

# 250GLC and 290GLC Excavator

(PIN: 608001— )

(PIN: 705001— )



**JOHN DEERE**

## OPERATOR'S MANUAL

### 250GLC and 290GLC Excavator

OMT289049    ISSUE L3    (ENGLISH)

#### CALIFORNIA

##### Proposition 65 Warning

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

If this product contains a gasoline engine:

#### **WARNING**

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

The State of California requires the above two warnings.

**Worldwide Construction,  
And Forestry Division**

PRINTED IN U.S.A.

# Introduction

## 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.

TX,FOREWORD-19-01MAR23-1/1

## Manual Identification—READ THIS FIRST!

**IMPORTANT: Use only supporting manuals designated for your specific machine. If incorrect manual is chosen, improper service may occur. Verify product identification number (PIN) when choosing the correct manual.**

### Choosing the Correct Supporting Manuals

John Deere excavators are available in different machine configurations based on the various markets into which

they are sold. Different supporting manuals exist for different machine configurations.

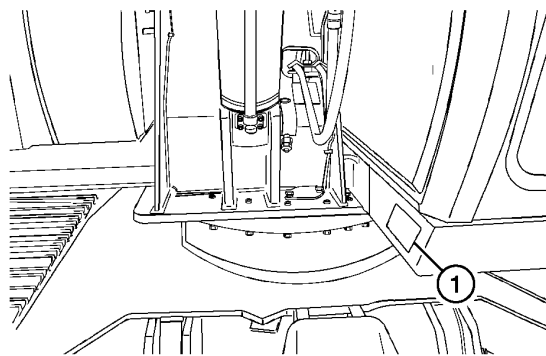
When necessary, product identification numbers are listed on the front covers of excavator manuals. These numbers are used to identify the correct supporting manual for your machine.

### Product Identification Number

Continued on next page

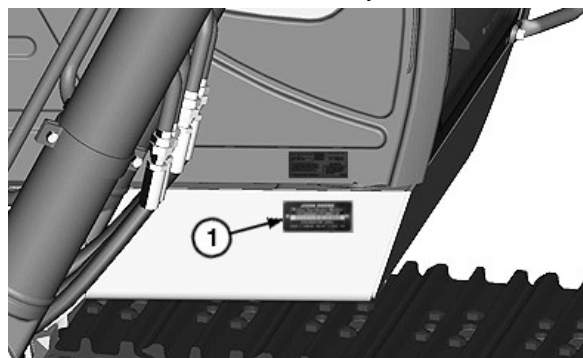
KR46761,0000C4D-19-01APR22-1/3

The product identification number (PIN) plate (1) is located on the front, right corner of the cab. Each machine has a 17-character PIN (2) shown on PIN plate.



PIN Plate Location—Early Production

TX1160624—UN—13MAY14



PIN Plate Location—Late Production

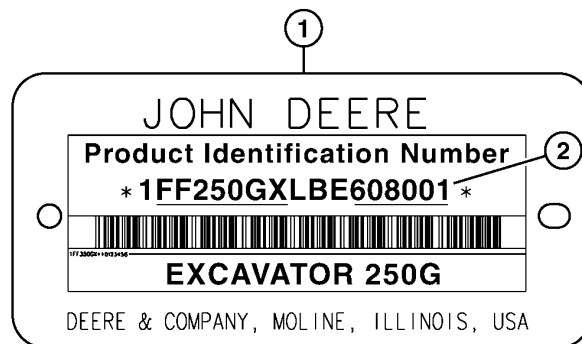
TX1156411—UN—27MAR14

The PIN identifies the producing factory, machine model number, machine option, year of manufacture, engine emission level, and machine serial number.

The following is an example for a machine that meets Interim Tier 4 and Stage III B emission levels:

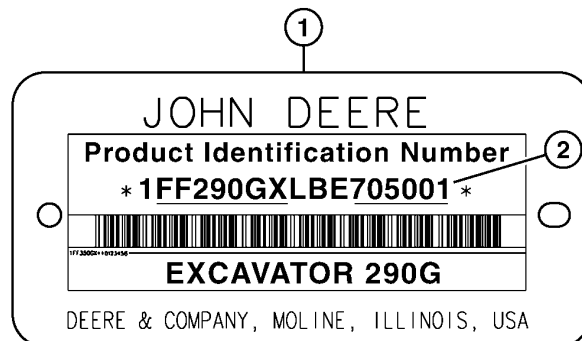
1—PIN Plate

2—17-Character PIN



Example of PIN Plate

TX1160791—UN—15MAY14



Example of PIN Plate

TX1160793—UN—15MAY14

17-Character PIN Examples

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	F	F	2	5	0	G	X	_	_	E	6	0	8	0	0	1

•

- **(1—3) World Code:** Identifies location where machine is manufactured. \_\_\_\_\_ **Check Letter** (variable)

**1FF** ..... **World Code** (manufacturing location)

1DW ..... Davenport Works

1T8 ..... Thibodaux Works

1T0 ..... Dubuque Works

1FF ..... John Deere (Kernersville, NC, USA)

1F9 ..... John Deere (Indaiatuba, São Paulo, Brazil)

- **(4—8) Machine Model Identifier:** Identifies model number.

**250G** ..... **Machine Model Identifier**

*NOTE: Characters 7—8 identify series and major machine configuration options. These characters will change from one machine to another.*

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**X** ..... **Machine Option Code**

X ..... Base Machine

R ..... HYEX Military Excavators

- **(9) Check Letter:** This is a random character assigned by the factory. This is not used in machine identification.

- **(10) Manufacturing Year Code:** Identifies year of machine manufacture.

\_\_\_\_\_ **Manufacturing Year Code** (variable)

B ..... 2011

C ..... 2012

D ..... 2013

E ..... 2014

- **(11) Engine Emission Code:** Represents engine emission certification.

**E** ..... **Engine Emission Code**

C ..... Tier 2 and Stage II

D ..... Tier 3 and Stage III A

E ..... Interim Tier 4 and Stage III B

F ..... Final Tier 4 and Stage IV

- **(12—17) Machine Serial Number:** Identifies machine serial number. This character will change from one machine to another.

**608001** ..... **Machine Serial Number**

KR46761,0000C4D-19-01APR22-3/3

## IMPORTANT

Warranty will not apply to engine and drivetrain failures resulting from unauthorized adjustments to this engine.

Unauthorized adjustments are in violation of the emissions regulations applicable to this engine and may result in substantial fines and penalties.

VD76477,000104D-19-27JUN12-1/1



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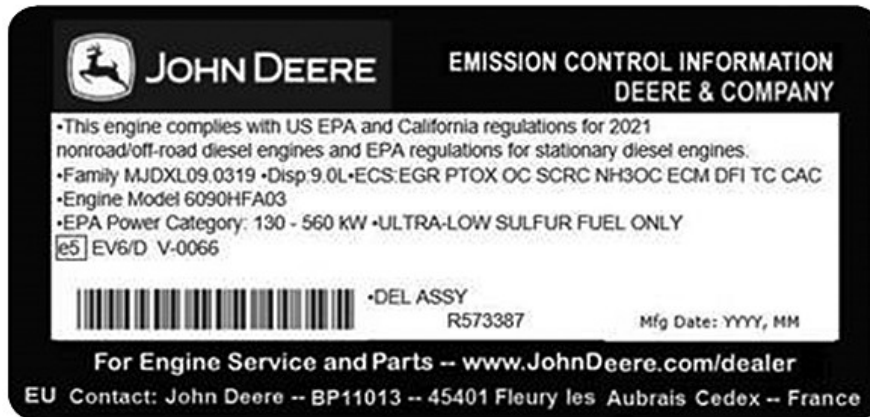
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USA

Please include name of the product and the version number of the software in the request letter. This offer is valid to anyone in receipt of this information.

## Emissions Control System Certification Label



RG33429—UN—04FEB21

Engine Emissions Label

**⚠ CAUTION: Statutes providing severe penalties for tampering with emissions controls may apply to the user or dealer.**

The emissions warranty applies to those engines marketed by John Deere that have been certified by the United States Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB); and used in the United States and Canada in Non-road equipment. The presence of an emissions label like the one shown signifies that the engine has been certified with the EPA and/or CARB. The EPA and CARB warranties only apply to new engines having the certification label affixed to the engine and sold as stated above in the geographic areas. The presence of an EU number signifies that the engine has been certified with the European Union countries per Regulation (EU) 2016/1628 and supplementing legislation. The EPA and/or CARB emissions warranties do not apply to the EU countries.

The emissions label has applicable US EPA and/or CARB regulatory year. The regulatory year determines which warranty statement is applicable to engine. See "EPA Non-road Emissions Control Warranty Statement—Compression Ignition" and "CARB Non-road Emissions Control Warranty Statement—Compression Ignition". For additional regulatory year warranty statements, see [www.JohnDeere.com](http://www.JohnDeere.com) or contact the nearest John Deere service dealer for assistance.

#### Emission Control System(s) Laws

The U.S. EPA and California ARB prohibit the removal or rendering inoperative of any device or element of design installed on or in engines/equipment in compliance with applicable emission regulations prior to or after the sale and delivery of the engines/equipment to the ultimate purchaser.

DX,EMISSIONS,LABEL-19-05FEB21-1/1

## EPA Non-road Emissions Control Warranty Statement—Compression Ignition

DXLOGOV1—UN—28APR09



JOHN DEERE

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

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

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

### JOHN DEERE'S WARRANTY RESPONSIBILITY

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

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

Air-Induction System  
Fuel System  
Ignition System  
Exhaust Gas Recirculation Systems

Aftertreatment Devices  
Crankcase Ventilation Valves  
Sensors  
Engine Electronic Control Units

### EMISSION WARRANTY EXCLUSIONS

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

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

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

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

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Emission\_CI\_EPA (18Dec09)

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DX,EMISSIONS,EPA-19-12DEC12-1/2



JOHN DEERE

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

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

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

**JOHN DEERE'S WARRANTY RESPONSIBILITY**

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

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

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

**EMISSION WARRANTY EXCLUSIONS**

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

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

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

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

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

Emission\_CI\_EPA (18Dec09)

TS1721—UN—15JUL13



## **CARB Non-road Emissions Control Warranty Statement—Compression Ignition Emissions Control Warranty Statement 2022 through 2024**

DXLOGOV1—UN—28APR09



**JOHN DEERE**

### **CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS**

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

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

#### **CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:**

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2022 through 2024 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB. John Deere warrants that this engine is free from defects in materials and workmanship which would cause the failure of emissions warranted parts to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. This applies to all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

#### **EMISSIONS WARRANTY EXCLUSIONS:**

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

#### **JOHN DEERE'S WARRANTY RESPONSIBILITY:**

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

Continued on next page

DX,EMISSIONS,CARB-19-15DEC23-1/6

## Introduction

### Air Induction System

- Intake manifold
- Turbocharger
- Charge air cooler

### Fuel Metering system

- Fuel injection system

### Exhaust Gas Recirculation

- EGR valve

### Catalyst or Thermal Reactor Systems

- Catalytic converter
- Exhaust manifold

### Emission control labels

#### Particulate Controls

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

#### Positive Crankcase Ventilation (PCV) System

- PCV valve
- Oil filler cap

### Advanced Oxides of Nitrogen (NOx) Controls

- NOx absorbers and catalysts

#### SCR systems and urea containers/dispensing systems

#### Miscellaneous Items used in Above Systems

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

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

### OWNER'S WARRANTY RESPONSIBILITIES:

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

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

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

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

Emission\_CI\_CARB (14Apr20)

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DX,EMISSIONS,CARB-19-15DEC23-2/6



**Emissions Control Warranty Statement 2022 through 2024**

DXLOGOV1 —UN—28APR09

**JOHN DEERE****CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT  
YOUR WARRANTY RIGHTS AND OBLIGATIONS**

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

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

**CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:**

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2022 through 2024 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB. John Deere warrants that this engine is free from defects in materials and workmanship which would cause the failure of emissions warranted parts to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first. This applies to all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

**EMISSIONS WARRANTY EXCLUSIONS:**

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

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DX,EMISSIONS,CARB-19-15DEC23-3/6

RG32758—UN—19AUG20

**JOHN DEERE'S WARRANTY RESPONSIBILITY:**

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

<b>Air Induction System</b>	<b>Emission control labels</b>	<b>Advanced Oxides of Nitrogen (NOx) Controls</b>
<ul style="list-style-type: none"> <li>• Intake manifold</li> <li>• Turbocharger</li> <li>• Charge air cooler</li> </ul>	<b>Particulate Controls</b> <ul style="list-style-type: none"> <li>• Any device used to capture particulate emissions</li> <li>• Any device used in the regeneration of the capturing system</li> <li>• Enclosures and manifold</li> <li>• Smoke Puff Limiters</li> </ul>	<ul style="list-style-type: none"> <li>• NOx absorbers and catalysts</li> </ul>
<b>Fuel Metering system</b>		<b>SCR systems and urea containers/dispensing systems</b>
<ul style="list-style-type: none"> <li>• Fuel injection system</li> </ul>		<b>Miscellaneous Items used in Above Systems</b>
<b>Exhaust Gas Recirculation</b>	<b>Positive Crankcase Ventilation (PCV) System</b>	<ul style="list-style-type: none"> <li>• Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware</li> </ul>
<ul style="list-style-type: none"> <li>• EGR valve</li> </ul>	<ul style="list-style-type: none"> <li>• PCV valve</li> <li>• Oil filler cap</li> </ul>	
<b>Catalyst or Thermal Reactor Systems</b>		
<ul style="list-style-type: none"> <li>• Catalytic converter</li> <li>• Exhaust manifold</li> </ul>		

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

**OWNER'S WARRANTY RESPONSIBILITIES:**

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

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

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

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

RG32759—UN—19AUG20

Emission\_CI\_CARB (14Apr20)

**Emissions Control Warranty Statement 2025 through 2027**

DXLOGOV1—UN—28APR09

**JOHN DEERE**

**CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT  
YOUR WARRANTY RIGHTS AND OBLIGATIONS**

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

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

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DX,EMISSIONS,CARB-19-15DEC23-4/6

**CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:**

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty in 2025 through 2027 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB and is free from defects in materials and workmanship which would cause the failure of a warranted part to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first for all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

**EMISSIONS WARRANTY EXCLUSIONS:**

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

**JOHN DEERE'S WARRANTY RESPONSIBILITY:**

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

Air Induction System	Emission control labels	Advanced Oxides of Nitrogen (NOx) Controls
<ul style="list-style-type: none"> <li>Intake manifold</li> <li>Turbocharger</li> <li>Charge air cooler</li> </ul>	Particulate Controls <ul style="list-style-type: none"> <li>Any device used to capture particulate emissions</li> <li>Any device used in the regeneration of the capturing system</li> <li>Enclosures and manifolding</li> <li>Smoke Puff Limiters</li> </ul>	<ul style="list-style-type: none"> <li>NOx absorbers and catalysts</li> </ul>
Fuel Metering system		SCR systems and urea containers/dispensing systems
<ul style="list-style-type: none"> <li>Fuel injection system</li> </ul>		Miscellaneous Items used in Above Systems
Exhaust Gas Recirculation	Positive Crankcase Ventilation (PCV) System	<ul style="list-style-type: none"> <li>Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware</li> </ul>
<ul style="list-style-type: none"> <li>EGR valve</li> </ul>	<ul style="list-style-type: none"> <li>PCV valve</li> <li>Oil filler cap</li> </ul>	
Catalyst or Thermal Reactor Systems		
<ul style="list-style-type: none"> <li>Catalytic converter</li> <li>Exhaust manifold</li> </ul>		

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

**OWNER'S WARRANTY RESPONSIBILITIES:**

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

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

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

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

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DX,EMISSIONS,CARB-19-15DEC23-5/6

## Introduction

### CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS

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

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

#### CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty in 2025 through 2027 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

Your emission control system may include parts such as the fuel injection system and the air induction system. Also included may be hoses, belts, connectors and other emission-related assemblies.

John Deere warrants to the ultimate purchaser and each subsequent purchaser that this off-road diesel engine was designed, built, and equipped so as to conform at the time of sale with all applicable regulations adopted by CARB and is free from defects in materials and workmanship which would cause the failure of a warranted part to be identical in all material respects to the part as described in John Deere's application for certification for a period of five years from the date the engine is delivered to an ultimate purchaser or 3,000 hours of operation, whichever occurs first for all engines rated at 19 kW and greater. In the absence of a device to measure hours of use, the engine shall be warranted for a period of five years.

#### EMISSIONS WARRANTY EXCLUSIONS:

John Deere may deny warranty claims for failures caused by the use of an add-on or modified part which has not been exempted by the CARB. A modified part is an aftermarket part intended to replace an original emission-related part which is not functionally identical in all respects and which in any way affects emissions. An add-on part is any aftermarket part which is not a modified part or a replacement part.

In no event will John Deere, any authorized engine distributor, dealer, or repair facility, or any company affiliated with John Deere be liable for incidental or consequential damage.

#### JOHN DEERE'S WARRANTY RESPONSIBILITY:

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

Air Induction System	Emission control labels	Advanced Oxides of Nitrogen (NOx Controls)
Intake manifold	Particulate Controls	NOx absorbers and catalysts
Turbocharger	Any device used to capture particulate emissions	SCR systems and urea containers / dispensing systems
Charge air cooler	Any device used in the regeneration of the capturing system	Miscellaneous Items used in Above Systems
Fuel Metering System	Enclosures and manifold	Electronic control units, sensors, actuators, wiring harnesses, hoses, connectors, clamps, fittings, gasket, mounting hardware
Fuel injection system	Smoke Puff Limiters	
Exhaust Gas Recirculation	Positive Crankcase Ventilation (PCV) System	
EGR valve	PCV valve	
Catalyst or Thermal Reactor Systems	Oil filler cap	
Catalytic converter		
Exhaust manifold		

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

#### OWNER'S WARRANTY RESPONSIBILITY:

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

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

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

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

DX,EMISSIONS,CARB-19-15DEC23-6/6

RG595770—UN—07DEC23

RG595771—UN—07DEC23

## Required Emission-Related Information Service Provider

A repair shop or person of the owner's choosing may maintain, replace, or repair emission control devices and systems with original or equivalent replacement parts. However, warranty, recall, and all other services paid for by John Deere must be performed at an authorized John Deere service center.

DX,EMISSIONS,REQINFO-19-08DEC23-1/1

## FCC Notifications to User

### FCC Notification

These devices comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

### Modular Telematics Gateway and Satellite Module

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a

residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, no guarantee shall be made that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

MM16284,000196F-19-20FEB19-1/1

## Service ADVISOR™ Remote (SAR)—SOFTWARE TERMS AND CONDITIONS

IMPORTANT -- READ CAREFULLY: THIS SOFTWARE LICENSE AGREEMENT IS A LEGAL CONTRACT BETWEEN YOU AND THE LICENSOR ("LICENSOR") IDENTIFIED BELOW AND GOVERNS YOUR USE OF THE SOFTWARE DELIVERED TO YOUR MACHINE (THE "MACHINE").

BY INDICATING YOUR ACCEPTANCE ON A DISPLAY ON THE MACHINE, BY INSTALLING SOFTWARE TO THE MACHINE, OR USING SOFTWARE ON THE MACHINE, YOU ARE ACCEPTING AND AGREEING TO THE TERMS OF THIS LICENSE AGREEMENT WITH RESPECT TO THE SOFTWARE (THE "Software") THAT IS DELIVERED TO YOUR MACHINE. YOU AGREE THAT THIS SOFTWARE LICENSE AGREEMENT, INCLUDING THE WARRANTY DISCLAIMERS, LIMITATIONS OF LIABILITY AND TERMINATION PROVISIONS BELOW, IS BINDING UPON YOU, AND UPON ANY COMPANY ON WHOSE BEHALF YOU USE THE SOFTWARE AS WELL AS THE EMPLOYEES OF ANY SUCH COMPANY (COLLECTIVELY REFERRED TO AS "YOU" IN THIS SOFTWARE LICENSE AGREEMENT). IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, OR IF YOU ARE NOT AUTHORIZED TO ACCEPT THESE TERMS ON BEHALF OF YOUR COMPANY OR ITS EMPLOYEES, PLEASE CLICK THE [Decline] ICON ON THE DISPLAY ON THE MACHINE TO DECLINE THESE TERMS AND CONDITIONS. THIS LICENSE AGREEMENT REPRESENTS THE ENTIRE AGREEMENT CONCERNING THE SOFTWARE BETWEEN YOU AND THE LICENSOR.

### 1.

**Delivery of Software.** Software may be delivered to your Machine by Licensor wirelessly or via an agent of Licensor, such as a dealer. If it is delivered wirelessly, you may be responsible for any data transmission fees incurred due to such delivery.

### 2.

**License.** Licensor hereby grants to you, and you accept, a nonexclusive license to use the Software in machine-readable, object code form, only as authorized in this License Agreement and the applicable provisions of the Operators' Manuals, which you agree to review carefully prior to using the Software. The Software may be used only on the Machine to which it was initially delivered. You agree that you will not assign, sublicense, transfer, pledge, lease, rent, or share your rights under this License Agreement, except that you may permanently transfer all of your rights under this License Agreement in connection with the sale of the Machine on which the Software covered by this Agreement is installed.

### 3.

**Licensor's Rights.** You acknowledge and agree that the Software is proprietary to Licensor and is protected under copyright law. You further acknowledge and agree that all right, title, and interests in and to the Software, including associated intellectual property rights, are and shall remain

with Licensor. This License Agreement does not convey to you any title or interest in or to the Software, but only a limited right of use revocable in accordance with the terms of this License Agreement. You agree that you will not: (a) reverse assemble, reverse compile, modify, or otherwise translate the Software, or attempt to defeat the copyright protection and application enabling mechanisms therein; (b) copy or reproduce the Software; or, (b) remove or obliterate any copyright, trademark or other proprietary rights notices from the Software. You also agree not to permit any third party acting under your control to do any of the foregoing.

### 4.

**License Fees.** The license fees paid by you, if any, are paid in consideration of the licenses granted under this License Agreement.

### 5.

**Limited Warranty.** Licensor warrants, for your benefit alone and not for the benefit of any other party, that during the "**Warranty Period**" defined below, the Software will operate substantially in accordance with the applicable functional specifications ("**Specifications**") set forth in the Operators' Manuals. If, prior to expiration of the Warranty Period, the Software fails to perform substantially in accordance with the Specifications, you may return the Machine to the place of purchase for repair or replacement of the non-performing Software. The Warranty Period is ninety (90) days from the date of installation of the Software or the duration of the warranty period of the component of the Machine on which the Software is installed, whichever is longer. The Software Warranty Period does not affect the warranty period of the Machine itself or any component thereof.

### 6.

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Continued on next page

OUT4001,00006C5-19-08NOV10-1/4

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**13. Language Clause.** If you are a resident of Canada at the time you accept this Agreement, then the parties hereby acknowledge that they have required this Agreement, and all other documents relating hereto, be drawn up in the English language only. Les parties reconnaissent avoir demandé que le présent contrat ainsi que toute autre entente ou avis requis ou permis à être conclu ou donné en vertu des stipulations du présent contrat, soient rédigés en langue anglaise seulement. If you are a resident of any country other than the United States, Canada, Great Britain, Australia or New Zealand then you agree as follows: there may be a translated version of this Agreement. If there is an inconsistency or contradiction between the translated version and the English version of this Agreement, the English version of this Agreement shall control.

**14. Assignment by Licensor.** Licensor may assign this Agreement without your prior consent to any company or entity affiliated with Licensor, or by an assignment associated with a corporate restructuring, merger or acquisition.

**15. Governing Law and Forum.** This Agreement will be

governed by and construed in accordance with the substantive laws identified in the table in Section 18, below. The respective courts of the venue identified in the table in Section 18, below, for the location of the Machine shall have non-exclusive jurisdiction over all disputes relating to this Agreement. This Agreement will not be governed by the conflict of law rules of any jurisdiction or the United Nations Convention on Contracts for the International Sale of Goods, the application of which is expressly excluded.

## 16. Specific Exceptions.

**16.1  
Limited Warranty for Users Residing in European Economic Area Countries or Switzerland.** If you obtained the Software in any European Economic Area country or Switzerland, and you usually reside in such country, then Section 6 does not apply, instead, Licensor warrants that the Software provides the functionalities set forth in the Operators Manuals (the "**agreed upon functionalities**") for the Warranty Period. As used in this Section, "Warranty Period" means one (1) year. Non-substantial variation from the agreed upon functionalities shall not be considered and does not establish any warranty rights. **THIS LIMITED WARRANTY DOES NOT APPLY TO SOFTWARE PROVIDED TO YOU FREE OF CHARGE, FOR EXAMPLE, UPDATES, OR SOFTWARE THAT HAS BEEN ALTERED BY YOU, TO THE EXTENT SUCH ALTERATIONS CAUSED A DEFECT.** To make a warranty claim, during the Warranty Period you must return, at our expense, the Software and proof of purchase to the location where you obtained it. If the functionalities of the Software vary substantially from the agreed upon functionalities, Licensor is entitled -- by way of re-performance and at its own discretion -- to repair or replace the Software. If this fails, you are entitled to a reduction of the purchase price (reduction) or to cancel the purchase agreement (rescission). For further warranty information, please contact Licensor at the address listed in Section 18.

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(c) You are required to take all reasonable measures to avoid and reduce damages, in particular to make back-up copies of the Software and your computer data subject to the provisions of this Agreement.

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Representations of Licensee.** BY ACCEPTING THIS AGREEMENT, YOU: (A) ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTAND THIS AGREEMENT; (B) REPRESENT THAT YOU HAVE THE AUTHORITY TO ENTER INTO THIS AGREEMENT; (C) AGREE THAT THIS AGREEMENT IS ENFORCEABLE AGAINST YOU AND ANY LEGAL ENTITY THAT OBTAINED THE SOFTWARE AND ON WHOSE BEHALF IT IS USED; AND, (D) AGREE TO PERFORM THE OBLIGATIONS OF THIS AGREEMENT.

**18.  
Identification of Licensor and Notices.** The Licensor is the entity identified in the table below. All notices to Licensor shall be sent by certified or registered mail to the corresponding address for the Licensor given below. In each case a copy of the notice shall also be sent to John Deere Intelligent Solutions Group, ATTN: Legal, 4140 114th Street Urbandale, IA 50322 U.S.A. All notices to Licensor shall be effective upon receipt. All notices required to be given to you shall, in Licensor's sole discretion, either be sent via certified or registered mail to the address given to Licensor in connection with your purchase of the Machine. Either method of notification used by Licensor shall be effective upon dispatch. You agree to notify Licensor of any change in your address in the manner set forth above.

Place of Purchase	Address	Governing Law	Venue
United States of America	John Deere Shared Services, Inc. One John Deere Place Moline, IL 61265 U.S.A.	State of Illinois, USA	Rock Island County, Illinois, USA
Argentina	Industrias John Deere Argentina, S.A. Casilla de Correo 80 Rosario (Santa Fe), 2000, Argentina	Province of Santa Fe, Argentina	Province of Santa Fe, Argentina
Australia or New Zealand	John Deere Limited (Australia) P.O. Box 2022 Crestmead, Queensland, Australia 4132	State of Queensland, Australia	State of Queensland, Australia
Canada	John Deere Limited 295 Hunter Road P.O. Box 1000	Province of Ontario, Canada	Province of Ontario, Canada

Continued on next page

OUT4001,00006C5-19-08NOV10-3/4



	Grimsby, ON L9K 1M3		
Chile	John Deere Water, S.A. Cerro Santa Lucia 9990 Quilicura, Santiago, Chile	Province of Santiago, Chile	Province of Santiago, Chile
Mexico	Industrias John Deere, S.A. de C.V. Boulevard Diaz Ordaz #500 Garza Garcia Nuevo Leon 66210, Mexico	State of Nuevo Leon, Mexico	State of Nuevo Leon, Mexico
Europe	ETIC Strassburgerallee 5 67657 Kaiserslautern, Germany	Federal Republic of Germany	Kaiserslautern, Germany
Other	The John Deere entity identified for the location of your Machine on <a href="http://www.JDLink.com">www.JDLink.com</a> .	The John Deere entity identified for the location of your Machine on <a href="http://www.JDLink.com">www.JDLink.com</a> .	The John Deere entity identified for the location of your Machine on <a href="http://www.JDLink.com">www.JDLink.com</a> .

OUT4001,00006C5-19-08NOV10-4/4

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- PARTS CATALOGS listing service parts available for machines with exploded view illustrations to help identify the correct parts. It is also useful in assembling and disassembling.
- OPERATOR'S MANUALS providing safety, operating, maintenance, and service information.
- TECHNICAL MANUALS outlining service information for machines. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in a separate component technical manual.



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- TRAINING GUIDES AND VIDEOS covering components, preventative maintenance, operation safety, and demonstration tips.

MB60223,0005117-19-01APR22-1/1

TX1213033—UN—07APR16



# Contents

	Page		Page
<b>Safety—Safety and Operator Conveniences</b>		<b>Safety—Safety Signs</b>	
Safety and Operator Convenience Features .....	1-1-1	Safety Signs and Other Instructions .....	1-5-1
<b>Safety—General Precautions</b>		Safety Signs Installed on Hydraulic Coupler—If Equipped .....	1-5-12
Recognize Safety Information .....	1-2-1	<b>Operation—Operator's Station</b>	
Follow Safety Instructions .....	1-2-1	Pedals, Levers, and Panels .....	2-1-1
Operate Only If Qualified .....	1-2-1	Switch Panel .....	2-1-2
Wear Protective Equipment .....	1-2-2	Switch Panel Functions .....	2-1-3
Avoid Unauthorized Machine Modifications .....	1-2-2	Rear Left Panel .....	2-1-4
Control Pattern Selector—If Equipped .....	1-2-2	Horn .....	2-1-4
Add Cab Guarding for Special Uses .....	1-2-2	Power Boost Button .....	2-1-5
Inspect Machine .....	1-2-3	Pilot Shutoff Lever .....	2-1-5
Stay Clear of Moving Parts .....	1-2-3	Left Console .....	2-1-6
Avoid High-Pressure Fluids .....	1-2-3	Travel Alarm and Travel Alarm Cancel Switch .....	2-1-6
Avoid High-Pressure Oils .....	1-2-4	Seat Heater Switch—If Equipped .....	2-1-6
Work In Ventilated Area .....	1-2-4	Reversing Fan Switch—If Equipped .....	2-1-7
Avoid Static Electricity Risk When Refueling .....	1-2-5	Exhaust Filter Parked Cleaning Switch— 6068HT073 Engine Only .....	2-1-7
Prevent Fires, Clean Debris From Machine .....	1-2-6	Right Console .....	2-1-8
In Case of Machine Fire .....	1-2-6	Right Enable Switch .....	2-1-8
Prevent Battery Explosions .....	1-2-7	Service ADVISOR™ Remote (SAR) Switch .....	2-1-8
Handle Starting Fluid Safely .....	1-2-7	Auxiliary Function Enable Switch—If Equipped .....	2-1-9
Handle Chemical Products Safely .....	1-2-7	Cab Heater and Air Conditioner .....	2-1-10
Decommissioning — Proper Recycling and Disposal of Fluids and Components .....	1-2-8	Selecting Display Between Celsius and Fahrenheit .....	2-1-11
Exhaust Filter Ash Handling and Disposal .....	1-2-8	Operating the AM/FM Radio .....	2-1-12
Prepare for Emergencies .....	1-2-9	Fire Extinguisher Mounting Location .....	2-1-13
Clean Debris from Machine .....	1-2-9	Alternative Exit Tool .....	2-1-13
<b>Safety—Operating Precautions</b>		Cab Dome Light Switch .....	2-1-14
Use Steps and Handholds Correctly .....	1-3-1	Opening Upper Front (Alternative Exit) Window .....	2-1-14
Start Only From Operator's Seat .....	1-3-1	Removing and Storing the Lower Front Window .....	2-1-15
Use and Maintain Seat Belt .....	1-3-1	Opening Cab Door Window .....	2-1-15
Prevent Unintended Machine Movement .....	1-3-2	Opening and Closing the Polycarbonate-Type Roof Exit Cover .....	2-1-16
Avoid Work Site Hazards .....	1-3-2	Adjusting the Mechanical Suspension Seat .....	2-1-16
Keep Riders Off Machine .....	1-3-3	Adjusting the Air Suspension Seat—If Equipped .....	2-1-17
Avoid Backover Accidents .....	1-3-3	Adjusting Pilot Control Lever Console Height .....	2-1-17
Inspect and Maintain ROPS .....	1-3-3	<b>Operation—Monitor Operation</b>	
Avoid Machine Tip Over and Machine Damage .....	1-3-4	Monitor .....	2-2-1
Use Special Care When Lifting Objects .....	1-3-4	Monitor Functions .....	2-2-2
Travel Safely .....	1-3-5	Monitor Start-Up .....	2-2-3
Prevent Acid Burns .....	1-3-5	Main Menu .....	2-2-4
Add and Operate Attachments Safely .....	1-3-5	Main Menu—Alarm List .....	2-2-5
<b>Safety—Maintenance Precautions</b>		Main Menu—Air Conditioner .....	2-2-11
Park and Prepare for Service Safely .....	1-4-1	Main Menu—Radio .....	2-2-13
Service Cooling System Safely .....	1-4-1	Main Menu—Work Mode .....	2-2-14
Remove Paint Before Welding or Heating .....	1-4-2	Main Menu—Setting Menu .....	2-2-15
Make Welding Repairs Safely .....	1-4-2	Main Menu—Setting Menu—Date and Time .....	2-2-16
Drive Metal Pins Safely .....	1-4-2	Main Menu—Setting Menu—Attachment Name Input .....	2-2-16
Clean Exhaust Filter Safely .....	1-4-3	Main Menu—Setting Menu—Auto-Shutdown .....	2-2-17

Continued on next page

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	Page		Page
Main Menu—Setting Menu—Auto Exhaust Filter Cleaning .....	2-2-18	Supplemental Diesel Fuel Additives .....	3-1-4
Main Menu—Setting Menu—Sub Meter Selection .....	2-2-19	Fuel Filters .....	3-1-4
Main Menu—Setting Menu—Rear View Camera Monitor .....	2-2-20	Minimizing the Effect of Cold Weather on Diesel Engines .....	3-1-5
Main Menu—Setting Menu—Display Item Selection .....	2-2-21	Alternative and Synthetic Lubricants .....	3-1-6
Main Menu—Setting Menu—Brightness Adjustment .....	2-2-21	Mixing of Lubricants .....	3-1-6
Main Menu—Setting Menu—Language .....	2-2-21	Lubricant Storage .....	3-1-6
Main Menu—Setting Menu—Unit Selection .....	2-2-22	Diesel Engine Break-In™ Oil .....	3-1-7
Main Menu—Setting Menu—Main Menu Sequence Change .....	2-2-22	John Deere Break-In Plus™ Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V .....	3-1-7
Main Menu—Information Menu .....	2-2-23	Diesel Engine Oil — Tier 2 and Stage II .....	3-1-8
Main Menu—Information Menu—Operation .....	2-2-24	Engine Oil and Filter Service Intervals — Tier 2 and Stage II Engines .....	3-1-9
Main Menu—Information Menu—Maintenance .....	2-2-25	Diesel Engine Oil — Tier 3 and Stage IIIA .....	3-1-10
Main Menu—Information Menu—Troubleshooting .....	2-2-25	Engine Oil and Filter Service Intervals—Tier 3 and Stage IIIA Engines .....	3-1-11
Main Menu—Information Menu—Monitoring .....	2-2-26	Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V .....	3-1-12
<b>Operation—Operating the Machine</b>		Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V Engines .....	3-1-13
Before Starting Work .....	2-3-1	Diesel Engine Oil Service Interval for Operation at High Altitude .....	3-1-13
Operator's Daily Machine Check Before Starting .....	2-3-1	Oil Filters .....	3-1-14
Engine Break-In Period .....	2-3-2	Hydraulic Oil .....	3-1-14
Starting Engine .....	2-3-3	Swing Gear Case and Travel Gear Case Oils .....	3-1-15
Cold Weather Start Aid .....	2-3-4	Pump Drive Gear Case Oil .....	3-1-15
Cold Weather Warm-Up .....	2-3-5	Track Adjuster, Working Tool Pivot, Swing Bearing, and Swing Bearing Gear Grease .....	3-1-16
Operate Within Machine Limits .....	2-3-6	Diesel Engine Coolant (engine with wet sleeve cylinder liners) .....	3-1-17
Digging and Grading Operation .....	2-3-6	Water Quality for Mixing with Coolant Concentrate .....	3-1-18
Travel Pedals and Levers .....	2-3-8	Operating in Warm Temperature Climates .....	3-1-18
Auxiliary Function Lever (AFL) .....	2-3-9	Testing Coolant Freeze Point .....	3-1-19
Exhaust Filter—6068HT073 Engine Only .....	2-3-10	Disposing of Coolant .....	3-1-19
Exhaust Filter Parked Cleaning—6068HT073 Engine Only .....	2-3-12	<b>Maintenance—Periodic Maintenance</b>	
Service ADVISOR™ Remote (SAR) Software Delivery Process .....	2-3-14	Service Machine at Specified Intervals .....	3-2-1
Service ADVISOR™ Remote (SAR) Operation .....	2-3-15	Check the Hour Meter Regularly .....	3-2-1
Locking the Hydraulic Coupler to the Attachment —If Equipped .....	2-3-16	Prepare Machine for Maintenance .....	3-2-1
Unlocking the Hydraulic Coupler From the Attachment—If Equipped .....	2-3-18	Engine Identification .....	3-2-2
Control Lever Pattern Operation .....	2-3-19	Open Access Doors for Service .....	3-2-5
Control Lever Pattern Conversion .....	2-3-20	Open Engine Cover for Service .....	3-2-6
Mechanical Control Lever Pattern Selector—If Equipped .....	2-3-21	Fuel Tank .....	3-2-6
Operating in Water and Mud .....	2-3-21	Hydraulic Breaker Attachment .....	3-2-7
Driving Up a Steep or Slippery Slope .....	2-3-21	Fluid Analysis Program Test Kits and 3-Way Coolant Test Kit .....	3-2-7
Required Machine Stop Warning .....	2-3-22	Service Intervals—6068HT073 Engine Only .....	3-2-8
Lifting .....	2-3-23	Required Parts—6068HT073 Engine Only .....	3-2-10
Lower Boom With Engine Stopped .....	2-3-25	Service Intervals—6068HT062 and 6068HT082 Engines Only .....	3-2-11
Parking the Machine .....	2-3-26	Required Parts—6068HT062 and 6068HT082 Engines Only .....	3-2-12
Loading and Unloading for Transport .....	2-3-27		
Towing Machine .....	2-3-28		
Lifting the Machine .....	2-3-28		
<b>Maintenance—Machine</b>		<b>Maintenance—As Required</b>	
Diesel Fuel .....	3-1-1	Remove and Clean Fuel Tank Inlet Screen .....	3-3-1
Diesel Fuel Specifications .....	3-1-1	Check Windshield Washer Fluid Level .....	3-3-1
Lubricity of Diesel Fuel .....	3-1-1	Check and Clean Air Cleaner Dust Unloader Valve .....	3-3-1
Handling and Storing Diesel Fuel .....	3-1-2	Check and Adjust Track Sag .....	3-3-2
Biodiesel Fuel .....	3-1-3	Clean Rear Camera Lens—If Equipped .....	3-3-3
Testing Diesel Fuel .....	3-1-4		

Continued on next page

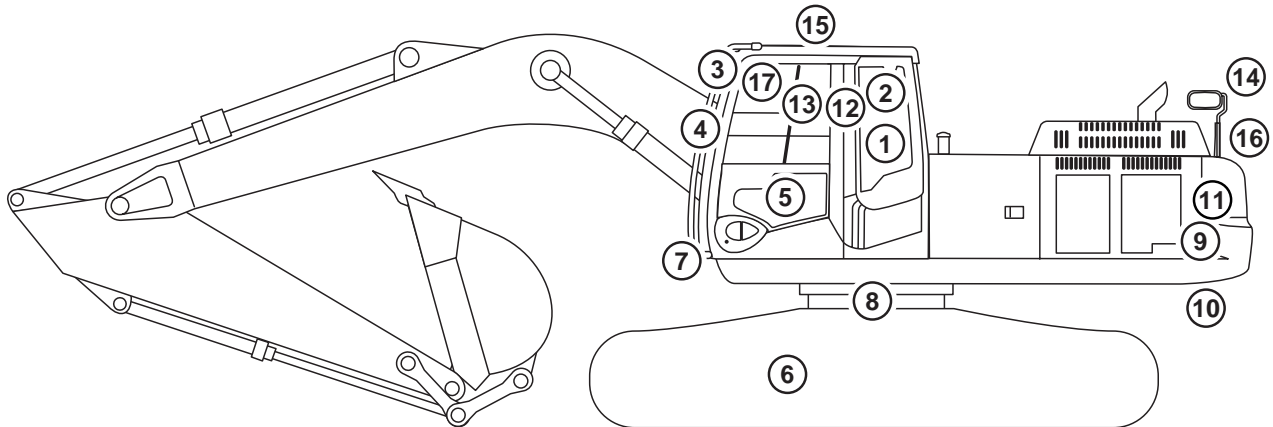
	Page		Page
Service Exhaust Filter—6068HT073 Engine Only .....	3-3-3	Remove and Clean Engine Crankcase Ventilation Tube—6068HT062 and 6068HT082 Engines Only .....	3-9-5
Clean and Tighten Battery Terminals .....	3-3-3	Inspect Serpentine Belt—6068HT073 Engine Only .....	3-9-5
<b>Maintenance—10 Hours or Daily</b>		Inspect Serpentine Belt—6068HT062 and 6068HT082 Engines Only .....	3-9-6
Check Engine Oil Level .....	3-4-1	Replace Air Cleaner Elements .....	3-9-7
Check Engine Coolant Level .....	3-4-2	Replace Air Cleaner Dust Unloader Valve .....	3-9-8
Check Hydraulic Tank Oil Level .....	3-4-3	Check Coolant Condition .....	3-9-9
Lubricate Hydraulic Coupler—If Equipped .....	3-4-4		
<b>Maintenance—Every 50 Hours or Weekly</b>		<b>Maintenance—Every 2000 Hours</b>	
Drain Water and Sediment from Fuel Tank Sump ...	3-5-1	Check and Adjust Engine Valve Lash .....	3-10-1
Drain Primary Fuel Filter and Water Separator—6068HT073 Engine Only .....	3-5-1	Drain and Refill Travel Gear Case Oil .....	3-10-1
Drain Primary Fuel Filter and Water Separator—6068HT062 and 6068HT082 Engines Only .....	3-5-2	Replace Open Crankcase Ventilation (OCV) Filter—6068HT073 Engine Only .....	3-10-1
Drain Final Fuel Filter .....	3-5-3		
Drain Auxiliary Fuel Filter and Water Separator—If Equipped .....	3-5-4	<b>Maintenance—Every 4000 Hours</b>	
Lubricate Working Tool Pivots .....	3-5-4	Replace Engine Crankshaft Damper—6068HT062 and 6068HT082 Engines Only .....	3-11-1
<b>Maintenance—Every 100 Hours</b>			
Inspect and Re-Torque Track Hardware .....	3-6-1	<b>Maintenance—Every 5000 Hours</b>	
<b>Maintenance—Every 250 Hours</b>		Drain and Refill Hydraulic Tank Oil .....	3-12-1
Check Swing Gear Case Oil Level .....	3-7-1	Replace Hydraulic Tank Vent Cap Filter .....	3-12-4
Drain Water and Sediment from Hydraulic Tank .....	3-7-1		
Check Pump Drive Gear Case Oil Level .....	3-7-3	<b>Maintenance—Every 6000 Hours</b>	
<b>Check Hybrid Battery Electrolyte Level—If Equipped</b> .....	3-7-4	Drain Cooling System—6068HT073 Engine Only .....	3-13-1
Check and Adjust Air Conditioner Belt—6068HT062 and 6068HT082 Engines Only .....	3-7-6	Cooling System Fill and Deaeration Procedure—6068HT073 Engine Only .....	3-13-2
Check Travel Gear Case Oil Level .....	3-7-6	Drain Cooling System—6068HT062 and 6068HT082 Engines Only .....	3-13-3
Lubricate Front End Pin Joints .....	3-7-7	Cooling System Fill and Deaeration Procedure—6068HT062 and 6068HT082 Engines Only .....	3-13-4
Take Engine Oil Sample .....	3-7-7		
<b>Maintenance—Every 500 Hours</b>		<b>Miscellaneous—Machine</b>	
Lubricate Swing Bearing .....	3-8-1	Bleed Fuel System .....	4-1-1
Lubricate Swing Bearing Gear .....	3-8-1	Clean Radiator, Oil Cooler, Charge Air Cooler, and Fuel Cooler .....	4-1-1
Replace Primary Fuel Filter and Water Separator—6068HT073 Engine Only .....	3-8-2	Do Not Service or Adjust Injection Nozzles or High-Pressure Fuel Pump .....	4-1-2
Replace Primary Fuel Filter and Water Separator—6068HT062 and 6068HT082 Engines Only .....	3-8-3	Do Not Service Control Valves, Cylinders, Pumps, or Motors .....	4-1-2
Replace Final Fuel Filter .....	3-8-4	Precautions for Alternator and Regulator Handling, Checking, and Servicing Batteries Carefully .....	4-1-3
Replace Auxiliary Fuel Filter and Water Separator—If Equipped .....	3-8-5	Using Battery Charger .....	4-1-5
Check Air Intake Hoses .....	3-8-6	Using Booster Batteries—24-Volt System .....	4-1-7
Drain and Refill Engine Oil and Replace Filter .....	3-8-7	Replacing Batteries .....	4-1-7
Clean Cab Fresh Air and Cab Recirculating Air Filters .....	3-8-8	Fluid Sampling Test Ports—If Equipped .....	4-1-8
Take Fluid Samples .....	3-8-8	Welding On Machine .....	4-1-8
<b>Maintenance—Every 1000 Hours</b>		Clean the Machine Regularly .....	4-1-9
Drain and Refill Swing Gear Case Oil .....	3-9-1	Adding 12-Volt Accessories .....	4-1-9
Replace Hydraulic Tank Oil Filter .....	3-9-2	JDLINK Machine Monitoring System (MMS)—If Equipped .....	4-1-9
Replace Pilot Oil Filter .....	3-9-3	Keep ROPS Installed Properly .....	4-1-9
Drain and Refill Pump Drive Gear Case Oil .....	3-9-4	Replacing Fuses .....	4-1-10
Remove and Clean Open Crankcase Ventilation (OCV) Hose—6068HT073 Engine Only .....	3-9-4	Replacing Bucket Teeth .....	4-1-13
		Replacing Bucket Tooth Tip—Heavy-Duty Bucket .....	4-1-15
		Replacing Bucket Teeth—TK Series .....	4-1-15

Continued on next page

	Page		Page
Bucket Remove and Install .....	4-1-16	250GLC Lift Capacity—Arm: 3.61 m (11 ft. 10 in.); Bucket: 871 kg (1920 lb.); Shoe: 800 mm (32 in.) .....	4-6-14
Track Sag General Information .....	4-1-20	290GLC Engine Specifications—6068HT073 Engine Only .....	4-6-15
Check Track Shoe Hardware .....	4-1-20	290GLC Engine Specifications—6068HT062 and 6068HT082 Engines Only .....	4-6-15
Hardware Torque Specifications .....	4-1-20	290GLC Drain and Refill Capacities .....	4-6-16
Unified Inch Bolt and Screw Torque Values .....	4-1-21	290GLC Machine Specifications .....	4-6-17
Metric Bolt and Screw Torque Values .....	4-1-22	290GLC Working Ranges .....	4-6-19
<b>Miscellaneous—Operational Checkout</b>		290GLC Lift Capacity—Arm: 3.11 m (10 ft. 2 in.); Bucket: 930 kg (2050 lb.); Shoe: 800 mm (32 in.) .....	4-6-21
Operational Checkout .....	4-2-1	290GLC Lift Capacity—Arm: 3.76 m (12 ft. 4 in.); Bucket: 930 kg (2050 lb.); Shoe: 800 mm (32 in.) .....	4-6-22
<b>Miscellaneous—Troubleshooting</b>			
Troubleshooting Procedure .....	4-3-1		
Engine .....	4-3-2		
Hydraulic System .....	4-3-5		
Electrical System .....	4-3-7		
Software Update .....	4-3-8		
<b>Miscellaneous—Storage</b>			
Prepare Machine for Storage .....	4-4-1		
Monthly Storage Procedure .....	4-4-2		
<b>Miscellaneous—Machine Numbers</b>			
Record Product Identification Number (PIN) .....	4-5-1		
Record Engine Serial Number—6068HT073 Engine Only .....	4-5-1		
Record Engine Serial Number—6068HT062 and 6068HT082 Engines Only .....	4-5-2		
Record Travel Motor Serial Numbers .....	4-5-2		
Record Swing Motor Serial Number .....	4-5-2		
Record Hydraulic Coupler Serial Number—If Equipped .....	4-5-3		
Record Hydraulic Pump Serial Number .....	4-5-3		
Keep Proof of Ownership .....	4-5-4		
Keep Machines Secure .....	4-5-4		
<b>Miscellaneous—Specifications</b>			
250GLC Engine Specifications—6068HT073 Engine Only .....	4-6-1		
250GLC Engine Specifications—6068HT062 and 6068HT082 Engines Only .....	4-6-1		
250GLC Drain and Refill Capacities .....	4-6-2		
250GLC Machine Specifications .....	4-6-3		
250GLC Working Ranges .....	4-6-5		
250GLC Lift Capacity—Arm: 2.50 m (8 ft. 2 in.); Bucket: 851 kg (1876 lb.); Shoe 600 mm (28 in.) .....	4-6-8		
250GLC Lift Capacity—Arm: 2.50 m (8 ft. 2 in.); Bucket: 851 kg (1876 lb.); Shoe 700 mm (28 in.) .....	4-6-9		
250GLC Lift Capacity—Arm: 2.50 m (8 ft. 2 in.); Bucket: 851 kg (1876 lb.); Shoe 800 mm (32 in.) .....	4-6-10		
250GLC Lift Capacity—Arm: 2.96 m (9 ft. 9 in.); Bucket: 871 kg (1920 lb.); Shoe: 700 mm (28 in.) .....	4-6-11		
250GLC Lift Capacity—Arm: 2.96 m (9 ft. 9 in.); Bucket: 871 kg (1920 lb.); Shoe: 800 mm (32 in.) .....	4-6-12		
250GLC Lift Capacity—Arm: 3.61 m (11 ft. 10 in.); Bucket: 871 kg (1920 lb.); Shoe: 700 mm (28 in.) .....	4-6-13		

# Safety—Safety and Operator Conveniences

## Safety and Operator Convenience Features



TX1300029

*Excavator Safety and Operator Convenience Features*

TX1300029—UN—13JUL20

**Remember that the operator is the key to preventing accidents.**

**1. Seat Belt With Retractors.** Seat belt retractors help keep belts clean and convenient to use.

**2. Window Guarding.** The stationary window with bars prevents contact with a moving boom.

**3. Rearview Mirrors.** Rearview mirrors provide the operator a view of activity along side of the machine.

**4. Alternative Exits.** The front window provides a large exit path if the cab door is blocked in an emergency situation. The rear window is also an alternative exit with an alternative exit tool provided.

**5. Pilot Shutoff Lever.** A lever near the cab exit reminds the operator to deactivate hydraulic functions before leaving the machine.

**6. Steps.** Wide and slip-resistant steps allow entering and exiting easier for the operator. The steps also provide a place to clean shoes.

**7. Handholds.** Large handholds are conveniently placed to assist operator entering or exiting the operator's station.

**8. Swing Brake.** Swing brake engages automatically when the swing is not operated. The swing brake helps secure upperstructure when transporting the machine.

**9. Bypass Start Protection.** Shielding over the starter helps prevent dangerous bypass starting.

**10. Travel Alarm.** The travel alarm alerts bystanders of the forward or reverse movement of the machine.

**11. Engine Fan Guard.** A fan guard inside the engine compartment helps prevent contact with the engine cooling fan.

**12. Horn.** Standard horn is useful when driving or signaling coworkers.

**13. Cab With Heater, Defroster, and Air Conditioner.** 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. The air conditioner provides a comfortable, temperature-controlled working environment.

**14. Counterweight Mirror (if equipped).** The counterweight mirror provides the operator a view directly behind the machine.

**15. ROPS and FOPS.** Integrated roll-over protective structure (ROPS) and falling object protective structure (FOPS) are designed to protect the operator. The enclosed lockable cabin also provides protection from the weather and reduces vandalism.

**16. Rear Camera (if equipped).** The rear camera provides the operator a view directly behind the machine.

**17. Sunshade (if equipped).** The adjustable sunshade reduces glare when operating in bright sunlight.

ER79617,0000D84-19-20JUL20-1/1

# 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.



**▲ DANGER**

**▲ WARNING**

**▲ CAUTION**

T133555—UN—15APR13

T133558—19—28AUG00

TX,RECOGNIZE-19-28JUN10-1/1

## Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement. Be sure that new equipment components and repair parts include the current safety signs. Replacement safety signs are available at 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 could impair the function 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.

TX,FOLLOW-19-28AUG23-1/1

## 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.

TX,QUALIFIED-19-18JAN11-1/1



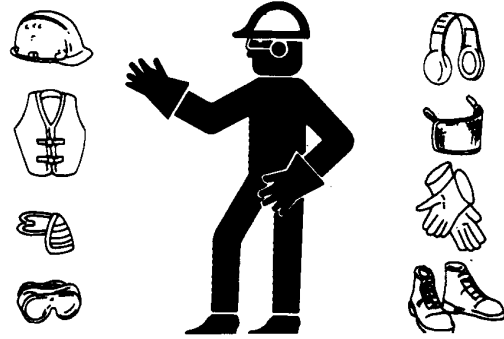
## Wear Protective Equipment

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 safety 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

TX,WEAR,PE-19-28AUG23-1/1

## 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 malfunctions resulting from their use, are not covered by any John Deere warranty.

Modifications to 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 that 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 dealer before making machine modifications that change the intended use, weight, or balance of the machine or that alter machine controls, performance, or reliability.

TX,AVOID,MACH,MODS-19-24FEB20-1/1

## Control Pattern Selector—If Equipped

This machine may be equipped with a control pattern selector valve. Ensure all bystanders are clear of machine

and area is large enough to operate machine functions. Verify the machine response to each control movement.

TX,CTRL,PAT,IFEQUIP-19-24FEB20-1/1

## Add Cab Guarding for Special Uses

Special work situations or machine attachments could 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 or wooded area, or working in a waste management application, for example, could require added guarding to protect the operator.

Additional level II FOPS (falling object protective structure),

forestry protection packages, and special screens or guarding should be installed when falling or flying objects could 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.

TX,CABGUARD-19-12FEB13-1/1

## 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

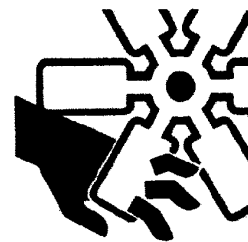
TX,INSPECT-19-16MAY23-1/1

## 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

TX,MOVING,PARTS-19-20JAN11-1/1

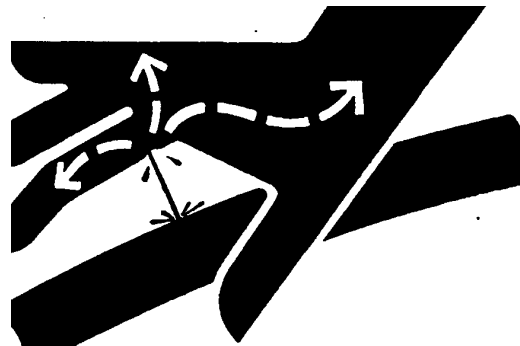
## Avoid High-Pressure Fluids

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, seek medical assistance immediately.



X9811—UN—23AUG88

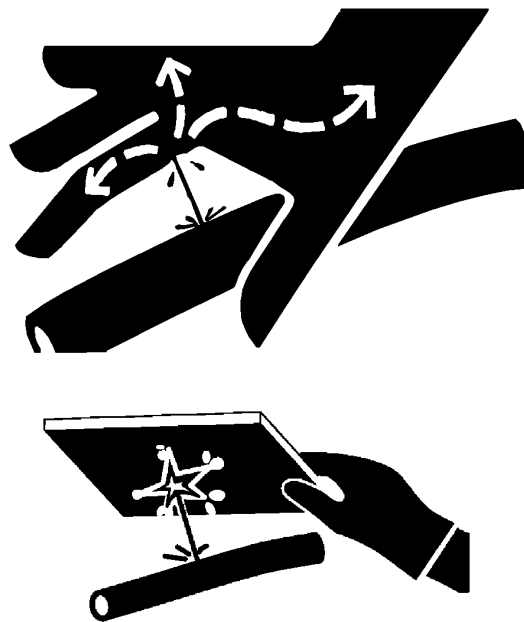
TX,FLUID-19-21DEC21-1/1

## 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, seek medical assistance immediately.**



T133509—UN—15APR13

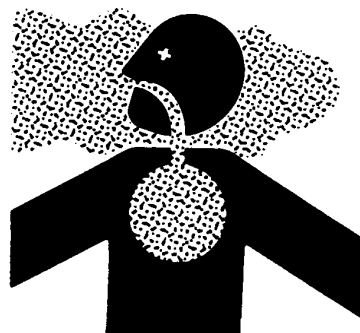
T133840—UN—20SEP00

TX,HPOILS-19-21DEC21-1/1

## 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

## Avoid Static Electricity Risk When Refueling

The removal of sulfur and other compounds in Ultra-Low Sulfur Diesel (ULSD) fuel decreases its conductivity and increases its ability to store a static charge.

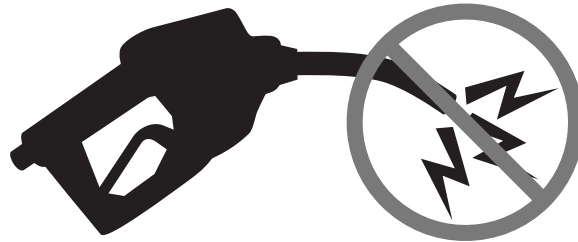
Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion.

Therefore, it is important to ensure that the entire system used to refuel your machine (fuel supply tank, transfer pump, transfer hose, nozzle, and others) is properly grounded and bonded. Consult with your fuel or fuel system supplier to ensure that the delivery system is in compliance with fueling standards for proper grounding and bonding practices.



RG22142—UN—17MAR14



RG21992—UN—21AUG13

DX,FUEL,STATIC,ELEC-19-12JUL13-1/1

## Prevent Fires, Clean Debris From Machine

**Handle Fluids Safely:** All fuels, most lubricants, and some coolant mixtures are flammable. Store flammable fluids away from fire hazards. Never refuel machine while smoking or when near sparks or flame.

**Clean Machine Regularly:** Engine temperatures may be elevated following engine shut-down. Keep flammable debris (trash, leaves, twigs, straw, etc.), grease and oil from accumulating in or around engine compartment, radiator, batteries, fuel tank, operator station, fuel lines, hydraulic lines, exhaust components, and electrical wiring. Never store oily rags or flammable materials inside any machine compartment.

**Maintain Hoses, Tubes, and Wiring:** Replace hoses and tubes 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 multipurpose fire extinguisher on or near the machine. Know how to use an extinguisher properly.

**Be Aware of the Operating Environment:** debris may contain sparks or embers. Do not operate near any flames.



Handle Fuel Safely



Clean Machine Regularly



Carry a Fire Extinguisher



Caution

TX,PREVENT,FIRE-19-02NOV22-1/1

T133552—UN—15APR13

T133553—UN—07SEP00

T133554—UN—07SEP00

T133555—UN—15APR13

## In Case of Machine Fire

**CAUTION:** Avoid personal injury from exposed flames. Maintain safe distance.

- Turn the engine off.
- Turn the battery disconnect switch to the OFF position (if equipped).
- If possible, fight the fire using the portable fire extinguisher or other fire suppression equipment (if equipped).
- Ensure that the fire does not spread to the surrounding area. Do not risk injury. If a fire is too far advanced, do not try to extinguish fire.
- Call for help.



In Case of Machine Fire

TX,MACH,FIRE-19-24FEB20-1/1

TS227—UN—15APR13

## 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 voltmeter or hydrometer.

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

Keep battery electrolyte levels properly maintained.



Battery Explosions

TX,PREVENT,BATT-19-24FEB20-1/1

TS204—UN—15APR13

## Handle Starting Fluid Safely

Starting fluid is highly flammable.

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

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

Do not incinerate or puncture a starting fluid container.

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



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

TS1356—UN—18MAR92

## 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.)



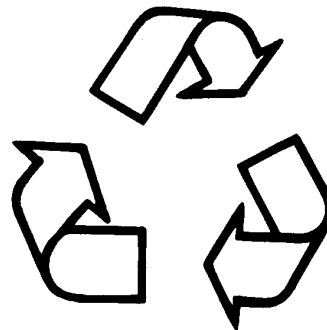
DX,MSDS,NA-19-03MAR93-1/1

TS1132—UN—15APR13

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

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

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



TS1133—UN—15APR13

filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.

- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

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

## Exhaust Filter Ash Handling and Disposal

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

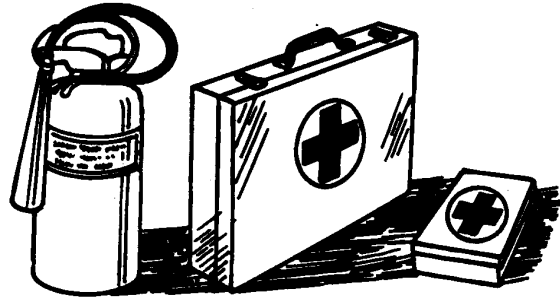
TX,ASH,DISP-19-31MAR22-1/1

## Prepare for Emergencies

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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



TS291—UN—15APR13

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

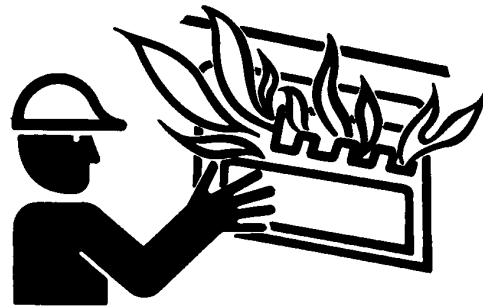
## Clean Debris from Machine

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 could 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

TX,DEBRIS-19-16MAY23-1/1

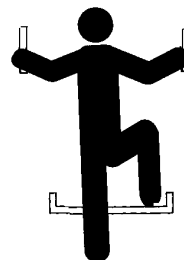


# Safety—Operating Precautions

## 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.



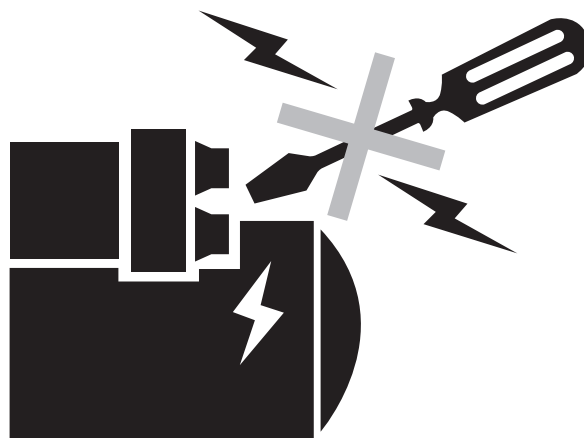
TX133468—UN—15APR13

TX,STEPS-19-09FEB11-1/1

## Start Only From Operator's Seat

Avoid unexpected machine movement. Start engine only while sitting in operator's seat. Ensure that 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.



TX1314398—UN—29JUN21

*Operate Only From Operators Seat*

TX,SOFOS-19-29JUN21-1/1

## 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.

**CAUTION:** Prevent personal injury. Check condition of seat belt and mounting hardware before operating machine. Replace if worn, frayed, or damaged.

Replace seat belt at least every 3 years, regardless of condition.



# USE SEAT BELT

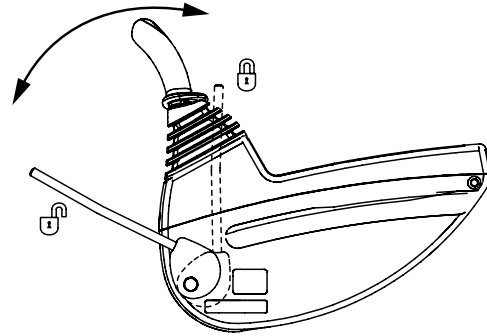
TX1165594—19—23JUL14

TX,SEAT,BELT-19-27JUL20-1/1

## Prevent Unintended Machine Movement

Be careful not to accidentally actuate control levers when coworkers are present. Pull pilot shutoff lever to locked (UP) position during work interruptions. Pull pilot shutoff lever to locked (UP) position and stop engine before allowing anyone to approach machine.

Always lower work equipment to the ground and pull pilot shutoff lever to locked (UP) position before standing up or leaving the operator's seat. Stop engine before exiting.



T216779—UN—22NOV05

VD76477,000036D-19-19APR11-1/1

## Avoid Work Site Hazards

**Before digging, check local requirements and call utility line location services to identify and mark all underground utilities in digging area before starting work. Avoid contact with gas lines, buried cables, and water lines.**

**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 any part of machine or load closer than 3 m (10 ft) plus 13 mm (1/2 in) for each additional 1000 volts above the 50 000 volt level.

**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 bystanders. 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 seat belt.



Work Site Hazards



Work Site Hazards



(USA only)  
1-888-258-0808  
(USA & Canada)

811 Call Before You Dig

TX03679,0001748-19-26JUN23-1/1

T133650—UN—27SEP00

T133549—UN—24AUG00

TX1286211—UN—03OCT19

## Keep Riders Off Machine

### Always use seat belt.

Only allow operator on machine.

The instructional seat, if equipped, is used to accommodate trainers, persons that need to observe machine operation, and for coworkers to provide further operational instructions.

Riders are subject to injury due to fall from machine, being caught between machine parts, or being struck by foreign objects. Riders may obstruct the operator's view or impair the operator's ability to operate machine safely.



Keep Riders Off Machine

TX,NO,RIDERS,EXC-19-23APR20-1/1

TX1094208—UN—27JUN13

## Avoid Backover Accidents

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

**Be certain reverse 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.

Do not rely on the rear camera and radar object detection systems, if equipped, to determine if personnel are behind the machine. The system has limitations due to

maintenance practices, environmental conditions, and operating range.



TX,AVOID,BACKOVER-19-04MAR16-1/1

PC10857XW—UN—15APR13

## Inspect and Maintain ROPS

A damaged rollover protective structure (ROPS) should be replaced, not reused.

The protection offered by ROPS could be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting.

If ROPS was loosened or removed for any reason, inspect it carefully before operating the machine again.

To maintain the ROPS:

- Replace missing hardware using correct grade hardware.
- Check hardware torque.
- Check isolation mounts for damage, looseness, or wear; replace them if necessary.
- Check ROPS for cracks or physical damage.

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

## Avoid Machine Tip Over and Machine Damage

**Use seat belt at all times.**

**Do not jump if the machine tips.** Operator is unlikely to jump clear and the machine may crush the operator.

**Load and unload from trucks or trailers carefully.** Be sure that truck is wide enough and 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.

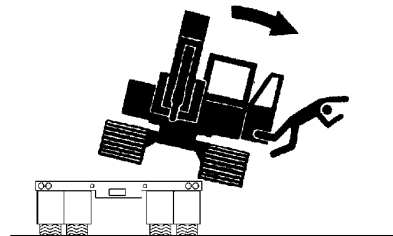
**Be careful on slopes.** Use extra care on soft, rocky, or frozen ground. Machine may slip sideways in these conditions. When traveling up or down slopes, keep the bucket on uphill side and just above ground level.

**Be careful with heavy loads.** Using oversize buckets or lifting heavy objects reduces machine stability. Extending a heavy load or swinging it over side of undercarriage may cause machine to tip.

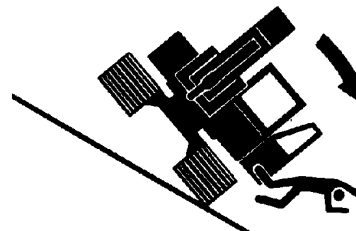
**Ensure solid footing.** Use extra care when operating near banks or excavations that may cave-in and cause machine to tip or fall.



Use Seat Belt



Unloading Machine



Do Not Jump

TX03679,00016DF-19-24OCT19-1/1

T133716—19—17APR13

T133545—UN—15SEP00

T133803—UN—27SEP00

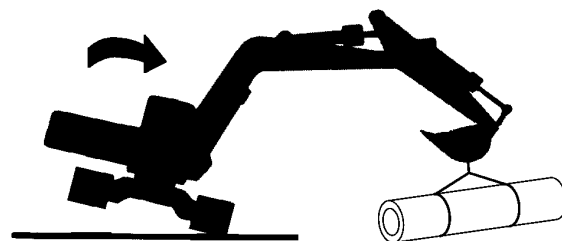
## Use Special Care When Lifting Objects

Never use this machine to lift people.

Never lift a load above another person. Keep bystanders clear of all areas where a load might fall if it breaks free. Do not leave the seat when there is a raised load.

Do not exceed lift capacity limits posted on machine and in this manual. Extending heavy loads too far or swinging over undercarriage side may cause machine to tip over.

Use proper rigging to attach and stabilize loads. Be sure slings or chains have adequate capacity and are in good condition. Use tether lines to guide loads and prearranged hand signals to communicate with co-workers.



Use Special Care When Lifting Objects

TX,LIFT,CARE-19-08MAY20-1/1

T133839—UN—27SEP00

## Travel Safely

When working on steep slopes, travel as straight up and down as possible to prevent roll over.

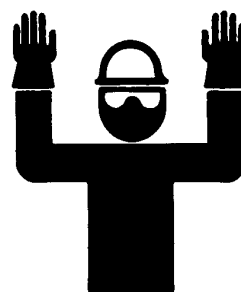
### **DO NOT PARK ON A HILLSIDE OR AN INCLINE.**

Always park the machine on level ground.

Know the location of bystanders before moving the machine.

Always keep the reverse/travel warning alarm in working condition. The alarm warns bystanders when the machine starts to move in reverse.

Use a signal person when moving the machine in congested areas. Coordinate hand signals before starting the machine.



