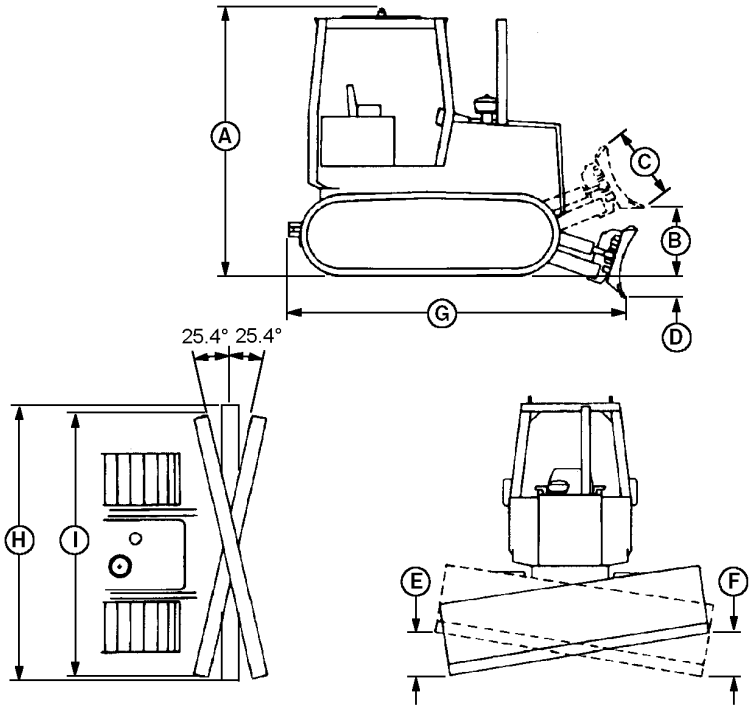
AM40430,000006A -19-14SEP09-1/1

850J-WT Pushbeam Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	18 553 kg 40,910 lb
Optional Equipment		
Rock Guards (4)	Weight	224.3 kg 534 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,000006B -19-17JAN07-1/1

850J-LGP Pushbeam 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	3180 mm 125 in.
B—Blade	Height	1320 mm 52 in.
C—Blade Lift	Height	1150 mm 45.3 in.
D—Digging	Depth	600 mm 23.6 in.
E—Blade Tilt	Distance	854 mm 33.6 in
F—Blade Tilt	Distance	854 mm 33.6 in
G—Overall Length With Blade	Length	5940 mm 234 in.
G—Overall Length With Blade (With Extended Drawbar)	Length	6181.5 mm 243.5 in.
H—Blade Width	Width	3861 mm 152 in.
152 inch Semi-U Blade	Capacity	5.96 m^3

Continued on next page

AM40430,000006C -19-29OCT07-1/2

Item	Measurement	Specification
154 inch Straight Blade	Capacity	4.09 m^3

AM40430,000006C -19-29OCT07-2/2

850J-LGP Pushbeam Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6081H 6-Cylinder Diesel Engine		
Engine	Type	Turbocharged
Fuel Consumption, Typical	Consumption	14.4—20.8 L/h 3.8—5.5 gph
Rated Power at 1800 rpm	Power	151 kW SAE net horsepower 200 hp
Piston	Displacement	8.1 L 496 $in.^3$
Maximum Net Torque at 1000 rpm	Torque Rise	880 N·m 650 lb-ft
Batteries	Voltage	12-volt
Alternator—ROPS	Amperage	55 amp
Alternator—Cab with Air Conditioning	Amperage	80 amp
Transmission	Speed	0—10 km/h 0—6.3 mph
Hydraulic System	Pressure	25 000 kPa 3625 psi
	Flow Rate	163 L/min @ unloaded high idle 43 gpm
Undercarriage		
Track Shoes (Each Side)	Quantity	45
Ground Contact Area (with 36 in. Shoes)	Area	59 787 cm^2
Track	Pitch	203.2 mm 8 in.
	Gauge	2184 mm 86 in.
Ground Pressure	Pressure	33.3 kPa 4.80 psi 0.33 bar

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AM40430,000006D -19-14SEP09-1/1

850J-LGP Pushbeam Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight	Weight	20 272 kg 44,700 lb
Optional Equipment		
Rock Guards (4)	Weight	222.4 kg 490.2 lb
Cab with Pressurizer and Heater/Air Conditioning	Weight	337 kg 743 lb
Heater (ROPS Canopy)	Weight	39 kg 85 lb
Extended Rigid Draw Bar	Weight	130 kg 286 lb

AM40430,000006E -19-17JAN07-1/1

850J Pushbeam and 850J-LT Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System With Recovery Tank	Capacity	35.0 L 9.2 gal
Fuel Tank	Capacity	371.0 L 98.0 gal
Engine Oil (including filter)	Capacity	26.0 L 7.0 gal
Inner Final Drive (each side)	Capacity	9.5 L 2.5 gal
Outer Final Drive (each side)	Capacity	15.9 L 4.2 gal
Hydraulic Reservoir	Capacity	106.0 L 28.0 gal
Hydrostatic Reservoir	Capacity	106.0 L 28.0 gal

VD76477,00004E0 -19-11MAR19-1/1

850J-WT and 850J-WLT Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System With Recovery Tank	Capacity	35.0 L 9.2 gal
Fuel Tank	Capacity	371.0 L 98.0 gal
Engine Oil (including filter)	Capacity	26.0 L 7.0 gal
Inner Final Drive (each side)	Capacity	15.9 L 4.2 gal
Outer Final Drive (each side)	Capacity	15.9 L 4.2 gal
Hydraulic Reservoir	Capacity	106.0 L 28.0 gal
Hydrostatic Reservoir	Capacity	106.0 L 28.0 gal

VD76477,00004E1 -19-11MAR19-1/1

850J-LGP PAT and 850J-LGP Pushbeam Crawler Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System With Recovery Tank	Capacity	35.0 L 9.2 gal
Fuel Tank	Capacity	371.0 L 98.0 gal
Engine Oil (including filter)	Capacity	26.0 L 7.0 gal
Inner Final Drive (each side)	Capacity	18.9 L 5.0 gal
Outer Final Drive (each side)	Capacity	15.9 L 5.0 gal
Hydraulic Reservoir	Capacity	106.0 L 28.0 gal
Hydrostatic Reservoir	Capacity	106.0 L 28.0 gal

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