Travel Safely

T6964AD—UN—20DEC88

TX,TRAVEL,SAFE1-19-08MAY20-1/1

## Prevent Acid Burns

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:

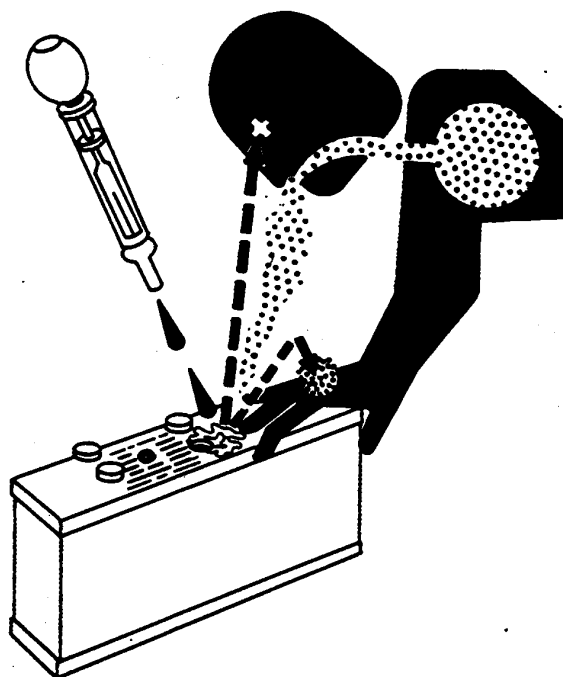
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

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 2 L (2 quarts).
3. Get medical attention immediately.



TS203—UN—23AUG88

DX,POISON-19-21APR93-1/1

## Add and Operate Attachments Safely

Always verify compatibility of attachments by contacting your authorized dealer. Adding unapproved attachments could affect machine stability or reliability and could 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.

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

# Safety—Maintenance Precautions

## Park and Prepare for Service Safely

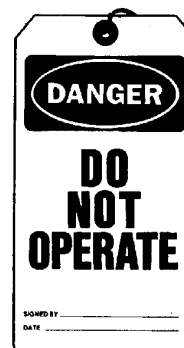
**Warn others of service work.** Always park and prepare machine for service or repair properly.

- Park machine on a level surface and lower equipment to the ground.
- Place pilot shutoff lever in locked (UP) position. Stop engine and remove key.
- Attach a “Do Not Operate” tag in an obvious place in the operator's station.

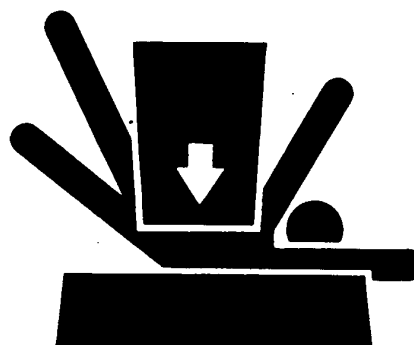
Securely support machine or attachment before working under it.

- Do not support machine with any hydraulically actuated equipment.
- 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.



*Do Not Operate Tag*



*Support Machine Properly*

OUT4001,000089A-19-02JUL15-1/1

T133332—19—17APR13

TS229—UN—23AUG88

## 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.



TX,SURGE-19-19JAN11-1/1

TS281—UN—15APR13

## 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.

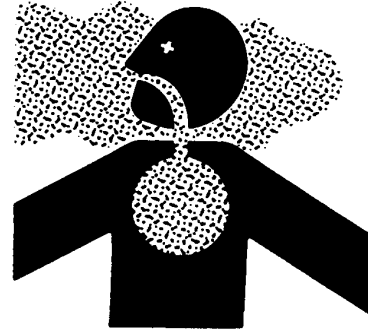
Remove paint before heating:

- 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.

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

Dispose of paint and solvent properly.



TS220—UN—15APR13

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

## Make Welding Repairs Safely

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

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

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

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



*Heating Near Pressurized Fluid Lines*

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

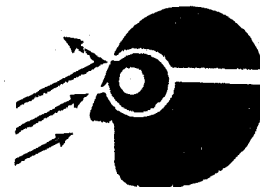
T133547—UN—15APR13

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

## Drive Metal Pins Safely

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

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



T133738—UN—15APR13

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

## Clean Exhaust Filter Safely

During exhaust filter cleaning operations, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components reach temperatures hot enough to burn people, or ignite or melt common materials.

Keep machine away from people, animals, or structures which may be susceptible to harm or damage from hot exhaust gases or components. Avoid potential fire or explosion hazards from flammable materials and vapors near the exhaust. Keep exhaust outlet away from people and anything that can melt, burn, or explode.

Closely monitor machine and surrounding area for smoldering debris during and after exhaust filter cleaning.

Adding fuel while an engine is running can create a fire or explosion hazard. Always stop engine before refueling machine and clean up any spilled fuel.

Always make sure that engine is stopped while hauling machine on a truck or trailer.

Contact with exhaust components while still hot can result in serious personal injury.

Avoid contact with these components until cooled to safe temperatures.

If service procedure requires engine to be running:

- Only engage power-driven parts required by service procedure
- Ensure that other people are clear of operator station and machine

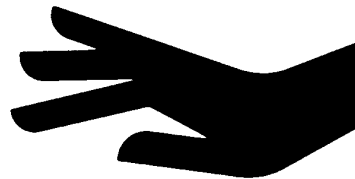
Keep hands, feet, and clothing away from power-driven parts.

Always disable movement (neutral), set the parking brake or mechanism and disconnect power to attachments or tools before leaving the operator's station.

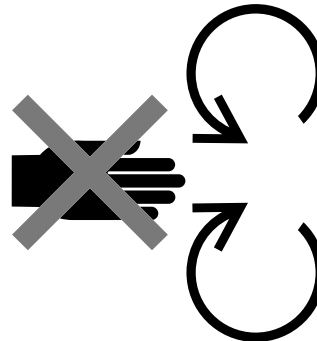
Shut off engine and remove key (if equipped) before leaving the machine unattended.



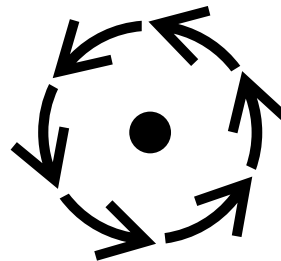
TS227—UN—15APR13



TS271—UN—23AUG88



TS1693—UN—09DEC09



**STOP**

TS1695—UN—07DEC09

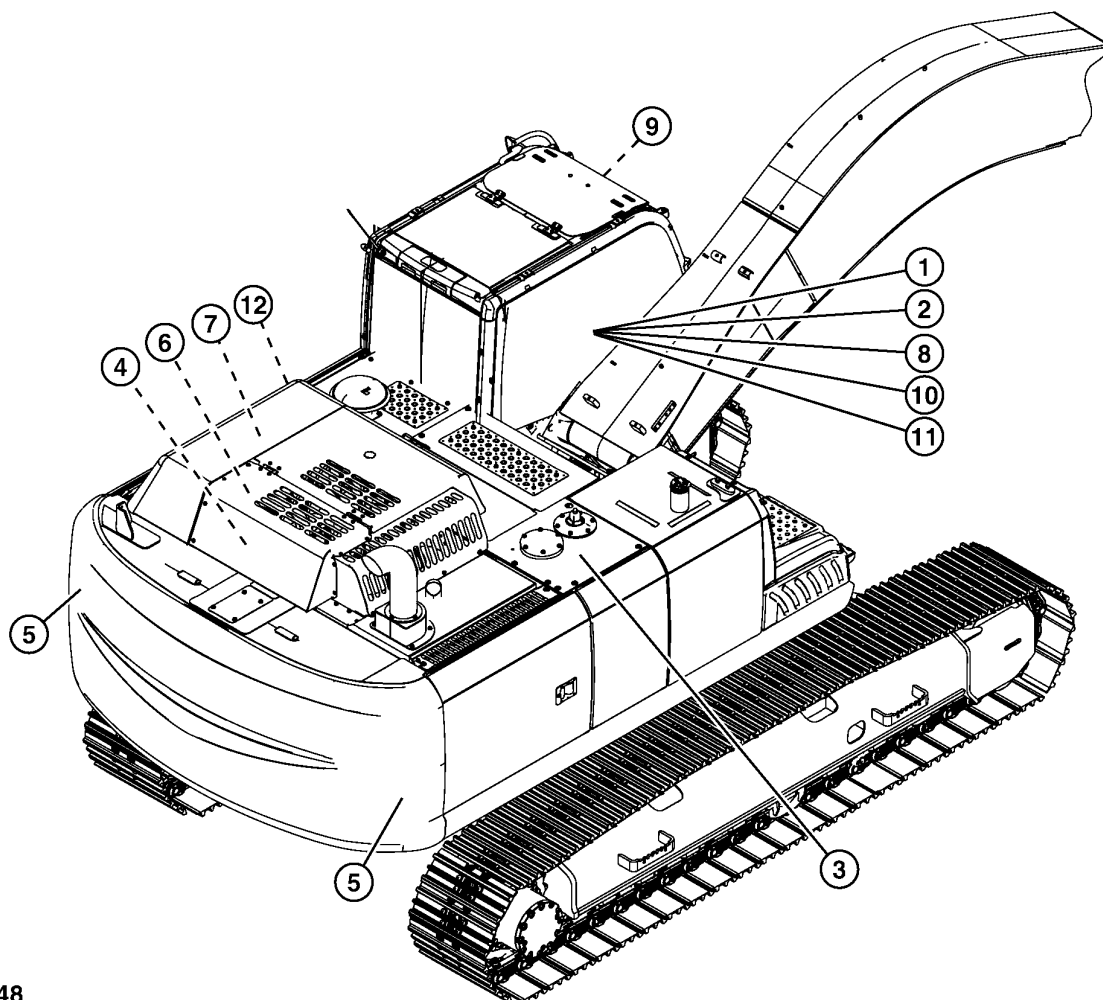
DX,EXHAUST,FILTER-19-12JAN11-1/1



# Safety—Safety Signs

## Safety Signs and Other Instructions

Early Production



TX1162548

### *Safety Signs and Other Instructions*

- |                                                   |                                |                                                    |                                   |
|---------------------------------------------------|--------------------------------|----------------------------------------------------|-----------------------------------|
| 1—CAUTION, Alternate Control Patterns—If Equipped | 4—DANGER, Start Only From Seat | 7—WARNING, Pressurized System                      | 10—DANGER, Electric Lines         |
| 2—CAUTION, Operate Machine Safely                 | 5—WARNING, Stay Clear          | 8—WARNING, Avoid Serious Crushing Injury From Boom | 11—CAUTION, Prevent Injury        |
| 3—CAUTION, Do Not Open Hot                        | 6—WARNING, Rotating Fan Blade  | 9—CAUTION, Avoid Injury From Slip or Fall          | 12—WARNING, Avoid Machine Tipover |

Continued on next page

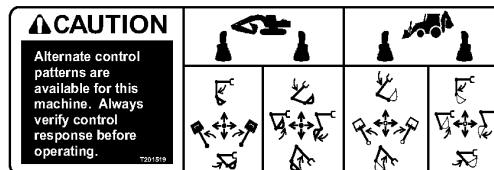
MB60223,00002BD-19-06APR15-1/29

TX1162548—UN—08JUN14

### 1. CAUTION, Alternate Control Patterns—If Equipped

Alternate control patterns are available for this backhoe. Always verify control response before operating.

This safety label is located inside the cab on the right-side window.



CAUTION, Alternate Control Patterns—If Equipped

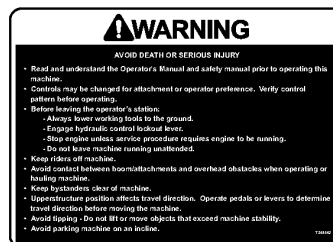
MB60223,00002BD-19-06APR15-2/29

TX1104371—19—12APR12

### 2. CAUTION, Operate Machine Safely

AVOID DEATH OR SERIOUS INJURY - Read and understand Operator's Manual before operating this machine.

- Read and understand the Operator's Manual and safety manual prior to operating this machine.
- Controls may be changed for attachment or operator preference. Verify control pattern before operating.
- Before leaving the operator's station:
  - Always lower working tools to the ground.
  - Engage hydraulic control lockout lever.
  - Stop engine unless service procedure requires engine to be running.
  - Do not leave machine running unattended.
- Keep riders off machine.
- Avoid contact between boom/attachments and overhead obstacles when operating or hauling machine.
- Keep bystanders clear of machine.
- Upperstructure position affects travel direction. Operate pedals or levers to determine travel direction before moving the machine.



CAUTION, Operate Machine Safely

- Avoid tipping - Do not lift or move objects that exceed machine stability.
- Avoid parking machine on an incline.

This safety label is located inside the cab on the right-side window.

MB60223,00002BD-19-06APR15-3/29

TX1104372—19—12APR12

### 3. CAUTION, Do Not Open Hot

Release internal pressure by pressing air breather button prior to removing reservoir cap.

This safety label is located on top of the hydraulic reservoir.



CAUTION, Do Not Open Hot

MB60223,00002BD-19-06APR15-4/29

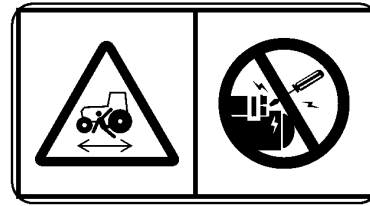
TX1104377—19—12APR12

Continued on next page

#### 4. **DANGER, Start Only From Seat**

Start only from seat in park or neutral. Starting in gear kills.

This safety message is positioned on the starter inside the engine compartment.



*DANGER, Start Only From Seat*

MB60223,00002BD-19-06APR15-5/29

TX109889—19—05DEC11

#### 5. **WARNING, Stay Clear**

Operator may swing or reverse machine.

This safety label is located at the rear of the machine on each side of the counterweight.



*WARNING, Stay Clear*

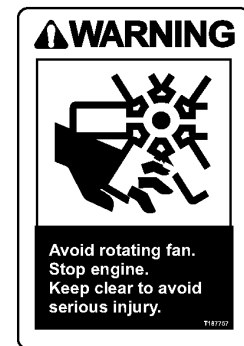
MB60223,00002BD-19-06APR15-6/29

TX1104370—19—19DEC12

#### 6. **WARNING, Rotating Fan Blade**

Avoid injury, keep clear of rotating fan blade.

This safety label is located on top of the engine.



*WARNING, Rotating Fan Blade*

MB60223,00002BD-19-06APR15-7/29

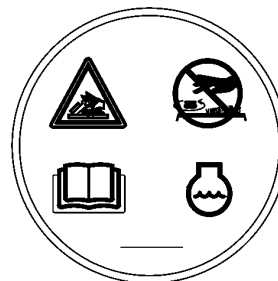
TX1103569—19—16DEC11

Continued on next page

## 7. WARNING, Pressurized System

Hot coolant can cause serious burns, injury or death. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure.

This safety label is located on the surge tank cap.



WARNING, Pressurized System

MB60223,00002BD-19-06APR15-8/29

TX1099924—UN—24OCT11

## 8. WARNING, Avoid Serious Crushing Injury From Boom

Never place any part of body beyond window bars or frame. It could be crushed by the boom if boom control lever is accidentally bumped or otherwise engaged.

DO NOT remove window bars. If window is missing or broken, replace immediately.

This safety label is located inside the cab on the right-side window.



WARNING, Avoid Serious Crushing Injury From Boom

MB60223,00002BD-19-06APR15-9/29

TX1104373—19—12APR12

## 9. CAUTION, Avoid Injury From Slip or Fall

DO NOT use as a handhold.

Window handle will move with the front window.

This safety label is located inside the cab on the handle of the front window.



CAUTION, Avoid Injury From Slip or Fall

MB60223,00002BD-19-06APR15-10/29

TX1104375—19—12APR12

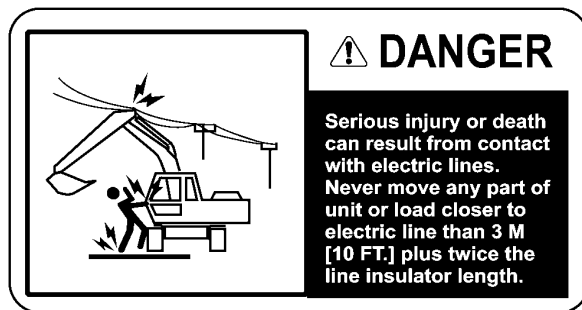
Continued on next page

## 10. DANGER, Electric Lines

Serious injury or death can result from contact with electric lines.

Never move any part of unit or load closer to electric line than 3 M [10 ft.] plus twice the line insulator length.

This safety label is located inside the cab on the right-side window.



DANGER, Electric Lines

MB60223,00002BD-19-06APR15-11/29

TX1104374—19—19DEC12

## 11. CAUTION, Prevent Injury

To prevent injury from the front window falling, lock window in place with the lock pin.

This safety label is located inside the cab on the right-side window.



CAUTION, Prevent Injury

MB60223,00002BD-19-06APR15-12/29

TX1104376—19—12APR12

## 12. WARNING, Avoid Machine Tipover

Machine is less stable with boom and arm removed.

- Travel and swing very slowly.
- Use extreme care when loading.
  - Avoid counter-rotation.
  - Do not swing counterweight beyond edge of truck bed.
- Keep counterweight pointed uphill on inclines.

This safety label is located outside the left front service door.



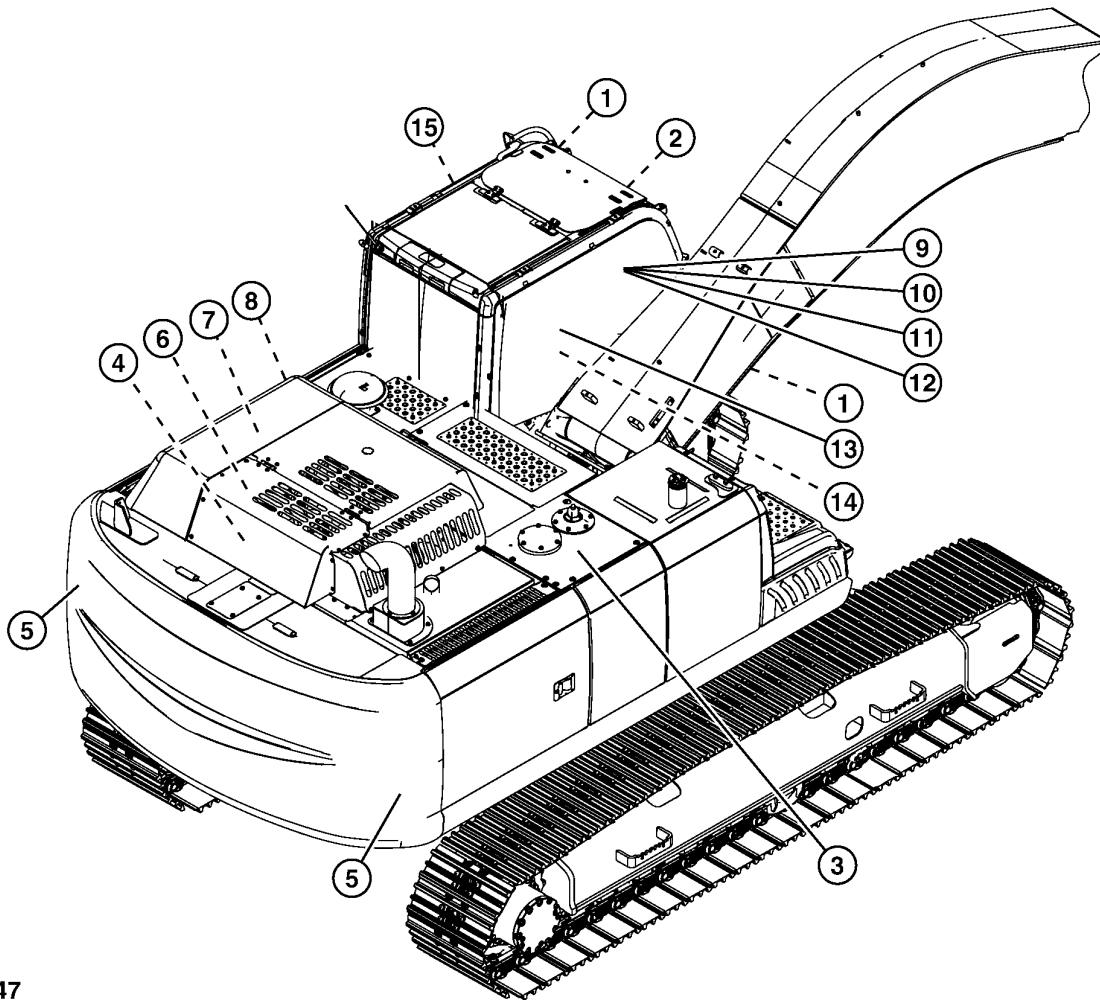
WARNING, Avoid Machine Tipover

MB60223,00002BD-19-06APR15-13/29

TX111959—19—12APR12

Continued on next page

Late Production



TX1162547—UN—10JUN14

TX1162547

Safety Signs and Other Instructions

- |                                           |                                  |                                                     |                                |
|-------------------------------------------|----------------------------------|-----------------------------------------------------|--------------------------------|
| 1—Protective Structure Certification      | 5—WARNING, Stay Clear            | 9—DANGER, Electric Lines                            | 13—CAUTION, Prevent Injury     |
| 2—CAUTION, Avoid Injury From Slip or Fall | 6—WARNING, Rotating Fan Blade    | 10—CAUTION, Operate Machine Safely                  | 14—CAUTION, Pinch Point        |
| 3—CAUTION, Do Not Open Hot                | 7—WARNING, Pressurized System    | 11—WARNING, Avoid Serious Crushing Injury From Boom | 15—IMPORTANT, Alternative Exit |
| 4—DANGER, Start Only From Seat            | 8—WARNING, Avoid Machine Tipover | 12—CAUTION, Alternate Control Patterns—If Equipped  |                                |

Continued on next page

MB60223,00002BD-19-06APR15-14/29

### 1. Protective Structure Certification

Any alteration or modification to this structure voids the certification.

Always wear seat belt when moving.

This safety label is located inside the cab on the left front ROPS post or on the right front corner of the outside cab.



Protective Structure Certification

MB60223,00002BD-19-06APR15-15/29

TX1156960—UN—07APR14

### 2. CAUTION, Avoid Injury From Slip or Fall

DO NOT use as a handhold.

Window handle will move with the front window.

This safety label is located inside the cab on the handle of the front window.



CAUTION, Avoid Injury From Slip or Fall

MB60223,00002BD-19-06APR15-16/29

TX1104375—19—12APR12

### 3. CAUTION, Do Not Open Hot

Release internal pressure by pressing air breather button prior to removing reservoir cap.

This safety label is located on top of the hydraulic reservoir.



CAUTION, Do Not Open Hot

MB60223,00002BD-19-06APR15-17/29

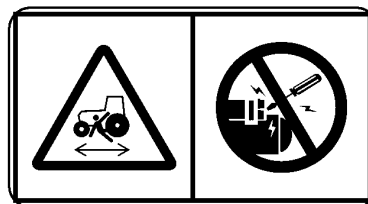
TX1104377—19—12APR12

Continued on next page

#### 4. **DANGER, Start Only From Seat**

Start only from seat in park or neutral. Starting in gear kills.

This safety message is positioned on the starter inside the engine compartment.



TX1099889—19—05DEC11

*DANGER, Start Only From Seat*

MB60223,00002BD-19-06APR15-18/29

#### 5. **WARNING, Stay Clear**

Operator may swing or reverse machine.

This safety label is located at the rear of the machine on each side of the counterweight.



TX1104370—19—19DEC12

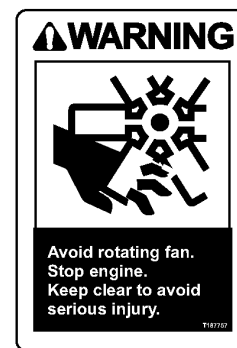
*WARNING, Stay Clear*

MB60223,00002BD-19-06APR15-19/29

#### 6. **WARNING, Rotating Fan Blade**

Avoid injury, keep clear of rotating fan blade.

This safety label is located on top of the engine.



TX1103569—19—16DEC11

*WARNING, Rotating Fan Blade*

MB60223,00002BD-19-06APR15-20/29

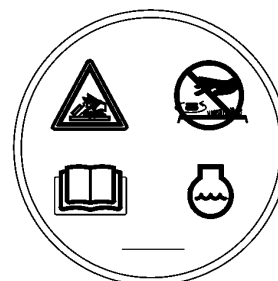
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## 7. WARNING, Pressurized System

Hot coolant can cause serious burns, injury or death. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure.

This safety label is located on the surge tank cap.



WARNING, Pressurized System

MB60223,00002BD-19-06APR15-21/29

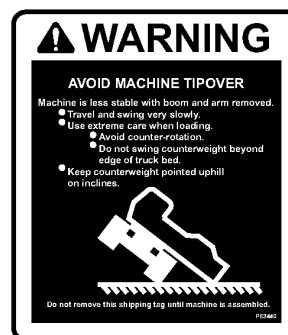
TX109924—UN—24OCT11

## 8. WARNING, Avoid Machine Tipover

Machine is less stable with boom and arm removed.

- Travel and swing very slowly.
- Use extreme care when loading.
  - Avoid counter-rotation.
  - Do not swing counterweight beyond edge of truck bed.
- Keep counterweight pointed uphill on inclines.

This safety label is located outside the left front service door.



WARNING, Avoid Machine Tipover

MB60223,00002BD-19-06APR15-22/29

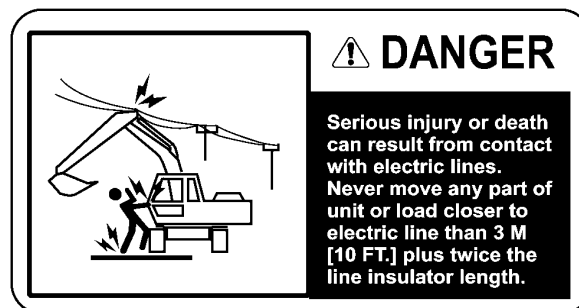
TX111959—19—12APR12

## 9. DANGER, Electric Lines

Serious injury or death can result from contact with electric lines.

Never move any part of unit or load closer to electric line than 3 M [10 ft.] plus twice the line insulator length.

This safety label is located inside the cab on the right-side window.



DANGER, Electric Lines

MB60223,00002BD-19-06APR15-23/29

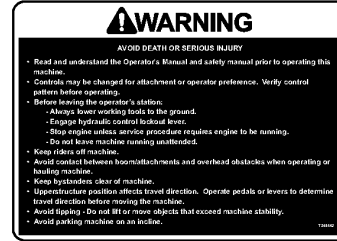
TX1104374—19—19DEC12

Continued on next page

## 10. CAUTION, Operate Machine Safely

AVOID DEATH OR SERIOUS INJURY - Read and understand Operator's Manual before operating this machine.

- Read and understand the Operator's Manual and safety manual prior to operating this machine.
- Controls may be changed for attachment or operator preference. Verify control pattern before operating.
- Before leaving the operator's station:
  - Always lower working tools to the ground.
  - Engage hydraulic control lockout lever.
  - Stop engine unless service procedure requires engine to be running.
  - Do not leave machine running unattended.
- Keep riders off machine.
- Avoid contact between boom/attachments and overhead obstacles when operating or hauling machine.
- Keep bystanders clear of machine.
- Upperstructure position affects travel direction. Operate pedals or levers to determine travel direction before moving the machine.



CAUTION, Operate Machine Safely

- Avoid tipping - Do not lift or move objects that exceed machine stability.
- Avoid parking machine on an incline.

This safety label is located inside the cab on the right-side window.

MB60223,00002BD-19-06APR15-24/29

TX1104372—19—12APR12

## 11. WARNING, Avoid Serious Crushing Injury From Boom

Never place any part of body beyond window bars or frame. It could be crushed by the boom if boom control lever is accidentally bumped or otherwise engaged.

DO NOT remove window bars. If window is missing or broken, replace immediately.

This safety label is located inside the cab on the right-side window.



WARNING, Avoid Serious Crushing Injury From Boom

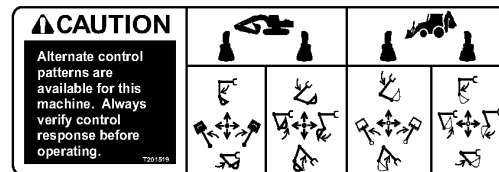
MB60223,00002BD-19-06APR15-25/29

TX1104373—19—12APR12

## 12. CAUTION, Alternate Control Patterns—If Equipped

Alternate control patterns are available for this backhoe. Always verify control response before operating.

This safety label is located inside the cab on the right-side window.



CAUTION, Alternate Control Patterns—If Equipped

MB60223,00002BD-19-06APR15-26/29

TX1104371—19—12APR12

Continued on next page

### 13. CAUTION, Prevent Injury

To prevent injury from the front window falling, lock window in place with the lock pin.

This safety label is located inside the cab on the right-side window.



TX1104376—19—12APR12

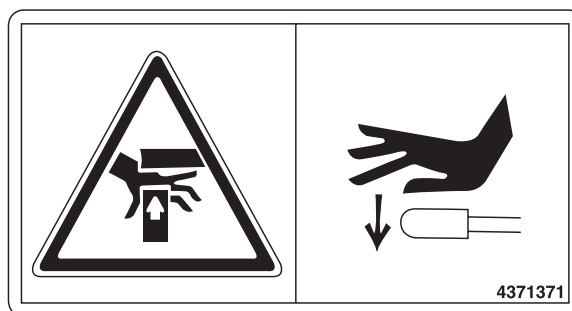
CAUTION, Prevent Injury

MB60223,00002BD-19-06APR15-27/29

### 14. CAUTION, Pinch Point

Avoid personal injury when operating seat fore-aft lever.

This safety label is located on the front of seat pedestal.



TX1157159—UN—04APR14

CAUTION, Pinch Point

MB60223,00002BD-19-06APR15-28/29

### 15. IMPORTANT, Alternative Exit

Use tool to break window. Always keep tool in machine.

This safety label is located inside the cab on the left ROPS post.

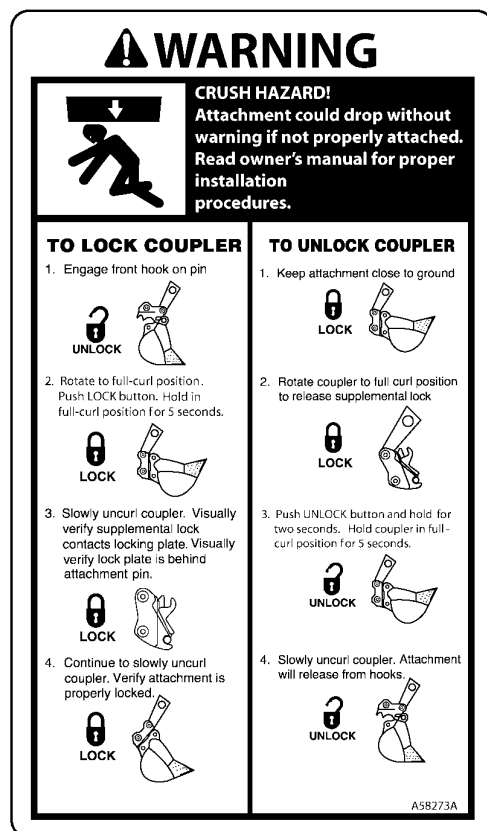


TX1156964—19—04APR14

IMPORTANT, Alternative Exit

MB60223,00002BD-19-06APR15-29/29

## Safety Signs Installed on Hydraulic Coupler—If Equipped



TX1105472

Hydraulic Coupler Safety Signs

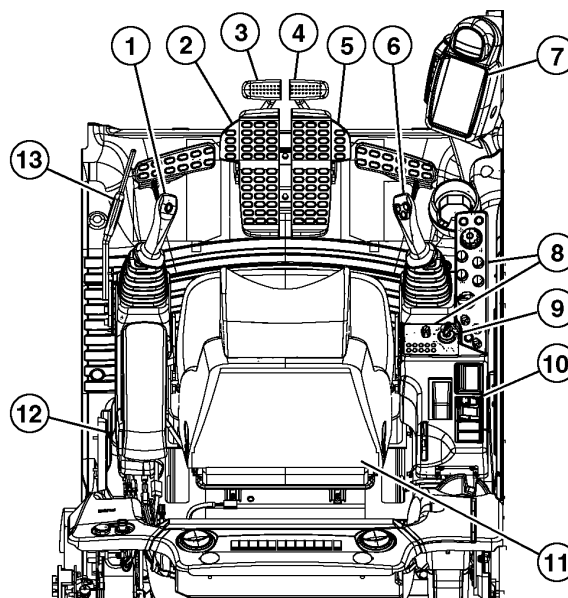
TX.SIGNS,HYD,COUP-19-18MAY20-1/1

TX1105472—19—13JAN12

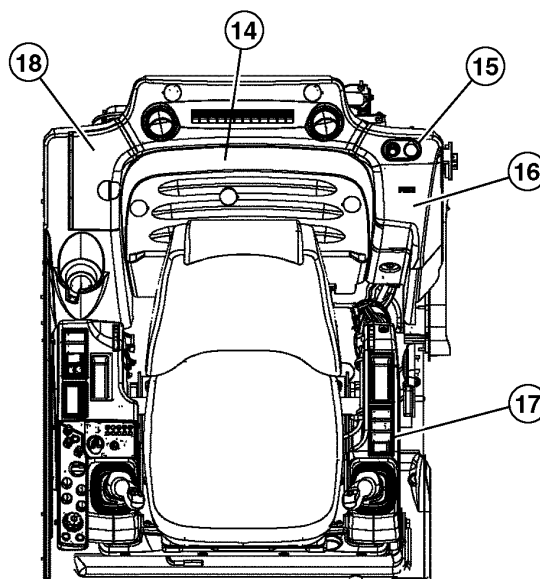
# Operation—Operator's Station

## Pedals, Levers, and Panels

- |                                                                                                  |                                 |
|--------------------------------------------------------------------------------------------------|---------------------------------|
| 1—Left Pilot Control Lever (3 button lever optional)/Horn Button (bottom button on top of lever) | 10—Right Console                |
| 2—Left Travel Pedal                                                                              | 11—Operator's Seat              |
| 3—Left Travel Lever                                                                              | 12—Cab Door Release Lever       |
| 4—Right Travel Lever                                                                             | 13—Pilot Shutoff Lever          |
| 5—Right Travel Pedal                                                                             | 14—Rear Deck                    |
| 6—Right Pilot Control Lever/Power Boost Button (bottom button on top of lever)                   | 15—Lighter/Accessory Power Port |
| 7—Monitor                                                                                        | 16—Fuse Box Cover               |
| 8—Switch Panel                                                                                   | 17—Left Console                 |
| 9—Key Switch                                                                                     | 18—Storage Compartment          |



*Pedals, Levers and Panels*

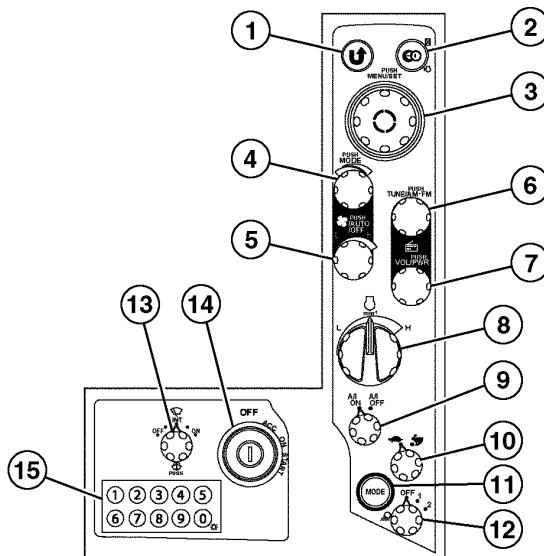


*Fuse Box and Left Console*

OUT4001,000073A-19-30MAY18-1/1

## Switch Panel

- |                                   |                                       |
|-----------------------------------|---------------------------------------|
| 1—Back Button                     | 9—Auto-Idle Switch                    |
| 2—Home Button                     | 10—Travel Mode Switch                 |
| 3—Monitor Dial                    | 11—Power Mode Button                  |
| 4—Temperature Control/Mode Switch | 12—Work Light Switch                  |
| 5—Blower Speed Switch             | 13—Windshield Wiper and Washer Switch |
| 6—Radio Tuning Switch             | 14—Key Switch                         |
| 7—Radio Power and Volume Switch   | 15—Keypad                             |
| 8—Engine Speed Dial               |                                       |



Switch Panel

OUT4001,000073B-19-23FEB16-1/1

TX1086613—UN—10JAN11

## Switch Panel Functions

**1. Back Button (for monitor use)**—Press button to return to the previous menu.

**2. Home Button (for monitor use)**—Press button to return to the default screen when in any of the monitor menus. If key switch is OFF, press and hold button to check hour meter and fuel amount on monitor.

**3. Monitor Dial (for monitor use)**—Press dial to go from the default screen to the main menu screen. Rotate dial to highlight desired menu function on the monitor. Press dial to select desired screen information or to confirm desired action.

**4. Temperature Control/Mode Switch**—Press switch to toggle between different air vent settings. The air conditioner display on the monitor shows the different settings each time the switch is pressed. There are four different settings:

- Air flows out of front vent and the defroster vents.
- Air flows out of front, rear, and the defroster vents.
- Air flows out of front, rear, foot, and the defroster vents.
- Air flows out of foot vents.

Rotate switch counterclockwise for cooler air setting and clockwise for warmer air setting. Temperature setting will change on the air conditioner display as the switch is rotated either way.

**5. Blower Speed Switch**—If switch is pressed while air conditioner is OFF, it turns to AUTO mode (blower speed setting and air flow setting are selected automatically). Temperature control/mode switch can be rotated to operator's preferred cab degree setting. Blower speed and air flow settings adjust automatically to reach and maintain desired cab temperature.

If blower speed switch is rotated or temperature control/mode switch is pressed while in AUTO mode, AUTO mode is cancelled and all settings need to be adjusted by the operator as needed.

If blower speed switch is pressed while air conditioner is ON, it turns the air conditioner OFF. (This switch must be ON to operate the ON/OFF function of the air conditioner in the monitor menu.)

Rotate switch to adjust the blower speed to desired setting when not in AUTO mode.

**6. Radio Tuning Switch**—Press switch to toggle between AM and FM frequency. Rotate switch to tune in desired radio station.

**7. Radio Power and Volume Switch**—Press switch to turn radio on or off. Rotate switch to adjust the volume to desired setting.

**8. Engine Speed Dial**—Turn dial clockwise to increase engine speed or counterclockwise to decrease engine speed.

**9. Auto-Idle Switch**—Turn switch to select between A/I ON or A/I OFF.

With engine on, move auto-idle switch to A/I ON and the engine speed dial to above the auto-idle speed. Auto-idle indicator appears on monitor when auto-idle is on. The engine runs at the engine speed dial setting for 4 seconds and then the auto-idle system will slow the engine to auto-idle engine speed. When any control lever is operated, engine speed increases to engine speed dial setting. When control levers are placed back in neutral position, auto-idle circuit automatically slows the engine to auto-idle engine speed after 4 seconds.

Turn auto-idle switch to A/I OFF and set engine speed dial to improve machine control in difficult work areas, loading, and unloading. Auto-idle indicator disappears on the monitor.

**10. Travel Mode Switch**—Turn switch to select between fast (rabbit) or slow (turtle) mode of travel.

**11. Power Mode Button**—Press button to select different engine speed modes:

- ECO (economy) Mode—Use to improve fuel efficiency and reduce noise level with a small difference in engine speed.
- PWR (power) Mode—Use when general digging work is needed.
- H/P (high power) Mode—Use when more flow is desired for booming up or rolling in the arm in excavation work.

**12. Work Light Switch**—Switch has three positions:

- First Position—Drive light on base of machine turns ON. Switch panel also illuminates.
- Second Position—Boom work light turns ON along with the drive light and switch panel. The monitor also changes to night mode.
- OFF—Work lights and switch panel illumination turns OFF.

**13. Windshield Wiper and Washer Switch**—Switch has five operating positions:

*NOTE: The wiper does not operate unless the upper front window is completely closed.*

- OFF—Wiper stops operating and is retracted.
- INT (slow)—Wiper operates intermittently at 8-second intervals.
- INT (medium)—Wiper operates intermittently at 6-second intervals.
- INT (fast)—Wiper operates intermittently at 3-second intervals.
- ON—Wiper operates continuously.

Push and hold switch to spray fluid on windshield. If switch is held more than 2 seconds, the wiper operates until the switch is released. Do not hold down switch for more than 20 seconds.

Continued on next page

OUT4001,000073C-19-28FEB18-1/2

**14. Key Switch**—Switch has four positions:

- OFF
- ACC
- ON
- START

**15. Keypad**—Keypad has a few different applications:

- Use numbers 0—9 to enter password at machine start-up (if equipped).
- Press keypad numbers 1—8 while the radio is ON to switch between programmed stations.
- When work light switch is in position 2, the monitor changes to night mode display (background lighting is dimmed). Press and hold the number 0 on keypad to change monitor back to daytime mode display.

OUT4001,000073C-19-28FEB18-2/2

**Rear Left Panel**

**Lighter (1):** For operator convenience. Can also be used as an electrical port for 24-volt appliances only.

**Accessory Power Port (2):** 12-volt, 5-amp electrical port provided for service and maintenance.

1—Lighter

2—Accessory Power Port



TX1085863A—UN—14DEC10

Rear Left Panel

ER79617,0000D57-19-29MAY14-1/1

**Horn**

Horn button (1) is located on top of left control lever.

1—Horn Button



TX1086237A—UN—27DEC10

Horn Button

ER79617,0000D6E-19-27DEC10-1/1



## Power Boost Button

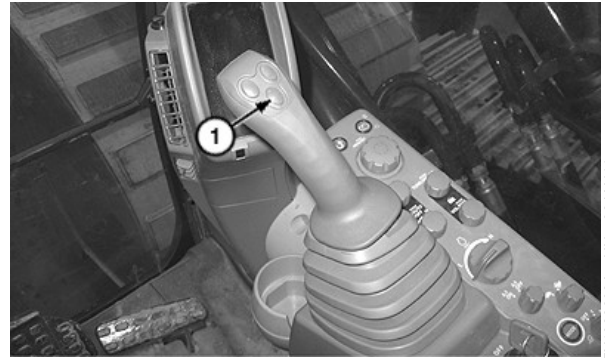
The power boost button (1 or 2) is located on the 3-button pilot control lever or the auxiliary function lever (AFL). Press and hold down power boost button for an 8-second increase in hydraulic power. Release button to reset power boost function.

Power boost is automatically activated when the following conditions are met:

- Boom up
- No arm in
- High delivery pressure

1—Power Boost Button

2—Power Boost Button



3-Button Pilot Control Lever



Auxiliary Function Lever (AFL)

OUT4001,000073D-19-18APR23-1/1

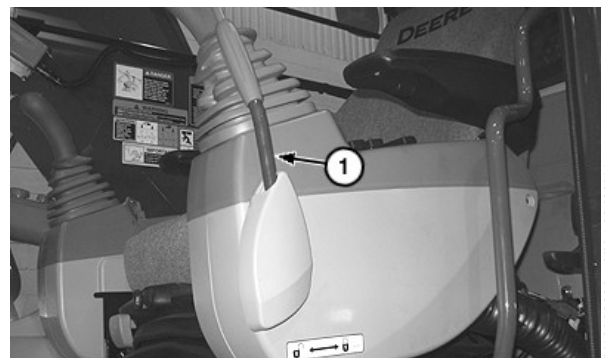
## Pilot Shutoff Lever

The pilot shutoff lever (1) shuts off hydraulic pilot pressure to all pilot control valves. When pilot shutoff lever is in locked (UP) position, the machine will not move if a lever or pedal is accidentally moved. Engine will not start with pilot shutoff lever in the unlocked (DOWN) position.

Always pull pilot shutoff lever to locked (UP) position when stopping the engine or leaving operator's station.

Push pilot shutoff lever forward to unlocked (DOWN) position to operate machine.

1—Pilot Shutoff Lever



Lever in Locked (UP) Position

OUT4001,000073E-19-12JUN15-1/1

## Left Console

**NOTE:** There are standard and optional switches on the left console. Before using the switches on the left console, be aware of what kind of optional devices are equipped on the machine.

Raise the armrest when operating the switches.

- 1—Reversing Fan Switch (if equipped)
- 2—Seat Heater Switch (if equipped)
- 3—Travel Alarm Cancel Switch



Left Console

OUT4001,000073F-19-09OCT17-1/1

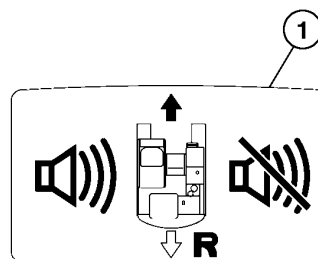
## Travel Alarm and Travel Alarm Cancel Switch

**NOTE:** If alarm is not operating during normal transport or if alarm sounds when engine is running and machine is stationary, see an authorized John Deere dealer.

The travel alarm sounds when a travel pedal or lever is activated and will continue as long as the tracks are moving. When travel motion stops, the travel alarm switch is reset.

After the initial 13-second alarm, alarm can be silenced by depressing the right half of the travel alarm cancel switch (1) located on the left console.

- 1—Travel Alarm Cancel Switch



Travel Alarm Cancel Switch

OUT4001,0000740-19-19FEB18-1/1

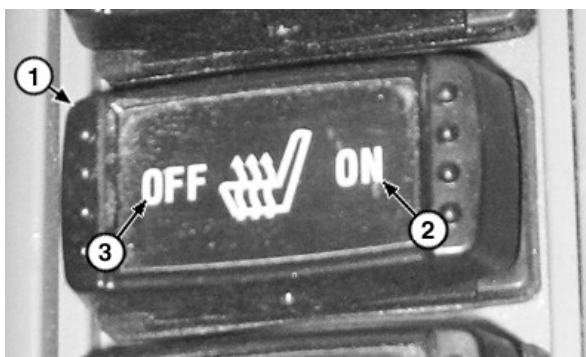
## Seat Heater Switch—If Equipped

Seat heater switch (1) is located on the left console.

Use switch to turn seat heater ON (2) or OFF (3).

When seat heater is ON, it will automatically cycle between 10°C and 20°C (50°F and 68°F).

- 1—Seat Heater Switch
- 2—ON
- 3—OFF



Seat Heater Switch

ER79617,0000D58-19-17MAR22-1/1

## Reversing Fan Switch—If Equipped

**NOTE:** The reversing fan function shall not be reactivated within 1 minute of its last completion (this time includes AUTO cycle).

The reversing fan switch has three positions:

- **AUTO:** Every 60 minutes, the radiator cooling fan will automatically reverse direction for 30 seconds without intervention from the operator when engine rpm is above auto-idle speed.
- **OFF:** Fan resumes normal operation.
- **MANUAL:** When pressed and held for 3 seconds, the fan will reverse direction for 30 seconds when right portion of switch is pressed.



Reversing Fan Switch

ER79617,0000D59-19-05APR16-1/1

TX1000844A—UN—29NOV05

## Exhaust Filter Parked Cleaning Switch—6068HT073 Engine Only

**CAUTION:** Servicing machine during exhaust filter parked cleaning can result in serious personal injury. Avoid exposure and skin contact with hot gases and components.

During exhaust filter parked cleaning, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components may reach temperatures hot enough to burn people and ignite or melt common materials.

**Avoid death or serious injury from machine movement. Do not leave running machine unattended during exhaust filter cleaning.**

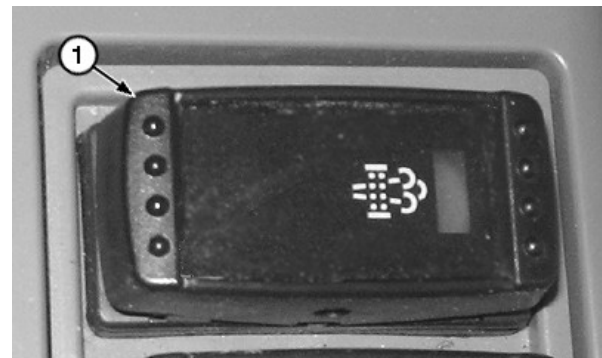
**IMPORTANT:** Avoid machine damage. Always park machine in a safe location and check for adequate fuel level before beginning exhaust filter parked cleaning.

The exhaust filter parked cleaning switch (1) is located on the right console.

Before starting the parked cleaning process, the machine needs to be in a predetermined safe state. This safe state includes three conditions:

- machine is parked in a safe place with the front attachment lowered to the ground
- pilot shutoff lever is in locked (UP) position
- engine speed dial is set to slow idle

An exhaust filter alarm indicator will appear on the monitor



Exhaust Filter Parked Cleaning Switch

1—Exhaust Filter Parked Cleaning Switch

to inform the operator when a parked cleaning needs to take place or the operator can check the restriction level bar graph in the monitor. See Main Menu—Information Menu—Monitoring. (Section 2-2.)

Once the safe state conditions are met, press and hold the right half of exhaust filter parked cleaning switch for 3 seconds to begin a parked cleaning procedure.

Monitor will show a progress screen during the cleaning and will prompt the operator when the cleaning is complete.

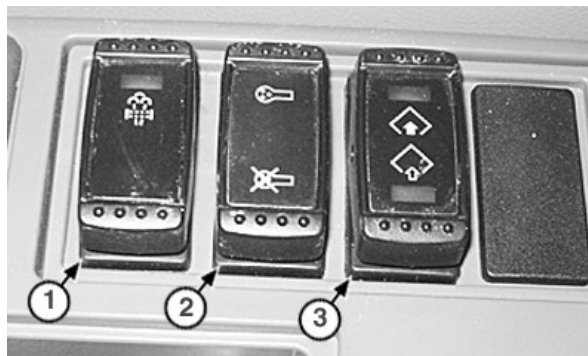
For more information, see Exhaust Filter Parked Cleaning—6068HT073 Engine Only. (Section 2-3.)

OUT4001,0000746-19-25JAN11-1/1

TX1086795A—UN—11JAN11

## Right Console

- 1—Exhaust Filter Parked Cleaning Switch (6068HT073 engine only)
- 2—Right Enable Switch
- 3—Service ADVISOR™ Remote (SAR) Switch



TX1089996A—UN—28MAR11

Right Console

Service ADVISOR is a trademark of Deere & Company

OUT4001,0000744-19-28MAR11-1/1

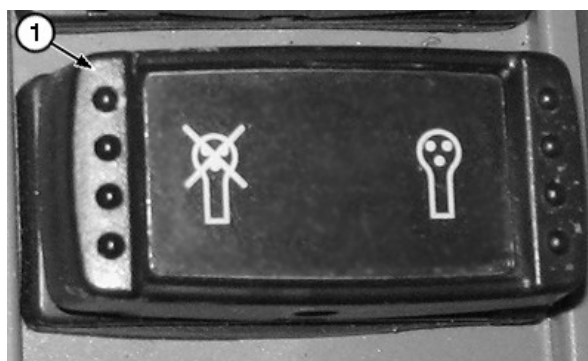
## Right Enable Switch

The right enable switch (1) is located on the right console.

Press right half of switch to enable auxiliary functions on the right pilot control lever.

Press left half of switch to disable auxiliary functions on the right pilot control lever.

- 1—Right Enable Switch



TX1086796A—UN—11JAN11

Right Enable Switch

OUT4001,0000747-19-11JAN11-1/1

## Service ADVISOR™ Remote (SAR) Switch

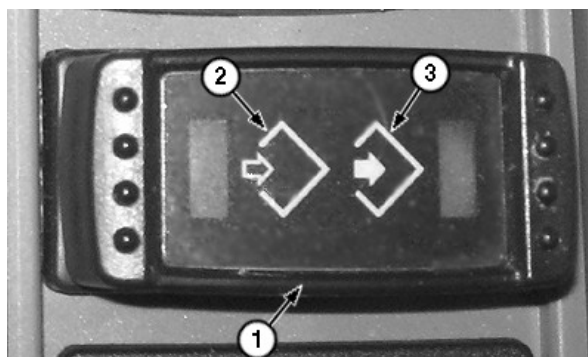
The Service ADVISOR™ Remote (SAR) switch (1) allows operator to accept or decline software updates available to the machine when prompted by an alarm on the monitor. LEDs on the SAR switch will illuminate when the alarm appears. The left LED will be red and the right LED will be green.

Press left side of SAR switch (red LED) to DECLINE installation (2) of software updates.

Press right side of SAR switch (green LED) to ACCEPT installation (3) of software updates.

For more information on SAR functionality, see Service ADVISOR™ Remote (SAR) Software Delivery Process and Service ADVISOR™ Remote (SAR) Operation. (Section 2-3.)

Service ADVISOR is a trademark of Deere & Company



TX1086797A—UN—21JAN11

Service ADVISOR™ Remote Switch

- 1—Service ADVISOR™ Remote (SAR) Switch
- 2—DECLINE Installation
- 3—ACCEPT Installation

OUT4001,0000748-19-15MAY19-1/1

## Auxiliary Function Enable Switch—If Equipped

*NOTE: The pilot control shutoff lever must be in the unlock (DOWN) position.*

The auxiliary function enable switch (1) is located on the left console.

Press auxiliary function enable switch to enable auxiliary function lever (AFL) on the right pilot control lever. Light-emitting diode (LED) on auxiliary function enable switch illuminates when functions are enabled.

Press the auxiliary function enable switch again to disable AFL. LED turns off when functions are disabled.

For more information, see Auxiliary Function Lever (AFL)—If Equipped. (Section 2-3.)



TX1168382A—UN—11AUG14

*Auxiliary Function Enable Switch*

**1—Auxiliary Function Enable Switch**

DJ54098,0000409-19-27FEB23-1/1

## Cab Heater and Air Conditioner

### CAB HEATER OPERATION

#### AUTO Operation

1. Press blower speed switch (1) while air conditioner is OFF to set blower speed to AUTO mode (blower speed setting and air flow setting are then selected automatically).
2. Rotate temperature control/mode switch (2) to reach operator's preferred cab degree heat setting. Temperature setting will change on the air conditioner display on the monitor as the switch is rotated either way. Blower speed and air flow settings adjust automatically to reach and maintain desired cab temperature.

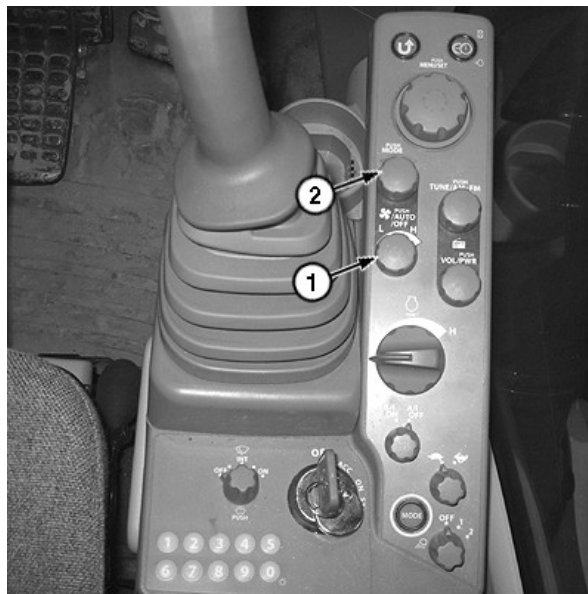
#### Manual Operation

1. Press blower speed switch (1) while air conditioner is OFF to set blower speed to AUTO mode. Rotate blower speed switch either way to cancel AUTO mode and set the blower speed manually to desired speed setting.
2. Rotate temperature control/mode switch (2) to reach operator's preferred cab degree heat setting. Temperature setting will change on the air conditioner display on the monitor as the switch is rotated either way.
3. Press temperature control/mode switch to toggle between different air vent options. The air conditioner display on the monitor will show the different settings each time the switch is pressed. There are four different settings:
  - Air flows out of front vent and the defroster vents.
  - Air flows out of front, rear, and the defroster vents.
  - Air flows out of front, rear, foot, and the defroster vents.
  - Air flows out of foot vents.

**NOTE:** Usually the cab heater turns the dehumidifier function off. Dehumidifier function can be turned on from monitor menu. See Main Menu—Air Conditioner. (Section 2-2.)

#### Defroster Operation

1. Press blower speed switch (1) while air conditioner is OFF to set blower speed to AUTO mode. During cold weather season when starting the engine, the engine coolant temperature and air temperature in the cab are low. The air conditioner and heater unit controls the blow rate to the minimum in order to restrict cool air from flowing into the cab.
2. Rotate temperature control/mode switch (2) to reach operator's preferred cab degree heat setting. Temperature setting will change on the air conditioner display on the monitor as the switch is rotated either way.
3. Set the circulation mode to fresh air using the monitor menu. See Main Menu—Air Conditioner. (Section 2-2.)
4. Once AUTO mode is operating and cab starts to heat up, press temperature control/mode switch to cancel AUTO mode and toggle between different air vent options. The air conditioner display on the monitor will show the



Cab Heater and Air Conditioner Operation

1—Blower Speed Switch

2—Temperature Control/Mode Switch

different settings each time the switch is pressed. For best defrosting results, select either:

- Air flows out of front vent and the defroster vents.
- Air flows out of front, rear, and the defroster vents.

5. Control air flow direction by adjusting the vents in the cab to blow towards the windows.
6. Rotate temperature control/mode switch as needed to control preferred air temperature.
7. Rotate blower speed switch as needed to set preferred fan speed.

#### Air Conditioner Operation

**NOTE:** During off season, operate the air conditioner at least once a month for several minutes with the engine running at slow idle to protect each part of the air conditioner compressor from lack of lubricant.

#### AUTO Operation

1. Press blower speed switch (1) while air conditioner is OFF to set blower speed to AUTO mode (blower speed setting and air flow setting are selected automatically).
2. Rotate temperature control/mode switch (2) to reach operator's preferred cab degree cold air setting. Temperature setting will change on the air conditioner display on the monitor as the switch is rotated either way. Blower speed and air flow settings adjust automatically to reach and maintain desired cab temperature.

#### Manual Operation

1. Press blower speed switch while air conditioner is OFF to set blower speed to AUTO mode. Rotate blower speed switch either way to cancel AUTO mode and set the blower speed manually to desired speed setting.

Continued on next page

OUT4001,0000741-19-19FEB18-2/1

2. Turn the air conditioner ON from the monitor menu. See Main Menu—Air Conditioner. (Section 2-2.)
3. Rotate temperature control/mode switch to reach operator's preferred cab degree cold air setting. Temperature setting will change on the air conditioner display on the monitor as the switch is rotated either way.
4. Press temperature control/mode switch to toggle between different air vent options. The air conditioner display on the monitor will show the different settings each time the switch is pressed. There are four different settings:

**NOTE:** If lower front window becomes cloudy, defroster vents should be closed.

- Air flows out of front vent and the defroster vents.
- Air flows out of front, rear, and the defroster vents.
- Air flows out of front, rear, foot, and the defroster vents.
- Air flows out of foot vents.

OUT4001,0000741-19-19FEB18-1/1

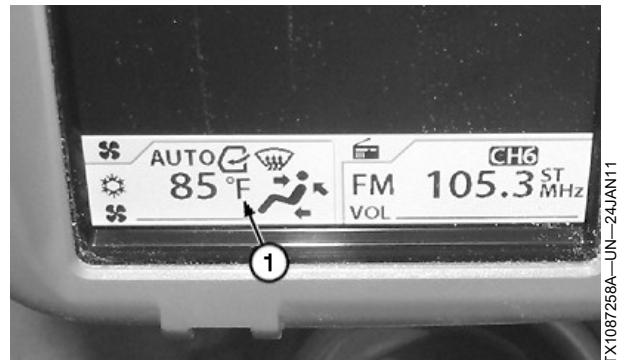
## Selecting Display Between Celsius and Fahrenheit

The cab temperature (1) is always shown in the air conditioner display on the monitor. Temperature display can be changed between degrees Celsius (°C) and Fahrenheit (°F) using the Unit Selection menu. For more information, see Main Menu—Setting Menu—Unit Selection. (Section 2-2.)

Degrees Celsius (°C) can be set in a range from 18°C—32°C.

Degrees Fahrenheit (°F) can be set in a range from 63°F—91°F.

**1—Cab Temperature**



*Air Conditioner Display on the Monitor*

OUT4001,0000742-19-13AUG14-1/1

## Operating the AM/FM Radio

Press the radio power and volume switch (1) to turn on the radio. Rotate the radio power and volume switch to desired volume setting. Treble and base settings are available through the monitor menu. For more information, see Main Menu—Radio. (Section 2-2.)

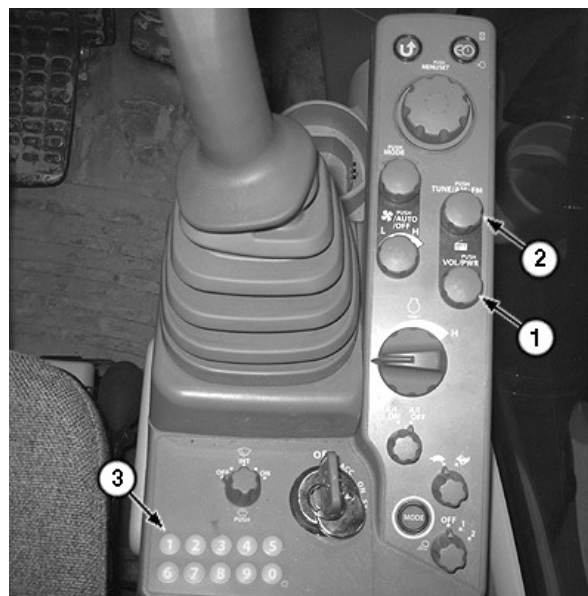
Press the radio tuning switch (2) to toggle between AM or FM frequency. Rotate radio tuning switch to tune radio to desired AM or FM station. To find the clearest reception stations for the area, use the seek function that is available through the monitor menu. For more information, see Main Menu—Radio. (Section 2-2.)

Press buttons 1—8 on the keypad (3) to move between preset memory radio stations. Radio display (4) on monitor shows the station and frequency setting that corresponds with each keypad button.

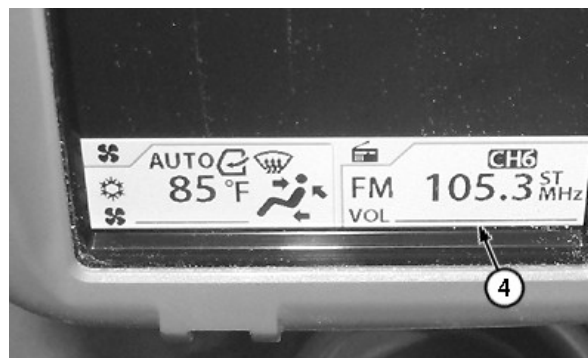
**NOTE:** Presetting memory radio stations can also be done using the monitor menu. Stations can be automatically selected for the area using the auto preset option in the monitor menu. For more information, see Main Menu—Radio. (Section 2-2.)

To preset memory radio stations or to change previously set stations using the keypad, tune radio to desired station setting. Press and hold one of the keypad buttons 1—8 for more than 1 second. Setting is stored to that corresponding button. Repeat procedure for seven other desired stations.

- |                                 |                 |
|---------------------------------|-----------------|
| 1—Radio Power and Volume Switch | 3—Keypad        |
| 2—Radio Tuning Switch           | 4—Radio Display |



Radio Controls on Switch Panel



Radio Display on Monitor

OUT4001,0000743-19-19FEB18-1/1



## Fire Extinguisher Mounting Location

### MOUNTING LOCATION:

The designated fire extinguisher mounting location (1) is inside the cab on the left rear side.

### USE:

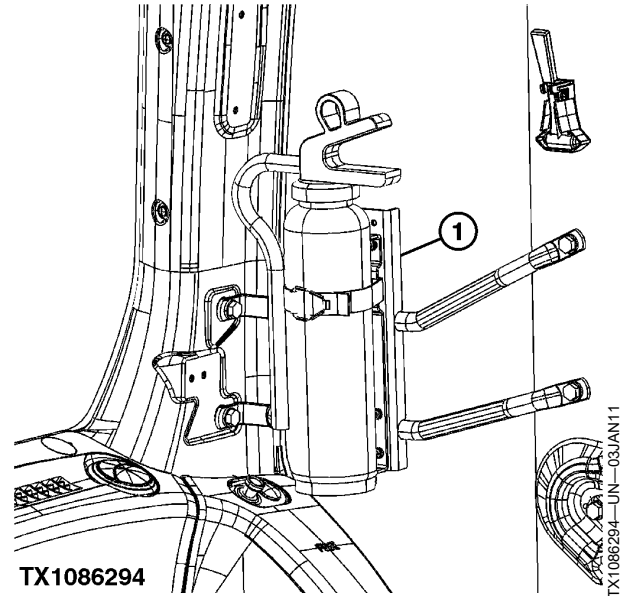
**NOTE:** All fire extinguishers do not operate the same. Read operating instructions on canister.

The portable fire extinguisher is used to aid in the extinguishing of small fires. Refer to individual manufacturer's instructions and proper fire fighting procedures before the need to use the fire extinguisher arises. See Prevent Fires. (Section 1-2.)

### MAINTENANCE:

**IMPORTANT:** Avoid possible machine damage. Check gauge (if equipped) on fire extinguisher. If fire extinguisher is not fully charged, recharge or replace fire extinguisher according to the manufacturer's instructions.

Inspect and maintain the fire extinguisher following the manufacturer's recommendations and all local, regional, and national regulations.



Fire Extinguisher Mounting Location

1—Fire Extinguisher Mounting Location

ER79617,0000D80-19-21MAR22-1/1

## Alternative Exit Tool

**IMPORTANT:** For alternative exit of machine, use the alternative exit tool (1) to break window. Always keep tool inside cab.

Alternative exit tool (1) is located on the left roll-over protective structure (ROPS) post.

1—Alternative Exit Tool



Alternative Exit Tool

ER79617,0000D4F-19-08NOV17-1/1

## Cab Dome Light Switch

The cab dome light is located on the right side of cab roof. There are three operating positions:

- **ON (1):** The cab light turns ON and stays ON until switch is moved to the OFF position.

**NOTE:** The cab light **will NOT** turn ON if the key switch is in OFF position.

- **Cab door—middle position (2):** The cab light turns ON when the door is opened. When the cab door is closed or cab door is left in the open position, the cab light turns OFF automatically after 30 seconds.

**NOTE:** The cab light **will** turn ON if the key switch is in OFF position.

- **OFF (3):** The cab light turns OFF and stays OFF until switch is moved to the cab door—middle position or ON position.



Cab Dome Light Switch

- 1—ON  
2—Cab Door—Middle Position  
3—OFF

TX1086802A—UN—11JAN11

OUT4001,0000745-19-13AUG14-1/1

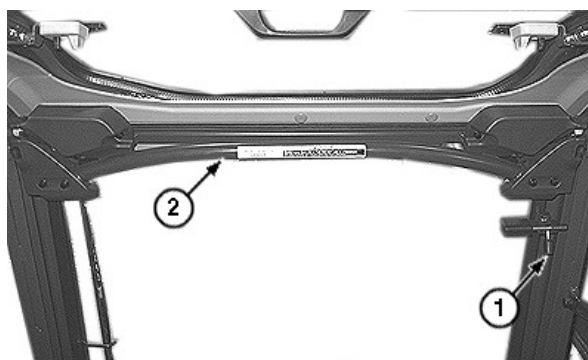
## Opening Upper Front (Alternative Exit) Window

**NOTE:** The wiper cannot operate with the upper front window open. The washer can operate with the upper front window open.

1. Park machine on a solid, level surface.
2. Lower equipment to the ground.
3. Stop engine and pull pilot shutoff lever to locked (UP) position.
4. Lift the lock pin (1) up, slide inward, then slide down into notch.
5. Pull the lock release bar (2) toward operator.
6. While holding the lower handle on the window, pull window up and guide all the way back on track until window locks into position.

**CAUTION:** Prevent possible injury from window closing unexpectedly. Always lock the pin in the cab frame boss hole.

7. Slide the lock pin into the cab frame boss hole and rotate downward into the lock position.



Upper Front Window

- 1—Lock Pin  
2—Lock Release Bar

TX1087290A—UN—25JAN11

**CAUTION:** Prevent possible injury when closing the upper front window. Upper front window comes down forcefully. Close window only when sitting in operator's seat.

8. To close upper front window, unlock pin and pull lock release bar down. Hold lower handle on the window and guide window down the track slowly until window clicks into position. Install lock pin.

OUT4001,0000779-19-19FEB18-1/1

## Removing and Storing the Lower Front Window

**NOTE:** In cold weather, some operators may choose to work with the upper front window open and the lower front window in place. Working with upper front window open and lower front window in place provides excellent visibility and tends to hold the heat being circulated around the operator's feet.

*Upper front window must be opened and locked in position before lower front window can be removed.*

1. While pulling in on window, raise window to remove.
2. Store window in rear storage area of cab behind operator's seat. Install window in lower protectors (1) first.
3. Slide window into the upper left protector (2).
4. Push right fastener (3) up and slide window under fastener.
5. Release fastener to secure window in storage position.

1—Lower Protector (2 used)      3—Right Fastener  
2—Upper Left Protector



Removing and Storing the Lower Front Window



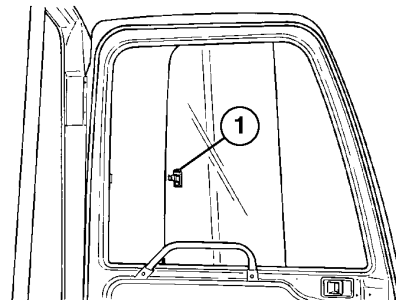
Storage Area for Lower Front Window

OUT4001,000077A-19-16SEP14-1/1

## Opening Cab Door Window

To open cab window, pinch latch (1) and slide rear pane forward.

1—Latch



Cab Window Latch

VD76477,00001C4-19-13AUG14-1/1

## Opening and Closing the Polycarbonate-Type Roof Exit Cover

**IMPORTANT:** Replace the polycarbonate-type roof with a new one every 5 years, even if undamaged. In case polycarbonate-type roof was visibly damaged or has received severe shock loads, replace polycarbonate-type roof even if it has not been in use for 5 years.

When cleaning the polycarbonate-type roof, use a neutral detergent. If acidic or alkaline detergent is used, the polycarbonate-type roof may become discolored or crack.

Keep organic solvent away from polycarbonate-type roof. Failure to do so may cause the polycarbonate-type roof to become discolored or crack.

### Opening the Roof Exit Cover:

1. Move lock levers (1) toward center of roof exit.
2. Push on handle (2) to open roof exit cover.



Roof Exit Cover

1—Lock Lever (2 used)

2—Handle

### Closing the Roof Exit Cover:

Hold handle and pull roof exit cover down until levers lock in position.

OUT4001,000077B-19-28FEB18-1/1

## Adjusting the Mechanical Suspension Seat

While sitting on seat, push down on seat angle lever (1) to adjust seat to desired angle. Release lever.

Pull up on seat fore-aft handle (2) to unlock seat. Slide seat to desired distance from control levers. Release handle.

Turn weight adjustment knob (3) to adjust seat to weight of operator.

Squeeze lumbar ball (4) to add air for firmness to lower backrest area. Press button on bottom of lumbar ball to release air and decrease firmness.

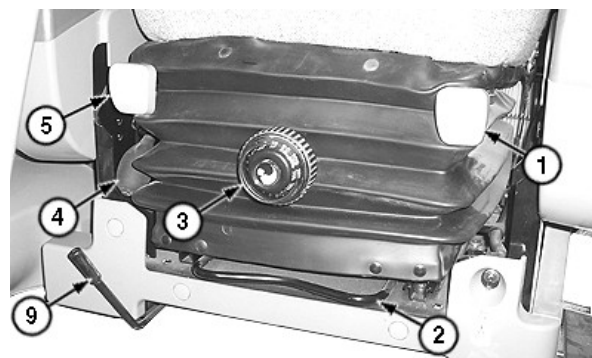
Pull up on backrest lever (5) to release backrest lock. Move backrest to desired position. Release lever.

Pull headrest (6) upward or push downward to desired height. Move headrest to desired angle.

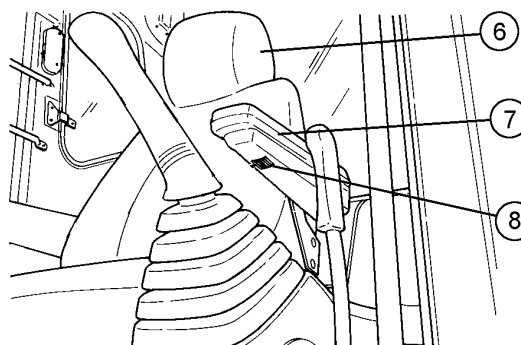
Pull up on armrest (7) to move it out of the way when exiting the cab.

Turn armrest dial (8) to adjust angle of armrest.

Pull seat and console handle (9) up toward operator. Slide entire seat and consoles to desired distance from travel pedals and levers. Release handle.



Mechanical Suspension Seat



Adjusting The Seat

- 1—Seat Angle Lever
- 2—Seat Fore-Aft Handle
- 3—Weight Adjustment Knob
- 4—Lumbar Ball
- 5—Backrest Lever

- 6—Headrest
- 7—Armrest
- 8—Armrest Dial
- 9—Seat and Console Handle

OUT4001,000077D-19-09FEB12-1/1

## Adjusting the Air Suspension Seat—If Equipped

While sitting on seat, push down on seat angle lever (1) to adjust seat to desired angle. Release lever.

Pull up on seat fore-aft handle (2) to unlock seat. Slide seat to desired distance from control levers. Release handle.

Pull out firmness button (3) to decrease seat firmness. With key switch in the ON position, press in and hold firmness button to increase seat firmness.

Pull up on backrest lever (4) to release backrest lock. Move backrest to desired position. Release lever.

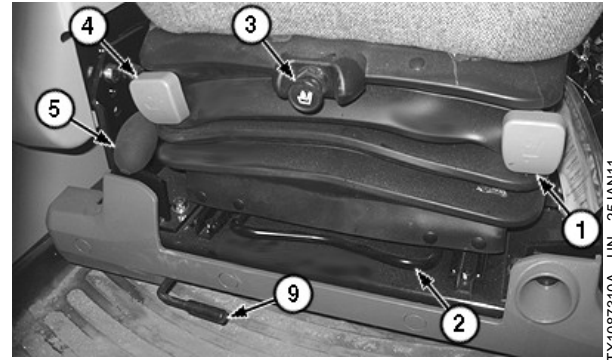
Squeeze lumbar ball (5) to add air for firmness to lower backrest area. Press button on bottom of lumbar ball to release air and decrease firmness.

Pull headrest (6) upward or push downward to desired height. Move headrest to desired angle.

Pull up on armrest (7) to move it out of the way when exiting the cab.

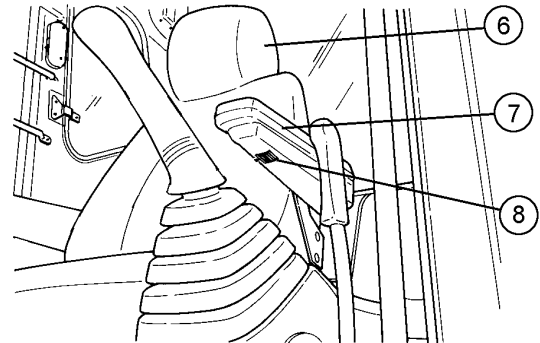
Turn armrest dial (8) to adjust angle of armrest.

Pull seat and console handle (9) up toward operator. Slide entire seat and consoles to desired distance from travel pedals and levers. Release handle.



TX1087310A—UN—25JAN11

Air Suspension Seat



Adjusting The Armrest

T140133—UN—02MAY01

- |                        |                           |
|------------------------|---------------------------|
| 1—Seat Angle Lever     | 6—Headrest                |
| 2—Seat Fore-Aft Handle | 7—Armrest                 |
| 3—Firmness Button      | 8—Armrest Dial            |
| 4—Backrest Lever       | 9—Seat and Console Handle |
| 5—Lumbar Ball          |                           |

OUT4001,000077C-19-23FEB12-1/1

## Adjusting Pilot Control Lever Console Height

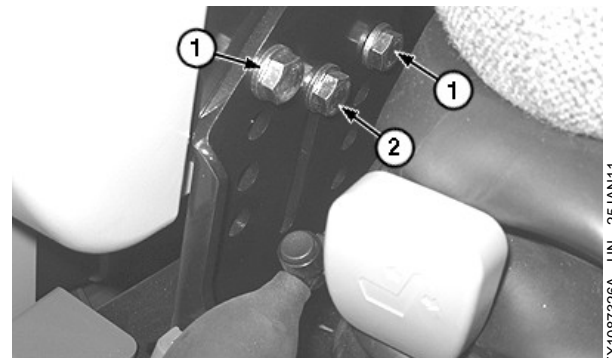
1. Ensure engine is off and pilot shutoff lever is in locked (UP) position.

**CAUTION:** Avoid possible crushing injury from console unexpectedly dropping. Before loosening the cap screws (1), support the console.

2. Remove right console holding cap screws (1).
3. Loosen cap screw (2) and adjust the pilot control lever console height relative to the cab floor.
4. Install holding cap screws in holes for desired console height and tighten.
5. Tighten cap screw to specification.

### Specification

Cap Screw—Torque . . . . . 50 N·m  
(37 lb·ft)



TX1087326A—UN—25JAN11

Right Side of Seat Shown

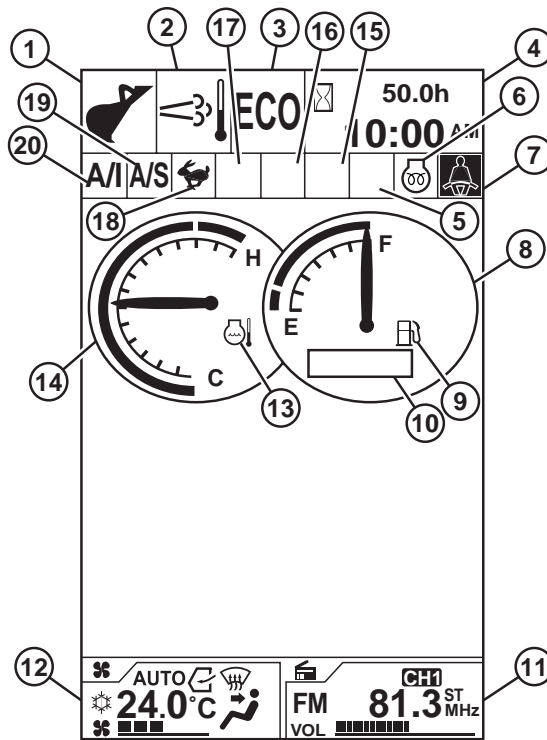
- 1—Holding Cap Screw (2 used) 2—Cap Screw

6. Repeat procedure for left console.

OUT4001,000077E-19-21MAR22-1/1

# Operation—Monitor Operation

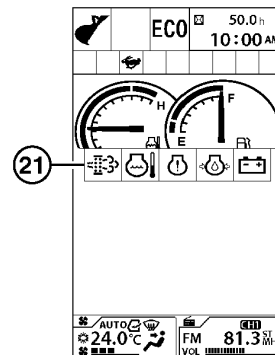
## Monitor



TX1130164

Monitor

- |                            |                              |
|----------------------------|------------------------------|
| 1—Work Mode Indicator      | 12—Air Conditioner Display   |
| 2—Exhaust Filter Indicator | 13—Coolant Temperature Mark  |
| 3—Power Mode Indicator     | 14—Coolant Temperature Gauge |
| 4—Hour Meter and Clock     | 15—Auxiliary Indicator       |
| 5—Not Used                 | 16—Auxiliary Indicator       |
| 6—Engine Preheat Indicator | 17—Auxiliary Indicator       |
| 7—Seat Belt Indicator      | 18—Travel Speed Indicator    |
| 8—Fuel Gauge               | 19—Auto Shutdown Indicator   |
| 9—Fuel Mark                | 20—Auto-Idle Indicator       |
| 10—Sub Meter               | 21—Alarm Indicators          |
| 11—Radio Display           |                              |



Alarm Indicators

TX1130164—UN—25JAN13

TX1086438—UN—05JAN11

OUT4001,000071A-19-25JAN13-1/1

## Monitor Functions

**1. Work Mode Indicator:** Displays icon for the current attachment being used (digging mode, breaker, pulverizer, crusher, vibrating hammer, grapple, clamshell, or others). For more information, see Main Menu—Work Mode in this section.

**2. Exhaust Filter Indicator:** Displays condition of the exhaust filter. Two different indicators could appear here:

- **Exhaust Filter Cleaning Indicator** appears when exhaust temperature is high during an auto or parked cleaning.

*NOTE: The exhaust filter auto cleaning disabled indicator will display on the monitor when the key switch is in ON position. Once the engine is started, the indicator will disappear unless exhaust filter auto cleaning has been disabled by the operator through the monitor.*

- **Exhaust Filter Auto Cleaning Disabled Indicator** appears when exhaust filter auto cleaning has been disabled by the operator. For more information, see Main Menu—Setting Menu—Exhaust Filter in this section.

**3. Power Mode Indicator:** Displays a power mode selected from the switch panel (ECO, PWR, or H/P). For more information, see Switch Panel Functions. (Section 2-1.)

**4. Hour Meter and Clock:** Displays total machine operation hours counted since the machine started working in the unit of hours (h). One digit after the decimal point indicates tenths of an hour (6 minutes).

Clock indicates present time.

**5. Not Used.**

**6. Engine Preheat Indicator:**

**IMPORTANT: Prevent engine damage. Do not use ether in this machine.**

If preheating is required, the engine preheat indicator is automatically lit. If preheating is not required, this indicator will not display.

**7. Seat Belt Indicator:** Displays when key switch is ON, and disappears 5 seconds after the engine starts.

**8. Fuel Gauge:** Displays remaining fuel amount as indicated by the needle. Fuel machine before needle reaches E.

**9. Fuel Mark:** If fuel sensor is malfunctioning, color of the fuel mark changes and the needle disappears. If the harness between the fuel sensor and the monitor unit is broken, the needle disappears but the fuel mark color does not change.

**10. Sub Meter:** Displays fuel consumption or breaker hours depending on what is set in the monitor. For more information, see Main Menu—Setting Menu—Sub Meter Selection in this section.

TX1086447—UN—05JAN11



Exhaust Filter Cleaning Indicator

TX1086347—UN—06JAN11



Exhaust Filter Auto Cleaning Disabled Indicator

**11. Radio Display:** Shows current radio station, frequency, and volume setting.

**12. Air Conditioner Display:** Shows blower fan speed, selected air vent, and temperature setting.

**13. Coolant Temperature Mark:** If coolant temperature sensor is malfunctioning, color of the coolant temperature mark changes and the needle disappears. If the harness between the coolant temperature sensor and the monitor unit is broken, the needle disappears but the coolant temperature mark color does not change.

**14. Coolant Temperature Gauge:**

**IMPORTANT: Possible engine damage may occur. If needle points to RED zone, idle engine to bring back to BLUE zone before stopping engine. If needle continues to rise, stop engine.**

Displays engine coolant temperature. Needle should be around the center of the scale during operation.

**15. Auxiliary Indicator:** Displays optional auxiliary data indicator.

**16. Auxiliary Indicator:** Displays optional auxiliary data indicator.

**17. Auxiliary Indicator:** Displays optional auxiliary data indicator.

**18. Travel Speed Indicator:** Displays travel speed selected from the switch panel (rabbit—fast speed travel or turtle—slow speed travel).

**19. Auto Shutdown Indicator:** Displays if auto shutdown was selected by operator from the menu screen. For more information, see Main Menu—Setting Menu—Auto Shutdown in this section.

**20. Auto-Idle Indicator:** Displays if auto-idle mode is turned ON from the switch panel. For more information, see Switch Panel Functions. (Section 2-1.)

**21. Alarm Indicators:** Displays if an abnormality occurs. If six or more alarms are generated, the indicators can be scrolled through using the monitor dial on the switch panel. For more information, see Main Menu—Alarm List in this section.

OUT4001,000071B-19-25JAN13-1/1

## Monitor Start-Up

**NOTE:** Start the engine after the default screen is displayed.

**NOTE:** The exhaust filter auto cleaning disabled indicator will display on the monitor when the key switch is in ON position. Once the engine is started, the indicator will disappear unless exhaust filter auto cleaning has been disabled by the operator through the monitor.

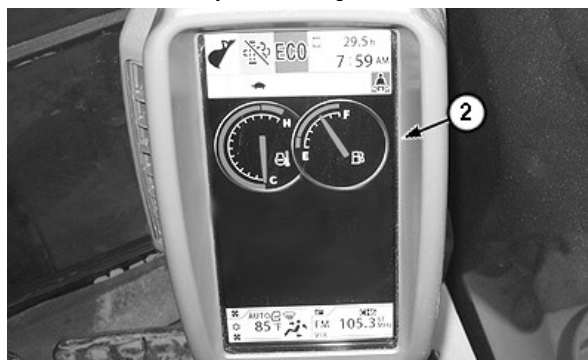
When the key switch is turned to the ON position, the system starting screen (1) displays for about 2 seconds and then the default screen (2) is displayed.

1—System Starting Screen

2—Default Screen



System Starting Screen



Default Screen

OUT4001,000071C-19-28FEB12-1/1

TX1086287A—UN—28DEC10

TX1086304A—UN—28DEC10



## Main Menu

When the default screen (5) is displayed, press the monitor dial (2) on the switch panel to display the **Main Menu** screen (1).

The Main Menu screen displays submenus which can be selected to view diagnostic information or change various operating characteristics of the machine or the monitor.

**NOTE:** *Translations shown on screen may be abbreviated.*

The submenus under Main Menu that appear on monitor include:

**NOTE:** *Alarm List ONLY appears as a submenu if there is an actual alarm.*

- **Alarm List**—provides detailed information of generated alarms.
- **Air Conditioner**—provides air conditioner functions.
- **Radio**—provides radio functions.
- **Work Mode**—provides front attachment functions.
- **Setting Menu**—allows operator to change various monitor and machine functions.
- **Information Menu**—allows operator to view operating hours, maintenance items, troubleshooting (diagnostic trouble codes [DTCs]), engine speed, and exhaust filter accumulation.

**NOTE:** *The Alarm List will always be displayed first on the Main Menu if there is an actual alarm. Air Conditioner, Radio, and Work Mode submenus can be ordered in the sequence that is preferred according to how often they are used. For changing the order sequence of these submenus, see Main Menu—Setting Menu—Main Menu Sequence Change in this section.*

Rotate monitor dial to highlight desired submenu. Press dial button to display chosen submenu.

Press Back button (3) to return to previous screen.

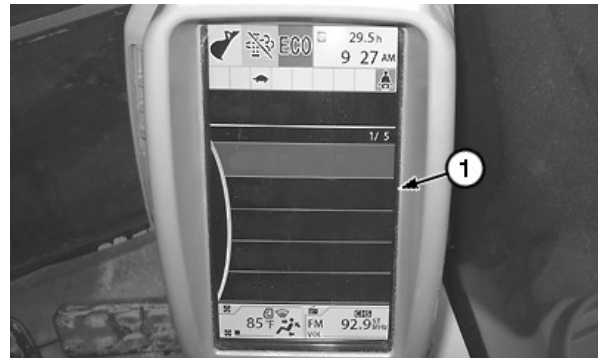
Press Home button (4) to return to default screen.

1—Main Menu Screen  
2—Monitor Dial  
3—Back Button

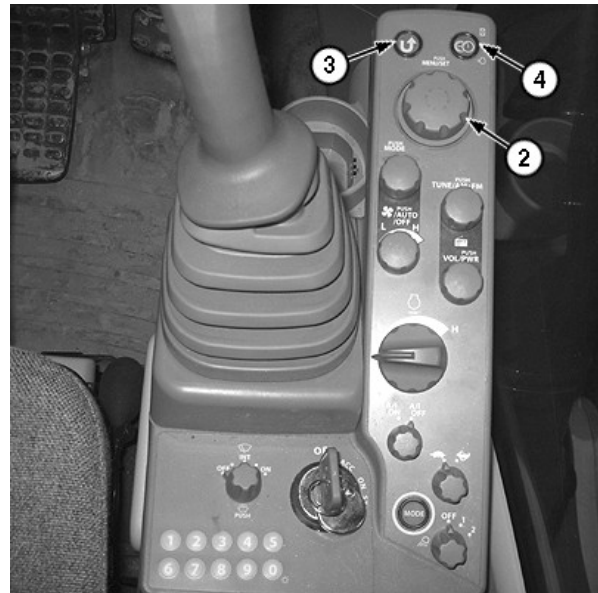
4—Home Button  
5—Default Screen



Default Screen



Main Menu Screen



Switch Panel

OUT4001,000071D-19-03JAN11-1/1

## Main Menu—Alarm List

The **Alarm List** menu will always appear as the first submenu under Main Menu, but **ONLY** if there is an actual alarm generated. If there is more than one alarm, a list will be displayed. If there are no alarms, Alarm List will not appear as a submenu.

The submenus under Main Menu that appear on monitor include:

**NOTE:** *Alarm List ONLY appears as a submenu if there is an actual alarm.*

- Alarm List
- Air Conditioner
- Radio
- Work Mode
- Setting Menu
- Information Menu

At Main Menu screen (1) with Alarm List highlighted, press monitor dial (2) to view generated alarms.

If there is more than one alarm, rotate monitor dial to highlight a particular alarm. Press monitor dial to view detailed information about that alarm and how to rectify the problem.

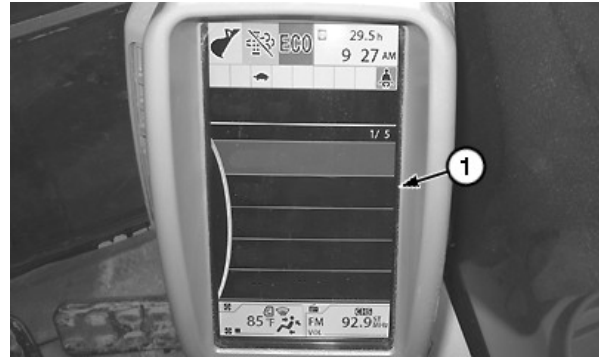
When an alarm indicator appears on the monitor display, an alarm light (5) is also illuminated on the bottom of the monitor to alert the operator.

Press Back button (3) to return to previous screen.

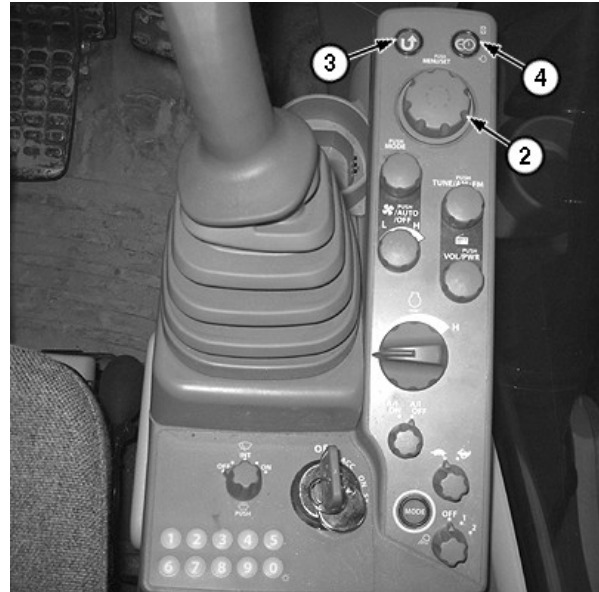
Press Home button (4) to return to default screen.

- 1—Main Menu Screen  
2—Monitor Dial  
3—Back Button

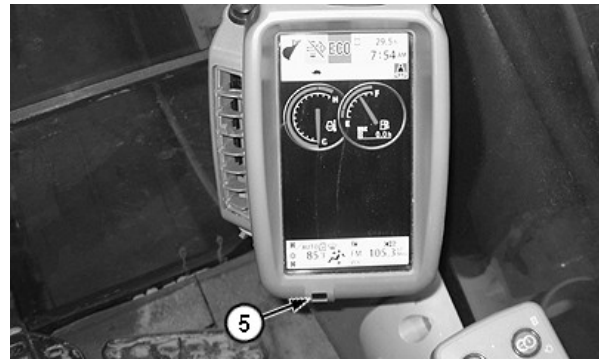
- 4—Home Button  
5—Alarm Light



Main Menu Screen



Switch Panel



Alarm Light

Continued on next page

ER79617,0000E38-19-10NOV17-1/26

TX1086306A—UN—28DEC10

TX1086272A—UN—27DEC10

TX1086914A—UN—13JAN11

**Possible alarm indicators that could appear are:**

TX1086346—UN—06JAN11

•**Exhaust Filter Alarms (6068HT073 Engine Only)**—The same exhaust filter alarm symbol appears, but the condition of the alarm is different. If the alarm symbol is:

- Illuminated and yellow.....Exhaust filter is restricted and at HIGH soot level. Enable auto cleaning, disable auto-idle, and operate machine normally or move machine to safe area and perform a parked cleaning.
- Blinking and yellow.....Exhaust filter is restricted and at VERY HIGH soot level. The warning alarm will also illuminate yellow. Immediately move machine to safe area and perform a parked cleaning.
- Blinking and red.....Exhaust filter is very restricted and at SERVICE soot level. The warning alarm will also



*Exhaust Filter Alarm*

illuminate red. Immediately park machine, stop the engine, and a service cleaning will need to be performed. For service cleaning, contact your authorized John Deere dealer.

For more information on exhaust filter, see Exhaust Filter. (Section 2-3.)

ER79617,0000E38-19-10NOV17-2/26

•**Exhaust Filter Auto Cleaning Disabled Alarm (6068HT073 Engine Only)**—Auto cleaning is disabled and exhaust filter needs to be cleaned. Move machine to safe area and perform a parked cleaning.

TX1086347—UN—06JAN11

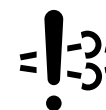


*Exhaust Filter Auto Cleaning Disabled Alarm*

ER79617,0000E38-19-10NOV17-3/26

•**Exhaust Filter Error Alarm (6068HT073 Engine Only)**—There is a system or hardware error causing the exhaust filter cleaning to abort. See your authorized dealer.

TX1086356—UN—06JAN11



*Exhaust Filter Error Alarm*

ER79617,0000E38-19-10NOV17-4/26

•**Engine Oil Level Alarm**—Check engine oil level and refill oil.

TX1086348—UN—06JAN11



*Engine Oil Level Alarm*

ER79617,0000E38-19-10NOV17-5/26

•**Engine Oil Pressure Alarm**—Engine oil pressure has decreased. Immediately stop engine. Check engine oil system and oil level.

TX1086353—UN—06JAN11



*Engine Oil Pressure Alarm*

ER79617,0000E38-19-10NOV17-6/26

Continued on next page

•**Engine Start Disabled Alarm**—Engine will not start due to pilot shutoff lever being lowered.

TX1086354—UN—06JAN11



Engine Start Disabled Alarm

ER79617,0000E38-19-10NOV17-7/26

•**Engine Overheat Alarm**—Engine coolant temperature has abnormally increased. Stop operation. Run the engine at slow idle speed or lower the coolant temperature.

TX1086350—UN—06JAN11



Engine Overheat Alarm

ER79617,0000E38-19-10NOV17-8/26

• **Cold Fluid Component Protection (CFCP) Alarm (6068HT073 Engine Only)**—This alarm appears when engine and hydraulic oils are very cold. Allow machine to warm up until indicator light disappears.

TX1241579—UN—11JUL17



CFCP Alarm

ER79617,0000E38-19-10NOV17-9/26

•**Warning Alarm**—An abnormal condition has been detected. Alarm will either be red or yellow depending on severity of problem. Contact your authorized John Deere dealer.

TX1086352—UN—06JAN11



Warning Alarm

ER79617,0000E38-19-10NOV17-10/26

•**Programming Alarm**—If this Service ADVISOR™ Remote (SAR) programming alarm appears on the monitor, different conditions may exist depending on the color. If this alarm is:

TX1087187—UN—21JAN11



Programming Alarm

ER79617,0000E38-19-10NOV17-11/26

- **YELLOW**—Service ADVISOR™ Remote (SAR) software update is ready to install.
- **RED**—SAR programming is in process. Do not turn OFF machine power until programming is complete.
- **GREEN**—SAR programming is complete and cycle machine power to complete the process.

Service ADVISOR is a trademark of Deere & Company

•**Program Failure Alarm**—This alarm will appear along with a red warning alarm. A problem occurred during the Service ADVISOR™ Remote (SAR) programming process. Consult your authorized dealer.

TX1087189—UN—21JAN11



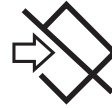
Program Failure Alarm

ER79617,0000E38-19-10NOV17-12/26

Continued on next page

•**Unable to Program Alarm**—This alarm will appear along with a yellow warning alarm. A condition exists that will not allow the transfer of new Service ADVISOR™ Remote (SAR) software to happen. Retry programming or contact your authorized John Deere dealer.

TX1087190—UN—21JAN11

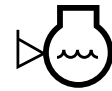


Unable to Program Alarm

ER79617,0000E38-19-10NOV17-13/26

•**Coolant Level Alarm**—Check coolant level and refill coolant.

TX1086349—UN—06JAN11



Coolant Level Alarm

ER79617,0000E38-19-10NOV17-14/26

•**Engine Air Filter Restriction Alarm**—Air filter elements are clogged. Clean or replace air filter elements.

TX1086365—UN—06JAN11



Engine Air Filter Restriction Alarm

ER79617,0000E38-19-10NOV17-15/26

•**Boost Temperature Alarm**—Engine intake air temperature has abnormally increased. Stop operation. Check intercooler for clogging and intake air piping for disconnection.

TX1086355—UN—06JAN11



Boost Temperature Alarm

ER79617,0000E38-19-10NOV17-16/26

•**Hydraulic Oil Overheat Alarm**—Hydraulic oil temperature has abnormally increased. Stop operation, check hydraulic oil level, and check for leaks.

TX1086351—UN—06JAN11



Hydraulic Oil Overheat Alarm

ER79617,0000E38-19-10NOV17-17/26

•**Hydraulic Oil Filter Restriction Alarm**—Hydraulic oil filter is clogged. Replace filter.

TX1086364—UN—06JAN11



Hydraulic Oil Filter Restriction Alarm

ER79617,0000E38-19-10NOV17-18/26

Continued on next page

•**Hydraulic Oil Cooling System Alarm**—Hydraulic oil cooling system is abnormal. Contact your authorized John Deere dealer.

TX1086357—UN—06JAN11



*Hydraulic Oil Cooling System Alarm*

ER79617,0000E38-19-10NOV17-19/26

•**Alternator Alarm**—Electrical system is abnormal. Contact your authorized John Deere dealer.

TX1086358—UN—06JAN11

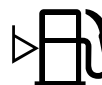


*Alternator Alarm*

ER79617,0000E38-19-10NOV17-20/26

•**Fuel Level Alarm**—Fuel level is low. Refill fuel tank as soon as possible.

TX1086362—UN—06JAN11



*Fuel Level Alarm*

ER79617,0000E38-19-10NOV17-21/26

•**Fuel Temperature Alarm**—Fuel temperature has abnormally increased. Stop operation. Check fuel cooler for any malfunction such as clogging.

TX1086363—UN—06JAN11



*Fuel Temperature Alarm*

ER79617,0000E38-19-10NOV17-22/26

•**Fuel Filter Restriction Alarm**—Fuel filter is clogged. Clean or replace fuel filter elements.

TX1086366—UN—06JAN11



*Fuel Filter Restriction Alarm*

ER79617,0000E38-19-10NOV17-23/26

•**System Failure Alarm**—Satellite communication system is abnormal. Contact your authorized John Deere dealer.

TX1086367—UN—06JAN11



*System Failure Alarm*

ER79617,0000E38-19-10NOV17-24/26

Continued on next page

•**Pilot Shutoff Lever Alarm**—Pilot shutoff lever system is abnormal. Contact your authorized John Deere dealer.

TX1086368—UN—06JAN11



*Pilot Shutoff Lever Alarm*

ER79617,0000E38-19-10NOV17-25/26

•**Electric Lever Alarm**—Electric lever system is abnormal. Contact your authorized dealer.

TX1185012—UN—10FEB15



*Electric Lever Alarm*

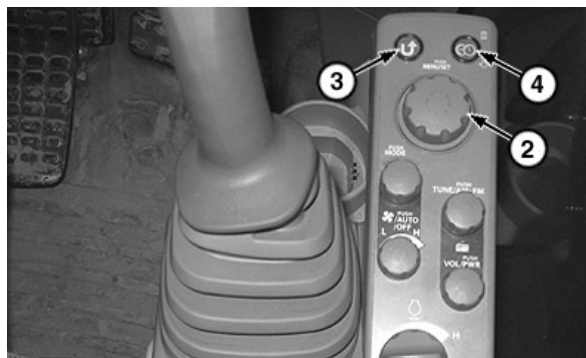
ER79617,0000E38-19-10NOV17-26/26

## Main Menu—Air Conditioner



TX1086306A—UN—28DEC10

Main Menu Screen



TX1183787A—UN—29JAN15

Switch Panel

The **Air Conditioner** menu allows operator to turn the air conditioner ON or OFF and set the circulation air mode to recirculating cab air or fresh air.

The submenus under Main Menu that appear on monitor include:

**NOTE:** Alarm List ONLY appears as a submenu if there is an actual alarm.

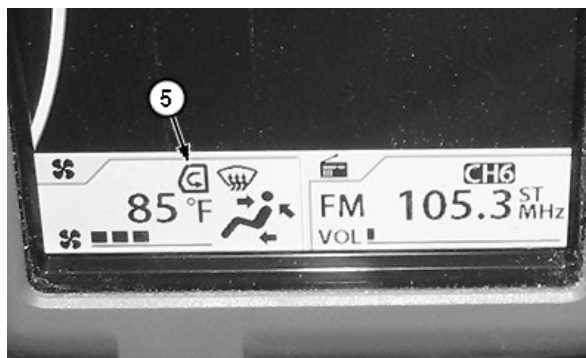
- Alarm List
- Air Conditioner
- Radio
- Work Mode
- Setting Menu
- Information Menu

At Main Menu screen (1), rotate monitor dial (2) to highlight Air Conditioner. Press monitor dial to display Air Conditioner menu.

Air Conditioner menu items include:

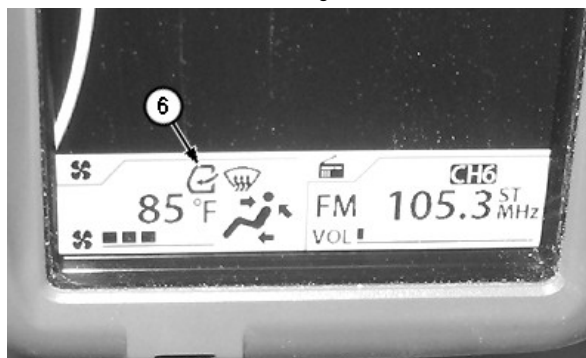
- ☐ **(Cab recirculating air mode symbol is displayed.)** Rotate monitor dial to highlight the cab recirculating air mode symbol. Press monitor dial to turn ON the cab recirculating air mode. The color of the preceding square will turn green and a recirculating air icon (5) will appear in the air conditioner display in the lower left corner of the monitor. Press monitor dial again to turn OFF the recirculating air mode and switch to fresh air mode. The color of the preceding square will be gray and a fresh air icon (6) will appear in the air conditioner display in the lower left corner of the monitor.

☐ **A/C**



TX1086310A—UN—28DEC10

Recirculating Air Icon



TX1086311A—UN—28DEC10

Fresh Air Icon

1—Main Menu Screen  
2—Monitor Dial  
3—Back Button

4—Home Button  
5—Recirculating Air Icon  
6—Fresh Air Icon

Continued on next page

OUT4001,000071E-19-19JAN16-1/2



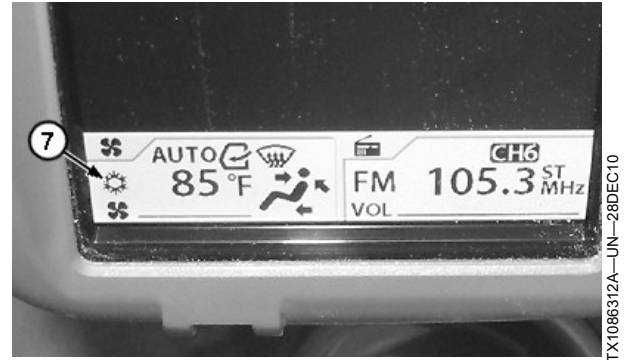
**NOTE:** Blower speed switch on switch panel needs to be ON in order to operate the ON/OFF function of the air conditioner in the monitor menu.

Rotate monitor dial to highlight A/C. Press monitor dial to turn ON the air conditioner. The color of the preceding square will turn green and an air conditioner icon (7) will appear in the air conditioner display in the lower left corner of the monitor. Press monitor dial again to turn OFF the air conditioner. The color of the preceding square will be gray and air conditioner icon will disappear.

If an exclamation mark appears on the monitor, communication between the air conditioner and the monitor is abnormal. See an authorized John Deere dealer.

Press back button (3) to return to previous screen.

Press home button (4) to return to default screen.



*Air Conditioner Icon*

**7—Air Conditioner Icon**

OUT4001,000071E-19-19JAN16-2/2

## Main Menu—Radio

The **Radio** menu allows operator to set preferred radio stations and adjust the tone settings.

The submenus under Main Menu that appear on monitor include:

**NOTE:** *Alarm List ONLY appears as a submenu if there is an actual alarm.*

- Alarm List
- Air Conditioner
- Radio
- Work Mode
- Setting Menu
- Information Menu

At Main Menu screen (1), rotate monitor dial (2) to highlight Radio. Press monitor dial to display Radio menu.

Radio menu items include:

- CH1 AM \_ \_ \_ \_ kHz
- CH2 AM \_ \_ \_ \_ kHz
- CH3 AM \_ \_ \_ \_ kHz
- CH4 AM \_ \_ \_ \_ kHz
- CH5 FM \_ \_ \_ \_ MHz
- CH6 FM \_ \_ \_ \_ MHz
- CH7 FM \_ \_ \_ \_ MHz
- CH8 FM \_ \_ \_ \_ MHz

**NOTE:** *Presetting memory radio stations can also be done using the keypad (6) on switch panel. See Operating the AM/FM Radio. (Section 2-1.)*

Press radio tuning switch (5) to toggle between AM or FM frequency. Tune radio to desired AM or FM station by rotating the radio tuning switch. When desired station is found, rotate monitor dial to highlight CH1. Press and hold monitor dial for more than 1 second. Current station is set. Repeat procedure for seven additional AM or FM stations using CH2 through CH8. Once the stations are stored, operator can select these programmed stations by using keys 1—8 on the switch panel keypad (6).

### • <<

Rotate monitor dial to highlight <<. Press monitor dial to seek next lower frequency station. Continue to press monitor dial to seek next lower frequency station until desired station is found.

### • >>

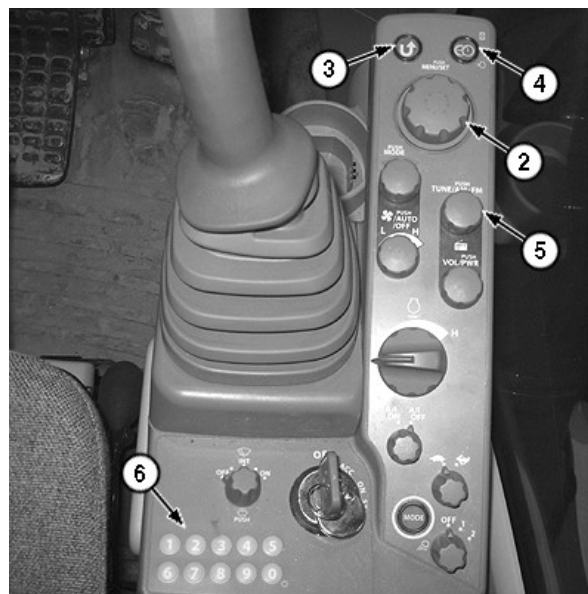
Rotate monitor dial to highlight >>. Press monitor dial to seek next higher frequency station. Continue to press monitor dial to seek next higher frequency station until desired station is found.

### • TONE

Rotate monitor dial to highlight TONE. Press monitor dial to adjust tone. Backlighting will turn orange. Rotate monitor dial clockwise to boost treble. Rotate monitor dial counterclockwise to boost base. Press monitor dial again to store changes.



Main Menu Screen



Switch Panel

- 1—Main Menu Screen
- 2—Monitor Dial
- 3—Back Button

- 4—Home Button
- 5—Radio Tuning Switch
- 6—Keypad

## • AUTO PRESET

Rotate monitor dial to highlight AUTO PRESET. Press monitor dial to start auto preset process. The AUTO PRESET scans reception frequency and allocates stations to CH1 to CH8. AM frequency stations will be preset to CH1 to CH4 and FM frequency stations will be preset to CH5 to CH8. Operating the radio during the scan stops the AUTO PRESET process.

If an exclamation mark appears in the radio display on the monitor, communication between the radio and the monitor is abnormal. See an authorized John Deere dealer.

Press back button (3) to return to previous screen.

Press home button (4) to return to default screen.

OUT4001,000071F-19-19JAN16-1/1

## Main Menu—Work Mode

The **Work Mode** menu allows operator to select front attachment.

The submenus under Main Menu that appear on monitor include:

*NOTE: Alarm List ONLY appears as a submenu if there is an actual alarm.*

- Alarm List
- Air Conditioner
- Radio
- Work Mode
- Setting Menu
- Information Menu

At Main Menu screen (1), rotate monitor dial (2) to highlight Work Mode. Press monitor dial to display Work Mode menu.

Work Mode menu items include:

*NOTE: This list of front attachments are examples only. Personalized list of front attachments can be entered in monitor through the Attachment Name Input screen. See Main Menu—Setting Menu—Attachment Name Input in this section.*

- Bucket (bucket icon will also be shown)
- Thumb 1 (thumb icon will also be shown)
- Breaker 1 (breaker icon will also be shown)  
Type-A
- Breaker 2 (breaker icon will also be shown)  
Type-B
- Pulverizer 1 (pulverizer icon will also be shown)
- Crusher 1 (crusher icon will also be shown)
- Grapple 1 (grapple icon will also be shown)

Rotate monitor dial to highlight desired front attachment. Press monitor dial to select the desired attachment for operation.

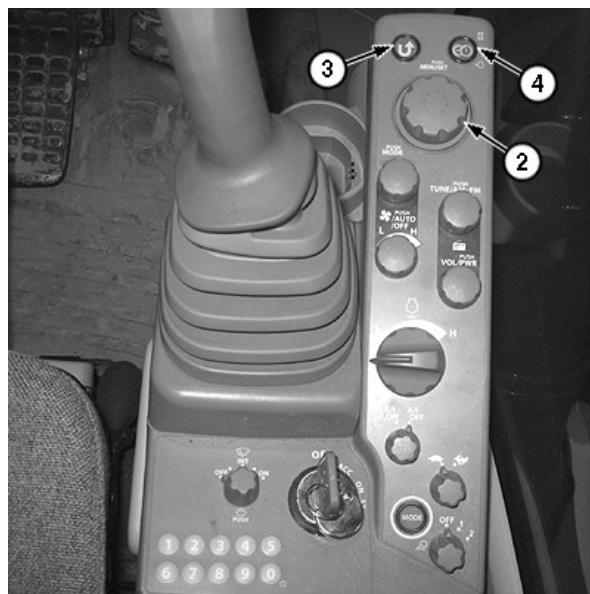
If Bucket work mode was selected, screen will revert back to the default screen and a bucket icon displays on monitor in the upper left corner.

If any other work mode is selected, the following information is displayed:

- Maximum Pump Flow Rate.....XXX.XX gpm
- Maximum Engine Speed.....XXXX min<sup>-1</sup>
- Selector Valve.....O/T or C/V
- 2 Pumps Combined Flow.....OFF/ON
- Breaker Relief Pressure.....OFF/ON
- ✓



Main Menu Screen



Switch Panel

1—Main Menu Screen  
2—Monitor Dial

3—Back Button  
4—Home Button

If adjustments need to be made to this information, see an authorized John Deere dealer. If information is correct and ready for operation, rotate monitor dial to highlight the checkmark (✓) and press monitor dial. Screen will revert back to the default screen and selected attachment icon displays on monitor in the upper left corner.

Press back button (3) to return to previous screen.

Press home button (4) to return to default screen.

OUT4001,0000720-19-31AUG15-1/1

## Main Menu—Setting Menu

The **Setting Menu** allows operator to change various monitor and machine functions.

The submenus under Main Menu that appear on monitor include:

*NOTE: Alarm List ONLY appears as a submenu if there is an actual alarm.*

- Alarm List
- Air Conditioner
- Radio
- Work Mode
- Setting Menu
- Information Menu

At Main Menu screen (1), rotate monitor dial (2) to highlight Setting Menu. Press monitor dial to display Setting Menu.

Setting Menu items include:

- Date and Time
- Attachment Name Input
- Auto-Shutdown
- Auto Exhaust Filter Cleaning
- Sub Meter Selection
- Rear View Camera Monitor
- Display Item Selection
- Brightness Adjustment
- Language
- Unit Selection
- Main Menu Sequence Change

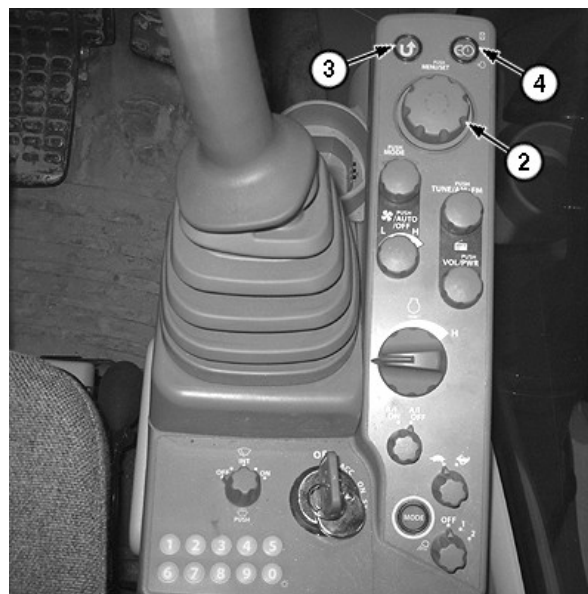
Rotate monitor dial to highlight a Setting submenu. Press monitor dial to display chosen Setting submenu.

Press back button (3) to return to previous screen.

Press home button (4) to return to default screen.



Main Menu Screen



Switch Panel

1—Main Menu Screen  
2—Monitor Dial

3—Back Button  
4—Home Button

OUT4001,0000721-19-11JAN16-1/1

TX1086306A—UN—28DEC10

TX1086272A—UN—27DEC10

## Main Menu—Setting Menu—Date and Time

The **Date and Time** menu provides the capability to change the date and time settings. Year/month/day format and 24h/12h display mode can also be changed.

At Setting Menu, rotate monitor dial to highlight Date and Time. Press monitor dial to display Date and Time menu.

Date and Time menu items include:

- **Time Setting**

(present time is displayed here)

- **Hour**
- **Minute**
- ✓

Rotate monitor dial to highlight Time Setting. Press monitor dial to display Time Setting screen. Rotate monitor dial to highlight Hour and press monitor dial (backlighting turns orange). Rotate monitor dial to adjust the hour setting. Rotate clockwise to increment number and counterclockwise to decrement number. Press monitor dial when desired hour setting is reached. Rotate monitor dial to highlight Minute and press monitor dial (backlighting turns orange). Rotate monitor dial to adjust the minute setting. Rotate clockwise to increment number and counterclockwise to decrement number. Press monitor dial when desired minute setting is reached. Rotate monitor dial to highlight checkmark (✓). Press monitor dial to store the Time Settings.

- **Date Setting**

- **Year**
- **Month**
- **Day**
- ✓

Rotate monitor dial to highlight Date Setting. Press monitor dial to display Date Setting screen. Rotate monitor dial to highlight Year and press monitor dial (backlighting turns orange). Rotate monitor dial to adjust the year setting. Rotate clockwise to increment number and counterclockwise to decrement number. Press monitor dial when desired year setting is reached. Rotate monitor dial to highlight Month and press monitor dial (backlighting turns orange). Rotate monitor dial to adjust the month setting. Rotate clockwise to increment number and counterclockwise to decrement number. Press monitor dial when desired month setting is reached. Rotate monitor dial to highlight Day and press monitor dial (backlighting turns orange). Rotate monitor dial to adjust the day setting. Rotate clockwise to increment number and counterclockwise to decrement number. Press monitor dial when desired day setting is reached. Rotate monitor dial to highlight checkmark (✓). Press monitor dial to store the Date Settings.

- **Display Form**

- **Time**
- **Date**

Rotate monitor dial to highlight Display Form. Press monitor dial to display Display Form screen. Rotate monitor dial to highlight Time and press monitor dial. Press monitor dial to switch between 12h or 24h settings. When desired time setting is reached, rotate monitor dial to highlight Date and press monitor dial. Press monitor dial to switch between YYYY/MM/DD, MM/DD/YYYY, or DD/MM/YYYY settings.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,0000724-19-04APR16-1/1

## Main Menu—Setting Menu—Attachment Name Input

The **Attachment Name Input** menu provides the capability to personalize front attachment with a specific name.

At Setting Menu, rotate monitor dial to highlight Attachment Name Input. Press monitor dial to display Attachment Name Input menu. Rotate monitor dial to highlight desired attachment name. Press monitor dial to display name change screen. To add specific information to the attachment name, rotate monitor dial either way to highlight

a character, then press the monitor dial. After inputting new name, rotate monitor dial to highlight **SET** on bottom right corner of monitor. Press monitor dial to finalize the setting.

To delete the last entered character, rotate monitor dial to highlight **BS** on bottom left corner of monitor and then press monitor dial. To delete all entered characters, rotate monitor dial to highlight **ALL CLEAR** and then press monitor dial.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,0000726-19-31AUG15-1/1

## Main Menu—Setting Menu—Auto-Shutdown

The **Auto-Shutdown** menu provides the capability to turn on this feature and set a desired time for machine shutdown to take place.

At Setting Menu, rotate monitor dial to highlight Auto-Shutdown. Press monitor dial to display Auto-Shutdown menu.

Auto-Shutdown menu items include:

*NOTE: When auto-shutdown is ON, the color of the preceding square is green and A/S will appear on the default screen. When auto-shutdown is OFF, the color of the preceding square is gray.*

### ☐ **ON (Enable)**

Rotate monitor dial to highlight ON (enable). Press monitor dial to turn the auto-shutdown function ON. Press monitor dial again to turn the auto-shutdown function OFF.

*NOTE: Setting Time minute increment needs to be set before enabling auto-shutdown.*

## Setting Time

Rotate monitor dial to highlight Setting Time and press monitor dial (backlighting turns orange). Rotate monitor dial to adjust the auto-shutdown acting time. Auto-shutdown can be set to activate after 1, 2, 3, 4, 5, 7, 10, 15, 20, 25, or 30 minute increments. Press monitor dial to store desired time setting.

The following conditions must be met in order for auto-shutdown to work:

- Engine operated in auto-idle for the set amount of time that was selected for auto-shutdown.
- Pilot shutoff lever is in locked (UP) position.
- Engine coolant temperature is greater than 60°C (140° C) but lower than 100°C (212°F).
- Exhaust filter cleaning is not active.

*NOTE: Thirty seconds before the engine stops, the monitor will display **Engine Shutdown Soon** message.*

Press back button to return to previous screen.

Press home button to return to default screen.

KR46761,00015D5-19-31JUL17-1/1

## Main Menu—Setting Menu—Auto Exhaust Filter Cleaning

**CAUTION:** Servicing machine during exhaust filter auto cleaning can result in serious personal injury. Avoid exposure and skin contact with hot gases and components.

During exhaust filter auto cleaning, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components may reach temperatures hot enough to burn people and ignite or melt common materials.

**NOTE:** Disabling auto exhaust filter cleaning is not preferred. Whenever possible, auto cleaning should be enabled to keep soot buildup to a minimum and to increase overall machine uptime.

If operating in conditions where it may be unsafe for elevated exhaust temperatures, auto cleaning of the exhaust filter can be disabled.

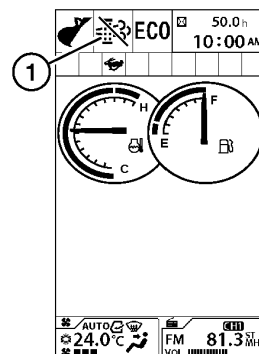
The **Auto Exhaust Filter Cleaning** menu allows the operator to enable or disable the auto cleaning function for the exhaust filter.

At Setting Menu, rotate monitor dial to highlight Auto Exhaust Filter Cleaning. Press monitor dial to display Auto Exhaust Filter Cleaning menu:

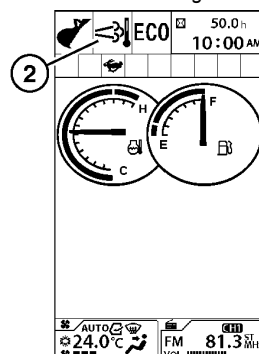
**NOTE:** When auto cleaning is disabled, the color of the preceding square is green and exhaust filter auto cleaning disabled indicator (1) will appear on the default screen.

When auto cleaning is enabled, the color of the preceding square is gray and an exhaust filter cleaning indicator (2) will appear on the default screen when an auto or parked cleaning procedure is taking place.

The exhaust filter auto cleaning disabled indicator will display on the monitor when the key switch is in ON position. Once the engine is started, the indicator will disappear unless exhaust filter auto cleaning has been disabled by the operator.



Exhaust Filter Auto Cleaning Disabled Indicator



Exhaust Filter Cleaning Indicator

1—Exhaust Filter Auto Cleaning Disabled Indicator

2—Exhaust Filter Cleaning Indicator

### ☐ OFF (Disable)

Press monitor dial to turn OFF (disable) auto cleaning. Press monitor dial again to enable auto cleaning.

Press Back button to return to previous screen.

Press Home button to return to default screen.

OUT4001,0000728-19-28FEB12-1/1

TX1086450—UN—06/JAN11

TX1086451—UN—06/JAN11

## Main Menu—Setting Menu—Sub Meter Selection

**NOTE:** Only one sub meter can be selected at a time. When one of the selections is ON, the color of the preceding square is green.

The **Sub Meter Selection** menu provides the capability to add a meter on the fuel gauge for fuel consumption or breaker hours.

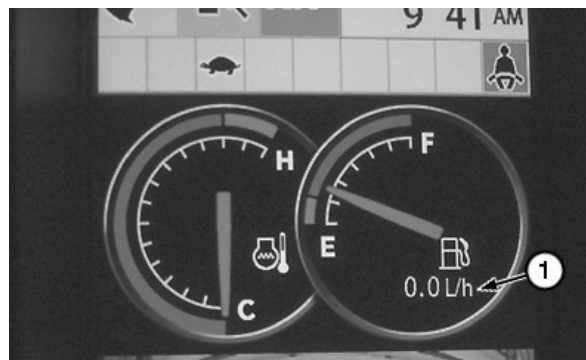
At Setting Menu, rotate monitor dial to highlight Sub Meter Selection. Press monitor dial to display Sub Meter Selection menu.

Sub Meter Selection menu items include:

- ☐ **OFF**  
Rotate monitor dial to highlight OFF. Press monitor dial to turn OFF any meters.
- ☐ **Fuel Consumption Indicator**  
Rotate monitor dial to highlight Fuel Consumption Indicator. Press monitor dial to turn ON the fuel consumption indicator (1). (Fuel consumption will be displayed on the fuel gauge on the default screen.)
- ☐ **Breaker Hour Meter**  
Rotate monitor dial to highlight Breaker Hour Meter. Press monitor dial to turn ON the breaker hour meter (2). (Breaker hours will be displayed on the fuel gauge on the default screen.)

Press back button to return to previous screen.

Press home button to return to default screen.



Fuel Consumption Indicator



Breaker Hour Meter

1—Fuel Consumption Indicator

2—Breaker Hour Meter

OUT4001,000072A-19-04MAR16-1/1



## Main Menu—Setting Menu—Rear View Camera Monitor

**CAUTION:** The rear view camera image is designed to supplement other safety practices and is not intended to be the sole method of collision avoidance. Always be alert and aware of the surroundings when operating this machine to avoid possible injury or death to operator or others.

**NOTE:** When the rear view camera mode is enabled, the color of the preceding square is green and rear view image (1) is continuously displayed on the default screen.

**NOTE:** For a clear image, clean lens and monitor before operating the machine. The monitor and camera lens surface is a resin product. Lightly wipe the surface with a wet, clean cloth. Never use an organic solvent.

The **Rear View Camera Monitor** menu provides the capability to turn the camera ON or OFF so the view behind the machine is shown on the monitor.

At Setting Menu, rotate monitor dial to highlight Rear View Camera Monitor. Press monitor dial to display Rear View Camera Monitor menu.

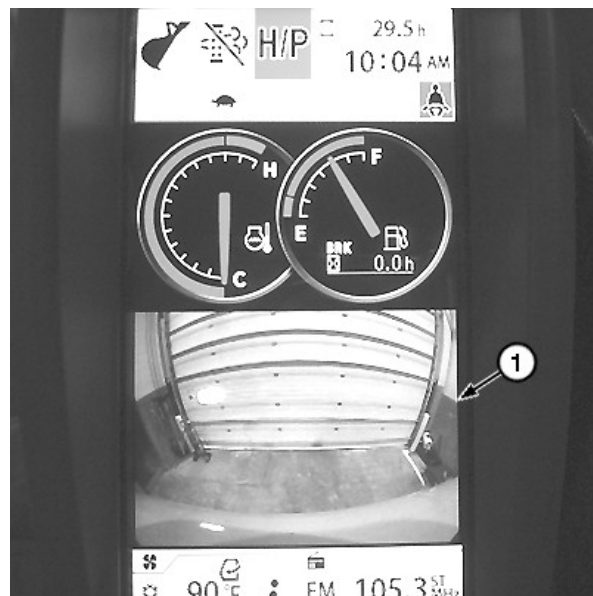
### ☐ ON (Enable)

Press monitor dial to turn ON (enable) the rear view camera mode on the monitor. Press monitor dial again to disable rear view camera mode.

Never attempt to change the mounting position of the rear view camera (2). If rear view camera monitor is not operating properly, see your authorized dealer.

Press Back button to return to previous screen.

Press Home button to return to default screen.



Rear View Image



Camera

1—Rear View Image

2—Rear View Camera

OUT4001,000072B-19-28FEB12-1/1

## Main Menu—Setting Menu—Display Item Selection

**NOTE:** Only one display item can be selected at a time. When one of the selections is ON, the color of the preceding square is green.

The **Display Item Selection** menu provides the capability to change what appears on the default screen.

At Setting Menu, rotate monitor dial to highlight Display Item Selection. Press monitor dial to display Display Item Selection menu.

Display Item Selection menu items include:

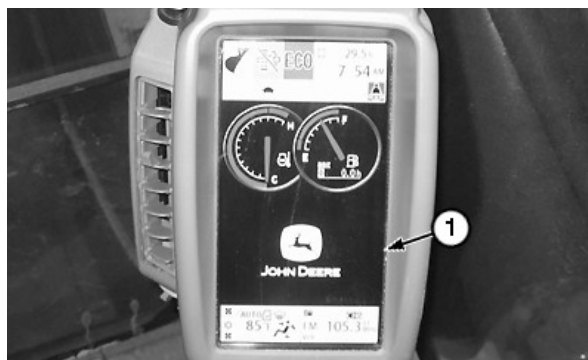
- ☐ **Logo**  
Rotate monitor dial to highlight Logo. Press monitor dial to have manufacturer logo (1) appear on default screen.
- ☐ **Operational Information**  
Rotate monitor dial to highlight Operational Information. Press monitor dial to have operational information (2) appear on default screen.
- ☐ **OFF (Disable)**  
Rotate monitor dial to highlight OFF (disable). Press monitor dial to turn OFF any images.

Press back button to return to previous screen.

Press home button to return to default screen.

1—Manufacturer Logo

2—Operational Information



Manufacturer Logo



Operational Information

OUT4001,000072F-19-15JUL16-1/1

## Main Menu—Setting Menu—Brightness Adjustment

The **Brightness Adjustment** menu allows operator to adjust the brightness of the monitor for better viewing.

At Setting Menu, rotate monitor dial to highlight Brightness Adjustment. Press monitor dial to display Brightness Adjustment menu.

Rotate monitor dial clockwise for lighter image and counterclockwise for darker image.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,000072C-19-31AUG15-1/1

## Main Menu—Setting Menu—Language

The **Language** menu allows operator to change the language text that appears on the monitor to a specific preference.

At Setting Menu, rotate monitor dial to highlight Language. Press monitor dial to display Language menu. A list of different languages appears.

**NOTE:** Only one language can be selected at a time. When one of the selections is ON, the color of the preceding square is green.

Rotate monitor dial to highlight desired language and press monitor dial to store setting.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,000072D-19-31AUG15-1/1

## Main Menu—Setting Menu—Unit Selection

The **Unit Selection** menu allows operator to change the unit system that appears on the monitor to either US or Metric and change temperature display reading on the monitor between degrees Celcius (°C) or degrees Fahrenheit (°F).

At Setting Menu, rotate monitor dial (2) to highlight Unit Selection. Press monitor dial to display Unit Selection menu.

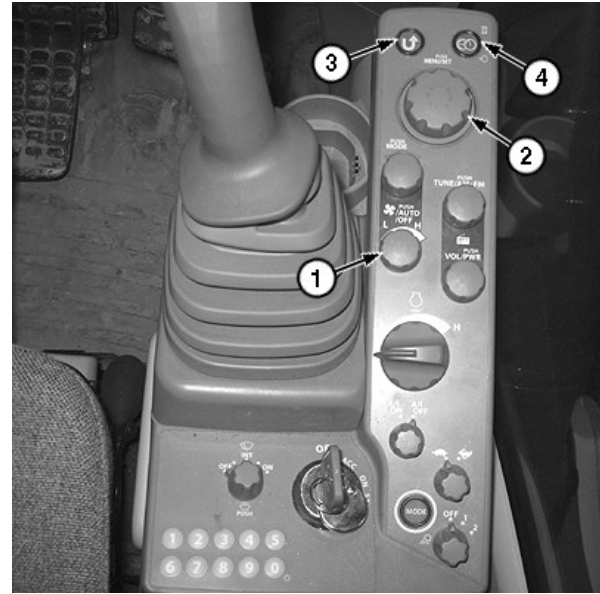
Unit Selection menu items include:

- **Unit**  
Rotate monitor dial to highlight Unit and press monitor dial. Press monitor dial to change setting between US or Metric.
- **°C/°F**  
**(Blower Must Be ON)**

**NOTE:** Before changing °C or °F, turn the blower fan ON by pressing the blower speed switch (1) on the switch panel.

Rotate monitor dial to highlight °C/°F and press monitor dial. After displaying Wait message, temperature reading is changed from previous setting in lower left corner of the screen on the air conditioner display. Press monitor dial again to change temperature reading back to opposite setting.

Press back button (3) to return to previous screen.



Switch Panel

- |                       |               |
|-----------------------|---------------|
| 1—Blower Speed Switch | 3—Back Button |
| 2—Monitor Dial        | 4—Home Button |

Press home button (4) to return to default screen.

OUT4001,000072E-19-31AUG15-1/1

## Main Menu—Setting Menu—Main Menu Sequence Change

The **Main Menu Sequence Change** menu provides the capability to change the sequence order of some of the submenus under the Main Menu according to how frequently they are used.

At Setting Menu, rotate monitor dial to highlight Main Menu Sequence Change. Press monitor dial to display Main Menu Sequence Change menu.

Main Menu Sequence Change menu items include:

- **Air Conditioner**
- **Radio**
- **Work Mode**

Rotate monitor dial to highlight the submenu that is preferred to be shown first. Press monitor dial to change the submenu sequence.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,0000730-19-31AUG15-1/1

## Main Menu—Information Menu

The **Information Menu** provides operating hour information, maintenance items, troubleshooting (diagnostic trouble codes [DTCs]), engine speed, and restriction level in the exhaust filter.

The submenus under Main Menu that appear on monitor include:

**NOTE:** *Alarm List ONLY appears as a submenu if there is an actual alarm.*

- Alarm List
- Air Conditioner
- Radio
- Work Mode
- Setting Menu
- Information Menu

At Main Menu screen (1), rotate monitor dial (2) to highlight Information Menu. Press monitor dial to display Information Menu.

Information Menu items include:

- Operation
- Maintenance
- Troubleshooting
- Monitoring

Press back button (3) to return to previous screen.

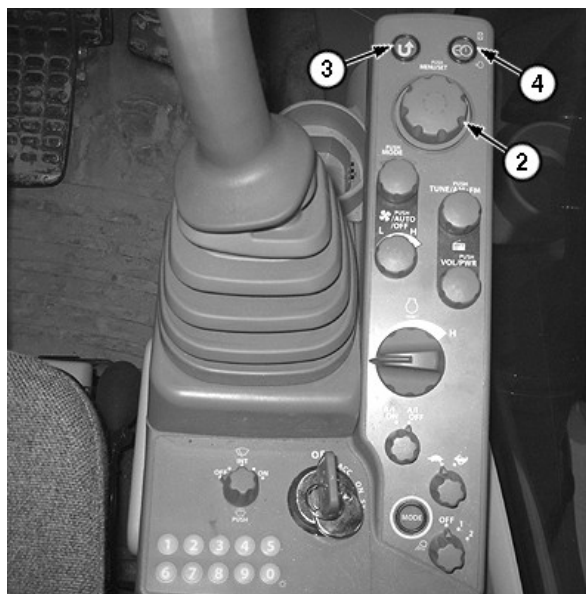
Press home button (4) to return to default screen.

1—Main Menu Screen  
2—Monitor Dial

3—Back Button  
4—Home Button



Main Menu Screen



Switch Panel

OUT4001,0000722-19-31AUG15-1/1

## Main Menu—Information Menu—Operation

The **Operation** menu provides fuel consumption and operating hours of the breaker, front attachment, tracks, and overall machine hours.

At Information Menu, rotate monitor dial to highlight Operation. Press monitor dial to display Operation menu.

*NOTE: Total fuel consumption and fuel consumption rate depend on the operating environment and the operation method of machine.*

Operation menu items include:

### • Fuel Consumption

Rotate monitor dial to highlight Fuel Consumption. Press monitor dial to display Fuel Consumption information:

- **Machine Operation Hours** ..... XX h
  - **Fuel Consumption** ..... XX L
  - **Average Fuel Consumption Rate**....XX.X L/h
- Press monitor dial to return to the previous menu. To reset fuel consumption data, rotate monitor dial to highlight CLEAR in the bottom right corner of screen and press monitor dial.

### • Breaker Operation

Rotate monitor dial to highlight Breaker Operation. Press monitor dial to display Breaker Operation information:

- **Operating Time** .....XXXXXX.X h
  - **Machine Operation Hours** .....XXXX.X h
  - **Operation Ratio**.....XXX.X %
- Press monitor dial to return to the previous menu. To reset breaker operating data, rotate monitor dial to highlight CLEAR in the bottom right corner of screen and press monitor dial.

### • Attachment Operation

Rotate monitor dial to highlight Attachment Operation. Press monitor dial to display Attachment Operation information:

- **Operating Time** .....XXXX.X h
- Press monitor dial to return to the previous menu. To reset attachment operating hours, rotate monitor dial to highlight CLEAR in the bottom right corner of screen and press monitor dial.

### • Travel Operation

Rotate monitor dial to highlight Travel Operation. Press monitor dial to display Travel Operation information:

- **Operating Time** .....XXXX.X h
- Press monitor dial to return to the previous menu. To reset travel operating hours, rotate monitor dial to highlight CLEAR in the bottom right corner of screen and press monitor dial.

### • Actual Operation

*NOTE: The actual operation time includes the front attachment operation and the travel operation hours.*

Rotate monitor dial to highlight Actual Operation. Press monitor dial to display Actual Operation information:

- **Operating Time** .....XXXX.X h
- Press monitor dial to return to the previous menu. To reset actual operating hours, rotate monitor dial to highlight CLEAR in the bottom right corner of screen and press monitor dial.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,0000731-19-31AUG15-1/1

## Main Menu—Information Menu—Maintenance

The **Maintenance** menu provides the capability to notify the operator when the next maintenance item is due, shows hours remaining until next maintenance interval and allows the interval hours to be reset.

At Information Menu, rotate monitor dial to highlight Maintenance. Press monitor dial to display Maintenance menu.

Maintenance menu items include:

- Engine Oil
- Engine Oil Filter
- Hydraulic Oil
- Pilot Hydraulic Oil Filter
- Hydraulic Oil Full-Flow Filter
- Pump Transmission Oil
- Travel Reduction Gear Oil
- Swing Reduction Gear Oil
- Swing Bearing Grease
- Air Cleaner Filter
- Fuel Filter
- Air Conditioner Filter
- Exhaust Filter
- User Setting 1
- User Setting 2
- Maintenance Notice.....ON or OFF

Rotate monitor dial to highlight Maintenance Notice. Press monitor dial to turn Maintenance Notice ON. Press monitor dial again to turn Maintenance Notice OFF.

If Maintenance Notice is ON, a message is displayed on the monitor for 10 seconds (when the key switch is ON) if any of

the maintenance items listed come due for a change. Press the Home button on switch panel to delete the notification.

If Maintenance Notice is OFF, no notification is displayed on the monitor.

To check if a maintenance item is due for a change, rotate monitor dial through list to reach specific item and highlight. If a wrench symbol appears next to the item, service is due. Press monitor dial to display the following information for each item:

- **Previous Maintenance**  
(date is displayed).....X.X h
- **Remains**.....XXX.X h
- **Maintenance Interval**.....XXX.X h

Press monitor dial to return to previous menu with no changes.

**To reset remaining time data**, rotate monitor dial to highlight RESET at the bottom center of monitor and press monitor dial. The value of remaining hours is reset to that of change interval. The previous maintenance date and hours are updated with current date and time.

**To change the maintenance interval**, rotate monitor dial to highlight the wrench with the clock next to it at the bottom right corner of monitor and press monitor dial. (Backlighting will turn orange for Maintenance Interval.) Rotate monitor dial to adjust the time for scheduled hour maintenance. Press monitor dial to store the change.

Press Back button to return to previous screen.

Press Home button to return to default screen.

OUT4001,0000732-19-03JAN11-1/1

## Main Menu—Information Menu—Troubleshooting

The **Troubleshooting** menu provides access to view any diagnostic trouble codes (DTCs) generated by a controller.

At Information Menu, rotate monitor dial to highlight Troubleshooting. Press monitor dial to begin Troubleshooting data. After displaying Wait message, the screen displays controller troubleshooting menu:

- Engine (00)
- Main (00)

- **Monitor (00)**
- **Information (00)**
- **Option (00)**

The amount of currently generated DTCs is displayed at the right side of each item in parentheses. Rotate monitor dial to highlight an item displaying DTCs. Press monitor dial to display the actual DTC numbers. Up to 20 DTCs can be displayed.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,0000733-19-31AUG15-1/1

## Main Menu—Information Menu—Monitoring

The **Monitoring** menu provides access to view engine speed and restriction level in the exhaust filter.

At Information Menu, rotate monitor dial to highlight Monitoring. Press monitor dial to display Monitoring menu:

- **Actual Engine Speed.....XXXX min<sup>-1</sup>**
- **Exhaust Filter Restriction Level....(displays a bar graph)**

There are five segments to the bar graph to indicate the restriction status of the exhaust filter.

- If any of the first three segments of the bar graph display a block, auto cleaning needs to be enabled.
- If the fourth or fifth segment also displays a block, a parked cleaning needs to be initiated by the operator. An exhaust filter alarm indicator will also appear on the monitor.

Press back button to return to previous screen.

Press home button to return to default screen.

OUT4001,0000734-19-31AUG15-1/1

# Operation—Operating the Machine

## Before Starting Work

**Review the operating precautions. See Safety—Operating Precautions (1-3).**

**Use seat belt when operating machine.** Remember to fasten seat belt even during brief periods of use.



*Reading Operator's Manual*

TX,BEFORE,WORK-19-16MAY23-1/1

T133556—UN—24AUG00

## Operator's Daily Machine Check Before Starting

### Safety and Protective Devices Checks

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

Clear all steps and walking surfaces.

Check condition of guards, shields, and covers.

### Overall Machine Checks

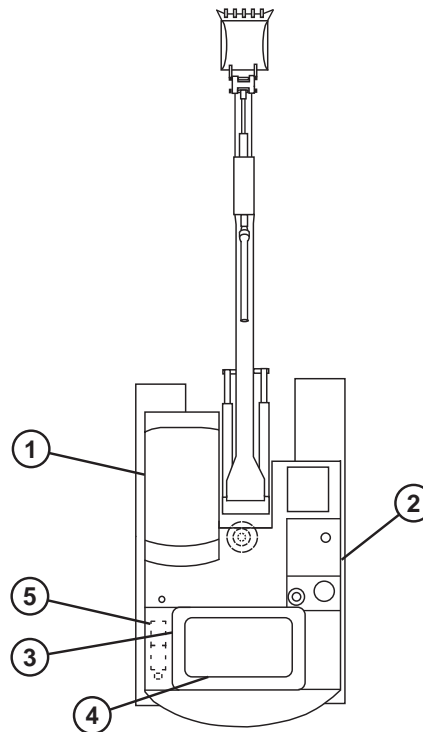
Check for worn or frayed electrical wires and loose or corroded connections.

Inspect machine for bent, broken, or loose parts.

Check for loose or missing hardware.

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

- |                                                       |                                                  |
|-------------------------------------------------------|--------------------------------------------------|
| 1—Check Pedal And Lever Movement/Clean Out Cab Debris | 4—Check Engine Oil Level                         |
| 2—Check Hydraulic Oil Level                           | 5—Check/Clean Radiator And Oil Cooler Outer Fins |
| 3—Check Surge Tank Level                              |                                                  |



*Inspect Machine Daily*

VD76477,0000345-19-24FEB14-1/1

TX 1000291—UN—15NOV05



## Engine Break-In Period

**IMPORTANT:** To avoid engine damage, it is critical to observe the engine break-in period. Extra care during the first 500 hours of operation will result in more satisfactory long-term engine performance and life. Do not exceed 500 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 engine 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 250 hours of operation:

- API Service Classification CE
- API Service Classification CD
- API Service Classification CC
- ACEA Oil Sequence E2
- ACEA Oil Sequence E1

2. Check engine oil level more frequently during the engine break-in period.

1. Change oil and oil filter after first 500 hours of operation (maximum). Fill crankcase with the normal seasonal viscosity grade oil. See Diesel Engine Oil. (Section 3-1.)

2. 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 in this manual.

3. Watch oil pressure gauge for pressure within specification.

4. Check belt for proper alignment and seating in pulley grooves.

TX,BREAKIN,JD500HR-19-30SEP23-1/1

## Starting Engine

**IMPORTANT:** Prevent possible damage to the engine. The diesel fired coolant heater is required for temperatures  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) and below. See your authorized dealer.

**IMPORTANT:** Prevent possible damage to engine. Temperatures below  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) require an additional warmup period. See Cold Weather Warmup in this section.

### Before Starting the Engine

Turn key switch to ON position. The system starting screen (1) displays for about 2 seconds and then the default screen (2) is displayed.

**IMPORTANT:** Prevent possible damage to the engine. Wait until engine preheat indicator (4) is no longer illuminated before starting the machine.

### Starting the Engine

1. Move pilot shutoff lever to the locked (UP) position to start machine.
2. Move engine speed dial (3) to slow idle position.
3. Sound horn to alert persons nearby.

**IMPORTANT:** Prevent starter damage. Never operate starter for more than 20 seconds at a time. If engine fails to start, return key switch to OFF. Wait for about 2 minutes, then try again. After a false start, **DO NOT** turn key switch until engine stops.

4. Turn key switch to START. Release key; switch will return to ON position.

### After Starting Check

**IMPORTANT:** Prevent possible damage to engine. If alarm indicators remain illuminated after starting engine, **IMMEDIATELY STOP THE ENGINE**. Find and correct the problem.

After the engine is started, check that no alarm indicators are shown on display.

**If the alarm indicators continue to be displayed, stop the engine immediately. Find and correct the problem. See Main Menu—Alarm List. (Section 2-2.)**

### Warming The Engine

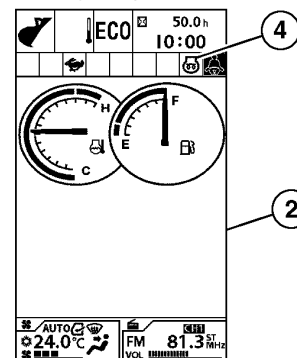
1. Run engine at 1/3 speed for 30 seconds. Do not run engine at fast or slow idle. Do not accelerate rapidly during warmup.



System Starting Screen



Engine Speed Dial




Engine Preheat Indicator

- |                          |                            |
|--------------------------|----------------------------|
| 1—System Starting Screen | 3—Engine Speed Dial        |
| 2—Default Screen         | 4—Engine Preheat Indicator |

2. Operate machine at less-than-normal loads and speeds until engine is at normal operating temperature.

ER79617,0000DC7-19-24APR14-1/1

### Cold Weather Start Aid

 **CAUTION:** Ether is highly flammable. Do not use ether when starting an engine equipped with glow plugs.

**IMPORTANT:** Prevent possible damage to the engine. The diesel fired coolant heater is required for temperatures -20°C (-4°F) and below. See an authorized John Deere dealer.

**IMPORTANT:** Prevent possible damage to engine. Temperatures below -20°C (-4°F) require an additional warm-up period. See **Cold Weather Warm-Up** in this section.

This machine is equipped with glow plugs. Glow plugs are automatically controlled by the engine controller when the key is turned ON. Do not start engine until the engine preheat indicator disappears on the monitor.

ER79617,0000DC8-19-04MAY15-1/1

## Cold Weather Warm-Up

**⚠ CAUTION:** Prevent possible injury from unexpected machine movement. If hydraulic oil is cold, hydraulic functions move slowly. **DO NOT** attempt normal machine operation until hydraulic functions move at close-to-normal cycle times.

**IMPORTANT:** Prevent possible damage to the engine. The diesel fired coolant heater is required for temperatures  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ), and below. See an authorized John Deere dealer.

**IMPORTANT:** Prevent possible damage to engine. Temperatures below  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) require a diesel fired coolant heater warm-up period. At  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ), the engine requires 1-hour warm-up period. Temperatures below  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) require additional warm-up period. See table below.

Diesel Fired Coolant Heater Warm-Up Period	
Temperature	Required Warm-Up Period Before Operation
$-20^{\circ}\text{C}$ ( $-4^{\circ}\text{F}$ )	1 hour
$-21^{\circ}\text{C}$ ( $-5^{\circ}\text{F}$ )	1 hour
$-22^{\circ}\text{C}$ ( $-7^{\circ}\text{F}$ )	2 hours
$-23^{\circ}\text{C}$ ( $-9^{\circ}\text{F}$ )	2 hours
$-24^{\circ}\text{C}$ ( $-11^{\circ}\text{F}$ )	2 hours
$-25^{\circ}\text{C}$ ( $-13^{\circ}\text{F}$ )	2 hours
$-26^{\circ}\text{C}$ ( $-14^{\circ}\text{F}$ )	2 hours
$-27^{\circ}\text{C}$ ( $-16^{\circ}\text{F}$ )	2 hours
$-28^{\circ}\text{C}$ ( $-18^{\circ}\text{F}$ )	2 hours
$-29^{\circ}\text{C}$ ( $-20^{\circ}\text{F}$ )	3 hours
$-30^{\circ}\text{C}$ ( $-22^{\circ}\text{F}$ )	4 hours
$-31^{\circ}\text{C}$ ( $-23^{\circ}\text{F}$ )	5 hours
$-32^{\circ}\text{C}$ ( $-25^{\circ}\text{F}$ )	6 hours
$-33^{\circ}\text{C}$ ( $-27^{\circ}\text{F}$ )	7 hours
$-34^{\circ}\text{C}$ ( $-29^{\circ}\text{F}$ )	8 hours
$-35^{\circ}\text{C}$ ( $-31^{\circ}\text{F}$ )	9 hours
$-36^{\circ}\text{C}$ ( $-32^{\circ}\text{F}$ )	10 hours
$-37^{\circ}\text{C}$ ( $-34^{\circ}\text{F}$ )	11 hours
$-38^{\circ}\text{C}$ ( $-36^{\circ}\text{F}$ )	12 hours
$-39^{\circ}\text{C}$ ( $-38^{\circ}\text{F}$ )	13 hours
$-40^{\circ}\text{C}$ ( $-40^{\circ}\text{F}$ )	14 hours

In extremely cold conditions, an extended warm-up period is necessary.

Avoid sudden operation of all functions until the engine and hydraulic oil are thoroughly warm.

1. If temperature is below  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ ), engine will start at

800 rpm and ramp to 1200 rpm after 30 seconds. Engine maintains 1200 rpm until hydraulic temperature reaches  $2^{\circ}\text{C}$  ( $35.6^{\circ}\text{F}$ ) or 15 minutes have elapsed, whichever comes first.

2. Run engine at 1/2 speed for 5 minutes. Do not run at fast or slow idle.

**⚠ CAUTION:** Prevent possible injury from unexpected machine movement. Clear the area of all bystanders before running machine through the warm-up procedure. If machine is inside a building, warm the travel circuit first and move the machine to a clear area outside. Cold oil causes machine functions to respond slowly.

3. Actuate travel and swing functions slowly, initially moving only short distances.

4. Operate boom, arm, and bucket functions by moving cylinders a short distance in each direction for the first time.

5. Continue cycling cylinders by increasing travel each cycle until full stroke is obtained.

6. Swing upperstructure so boom is perpendicular to tracks.

**⚠ CAUTION:** Prevent possible injury from machine sliding backwards. Keep angle between boom and arm  $90^{\circ}$ — $110^{\circ}$ .

7. Keeping the angle between boom and arm  $90^{\circ}$ — $110^{\circ}$ , fully actuate bucket close function (cylinder extend) and lower bucket to raise track off ground.

**IMPORTANT:** Holding function actuated for more than 10 seconds can cause damage from hot spots in the control valve.

8. While rotating raised track in forward direction, actuate bucket curl function (cylinder extend) for 10 seconds and release for 5 seconds for a period of 2-1/2 minutes.

9. Repeat procedure with track rotating in reverse direction.

10. Lower machine to ground.

11. Repeat steps 6—10 on opposite track.

12. Operate all hydraulic functions to distribute warm oil in all cylinders, motors, and lines.

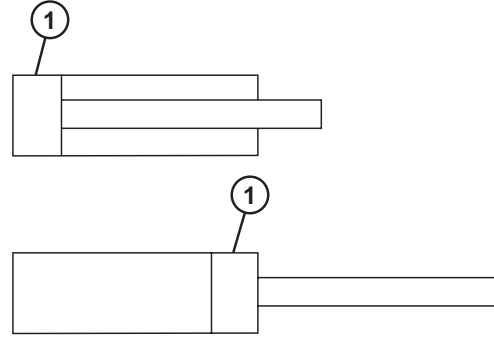
13. If hydraulic functions still move slowly, repeat steps 7 and 8.

ER79617,0000DC6-19-27FEB18-1/1

## Operate Within Machine Limits

**IMPORTANT: Prevent boom, arm, and bucket cylinder damage. Operating machine with any cylinder at end of stroke (1) may apply excessive load which may damage the cylinders. Avoid operating machine with any cylinder at end of stroke.**

When an excessive load is applied to the boom, arm, or bucket, hydraulic oil is relieved in those circuits. Relieving oil reduces hydraulic circuit pressure and load on the components to protect the machine from damage. If the cylinders are used at the end of stroke (1), the force is applied to the cylinders and machine components are no longer protected by the relief valve. Do not operate the machine with any cylinder at the end of stroke.



Operate Within Machine Limits

1—End of Stroke

TX,CYLINDER,LIMITS-19-08JAN21-1/1

TX1307270—UN—14DEC20

## Digging and Grading Operation

**IMPORTANT: Prevent possible machine damage. Coupler mounted and direct mounted attachments can contact machine. Maintain safe clearance between attachments and machine at all times.**

During work operations, coupler mounted and direct mounted attachments can contact cab, boom,

undercarriage, or blade (if equipped). Be aware of attachment position at all times. When working over embankments or stockpiles, do not allow the boom to contact the machine or ground.

Operate the boom, arm, and bucket so the bucket teeth move horizontally. Keep the bucket teeth perpendicular with the ground while grading.

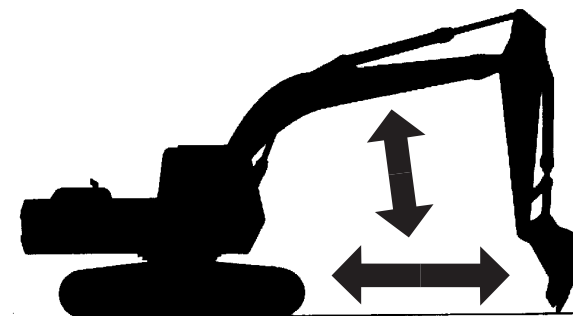
Continued on next page

DH10862,0000623-19-25JUL23-1/2

**IMPORTANT: Prevent possible machine damage.**

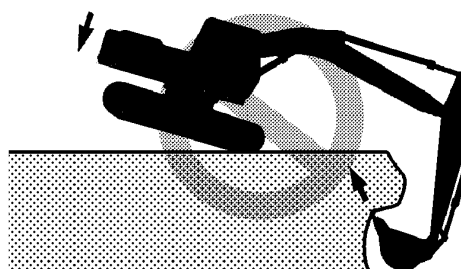
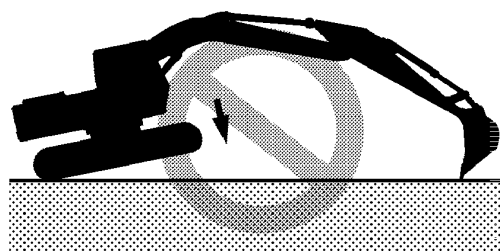
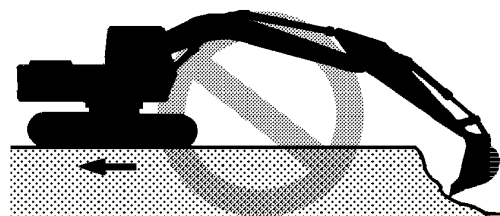
Raising the front or rear of the machine to use the weight of the machine, or pushing and pulling dirt while traveling to increase digging force puts excess force on moving parts. Do not move or tilt the machine while bucket is in contact with dirt.

- Operate arm roll-in function while slowly raising the boom. When the boom moves past the vertical position, slowly lower the boom to allow the bucket to maintain a smooth surface.
- Operate arm roll-out function while slowly raising the boom. When the boom moves past the vertical position, slowly lower the boom to allow the bucket to maintain a smooth surface.
- Operate arm roll-in and arm roll-out functions while slowly raising the boom. When the boom moves past the vertical position, slowly lower the boom to allow the bucket to perform slope finishing work.



TX1316911—UN—29SEP21

*Machine Position*



*Machine Positions*

TX1316913—UN—29SEP21

DH10862,0000623-19-25JUL23-2/2

## Travel Pedals and Levers

**CAUTION:** Prevent possible injury from unexpected machine movement. Keep bystanders clear of machine when traveling.

Keep bystanders clear of machine when traveling.

The instructions below apply when the travel motors (4) are to the rear of the machine. If the travel motors are to the front of the machine, the machine moves **OPPOSITE** to the direction described.

**FORWARD TRAVEL (1):** Push down on front of both pedals or push both levers forward.

**REVERSE TRAVEL (2):** Push down on rear of both pedals or pull both levers rearward.

**NEUTRAL POSITION (3):** Travel brakes will automatically stop and hold the machine.

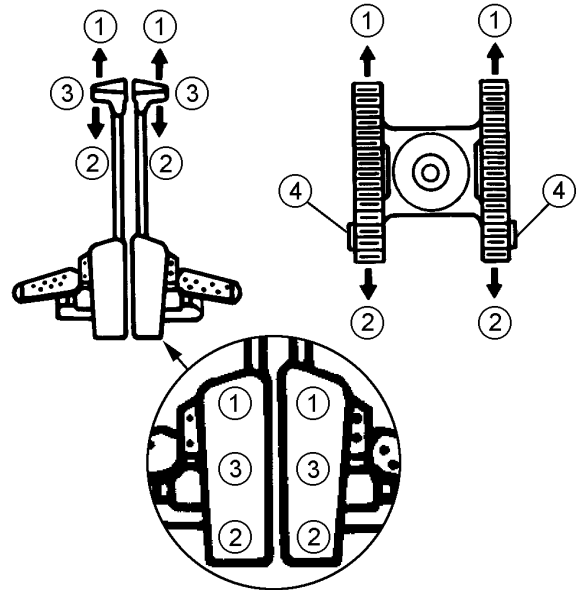
**RIGHT TURN:** Push down on front of left pedal or push left lever forward.

**LEFT TURN:** Push down on front of right pedal or push right lever forward.

**SHORT TURN (COUNTER ROTATE):** Push down the front of one pedal and the rear of the other or push one lever forward and pull the other rearward.

**CAUTION:** Prevent possible injury from machine tipping. Operate control pedals or levers slowly when traveling down a slope.

**TRAVELING DOWN A SLOPE:** Operate control pedals or levers slowly when traveling down a slope.



Travel Pedals and Levers

1—Forward Travel  
2—Reverse Travel

3—Neutral Position  
4—Travel Motor (2 used)

**COLD WEATHER OPERATION:** Travel pedal and lever dampers are provided for smooth control. In extremely cold weather, pedal or lever effort will increase. Operate pedals or levers several times with pilot shutoff lever in the locked (UP) position.

ER79617,0000E31-19-04MAY15-1/1

T137492—UN—25/AN01

## Auxiliary Function Lever (AFL)

**IMPORTANT:** Prevent possible machine damage.

Before operating attachment switch, consult attachment Operator's Manual for proper mounting and operation.

**Do not use auxiliary function lever (AFL) (2) to operate couplers or similar devices.**

Move pilot control shutoff lever to the unlocked (DOWN) position.

Press auxiliary function enable switch (1) to enable auxiliary function lever (AFL) (2) on the right pilot control lever. Light-emitting diode (LED) on auxiliary function enable switch illuminates when function is enabled.

The AFL on the right pilot control lever is a proportional switch used for optional equipment and attachments requiring proportional hydraulic flow. Use of AFL is for rotary and tilt functions or thumb operation.

The power boost button (3) is on the right pilot control lever. See Power Boost Button. (Section 2-1.)

The horn button (4) is on the top of the left pilot control lever in the bottom position.

- |                                    |                      |
|------------------------------------|----------------------|
| 1—Auxiliary Function Enable Switch | 3—Power Boost Button |
| 2—Auxiliary Function Lever (AFL)   | 4—Horn Button        |



TX1168382A—UN—11AUG14

Auxiliary Function Enable Switch



TX1322255A—UN—29MAR22

Right Pilot Control Lever



TX1254232A—UN—22MAR18

Left Pilot Control Lever

DJ54098,000040A-19-04APR22-1/1



## Exhaust Filter—6068HT073 Engine Only

The exhaust filter is a critical component in the engine's emissions control system, which is required to meet governmental emissions regulations. The exhaust filter captures soot and ash to prevent its release into the atmosphere. The soot and ash must be eliminated from the exhaust filter to keep it functioning properly. The process of eliminating collected soot is called exhaust filter cleaning. There are three types of exhaust filter cleaning available to the operator:

- **NATURAL/PASSIVE**
- **AUTO**
- **PARKED**

There are five soot levels to describe the amount of restriction in the exhaust filter. These levels determine the type of cleaning that is required:

- **LOW**
- **MODERATE**
- **HIGH**
- **VERY HIGH**
- **SERVICE**

To observe the current restriction status of the exhaust filter, an exhaust filter restriction level bar graph is located in the Information Menu for viewing at any time. For more information, see Main Menu—Information Menu—Monitoring. (Section 2-2.)

Auto cleaning is able to activate (if not disabled by the operator) when the exhaust filter restriction is anywhere between MODERATE and HIGH soot levels. Auto cleaning is no longer available if exhaust filter restriction reaches VERY HIGH or SERVICE soot levels.

Parked cleaning can only be initiated when the exhaust filter restriction reaches HIGH or VERY HIGH soot levels.

If exhaust filter restriction reaches SERVICE soot level, contact your authorized dealer.

In addition to the cleaning procedures, the exhaust filter also requires maintenance to remove accumulated ash, which is a noncombustible result of additives used in crankcase lubrication oils and the fuel. Ash removal CANNOT be performed by the operator. For more information on exhaust filter ash removal, see Service Exhaust Filter. (Section 3-3.)

**NOTE:** *Unnecessary idling can cause exhaust filter soot to accumulate more quickly. For the best possible exhaust filter operation which requires the least amount of operator interaction, idling should be kept to a minimum.*

### Natural/Passive Cleaning

During normal machine operation, the exhaust heat will naturally clean the soot build up in the exhaust filter.

### Auto Cleaning

**CAUTION:** Servicing machine during exhaust filter auto cleaning can result in serious personal injury. Avoid exposure and skin contact with hot gases and components.

**During exhaust filter auto cleaning, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components may reach temperatures hot enough to burn people and ignite or melt common materials.**

With auto cleaning enabled, exhaust filter cleaning is automatically performed as needed, with no interaction from the operator. An exhaust filter cleaning indicator will illuminate on the default screen of the monitor when the system is actively performing an exhaust filter auto cleaning. Machine can be operated as normal. When the exhaust filter auto cleaning process has completed its cycle, the cleaning indicator will automatically turn off.

**NOTE:** *Disabling exhaust filter auto cleaning is not preferred. Whenever possible, auto cleaning should be enabled to keep soot buildup to a minimum and to increase overall machine uptime.*

If operating in conditions where it may be unsafe for elevated exhaust temperatures, auto cleaning can be disabled through the monitor. For more information, see Main Menu—Setting Menu—Auto Exhaust Filter Cleaning. (Section 2-1.) If auto cleaning is disabled by the operator, an exhaust filter auto cleaning disabled indicator will appear on the default screen of the monitor and remains on until auto cleaning is enabled again. If filter restriction reaches the HIGH soot level with auto cleaning disabled, an exhaust filter alarm indicator will appear on the default screen of the monitor to alert the operator to enable auto cleaning or to initiate a parked cleaning. Operator can check the restriction level bar graph in the monitor at any time. See Main Menu—Information Menu—Monitoring. (Section 2-2.)

### Parked Cleaning

**CAUTION:** Servicing machine during exhaust filter parked cleaning can result in serious personal injury. Avoid exposure and skin contact with hot gases and components.

**During exhaust filter parked cleaning, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components may reach temperatures hot enough to burn people and ignite or melt common materials.**

**Avoid death or serious injury from machine movement. Do not leave running machine unattended during exhaust filter cleaning.**

**IMPORTANT:** Avoid machine damage. Always park machine in a safe location and check for adequate fuel level before beginning exhaust filter parked cleaning.

Continued on next page

OUT4001,0000738-19-21APR15-1/2

Parked cleaning is a process that allows the system to clean the exhaust filter. It is most commonly initiated after extended operation with exhaust filter auto cleaning disabled or frequent engine shut downs have occurred while the auto cleaning process was active. (For more detailed information, see Exhaust Filter Parked Cleaning in this section.)

During the cleaning process, the engine speed will be controlled automatically and the machine must remain parked to complete the procedure. Complete cleaning time takes less than 45 minutes, but will vary on several criteria including fuel type, oil type, duty cycle, ambient temperature, and the number of previously aborted exhaust filter cleaning requests.

Parked cleaning can only be initiated if the filter restriction is at HIGH or VERY HIGH soot levels. It is prompted by an exhaust filter alarm indicator appearing on the monitor. If exhaust filter alarm indicator is illuminated and yellow, filter restriction is at a HIGH soot level and auto cleaning needs to be enabled or a parked cleaning should be done soon. If exhaust filter alarm indicator is blinking and yellow along with the warning alarm indicator, filter restriction is at a VERY HIGH soot level and a parked cleaning should be done immediately.

Machine needs to be in a predetermined safe state. This safe state includes three conditions:

- machine is parked in a safe place with the front attachment lowered to the ground
- pilot shutoff lever is in locked (UP) position
- engine speed dial is set to slow idle

Once the exhaust filter parked cleaning switch is pressed and held for 3 seconds, a parked cleaning progress screen appears on monitor. Progress status is displayed by a bar graph. The cleaning process will continue until one of the following conditions exist:

- there is no soot restriction in the exhaust filter
- 45 minutes has elapsed causing a timeout
- operator cancels the parked cleaning procedure by lowering the pilot shutoff lever or increasing engine speed
- parked cleaning is aborted due to a system fault
- engine runs out of fuel
- engine is shut off by operator (not recommended)

**IMPORTANT: Avoid engine damage. If machine will NOT be returning to operation immediately after a parked cleaning procedure, allow the engine and exhaust filter time to return to normal operating temperatures BEFORE stopping engine.**

The exhaust filter cleaning indicator will be illuminated on the monitor during the parked cleaning. When parked cleaning procedure is complete, engine will automatically return to slow idle and exhaust filter cleaning indicator will turn off. Machine is ready to return to operation.


Avoid disabling the auto cleaning process unless absolutely necessary. Repeated disabling of the auto cleaning process or ignoring prompts to perform a parked cleaning procedure, will cause engine power limitations and can eventually lead to dealer required service cleaning.

#### Ash Removal

The exhaust filter cleaning procedures listed previously, clean the soot from the machine's exhaust filter. The exhaust filter also traps ash deposits over time which are not removed during an exhaust filter cleaning. When the exhaust filter has run several thousand hours, these ash deposits can restrict engine performance and must be removed. For more information on ash removal, see Service Exhaust Filter. (Section 3-3.)

OUT4001,0000738-19-21APR15-2/2

## Exhaust Filter Parked Cleaning—6068HT073 Engine Only

 **CAUTION:** Servicing machine during exhaust filter parked cleaning can result in serious personal injury. Avoid exposure and skin contact with hot gases and components.

During exhaust filter parked cleaning, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust filter components may reach temperatures hot enough to burn people and ignite or melt common materials.

Avoid death or serious injury from machine movement. Do not leave running machine unattended during exhaust filter cleaning.

**IMPORTANT:** Avoid machine damage. Always park machine in a safe location and check for adequate fuel level before beginning exhaust filter parked cleaning.

The exhaust filter parked cleaning process allows the system to clean the exhaust filter when the filter restriction is at HIGH or VERY HIGH soot levels. It is most commonly initiated after extended operation with exhaust filter auto cleaning disabled or frequent engine shut downs have occurred while the auto cleaning process was active. Operator can check the restriction level bar graph in the monitor at any time. See Main Menu—Information Menu—Monitoring. (Section 2-2.)

Before starting the parked cleaning process, the machine needs to be in a predetermined safe state. This safe state includes three conditions:

- machine is parked in a safe place with the front attachment lowered to the ground
- pilot shutoff lever is in locked (UP) position
- engine speed dial is set to slow idle

Continued on next page

OUT4001,0000739-19-28JAN11-1/3

An exhaust filter alarm indicator (1) on the monitor will inform the operator when a parked cleaning needs to take place.

- If the alarm indicator is illuminated yellow, exhaust filter restriction is at HIGH soot level and an exhaust filter parked cleaning should be done soon.
- If the alarm indicator is illuminated yellow and blinking, exhaust filter restriction is at VERY HIGH soot level and an exhaust filter parked cleaning should be done immediately. Warning alarm indicator will also be illuminated.

Before starting the parked cleaning process, make sure the machine is in a safe state as listed previously. Once these conditions are met, press and hold the exhaust filter parked cleaning switch (3) on the right console for 3 seconds.

**NOTE:** If the safe state conditions are NOT met and the exhaust filter parked cleaning switch is pressed and held, a parked cleaning start screen (2) appears on the monitor. Move the pilot shutoff lever to locked (UP) position and set engine speed dial to slow idle. Press and hold the parked cleaning switch again for 3 seconds to begin the exhaust filter parked cleaning process.

Exhaust filter cleaning indicator (4) will illuminate on the monitor and a parked cleaning progress screen (5) appears. Progress status is displayed on the bar graph (6).

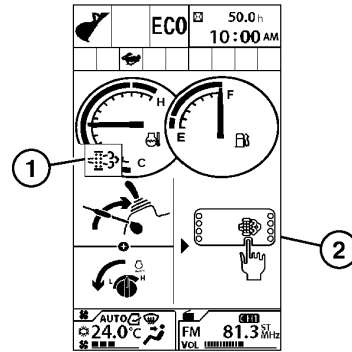
During the cleaning process, the engine speed will be controlled automatically and the machine must remain parked to complete the procedure. Complete cleaning time takes less than 45 minutes, but will vary on several criteria including fuel type, oil type, duty cycle, ambient temperature, and the number of previously aborted exhaust filter cleaning requests. Exhaust combustion may temporarily emit white smoke during the cleaning process.

The cleaning process will continue until one of the following conditions exist:

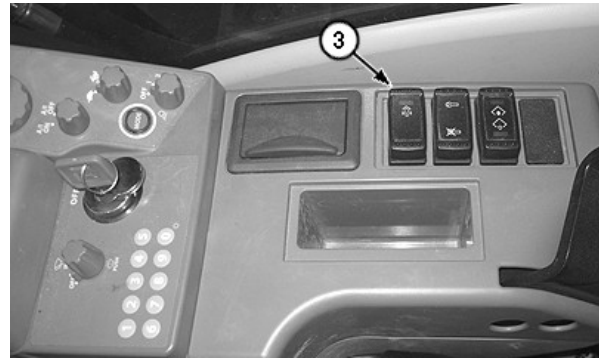
- 45 minutes has elapsed causing a timeout
- pilot shutoff lever is moved
- engine speed dial is moved
- parked cleaning is aborted due to a system fault
- engine runs out of fuel
- engine is shut off by operator (not recommended)

If any of these conditions happen during the parked cleaning process, the process will be cancelled and a message will be displayed on the monitor informing the operator. The condition will need to be amended and the parked cleaning process must be started over. For a system fault, see your authorized dealer.

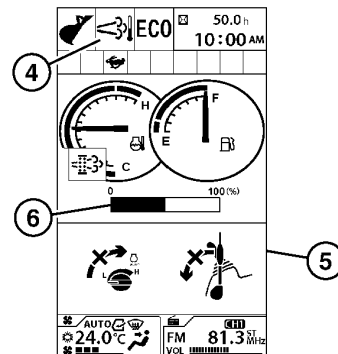
**IMPORTANT: Avoid engine damage. If machine will NOT be returning to operation immediately after a parked cleaning procedure, allow the engine and exhaust filter time to return to normal operating temperatures BEFORE stopping engine.**



Parked Cleaning Start Screen



Exhaust Filter Parked Cleaning Switch



Parked Cleaning Progress Screen

- |                                         |                                     |
|-----------------------------------------|-------------------------------------|
| 1—Exhaust Filter Alarm Indicator        | 4—Exhaust Filter Cleaning Indicator |
| 2—Parked Cleaning Start Screen          | 5—Parked Cleaning Progress Screen   |
| 3—Exhaust Filter Parked Cleaning Switch | 6—Bar Graph                         |

**NOTE:** If machine needs to be operated during the parked cleaning procedure, press the exhaust filter parked cleaning switch again. The process will be cancelled and a message will be displayed on the monitor informing the operator. Machine operation can resume, but a parked cleaning must be performed as soon as possible.

When there is no soot restriction in the exhaust filter, the parked cleaning procedure is complete. Engine will automatically return to slow idle and exhaust filter cleaning

indicator will turn off. A message will appear on the monitor stating Exhaust Filter Cleaning Complete and the machine is ready to return to operation.

OUT4001,0000739-19-28JAN11-3/3

## Service ADVISOR™ Remote (SAR) Software Delivery Process

### Theory of Operation

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

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

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

*Service ADVISOR is a trademark of Deere & Company  
JDLINK is a trademark of Deere & Company*

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

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

### Vehicle Reprogramming

*NOTE: Factory setting is set to always accept software downloads.*

*Normal machine operation can continue during the software download process.*

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

Customer can determine the appropriate time and place to install the new software on the machine. For more information, see Service ADVISOR™ Remote (SAR) Operation in this section.

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

*NOTE: Software download speed capability depends on JDLINK cellular coverage.*

TX,SAR,DELIVERY,1-19-13JUL20-1/1

## Service ADVISOR™ Remote (SAR) Operation

The flex power controller (FPC) will interface with JDLink™ and the monitor to communicate the availability of software updates and programming progress. The Service ADVISOR™ Remote (SAR) switch (1) is wired directly to the FPC and allows the operator to accept or decline available updates. Alarm indicators on the display are controlled through diagnostic trouble codes (DTCs) originating from the FPC. The FPC will create the DTCs under certain conditions, which will then prompt the monitor to display operator instructions. It will be necessary to interact with a John Deere dealer or technician for needed information.

**NOTE:** The programming alarm indicator is used for different purposes, but the color of the alarm indicator changes for each purpose.

When a software update is available to install, a yellow programming alarm will appear on the monitor, along with a message stating:

### SOFTWARE UPDATE READY

**NOTE:** Alarm List ONLY appears as a submenu if there is an actual alarm.

The Alarm List submenu under the Main Menu will give instructions to guide the operator through the process. For viewing alarm instructions, see Main Menu—Alarm List. (Section 2-2.)

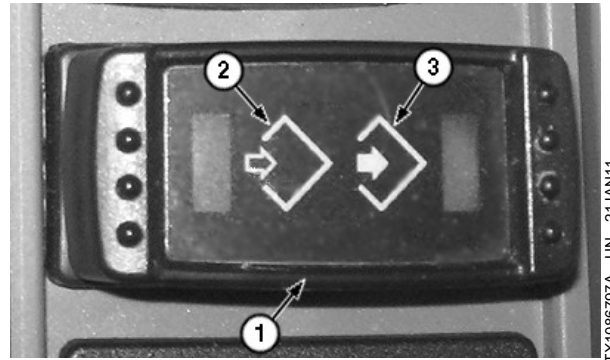
Park machine and stop engine. Installation of the software can only process if the engine is not running and pilot shutoff lever is in locked (UP) position.

**NOTE:** Before installing software, make sure the SOFTWARE TERMS AND CONDITIONS have been read. Find SOFTWARE TERMS AND CONDITIONS at the beginning of this manual.

LEDs on the SAR switch will illuminate when this alarm appears. The left LED will be red and the right LED will be green.

Press and hold the right side of SAR switch (green LED) for 3 seconds to begin programming installation. Press left side of SAR switch (red LED) to cancel software update and wait until the next power cycle.

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Service ADVISOR is a trademark of Deere & Company



Service ADVISOR™ Remote Switch  
TX1087187—UN—21JAN11



Programming Alarm

- 1—Service ADVISOR™ Remote (SAR) Switch
- 2—DECLINE Software Updates
- 3—ACCEPT Software Updates

If operator chooses to install the new update, the programming alarm will remain on the monitor, but the color will change to red and the message will state:

### PROGRAMMING IN PROCESS

Green LED on SAR switch will blink while programming is taking place.

DO NOT turn OFF machine power until the programming is complete.

Once programming is completed, programming alarm will turn green and the message will state:

### PROGRAMMING COMPLETED

Cycle machine power to complete the installation process.

If a problem occurs during the programming process, a red program failure alarm will appear on the monitor along with a red warning alarm. The message on the monitor will state:

### PROGRAM FAILURE

If these alarms appear, see an authorized John Deere dealer for solutions.

TX1087189—UN—21JAN11



Program Failure Alarm

TX1086352—UN—06JAN11



Warning Alarm

Continued on next page

TX,SAR,OPERATION,1-19-13JUL20-1/3

TX,SAR,OPERATION,1-19-13JUL20-2/3

If conditions exist that will not allow the transfer of new software to happen, a red unable to program alarm appears on the monitor along with a yellow warning alarm. The message on the monitor will state:

#### UNABLE TO REPROGRAM DEVICE

Make sure the engine is stopped and pilot shutoff lever is in locked (UP) position. Press and hold the right side of SAR switch (green LED) again for 3 seconds to retry programming or contact an authorized John Deere dealer.

TX1087190—UN—21JAN11



Unable to Program Alarm

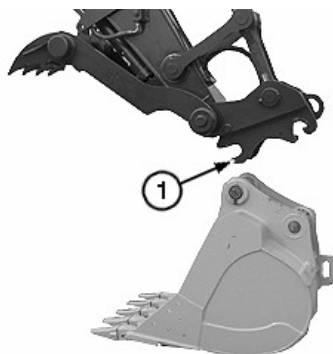
TX1086352—UN—06JAN11



Warning Alarm

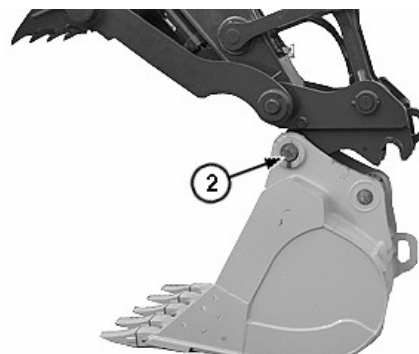
TX,SAR,OPERATION,1-19-13JUL20-3/3

## Locking the Hydraulic Coupler to the Attachment—If Equipped



Front Hook on Hydraulic Coupler

TX1017664A—UN—17JAN07



Hydraulic Coupler Pin

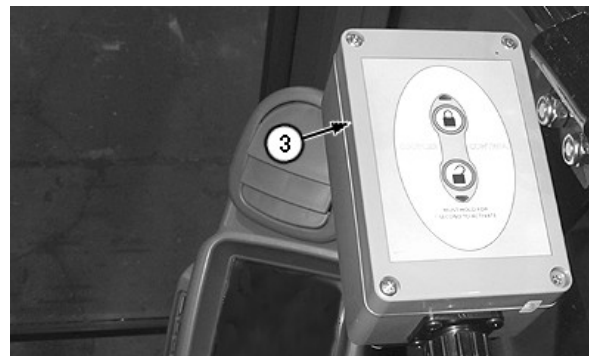
TX1017662A—UN—17JAN07

**CAUTION:** Prevent possible injury or death from unexpected hydraulic coupler movement. Make sure hydraulic coupler is attached correctly to attachment. The supplemental lock can be engaged with the attachment in an incorrect lock position. A visual check is required each time the lock operation is performed.

**CAUTION:** Avoid personal injury. Prevent injury from hydraulic coupler movement. Keep bystanders clear of machine.

**IMPORTANT:** Prevent possible hydraulic coupler damage from incorrect installation. Attaching the bucket in a reverse orientation on the hydraulic coupler is not recommended. When installed in the reverse orientation, the bucket or the lift hook interferes with the arm of the excavator when the bucket is in full curl position by extending the bucket cylinder. This is an inherent part of the design of the original equipment.

Since the hydraulic coupler interacts with the arm at full curl position to unlock the supplemental lock, the hydraulic coupler will NOT operate properly when the bucket is attached in reverse orientation.



Hydraulic Coupler Control Box

TX1171396A—UN—09SEP14

1—Front Hook  
2—Pin

3—Hydraulic Coupler Control Box

**NOTE:** The safety buzzer located on the hydraulic coupler control box (3) sounds to alert personnel the lock/unlock function has been activated.

1. Engage front hook (1) on pin (2). Press UNLOCK button on hydraulic coupler control box (3).

Continued on next page

OUT4001,0000866-19-26JUL21-1/2

**NOTE:** The hydraulic coupler must be held over relief to lock or unlock the hydraulic coupler cylinder.

2. Rotate to full curl position. Press LOCK button on hydraulic coupler control box. Hold in full curl position for 5 seconds.
3. Slowly uncurl hydraulic coupler. Visually verify supplemental lock contacts locking plate. Visually verify that lock plate is behind attachment pin.

**IMPORTANT:** Prevent possible damage to the hydraulic coupler. Do not operate attachment when the supplemental lock is used as the primary locking device. Doing so could result in hydraulic coupler malfunction.

4. Continue to slowly uncurl hydraulic coupler. Verify that attachment is properly locked.

#### Reset Lock Controller

**⚠ CAUTION:** Avoid personal injury. Prevent injury from hydraulic coupler movement. Keep bystanders clear of machine.

The safety buzzer will sound if an error occurs with the hydraulic coupler control box circuit.

1. Lower attachment to ground.
2. Turn key switch to OFF position.



*Bucket Rotated to Full Curl Position*

3. Press and hold LOCK and UNLOCK buttons on hydraulic coupler control box.
4. Turn key switch to ON position.
5. Continue to press and hold LOCK and UNLOCK buttons for 20 seconds.
6. Safety buzzer and hydraulic coupler control box lights will cycle on and off.
7. After safety buzzer stops, release LOCK and UNLOCK buttons. Resume normal operation. If safety buzzer will not turn off, contact an authorized John Deere dealer.

TX1017663A—UN—17 JAN07

OUT4001,0000866-19-26JUL21-2/2



## Unlocking the Hydraulic Coupler From the Attachment—If Equipped

**CAUTION:** Prevent possible injury or death from unexpected hydraulic coupler movement. Make sure hydraulic coupler is attached correctly to attachment. The supplemental lock can be engaged with the attachment in an incorrect lock position. A visual check is required each time the lock operation is performed.

**CAUTION:** Avoid personal injury. Prevent injury from hydraulic coupler movement. Keep bystanders clear of machine.

**IMPORTANT:** Prevent possible hydraulic coupler damage from incorrect installation. Attaching the bucket in a reverse orientation on the hydraulic coupler is not recommended. When installed in the reverse orientation, the bucket or the lift hook interferes with the arm of the excavator when the bucket is in full curl position by extending the bucket cylinder. This is an inherent part of the design of the original equipment.

Since the hydraulic coupler interacts with the arm at full curl position to unlock the supplemental lock, the hydraulic coupler will NOT operate properly when the bucket is attached in reverse orientation.

1. Keep attachment close to ground.

*NOTE: The hydraulic coupler must be held over relief in order to unlock the hydraulic coupler cylinder.*

2. Rotate hydraulic coupler to full curl position to release supplemental lock.

*NOTE: The safety buzzer located on the hydraulic coupler control box (3) will sound to alert personnel the lock/unlock function has been activated.*

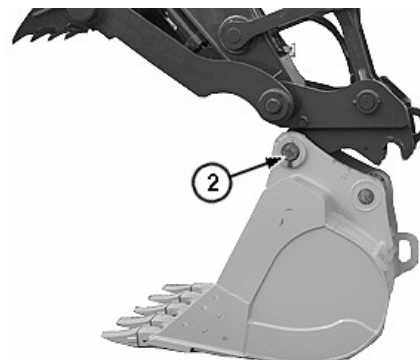
3. Press UNLOCK button on hydraulic coupler control box (3). Hold in full curl position for 5 seconds.
4. Slowly uncurl hydraulic coupler. Front hook (1) will release from pin (2).

### Reset Lock Controller

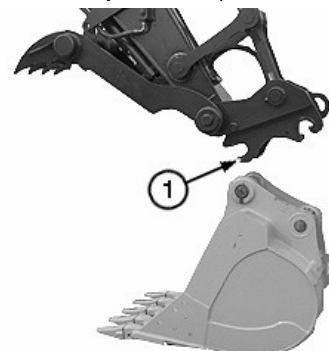
**CAUTION:** Avoid personal injury. Prevent injury from hydraulic coupler movement. Keep bystanders clear of machine.

The safety buzzer will sound if an error occurs with the hydraulic coupler control box circuit.

1. Lower attachment to ground.
2. Turn key switch to OFF position.
3. Press and hold LOCK and UNLOCK buttons on hydraulic coupler control box.
4. Turn key switch to ON position.



Hydraulic Coupler Pin



Front Hook on Hydraulic Coupler



Hydraulic Coupler Control Box

1—Front Hook  
2—Pin

3—Hydraulic Coupler Control Box

5. Continue to press and hold LOCK and UNLOCK buttons for 20 seconds.
6. Safety buzzer and hydraulic coupler control box lights will cycle on and off.
7. After safety buzzer stops, release LOCK and UNLOCK buttons. Resume normal operation. If safety buzzer will not turn off, contact an authorized John Deere dealer.

OUT4001,0000867-19-26JUL21-1/1

TX1017662A—UN—17JAN07

TX1017664A—UN—17JAN07

TX1171396A—UN—09SEP14

## Control Lever Pattern Operation

**CAUTION:** Avoid personal injury from unexpected machine movement. Never place any part of body beyond window frame to avoid serious crushing injury from boom. Boom could lower if the control lever is accidentally bumped or otherwise engaged. Immediately replace a missing or broken window.

**CAUTION:** Prevent injury from unexpected control lever function. Be aware of the control lever pattern used on the machine before operating.

The machine comes equipped from the factory with the excavator control lever pattern. A label with both the excavator and backhoe control lever patterns comes installed on the right cab window.

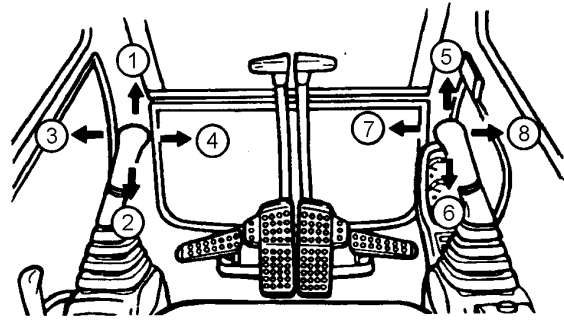
Check the pattern on the labels, and then carefully operate the machine to verify the pattern.

Open front left service door to access pattern mechanical control lever pattern selector. Mechanical control lever pattern selector changes lever pattern to excavator operation or backhoe operation.

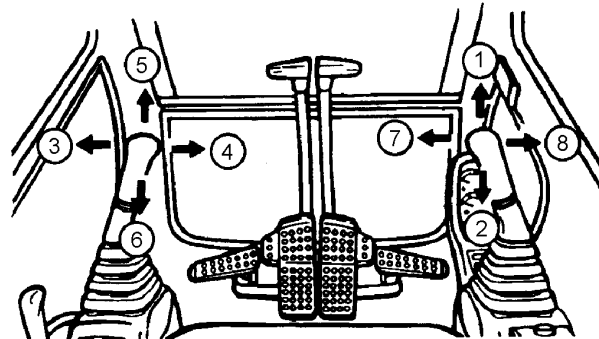
**NOTE:** A Control Pattern Selector Kit is available, that when installed, changes the control lever pattern using a mechanical valve.

Control levers return to neutral when released. Functions will stop and remain positioned. The parking brake for swing and travel will engage.

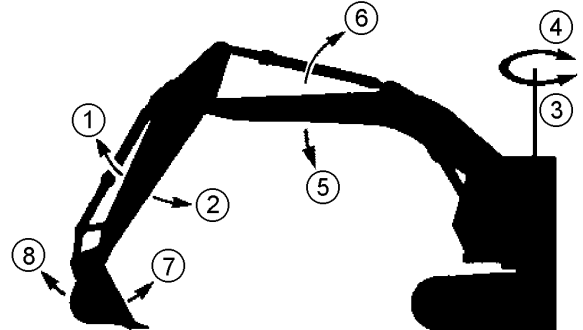
- |               |               |
|---------------|---------------|
| 1—Arm Out     | 5—Boom Down   |
| 2—Arm In      | 6—Boom Up     |
| 3—Swing Left  | 7—Bucket Load |
| 4—Swing Right | 8—Bucket Dump |



Excavator Control Lever Pattern



Backhoe Control Lever Pattern



Boom, Arm, Bucket Movement

ER79617,0000DAB-19-10JAN11-1/1

T137600—UN—25JAN01

T137498—UN—25JAN01

T137499—UN—25JAN01

## Control Lever Pattern Conversion

1. Park and prepare machine for service.

**CAUTION:** To avoid injury from escaping fluid under pressure, stop engine and relieve the pressure in the system before disconnecting or connecting hydraulic or other lines. Tighten all connections before applying pressure.

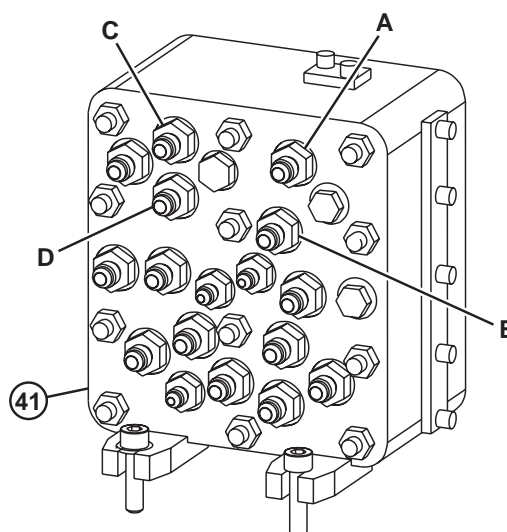
2. Release hydraulic oil tank pressure by pushing pressure release button on top of hydraulic oil tank.

3. Stop engine and turn key to the ON position. Place pilot shutoff lever in unlocked (DOWN) position. Move control levers back and forth, and right and left several times to release remaining pressure in hydraulic lines.

**NOTE:** When going from excavator to backhoe pattern, moving boom up (A) hose to arm in (D) port, a fabricated hose size -6 JIC male x female approximately 150 mm (6 in) long, is needed.

4. Switch pilot line boom up (A) with arm in (D) port. Switch pilot line boom down (B) with arm out (C) port.

5. To view control lever patterns, see Control Lever Pattern Operation in this section.



Pilot Control Valve Side

41—Pilot Signal Manifold (pilot control valve side)  
A—Boom Up  
B—Boom Down  
C—Arm Out  
D—Arm In

EXCAVATOR PATTERN			
	FUNCTIONS	PILOT SIGNAL MANIFOLD	
		PILOT CONTROL VALVE SIDE	CONTROL VALVE SIDE
Right	BUCKET DUMP	H	8
	<b>BOOM DOWN</b>	<b>B</b>	2
	BUCKET CURL	G	7
	<b>BOOM UP</b>	<b>A</b>	1
Left	SWING RIGHT	F	6
	<b>ARM OUT</b>	<b>C</b>	3
	SWING LEFT	E	5
	<b>ARM IN</b>	<b>D</b>	4

NOTE: Letters and numbers are on the housing next to the ports.

	FUNCTIONS	PILOT SIGNAL MANIFOLD	
		PILOT CONTROL VALVE SIDE	CONTROL VALVE SIDE
Right	BUCKET DUMP	H	8
	<b>ARM OUT</b>	<b>C</b>	3
	BUCKET CURL	G	7
	<b>ARM IN</b>	<b>D</b>	4
Left	SWING RIGHT	F	6
	<b>BOOM DOWN</b>	<b>B</b>	2
	SWING LEFT	E	5
	<b>BOOM UP</b>	<b>A</b>	1

NOTE: Letters and numbers are on the housing next to the ports.

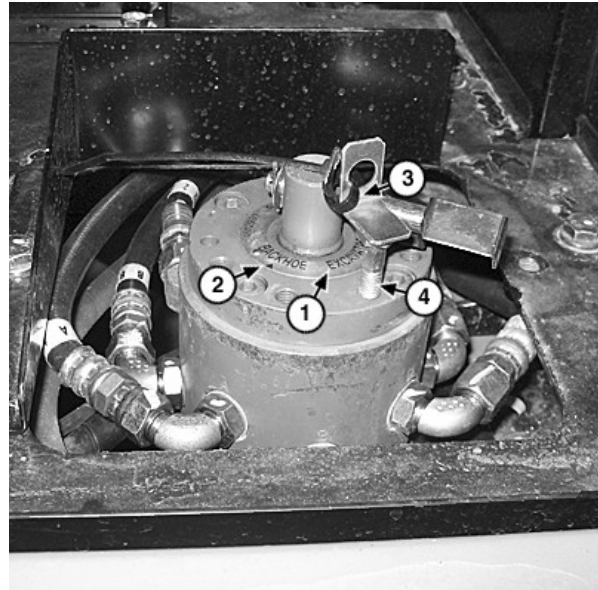
BACKHOE PATTERN
-----------------

MM16284,0001B12-19-10NOV20-1/1

## Mechanical Control Lever Pattern Selector—If Equipped

The machine pilot control levers can be changed from the standard EXCAVATOR control pattern (1) to a BACKHOE control pattern (2). To change control pattern:

1. Park machine on a level surface.
2. Run engine at slow idle speed without load for 3 minutes.
3. Place pilot shutoff lever in the locked (UP) position.
4. Turn key switch to OFF position to stop engine. Remove key from switch.
5. Open the front left service door to access the mechanical control lever pattern selector.
6. Remove tie band (3).
7. Remove locking screw (4).
8. Turn selector lever to the standard EXCAVATOR control pattern or BACKHOE control pattern.
9. Install tie band.



Mechanical Control Lever Pattern Selector

1—EXCAVATOR Control Pattern  
2—BACKHOE Control Pattern

3—Tie Band  
4—Locking Screw

ER79617,0000DAC-19-10JAN11-1/1

## Operating in Water and Mud

Be careful not to operate the machine in water or mud above the upper deck surface of the undercarriage, causing the swing bearing and rotary manifold to be submerged.

If the swing bearing and rotary manifold are submerged, remove cover from underneath center of machine. Remove drain plug (1) to drain water and mud.

Clean swing gear area. Install plug and cover. Lubricate swing gear and swing bearing. See Lubricate Swing Bearing and Lubricate Swing Bearing Gear. (Section 3-8.)

1—Drain Plug



Drain Plug (view from underneath)

ER79617,0000DB3-19-02MAY18-1/1

## Driving Up a Steep or Slippery Slope

**CAUTION:** Prevent possible injury from machine roll-over. Use this technique only on a short slope. Machine depends on support of boom, arm, or bucket during entire procedure until machine reaches top of slope. Repositioning the bucket during this procedure is not recommended. Do not swing upperstructure during this procedure. Do not reposition bucket during this procedure.

1. Wear seat belt.
2. Position undercarriage so travel motors will be on uphill end of machine.

3. Push bucket into the ground.
4. When boom is on uphill end of machine, pull machine using boom and arm cylinder to help travel motors.  
When boom is on downhill end of machine, push machine using boom and arm cylinder to help travel motors.
5. Do not travel on a slope steeper than 35°.

VD76477,00001F4-19-26APR21-1/1

## Required Machine Stop Warning

**NOTE:** Engine emissions system malfunction indicator is for machines equipped with F or L engine.

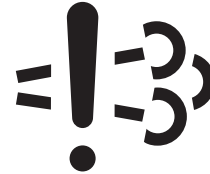
TX,MACH,STOP,WARNING-19-23JUN20-1/7

### Machine Stop Mandate Occurs

RG22491—UN—21AUG13

**IMPORTANT:** In some situations, machine engine power may be reduced as described. On notification, immediately place the machine in a safe state and move it to a safe location. A mandated machine stop can only be removed by a service technician.

Engine emissions system malfunction indicator illuminates when an emission-related fault occurs.



Engine Emissions System Malfunction Indicator

TX,MACH,STOP,WARNING-19-23JUN20-2/7

Warning indicator illuminates when a condition exists which requires operator action.

RG22492—UN—21AUG13



Warning Indicator

TX,MACH,STOP,WARNING-19-23JUN20-3/7

Engine stop indicator illuminates when a condition exists which requires immediate operator action and service.

RG22493—UN—21AUG13



Engine Stop Indicator

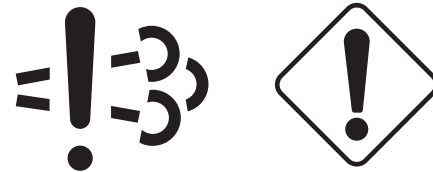
TX,MACH,STOP,WARNING-19-23JUN20-4/7

### Emission System Fault Has Occurred

RG26361—UN—04SEP14

Four hours or less remaining, engine emissions system malfunction and warning indicators are illuminated to warn operator of emissions-related fault. Two hours or less when pop-up is displayed.

- Engine power is normal.
- Machine operation is normal.
- Place machine in a safe state.
- Contact service provider.



Engine Emissions System Malfunction and Warning Indicators

Continued on next page

TX,MACH,STOP,WARNING-19-23JUN20-5/7

Sixty minutes remaining, engine emissions system malfunction and engine stop indicators are illuminated and alarm sounds to warn operator of emissions-related fault. Sixty minutes or less from when pop-up is displayed until final power restriction.

- Engine power and torque will be reduced.
- Key Off—Key On will temporarily provide full power.
- Place machine in a safe state.
- Contact service provider.

RG26972—UN—26MAR15



Engine Emissions System Malfunction and Engine Stop Indicators

TX,MACH,STOP,WARNING-19-23JUN20-6/7

Two minutes or less remaining, engine emissions system malfunction and engine stop indicators are illuminated and alarm sounds to warn operator of emissions-related fault which has not been corrected. "DEF System Fault-Engine Power and Speed Limited" is displayed on machines with monitors.

- Engine power is idle only.
- Place machine in a safe state.
- Contact service provider.

RG26972—UN—26MAR15



Engine Emissions System Malfunction and Engine Stop Indicators

TX,MACH,STOP,WARNING-19-23JUN20-7/7

## Lifting

**CAUTION:** Prevent possible injury when lifting. Observe these rules when lifting machine:

- Never move a load over a bystander's head.
- Never use machine to lift people.
- Keep everyone clear of raised loads.
- Do not exceed lift capacity limits.
- Never attach sling or chain to bucket teeth.
- Use tether lines to guide loads.
- Use hand signals to communicate with others.

- Never move load suddenly.
- Keep all bystanders away from raised load until blocks are supporting it or load is sitting on the ground.

For more information on lifting, see Use Special Care When Lifting Objects. (Section 1-3.)

For more information on lift capacity limits, see Miscellaneous—Specifications.

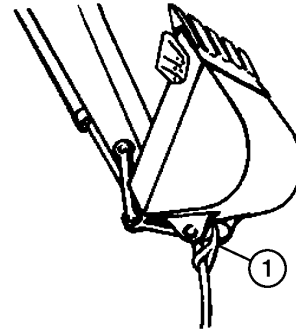
Continued on next page

TX,LIFTING-19-13JUL20-1/2

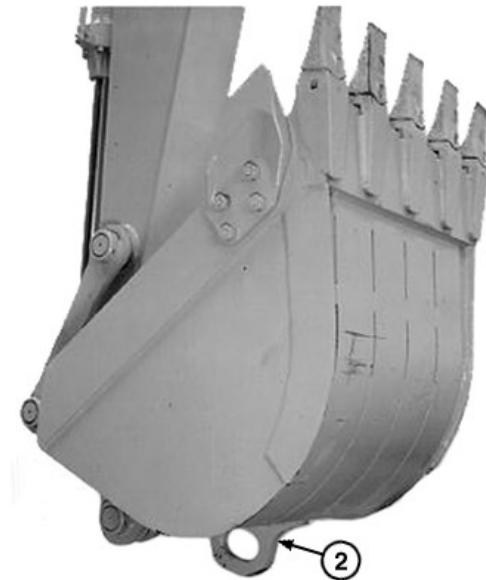
1. Use proper rigging to attach and stabilize loads.
2. Without bucket loop: Curl bucket and retract arm. Fasten sling or chain to bucket pivot pin (1).  
  
With bucket loop: Curl bucket and retract arm. Fasten sling or chain to bucket loop (2).
3. Coordinate hand signals with signal person before starting.
4. Know location of all bystanders in working area.
5. Attach a hand line to load and make sure person holding hand line is away from load.
6. Check stability by carefully doing a trial lift:
  - Park machine close to load.
  - Attach load to machine.
  - Raise load 50 mm (2 in) above ground.
  - Swing load all the way to one side.
  - While keeping load close to ground, move load away from machine.
  - If there is any indication of reduced stability of machine, lower load to ground.
7. Lift load only as high as necessary.

1—Bucket Pivot Pin

2—Bucket Loop



Without Bucket Loop



With Bucket Loop

TX1144511—UN—24OCT13

TX1144666—UN—24OCT13

TX,LIFTING-19-13JUL20-2/2

## Lower Boom With Engine Stopped

When an engine stops during operation, the boom cannot be lowered using the pilot controller because there is no pilot pressure oil to move the boom valve spool.

**CAUTION:** Prevent possible injury from unexpected machine movement. Clear all persons from the area before lowering the boom with the engine stopped.

1. Remove control valve access cover.

**CAUTION:** To avoid injury from escaping oil under pressure, stop engine and relieve the pressure in the system before disconnecting or connecting hydraulic or other lines. Tighten all connections before applying pressure.

**IMPORTANT:** Never loosen screw more than two turns as screw may come off.

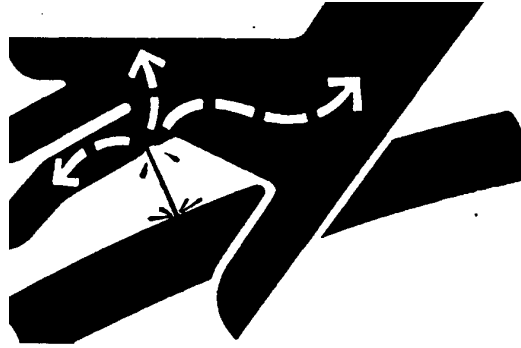
2. Loosen nut (1). Loosen boom manual lower screw (2) 1/2 turn. The boom will start to lower. The boom lowering speed can be somewhat adjusted by loosening screw more.
3. After the bucket is lowered to the ground, tighten screw, then nut to specifications.

### Specification

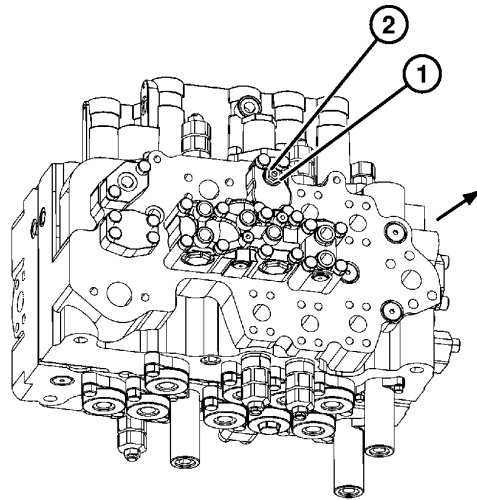
Hex Key Wrench—Size. . . . . 4 mm  
Screw—Torque. . . . . 6.9 N·m (5.0 lb.-ft.)  
Nut (1)—Torque. . . . . 13.0 N·m (9.4 lb.-ft.)

1—Nut

2—Boom Manual Lower Screw



Lower Boom with Engine Stopped



TX1000642

Control Valve-Right Side Shown

ER79617,0000DD5-19-24FEB14-1/1

X9811—UN—23AUG88

TX1000642—UN—29NOV05



## Parking the Machine

**IMPORTANT:** During freezing weather, prevent damage to undercarriage components from frozen mud and dirt. Machine must be parked on a solid level surface to prevent tracks freezing in the ground.

1. Park machine on a solid level surface.

During freezing weather, clean mud and dirt from tracks, rollers and track frames. Clean the steps and walkways after parking the machine.

If tracks are frozen in the ground, slowly raise the machine using boom to free the tracks. Move machine carefully.

2. Lower equipment to the ground.
3. Turn auto-idle switch (1) to the A/I OFF position.

**IMPORTANT:** Turbocharger can be damaged if procedure to shutdown engine is not done properly.

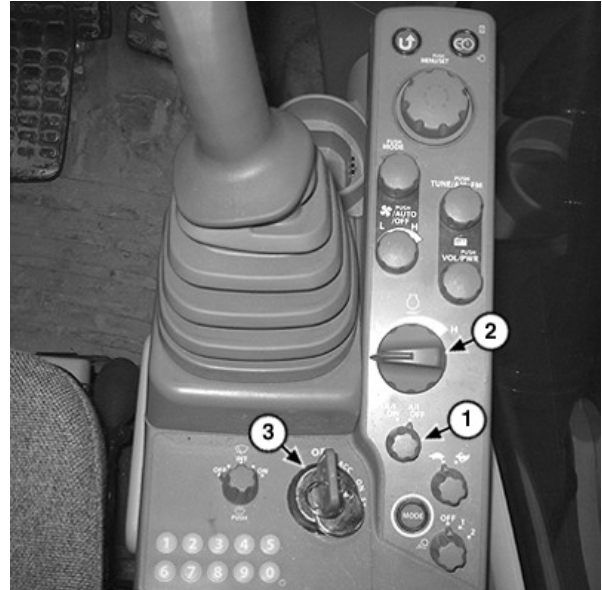
4. Run engine with engine speed dial (2) at 1/3 position without load for 2 minutes.
5. Turn engine speed dial to slow idle position.
6. Turn key switch (3) to the OFF position. Remove key from switch.
7. Place pilot shutoff lever (4) to locked (UP) position.

**IMPORTANT:** Prevent cab electrical component damage from bad weather. Windows, roof vent, and cab door must be closed to prevent rain from entering.

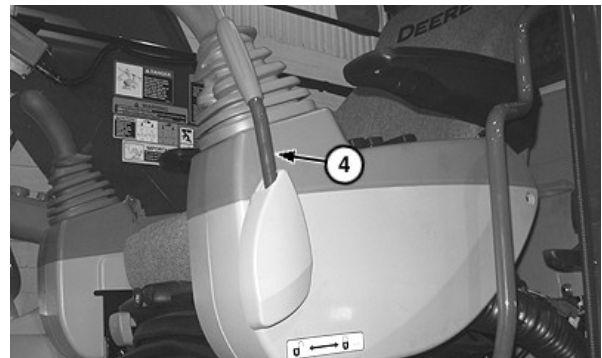
8. Close windows, roof vent, and cab door.
9. Lock all access doors and compartments.

1—Auto-Idle Switch  
2—Engine Speed Dial

3—Key Switch  
4—Pilot Shutoff Lever



Switch Panel



Pilot Shutoff Lever

ER79617,0000DCF-19-09JAN12-1/1

## Loading and Unloading for Transport

**⚠ CAUTION:** Use extra care to prevent tipover or unexpected movement when loading and unloading machine for transport. Observe these rules when loading and unloading machine:

- Keep the trailer bed clean.
- Locate trailer on a level and stable surface.
- Chock trailer wheels.
- Always wear seat belt.
- Use loading ramps. Keep ramps at a low angle and firmly attached to trailer.
- Turn auto-idle switch to the A/I OFF position. Use slow speed operating modes and move machine carefully.

1. When loading machine, use bucket for support with angle of arm to boom at 90° (1).

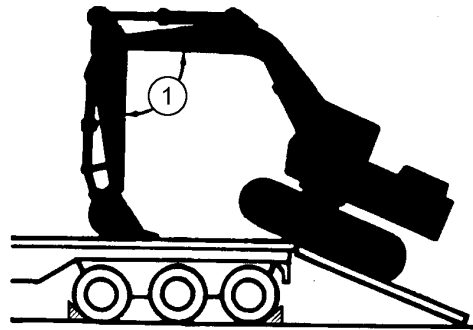
**IMPORTANT:** Prevent machine or trailer damage. DO NOT allow machine or bucket to impact trailer.

2. Position machine on trailer as shown. Fasten machine to trailer at designated tie down (2) areas.

3. When unloading machine, use bucket for support with angle of arm to boom at 90°.

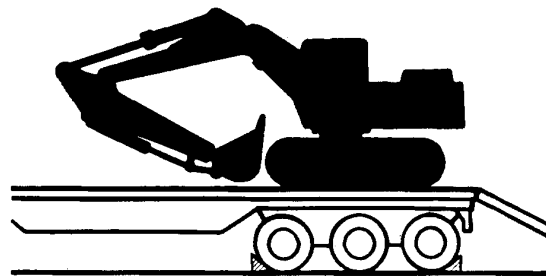
1—90° Arm to Boom

2—Tie Down (4 used)



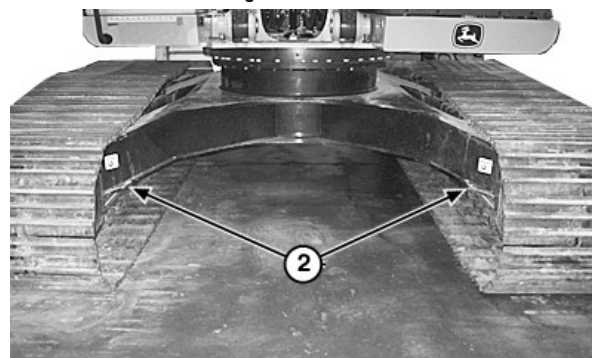
Loading Machine On A Trailer

T137507—UN—25JAN01



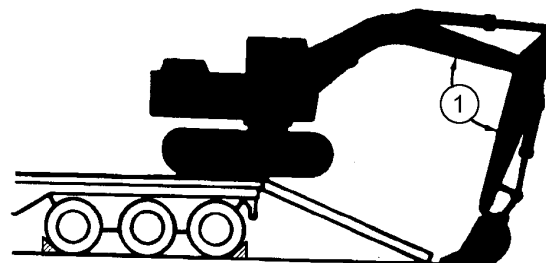
Moving Machine On Trailer

T74056J—UN—29NOV90



Tie Downs (front side shown)

TX1086371A—UN—03JAN11



Unloading Machine From A Trailer

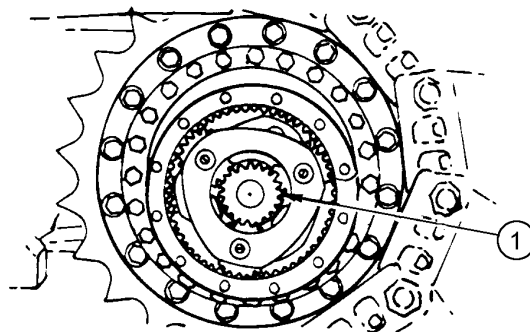
T137505—UN—25JAN01

ER79617,0000D83-19-19MAR12-1/1

## Towing Machine

**CAUTION:** Prevent possible injury from unexpected machine movement. Block both tracks when disconnecting travel gear cases. When travel gear cases are disconnected, machine has no brakes and can move. The machine will roll free on a slope or while being towed.

1. Block tracks.
2. Drain oil from each travel gear case.
3. Remove cover from each gear case.
4. Remove sun gear (1) from each gear case.
5. Install cover. Fill gear case with oil.



Sun Gear

1—Sun Gear

T137511—UN—25JAN01

ER79617,0000A94-19-09JAN12-1/1

## Lifting the Machine

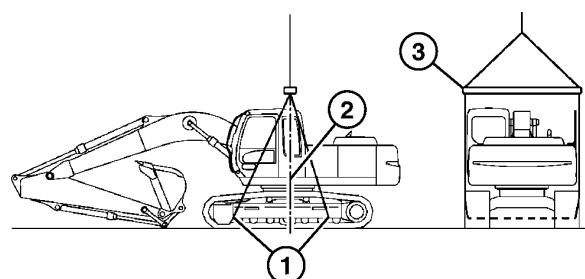
**CAUTION:** Prevent possible injury from unexpected machine movement when lifting the machine. Check lifting capacity of crane before lifting the excavator. Lift load only as high as necessary.

**Keep all people clear of raised load.**

**NOTE:** The center of gravity (2) will vary depending on the kind of attachment.

**NOTE:** Refer to decals on machine for correct lift points (1). There are 2 lift points on each side of the undercarriage.

1. Fully extend boom, arm, and bucket cylinders.
2. Position boom straight ahead of the upperstructure.
3. Turn key switch to OFF. Remove key from switch.
4. Pull pilot control shutoff lever to locked position.
5. Route appropriate lifting device through lifting points (1) and under both sides of the track frame as illustrated.
6. Attach appropriate lifting device to crane.
7. Slowly lift machine.



Lifting Machine

1—Lifting Points  
2—Center of Gravity

3—Support Bar

### Specification

250GLC —Approximate Weight. . . . .	25 281 kg 55 736 lb.
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### Specification

290GLC—Approximate Weight. . . . .	30 090 kg 66 338 lb.
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JS93577,00008F3-19-02APR14-1/1

# Maintenance—Machine

## Diesel Fuel

Consult a local fuel distributor for properties of the diesel fuel available in the 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 fuel that meets EN 590 or ASTM D975 is acceptable for use at all percentage mixture levels.

### E-Diesel fuel

**⚠ CAUTION: Avoid severe injury or death due to the fire and explosion risk from using 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.

### Sulfur Content for Engines That Meet Interim Tier 4, Final Tier 4, Stage III B, Stage IV, and Stage V Engines

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

Use of fuel other than ULSD will reduce the efficiency and durability of the engine, will harm and permanently damage the engine's advanced emissions control systems, reduce fuel economy, and possibly prevent the engine from running at all. Emission-related warranties are likely to be rendered void by the use of fuel that does not meet these specifications.

### Sulfur Content for Engines That Meet Tier 3 and Stage III A 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.
- **BEFORE** using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact an authorized John Deere dealer.

### Sulfur Content for Engines That Meet 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.
- **BEFORE** using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact an authorized 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.**

MB60223.0000029-19-17MAY23-1/1

## Diesel Fuel Specifications

The engine in this machine is designed to operate only with ultra low sulfur diesel (ULSD) fuel. Use of fuel other than ULSD will reduce the efficiency and durability of the engine, will harm and permanently damage the engine's advanced

emissions control systems, reduce fuel economy, and possibly prevent the engine from running at all. Emission-related warranties are likely to be rendered void by the use of fuel that does not meet these specifications.

TX,FUEL,SPECS-19-26OCT20-1/1

## 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
- 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

## Supplemental Diesel Fuel Additives

Diesel fuel can be the source of performance or other operational problems for many reasons. Some causes include poor lubricity, contaminants, low cetane number, and a variety of properties that cause fuel system deposits. These and others are referenced in other sections of this Operator's Manual.

To optimize engine performance and reliability, closely follow recommendations on fuel quality, storage, and handling, which are found elsewhere in this Operator's Manual.

To further aid in maintaining performance and reliability of the engine's fuel system, John Deere has developed a family of fuel additive products for most global markets. The primary products include Fuel-Protect Diesel Fuel Conditioner (full feature conditioner in winter and summer formulas) and Fuel-Protect Keep Clean (fuel injector deposit removal and prevention). Availability of these and other products varies by market. See your local John Deere dealer for availability and additional information about fuel additives that might be right for your needs.

DX,FUEL13-19-07FEB14-1/1

## Fuel Filters

The importance of fuel filtration cannot be overemphasized with modern fuel systems. The combination of increasingly restrictive emission regulations and more efficient engines requires fuel system to operate at much higher pressures. Higher pressures can only be achieved using fuel injection components with very close tolerances. These close

manufacturing tolerances have significantly reduced capacities for debris and water.

John Deere brand fuel filters have been designed and produced specifically for John Deere engines.

To protect the engine from debris and water, always change engine fuel filters as specified in this manual.

DX,FILT2-19-14APR11-1/1

## 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



## 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

## Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

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

DX,LUBMIX-19-18MAR96-1/1

## Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

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

## Diesel Engine Break-In™ Oil

New engines are filled at the factory with either John Deere Break-In™ or Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In or Break-In Plus Engine Oil, respectively, as needed to maintain the specified oil level.

Operate the engine under various conditions, particularly heavy loads with minimal idling, to help seat engine components properly.

Change the oil and filter at 250 hours maximum for Break-In Oil or 500 hours maximum for Break-In Plus Oil during the initial operation of a new or rebuilt engine.

After engine overhaul, fill the engine with either John Deere Break-In or Break-In Plus Engine Oil.

If John Deere Break-In or Break-In Plus Engine Oil is not available, use a 10W-30 diesel engine oil meeting one of the following during the first 250 hours of operation:

- API Service Classification CE
- API Service Classification CD
- API Service Classification CC
- ACEA Oil Sequence E2
- ACEA Oil Sequence E1

*Break-In is a trademark of Deere & Company  
Break-In Plus is a trademark of Deere & Company  
Plus-50 is a trademark of Deere & Company*

**IMPORTANT: Do not use Plus-50™ II, Plus-50, or engine oils meeting any of the following for the initial break-in of a new or rebuilt engine:**

API CK-4	ACEA E9
API CJ-4	ACEA E7
API CI-4 PLUS	ACEA E6
API CI-4	ACEA E5
API CH-4	ACEA E4
API CG-4	ACEA E3
API CF-4	
API CF-2	
API CF	

**These oils will not allow the engine to break in properly.**

John Deere Break-In Plus Engine Oil can be used for all John Deere diesel engines at all emission certification levels.

After the break-in period, use John Deere Plus-50 II, John Deere Plus-50, or other diesel engine oil as recommended in this manual.

TX,ENOIL4-19-13FEB23-1/1

## John Deere Break-In Plus™ Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V

New engines are filled at the factory with John Deere Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In Plus™ Engine Oil, as needed to maintain the specified oil level.

Operate the engine under various conditions, particularly heavy loads with minimal idling, to help seat engine components properly.

During the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and maximum equal to the interval specified for John Deere Plus-50™ II oil.

After engine overhaul, fill the engine with John Deere Break-In Plus™ Engine Oil.

If John Deere Break-In Plus™ Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following:

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Plus-50 is a trademark of Deere & Company*

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

If one of these oils is used during the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and a maximum of 250 hours.

**IMPORTANT: Do not use any other engine oils during the initial break-in of a new or rebuilt engine.**

John Deere Break-In Plus™ Engine Oil can be used for all John Deere diesel engines at all emission certification levels.

After the break-in period, use John Deere Plus-50™ II or other diesel engine oil as recommended in this manual.

DX,ENOIL16-19-13JAN18-1/1

## 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.

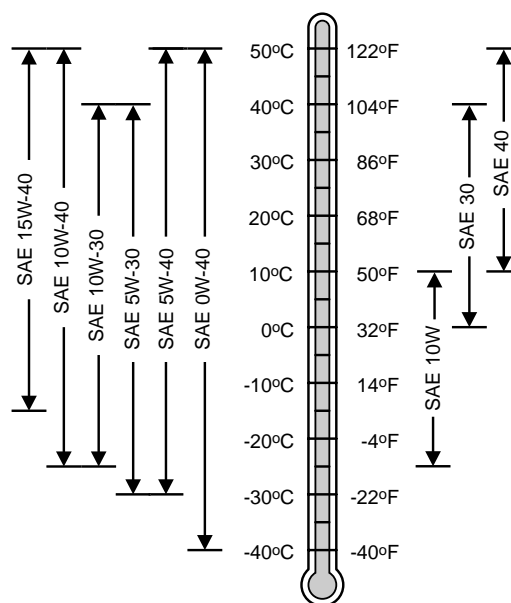
Other oils may be used if they meet one or more of the following standards:

- 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

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*Torq-Gard is a trademark of Deere & Company*



Oil Viscosities for Air Temperature Ranges

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).

TS1743—UN—25APR19

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

## Engine Oil and Filter Service Intervals — Tier 2 and Stage II Engines

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of diesel fuel. Actual service intervals also depend on operation and maintenance practices.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer or other qualified service provider for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

**Diesel fuel sulfur content** affects engine oil and filter service intervals.

- Use of diesel fuel with sulfur content less than 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.
- **BEFORE** using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer or qualified service provider.

### **IMPORTANT: To avoid engine damage:**

- **Reduce oil and filter service intervals by 50% when using biodiesel blends greater than B20. Oil analysis may allow longer service intervals.**
- **Use only approved oil types.**

### **Approved Oil Types:**

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

- “Plus-50 Oils” include John Deere Plus-50™ II and John Deere Plus-50™
- “Other Oils” include John Deere Torq-Gard™, API CK-4, API CJ-4, API CI-4 PLUS, API CI-4, API CH-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, and ACEA E4

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

- Use of diesel fuel with sulfur content less than 2000 mg/kg (2000 ppm).
- Use of John Deere Plus-50™ II or John Deere Plus-50™ oil.
- Use of an approved John Deere oil filter.

Engine Oil and Filter Service Intervals	
Fuel Sulfur	Less than 2000 mg/kg (2000 ppm)
Plus-50 Oils	500 hours
Other Oils	250 hours
Fuel Sulfur	2000—5000 mg/kg (2000—5000 ppm)
Plus-50 Oils	400 hours
Other Oils	150 hours
Fuel Sulfur	5000—10 000 mg/kg (5000—10 000 ppm)
Plus-50 Oils	250 hours (see John Deere dealer)
Other Oils	125 hours (see John Deere dealer)

Oil analysis may extend the service interval of “Other Oils”, to a maximum not to exceed the interval for Plus-50 Oils. Oil analysis means taking a series of oil samples at 50-hour increments beyond the normal service interval until either the data indicates the end of useful oil life or the maximum service interval of John Deere Plus-50 oils is reached.

DX,ENOIL12,T2,EXT-19-13JAN18-1/1

## Diesel Engine Oil — Tier 3 and Stage IIIA

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

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

### John Deere Plus-50™ II oil is preferred.

John Deere Plus-50™ is also recommended.

John Deere Torq-Gard™ is also allowed.

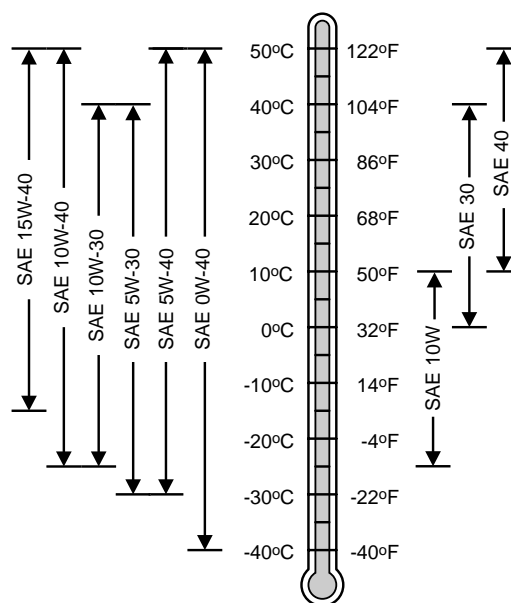
Other oils may be used if they meet one or more of the following standards:

- API Service Category CK-4
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E7
- ACEA Oil Sequence E6
- ACEA Oil Sequence E5
- ACEA Oil Sequence E4

### Multi-viscosity diesel engine oils are preferred.

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

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



Oil Viscosities for Air Temperature Ranges

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

TS1743—UN—25APR19

DX,ENOIL11-19-23APR19-1/1

## Engine Oil and Filter Service Intervals—Tier 3 and Stage IIIA Engines

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel. Actual service intervals also depend on operation and maintenance practices.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact an authorized John Deere dealer for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

**Diesel fuel sulfur content** affects engine oil and filter service intervals.

- Use of diesel fuel with sulfur content less than 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.
- **BEFORE** using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact an authorized John Deere dealer.

### IMPORTANT: To avoid engine damage:

- **Reduce oil and filter service intervals by 50% when using biodiesel blends greater than B20. Oil analysis may allow longer service intervals.**
- **When machine operates at or above 1676 m (5500 ft) elevation, sample engine oil every 100 hours.**
- **Use only approved oil types.**

### Approved Oil Types:

- “Plus-50 Oils” include John Deere Plus-50 II and John Deere Plus-50.
- “Other Oils” include John Deere Torq-Gard, API CJ-4, API CI-4 PLUS, API CI-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, and ACEA E4.

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

- Use of diesel fuel with sulfur content less than 5000 mg/kg (5000 ppm).
- Use of John Deere Plus-50 II or John Deere Plus-50 oil.
- Use of an approved John Deere oil filter.

Engine Oil and Filter Service Intervals	
Fuel Sulfur	Less than 1000 mg/kg (1000 ppm)
Plus-50 Oils	500 hours
Other Oils <sup>2</sup>	250 hours
Fuel Sulfur	1000—2000 mg/kg (1000—2000 ppm)
Plus-50 Oils	500 hours
Other Oils <sup>2</sup>	250 hours
Fuel Sulfur	2000—5000 mg/kg (2000—5000 ppm) <sup>1</sup>
Plus-50 Oils	500 hours
Other Oils <sup>2</sup>	250 hours
Fuel Sulfur	5000—10 000 mg/kg (5000—10 000 ppm)
Plus-50 Oils	250 hours
Other Oils <sup>2</sup>	125 hours

<sup>1</sup>When “Fuel Sulfur” range is between 2000—5000 ppm, sample “Plus-50 Oils” at every 250 hours and “Other Oils” at every 125 hours to verify engine oils are providing adequate protection.

<sup>2</sup>Oil analysis may extend the service interval of “Other Oils” to a maximum not to exceed the interval for Plus-50 Oils.

TX,ENOIL,13-19-02OCT23-1/1

## Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V

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 is the recommended engine oil.

Extended service intervals may apply when John Deere Plus-50™ II engine oil is used. Refer to the engine oil drain interval table and consult your John Deere dealer for more information.

If John Deere Plus-50™ II engine oil is not available, engine oil meeting one or more of the following may be used:

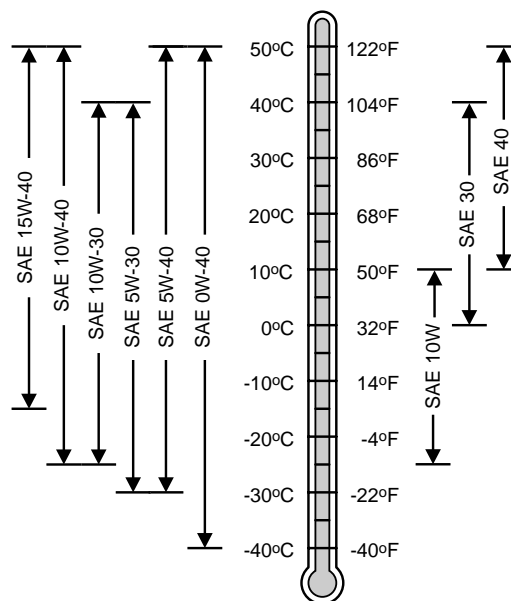
- API Service Category CK-4
- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

DO NOT use engine oil containing more than 1.0% sulfated ash, 0.12% phosphorus, or 0.4% sulfur.

### 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*



Oil Viscosities for Air Temperature Ranges

**IMPORTANT: Use only ultra low sulfur diesel (ULSD) fuel with a maximum sulfur content of 15 mg/kg (15 ppm).**

TS1743—UN—25APR19

DX,ENOIL14-19-23APR19-1/1

## Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V Engines

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.

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel. Actual service intervals also depend on operation and maintenance practices.

### Approved Oil Types:

- John Deere Plus-50™ II
- “Other Oils” include API CK-4, API CJ-4, ACEA E9, and ACEA E6

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer or other qualified service provider for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

**Diesel fuel sulfur content** affects engine oil and filter service intervals. Higher fuel sulfur levels reduce oil and filter service intervals.

*Plus-50 is a trademark of Deere & Company*

Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm) is **REQUIRED**.

**Engine operation at high altitude** decreases oil change intervals. See Diesel Engine Oil Service Interval for Operation at High Altitude for additional information.

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

- Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm)
- Use of John Deere Plus-50™ II oil
- Use of an approved John Deere oil filter

Engine Oil and Filter Service Intervals	
John Deere Plus-50™ II	500 hours
Other Oils	250 hours
Oil analysis may extend the service interval of “Other Oils” to a maximum not to exceed the interval of Plus-50™ II oils. Oil analysis means taking a series of oil samples at 50-hour increments beyond the normal service interval until either the data indicates the end of useful oil life or the maximum service interval of John Deere Plus-50 II oils is reached.	

### IMPORTANT: To avoid engine damage:

- Reduce oil and filter service intervals by 50% when using biodiesel blends greater than B20. Oil analysis may allow longer service intervals.
- Use only approved oil types.

DX,ENOIL15,IT4,120TOMAX-19-13JAN18-1/1

## Diesel Engine Oil Service Interval for Operation at High Altitude

**IMPORTANT:** Diesel fuel sulfur content also affects engine oil and filter service intervals. See Engine Oil and Service Intervals in this section to determine the appropriate service interval prior to performing high altitude recommendations.

To avoid excessive oil degradation and potential engine damage, reduce oil and filter service intervals to 50% of the original recommended values when operating engines at altitudes above **1676 m (5500 ft)**.

Oil analysis may allow longer service intervals.

Use only approved oil types.

Example of Original Hours	Corresponding High Altitude Hours
125	60
150	75
175	85
200	100
250	125
275	135
300	150
350	175
375	185
400	200
500	250

TX,ENOIL,SERV,HIALT-19-24JUN20-1/1



## Oil Filters

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

John Deere filters adhere to engineering specifications for quality of the filter media, filter efficiency rating, strength of

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

Always change oil filters regularly as specified in this manual.

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

## Hydraulic Oil

**IMPORTANT:** This machine is factory filled with John Deere Zinc-Free Hydraulic Oil 46.

**DO NOT MIX ZINC-BASED AND ZINC-FREE OILS.**

Flushing system is required when changing from zinc-free to zinc-based oils. Contact authorized dealer for the flushing procedure.

**Avoid mixing different brands of oils. Oil manufacturers engineer their oils to meet certain specifications and requirements. Mixing different oils can degrade lubricant and machine performance.**

TX,HYDOIL,D-19-31MAR23-1/2

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

### Low Temperature Operation

- **Do not mix zinc-based and zinc-free oils.**
- A zinc-free ISO32 hydraulic oil may be added to the machine for low temperature operations. Hydraulic system oil viscosity must be 32 cSt at 40°C (104°F) minimum and must not be operated when ambient temperature exceeds 30°C (86°F).
- When switching back to warm-weather operation, a preferred ISO46 hydraulic oil may be added to the machine. The hydraulic system oil viscosity must be 40 cSt at 40°C (104°F) minimum and must not be operated when ambient temperature exceeds 40°C (104°F).

### Seasonal Hydraulic Flushing

- **Do not mix zinc-based and zinc-free oils.**
- Two hydraulic tank flushes are required when changing hydraulic oils for seasonal operation. Drain and refill tank with new oil (ISO32-cold, ISO46-warm). Operate machine to mix oil in system. Drain and refill tank again. Check oil viscosity.

The following oil is preferred:

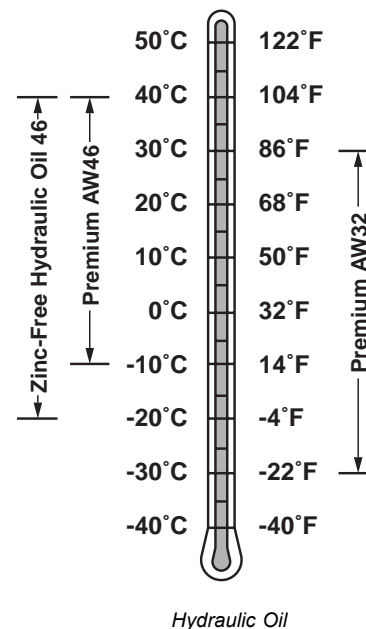
#### 5000 hour change interval:

- John Deere Zinc-Free Hydraulic Oil 46

#### 2000 hour change interval:

**IMPORTANT:** Avoid damage to the machine. Zinc-based oils must not be mixed with 2500 hour and 5000 hour zinc-free oils.

The following products may be zinc-based and can be used provided a complete hydraulic system flush has been performed. Contact an authorized dealer for this procedure.



Hydraulic Oil

TX1340960—UN—31MAR23

Premium AW oil: AW46 or AW32 (for low temperature operation)

### Biodegradable Hydraulic Oil:

**IMPORTANT:** Other fire resistant and readily biodegradable oil (also called FR oils) are not approved for use in John Deere Construction and Forestry equipment.

Use only Exxon Mobil EAL EnviroSyn 46H Synthetic Esther Oil when biodegradable oil is required. Contact an authorized John Deere dealer for registration and routine oil analysis to meet warranty requirements.

TX,HYDOIL,D-19-31MAR23-2/2

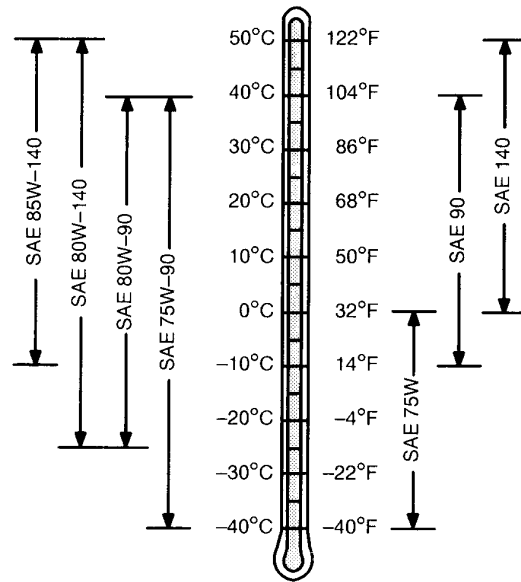
## Swing Gear Case and Travel Gear Case Oils

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
- John Deere EXTREME-GARD™

Other oils may be used if they meet API Service Classification GL-5.



Gear Oil

TS1653—UN—14MAR96

EXTREME-GARD is a trademark of Deere & Company.

ER79617,0000A95-19-05JUN14-1/1

## Pump Drive Gear Case Oil

**IMPORTANT:** The 250GLC and the 290GLC can use 15W/40 engine oil or 80/90 gear oil in the pump drive gear case.

Continued on next page

ER79617,0000DD8-19-05JUN14-1/2

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

The following oil is preferred:

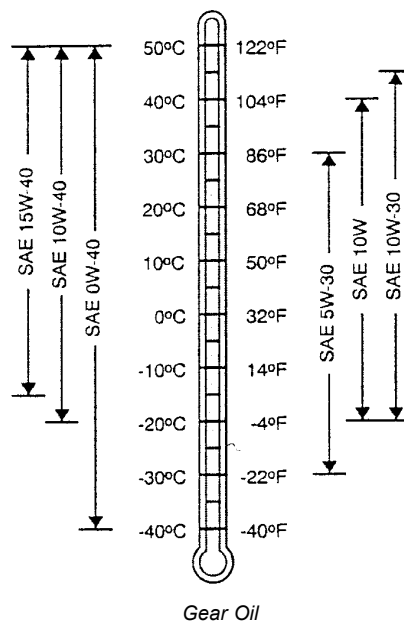
- John Deere PLUS-50™ II

The following oil is also recommended:

- John Deere Torq-Gard™

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

- API Service Category CI-4
- API Service Category CH-4
- API Service Category CG-4



T197398—UN—21JAN04

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

ER79617,0000DD8-19-05JUN14-2/2

### Track Adjuster, Working Tool Pivot, Swing Bearing, and Swing Bearing Gear Grease

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

The following grease is preferred:

- John Deere SD POLYUREA GREASE

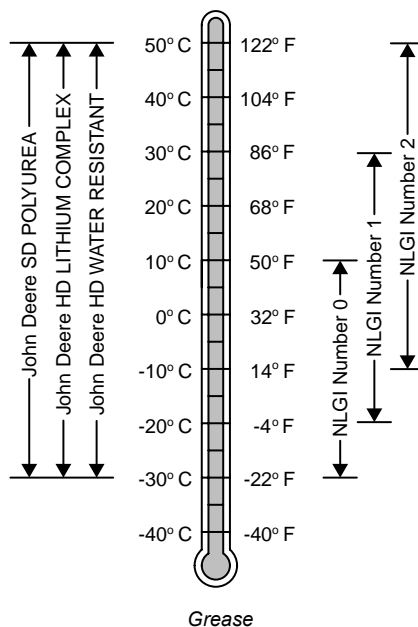
The following greases are also recommended:

- John Deere HD MOLY GREASE
- John Deere HD LITHIUM COMPLEX GREASE
- John Deere HD WATER RESISTANT GREASE

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB

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



TX1237263—UN—11APR17

OUT4001,00007D4-19-11APR17-1/1

## Diesel Engine Coolant (engine with wet sleeve cylinder liners)

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

### Preferred Coolants

The following pre-mix engine coolants are preferred:

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

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

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

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

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

### Additional Recommended Coolants

The following engine coolant is also recommended:

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

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

### Other Coolants

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

COOL-GARD is a trademark of Deere & Company

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

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

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

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

### Water Quality

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

### Coolant Drain Intervals

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

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

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

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

**Do not mix ethylene glycol and propylene glycol base coolants.**

**Do not use coolants that contain nitrites.**

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

## Water Quality for Mixing with Coolant Concentrate

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

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.

All water used in the cooling system should meet the following minimum specifications for quality:

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

**IMPORTANT:** Do not use bottled drinking water because it often contains higher concentrations of total dissolved solids.

## 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,COOL19-19-13JAN18-1/1

## Operating in Warm Temperature Climates

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

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

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

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

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

DX,COOL6-19-17FEB20-1/1

## Testing Coolant Freeze Point

The use of a handheld coolant refractometer is the quickest, easiest, and most accurate method to determine coolant freeze point. This method is more accurate than a test strip or a float-type hydrometer which can produce poor results.

A coolant refractometer is available through your John Deere dealer under the SERVICEGARD™ tool program. Part number 75240 provides an economical solution to accurate freeze point determination in the field.

To use this tool:

1. Allow cooling system to cool to ambient temperatures.
2. Open radiator cap to expose coolant.
3. With the included dropper, collect a small coolant sample.
4. Open the lid of the refractometer, place one drop of coolant on the window and close the lid.
5. Look through the eyepiece and focus as necessary.
6. Record the listed freeze point for the type of coolant (ethylene glycol coolant or propylene glycol) being tested.



SERVICEGARD™ Part Number 75240

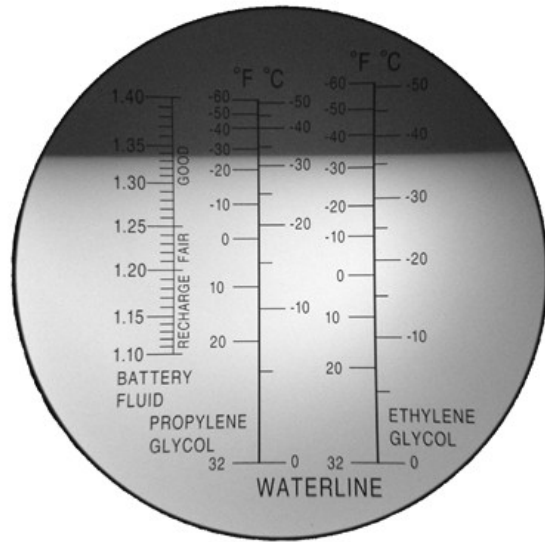


Image with a Drop of 50/50 Coolant Placed on the Refractometer Window

SERVICEGARD is a trademark of Deere & Company

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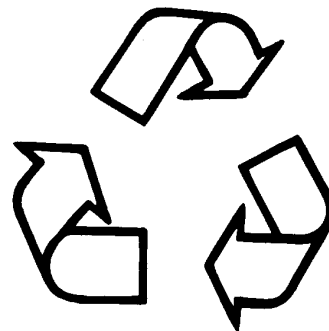
## Disposing of Coolant

Improperly disposing of engine coolant can threaten the environment and ecology.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Inquire on the proper way to recycle or dispose of waste from a local environmental or recycling center, or from an authorized John Deere dealer.



Recycle Waste

TX,COOL,DISP-19-26OCT20-1/1

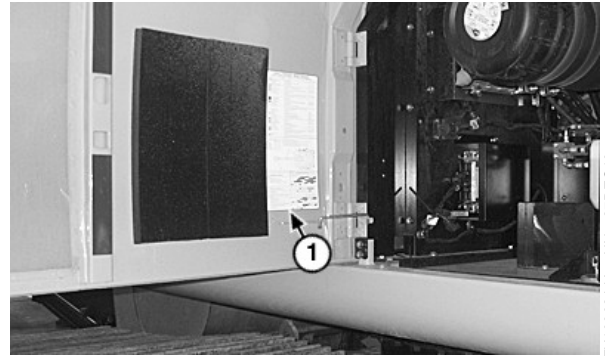
# Maintenance—Periodic Maintenance

## 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.

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



Periodic Maintenance Chart

ER79617,0000D70-19-27DEC10-1/1

TX1086244A—UN—27DEC10

## Check the Hour Meter Regularly

*NOTE: Hour meter display is located in the upper right corner of the monitor.*

Hour meter (1) displays total machine operation hours. Use the hour meter to determine when your machine needs periodic maintenance.

Turn key to the ON position to view the default screen and the hour meter.

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



Hour Meter

1—Hour Meter

ER79617,0000D92-19-05JAN11-1/1

TX1086525A—UN—05JAN11

## 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.

Continued on next page

ER79617,0000D96-19-17OCT17-1/2

1. Park machine on a level surface as shown.
  2. Lower equipment to the ground.
  3. Turn auto-idle switch (1) to the A/I OFF position.
- IMPORTANT: Turbocharger can be damaged if procedure to shut down engine is not done properly.**
4. Run engine with engine speed dial (2) at 1/3 position without load for 2 minutes.
  5. Turn engine speed dial to slow idle position.
  6. Turn key switch (3) to the OFF position. Remove key from switch.
  7. Place pilot shutoff lever (4) to locked (UP) position.

1—Auto-Idle Switch  
2—Engine Speed Dial

3—Key Switch  
4—Pilot Shutoff Lever



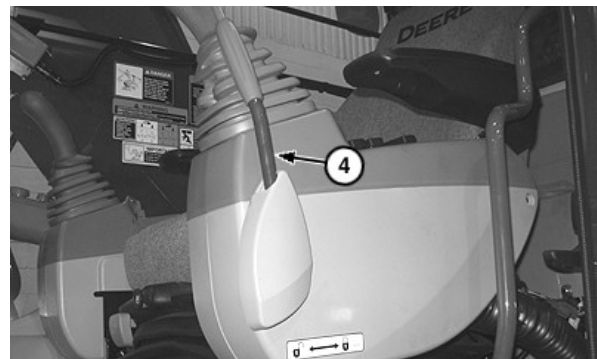
T6811A1—UN—18OCT88

Machine Position



TX1087012A—UN—18JAN11

Switch Panel



TX1087013A—UN—18JAN11

Pilot Shutoff Lever

ER79617,0000D96-19-17OCT17-2/2

## Engine Identification

Use the following information to identify the engine as either a 6068HT073, 6068HT062, or 6068HT082 engine.

Continued on next page

ER79617,0000D94-19-05APR11-1/5



### 6068HT073 Engine Model Component Identification

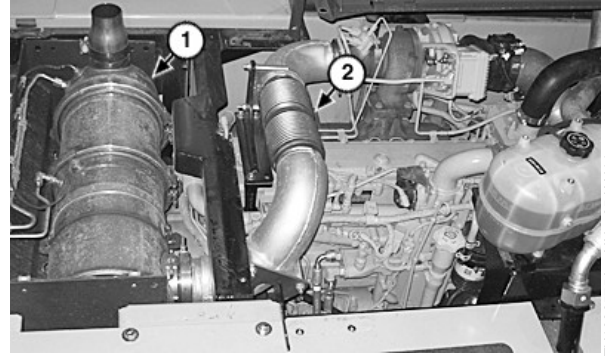
**NOTE:** The engine serial number plate provides the engine serial number. The engine serial number plate is located on the front right side of the engine and to the left of the fill tube.

Machines equipped with a 6068HT073 engine have an exhaust filter (1).

Machines equipped with a 6068HT073 engine have exhaust bellows (2).

1—Exhaust Filter

2—Exhaust Bellows



6068HT073 Engine

ER79617,0000D94-19-05APR11-2/5

### 6068HT062 Engine Model Component Identification

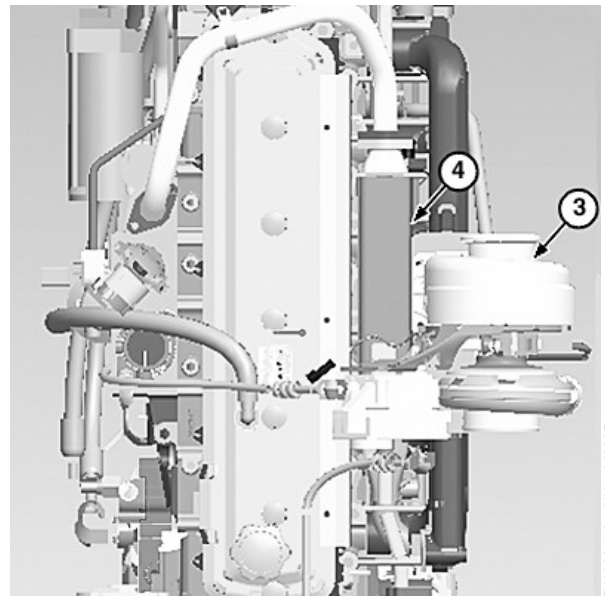
**NOTE:** The engine serial number plate provides the engine serial number. The engine serial number plate is located on the right rear of the engine block.

Machines equipped with a 6068HT062 engine have a variable geometry turbocharger (3).

Machines equipped with a 6068HT062 engine have an EGR cooler (4).

3—Variable Geometry  
Turbocharger

4—EGR Cooler



6068HT062 Engine

ER79617,0000D94-19-05APR11-3/5

Continued on next page

## 6068HT082 Engine Model Component Identification

**NOTE:** The engine serial number plate provides the engine serial number. The engine serial number plate is located on the right rear of the engine block.

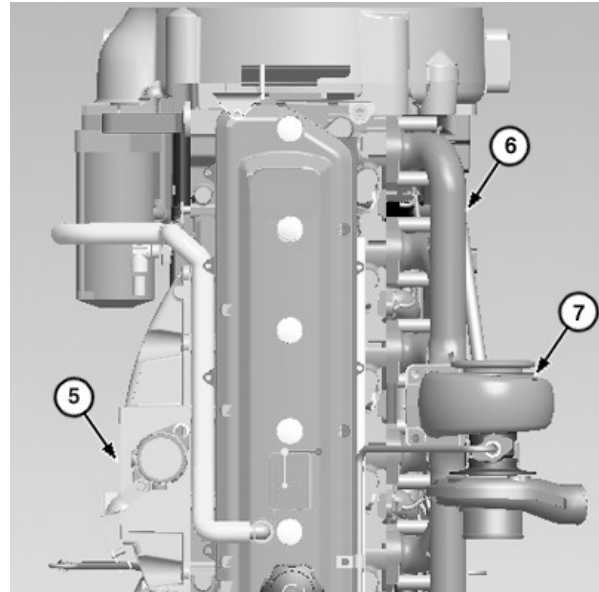
Machines equipped with a 6068HT082 engine have a fixed geometry turbocharger (7).

Machines equipped with a 6068HT082 engine do not have an exhaust gas recirculation (EGR) cooler.

5—Intake Manifold

6—Exhaust Manifold

7—Fixed Geometry  
Turbocharger



TX1090151—UN—30MAR11

6068HT082 Engine

Continued on next page

ER79617,0000D94-19-05APR11-4/5

### Engine Serial and Model Number Identification

The 6068HT073 engine serial number plate is located on the front right side of the engine and to the left of the fill tube. See Machine Numbers. (Section 4-5.)

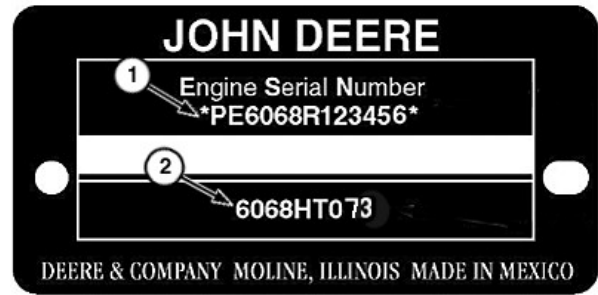
The 6068HT062 and 6068HT082 engine serial number plate is located on the right rear of the engine block. See Machine Numbers. (Section 4-5.)

The last two digits of the engine model number (2) can be used to identify an engine as either a 6068HT073, 6068HT062, or 6068HT082 engine based on machine application.

Engine Model Number	
6068HT073	IT4 engines (turbocharged and air-to-air aftercooled)
6068HT062	Stage III A engines (turbocharged and air-to-air aftercooled)
6068HT082	Stage II engines (turbocharged and air-to-air aftercooled)

1—Engine Serial Number

2—Engine Model Number



IT4 Engine Serial Number Plate—6068HT073



Stage III A Engine Serial Number Plate—6068HT062



Stage II Engine Serial Number Plate—6068HT082

ER79617,0000D94-19-05APR11-5/5

### Open Access Doors for Service

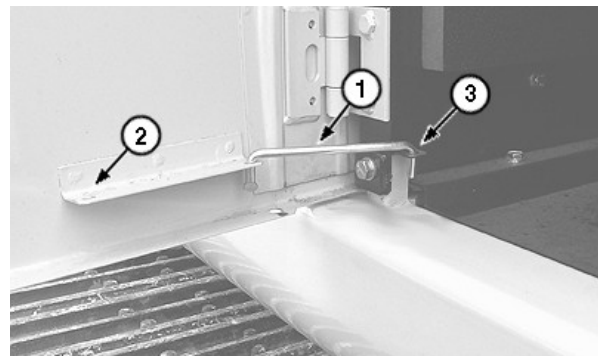
**CAUTION:** Prevent possible injury from door closing. Secure door in the OPEN position.

To hold door open, remove rod (1) from stored position (2) and insert in tab (3).

1—Rod

2—Stored Position

3—Tab



Access Door Hold

VD76477,00001C1-19-28MAR11-1/1

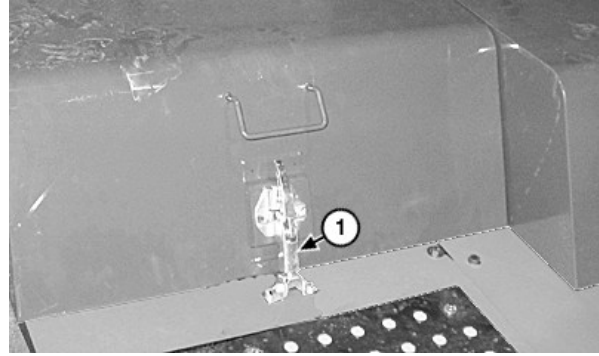
## Open Engine Cover for Service

**⚠ CAUTION:** Prevent possible injury from cover closing. Unlock latch. Pull open latches to unlock cover. Raise the cover until the end of the bar is securely locked into catch.

1. Unlock latch (1).
2. Pull open latches to unlock cover.
3. Raise the cover until the end of the bar is securely locked into catch (2).

1—Latch

2—Catch



TX1086687A—UN—06JAN11

Engine Lock (closed position shown)



TX1086687A—UN—07JAN11

6068HT073 Engine Shown

ER79617,0000D99-19-25FEB11-1/1

## Fuel Tank

**⚠ CAUTION:** Fuel is flammable and may ignite if spilled on hot engine. To prevent injury, handle fuel carefully. If engine is hot or running, do NOT fill the fuel tank. Do NOT smoke while filling fuel tank or working on fuel system.

**IMPORTANT:** Avoid engine damage. If machine has run out of fuel, engine will not start. Contact an authorized John Deere dealer for instructions.

To avoid condensation, fill the fuel tank at the end of each workday. Shut off engine before filling.

KR46761,0000F5B-19-27SEP22-1/1

## Hydraulic Breaker Attachment

**IMPORTANT:** Avoid mixing different brands or types of oils. Oil manufacturers engineer their oils to meet certain specifications and performance requirements. Mixing different oil types can degrade lubricant and machine performance.

This excavator is factory filled with John Deere Zinc-Free Hydraulic Oil 46. Avoid servicing the excavator with products that do not meet this specification. If oils have been mixed or if alternate service oils are desired, an authorized dealer must flush the complete hydraulic system.

Prevent damage to hydraulic pumps and other hydraulic components from operating the hydraulic breaker. Operating the hydraulic breaker subjects the hydraulic system of the machine to possible contamination and accelerated deterioration. Change the hydraulic return filter and hydraulic oil at intervals recommended in the table based on the percentage of operating time the attachment is used.

Hydraulic breaker operation subjects the hydraulic system of the machine to possible contamination and accelerated deterioration. The hydraulic return filter and hydraulic oil must be replaced frequently to prevent damage to hydraulic pumps and other hydraulic components. Change the hydraulic return filter and hydraulic oil at the intervals recommended in the table based on the amount of machine operating time the attachment is used.

*NOTE: John Deere recommends the addition of the hydraulic filter restriction indicator kit with the attachment.*

Percentage of Operating Time Hydraulic Breaker Used	Hydraulic Return Filter Change Interval (hours)	Hydraulic Oil Change Interval (hours)
100	100	600
60	150	800
40	200	1000
20	300	1300

DW90712,000076A-19-07NOV23-1/1

## 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, before a filter 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



TX1003513A—UN—20FEB06

sampling products and expertise to assist you in lowering your overall operating costs through fluid sampling.

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

**Service Intervals—6068HT073 Engine Only**

<b>Model:</b> 6068HT073 Engine Only	<b>PIN/Serial Number:</b>
<b>Hour Meter Reading:</b>	
<b>SERVICE INTERVALS</b>	
Service machine at intervals shown on this chart. Also, perform service on items at multiples of the original requirement. For example: at 500 hours, also service those items (if applicable) listed under 250 hours, 100 hours, 50 hours, and 10 hours or daily.	
<b>FLUID SAMPLING</b>	
Fluid samples should be taken from each system at its recommended change interval prior to actually draining the fluid. Regular oil sampling will extend the operational life of the machine.	
<b>As Required</b>	
<input type="checkbox"/> Remove and clean fuel tank inlet screen	<input type="checkbox"/> Check and adjust track sag
<input type="checkbox"/> Check windshield washer fluid level	<input type="checkbox"/> Clean rear camera lens (if equipped)
<input type="checkbox"/> Check and clean air cleaner dust unloader valve	<input type="checkbox"/> Service exhaust filter
<input type="checkbox"/> Clean and tighten battery terminals	
<b>Every 10 Hours or Daily</b>	
<input type="checkbox"/> Check hydraulic tank oil level	<input type="checkbox"/> Check engine oil level
<input type="checkbox"/> Check engine coolant level	<input type="checkbox"/> Lubricate hydraulic coupler (if equipped)
<b>Every 50 Hours or Weekly</b>	
<input type="checkbox"/> Drain water and sediment from fuel tank sump	<input type="checkbox"/> Drain primary fuel filter and water separator
<input type="checkbox"/> Drain auxiliary fuel filter and water separator (if equipped)	<input type="checkbox"/> Drain final fuel filter
<input type="checkbox"/> Lubricate working tool pivots	
<b>Every 100 Hours</b>	
<input type="checkbox"/> Inspect and re-torque track hardware	
<b>Every 250 Hours</b>	
<input type="checkbox"/> Check swing gear case oil level	<input type="checkbox"/> Check travel gear case oil level
<input type="checkbox"/> Check pump drive gear case oil level	<input type="checkbox"/> Drain water and sediment from hydraulic tank
<input type="checkbox"/> Check hybrid battery electrolyte level (if equipped)	<input type="checkbox"/> Take engine oil sample
<input type="checkbox"/> Lubricate front end pin joints	
<b>Every 500 Hours</b>	
<input type="checkbox"/> Check air intake hoses	<input type="checkbox"/> Lubricate swing bearing
<input type="checkbox"/> Lubricate swing bearing gear	<input type="checkbox"/> Take diesel fuel sample
<input type="checkbox"/> Drain and refill engine oil and replace filter	<input type="checkbox"/> Take swing gear case oil sample
<input type="checkbox"/> Replace primary fuel filter and water separator	<input type="checkbox"/> Take hydraulic oil sample
<input type="checkbox"/> Replace auxiliary fuel filter and water separator (if equipped)	<input type="checkbox"/> Take engine coolant sample
<input type="checkbox"/> Replace final fuel filter	<input type="checkbox"/> Take travel gear case oil sample
<input type="checkbox"/> Clean cab fresh air and cab recirculating air filters (replace every 6 cleanings)	<input type="checkbox"/> Take pump drive gear case oil sample
<b>Every 1000 Hours</b>	
<input type="checkbox"/> Drain and refill swing gear case oil	<input type="checkbox"/> Inspect serpentine belt
<input type="checkbox"/> Replace hydraulic tank oil filter	<input type="checkbox"/> Replace air cleaner elements
<input type="checkbox"/> Replace pilot oil filter	<input type="checkbox"/> Replace air cleaner dust unloader valve
<input type="checkbox"/> Drain and refill pump drive gear case oil	<input type="checkbox"/> Check coolant condition
<input type="checkbox"/> Remove and clean open crankcase ventilation (OCV) hose	
<b>Every 2000 Hours</b>	
<input type="checkbox"/> Check and adjust engine valve lash	<input type="checkbox"/> Drain and refill travel gear case oil

Continued on next page

ER79617,0000D67-19-02APR20-1/2

☐ Replace open crankcase ventilation (OCV) filter

**Every 5000 Hours**

☐ Drain and refill hydraulic tank oil

☐ Replace hydraulic tank vent cap filter

**Every 6000 Hours**

☐ Drain, flush, and refill engine cooling system

ER79617,0000D67-19-02APR20-2/2

**Required Parts—6068HT073 Engine Only****REQUIRED PARTS**

Ensure 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	Every 250 Hours	Every 500 Hours	Every 1000 Hours	Every 2000 Hours	Every 5000 Hours	Every 6000 Hours
Engine Oil Filter		1	1	1	1	1
Primary and Final Fuel Filter Elements (kit)		1	1	1	1	1
Auxiliary Fuel Filter Element—If Equipped		1	1	1	1	1
Hydraulic Tank Oil Filter Element			1	1	1	1
Pilot Oil Filter Element			1	1	1	1
Primary Air Filter Element			1	1	1	1
Secondary Air Filter Element			1	1	1	1
Dust Unloader Valve			1	1	1	1
Open Crankcase Ventilation (OCV) Filter Element				1		1
Engine Rocker Arm Cover Gasket				1		1
Hydraulic Tank Vent Cap Filter Element					1	
Diesel Particulate Filter (component of exhaust filter)	As Required					
Cab Fresh Air Filter	As Required					
Cab Recirculating Air Filter	As Required					
John Deere PLUS-50™ II Engine Oil <sup>1</sup>		19.5 L (5.2 gal)	20.6 L (5.4 gal)	20.6 L (5.4 gal)	20.6 L (5.4 gal)	20.6 L (5.4 gal)
API GL-5 Gear Oil—250GLC <sup>1</sup>			7.0 L (1.8 gal)	19.4 L (5.1 gal)	7.0 L (1.8 gal)	19.4 L (5.1 gal)
API GL-5 Gear Oil—290GLC <sup>1</sup>			8.5 L (2.2 gal)	23.7 L (6.2 gal)	8.5 L (2.2 gal)	23.7 L (6.2 gal)
Zinc-Free Hydraulic Oil 46 <sup>1</sup>					147.6 L (39.0 gal)	
John Deere COOL-GARD™ II Pre-Mix						23.0 L (6.0 gal)
<b>Fluid Analysis Kits<sup>2</sup></b>						
Diesel Engine Oil	1	1	1	1	1	1
Hydraulic Oil		1	1	1	1	1
Travel Gear Case Oil		2	2	2	2	2
Swing Gear Case Oil		1	1	1	1	1
Pump Drive Gear Case Oil		1	1	1	1	1
Diesel Fuel		1	1	1	1	1
Engine Coolant		1	1	1	1	1

<sup>1</sup>For recommended oil viscosities based on operating temperatures, see Maintenance—Machine. (Section 3-1.)

<sup>2</sup>Based on fluid analysis results, intervals may need to be adjusted for operating conditions. See an authorized John Deere dealer.

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COOL-GARD is a trademark of Deere & Company

ER79617,0000D69-19-01APR22-1/1



**Service Intervals—6068HT062 and 6068HT082 Engines Only**

<b>Model:</b> 6068HT062 and 6068HT082 Engines Only		<b>PIN/Serial Number:</b>	
<b>Hour Meter Reading:</b>			
<b>SERVICE INTERVALS</b>			
Service machine at intervals shown on this chart. Also, perform service on items at multiples of the original requirement. For example: at 500 hours, also service those items (if applicable) listed under 250 hours, 100 hours, 50 hours, and 10 hours or daily.			
<b>FLUID SAMPLING</b>			
Fluid samples should be taken from each system at its recommended change interval prior to actually draining the fluid. Regular oil sampling will extend the operational life of the machine.			
<b>As Required</b>			
<input type="checkbox"/> Remove and clean fuel tank inlet screen	<input type="checkbox"/> Check and adjust track sag		
<input type="checkbox"/> Check windshield washer fluid level	<input type="checkbox"/> Clean rear camera lens (if equipped)		
<input type="checkbox"/> Check and clean air cleaner dust unloader valve	<input type="checkbox"/> Clean and tighten battery terminals		
<b>Every 10 Hours or Daily</b>			
<input type="checkbox"/> Check hydraulic tank oil level	<input type="checkbox"/> Check engine oil level		
<input type="checkbox"/> Check engine coolant level	<input type="checkbox"/> Lubricate hydraulic coupler (if equipped)		
<b>Every 50 Hours or Weekly</b>			
<input type="checkbox"/> Drain water and sediment from fuel tank sump	<input type="checkbox"/> Drain primary fuel filter and water separator		
<input type="checkbox"/> Drain auxiliary fuel filter and water separator (if equipped)	<input type="checkbox"/> Drain final fuel filter		
<input type="checkbox"/> Lubricate working tool pivots			
<b>Every 100 Hours</b>			
<input type="checkbox"/> Inspect and re-torque track hardware			
<b>Every 250 Hours</b>			
<input type="checkbox"/> Check swing gear case oil level	<input type="checkbox"/> Check travel gear case oil level		
<input type="checkbox"/> Check pump drive gear case oil level	<input type="checkbox"/> Drain water and sediment from hydraulic tank		
<input type="checkbox"/> Check hybrid battery electrolyte level (if equipped)	<input type="checkbox"/> Take engine oil sample		
<input type="checkbox"/> Check and adjust air conditioner belt	<input type="checkbox"/> Lubricate front end pin joints		
<b>Every 500 Hours</b>			
<input type="checkbox"/> Check air intake hoses	<input type="checkbox"/> Lubricate swing bearing		
<input type="checkbox"/> Lubricate swing bearing gear	<input type="checkbox"/> Take diesel fuel sample		
<input type="checkbox"/> Drain and refill engine oil and replace filter	<input type="checkbox"/> Take swing gear case oil sample		
<input type="checkbox"/> Replace primary fuel filter and water separator	<input type="checkbox"/> Take hydraulic oil sample		
<input type="checkbox"/> Replace auxiliary fuel filter and water separator (if equipped)	<input type="checkbox"/> Take engine coolant sample		
<input type="checkbox"/> Replace final fuel filter	<input type="checkbox"/> Take travel gear case oil sample		
<input type="checkbox"/> Clean cab fresh air and cab recirculating air filters (replace every 6 cleanings)	<input type="checkbox"/> Take pump drive gear case oil sample		
<b>Every 1000 Hours</b>			
<input type="checkbox"/> Drain and refill swing gear case oil	<input type="checkbox"/> Inspect serpentine belt		
<input type="checkbox"/> Replace hydraulic tank oil filter	<input type="checkbox"/> Replace air cleaner elements		
<input type="checkbox"/> Replace pilot oil filter	<input type="checkbox"/> Replace air cleaner dust unloader valve		
<input type="checkbox"/> Drain and refill pump drive gear case oil	<input type="checkbox"/> Check coolant condition		
<input type="checkbox"/> Remove and clean engine crankcase ventilation tube			
<b>Every 2000 Hours</b>			
<input type="checkbox"/> Check and adjust engine valve lash	<input type="checkbox"/> Drain and refill travel gear case oil		

Continued on next page

ER79617,0000D66-19-02APR20-1/2

<b>Every 4000 Hours</b>	
<input type="checkbox"/> Replace engine crankshaft damper	
<b>Every 5000 Hours</b>	
<input type="checkbox"/> Drain and refill hydraulic tank oil	<input type="checkbox"/> Replace hydraulic tank vent cap filter
<b>Every 6000 Hours</b>	
<input type="checkbox"/> Drain, flush, and refill engine cooling system	

ER79617,0000D66-19-02APR20-2/2

**Required Parts—6068HT062 and 6068HT082 Engines Only**

<b>REQUIRED PARTS</b>							
Ensure 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	Every 250 Hours	Every 500 Hours	Every 1000 Hours	Every 2000 Hours	Every 4000 Hours	Every 5000 Hours	Every 6000 Hours
Engine Oil Filter		1	1	1	1	1	1
Final Fuel Filter Element		1	1	1	1	1	1
Primary Fuel Filter Element		1	1	1	1	1	1
Auxiliary Fuel Filter Element—If Equipped		1	1	1	1	1	1
Hydraulic Tank Oil Filter			1	1	1	1	1
Pilot Oil Filter Element			1	1	1	1	1
Primary Air Filter Element			1	1	1	1	1
Secondary Air Filter Element			1	1	1	1	1
Dust Unloader Valve			1	1	1	1	1
Engine Rocker Arm Cover Gasket				1	1		1
Engine Crankshaft Damper					1		
Hydraulic Tank Vent Cap Filter Element						1	
Cab Fresh Air Filter	As Required						
Cab Recirculating Air Filter	As Required						
John Deere PLUS-50™ II Engine Oil <sup>1</sup>		19.5 L (5.2 gal)	20.6 L (5.4 gal)	20.6 L (5.4 gal)	20.6 L (5.4 gal)	20.6 L (5.4 gal)	20.6 L (5.4 gal)
API GL-5 Gear Oil—250GLC <sup>1</sup>			7.0 L (1.8 gal)	19.4 L (5.1 gal)	19.4 L (5.1 gal)	7.0 L (1.8 gal)	19.4 L (5.1 gal)
API GL-5 Gear Oil—290GLC <sup>1</sup>			8.5 L (2.2 gal)	23.7 L (6.2 gal)	23.7 L (6.2 gal)	8.5 L (2.2 gal)	23.7 L (6.2 gal)
Zinc-Free Hydraulic Oil 46 <sup>1</sup>						147.6 L (39.0 gal)	
John Deere COOL-GARD™ II Pre-Mix							23.0 L (6.0 gal)
<b>Fluid Analysis Kits<sup>2</sup></b>							
Diesel Engine Oil	1	1	1	1	1	1	1
Hydraulic Oil		1	1	1	1	1	1
Travel Gear Case Oil		2	2	2	2	2	2
Swing Gear Case Oil		1	1	1	1	1	1
Pump Drive Gear Case Oil		1	1	1	1	1	1
Diesel Fuel		1	1	1	1	1	1
Engine Coolant		1	1	1	1	1	1

<sup>1</sup>For recommended oil viscosities based on operating temperatures, see Maintenance—Machine. (Section 3-1.)<sup>2</sup>Based on fluid analysis results, intervals may need to be adjusted for operating conditions. See an authorized John Deere dealer.

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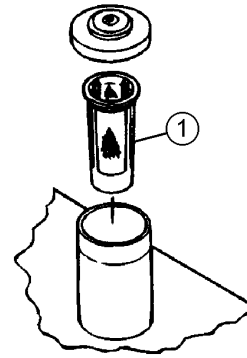
# Maintenance—As Required

## Remove and Clean Fuel Tank Inlet Screen

Clean fuel tank inlet screen (1) using solvent or diesel fuel to remove any debris.

Replace screen if damaged.

1—Fuel Tank Inlet Screen



Fuel Tank Inlet Screen

ER79617,0000A84-19-07APR16-1/1

T135186—UN—06NOV00

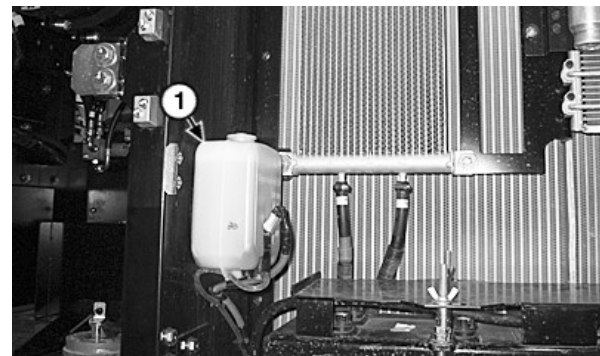
## Check Windshield Washer Fluid Level

1. On left side of machine, open service door to access windshield washer fluid bottle (1).

**NOTE:** During winter season, use all-season windshield washer fluid which will not freeze.

2. Check fluid level in windshield washer fluid bottle and refill as required.
3. Close service door.

1—Windshield Washer Fluid Bottle



Windshield Washer Fluid Level

ER79617,0000D1B-19-14JAN15-1/1

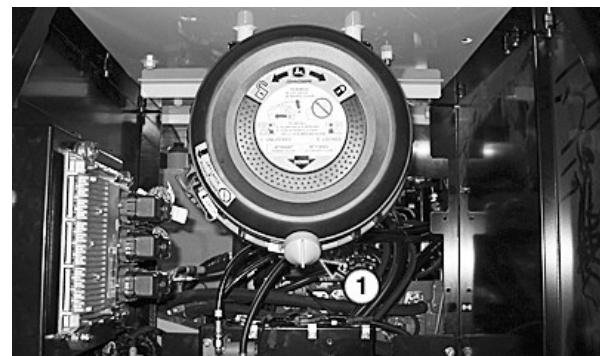
TX1085527A—UN—27DEC10

## Check and Clean Air Cleaner Dust Unloader Valve

**IMPORTANT:** Avoid machine damage. A missing, damaged, or hardened air cleaner dust unloader valve (1) will make the dust cup precleaner ineffective, causing very short element life. Valve should suck closed above 1/3 engine speed.

**NOTE:** If operating in high dust conditions, squeeze dust valve every 2 hours of operation to release dust.

1. On left side of machine, open front service door to access air cleaner dust unloader valve (1).
2. Squeeze air cleaner dust unloader valve to remove dust from the air cleaner.
3. Check condition of dust unloader valve. Replace if hardened or damaged.



Air Cleaner Dust Unloader Valve (S.N.—XXXXXX shown)

1—Air Cleaner Dust Unloader Valve

ER79617,0000D15-19-19JUN14-1/1

TX1085508A—UN—07DEC10

## Check and Adjust Track Sag

### Check Track Sag

1. Swing upperstructure 90°, and lower bucket to raise track off ground.
2. Keep the angle (1) between boom and arm 90—110°, and position the bucket's round side on the ground.

**CAUTION:** Prevent possible injury from unexpected machine movement. Place blocks under machine frame to support machine while measuring track sag.

3. Place blocks under machine frame to support machine.
4. Rotate track forward two full rotations and then in reverse two full rotations.
5. Measure distance (2) at middle track roller from bottom of track frame to top surface of track shoe.

#### 250GLC — Specification

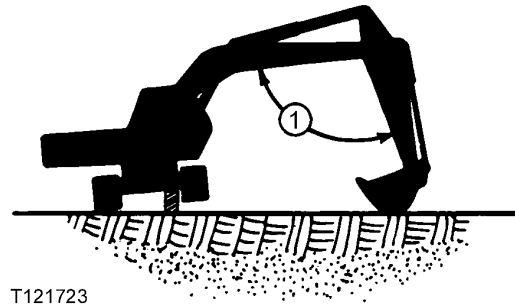
Track—Sag. . . . . 300—335 mm (11.8—13.2 in.)  
11.8—13.2 in.

#### 290GLC — Specification

Track—Sag. . . . . 340—380 mm  
13.4—15.0 in.

1—Boom-To-Arm Angle

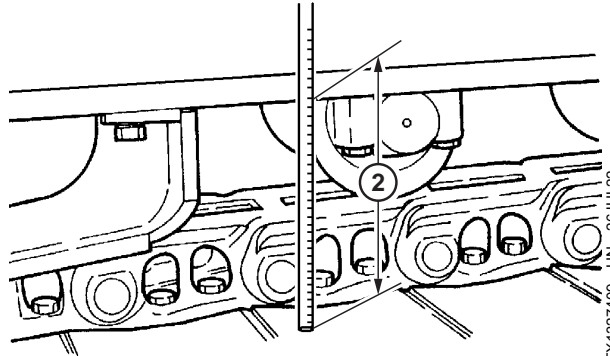
2—Distance



T121723

T121723—UN—10JUN99

Machine Position



TX1327409—UN—26JUL22

Track Sag Measurement

ER79617,0000D17-19-03MAY23-1/2

### Adjust Track Sag

**IMPORTANT:** Prevent possible damage to track components. DO NOT use the grease fitting on the track adjusting cylinder for lubrication. Use this fitting ONLY for track adjustment.

1. To tighten track, connect a grease gun to grease fitting (1) (located through access hole (4) in track frame). Add grease until sag is within recommended limits.

**CAUTION:** Prevent possible injury from high pressure grease. DO NOT remove grease fitting (1) from nut (2).

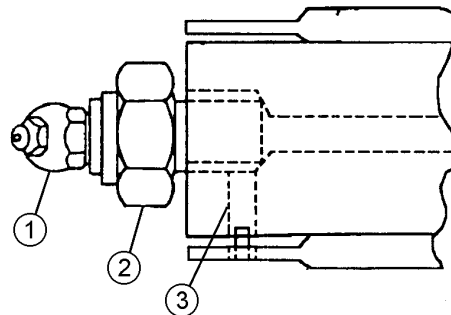
2. To loosen, slowly turn nut (2) counterclockwise; grease will escape through the bleed hole (3).
3. When amount of track sag is satisfactory, turn nut clockwise to tighten.

#### Specification

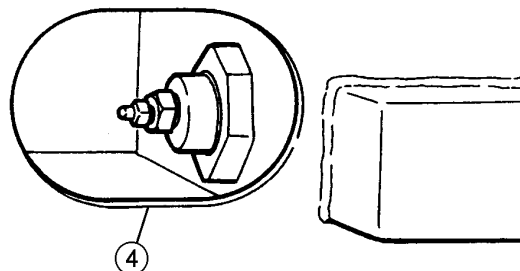
Nut—Torque. . . . . 147 N·m  
108 lb.-ft.

1—Grease Fitting  
2—Nut

3—Bleed Hole  
4—Access Hole



Grease Fitting



Access Hole

T135187—UN—06NOV00

T135188—UN—06NOV00

ER79617,0000D17-19-03MAY23-2/2

### Clean Rear Camera Lens—If Equipped

**CAUTION:** Avoid personal injury. **DO NOT** climb on machine when inspecting or cleaning rear camera lens.

**NOTE:** The camera lens surface is a resin product. Lightly wipe the surface with a wet, clean cloth. Never use an organic solvent.

Inspect camera lens (1) for any accumulation of dirt, mud, snow, ice, or debris.

Clean lens as necessary.

1—Camera Lens



Rear Camera

ER79617,0000D75-19-27JUL15-1/1

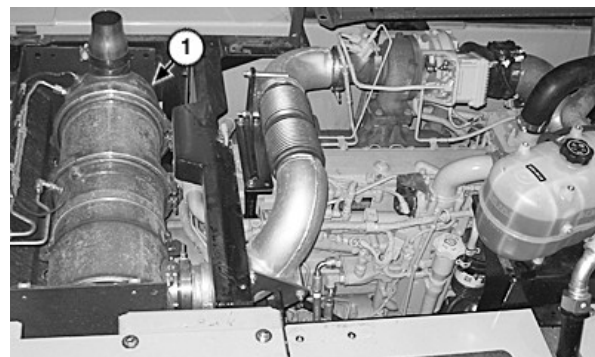
TX1086324A—UN—28DEC10

### Service Exhaust Filter—6068HT073 Engine Only

**CAUTION:** Under federal, state, and/or local laws or regulations, exhaust filter ash may be classified as a hazardous waste. Hazardous waste must be disposed of in accordance with all applicable federal, state and local laws or regulations governing hazardous waste disposal. Only a qualified service provider should remove ash from the exhaust filter. See your authorized dealer for exhaust filter ash handling and disposal.

The exhaust filter (1) is designed to retain residual ash, which is a noncombustible result of additives used in crankcase lubrication oils and the fuel. As ash levels rise, the capacity for soot storage is reduced. Engine performance can be reduced due to increased exhaust system back pressure. The residual ash must be removed from the filter. Ash removal is performed by removing the exhaust filter from machine and having it cleaned by specialized equipment or replacing the exhaust filter.

Do **NOT** attempt to remove exhaust filter from machine.



Exhaust Filter

1—Exhaust Filter

**Contact your authorized dealer to remove exhaust filter for ash removal or replacement.**

Failure to follow the approved ash removal methods may violate U.S. federal, state and local hazardous waste laws, along with damage to the exhaust filter resulting in potential denial of the emissions warranty.

ER79617,0000D28-19-06JAN11-1/1

TX1086622A—UN—06JAN11

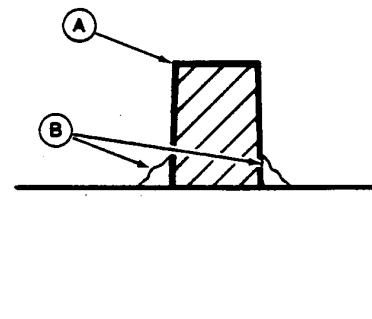
### Clean and Tighten Battery Terminals

**CAUTION:** Battery gas can explode. Keep sparks and flames away from batteries. Always remove grounded (-) battery clamp first and replace it last.

1. Disconnect battery clamps, grounded clamp first.
2. Clean terminal (A) and clamp with a stiff brush.
3. Apply lubricating grease (B) where battery terminal meets top of battery case to prevent grease from escaping.
4. Install and tighten clamps, grounded clamp last.

A—Terminal

B—Lubricating Grease



Battery Terminal

TX,55,FF765-19-30NOV16-1/1

T6758AA—UN—21OCT88

# Maintenance—10 Hours or Daily

## Check Engine Oil Level

**IMPORTANT: Prevent engine damage. 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. Shut off engine and allow oil to drain into oil pan for 10 minutes.
3. Open engine cover to access engine.
4. Make sure dipstick (1) is fully seated.
5. 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.

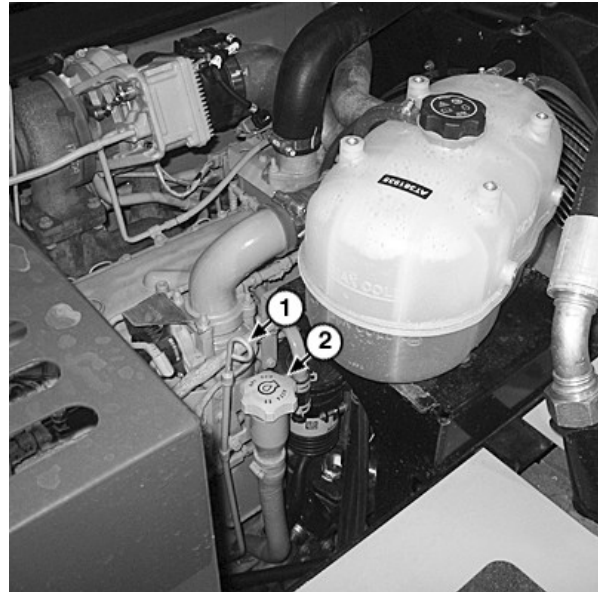
6. If necessary, remove filler cap (2) to add oil.

**IMPORTANT: If oil level is low, the engine can be damaged. DO NOT operate the engine when oil level is below the ADD mark.**

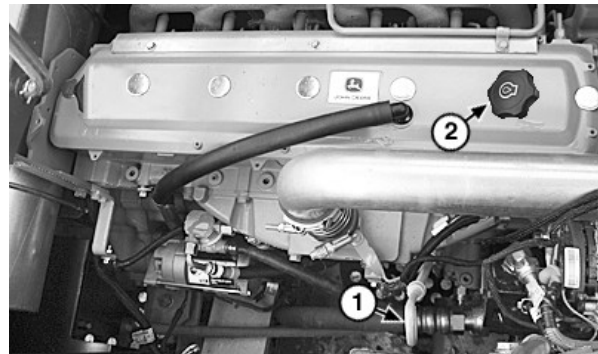
7. If oil level is below ADD mark, add oil as necessary. See Diesel Engine Oil. (Section 3-1.)
8. Install dipstick and close engine cover.

1—Dipstick  
2—Filler Cap

3—Cross-Hatch Area



6068HT073 Engine Shown



6068HT062 and 6068HT082 Engine Shown



Dipstick Cross-Hatch Area

ER79617,0000D1A-19-05JUN14-1/1

## Check Engine Coolant Level

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

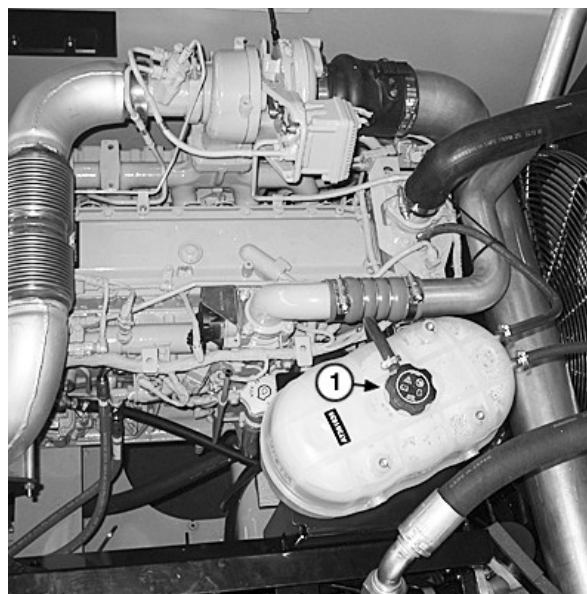
**IMPORTANT:** Avoid machine damage. Mixing different coolant types can degrade coolant and machine performance. Avoid mixing different brands or types of coolant. Coolant manufacturers engineer their coolants to meet certain specifications and performance requirements.

1. Open engine cover and check coolant level in surge tank (1).
2. With engine cold, coolant level must be between MIN COLD and MAX COLD marks on surge tank.
3. If coolant is below MIN COLD mark, add coolant to surge tank. See Diesel Engine Coolant (engine with wet sleeve cylinder liners). (Section 3-1.)
4. If surge tank is empty, check for leaks in tank, hoses, and radiator. Repair as required, then refill with coolant.
5. Close engine cover.

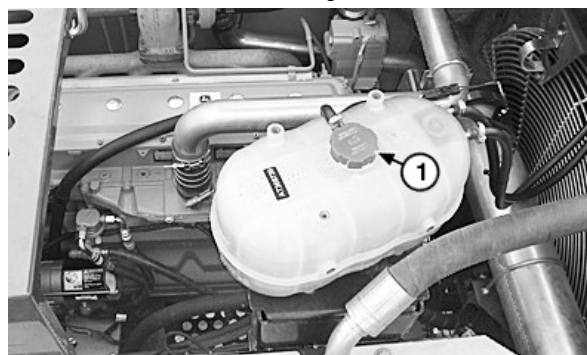
1—Surge Tank



Pressurized Fluids



6068HT073 Engine Shown



6068HT062 and 6068HT082 Engine Shown

ER79617,0000D1C-19-14APR16-1/1

TS281—UN—15APR13

TX1085509A—UN—07DEC10

TX1088502A—UN—24FEB11

## Check Hydraulic Tank Oil Level



Machine Position

T8811A1—UN—18OCT88



Pressurized Fluids

TS281—UN—15APR13

**IMPORTANT:** Prevent damage to hydraulic system components. Do NOT run engine without oil in hydraulic tank.

Avoid machine damage. Mixing different oil types can degrade lubricant and machine performance. Oil manufacturers engineer the oils to meet certain specifications and performance requirements.

Avoid machine damage. This excavator is factory filled with Zinc-Free Hydraulic Oil 46. Avoid servicing this excavator with products that do not meet this specification. If oils have been mixed or if alternate service oils are desired, an authorized dealer must flush the complete hydraulic system.

1. Park machine on a level surface, and position machine with arm cylinder fully retracted and bucket cylinder fully extended.
2. Stop engine.
3. On right side of machine, check hydraulic oil level gauge (1) on hydraulic tank. Oil must be between marks on window.

If necessary, add oil.

To add oil:

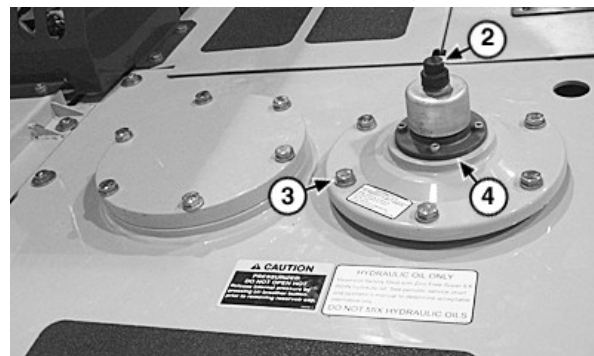
**CAUTION:** High pressure release of oil from pressurized system can cause serious burns or penetrating injury. Relieve pressure by pushing pressure release button.

- a. Push pressure release button (2).
- b. Remove cap screws (3).
- c. Remove hydraulic tank cover (4).
- d. Add oil.
- e. Install cover and cap screws.



Hydraulic Oil Level Gauge

TX1086266A—UN—27DEC10



Hydraulic Tank Cover

TX1086268A—UN—27DEC10

- 1—Hydraulic Oil Level Gauge    3—Cap Screw (6 used)  
2—Pressure Release Button    4—Hydraulic Tank Cover

ER79617,0000D79-19-07NOV23-1/1



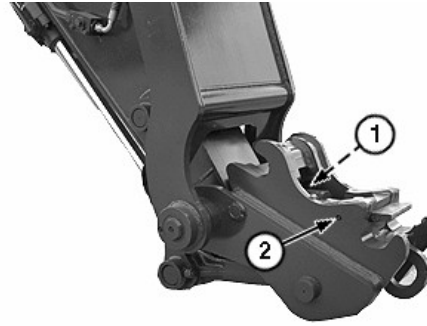
## Lubricate Hydraulic Coupler—If Equipped

**NOTE:** Cylinders that are supplied without grease zerks (1 and 2) **DO NOT** need to be lubricated.

To keep hydraulic coupler in proper working condition, hydraulic coupler must be lubricated on a daily basis.

Most hydraulic couplers are supplied with a cylinder grease zerk (1), which is located on the head end of the cylinder or cylinder barrel, a lock arm grease zerk (2), and a grease zerk on each side of the hydraulic coupler for the locking wedge.

Apply grease to fittings until grease escapes from joints. See Track Adjuster, Working Tool Pivot, Swing Bearing, and Swing Bearing Gear Grease. (Section 3-1.)



Lubrication Points

1—Cylinder Grease Zerk

2—Lock Arm Grease Zerk

VD76477,0001376-19-06OCT22-1/1

TX1017854A—UN—22JAN07

# Maintenance—Every 50 Hours or Weekly

## Drain Water and Sediment from Fuel Tank Sump

1. Park machine on a level surface. Rotate upperstructure 90° for easier access.

**IMPORTANT:** Turbocharger can be damaged if procedure to shutdown engine is not done properly.

2. Run engine at slow idle speed without load for 5 minutes.
3. Stop engine.
4. Remove fuel tank fill cap.
5. Open right service door to access the drain valve (1) for the fuel tank.

**NOTE:** Drain waste into a container. Dispose of waste properly.

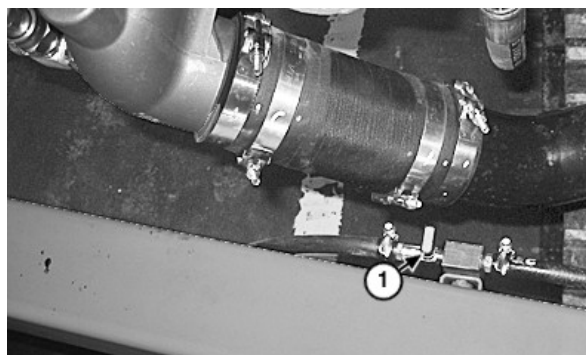
6. Open drain valve for several seconds to drain water and sediment into a container. Dispose of waste properly. Close drain valve.
7. Close service door and install fuel tank fill cap.

1—Drain Valve



T6811AJ—UN—18OCT88

Machine Position



TX1088020A—UN—11FEB11

Drain Valve

ER79617,0000DDA-19-14JAN15-1/1

## Drain Primary Fuel Filter and Water Separator —6068HT073 Engine Only

1. Open right service door to access primary fuel filter and water separator (1).

**NOTE:** Drain waste into a container. Dispose of waste properly.

2. Open drain valve (2) to extract water from fuel system. Drain fluid until water and sediment is removed. Collect waste in a container and dispose of waste properly.
3. Close drain valve.

1—Primary Fuel Filter and  
Water Separator

2—Drain Valve



TX1087814A—UN—09FEB11

Primary Fuel Filter and Water Separator

ER79617,0000E3F-19-23MAR11-1/1

### Drain Primary Fuel Filter and Water Separator —6068HT062 and 6068HT082 Engines Only

1. Open right service door to access primary fuel filter and water separator (1).
2. Disconnect water-in-fuel (WIF) sensor wiring (3).

*NOTE: Drain waste into a container. Dispose of waste properly.*

3. Open drain valve (2) to extract water from fuel system. Drain fluid until water and sediment is removed. Collect waste in a container and dispose of waste properly.
4. Close drain valve.

1—Primary Fuel Filter and  
Water Separator  
2—Drain Valve

3—Water-in-Fuel (WIF) Sensor  
Wiring



TX108975A—UN—25MAR11

Primary Fuel Filter and Water Separator

ER79617,0000E40-19-25MAR11-1/1

## Drain Final Fuel Filter

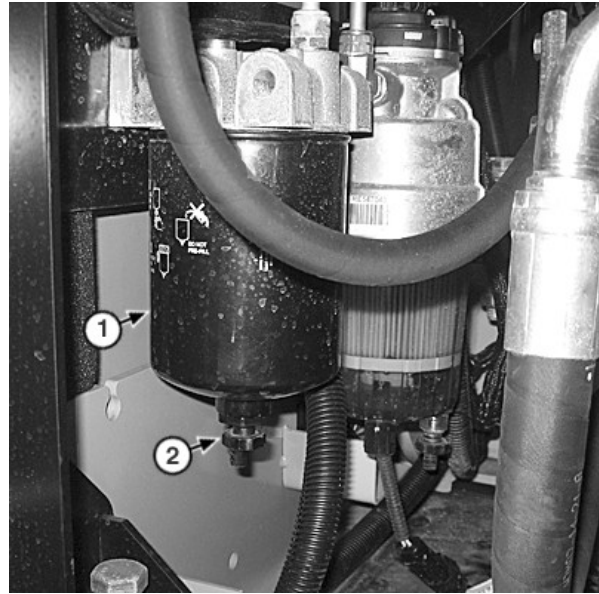
1. Open right service door to access final fuel filter (1).

**NOTE:** Drain waste into a container. Dispose of waste properly.

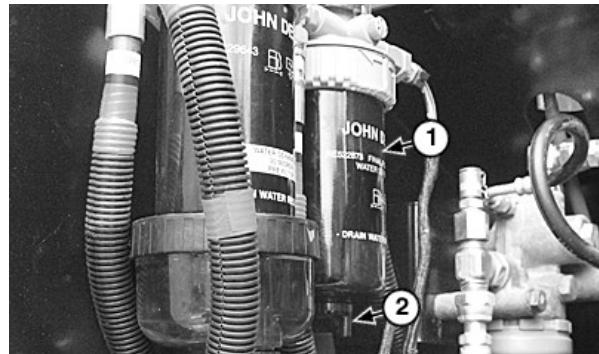
2. Open drain valve (2) on bottom of filter to extract water from fuel system. Drain fluid until water and sediment is removed. Collect waste in a container and dispose of waste properly.
3. Close drain valve.

1—Final Fuel Filter

2—Drain Valve



6068HT073 Engine Shown



6068HT062 and 6068HT082 Engine Shown

OUT4001,000078F-19-25MAR11-1/1

## Drain Auxiliary Fuel Filter and Water Separator—If Equipped

1. Open right service door to access auxiliary fuel filter and water separator (1).

**NOTE:** Drain waste into a container. Dispose of waste properly.

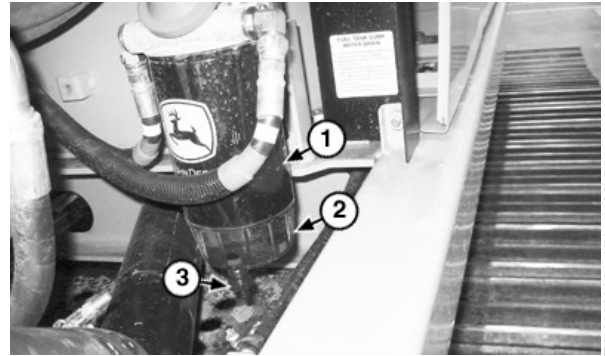
2. Open drain valve (3) on bottom of water separator bowl (2) to extract water from fuel system. Drain until water and sediment is removed. Collect waste in a container and dispose of waste properly.

3. Close drain valve.

1—Auxiliary Fuel Filter and  
Water Separator

3—Drain Valve

2—Water Separator Bowl



6068HT073 Engine Shown

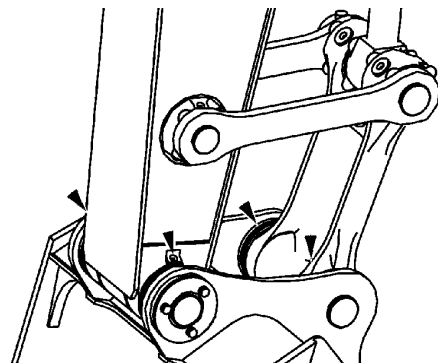


6068HT062 and 6068HT082 Engine Shown

OUT4001,0000791-19-25MAR11-1/1

## Lubricate Working Tool Pivots

Lubricate working tool pivots (4 points) until grease escapes from joints. Lubricate every 4 hours for first 20 hours. Lubricate every 10 hours during first 30—100 hours and when working in mud and water.



Four Points

VD76477,000036F-19-27MAY11-1/1

# Maintenance—Every 100 Hours

## Inspect and Re-Torque Track Hardware

Each inspection and re-torquing should be documented by completing a service report for each unit, placing a copy of this report in the machine file, and forwarding a copy to the manufacturer's attention.

For shoes with missing or loose cap screws and nuts, remove shoes and clean the mating surface of shoes and links before replacing cap screws and nuts. The cap screws must be replaced because they have been stretched to yield previously.

**IMPORTANT: Prevent possible machine damage.**  
**Operating a machine with loose shoes can cause the cap screws and holes in the shoes and links to wear, making it difficult to keep the shoes tight. Loose shoes can also cause hardware malfunction and loss of shoes.**

**Improper track shoe cap screw torque will result in serious damage to the undercarriage components, shorter life expectancy, and will void the manufacturer's warranty on the undercarriage components.**

### Checking Track Shoe Hardware Torque

*NOTE: This procedure is for checking the torque specification on existing track shoe hardware.*

1. Tighten cap screws in sequence to specification.

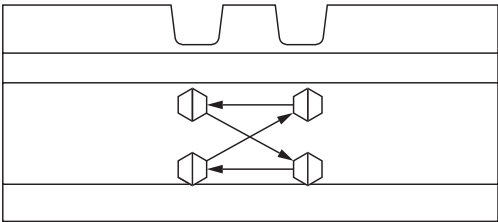
Cap Screw—Torque.	Specification
.....	1556 N·m 1148 lb·ft

2. Cap screws that have turned have reduced tightness and need to be re-torqued. See Re-Torquing Track Shoe Hardware. (Section 3-6.)
3. Check track shoe holes for wear or damage. Replace as necessary.

### Re-Torquing Track Shoe Hardware

*NOTE: This procedure is for re-torquing existing track hardware that was found loose during the Checking Track Shoe Hardware Torque procedure.*

1. Loosen cap screw.
2. Tighten cap screws in sequence to specification.



Cap Screw Torque Sequence

#### Specification

Cap Screw—Initial Torque.	.....	136 N·m 100 lb·ft
---------------------------	-------	----------------------

3. Re-torque cap screws in sequence to specification.

#### Specification

250GLC—Cap Screw—Final Torque.	.....	353 N·m + 1/3 Turn (120°) 260 lb·ft + 1/3 Turn (120°)
290GLC—Cap Screw—Final Torque.	.....	407 N·m + 1/3 Turn (120°) 300 lb·ft + 1/3 Turn (120°)

### Torquing Replacement Track Shoe Hardware

**IMPORTANT: Prevent possible machine damage. Clean shoe and link surfaces of dirt, paint, and debris before installation.**

*NOTE: This procedure is for installing and torquing new track shoe hardware to specification.*

1. Clean shoe and link surfaces of dirt or paint.
2. Tighten cap screws in sequence to specification.

#### Specification

Cap Screw—Initial Torque.	.....	136 N·m 100 lb·ft
---------------------------	-------	----------------------

3. Torque cap screws in sequence to specification.

#### Specification

250GLC—Cap Screw—Final Torque.	.....	353 N·m + 1/3 Turn (120°) 260 lb·ft + 1/3 Turn (120°)
290GLC—Cap Screw—Final Torque.	.....	407 N·m + 1/3 Turn (120°) 300 lb·ft + 1/3 Turn (120°)

DH10862,0000178-19-11MAY18-1/1

TX1255661—UN—19APR18

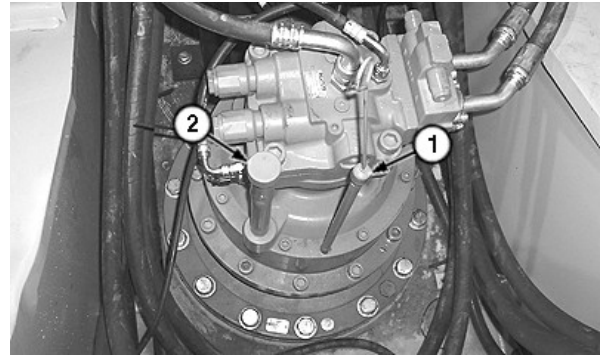
# Maintenance—Every 250 Hours

## Check Swing Gear Case Oil Level

1. Park machine on a level surface.
2. Remove dipstick (1). Wipe dipstick clean and replace completely into tube.
3. Remove dipstick. Oil must be in the dipstick cross-hatch area (3).
4. If oil is needed, remove filler cap (2), and add oil.
5. Check oil level.
6. Replace filler cap.

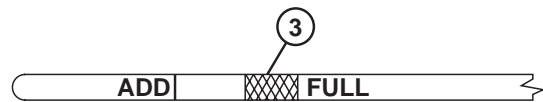
1—Dipstick  
2—Filler Cap

3—Dipstick Cross-Hatch Area



Swing Gear Case

TX1001071A—UN—02DEC05



Dipstick Cross-Hatch Area

TZ16546—UN—29NOV05

ER79617,0000A98-19-05JUN14-1/1

## Drain Water and Sediment from Hydraulic Tank

1. Park machine on a level surface.

2. Stop engine.

Continued on next page

ER79617,0000DDF-19-05JUN14-1/2

**CAUTION:** High pressure release of oil from pressurized system can cause serious burns or penetrating injury. The hydraulic tank is pressurized. Relieve pressure by pushing pressure release button (1).

3. Push the pressure release button (1) to relieve pressure.

4. Remove cap screws (3).

5. Remove hydraulic tank oil cover (2).

**NOTE:** Drain waste into a container. Dispose of waste properly.

6. After oil is cool, loosen drain valve cap screw (4) for several seconds to drain water and sediment into a container. Do not remove cap screw completely. Dispose of waste properly.

7. Check hydraulic oil level. See Check Hydraulic Tank Oil Level. (Section 3-4.)

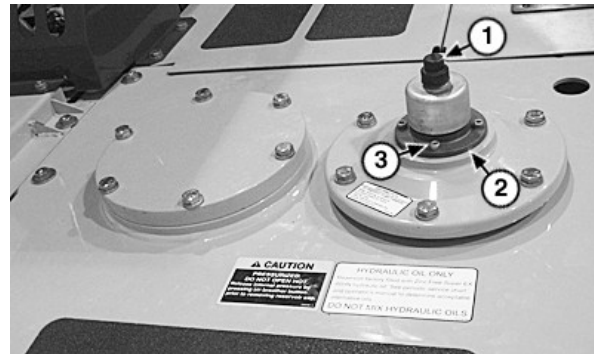
8. Tighten drain valve cap screw, and install hydraulic tank oil cover and cap screws.

1—Pressure Release Button  
2—Hydraulic Tank Oil Cover

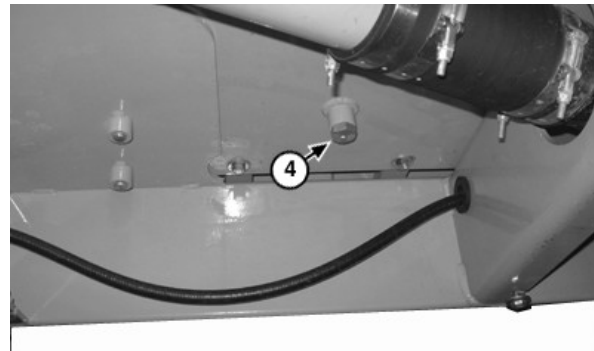
3—Cap Screw (4 used)  
4—Drain Valve Cap Screw



Pressurized Fluids



Hydraulic Tank Oil Cover



Drain Valve Cap Screw

TS281—UN—15APR13

TX1087267A—UN—24JAN11

TX1086692A—UN—07JAN11

ER79617,0000DDF-19-05JUN14-2/2



### Check Pump Drive Gear Case Oil Level

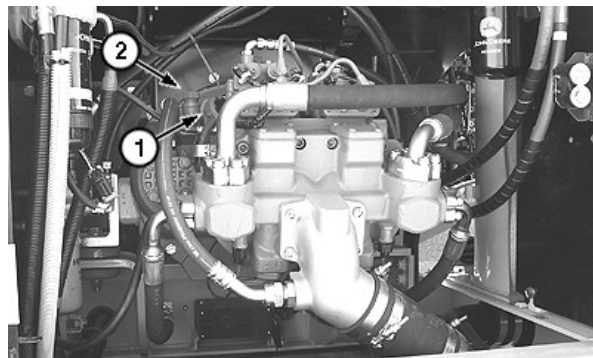
1. Open right service door to access pump drive gear case.
2. Remove dipstick (1).
3. Wipe dipstick clean and insert completely into tube.
4. Remove dipstick.
5. Oil level must be approximately halfway below the H mark. Insert dipstick.

To add oil:

1. Remove filler plug (2).
2. Add oil. See Pump Drive Gear Case Oil. (Section 3-1.)
3. Install filler plug.

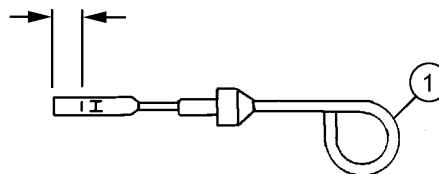
1—Dipstick

2—Filler Plug



T215013A-UN-04OCT05

*Pump Drive Gear Case Oil Level*



T145092-UN-31AUG01

*Pump Drive Gear Case Oil Level*

ER79617,0000A99-19-14APR16-1/1

## Check Hybrid Battery Electrolyte Level—If Equipped

**⚠ 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:

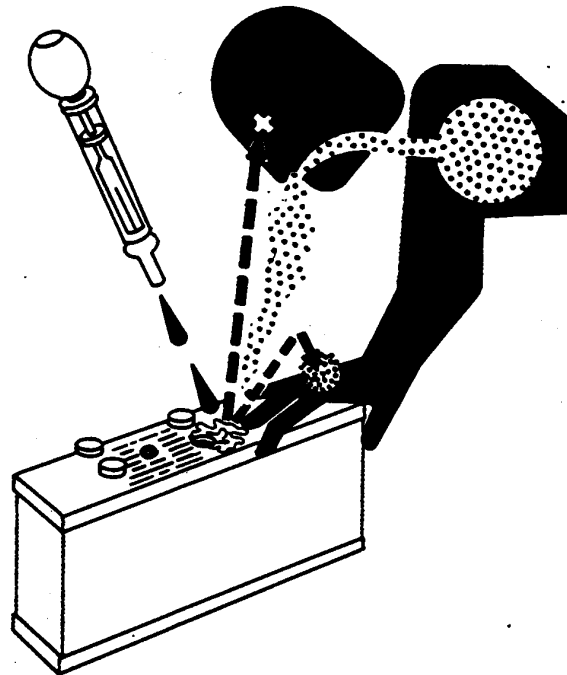
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Using proper jump start procedure.

If acid is spilled on skin:

1. Flush skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush eyes with water for 15–30 minutes.
4. 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).



*Avoid Acid Burns*

### 3. Get medical attention immediately.

1. Remove battery box cover.

Continued on next page

TX, HYBATT, CHK-19-21AUG23-1/2

TS203—UN—23AUG88

**IMPORTANT:** If water is added to batteries during freezing weather, batteries must be charged after water is added to prevent batteries from freezing. Charge battery using a battery charger or by running the engine.

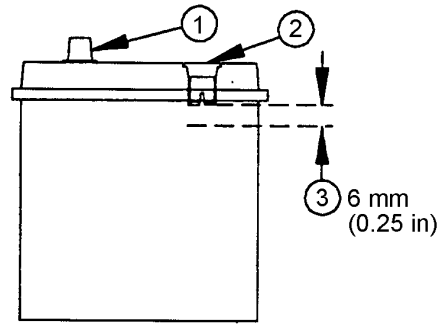
2. Fill each cell to within the specified range with distilled water. DO NOT overfill.

**CAUTION:** Prevent possible injury. ALWAYS remove grounded (-) battery clamp first and replace it last.

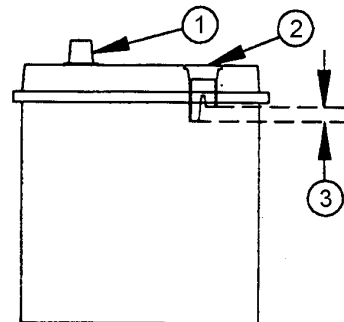
3. Disconnect battery clamps, grounded clamp first.
4. Clean battery terminal (4) and clamps with a stiff brush.
5. Apply lubricating grease (5) around battery terminal base only.
6. Install and tighten clamps, grounded clamp last.

1—Battery Post  
2—Fill Tube  
3—Electrolyte Level Range

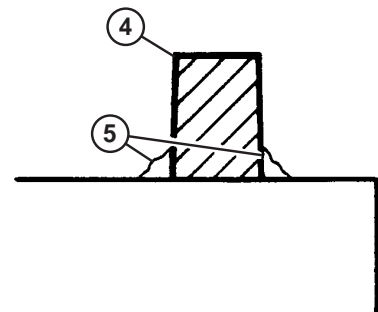
4—Battery Terminal  
5—Lubricating Grease



Battery Terminal and Fill Hole



Fill Level



Terminal and Grease

TX, HYBATT, CHK-19-21AUG23-2/2

TX1208617—UN—05JAN16

T137536—UN—25JAN01

TX1265575—UN—03OCT18

## Check and Adjust Air Conditioner Belt— 6068HT062 and 6068HT082 Engines Only

Visually check the belt for wear. Replace if necessary.

**NOTE:** When a new belt is installed, be sure to readjust the tension after operating the engine for 3 to 5 minutes at slow idle speed to be sure that the new belt is seated correctly.

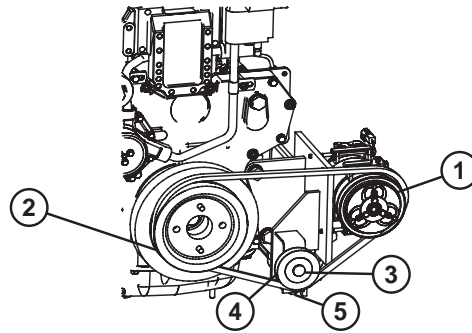
Use the following steps to adjust compressor belt tension:

1. Check compressor belt tension by depressing the midpoint between compressor pulley (1) and crank pulley (2) with thumb.

### Compressor Belt — Specification

Deflection. . . . .	9 mm—12 mm 0.35 in—0.47 in.
Depressing Force. . . . .	98 N 10 kgf 22 lb.-force

2. If tension is not within specifications, loosen cap screw (3).



Air Conditioner Belt

- 1—Compressor Pulley
- 2—Crank Pulley
- 3—Cap Screw
- 4—Tension Pulley
- 5—Cap Screw

3. Move the tension pulley (4) by cap screw (5) until tension is correct. Tighten cap screw.

ER79617,0000E23-19-05JUN14-1/1

TX1001241—UN—20DEC05

## Check Travel Gear Case Oil Level

1. Park the machine on level ground, rotating travel gear case until positioned as shown.

2. Stop engine.

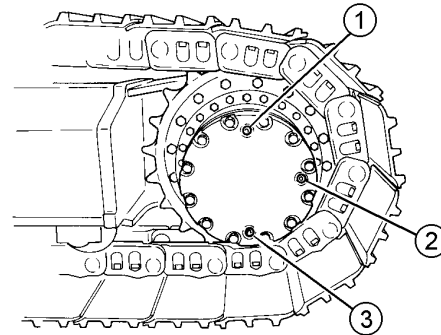
**CAUTION:** High-pressure release of oils from pressurized system can cause serious burns. Wait for travel gear case oil to cool. Keep body and face away from fill plug (1). Gradually loosen fill plug to release pressure.

3. After travel gear case has cooled, slowly loosen fill plug (1) to release air and relieve pressure.

4. Remove check plug (2). Oil must be to bottom of hole.

5. If necessary, remove fill plug and add oil until oil flows out of check plug hole. See Swing Gear Case and Travel Gear Case Oils. (Section 3-1.)

6. Wrap threads of plugs with sealing-type tape. Install plugs. Tighten plugs to specification.



Travel Gear Case Oil Level

- 1—Fill Plug
- 2—Check Plug
- 3—Drain Plug

### Specification

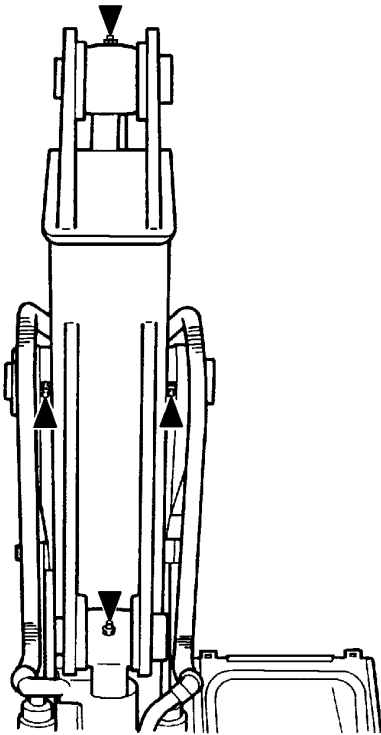
Plug—Torque. . . . .	50 N·m 37 lb·ft
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7. Check second travel gear case oil level.

DB84312,0000147-19-31JAN17-1/1

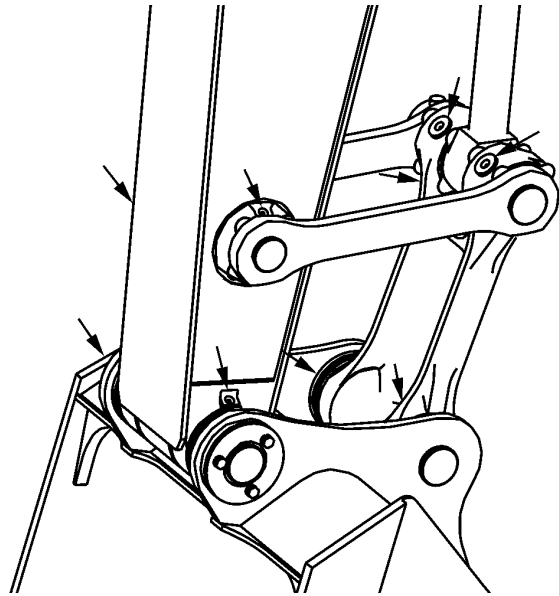
TX1000270—UN—15NOV05

## Lubricate Front End Pin Joints



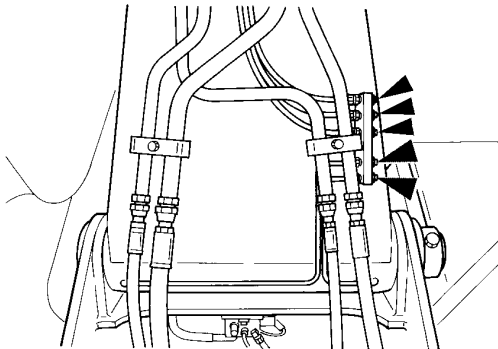
Four Points

T134954—UN—01NOV00



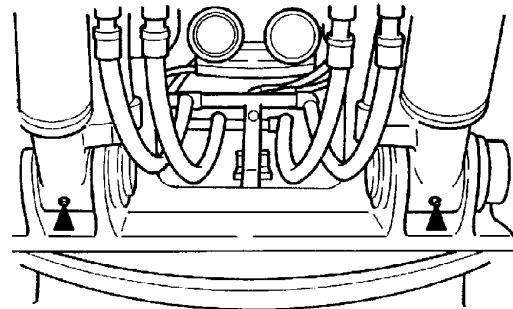
Nine Points

T136448—UN—18DEC00



Five Points

T134956—UN—01NOV00



Two Points

T134957—UN—01NOV00

Lubricate front end pin joints (20 points) until grease escapes from joints. Lubricate every 4 hours for the first 20

hours. Lubricate every 10 hours during first 30—100 hours and when working in mud and water.

VD76477,0000368-19-20FEB18-1/1

## Take Engine Oil Sample

See an authorized John Deere dealer for procedures and

sampling equipment. For more information, see Fluid Sampling Test Ports—If Equipped (4-1).

CN93077,000041E-19-22JUN23-1/1

# Maintenance—Every 500 Hours

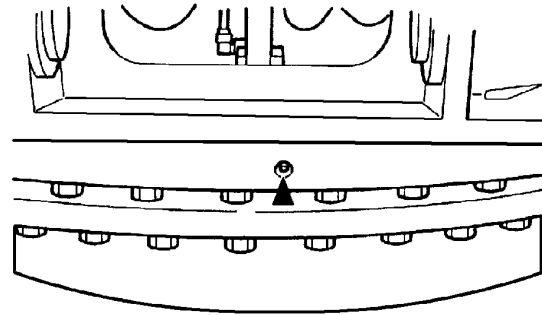
## Lubricate Swing Bearing

**⚠ CAUTION:** Prevent possible injury from unexpected machine movement if controls are moved by another person. Lubricating swing bearing and rotating the upperstructure must be done by one person. Before lubricating swing bearing, clear the area of all persons.

1. Park machine on a level surface.
2. Lower bucket to the ground, stop the engine, and pull pilot shutoff lever to locked (UP) position.
3. Lubricate swing bearing with 8 shots of grease at both grease fittings.
4. Start engine. Raise bucket several inches off the ground and turn upperstructure 45 degrees.

**NOTE:** It is not necessary to start the engine the last time.

5. Repeat steps 2—4 three times.



Swing Bearing

T134968—UN—01NOV00

VD76477,0000396-19-24MAR16-1/1

## Lubricate Swing Bearing Gear

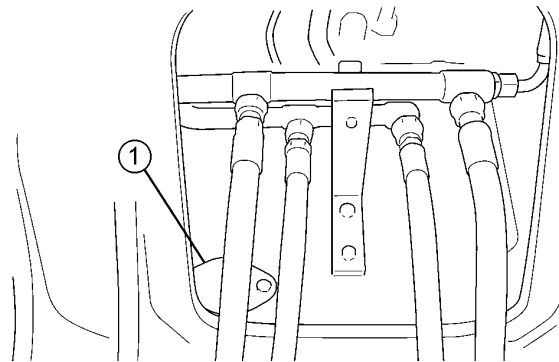
**⚠ CAUTION:** Prevent possible injury from unexpected machine movement if controls are moved by another person. Lubricating swing bearing and rotating the upperstructure must be done by one person. Before lubricating swing bearing gear, clear the area of all persons.

1. Remove swing bearing gear access cover (1).
2. Grease must be 13—25 mm (0.5—1 in) deep, measured from the bottom of the ring gear. The grease must also be free of contamination by dirt and water.

If the grease is contaminated, remove grease and replace with clean grease.

**NOTE:** If water or mud is found in swing gear area, see *Operating in Water and Mud*. (Section 2-3.)

3. Add grease as required (approximately 0.5 kg [1.1 lb] every 90°). See Track Adjuster, Working Tool Pivot, Swing Bearing, and Swing Bearing Gear Grease. (Section 3-1.)



Access Cover

1—Access Cover

**IMPORTANT:** Excessive grease can damage the swing gear case seal.

4. Remove any excess grease from over the top of the swing drive pinion.
5. Install access cover.

T136458—UN—18DEC00

ER79617,0000DE4-19-07APR16-1/1

## Replace Primary Fuel Filter and Water Separator—6068HT073 Engine Only

1. Ensure key switch is in the OFF position.
2. Open right service door to access primary fuel filter and water separator.
3. Thoroughly clean exterior of primary fuel filter and water separator assembly and surrounding area.

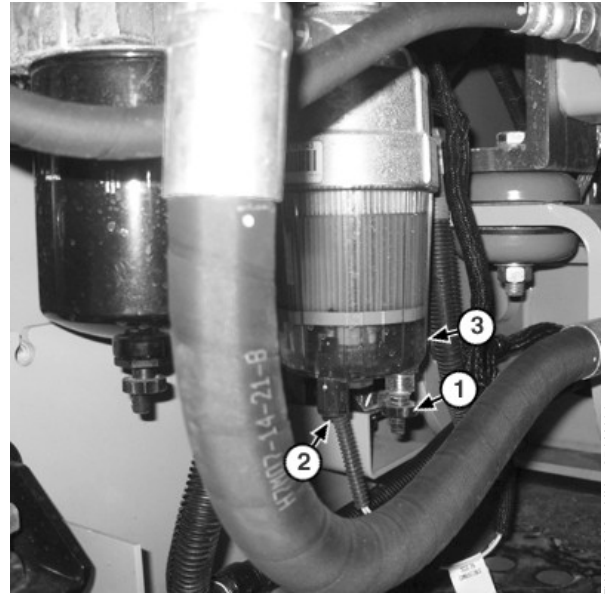
**⚠ CAUTION: Fuel in filter may be under high pressure. Escaping fuel under pressure can penetrate the skin and cause serious injury. Relieve pressure before removing filter.**

4. Disconnect the water-in-fuel (WIF) sensor wiring (2).
5. Loosen drain valve (1) to relieve pressure and drain water and contaminants from water separator bowl (3) into a suitable container. Dispose of waste properly. Close drain valve.
6. Remove water separator bowl from filter element. Clean and dry separator bowl.
7. Inspect bowl. Replace if necessary.
8. Remove filter element and seal from mounting base and discard.

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

**Only lubricate filter seal with diesel fuel before installing.**

9. Install new filter element.



Primary Fuel Filter and Water Separator

- 1—Drain Valve                      3—Water Separator Bowl  
2—Water-in-Fuel (WIF) Sensor  
Wiring

10. Install water separator bowl. Tighten 1/2 turn after seal contacts mounting base.
11. Connect WIF sensor wiring.
12. Prime fuel system and bleed air. See Bleed Fuel System. (Section 4-1.)

ER79617,0000DE9-19-23MAR11-1/1

## Replace Primary Fuel Filter and Water Separator—6068HT062 and 6068HT082 Engines Only

1. Ensure key switch is in the OFF position.
2. Open right service door to access primary fuel filter and water separator (1).
3. Thoroughly clean exterior of primary fuel filter and water separator assembly and surrounding area.

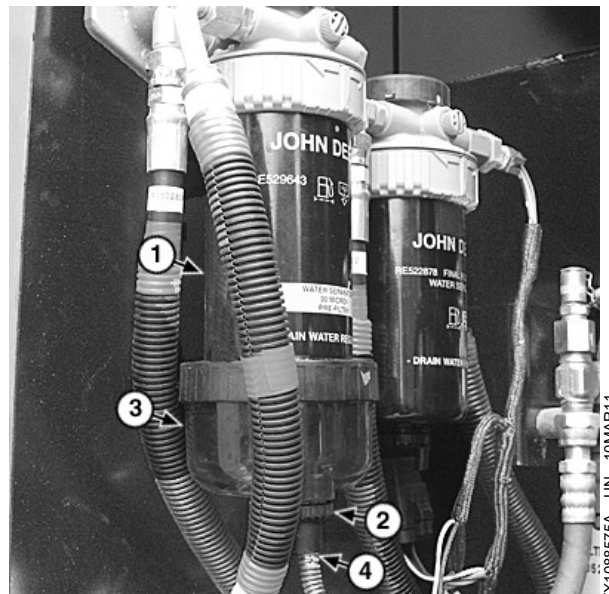
**CAUTION:** Fuel in filter may be under high pressure. Escaping fuel under pressure can penetrate the skin and cause serious injury. Relieve pressure before removing filter.

4. Disconnect the water-in-fuel (WIF) sensor wiring (4).
5. Loosen drain valve (2) to relieve pressure and drain water and contaminants from water separator bowl (3) into a suitable container. Dispose of waste properly. Close drain valve.
6. Remove water separator bowl from filter element. Clean and dry separator bowl.
7. Inspect bowl. Replace if necessary.
8. Remove filter element and seal from mounting base and discard.

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

**Only lubricate filter seal with diesel fuel before installing.**

9. Install new filter element.



Primary Fuel Filter and Water Separator

- |                                           |                                     |
|-------------------------------------------|-------------------------------------|
| 1—Primary Fuel Filter and Water Separator | 3—Water Separator Bowl              |
| 2—Drain Valve                             | 4—Water-in-Fuel (WIF) Sensor Wiring |

10. Install water separator bowl. Tighten 1/2 turn after seal contacts mounting base.
11. Connect WIF sensor wiring.
12. Prime fuel system and bleed air. See Bleed Fuel System. (Section 4-1.)

OUT4001,0000787-19-25MAR11-1/1



## Replace Final Fuel Filter

**NOTE:** Do not clean fuel tank inlet screen and change fuel filter at the same time. Clean fuel tank inlet screen and run engine before changing fuel filter.

1. Ensure key switch is in the OFF position.
2. Open right service door to access final fuel filter (1).
3. Thoroughly clean exterior of final fuel filter and surrounding area.

**NOTE:** Some fuel will be present in final fuel filter housing.

4. Remove final fuel filter using a filter wrench. Dispose of used filter properly.
5. Clean filter mounting base (2).

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

**Only lubricate filter seal with diesel fuel before installing.**

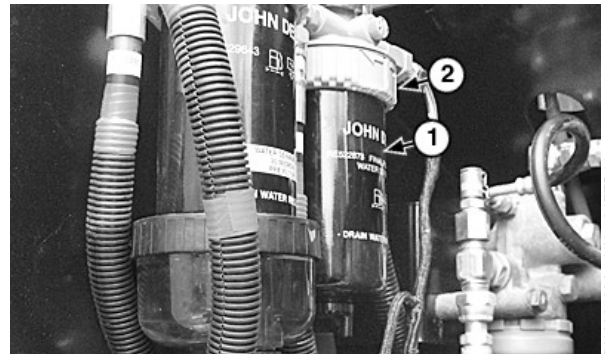
6. Install new final fuel filter onto mounting base. Rotate filter housing clockwise by hand. Tighten one turn after seal contacts mounting base.
7. Prime fuel system and bleed air. See Bleed Fuel System. (Section 4-1.)

1—Final Fuel Filter

2—Mounting Base



6068HT073 Engine Shown



6068HT062 and 6068HT082 Engine Shown

ER79617,0000DEA-19-30MAR11-1/1

## Replace Auxiliary Fuel Filter and Water Separator—If Equipped

1. Ensure key switch is in the OFF position.
2. Open right engine service door to access auxiliary fuel filter and water separator (1).
3. Thoroughly clean exterior of auxiliary fuel filter and water separator assembly and surrounding area.

**CAUTION:** Fuel in filter may be under high pressure. Escaping fuel under pressure can penetrate the skin and cause serious injury. Relieve pressure before removing filter.

**NOTE:** Drain waste into a container. Dispose of waste properly.

4. Loosen drain valve (3) to relieve pressure and drain contaminates from water separator bowl (2). Dispose of waste properly. Close drain valve.
5. Rotate auxiliary fuel filter counterclockwise and remove from mounting base. Remove water separator bowl from auxiliary fuel filter. Dispose used fuel filter properly.
6. Clean filter mounting base.
7. Clean and dry water separator bowl. Replace if necessary.
8. Install water separator bowl to new auxiliary fuel filter.

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

**Only lubricate filter seal with diesel fuel before installing.**

9. Install new auxiliary fuel filter onto mounting base. Rotate filter housing clockwise by hand. Tighten 1/2—3/4 turn after seal contacts mounting base.



6068HT073 Engine Shown



6068HT062 and 6068HT082 Engine Shown

- |                                             |               |
|---------------------------------------------|---------------|
| 1—Auxiliary Fuel Filter and Water Separator | 3—Drain Valve |
| 2—Water Separator Bowl                      |               |

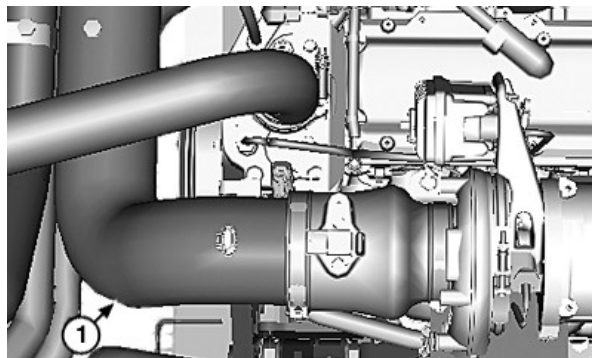
10. Prime fuel system and bleed air. See Bleed Fuel System. (Section 4-1.)
11. Operate engine and check for leaks.
12. Tighten filter element and bowl only enough to stop leaks.

ER79617,0000DEC-19-25MAR11-1/1

## Check Air Intake Hoses

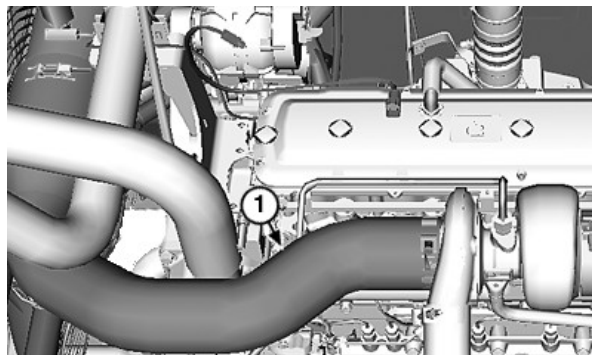
1. Check air intake hoses (1) for cracks. Replace as necessary.
2. Check for loose connections and tighten clamps as necessary.

1—Air Intake Hose



TX1090015—UN—28MAR11

*Air Intake Hose—6068HT073 Engine Shown*



TX1090017—UN—28MAR11

*Air Intake Hose—6068HT062 and 6068HT082 Engine Shown*

ER79617,0000E43-19-28MAR11-1/1

## Drain and Refill Engine Oil and Replace Filter

1. Run engine to warm oil.
2. Park machine on a level surface.
3. Stop engine.
4. Remove middle access cover under the machine. Open drain valve on side of engine oil pan. Allow oil to drain into a container. Dispose of waste oil properly.
5. Close drain valve and install access cover.
6. Turn engine oil filter (3) counterclockwise to remove. Clean mounting surface on base.
7. Apply thin film of oil to rubber gasket of new filter.
8. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
9. Tighten filter 1/2—3/4 turn more.
10. Remove filler cap (2) and fill engine with oil. For specific engine oil, see applicable Diesel Engine Oil story. (Section 3-1.)

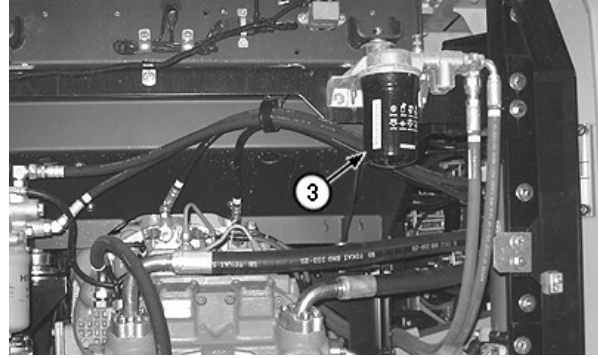
### 250GLC and 290GLC — Specification

Engine Oil With Filter—Capacity. . . . . 19.5 L  
5.2 gal.

11. Install filler cap.
12. Start engine.
13. Stop engine, remove dipstick (1) and check oil level. Engine is full when oil level is in the cross-hatch area.
14. Check for any leakage at filter. Tighten filter just enough to stop leakage.

1—Dipstick  
2—Filler Cap

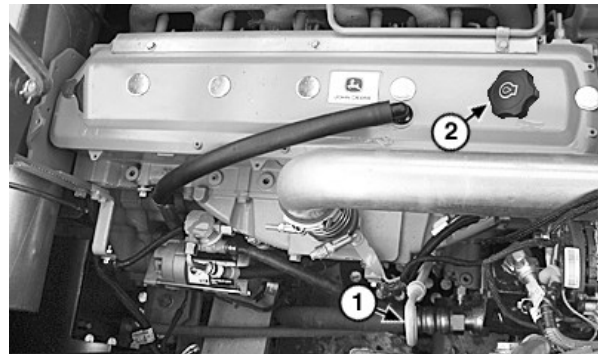
3—Engine Oil Filter



Engine Oil Filter



Engine Oil Filler Cap and Dipstick—6068HT073 Engine Shown



Engine Oil Filler Cap and Dipstick—6068HT062 and 6068HT082 Engine Shown

OUT4001,0000782-19-05JUN14-1/1

## Clean Cab Fresh Air and Cab Recirculating Air Filters

**NOTE:** Replace filters after the sixth cleaning.

### Removing Cab Fresh Air Filter:

1. Unlock cab side cover (1) on left side of machine with key to access fresh air filter (2).
2. Squeeze tab on each side of the filter to remove.

### Removing Cab Recirculating Air Filter:

1. Move operator's seat forward to access recirculating air filter (3) located under the rear deck.
2. Squeeze tab (4) on right side of filter to remove.

### Cleaning Filters:

1. Clean filters in one of two ways.

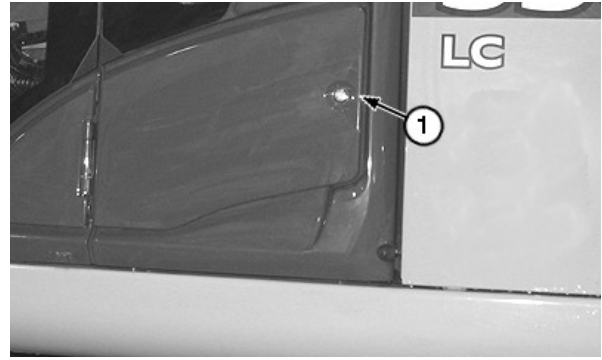
**CAUTION:** Reduce compressed air to less than 196 kPa (1.96 bar) (28.4 psi) when using for cleaning purposes. Clear area of bystanders, guard against flying chips, and wear personal protection equipment including eye protection.

- Use compressed air opposite to the normal air flow.
- Wash filters with water. Soak the filters in warm, soapy water for 5 minutes. Flush filter. Allow filter to dry before installing.

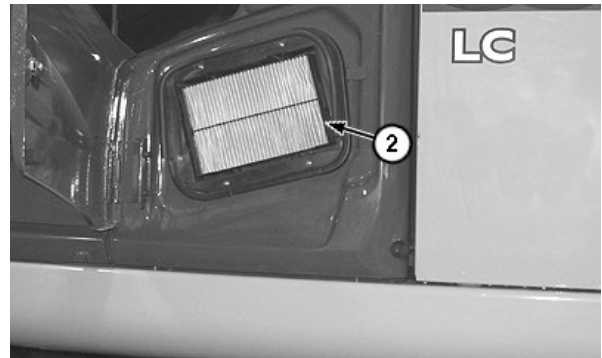
2. Install filter.

1—Cab Side Cover  
2—Fresh Air Filter

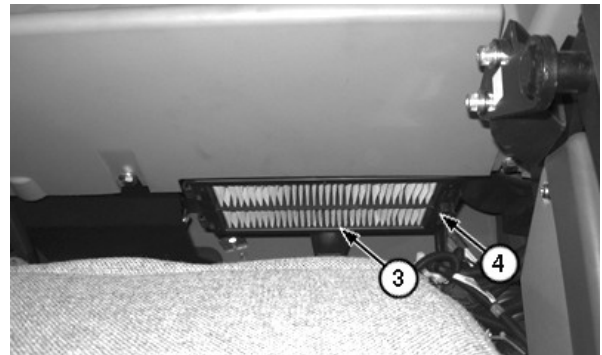
3—Recirculating Air Filter  
4—Tab



Cab Side Cover



Cab Fresh Air Filter



Cab Recirculating Air Filter

OUT4001,0000781-19-22AUG12-1/1

## Take Fluid Samples

See your authorized dealer for taking the following fluid samples:

- Hydraulic Oil

- Coolant
- Diesel Fuel
- Swing Gear Case Oil
- Travel Gear Case Oil
- Pump Drive Gear Case Oil

ER79617,0000A8F-19-22MAR10-1/1

# Maintenance—Every 1000 Hours

## Drain and Refill Swing Gear Case Oil

### Specification

250GLC Swing Gear Case—Oil

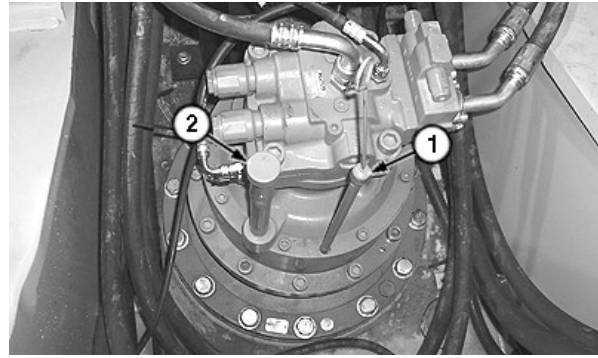
Capacity. . . . . 7.0 L  
1.8 gal.

### Specification

290GLC Swing Gear Case—Oil

Capacity. . . . . 8.5 L  
2.2 gal.

1. Remove plug mounted on end of drain pipe to drain oil into a container. Dispose of waste oil properly.
2. Install plug.
3. Remove filler cap (2), and add oil. See Swing Gear Case and Travel Gear Case Oils. (Section 3-1.)
4. Install filler cap.
5. Check oil level on dipstick (1).



TX1001071A—UN—02DEC05

*Swing Gear Case Oil*

1—Dipstick

2—Filler Cap

ER79617,0000DEE-19-05JUN14-1/1

## Replace Hydraulic Tank Oil Filter

1. Park machine on a level surface with arm cylinder fully retracted and bucket cylinder fully extended.

2. Stop engine.

**CAUTION:** High pressure release of oil from pressurized system can cause serious burns or penetrating injury. The hydraulic tank is pressurized. **DO NOT** remove hydraulic cap. Relieve pressure by pushing the pressure release button (7).

3. To release pressure, push the pressure release button (7).

4. Hold down hydraulic oil filter cover (8) against light spring load when removing the last two cap screws.

5. Remove spring (3), valve (5), and filter element (4).

6. Remove and discard filter element and O-ring (6).

**NOTE:** Remove element, and inspect for metal particles and debris in bottom of filter canister. Excessive amounts of brass and steel particles can indicate a hydraulic pump, motor, or valve malfunction, or a malfunction in process. A rubber type of material can indicate cylinder packing problem.

7. Install filter element, valve, and spring.

8. Install cover (1) and tighten cap screws (2) to specification

### Specification

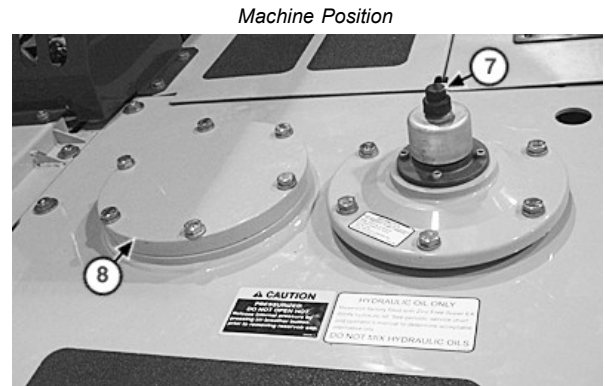
Cap Screw—Torque. . . . . 49 N·m  
36 lb.-ft.

1—Cover  
2—Cap Screw (6 used)  
3—Spring  
4—Filter Element

5—Valve  
6—O-Ring  
7—Pressure Release Button  
8—Hydraulic Oil Filter Cover

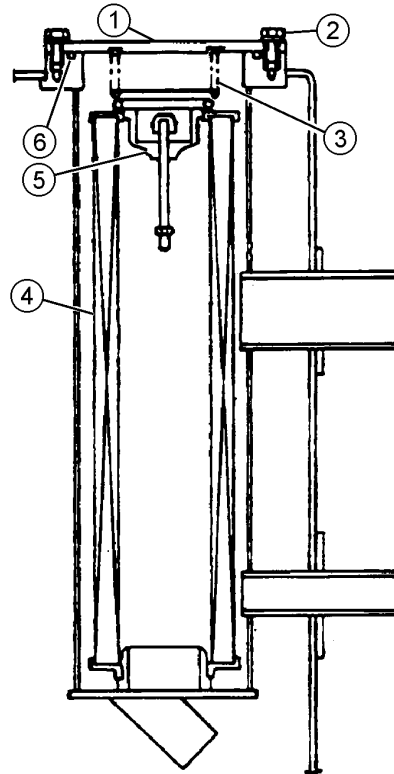


T6811A1—UN—18OCT88



TX1087386A—UN—27JAN11

Hydraulic Tank Cover



Hydraulic Filter Element

TX1087387—UN—27JAN11

ER79617,0000DEF-19-05JUN14-1/1

## Replace Pilot Oil Filter

**CAUTION:** High pressure release of oil from pressurized system can cause serious burns or penetrating injury. The hydraulic tank is pressurized. Relieve pressure by pushing the pressure release button (5).

1. To relieve hydraulic pressure, push the pressure release button (5).
2. Open right service door to access pilot oil filter (4).
3. Remove filter canister (1) from head cover by turning counterclockwise.
4. Clean head cover contact area.
5. Remove filter element (2) and O-ring (3).
6. Install new O-ring and filter element.
7. Install filter canister clockwise by hand. Check for any leakage.

1—Filter Canister  
2—Filter Element  
3—O-Ring

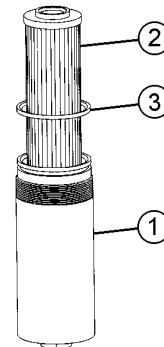
4—Pilot Oil Filter  
5—Pressure Release Button



Hydraulic Tank Cover



Pilot Oil Filter



Filter Canister

ER79617,0000DF1-19-10JUN11-1/1

TX1087392A—UN—27JAN11

TX1087393A—UN—27JAN11

T136461—UN—19DEC00



## Drain and Refill Pump Drive Gear Case Oil

1. Open right service door to access pump drive gear case.
  2. Remove filler plug (2).
- NOTE:** Drain waste into a container. Dispose of waste properly.
3. Remove drain plug (3). Allow oil to drain into a container. Dispose of waste oil properly.
  4. Apply liquid pipe thread sealant to drain plug. Install plug.

### Specification

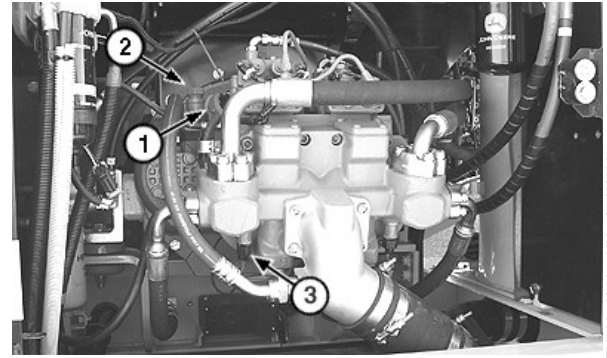
Pump Drive Gear Case—Oil

Capacity. . . . . 1.1 L  
1.2 qt

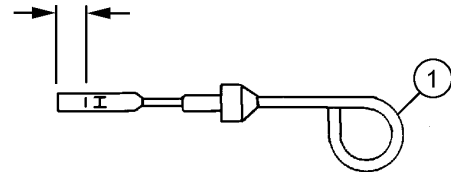
5. Add oil. See Pump Drive Gear Case Oil. (Section 3-1.)
6. Remove dipstick (1), and check oil level. Oil level must be approximately halfway below H mark.
7. Install filler plug.
8. Install dipstick.
9. Close right service door.

1—Dipstick  
2—Filler Plug

3—Drain Plug



Pump Drive Gear Case



Pump Drive Gear Case Oil Level

ER79617,0000DF5-19-05JUN14-1/1

## Remove and Clean Open Crankcase Ventilation (OCV) Hose—6068HT073 Engine Only

1. Open engine cover on top of machine.
2. Remove the open crankcase ventilation (OCV) hose (1).

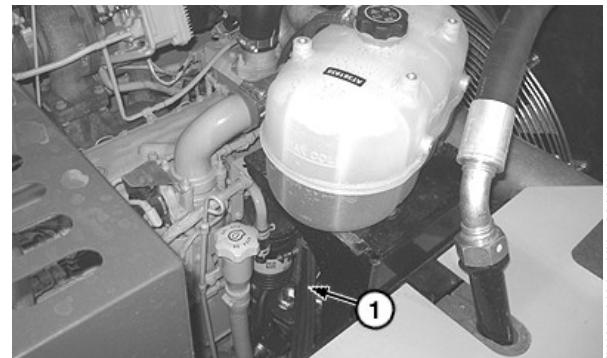
**IMPORTANT:** Restrictions in the OCV hose can cause sludge to form in crankcase. This can lead to clogging of oil passages, filters, and screens, resulting in serious engine damage.

3. Inspect OCV hose for dirt and debris.

**NOTE:** Clean the OCV hose at shorter intervals if operating machine in dusty conditions.

4. Clean OCV hose with solvent and compressed air if restricted.

5. Install OCV hose and close engine cover.



OCV Hose

1—Open Crankcase Ventilation (OCV) Hose

OUT4001,000078B-19-28JAN11-1/1

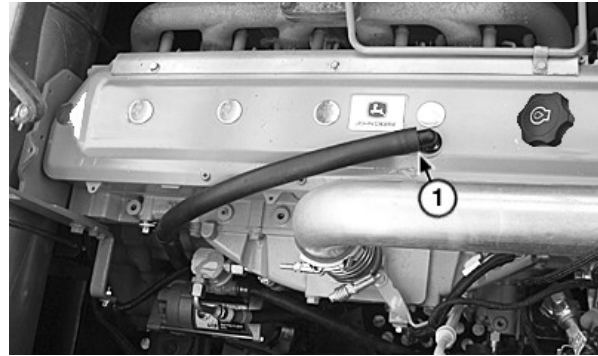
## Remove and Clean Engine Crankcase Ventilation Tube—6068HT062 and 6068HT082 Engines Only

1. Open engine cover.
2. Remove and clean the engine crankcase ventilation tube (1).

3. Inspect engine crankcase ventilation tube for dirt and debris.

**NOTE:** Clean the engine crankcase ventilation tube at shorter intervals if operating machine in dusty conditions.

4. Clean engine crankcase ventilation tube with solvent and compressed air if restricted.
5. Install engine crankcase ventilation tube and close engine cover.



TX1088678A—UN—24FEB11

Engine Crankcase Ventilation Tube

1—Engine Crankcase Ventilation Tube

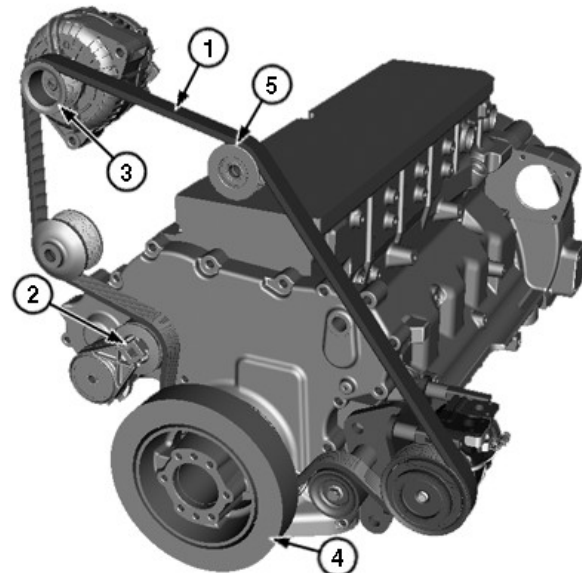
ER79617,0000E2F-19-30MAR11-1/1

## Inspect Serpentine Belt—6068HT073 Engine Only

1. Check belt (1) regularly for wear, especially for cracks at the bottom of grooves and for frayed edges.
2. If necessary, replace belt.
3. Install a 1/2 in. drive socket wrench to the belt tension adjuster (2). Turn wrench to pull tension adjuster pulley away from belt, releasing belt tension.
4. Hold tension adjuster away from belt while removing old belt and installing new belt.
5. Slowly release wrench tension to allow tension adjuster to move against new belt. Tension is automatically adjusted.
6. Remove wrench.

1—Belt  
2—Belt Tension Adjuster  
3—Alternator

4—Crankshaft Pulley  
5—Idler Pulley (2 used)



TX1087419—UN—28JAN11

Serpentine Belt

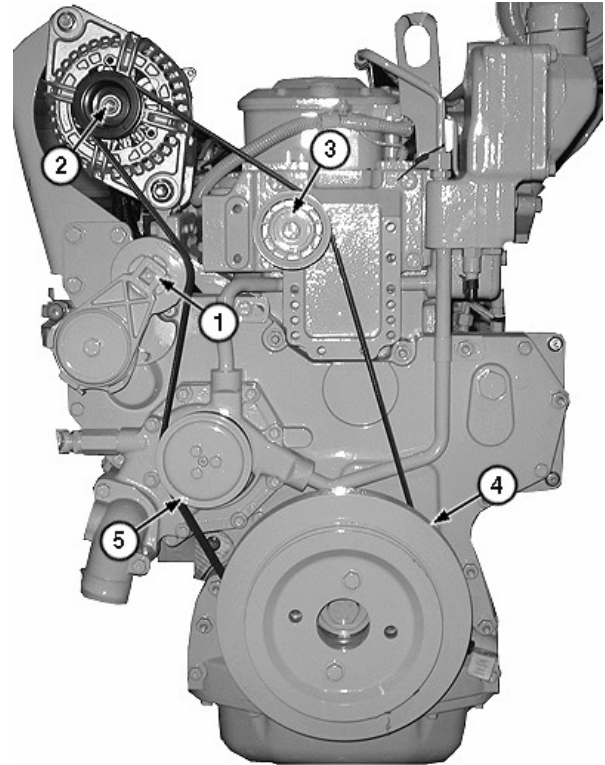
ER79617,0000DF3-19-15JUN15-1/1

### Inspect Serpentine Belt—6068HT062 and 6068HT082 Engines Only

1. Check belt regularly for wear, especially for cracks at the bottom of grooves and for frayed edges.
2. If necessary, replace belt.
3. Install a 1/2 in. drive socket wrench to the belt tension adjuster (1). Turn wrench to pull tension adjuster pulley away from belt, releasing belt tension.
4. Hold tension adjuster away from belt while removing old belt and installing new belt.
5. Slowly release wrench tension to allow tension adjuster to move against new belt. Tension is automatically adjusted.
6. Remove wrench.

1—Belt Tension Adjuster  
2—Alternator  
3—Idler Pulley

4—Crankshaft Pulley  
5—Coolant Pump



Serpentine Belt

TX1016949A—UN—20DEC06

ER79617,0000E24-19-11FEB11-1/1

## Replace Air Cleaner Elements

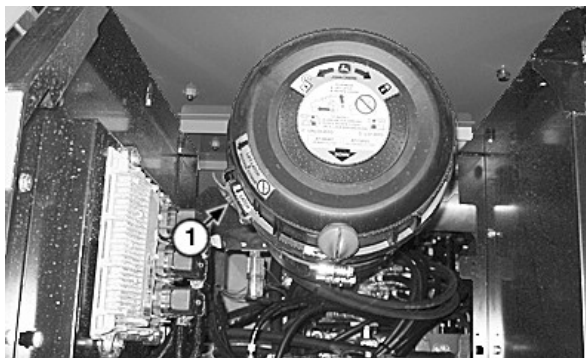
### Early Production (S.N. —XXXXXX)

1. Open left front service door to access the air cleaner.
2. Release latch (1) to unlock cover.
3. Rotate cover counterclockwise, and remove cover.
4. Remove primary element (2).
5. Remove secondary element (3).
6. Clean the inside of the filter canister.
7. Install elements, making sure the secondary element is centered in canister.
8. Replace cover and secure latch.
9. Close service door.

1—Latch

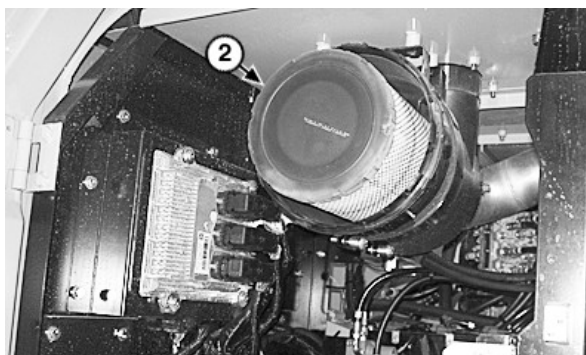
2—Primary Element

3—Secondary Element



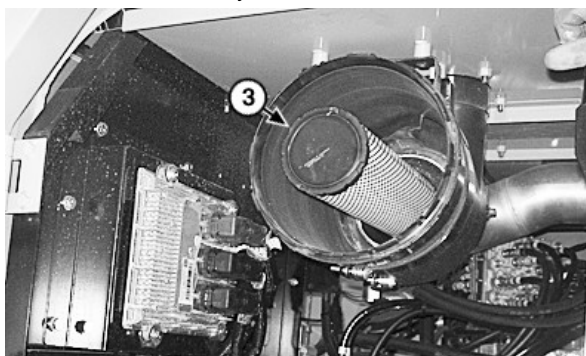
TX1086283A—UN—28DEC10

Air Cleaner Cover Latch



TX1086284A—UN—28DEC10

Primary Air Cleaner Element



TX1086285A—UN—28DEC10

Secondary Air Cleaner Element

Continued on next page

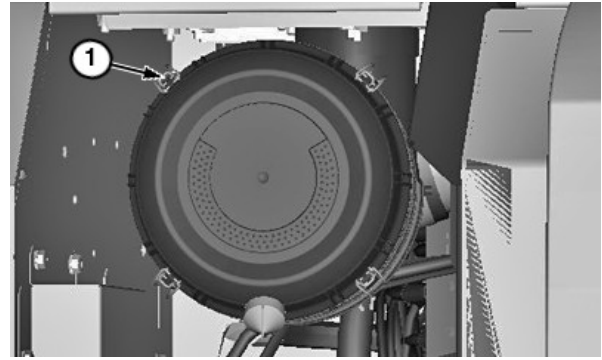
ER79617,0000D7D-19-19JUN14-1/2

### Late Production (S.N. XXXXXX—)

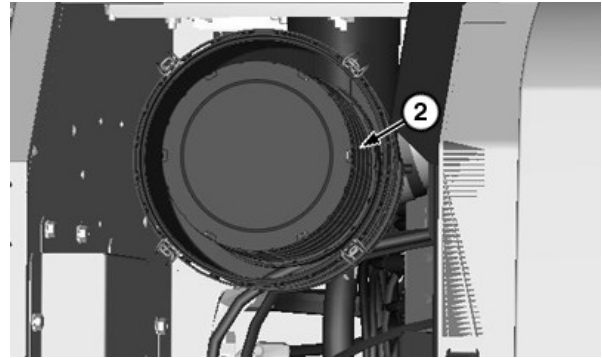
1. Open left front service door to access the air cleaner.
2. Release latches (1) to unlock cover.
3. Remove cover.
4. Remove primary element (2).
5. Remove secondary element (3).
6. Clean the inside of the filter canister.
7. Install elements, making sure the secondary element is centered in canister.
8. Replace cover and secure latches.
9. Close service door.

1—Latch (4 used)  
2—Primary Element

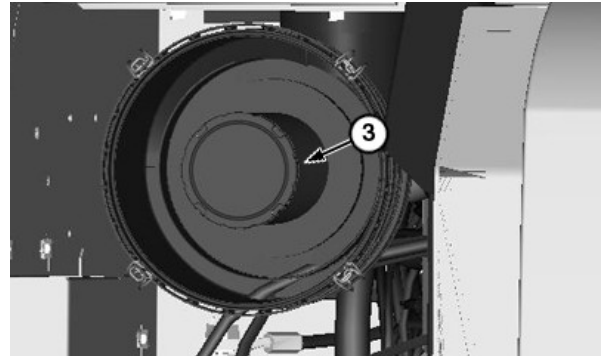
3—Secondary Element



Air Cleaner Cover Latch



Primary Air Cleaner Element



Secondary Air Cleaner Element

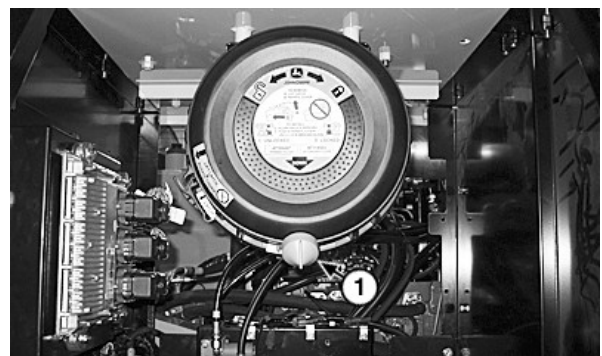
ER79617,0000D7D-19-19JUN14-2/2

### Replace Air Cleaner Dust Unloader Valve

**NOTE:** A missing, damaged, or hardened dust unloader valve (1) will cause the air filter elements to be ineffective.

1. On the left side of the machine, open the front service door to access the dust unloader valve (1).
2. Twist and pull on the dust unloader valve to remove from the air cleaner cover.
3. Install new dust unloader valve on the air cleaner cover.

1—Dust Unloader Valve



Dust Unloader Valve

ER79617,0000D7B-19-03APR20-1/1

## Check Coolant Condition

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

*NOTE: Coolant should be checked every 1000 hours or 1 year, or when replacing 1/3 or more of coolant using SERVICEGARD™ tool program.*

1. Open engine cover to access surge tank.
2. Test engine coolant. See Testing Coolant Freeze Point (3-1).
3. Install surge tank cap.
4. Close engine cover.

*SERVICEGARD is a trademark of Deere & Company*



*Pressurized Fluids*

TS281—UN—15APR13

KR46761,0000BB7-19-26OCT23-1/1

# Maintenance—Every 2000 Hours

## Check and Adjust Engine Valve Lash

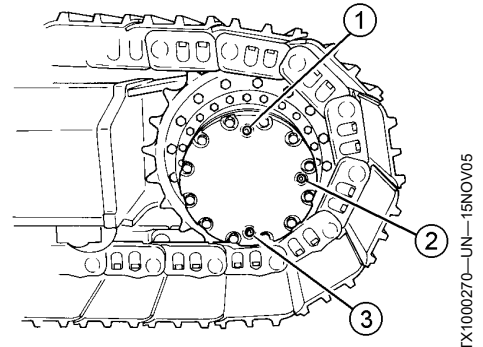
See an authorized John Deere dealer for engine valve clearance adjustment.

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

## Drain and Refill Travel Gear Case Oil

1—Fill Plug  
2—Check Plug

3—Drain Plug



Travel Gear Case Oil

ER79617,0000DFB-19-14APR16-1/2

1. Park the machine on level ground, rotating travel gear case until positioned as shown.

2. Stop engine.

**CAUTION:** High-pressure release of oils from pressurized system can cause serious burns. Wait for travel gear case oil to cool. Keep body and face away from fill plug (1). Gradually loosen fill plug to release pressure.

3. After travel gear case has cooled, slowly loosen fill plug (1) to release air and relieve pressure.

4. Remove drain plug (3). Allow oil to drain into a container. Dispose of waste oil properly.

5. Wrap threads of drain plug with a sealing-type tape. Install plug. Tighten plug to specification.

### Specification

Plug—Torque. . . . . 50 N·m  
37 lb·ft

6. Remove fill plug and check plug (2).

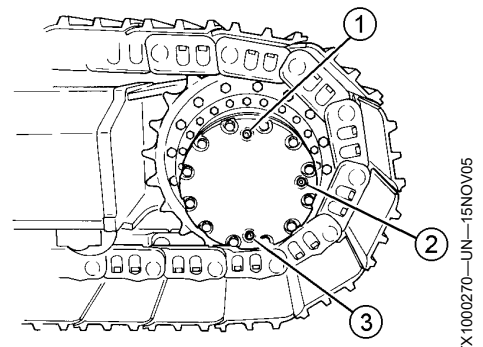
7. Add oil until oil flows out of check plug hole. See Swing Gear Case and Travel Gear Case Oils. (Section 3-1.)

### Specification

250GLC Travel Gear Case—Oil  
Capacity (each). . . . . 6.2 L  
1.6 gal.

1—Fill Plug  
2—Check Plug

3—Drain Plug



Travel Gear Case

290GLC Travel Gear Case—Oil  
Capacity (each). . . . . 7.6 L  
2.0 gal.

8. Wrap threads of check plug and fill plug with sealing-type tape. Install plugs. Tighten plugs to specification.

9. Change oil of second travel gear case.

ER79617,0000DFB-19-14APR16-2/2

## Replace Open Crankcase Ventilation (OCV) Filter—6068HT073 Engine Only

See your authorized dealer.

ER79617,0000DFD-19-28JAN11-1/1

## Maintenance—Every 4000 Hours

---

### **Replace Engine Crankshaft Damper— 6068HT062 and 6068HT082 Engines Only**

The crankshaft damper assembly is not repairable and

should be replaced every 4000 hours, or whenever crankshaft is replaced. Consult your local John Deere dealer.

ER79617,0000E14-19-14APR15-1/1




# Maintenance—Every 5000 Hours

## Drain and Refill Hydraulic Tank Oil

*NOTE: Change original factory fill hydraulic oil after first 5000 hours. Change every 5000 hours thereafter if using Super EX 46HN, if using alternative oils see Hydraulic Oil. (Section 3-1.)*

*NOTE: Perform this service at the 5000 hour interval when operating in normal conditions. When operating with an attachment, drain and refill as necessary.*

 **CAUTION:** Avoid personal injury from high pressure fluid. High pressure release of oil from pressurized system can cause serious burns or penetrating injury. Relieve pressure by pushing pressure release button (5).

**IMPORTANT:** Prevent damage to hydraulic system components. **DO NOT** run engine without oil in the tank.

Avoid mixing different brands or types of oils. Oil manufacturers engineer their oils to meet certain specifications and performance requirements. Mixing different oil types can degrade lubricant and machine performance.

This excavator is factory filled with Super EX 46HN extended life zinc-free hydraulic oil. Avoid servicing this excavator with products that do not meet this specification. If oils have been mixed or if alternate service oils are desired, the complete hydraulic system needs to be totally flushed by an authorized dealer.

Continued on next page

ER79617,0000DA6-19-28AUG20-1/3

1. Park machine on level surface with upperstructure rotated 90° for easier access.
2. Position machine with arm cylinder fully retracted and bucket cylinder fully extended.
3. Stop engine.

**⚠ CAUTION: Avoid personal injury from high pressure fluid. High pressure release of oil from pressurized system can cause serious burns or penetrating injury. Relieve pressure by pushing pressure release button.**

4. To relieve pressure, press the pressure release button (5).
5. Remove cap screws (6).
6. Remove hydraulic tank oil cover with suction screen (7).

#### Specification

Hydraulic Tank—Oil Capacity. . . . . 147.6 L  
39.0 gal.

5—Pressure Release Button  
6—Cap Screw (6 used)

7—Hydraulic Tank Oil Cover  
With Suction Screen



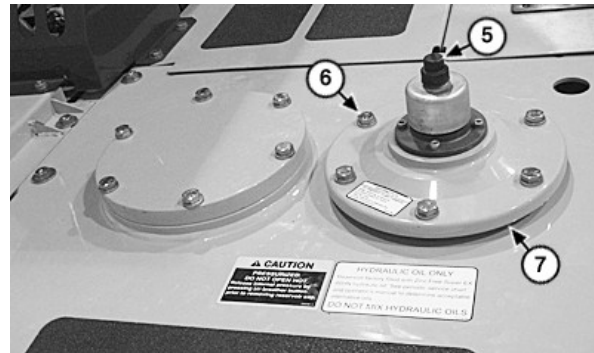
Pressurized Fluids

TS281—UN—15APR13



T6811AJ—UN—18OCT88

Machine Position



TX1086691A—UN—08JAN11

Hydraulic Tank Oil Cover

Continued on next page

ER79617,0000DA6-19-28AUG20-2/3

**NOTE:** Drain waste into a container. Dispose of waste properly.

7. Remove drain valve cap screw (4). Allow oil to drain into a container. Dispose of waste oil properly.
8. Clean inside of tank and suction screen.

**NOTE:** The hydraulic tank oil filter and pilot oil filter can be changed at this point in the procedure. See Maintenance—Every 1000 Hours. (Section 3-9.)

9. Install suction screen with cover. Suction screen must seal against outlet pipe in bottom of tank. If necessary, loosen nut (2) to adjust rod length.
10. Replace cap screw.

**IMPORTANT:** If the hydraulic pump is not filled with oil, it will be damaged when the engine is started.

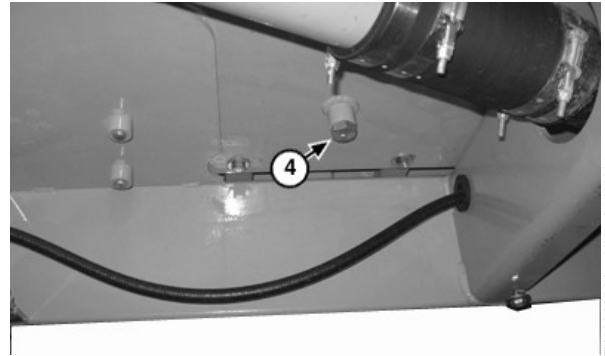
11. Add oil until it is between marks on sight glass.

**Specification**

Suction Screen Rod (1)—Length. . . . .	869 mm 34.2 in.
Suction Screen Rod Nut—Torque. . . . .	17 N·m 150 lb.-in.
Hydraulic Cover Cap Screw—Torque . . . . .	49 N·m 36 lb.-ft.

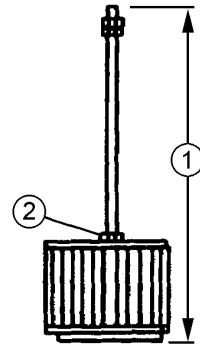
12. Remove air bleed plugs (3) from hydraulic pump until oil flows from bleed holes.
13. Install air bleed plugs in hydraulic pump.
14. Check oil level in sight glass. Add oil if necessary. Install and tighten tank cover.
15. Purge air from cylinders and swing motor by slowly cycling hydraulic functions.

- |                          |                         |
|--------------------------|-------------------------|
| 1—Suction Screen Rod     | 3—Bleed Plug (2 used)   |
| 2—Suction Screen Rod Nut | 4—Drain Valve Cap Screw |



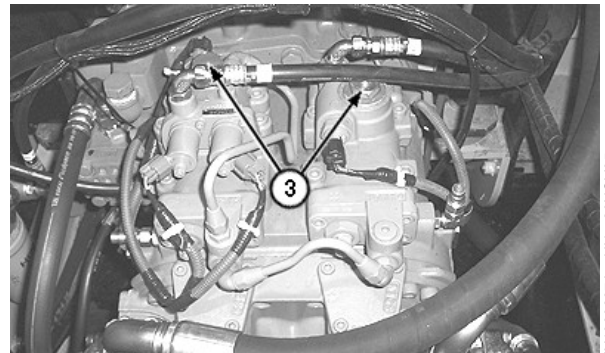
TX1086692A—UN—07 JAN11

Drain Valve Cap Screw



Suction Screen

T135193—UN—08 NOV00



TX1000837A—UN—29 NOV05

Bleed Plugs

ER79617,0000DA6-19-28AUG20-3/3

## Replace Hydraulic Tank Vent Cap Filter



Pressurized Fluids

TS281—UN—15APR13



T8811A1—UN—18OCT88

**CAUTION:** High pressure release of oil from pressurized system can cause serious burns or penetrating injury. Relieve by pushing pressure release button (5).

To prevent possible burn injury from hot hydraulic oil, wait for hydraulic oil to cool before starting work.

1. Park machine on solid level surface as shown at right. Stop engine.

**CAUTION:** High pressure release of oil from pressurized system can cause serious burns or penetrating injury. Relieve by pushing pressure release button.

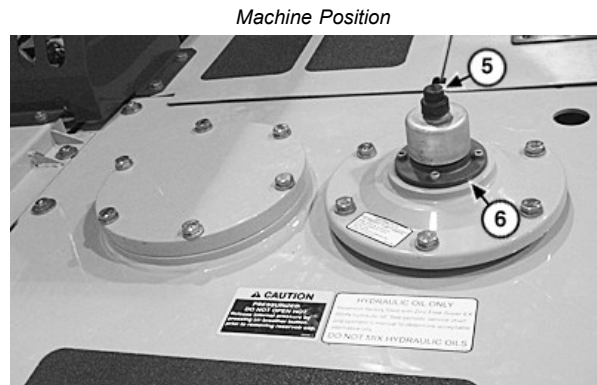
2. Push the pressure release button (5) on top of the hydraulic tank oil cover (6).
3. Remove rubber pressure release button.
4. Remove cap screw under the pressure release button (1).
5. Remove hydraulic tank vent cap filter cover (2) by turning counterclockwise.
6. Remove vent cap filter (3). Install new filter.

**IMPORTANT:** Do not allow water or contaminants between cover (2) and body (4).

7. Reinstall filter cover until it comes in contact with the filter element. Then, further tighten the cover 1/4 turn.
8. Install cap screw and pressure release button.

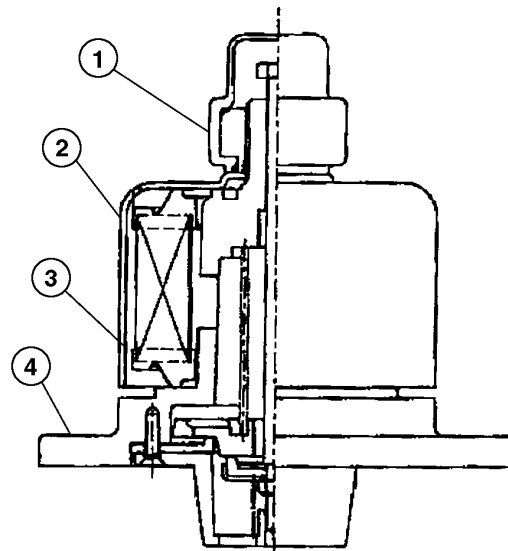
- 1—Pressure Release Button  
2—Hydraulic Tank Vent Cap Filter Cover  
3—Vent Cap Filter

- 4—Body  
5—Pressure Release Button  
6—Hydraulic Tank Oil Cover



Hydraulic Tank Oil Cover

TX108694A—UN—08JAN11



Hydraulic Tank Oil Vent Cap

TX1001448—UN—16DEC05

ER79617,0000DA7-19-05JUN14-1/1

# Maintenance—Every 6000 Hours

## Drain Cooling System—6068HT073 Engine Only

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

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

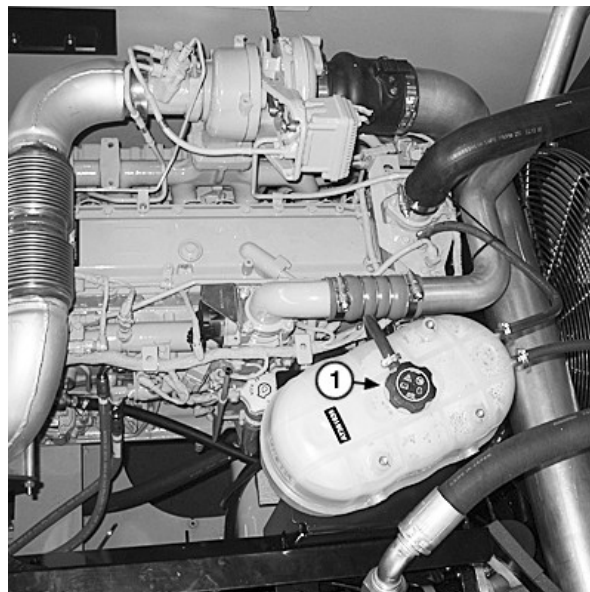
1. Check coolant hoses for cracks and leaks. Replace if necessary.
  2. Tighten clamps.
  3. Check radiator, charge air, and oil cooler for dirt, grease, leaks, and loose or broken mountings. Clean radiator, charge air, and oil cooler fins.
  4. Remove surge tank cap (1) to relieve pressure.
  5. Remove cover from underside of machine to access radiator drain valve (2).
- NOTE: Drain waste into a container. Dispose of waste properly.*
6. Turn radiator drain valve counterclockwise to open. Allow coolant to drain into a container. Dispose of waste coolant properly.
  7. Close radiator drain valve and replace cover.
  8. Install surge tank cap.

1—Surge Tank Cap

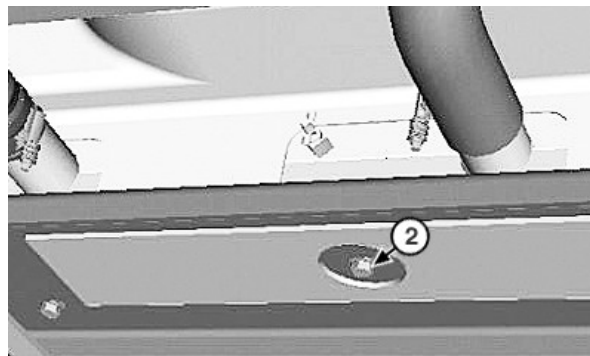
2—Radiator Drain Valve



Pressurized Fluids



Surge Tank Cap



Radiator Drain Valve

ER79617,0000E01-19-14APR16-1/1

TS281—UN—15APR13

TX1085509A—UN—07DEC10

TX1087464—UN—28JAN11

## Cooling System Fill and Deaeration Procedure—6068HT073 Engine Only

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

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

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

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

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

Follow directions on container for correct mixture ratio.

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

### Fill

Remove surge tank cap (1) to relieve pressure. Fill surge tank to above the full hot mark. Replace surge tank cap.

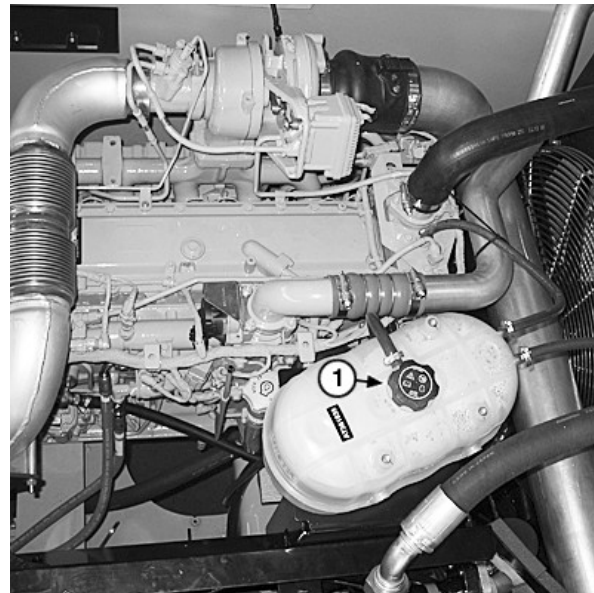
### Deaeration

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

1. Start engine. Run engine until coolant reaches a warm temperature.
2. Stop engine. Allow coolant to cool.
3. Check coolant level at surge tank.
4. Repeat steps 1—3 until surge tank coolant level is repeatedly at the same level (stabilized).



Pressurized Fluids



Surge Tank Cap

1—Surge Tank Cap

**NOTE:** The level of the coolant in the cooling system **MUST BE** repeatedly checked after all drain and refill procedures to insure that all air is out of the system which allows the coolant level to stabilize. Check coolant level only when the engine is cold.

5. If necessary, fill surge tank to above the MIN COLD mark.

### Specification

Cooling System—Capacity . . . . . 23.0 L  
6.0 gal.

COOL-GARD is a trademark of Deere & Company

ER79617,0000E02-19-14APR16-1/1

TS281—UN—15APR13

TX1085509A—UN—07DEC10

## Drain Cooling System—6068HT062 and 6068HT082 Engines Only



Pressurized Fluids

TS281—UN—15APR13

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

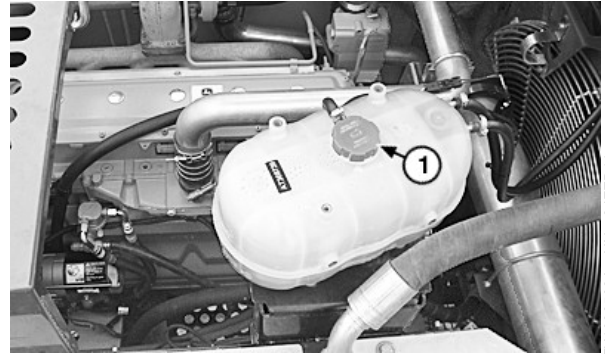
Prevent possible injury from hot spraying water. Shut off engine. Remove filler cap only when cool enough to touch with bare hands. Slowly loosen cap to relieve pressure before removing completely.

1. Check coolant hoses for cracks and leaks. Replace if necessary.
2. Tighten clamps.
3. Check radiator, charge air, and oil cooler for dirt, grease, leaks, and loose or broken mountings. Clean radiator, charge air, and oil cooler fins.

4. Remove surge tank cap (1) to relieve pressure.
5. Remove cover from underside of machine to access radiator drain valve (2).

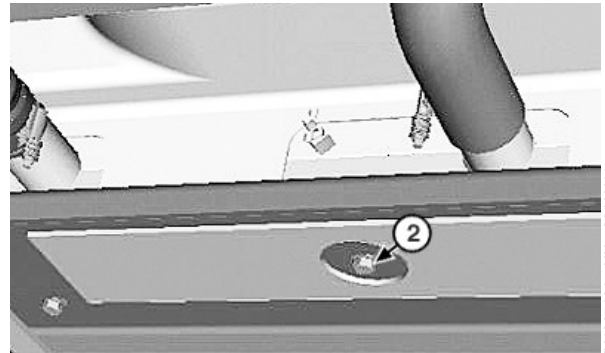
**NOTE:** Drain waste into a container. Dispose of waste properly.

6. Turn radiator drain valve counterclockwise to open. Allow coolant to drain into a container. Dispose of waste coolant properly.
7. Close radiator drain valve.
8. Turn engine block coolant drain plug (3) counterclockwise to drain engine block. Drain coolant into a container. Dispose of waste properly.
9. Close engine block coolant drain plug and replace cover.



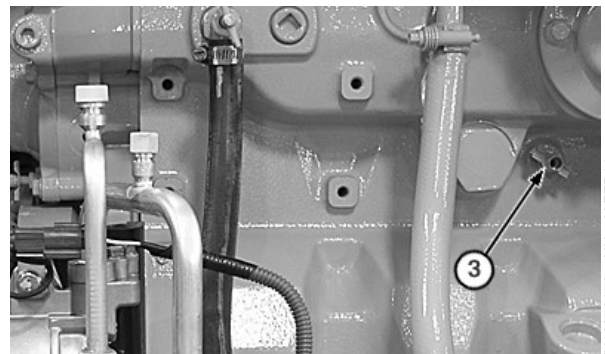
Surge Tank Cap

TX1088502A—UN—24FEB11



Radiator Drain Valve

TX1087464—UN—28JAN11



Engine Block Coolant Drain Plug

TX1087615A—UN—03FEB11

1—Surge Tank Cap  
2—Radiator Drain Valve

3—Engine Block Coolant Drain Plug

10. Install surge tank cap.

ER79617,0000E21-19-14APR16-1/1

## Cooling System Fill and Deaeration Procedure—6068HT062 and 6068HT082 Engines Only

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

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

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

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

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

Follow directions on container for correct mixture ratio.

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

### Fill

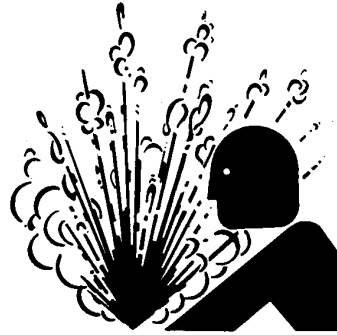
Remove surge tank cap (1) to relieve pressure. Fill the surge tank to above the full hot mark. Replace surge tank cap.

### Deaeration

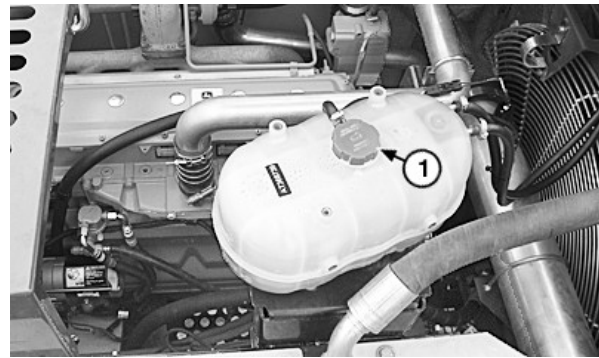
The cooling system requires several warmup and cool down cycles to deaerate. It will NOT deaerate during normal operation. Only during warmup and cool down cycles will the system deaerate.

1. Start engine. Run engine until coolant reaches a warm temperature.
2. Stop engine. Allow coolant to cool.
3. Check coolant level at surge tank.

COOL-GARD is a trademark of Deere & Company



Pressurized Fluids



Surge Tank Cap

1—Surge Tank Cap

4. Repeat steps 1—3 until surge tank coolant level is repeatedly at the same level (stabilized).

**NOTE:** The level of the coolant in the cooling system **MUST BE** repeatedly checked after all drain and refill procedures to insure that all air is out of the system which allows the coolant level to stabilize. Check coolant level only when the engine is cold.

5. If necessary, fill surge tank to above the MIN COLD mark.

### Specification

Cooling System—Capacity . . . . . 23.0 L  
6.0 gal.

TS281—UN—15APR13

TX1088502A—UN—24FEB11

ER79617,0000E22-19-05JUN14-1/1



# Miscellaneous—Machine

## Bleed Fuel System

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

*NOTE: This procedure should be performed after each fuel filter drain, fuel filter change, or when the engine has run out of fuel.*

Air can enter fuel system when draining fuel filters, changing fuel filters, or when machine has run out of fuel. Air in the fuel system can prevent the engine from starting or cause rough idle. This machine is equipped with an

electric priming pump. Prime fuel system and bleed air as follows:

1. Open fuel shutoff valve (if equipped).
2. Turn key switch to the ON position to energize ignition system and fuel pump. Let pump run for 60 seconds to prime fuel system.
3. After 60 seconds, turn key switch to the OFF position.
4. Turn key switch back to the ON position.
5. Run engine for 5 minutes at slow idle.

ER79617,0000DF9-19-12MAR18-1/1

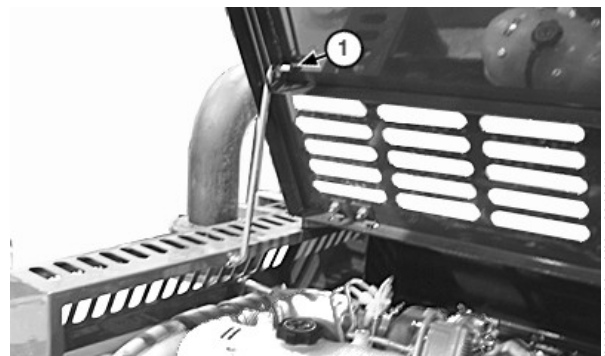
## Clean Radiator, Oil Cooler, Charge Air Cooler, and Fuel Cooler

**CAUTION:** Prevent possible injury from rotating fan and flying debris. Shut off engine before opening cover. Avoid rotating fan and fan blast.

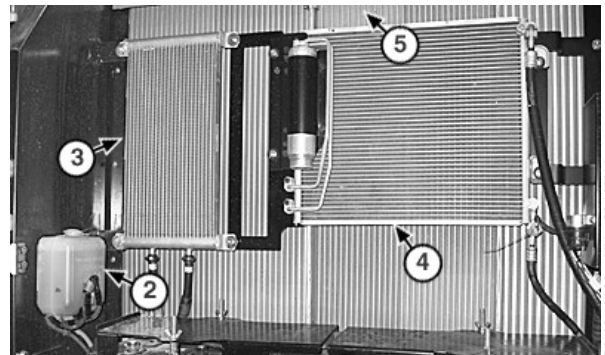
1. Turn machine off.
2. Open the engine cover (1).
3. Attach an air wand to an air compressor, and blow dirt and debris back through cooling system.
4. Close engine cover.
5. Open left service door to access coolers.
6. Remove windshield washer fluid tank (2) by sliding upward. Do not detach tubing.
7. Use compressed air to clean out the heat exchanger (5).
8. Install windshield washer fluid tank.
9. Close left service door.

1—Engine Cover  
2—Windshield Washer Fluid Tank  
3—Fuel Cooler

4—Air Conditioner Condenser  
5—Heat Exchanger



6068HT073 Engine Shown



Coolers

Continued on next page

ER79617,0000DFE-19-11MAR11-1/2

If machine is equipped with a hydraulic reverse fan function, use the reversing fan switch to clean the cooling system. The reversing fan is located on the left console.

**NOTE:** The reversing fan function shall not be reactivated within 1 minute of its last completion (this time includes AUTO cycle).

The reversing fan switch has three positions:

- **AUTO:** Every 60 minutes the radiator cooling fan will automatically reverse direction for 30 seconds without intervention from the operator.
- **OFF:** Fan resumes normal operation.
- **MANUAL:** When pressed and held for 3 seconds, the fan will reverse direction for 30 seconds when right portion of switch is pressed.



TX1000844A—UN—29NOV05

Reversing Fan Switch—If Equipped

ER79617,0000DFE-19-11MAR11-2/2

### Do Not Service or Adjust Injection Nozzles or High-Pressure Fuel Pump

If injection nozzles are not working correctly or are dirty, the engine will not run normally. See an authorized John Deere dealer for service.

Changing the high-pressure fuel pump in any way not

approved by the manufacturer will end the warranty. See copy of the John Deere warranty on this machine.

Do not service a high-pressure fuel pump that is not operating correctly. See an authorized John Deere dealer.

VD76477,0000366-19-30MAR17-1/1

### 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,DH2537-19-13AUG20-1/1

### 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 that 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 the 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.
9. Before washing machine, place a water repellent cover over the alternator.
10. To prevent component damage, the water jets need to be set at a 45-degree angle with reduced water pressure. Avoid direct contact with electrical and electronic connectors.

CED,OUO1021,185-19-04MAR20-1/1

## **Handling, Checking, and Servicing Batteries Carefully**

*NOTE: Under normal operating conditions, general service  
of maintenance free batteries is not required.*

Continued on next page

TX,SERV,BATT,CARE-19-02OCT23-1/2

**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. Sulfuric acid 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 acid is spilled on a person:

1. Flush contacted skin with water.
2. Apply baking soda or lime to contacted area to help neutralize the acid.
3. Flush eyes with water for 15—30 minutes.
4. 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.

**CAUTION:** 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 (11.0 fl oz) household ammonia in 4 L (1 gal) water.

**IMPORTANT:** Do not overfill the battery cells.

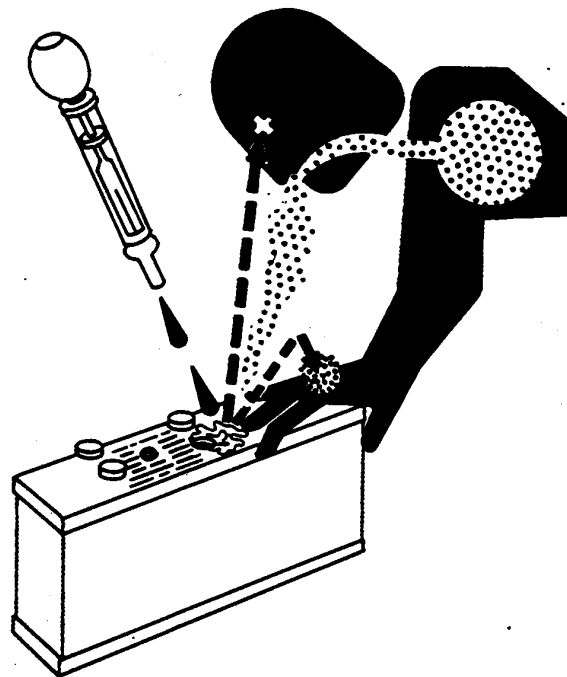
Check the specific gravity of electrolyte in each battery cell.

See an authorized John Deere dealer for 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.



Exploding Battery Gas



Battery Electrolyte



Battery and Coolant Tester

TS204—UN—15APR13

TS203—UN—23AUG88

T85402—UN—10NOV88

TX,SERV,BATT,CARE-19-02OCT23-2/2

## Using Battery Charger

### 12-Volt System

**CAUTION:** Prevent possible injury from exploding battery. Do not charge a battery if ambient temperature is below 0°C (32°F). 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.

*NOTE: Some battery chargers may also be used as a booster to start the engine. Follow battery charger manufacturer's operating instruction before boosting.*

1. Turn the battery disconnect switch (if equipped) to the OFF position.
2. Ventilate the area where battery is being charged.
3. Connect positive (+) cable to the positive (+) terminal of machine battery.
4. Connect negative (-) cable to the negative (-) terminal of machine battery.

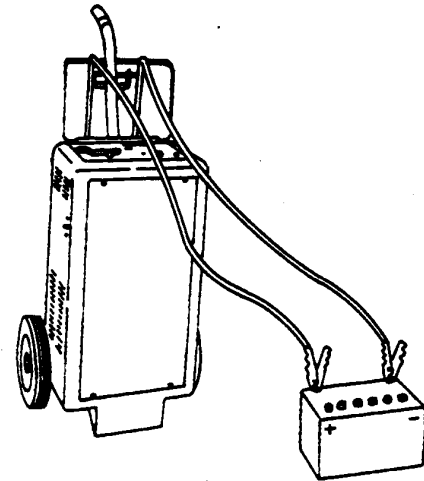
**CAUTION:** Prevent possible injury from exploding battery. Follow battery charger manufacturer's operating instructions before charging.

**IMPORTANT:** Prevent battery or machine damage from improper use of charger. Follow battery charger manufacturer's operation instruction before charging.

5. Stop or cut back charging rate if battery case becomes



Prevent Battery Explosions



Charger

hot or is venting electrolyte. Battery temperature must not exceed 52°C (125°F).

6. Remove charger cables in reverse order of connection.

Continued on next page

KR46761,0000C06-19-17AUG21-1/2

TS204—UN—15APR13

N36890—UN—07 OCT88

**24-Volt System**

**⚠ CAUTION:** Prevent possible injury from exploding battery. Do not charge a battery if ambient temperature is below 0°C (32°F). Warm each 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.

*NOTE: Some battery chargers may also be used as a booster to start the engine. Follow battery charger manufacturer's operating instruction before boosting.*

1. Turn the battery disconnect switch (if equipped) to the OFF position.
2. Ventilate the area where batteries are being charged.
3. Connect positive (+) cable to the positive (+) terminal of one machine battery.
4. Connect negative (-) cable to the negative (-) terminal of second machine battery.

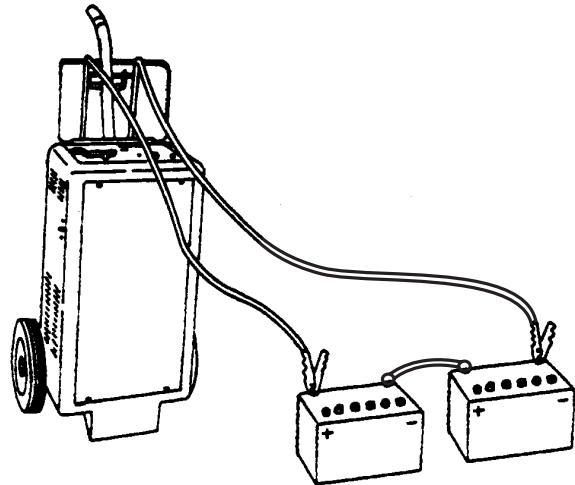
**⚠ CAUTION:** Prevent possible injury from exploding battery. Follow battery charger manufacturer's operating instructions before charging.

**IMPORTANT:** Prevent battery or machine damage from improper use of charger. Follow battery charger manufacturer's operation instruction before charging.

5. Stop or cut back charging rate if battery case becomes



Prevent Battery Explosions



Charger

hot or is venting electrolyte. Battery temperature must not exceed 52°C (125°F).

6. Remove charger cables in reverse order of connection.

KR46761,0000C06-19-17AUG21-2/2

TS204—UN—15APR13

TX1314241—UN—22JUN21

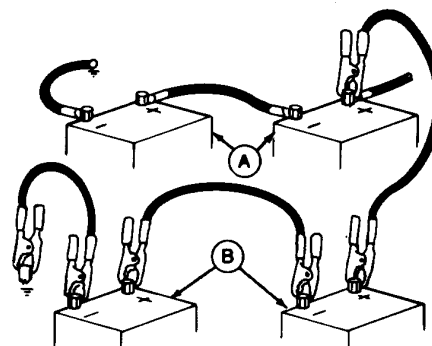
## Using Booster Batteries—24-Volt System

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.
4. Immediately after starting engine, disconnect the end of



Booster Batteries, 2-Battery Application

A—Machine Battery (2 used) B—Booster Battery (2 used)

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:** Avoid personal injury from battery acid. 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.

**NOTE:** Reserve capacity is the time in minutes it takes a fully charged battery at 26.6°C (80°F) to drop below 10 volts.

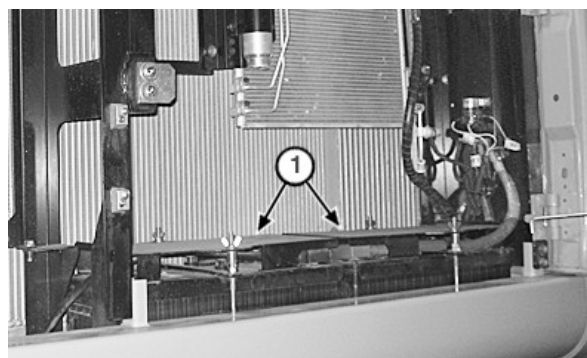
Your machine has two 12-volt batteries (1) with negative (-) ground connected in series to provide 24-volts.

Use only batteries which meet the following specifications.

### Specification

Battery—Cold Cranking Amps At	
-18°C (0°F) per Battery. . . . .	1000
Battery—Minutes Reserve Capacity	
At 25 Amps per Battery. . . . .	320

If one battery in a 24-volt system has failed but the other is still good, replace the failed battery with one of the same type. For example, replace a failed maintenance-free battery with a new maintenance-free battery. Different types



Batteries

1—Battery (2 used)

of batteries may have different rates of charge. This difference could overload one of the batteries and cause it to fail.

ER79617,0000DCE-19-07MAY15-1/1

## Fluid Sampling Test Ports—If Equipped

### Engine Oil Test Port

On right side of machine, open engine service door to access the engine oil test port (1).

1—Engine Oil Test Port



TX1086960A—UN—19JAN11

Engine Oil Test Port

ER79617,0000DD2-19-19JAN11-1/2

### Hydraulic Oil Test Port

On right side of machine, open engine service door to access the hydraulic oil test port (1).

2—Hydraulic Oil Test Port



TX1086959A—UN—19JAN11

Hydraulic Oil Test Port

ER79617,0000DD2-19-19JAN11-2/2

## Welding On Machine

**IMPORTANT:** Disconnect both negative and positive battery cables and microprocessor unit (if applicable).

Have only a qualified welder do this job. Connect welder ground clamp close to each weld area so electrical current does not pass through any bearings.

Remove or protect all parts that can be damaged by heat or weld splatter.

VD76477,00004EE-19-31OCT12-1/1



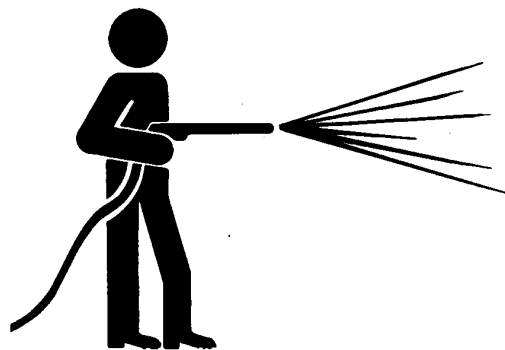
## Clean the Machine Regularly

**CAUTION:** Avoid personal injury from flying debris. Be careful when removing any grease, oil, fuel, or debris buildup.

**IMPORTANT:** Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts, and components may cause product malfunctions. Reduce pressure and spray at a 45—90° angle.

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

Do not spray heat exchangers at an angle.



Clean Machine Regularly

T6642EJ—UN—18OCT88

ER79617,0000D50-19-31MAR16-1/1

## Adding 12-Volt Accessories

**IMPORTANT:** This machine has a 24-volt electrical system. Installing 12-volt accessories without the addition of 24-volt-to-12-volt converter may cause battery malfunction.

This machine is equipped with a 12-volt, 5-amp outlet.

When possible, use 24-volt accessories. If 12-volt accessories are added, use a 24-volt-to-12-volt converter. Converters are available from an authorized John Deere dealer.

Converter capacity requirements depend on the load of the

accessories installed. Follow electronic dealer and manufacturer's recommendations to determine the capacity of the converter required and its installation requirements. If standard equipment, verify if amperage is adequate for application.

**IMPORTANT: DO NOT connect an accessory to one battery. Connecting a 12-volt accessory to one battery will cause one battery to overcharge and the other battery to undercharge, causing battery malfunction.**

TX,90,DH3734-19-21FEB18-1/1

## JDLink Machine Monitoring System (MMS)—If Equipped

JDLink is an equipment monitoring and information delivery system. JDLink automatically collects and manages information about where and how construction and forestry

equipment is being used, as well as critical machine health data and service status.

For more information, see an authorized John Deere dealer or visit [www.deere.com](http://www.deere.com) (browse to Construction, Services and Support, JDLink ).

VD76477,0001541-19-02OCT23-1/1

## Keep ROPS Installed Properly

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

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

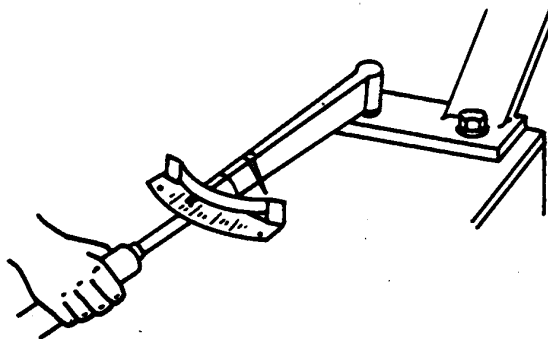
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KR46761,0001089-19-06APR22-1/2

When installation of equipment on a machine necessitates loosening or removing ROPS, mounting bolts must be tightened to specification.

#### Specification

ROPS Mounting Bolts—Torque. . . . . 620 N·m  
(457 lb·ft)



TS176—UN—23AUG88

*ROPS Maintenance*

KR46761,0001089-19-06APR22-2/2

## Replacing Fuses

The fuse box is located inside the cab underneath the left rear panel labeled FUSE.

Remove cover.

**IMPORTANT:** Install fuse with correct amperage rating to prevent electrical system damage from overload.

Amperage Rating	Color
7-1/2	Brown
10	Red
15	Light Blue
20	Yellow
25	Natural (white)
30	Light Green

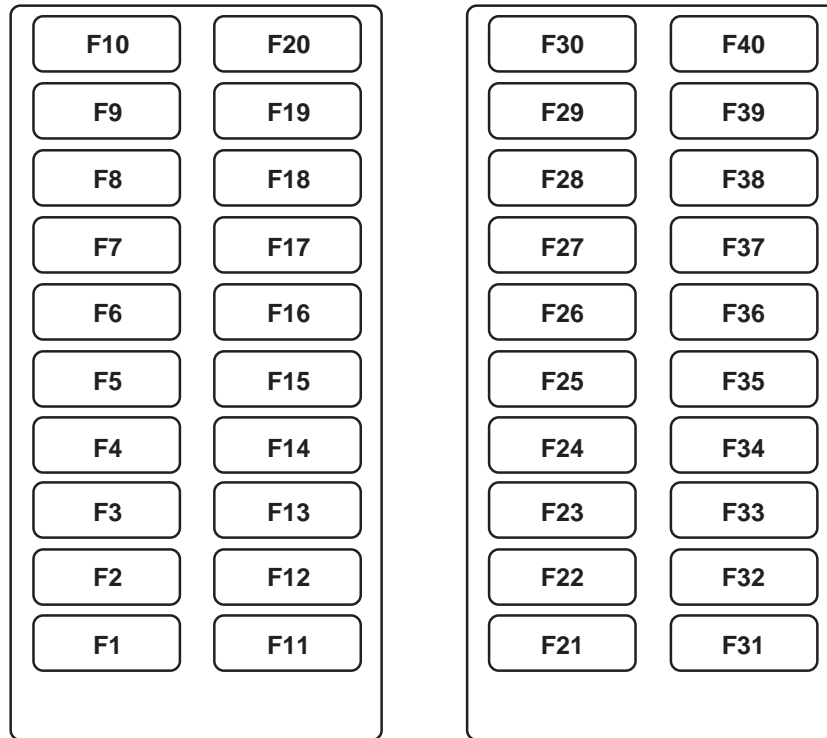
*Fuse Color Codes*

Amperage Rating	Color
1	Black
3	Violet
4	Pink
5	Tan

Continued on next page

ER79617,0000D1E-19-13APR16-1/4

## Early Production



TX1157166

TX1157166—UN—03APR14

## Fuse Blocks

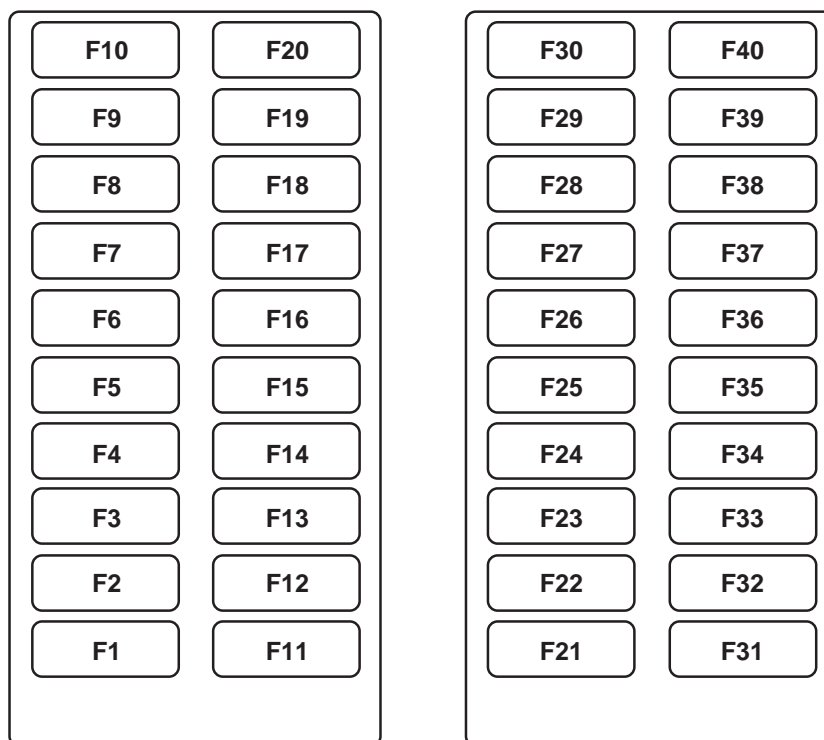
**F1**—LAMP 20 Amp fuse  
**F2**—WIPER 10 Amp fuse  
**F3**—HEATER 20 Amp fuse  
**F4**—SOLENOID 20 Amp fuse  
**F5**—OPT. 1 (ALT) 5 Amp fuse  
**F6**—OPT. 2 (ALT) 20 Amp fuse  
**F7**—START 5 Amp fuse  
**F8**—ECU 30 Amp fuse  
**F9**—BACK UP 10 Amp fuse  
**F10**—CONTROLLER 5 Amp fuse  
**F11**—NOT USED  
**F12**—RADIO 5 Amp fuse  
**F13**—LIGHTER 10 Amp fuse  
**F14**—MONITOR 5 Amp fuse  
**F15**—AUX 10 Amp fuse  
**F16**—START AID 20 Amp fuse  
**F17**—POWER ON 5 Amp fuse  
**F18**—IDLE STOP 5 Amp fuse  
**F19**—HORN 10 Amp fuse  
**F20**—OPT.3 (BAT) 5 Amp fuse

**F21**—SEAT HEATER 10 Amp fuse  
**F22**—CAB LAMP FRONT 10 Amp fuse  
**F23**—CAB LAMP REAR 10 Amp fuse  
**F24**—12V UNIT 10 Amp fuse  
**F25**—IMOB 5 Amp fuse  
**F26**—QUICK HITCH 5 Amp fuse  
**F27**—AUX 3 5 Amp fuse  
**F28**—NOT USED  
**F29**—NOT USED  
**F30**—NOT USED  
**F31**—SEAT COMPR 10 Amp fuse  
**F32**—CAB LAMP FRONT +2 10 Amp fuse  
**F33**—WARNING LAMP 10 Amp fuse  
**F34**—AUX 2 10 Amp fuse  
**F35**—NOT USED  
**F36**—NOT USED  
**F37**—NOT USED  
**F38**—NOT USED  
**F39**—NOT USED  
**F40**—NOT USED

Continued on next page

ER79617,0000D1E-19-13APR16-2/4

## Late Production



TX1157166

TX1157166—UN—03APR14

## Fuse Blocks

**F1**—LAMP 20 Amp Fuse  
**F2**—WIPER 10 Amp Fuse  
**F3**—HEATER 20 Amp Fuse  
**F4**—SOLENOID 20 Amp Fuse  
**F5**—OPT. 1 (ALT) 5 Amp Fuse  
**F6**—OPT. 2 (ALT) 20 Amp Fuse  
**F7**—START 5 Amp Fuse  
**F8**—ECU P1 20 Amp Fuse  
**F9**—BACK UP 10 Amp Fuse  
**F10**—CONTROLLER 5 Amp Fuse  
**F11**—TRAVEL ALARM 5 Amp Fuse  
**F12**—RADIO 5 Amp Fuse  
**F13**—LIGHTER 10 Amp Fuse  
**F14**—MONITOR 5 Amp Fuse  
**F15**—AUX 10 Amp Fuse  
**F16**—12V UNIT 10 Amp Fuse  
**F17**—POWER ON 5 Amp Fuse  
**F18**—IDLE STOP 5 Amp Fuse  
**F19**—HORN 10 Amp Fuse  
**F20**—OPT.3 (BAT) 5 Amp Fuse  
**F21**—SEAT HEATER 10 Amp Fuse

**F22**—CAB LAMP FRONT 10 Amp Fuse  
**F23**—CAB LAMP REAR 10 Amp Fuse  
**F24**—IMOB 5 Amp Fuse  
**F25**—QUICK HITCH 5 Amp Fuse  
**F26**—AUX 3 5 Amp Fuse  
**F27**—NOT USED  
**F28**—NOT USED  
**F29**—NOT USED  
**F30**—NOT USED  
**F31**—SEAT COMPR 10 Amp Fuse  
**F32**—CAB LAMP FRONT +2 10 Amp Fuse  
**F33**—WARNING LAMP 10 Amp Fuse  
**F34**—AUX 2 10 Amp Fuse  
**F35**—DIAG 5 Amp Fuse  
**F36**—ECU P2 20 Amp Fuse  
**F37**—ECU P3 20 Amp Fuse  
**F38**—ECU P4 20 Amp Fuse  
**F39**—NOT USED  
**F40**—NOT USED

**JDLink™ In-Line Fuse—If Equipped**

*NOTE: JDLink in-line fuses may be equipped on early and late serial number machines.*

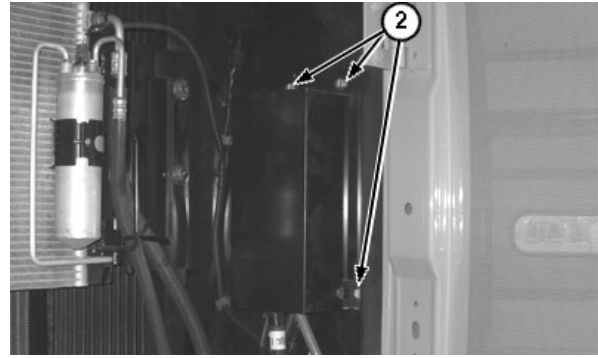
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ER79617,0000D1E-19-13APR16-3/4

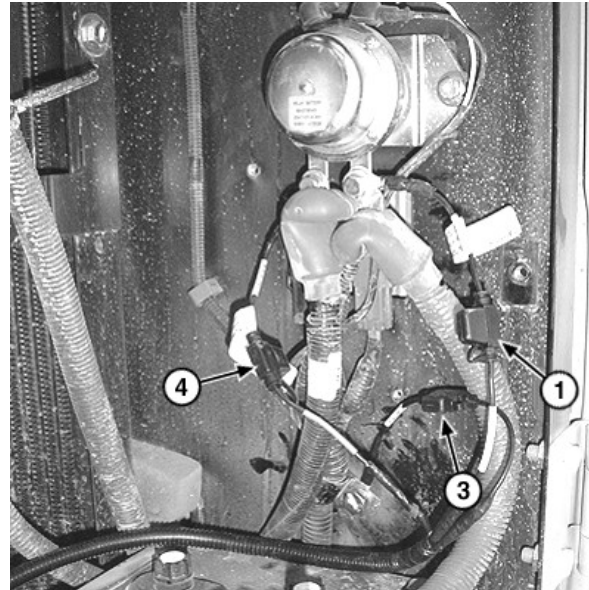
1. Turn machine off.
2. Open battery compartment access door.
3. Remove cap screws (2) from cover to access the 7.5 Amp JDLink™ unswitched power in-line fuse (1) on the yellow wire.
4. To deactivate the JDLink™ Machine Monitoring System, remove the unswitched power in-line fuse.
5. Install cover and cap screws.
6. Close access door.

1—JDLink™ Unswitched  
Power In-Line Fuse  
2—Cap Screws (3 used)

3—JDLink™ Ground In-Line  
Fuse (7.5 Amp)  
4—JDLink™ Switched Power In-  
Line Fuse (3 Amp)



Cover



JDLink In-line Fuse

JDLink is a trademark of Deere & Company

ER79617,0000D1E-19-13APR16-4/4

## Replacing Bucket Teeth

**CAUTION:** Guard against injury from flying pieces of metal; wear goggles or safety glasses.

**IMPORTANT:** Angle the drift toward the bucket to avoid damaging the rubber pin lock.

Check bucket teeth periodically so that wear does not extend to the bucket tooth shank.

Continued on next page

04T,90,M16-19-28APR22-1/2

1. Use a hammer and drift to drive out locking pin.

**NOTE:** Alternate buckets may use different tooth assemblies.

2. Remove tooth.
3. Inspect rubber pin lock (A) for damage. Replace if necessary.
4. If rubber pin lock has moved, reposition in slot in adapter tooth shank.
5. Position the new tooth over the tooth shank.
6. Drive the locking pin into the hole fully.

**A—Rubber Pin Lock**



T95784—UN—10NOV88

*Bucket Teeth*



T95785—UN—10NOV88

*Rubber Pin Lock*



T95786—UN—10NOV88

*Tooth Shank*

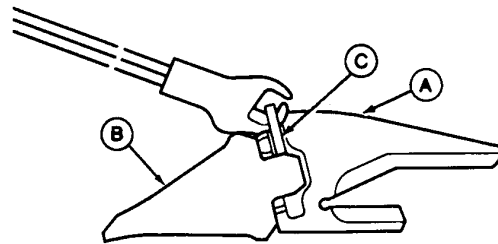
04T,90,M16-19-28APR22-2/2

## Replacing Bucket Tooth Tip—Heavy-Duty Bucket

1. Clean tooth (A) and tooth tip (B).
2. Insert lock removal tool under U-shaped pin (C).
- CAUTION:** Avoid possible injury. U-shaped pin may fly after the pin is released from the tooth tip. Keep a firm grip on the U-shaped pin to prevent injury.
3. Remove U-shaped pin.
4. Turn the tooth tip counterclockwise and pull the tooth tip up to remove.
5. Clean the tooth shank.
6. Replace the U-shaped pin and the tooth tip at the same time.
7. Insert the tooth tip onto the shank by turning the tooth tip clockwise.
8. Install U-shaped pin. The side of the pin with the FRONT mark (D) must face the tooth tip. Make sure the pin is firmly engaged over the tooth tip.

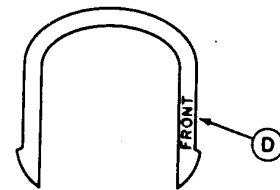
A—Tooth  
B—Tooth Tip

C—U-Shaped Pin  
D—Front Mark



T6879EE

Bucket Tooth Tip (heavy-duty bucket)



U-Shaped Pin (heavy-duty bucket)

04T,90,K273-19-11MAY22-1/1

T6879EE—UN—06DEC88

T7527DO—UN—27JUN91

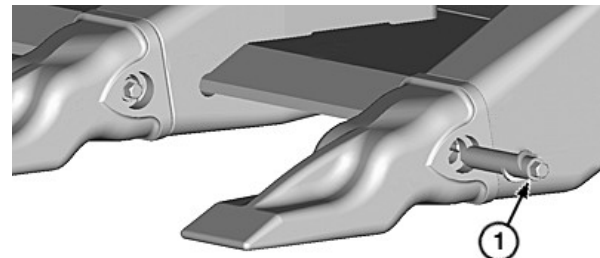
## Replacing Bucket Teeth—TK Series

**IMPORTANT:** Prevent machine damage. Check bucket teeth periodically so that wear does not extend to the bucket tooth shank.

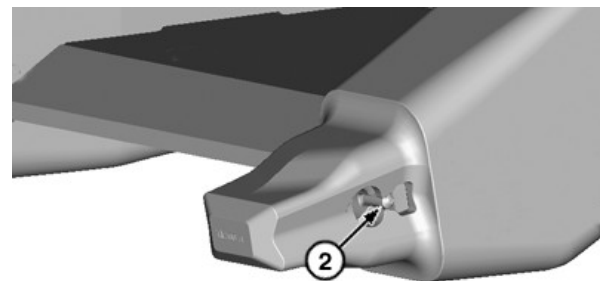
1. Remove pin (1) by rotating counterclockwise 180° using a ratchet and socket.
2. Remove tooth.
3. Inspect pin and rubber locks (2) for damage. Replace if necessary.
4. Position the new tooth over the tooth shank.
5. Install pin by rotating clockwise 180°. Install pin in same orientation as removed. Check alignment of pin.

1—Pin

2—Rubber Lock (2 used)



Pin



Rubber Lock

DB84312,00000BC-19-24OCT18-1/1

TX1150806—UN—10JAN14

TX1150895—UN—10JAN14

## Bucket Remove and Install

SPECIFICATIONS	
Bucket Link and Arm End Play	0.5—1.5 mm (0.020—0.060 in)
Split O-Ring Seal Nut Torque	6 N·m (53 lb·in)
Split O-Ring Seal Retainer Cap Screw Length	10—20 mm (0.394—0.787 in)

PIN WEIGHT SPECIFICATIONS (APPROXIMATE)	
130G Bucket Pin Weight	12 kg (26 lb)
160GLC, 180GLC, 200G, 210G, and 210GLC Bucket Pin Weight	20 kg (44 lb)
250GLC, 290GLC, and 300GLC Bucket Pin Weight	34 kg (75 lb)
350GLC and 380GLC Bucket Pin Weight	46 kg (101 lb)
470GLC Bucket Pin Weight	61 kg (134 lb)

## REMOVAL

1. Park and prepare machine for service safely. See Prepare Machine for Maintenance. (Section 3-2.)

**CAUTION:** Prevent possible crushing injury from heavy component. Bucket could possibly roll. Secure bucket position with appropriate blocking.

2. Position bucket flat side down and use appropriate blocking to stabilize.

DH10862,0000008-19-03JUN22-1/5

3. Remove nuts (4) and cap screws (3).

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

4. Use appropriate lifting device to remove bucket link pin (1) and bucket arm pin (2). See pin weight specification table for approximate bucket pin weights.

5. Separate bucket from arm and link.

6. Remove 2MAD™ seals, O-ring seals, or split O-ring seals. Clean, inspect, and replace as necessary.

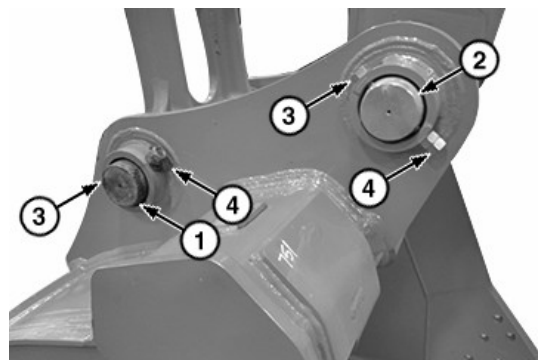
**IMPORTANT:** Prevent possible damage to pins, bushings, and bosses. Dirt and debris can prematurely wear components. Clean all components thoroughly.

7. Clean contaminated grease, dirt, and debris from bucket link pin and bucket arm pin pivot areas.

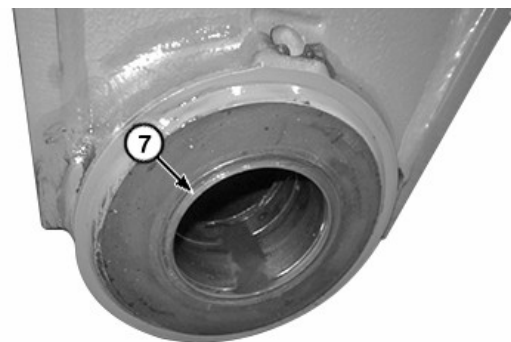
8. Inspect dust seals (7) for wear or damage. Replace as necessary.

9. Inspect pins and bushings for wear or damage. Replace as necessary.

- |                      |                      |
|----------------------|----------------------|
| 1—Bucket Link Pin    | 4—Nut (4 used)       |
| 2—Bucket Arm Pin     | 7—Dust Seal (4 used) |
| 3—Cap Screw (2 used) |                      |



Bucket Arm and Bucket Link Pins



Dust Seal

TX1237262A—UN—12APR17

TX1237052A—UN—12APR17

2MAD is a trademark of ESP International

Continued on next page

DH10862,0000008-19-03JUN22-2/5



**INSTALLATION—2MAD™ Seal**

1. Install 2MAD™ seals (8) by securing seal with one hand, sliding fingers under seal, and pulling seal onto bucket boss (5) as shown.

2. Apply grease to pins and bores.

3. Align machine arm and link with bucket.

**IMPORTANT: Prevent possible machine damage. Using a larger diameter shim than recommended does not allow 2MAD seal to seat properly. 2MAD seal must seat properly to keep out dirt and debris.**

4. Measure bucket link and arm end play and add shims (6) as necessary. If multiple shims are used, divide the shims equally on each side of boom arm and bucket link.

**Specification**

Bucket Link and Arm—End Play . . . . . 0.5—1.5 mm  
(0.020—0.060 in)

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

5. Use appropriate lifting device to install bucket link pin and bucket arm pin. See pin weight specification table for approximate bucket pin weights.

*NOTE: Tighten nuts against each other, not against retainer. Cap screw must be free to turn in hole.*

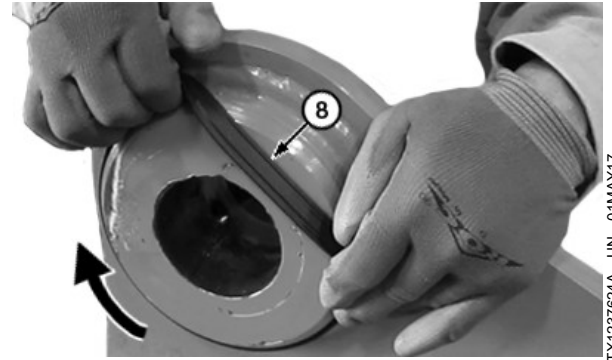
6. Install cap screws and tighten nuts against each other.

7. Slide 2MAD seals from bucket boss into bucket link and bucket arm pivot points as shown.

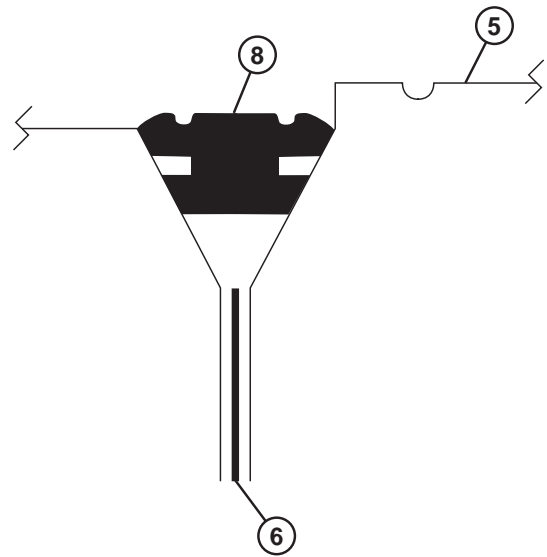
8. Grease bucket link and bucket arm pivot points.

5—Bucket Boss  
6—Shim (as needed)

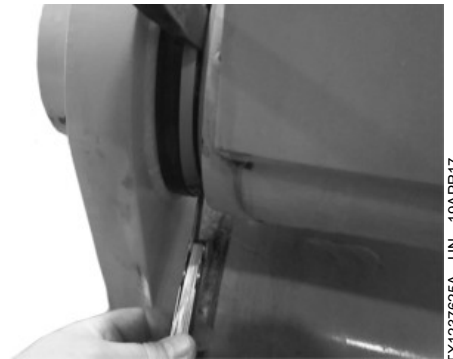
8—2MAD Seal (4 used)



2MAD Seal



2MAD Seal Correctly Installed



Measuring Bucket Link and Arm End Play

2MAD is a trademark of ESP International

Continued on next page

DH10862,0000008-19-03JUN22-3/5

## INSTALLATION—O-Ring Seal

1. Install O-ring seals (9) over bucket boss (5).
2. Apply grease to pins and bores.
3. Align machine arm and link with bucket.

**IMPORTANT: Prevent possible machine damage. Using a larger diameter shim than recommended does not allow O-ring seal to seat properly. O-ring seal must seat properly to keep out dirt and debris.**

4. Measure bucket link and arm end play and add shims (6) as necessary. If multiple shims are used, divide the shims equally on each side of boom arm and bucket link.

### Specification

Bucket Link and Arm—End Play . . . . . 0.5—1.5 mm  
(0.020—0.060 in)

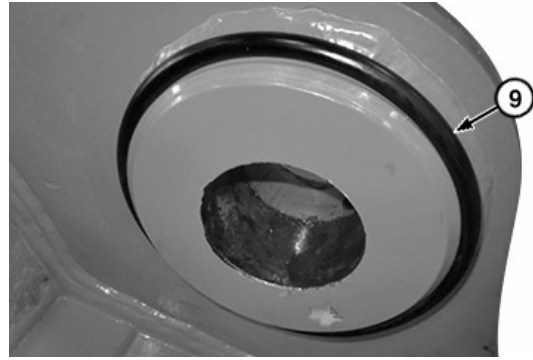
**⚠ CAUTION: Prevent possible crushing injury from heavy component. Use appropriate lifting device.**

5. Use appropriate lifting device to install bucket link pin and bucket arm pin. See pin weight specification table for approximate bucket pin weights.

**NOTE: Tighten nuts against each other, not against retainer. Cap screw must be free to turn in hole.**

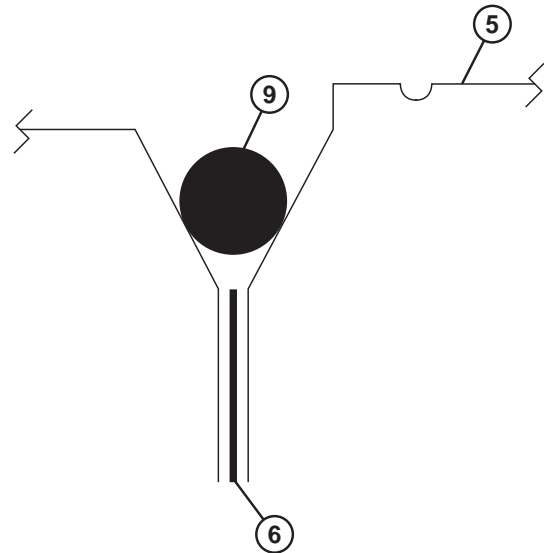
6. Install cap screws and tighten nuts against each other.
7. Roll O-ring seals into bucket link and bucket arm pivot points as shown.
8. Grease bucket link and bucket arm pivot points.

5—Bucket Boss                      9—O-Ring Seal (4 used)  
6—Shim (as needed)



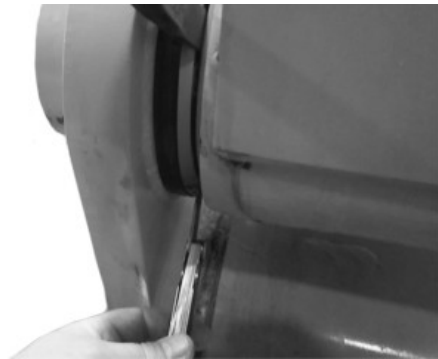
O-Ring Seal

TX1237202A—UN—12APR17



O-Ring Seal Correctly Installed

TX1237913—UN—27APR17



Measuring Bucket Link and Arm End Play

TX1237625A—UN—19APR17

Continued on next page

DH10862,0000008-19-03JUN22-4/5

**INSTALLATION—Split O-Ring Seal**

1. Apply grease to pins and bores.
2. Align machine arm and link with bucket.

**IMPORTANT:** Prevent possible machine damage. Using a larger diameter shim than recommended does not allow split O-ring seal to seat properly. Split O-ring seal must seat properly to keep out dirt and debris.

3. Measure bucket link and arm end play and add shims (6) as necessary. If multiple shims are used, divide the shims equally on each side of boom arm and bucket link.

**Specification**

Bucket Link and Arm—End Play. . . . . 0.5—1.5 mm  
(0.020—0.060 in)

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

4. Use appropriate lifting device to install bucket link pin and bucket arm pin. See pin weight specification table for approximate bucket pin weights.

**NOTE:** Tighten nuts against each other, not against retainer. Cap screw must be free to turn in hole.

5. Install cap screws and tighten nuts against each other.
6. Install split O-ring seals (10) into bucket link and bucket arm pivot points as shown. Tighten split O-ring seal nut to specification.

**Specification**

Split O-Ring Seal Nut—Torque. . . . . 6 N·m  
(53 lb·in)

7. Trim excess split O-ring seals retainer cap screw (11) to specification.

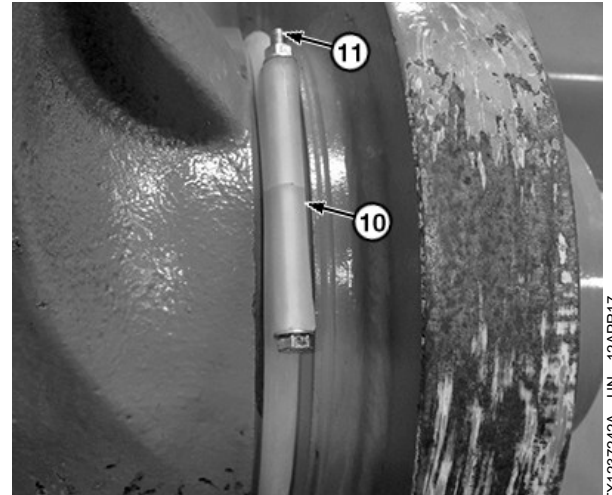
**Specification**

Split O-Ring Seal Retainer Cap  
Screw—Length. . . . . 10—20 mm  
(0.394—0.787 in)

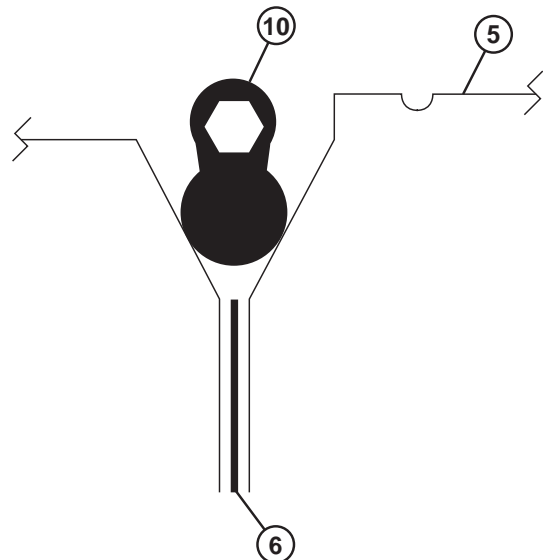
8. Grease bucket link and bucket arm pivot points.

5—Bucket Boss  
6—Shim (as needed)

10—Split O-Ring Seal (4 used)  
11—Split O-Ring Seal Retainer  
Cap Screw (4 used)



Split O-Ring Seal



Split O-Ring Seal Correctly Installed



Measuring Bucket Link and Arm End Play

DH10862,0000008-19-03JUN22-5/5

## Track Sag General Information

To maximize undercarriage life, keep track sag within specification. Tracks may require adjustment several times during a working day due to changing soil type and moisture content.

Adjust tracks in the actual operating conditions.

**TIGHT TRACK:** Packing causes a tight track. If material packs in the undercarriage, adjust tracks with the material packed in the components.

While the track spring will recoil and the machine can continue to operate with a tight track, continued operation will result in excessive pin and bushing wear, sprocket

popping, tooth tip wear, and excessive loads on the entire undercarriage and travel drive system.

Machine productivity and fuel consumption are also adversely affected because increased horsepower is needed to move the machine.

**LOOSE TRACK:** A loose track has more side to side motion, increasing side wear on the links, rollers, and front idler. An excessively loose track will slap at high ground speeds, resulting in high impact loads on the sprocket teeth, bushings, and carrier rollers.

VD76477,00001F7-19-28AUG09-1/1

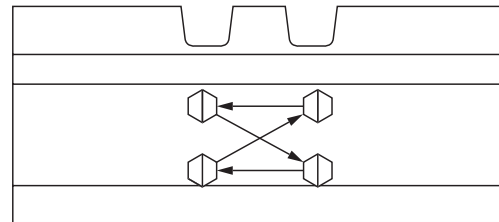
## Check Track Shoe Hardware

Check track shoes periodically for loose or missing cap screws and nuts. For shoes with missing or loose cap screws and nuts, remove shoes and clean the mating surface of shoes and links before tightening cap screws and nuts. Replace cap screws when they have been stretched to yield previously.

Operating a machine with loose shoes can cause the cap screws and holes in the shoes and links to wear, making it difficult to keep the shoes tight. Loose shoes can also cause hardware malfunction and loss of shoes.

1. Clean the mating surface of shoe and links. Install shoes.
2. Apply a light coating of oil to cap screw threads before installing.
3. Install nuts with the rounded corners against milled surface of link and chamfered side away from link.

Check that nuts are square with the milled surface of link



Cap Screw Tightening Sequence

and there is full contact between nut and milled surface. As necessary, hold the nut so it does not turn.

4. Starting at any cap screw, tighten all cap screws in sequence shown to the torque specification, then tighten an additional 1/2 turn (180°).

TX,TRACKSHOE-19-10MAR22-1/1

TX1255661—UN—19APR18

## Hardware Torque Specifications

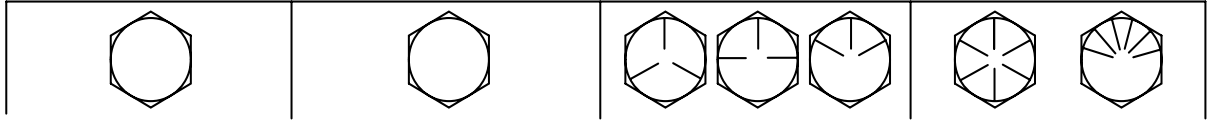
Check cap screws and nuts to be sure they are tight. If

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



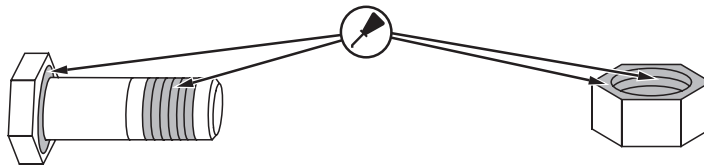
Bolt or Screw Size	SAE Grade 1 <sup>a</sup>				SAE Grade 2 <sup>b</sup>				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head <sup>c</sup>		Flange Head <sup>d</sup>		Hex Head <sup>c</sup>		Flange Head <sup>d</sup>		Hex Head <sup>c</sup>		Flange Head <sup>d</sup>		Hex Head <sup>c</sup>		Flange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

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

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

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

TS1741—UN—22MAY18



<sup>a</sup> Grade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.

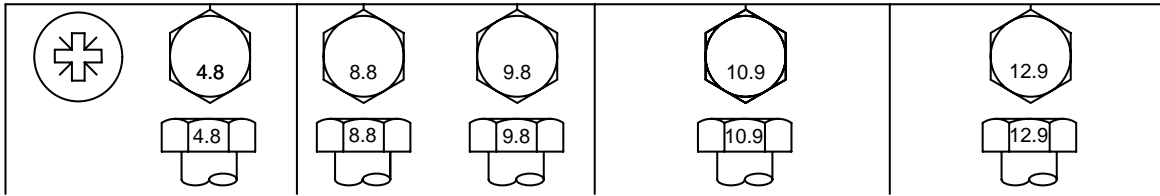
<sup>b</sup> Grade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.

<sup>c</sup> Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

<sup>d</sup> Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

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

## Metric Bolt and Screw Torque Values



TS1742—UN—31MAY18

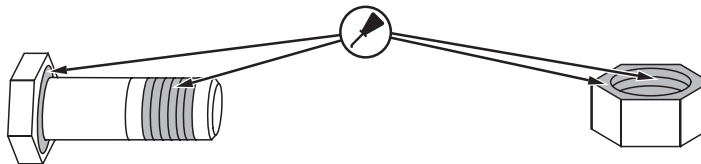
Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head <sup>a</sup>		Flange Head <sup>b</sup>		Hex Head <sup>a</sup>		Flange Head <sup>b</sup>		Hex Head <sup>a</sup>		Flange Head <sup>b</sup>		Hex Head <sup>a</sup>		Flange Head <sup>b</sup>	
	N·m	lb·in	N·m	lb·in	N·m	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
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
									23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
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
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



<sup>a</sup> Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

<sup>b</sup> Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2-19-09MAY22-1/1

# Miscellaneous—Operational Checkout

## Operational Checkout

This procedure is used to check operation of machine. It is designed so you can do a walk around inspection, check machine operation, and perform specific checks from the operator's seat.

If there is a problem with machine, diagnostic information in this checkout will help pinpoint the probable cause. This information may allow you to perform a simple adjustment to correct the problem. Use the table of contents to help find adjustment procedures.

A location will be required which is level and has adequate space to complete checks. No tools or equipment are needed to perform checkout.

Complete necessary visual checks (oil levels, oil condition, external leaks, loose hardware, linkage, wiring) prior to doing checkout. The machine must be at operating temperature for many of the checks.

Read each check completely before performing. If no problem is found, you will be instructed to go to the next check. If a problem is indicated, you will be referred to a procedure for adjustment, repair, or replacement.

The monitor can be used to perform diagnostic and operational checks. The monitor can display engine speed, pressures, and diagnostic trouble codes (DTCs).

ER79617,0000DFA-19-05JUN14-1/52

## Diagnostic Trouble Code Check

ER79617,0000DFA-19-05JUN14-2/52

### Display and Clear Trouble Codes

Always check for diagnostic trouble codes and correct them before performing operational checkout.

Diagnostic trouble codes can be displayed by using one of the following methods:

- Monitor
- WithService ADVISOR™

*LOOK: Are diagnostic trouble codes present?*

**YES:** Correct all diagnostic trouble codes before proceeding.

**NO:** Go to next check.

*Service ADVISOR is a trademark of Deere & Company*

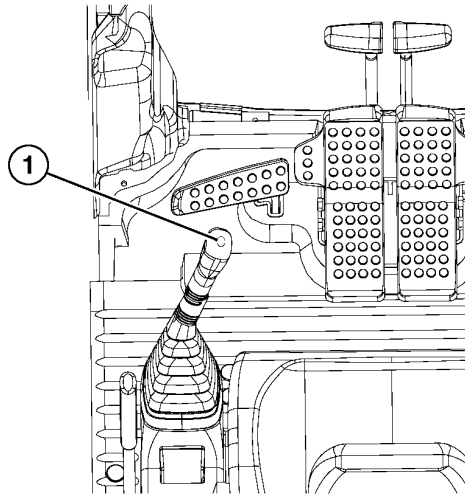
ER79617,0000DFA-19-05JUN14-3/52

## Operational Checks—Key Switch Off, Engine Off Checks

Continued on next page

ER79617,0000DFA-19-05JUN14-4/52

## Horn Circuit Check



TX1001366—UN—15DEC05

### Horn Circuit

#### 1—Horn Button

Key switch in OFF position.

Push horn button (1) on top of left pilot control lever.

*LISTEN: Does horn sound?*

**YES:** Go to next check.

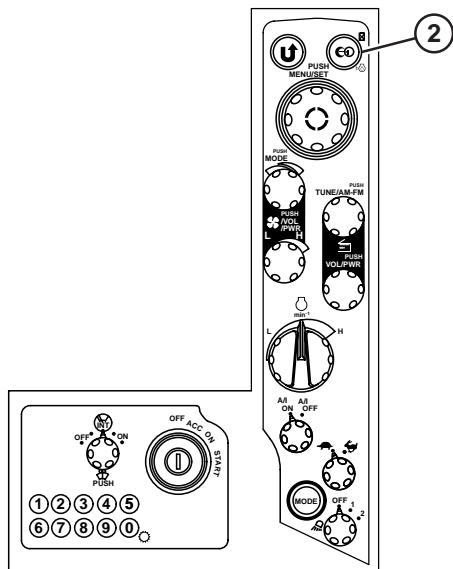
**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-5/52

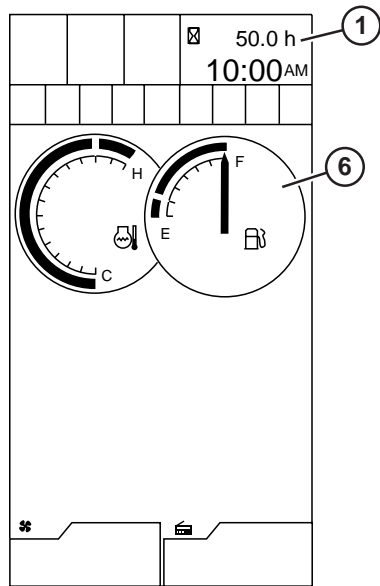


Hour Meter and Fuel Gauge Check



TX1086727—UN—11JAN11

Switch Panel



TX1086583A—UN—11JAN11

Hour Meter and Fuel Gauge Screen

- 1—Hour Meter
- 2—Home Button
- 6—Fuel Gauge

Press and hold Home button (2) until default screen appears.

LOOK: Does hour meter (1) display machine hours?

LOOK: Does fuel gauge (6) display correct fuel level?

**YES:** Go to next check.

**NO:** See your authorized dealer.

ER79617,0000DFA-19-05JUN14-6/52

Operational Checks—Key Switch On, Engine Off Checks

Continued on next page

ER79617,0000DFA-19-05JUN14-7/52

## Monitor Start Up Check



TX1086287A—UN—28DEC10

System Starting Screen



TX1086304A—UN—28DEC10

Default Screen

**1—System Starting Screen**

**2—Default Screen**

*NOTE: Start the engine after the default screen is displayed.*

*NOTE: The exhaust filter auto cleaning disabled indicator will display on the monitor when the key switch is in ON position. Once the engine is started, the indicator will disappear unless exhaust filter auto cleaning has been disabled by the operator through the monitor.*

When the key switch is turned to the ON position, the system starting screen (1) displays for about 2 seconds and then the default screen (2) is displayed.

Turn key switch to ON position.

*LOOK: Does monitor display system starting screen?*

*LOOK: Does default screen with hour meter appear after system starting screen disappears?*

**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-8/52

Monitor, Gauges, and  
Battery Relay Checks



TX1087186A—UN—28JUN13

Default Screen

- 1—Work Mode Indicator
- 2—Exhaust Filter Auto Cleaning Disabled Indicator
- 3—Power Mode Indicator
- 4—Hour Meter
- 5—Engine Coolant Temperature Gauge
- 6—Fuel Gauge
- 7—Travel Mode Indicator

**NOTE:** The exhaust filter auto cleaning disabled indicator will display on the monitor when the key switch is in ON position. Once the engine is started, the indicator will disappear unless exhaust filter auto cleaning has been disabled by the operator through the monitor.

**NOTE:** If engine coolant temperature is below 30°C (86°F) engine temperature gauge needle may not move.

Turn key switch to ON.

**LISTEN:** Does battery relay click?

**LOOK:** Does engine coolant temperature gauge (5) display correct engine coolant temperature?

**LOOK:** Does fuel gauge (6) display correct fuel level?

**LOOK:** Does hour meter (4) display machine hours?

**LOOK:** Does work mode indicator (1) display correct work mode (dig or attachment)?

**LOOK:** Does travel mode indicator (7) display correct travel mode?

**LOOK:** Does power mode indicator (3), show correct power mode?

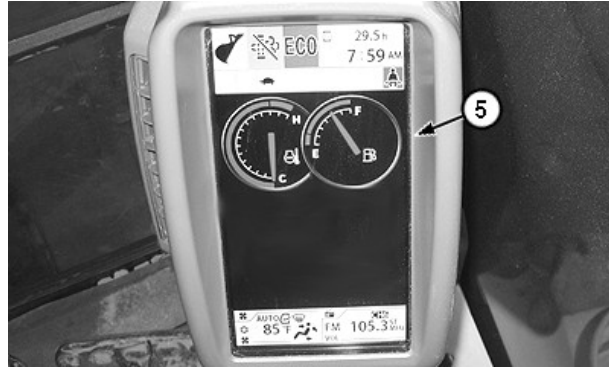
**YES:** Go to next check.

**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-9/52

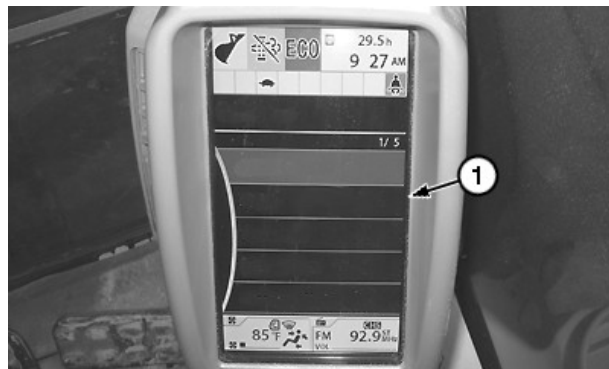
## Rear Camera Check



TX1086305A—UN—28DEC10

Default Screen

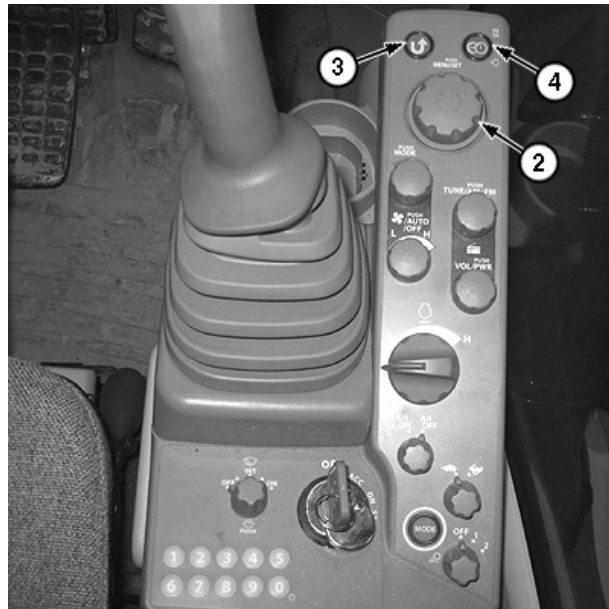
### 5—Default Screen



TX1086306A—UN—28DEC10

Main Menu Screen

### 1—Main Menu Screen



TX1086272A—UN—27DEC10

Switch Panel

- 2—Monitor Dial
- 3—Back Button
- 4—Home Button

Continued on next page

ER79617,0000DFA-19-05JUN14-10/52

**⚠ CAUTION:** To avoid possible injury or death to operator or others. The rear view camera image is designed to supplement other safety practices and is not intended to be the sole method of collision avoidance. Always be alert and aware of the surroundings when operating this machine .

Turn key ON.

When the default screen (5) is displayed, press monitor dial (2) on the switch panel.

*LOOK: Does main menu (1) display?*

Rotate monitor dial to highlight settings menu.

Press monitor dial.

*LOOK: Does settings menu display?*

At settings menu, rotate monitor dial to highlight rear view camera monitor.

Press monitor dial to display rear view camera monitor menu.

*LOOK: Does rear view camera monitor menu display?*

Press monitor dial to turn camera ON (enable).

Press Home button (4).



TX1087390A—UN—27JAN11

Rear View Image

#### 6—Rear View Image

*LOOK: Does rear view image (6) display on default screen?*

Repeat above steps.

At rear view camera monitor menu, press monitor dial to turn camera OFF (disable).

Press Home button.

*LOOK: Does default screen appear without rear view image?*

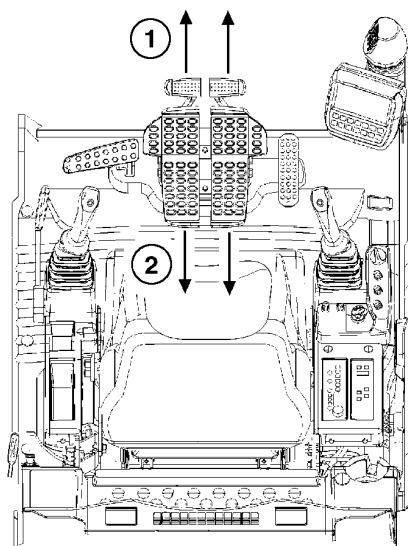
**YES:** Go to next check.

**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-11/52

**Travel Lever and Pedal  
Neutral Checks**



TX1005042—UN—21MAR06

*Travel Lever and Pedal*

**1—Forward**

**2—Reverse**

Push both travel levers and pedals forward (1), then release.

Pull both travel levers and pedals rearward (2), then release.

*FEEL: Do levers and pedals require equal effort to operate in forward and reverse?*

*LOOK: Do levers and pedals return to neutral at the same time when released?*

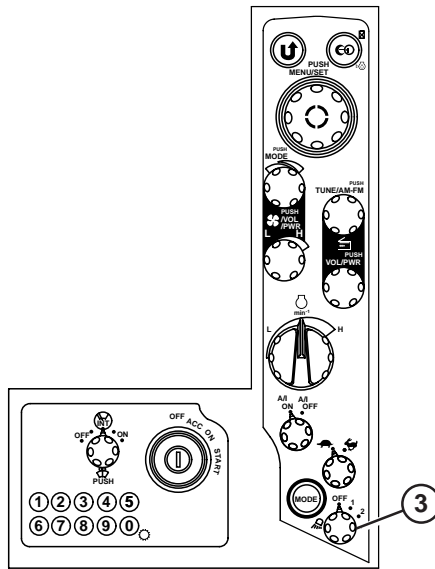
**YES:** Go to next check.

**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-12/52

Light Circuit Checks



TX1086747—UN—11JAN11

Switch Panel

**3—Work Light Switch**

Turn work light switch (3) to 1st position.

*LOOK: Is monitor panel back light and base machine work light on?*

*LOOK: Does switch panel illuminate?*

Turn light switch to 2nd position.

*LOOK: Does base machine work light stay on and switch panel stay illuminated?*

*LOOK: Does boom work light come on and monitor back panel light change to night mode?*

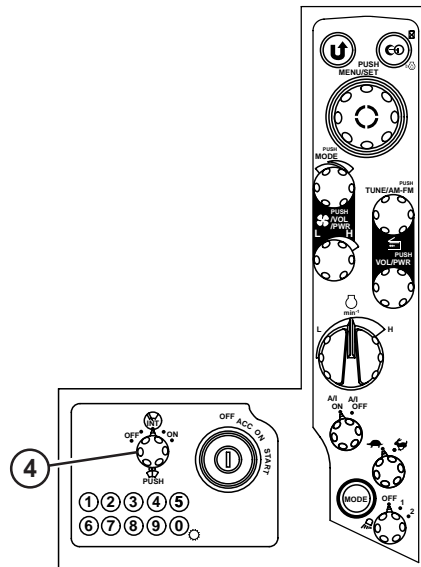
**YES:** Go to next check.

**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-13/52

**Windshield Wiper Control Check**



TX1086748—UN—11JAN11

*Switch Panel*

**4—Windshield Wiper and Washer Switch**

*NOTE: Front window must be fully closed and latched for windshield wiper to operate.*

Turn windshield wiper and washer switch (4) to first INT position.

*LOOK: Does wiper operate intermittently (8 second interval)?*

Turn windshield wiper and washer switch to second INT position.

*LOOK: Does wiper operate intermittently, but faster than when in first position (5 second interval)?*

Turn windshield wiper and washer switch to third INT position.

*LOOK: Does wiper operate intermittently, but faster than when in second position (3 second interval)?*

Turn windshield wiper and washer switch to ON position.

*LOOK: Does wiper operate continuously?*

Move windshield wiper and washer switch to OFF position.

*LOOK: Does wiper arm stop and retract to left side of windshield?*

**YES:** Go to next check.

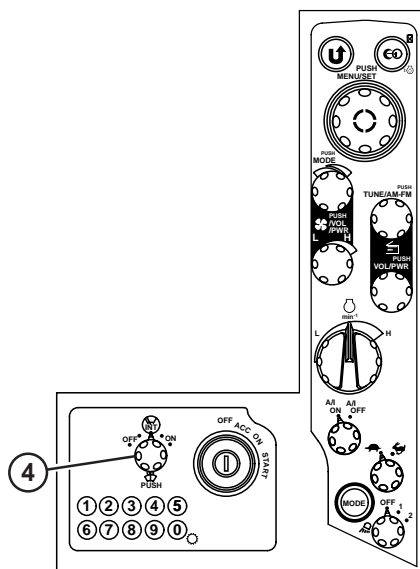
**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-14/52



# Windshield Washer Control Check



TX1086748—UN—11JAN11

## Switch Panel

### 4—Windshield Wiper and Washer Switch

**IMPORTANT:** Washer motor may be damaged if washer switch is held for more than 20 seconds, or continually operated with no fluid in the washer fluid tank.

**NOTE:** While wiper is being operated in INT mode, when windshield wiper and washer switch is pressed, wiper mode is changed to continuous mode.

Press windshield wiper and washer switch (4).

**LOOK:** Is washer fluid supplied to windshield?

Press and hold windshield wiper and washer switch for 3 seconds.

**LOOK:** Does wiper start and continue operating until switch is released?

Release windshield wiper and washer switch.

**LOOK:** Does wiper stop and retract to left side of windshield?

**YES:** Go to next check.

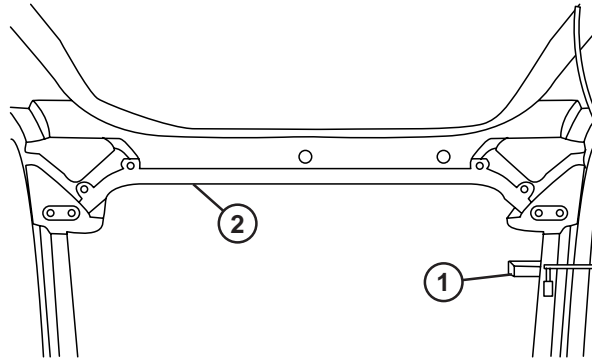
**NO:** Check washer fluid level. See Check Windshield Washer Fluid Level. (Section 3-3.)

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-15/52

# Windshield Wiper Circuit Check



TX1001270—UN—14DEC05

Front Window Release Handle

1—Lock Pin

2—Lock Release Bar

**CAUTION:** Prevent possible injury from window closing. Upper front window comes down very forcefully. Close window only when sitting on operator's seat. Guide window down slowly.

**CAUTION:** Prevent possible injury from window closing. Always lock the pin in cab frame boss hole.

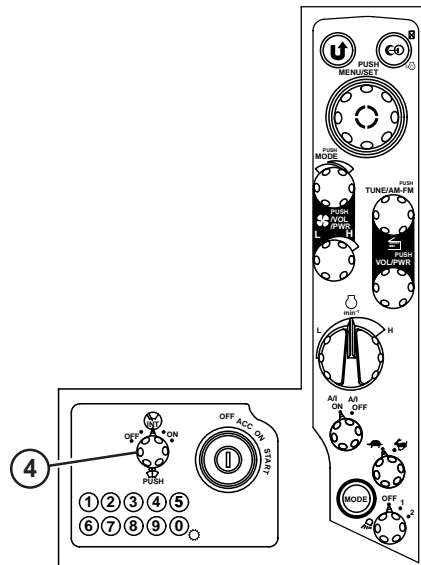
**NOTE:** The wiper cannot operate with the upper front window open. The washer can operate with the upper front window open. When closing window, check that window upper left corner makes good contact with the cab.

Slide lock pin (1) inward, then down into notch.

Pull lock release bar (2) toward operator's seat.

While holding lower handle on window, pull window up and back as far as it can go.

Slide lock pin into cab frame boss hole and rotate downward into the locked position.



TX1086748—UN—11JAN11

Switch Panel

4—Windshield Wiper and Washer Switch

Turn windshield wiper and washer switch (4) ON.

**LISTEN:** Does wiper circuit click?

**LOOK:** Does wiper remain stationary in park position?

**YES:** Go to next check.

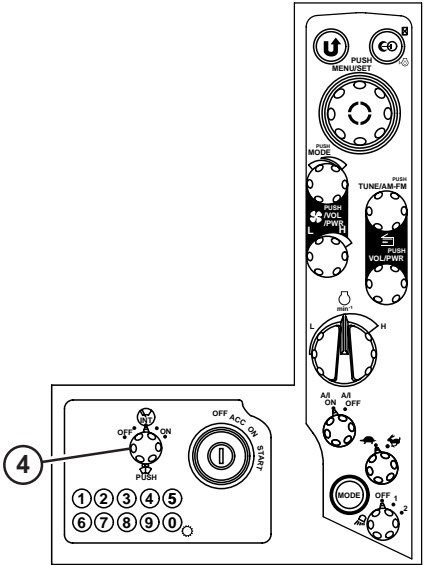
**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-16/52

Windshield Washer  
Circuit Check

**IMPORTANT:** Washer motor may be damaged if washer switch is held for more than 20 seconds, or continually operated with no fluid in the washer fluid tank.



TX1086748—UN—11JAN11

Switch Panel

**4—Windshield Wiper and Washer Switch**

Push windshield wiper and washer switch (4) and hold for 3 seconds.

*LOOK: Is washer fluid supplied to windshield?*

**YES:** Go to next check.

**NO:** Check washer fluid level. See Check Windshield Washer Fluid Level. (Section 3-3).

**NO:** See your authorized dealer.

ER79617,0000DFA-19-05JUN14-17/52

Operational Checks—Key Switch On, Engine On Checks

Continued on next page

ER79617,0000DFA-19-05JUN14-18/52

Monitor and Gauge  
Circuit Checks



TX1087196A—UN—28JUN13

Operating Screen

- 1—Power Mode Indicator
- 2—Hour Meter
- 3—Engine Coolant Temperature Gauge
- 4—Fuel Gauge
- 5—Alarm Indicator

**IMPORTANT:** Engine damage could occur if the alarm indicator (5) or engine oil pressure alarm indicator comes on after engine starts. Turn off machine immediately.

*NOTE: The exhaust filter auto cleaning disabled indicator will display on the monitor when the key switch is in ON position. Once the engine is started, the indicator will disappear unless exhaust filter auto cleaning has been disabled by the operator through the monitor.*

Start engine.

*LOOK: Do all alarm indicator displays remain off after engine starts?*

*LOOK: Does alarm indicator remain off after engine starts?*

*LOOK: Does engine coolant temperature gauge (3) display correct engine coolant temperature?*

*LOOK: Does fuel gauge (4) display correct fuel level?*

**YES:** Go to next check.

**NO:** Engine oil pressure alarm displayed. Immediately stop engine and check engine oil level. See Check Engine Oil Level. (Section 3-4.)

**IF OK:** See your authorized dealer.

**NO:** Alternator alarm indicator displayed. Check alternator drive belt.

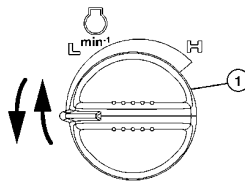
**IF OK:** See your authorized dealer.

**NO:** See your authorized dealer.

Continued on next page

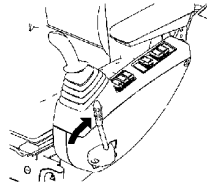
ER79617,0000DFA-19-05JUN14-19/52

**Pilot Shutoff Circuit Check**



TX1000874—UN—01DEC05

*Engine Speed Dial*



TX1000749—UN—29NOV05

*Locked (UP) Position*

**1—Engine Speed Dial**

**CAUTION:** Avoid possible injury. Machine may move during this check. Make sure area is clear and large enough to operate all machine functions.

Turn engine speed dial (1) to L (slow idle) position.

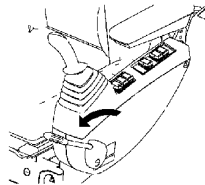
Place pilot shutoff lever in the locked (UP) position.

Slowly actuate dig and travel functions.

*LOOK: Do dig and travel functions operate?*

**YES:** See your authorized dealer.

**NO:** Go to next check.



TX1000747—UN—29NOV05

*Unlocked (DOWN) Position*

Place pilot shutoff lever in the unlocked (DOWN) position.

Slowly actuate dig and travel functions.

*LOOK: Do dig and travel functions operate?*

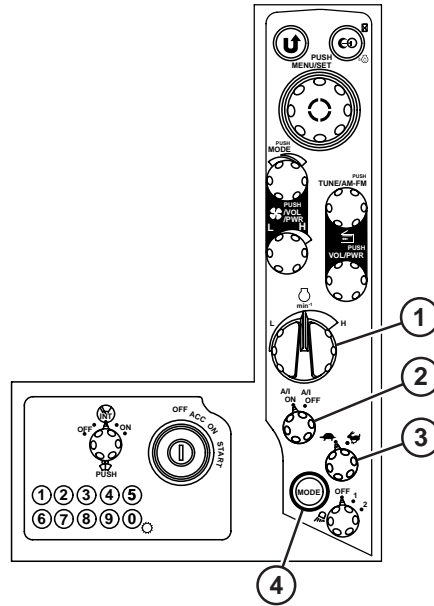
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-20/52

## Engine Speed Dial Check



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Mode Switch
- 4—Power Mode Switch

Turn auto-idle switch (2) to the A/I OFF position.

Place pilot shutoff lever in the locked (UP) position.

Turn engine speed dial (1) clockwise.

*LISTEN: Does engine speed increase?*

Turn engine speed dial counterclockwise.

*LISTEN: Does engine speed decrease?*

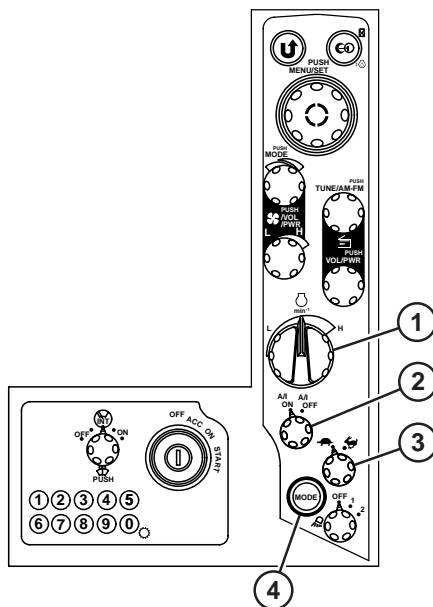
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-21/52

# **ECO (Economy) Mode and PWR (Power) Mode Check**



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial**
- 2—Auto-Idle Switch**
- 3—Travel Speed Switch**
- 4—Power Mode Switch**

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Turn (auto-idle) switch (2) to the A/I OFF position.

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch until ECO (economy) mode is displayed on monitor.

*LOOK/LISTEN: Does engine speed decrease?*

Push power mode switch until PWR (power) mode is displayed on monitor.

*LOOK/LISTEN: Does engine speed increase?*

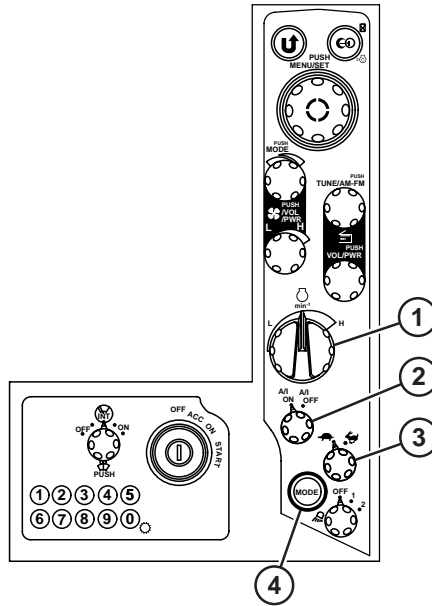
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-22/52

**H/P (High Power) Mode Check**



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial**
- 2—Auto-Idle Switch**
- 3—Travel Speed Switch**
- 4—Power Mode Switch**

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Turn auto-idle switch (2) to the A/I OFF position.

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch until H/P (high power) mode is displayed on monitor.

Actuate arm in function over relief.

**LOOK/LISTEN:** Does engine speed increase as function goes over relief?

**YES:** Go to next check.

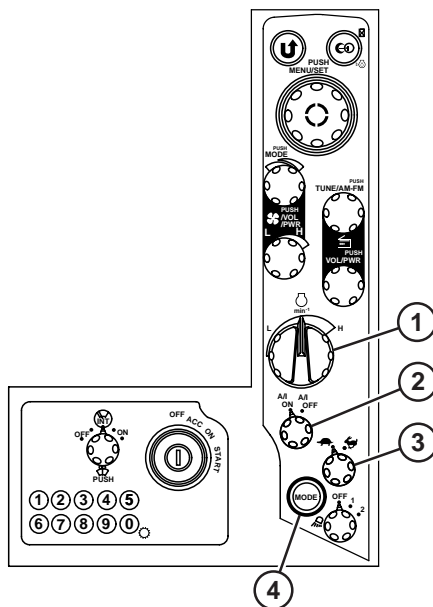
**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-23/52



# Auto-Idle Circuit Check



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until H/P (high power) mode is displayed on monitor.

Turn auto-idle switch (2) to the A/I OFF position.

Place pilot shutoff lever to the unlocked (DOWN) position.

Turn auto-idle switch to the A/I ON position.

*LOOK/LISTEN: Does engine speed decrease after 4—6 seconds?*

Slowly actuate dig function.

*LOOK/LISTEN: Does engine speed return to fast idle?*

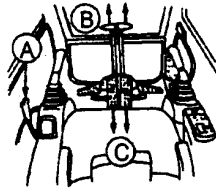
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-24/52

## Travel Alarm Check



T7850AF—UN—22OCT92

Travel Alarm

- A—Pilot Shutoff Lever
- B—Travel Lever and Pedal Forward
- C—Travel Lever and Pedal Rearward

**CAUTION:** Avoid possible injury. Machine will move during this check. Make sure area is clear and large enough to operate machine.

Place pilot shutoff lever (A) to the unlocked (DOWN) position.

Push travel pedals or levers forward (B).

*LISTEN: Does travel alarm sound?*

Push travel pedals or pull levers rearward (C).

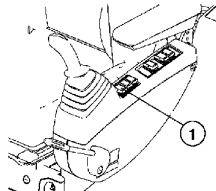
*LISTEN: Does travel alarm sound?*

**YES:** Go to next check.

**NO:** See your authorized dealer.

ER79617,0000DFA-19-05JUN14-25/52

## Travel Alarm Cancel Switch Circuit Check



TX1000876—UN—03DEC05

Travel Alarm Cancel Switch

- 1—Travel Alarm Cancel Switch

**CAUTION:** Avoid possible injury. Machine will move during this check. Make sure area is clear and large enough to operate machine.

*NOTE: Travel alarm must operate for this check.*

Place pilot shutoff lever to the locked (UP) position.

Push travel pedals or levers and allow travel alarm to operate for a minimum of 12 seconds.

*LISTEN: Does travel alarm sound?*

While continuing travel, push travel alarm cancel switch (1).

*LISTEN: Does travel alarm stop sounding?*

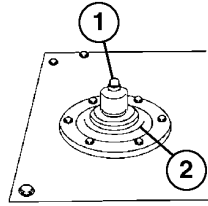
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-26/52

# Hydraulic Oil Tank Pressurization Check



TX1000859—UN—01DEC05

Hydraulic Oil Tank Cover

- 1—Hydraulic Oil Tank Pressure Release Button
- 2—Hydraulic Oil Tank Cover

**IMPORTANT:** The pressurized oil tank creates pressure at the inlet to the hydraulic pumps. If tank cover does not seal, hydraulic pumps could cavitate and be damaged.

Raise boom to full height, then lower boom to ground.

Slowly depress pressure release button (1) on hydraulic oil tank cover.

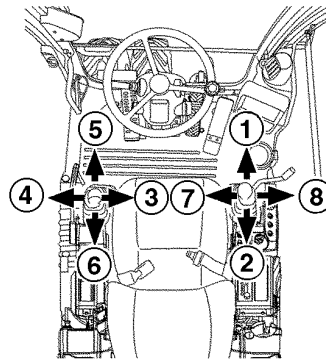
***LISTEN:** Is air heard escaping from the pressure release button on hydraulic oil tank cover?*

**YES:** Go to next check.

**NO:** Replace hydraulic oil tank cover.

ER79617,0000DFA-19-05JUN14-27/52

# Control Lever Pattern Check



TX1024414—UN—05JUL07

Control Lever Pattern

- 1—Arm Out
- 2—Arm In
- 3—Swing Right
- 4—Swing Left
- 5—Boom Down
- 6—Boom Up
- 7—Bucket Load
- 8—Bucket Dump

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

Turn engine speed dial to L (slow idle) position.

Place pilot shutoff lever to the unlocked (DOWN) position.

Slowly move hydraulic levers to all positions.

***LOOK:** Do bucket, boom, arm, and swing move according to pattern?*

**YES:** Go to next check.

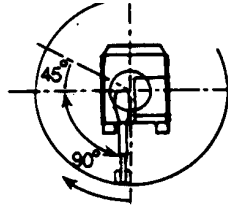
**NO:** See Control Lever Pattern Operation. (Section 2-3.)

**NO:** See your authorized dealer.

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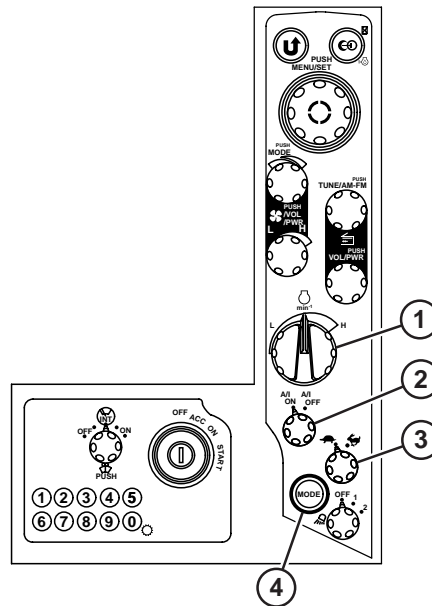
ER79617,0000DFA-19-05JUN14-28/52

Swing Dynamic Braking Check



T6479AY—UN—19OCT88

Swing Dynamic Braking



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

**CAUTION:** Avoid possible injury. Make sure area is clear and large enough to swing extended arm and bucket. Machine must be on level ground.

Position upperstructure with boom to the front.

Move arm to the extended position, bucket to the retracted position, and bucket-to-arm pivot pin at same level as boom-to-frame pivot pin.

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Fully actuate swing function. Swing clockwise 90 degrees and then release lever.

**LOOK:** Does upperstructure stop within 45 degrees (1/8 turn) or less after releasing lever?

Position upperstructure with boom to the front.

Fully actuate swing function. Swing counterclockwise 90 degrees and then release lever.

**LOOK:** Does upperstructure stop within 45 degrees (1/8 turn) or less after releasing lever?

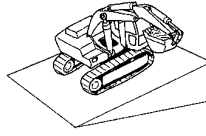
**YES:** Go to next check.

**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-29/52

**Swing Park Brake and  
Circuit Drift Check**



**T140540**

T140540—UN—17MAY01

*Machine Position*

Fill the bucket with dirt.

Position machine on a hillside with a slope of approximately 25%. If a hill is not available, raise one side of machine approximately 300 mm (1 ft) with the boom and then put a block under the track.

Move arm to the fully extended position.

Raise boom so arm-to-bucket pivot pin are the same height as boom-to-frame pivot pin.

Position upperstructure with cab over travel motors, perpendicular to tracks.

Turn engine speed dial to L (slow idle) position.

Wait approximately 5 minutes with all functions in neutral.

*NOTE: Function does not need to be fully actuated to disengage the swing park brake.*

Slowly actuate bucket load function to disengage the swing park brake. Do not hold the function over relief for more than 10 seconds.

*LOOK: Does upperstructure hold position when swing park brake is engaged?*

*LOOK: Does upperstructure move only slightly when swing park brake is disengaged?*

Swing upperstructure 180 degrees counterclockwise and repeat procedure.

Turn engine speed dial to L (slow idle) position.

Wait approximately 5 minutes with all functions in neutral.

Slowly actuate bucket load function to disengage the swing park brake. Do not hold the function over relief for more than 10 seconds.

*LOOK: Does upperstructure hold position when swing park brake is engaged?*

*LOOK: Does upperstructure move only slightly when swing park brake is disengaged?*

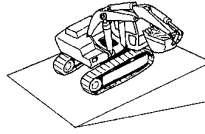
**YES:** Go to next check.

**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-30/52

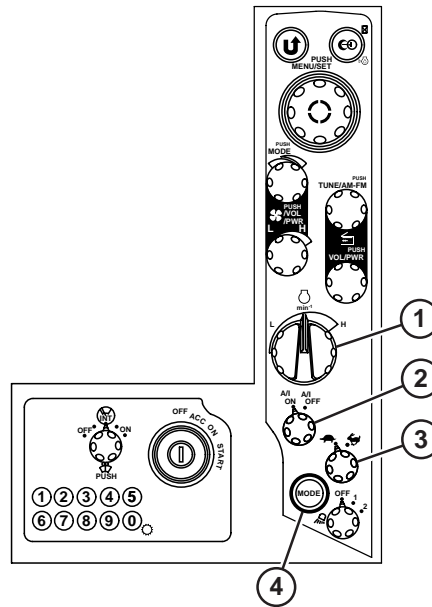
## Swing Power Check



T140540

T140540—UN—17MAY01

Machine Position



Switch Panel

TX1086753—UN—11JAN11

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

Fill the bucket with dirt.

Position machine on a hillside with a slope of approximately 25%. If a hill is not available, raise one side of machine approximately 300 mm (1 ft) with the boom and then put a block under the track.

Move arm to the fully extended position. Raise boom so arm-to-bucket pivot pin is the same height as boom-to-frame pivot pin.

Swing upperstructure clockwise so it is 90 degrees to the slope.

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until H/P (high power) mode is displayed on monitor.

Actuate the swing function to swing uphill.

**LOOK:** Does upperstructure swing uphill?

Swing upperstructure 180 degrees counterclockwise and repeat procedure.

Turn engine speed dial to H (fast idle) position.

Power mode switch in H/P (high power) mode.

Actuate the swing function to swing uphill.

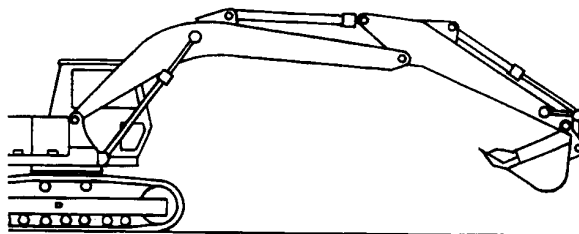
**LOOK:** Does upperstructure swing uphill?

**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-31/52

**Dig Function Drift Check  
(loaded bucket)**

T6904AG

T6904AG—UN—06DEC88

*Machine Position—Loaded Bucket*

Fill bucket with material to specification.

**Specification****Loaded Bucket—250GLC Only—Weight**

(approximate) . . . . .	1500 kg
	3307 lb.

**Specification****Loaded Bucket—290GLC Only—Weight**

(approximate) . . . . .	1650 kg
	3638 lb.

Position bucket at maximum reach with bucket pivot pin the same height as boom pivot pin.

Retract arm cylinder, then extend about 50 mm (2 in.).

Extend bucket cylinder, then retract about 50 mm (2 in.).

Stop engine.

Measure amount cylinders extend or retract in 5 minutes.

Measure distance from bottom of bucket to ground.

Compare measurements to specifications.

**Dig Function Drift Specifications (loaded bucket) — Specification**

Boom Cylinder—Drift. . . . .	20 mm
	0.79 in.
Arm Cylinder—Drift. . . . .	20 mm
	0.79 in.
Bucket Cylinder—Drift. . . . .	20 mm
	0.79 in.
Bottom Of Bucket-To-Ground—Drift. . . . .	150 mm
	5.91 in.

*LOOK: Is cylinder drift within specification?***YES:** Go to next check.**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-32/52

**Dig Function Drift Check  
(empty bucket)**



TX1109902—UN—28JUN13

*Machine Position—Empty Bucket*

**1—Arm Tip Position Above Ground**

Empty bucket of material.

Extend arm cylinder, then retract about 50 mm (2 in.).

Extend bucket cylinder, then retract about 50 mm (2 in.).

Lower boom until arm tip position above ground (1) is 1 m (40 in.).

Stop engine.

Measure amount cylinders extend or retract in 5 minutes.

Measure distance from arm tip to ground.

Compare measurements to specifications.

**Dig Function Drift Specifications (empty bucket) — Specification**

Boom Cylinder—Drift. . . . .	5 mm 0.20 in.
Arm Cylinder—Drift. . . . .	15 mm 0.59 in.
Bucket Cylinder—Drift. . . . .	10 mm 0.39 in.
Arm Tip-to-Ground—Drift. . . . .	110 mm 4.33 in.

*LOOK: Is cylinder drift within specification?*

**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-33/52



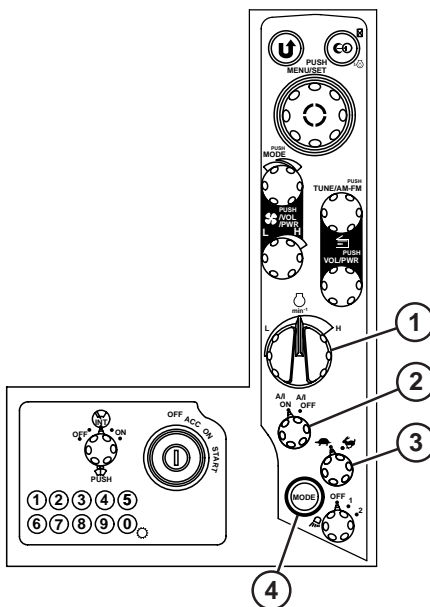
# Swing Priority Circuit Check

**CAUTION:** Avoid possible injury. Make sure area is clear and large enough to swing extended arm and bucket. Machine must be on level ground.



T6290AF—UN—19OCT88

## Swing Priority Check



TX1086753—UN—11JAN11

## Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

**IMPORTANT:** Position machine as shown. Operate swing and arm in slowly a few times before attempting to perform check to ensure bucket does not contact machine or ground.

Position machine as shown.

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Operate swing function and record time required for three complete revolutions.

Divide that time by three to get an average time for one revolution.

## Specification

Swing Function—Time—One Revolution. . . . . 4.00—5.00 sec.

Position machine as shown, arm extended, bucket curled, and upper structure 90 degrees to tracks.

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Raise boom high enough so bucket does not contact the machine or ground during arm in and swing combined operation.

Operate swing function and slowly actuate arm in function when upperstructure is in line with tracks. Record time required for one complete revolution.

**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-34/52

*NOTE: Swing speed should not slow when actuating arm in.*  
*LOOK: Does swing speed remain unchanged when actuating arm in?*

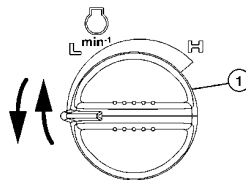
ER79617,0000DFA-19-05JUN14-35/52

### Control Valve Lift Check Test



T6292AZ—UN—19OCT88

#### Control Valve Lift



TX1000874—UN—01DEC05

#### Engine Speed Dial

##### 1—Engine Speed Dial

Turn engine speed dial (1) to L (slow idle) position.

Position machine as shown.

Slowly lower boom, extend arm (retract cylinder), and dump bucket (retract cylinder).

*LOOK: Do functions move in opposite direction as pilot control levers are first moved, then change direction as levers are moved farther?*

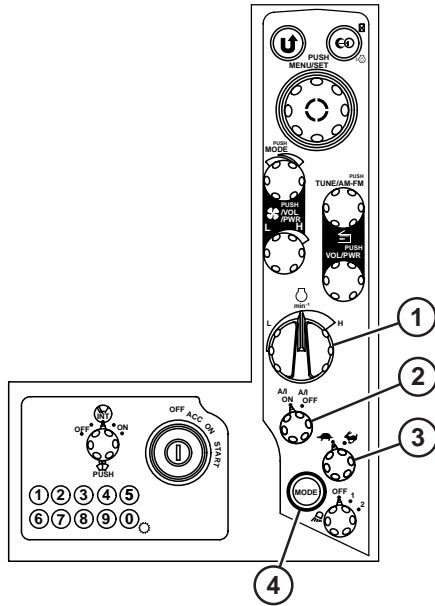
**YES:** See your authorized dealer.

**NO:** Go to next check.

Continued on next page

ER79617,0000DFA-19-05JUN14-36/52

**Boom Up, Arm In, and  
Bucket Combined  
Function Operation  
Check**



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Actuate boom up function, arm in function, and then bucket function in combination.

*LOOK: Does boom continue to move at approximately the same speed after bucket function is actuated?*

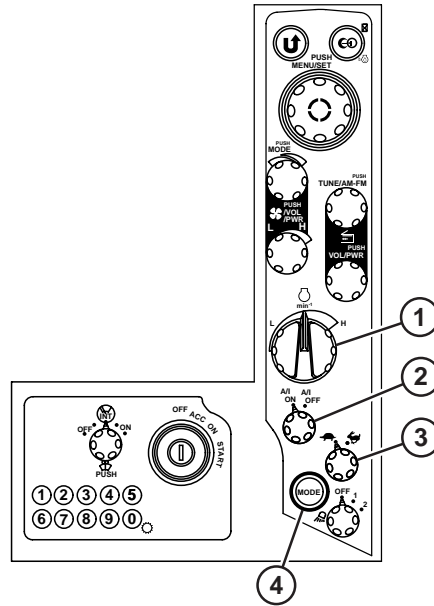
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-37/52

**Boom Regenerative Valve  
Operation Check**



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Raise boom and extend the arm to full extension.

Actuate the boom down, then arm in and boom up functions in combined operation.

*LOOK: Does the boom move smoothly through the complete cycle down and up and not hesitate when it goes past the vertical position?*

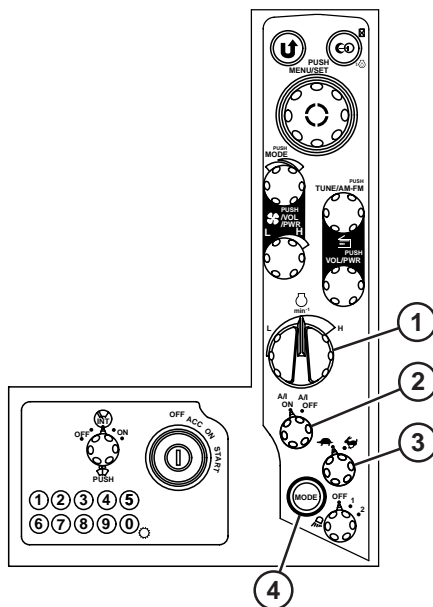
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-38/52

# Arm Regenerative Valve Operation Check



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Extend the arm to full extension and then lower boom so bucket is on the ground.

Actuate the boom up and arm in functions in combined operation.

**LOOK:** Does the arm move smoothly through the complete cycle and not hesitate when it goes through the vertical position?

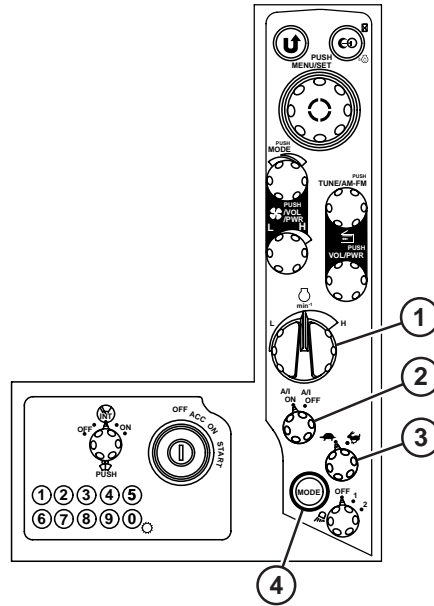
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-39/52

**Bucket Regenerative  
Valve Operation Check**



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial**
- 2—Auto-Idle Switch**
- 3—Travel Speed Switch**
- 4—Power Mode Switch**

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Actuate boom up, arm out and bucket dump functions.

Actuate boom down function, arm in function, and then bucket curl function.

**LOOK:** Does the bucket move smoothly through the complete cycle and not hesitate when it goes to the curl position?

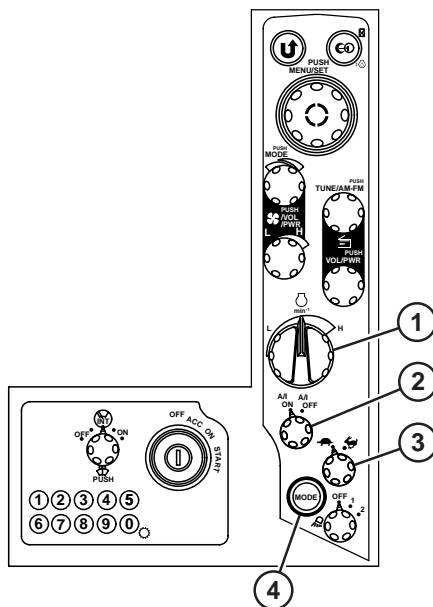
**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-40/52

# Travel Speed Selection Check



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

Turn engine speed dial (1) to H (fast idle) position.

Turn travel speed switch (3) to slow speed (turtle) mode.

Actuate travel function to full speed.

Turn travel speed switch to fast speed (rabbit) mode.

**LOOK:** Does machine travel speed increase?

Actuate a dig function and then return to neutral.

**LOOK:** Does machine travel speed decrease and then increase as dig function is actuated and then released?

Turn travel speed switch to slow speed (turtle) mode.

**LOOK:** Does machine travel speed decrease?

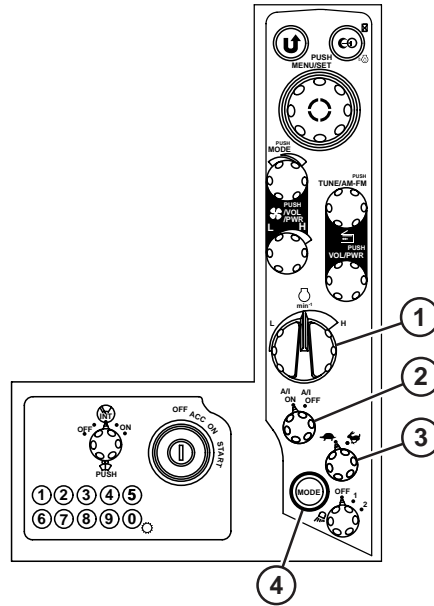
**YES:** Go to next check.

**NO:** See your authorized dealer.

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ER79617,0000DFA-19-05JUN14-41/52

**Travel System Tracking Check**



TX1086753—UN—11JAN11

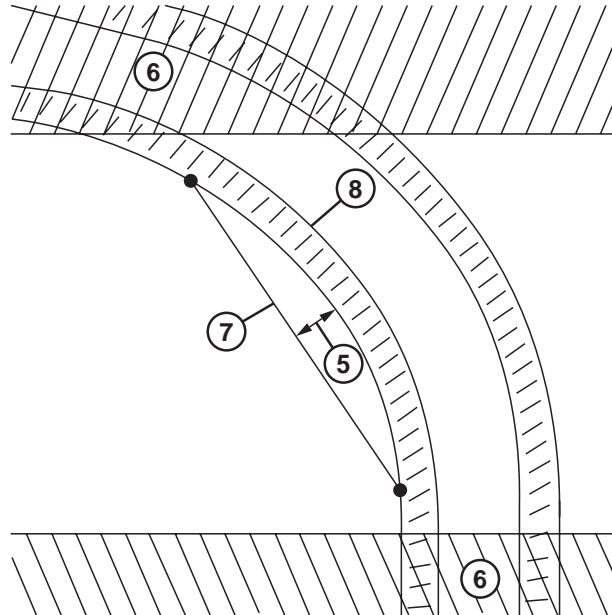
*Switch Panel*

- 1—Engine Speed Dial**
- 2—Auto-Idle Switch**
- 3—Travel Speed Switch**
- 4—Power Mode Switch**

Turn engine speed dial (1) to H (fast idle) position.

Push power mode switch (4) until PWR (power) mode is displayed on monitor.

Turn travel speed switch (3) to fast speed (rabbit) mode.



TX1120481—UN—17AUG12

*Tracking Check*

- 5—Distance of Mistrack**
- 6—Acceleration and Deceleration Zone (approximately): 3—5 m (10—16 ft.)**
- 7—Test Line (distance): 20 m (66 ft.)**
- 8—Track Print**

**YES:** Go to next check.

Continued on next page

ER79617,0000DFA-19-05JUN14-42/52



Operate machine at full travel forward speed on a flat and level surface approximately 30 m (99 ft.).

**NOTE:** When machine mistracks right, hydraulic pump 1 circuit oil flow may be less than specification. When machine mistracks left, hydraulic pump 2 circuit oil flow may be less than specification.

Observe direction of mistrack.

Create a straight test line 20 m (66 ft.) (7) long between two points on track print (8).

Measure and record greatest distance of mistrack (5) between inside edge of track print and test line.

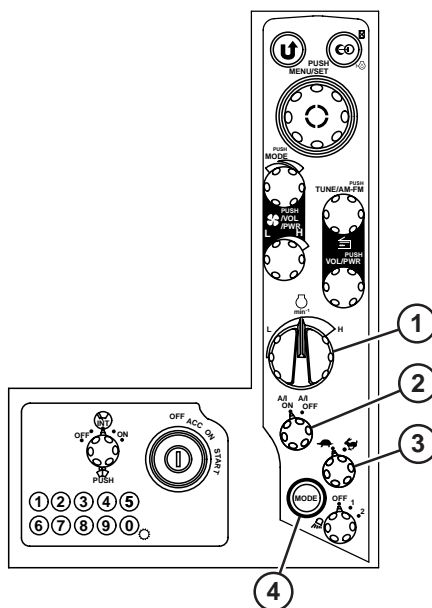
Repeat procedure in reverse travel.

**LOOK:** Does machine mistrack (5) less than 200 mm (7.88 in.)?

**NO:** See your authorized dealer.

ER79617,0000DFA-19-05JUN14-43/52

# Travel System Tracking Checks While Operating a Dig Function



Switch Panel

- 1—Engine Speed Dial
- 2—Auto-Idle Switch
- 3—Travel Speed Switch
- 4—Power Mode Switch

**NOTE:** Machine will slow down during this test.

Turn engine speed dial (1) to H (fast idle) position.

Turn travel speed switch (3) to fast speed (rabbit) mode.

Operate machine at full speed forward on a flat and level surface.

After machine is moving, actuate arm out from neutral to full actuation and extend the arm.

**LOOK:** Does machine mistrack excessively when the arm is extended?

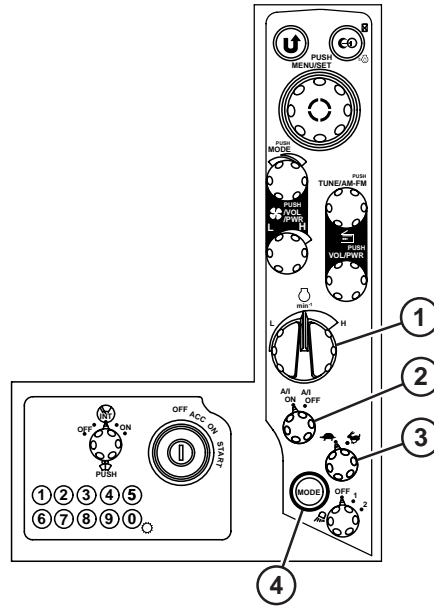
**YES:** See your authorized dealer.

**NO:** Go to next check.

Continued on next page

ER79617,0000DFA-19-05JUN14-44/52

**Travel System  
Maneuverability Check**



TX1086753—UN—11JAN11

Switch Panel

- 1—Engine Speed Dial**
- 2—Auto-Idle Switch**
- 3—Travel Speed Switch**
- 4—Power Mode Switch**

Turn engine speed dial (1) to H (fast idle) position.

Turn travel speed switch (3) to fast speed (rabbit) mode.

Drive machine at full speed forward down a slope.

Turn in each direction.

**LOOK:** Does each track slow down in response to pedal or lever movement in order to turn?

Repeat the procedure in reverse travel.

Turn travel speed switch to fast speed (rabbit) mode.

Drive machine at full speed in reverse down a slope.

Turn in each direction.

**LOOK:** Does each track slow down in response to pedal or lever movement in order to turn?

**YES:** Go to next check.

**NO:** See your authorized dealer.

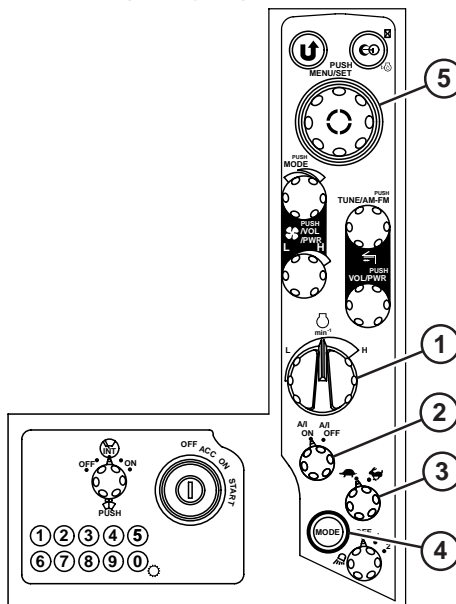
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ER79617,0000DFA-19-05JUN14-45/52

**Cycle Times Check—  
250GLC only**

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

**NOTE:** Warm hydraulic oil to operating temperature for this check.



TX1136301—UN—10MAY13

*Switch Panel*

- 1—Engine Speed Dial**
- 2—Auto-Idle Switch**
- 3—Travel Speed Switch**
- 4—Power Mode Switch**
- 5—Monitor Dial**

Turn engine speed dial (1) to H (fast idle) position.

Turn auto-idle switch (2) to the A/I OFF position.

Press power mode button (4) until PWR (power) mode is displayed on monitor.

Rotate monitor dial (5) to highlight and select Dig mode from Work Mode menu.



T6477AQ—UN—19OCT88

*Boom*



T7884AE—UN—10NOV92

*Arm, Bucket, Swing*

Move machine to position shown for each test.

Record cycle time for each function.

**YES:** Go to next check.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-46/52

**Specification**

Boom Raise (cylinder extend)—Cycle Time. . . . .	3.2—3.8 sec.
Boom Lower (cylinder retract)—Cycle Time. . . . .	2.0—2.6 sec.
Arm In (cylinder extend)—Cycle Time. . . . .	3.2—3.8 sec.
Arm Out (cylinder retract)—Cycle Time. . . . .	2.4—3.0 sec.
Bucket Load (cylinder extend)—Cycle Time. . . . .	3.1—3.7 sec.
Bucket Dump (cylinder retract)—Cycle Time. . . . .	2.1—2.7 sec.
Swing Left or Right, 3 Revolutions From a Running Start—Cycle Time. . . . .	12.7—14.7 sec.
Drive 20 m (65 ft.) From a Running Start (check in forward and reverse with travel speed switch in FAST position)—Cycle Time. . . . .	12.0—14.4 sec.
Drive 20 m (65 ft.) From a Running Start (check in forward and reverse with travel speed switch in SLOW position)—Cycle Time. . . . .	19.4—23.4 sec.
Track Raised for 3 Revolutions From a Running Start (check in forward and reverse with travel mode switch in FAST position)—Cycle Time. . . . .	17.1—21.1 sec.
Track Raised for 3 Revolutions From a Running Start (check in forward and reverse with travel mode switch in SLOW position)—Cycle Time. . . . .	29.0—33.0 sec.
<i>LOOK: Does machine perform within specifications?</i>	

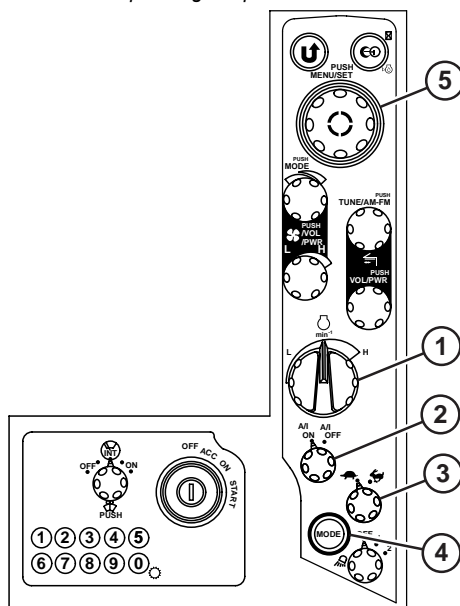
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ER79617,0000DFA-19-05JUN14-47/52

**Cycle Times Check—  
290GLC Only**

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

**NOTE:** Warm hydraulic oil to operating temperature for this check



TX1136301—UN—10MAY13

*Switch Panel*

- 1—Engine Speed Dial**
- 2—Auto-Idle Switch**
- 3—Travel Speed Switch**
- 4—Power Mode Switch**
- 5—Monitor Dial**

Turn engine speed dial (1) to H (fast idle) position.

Turn auto-idle switch (2) to A/I OFF.

Press power mode button (4) until PWR (power) mode is displayed on monitor.

Rotate monitor dial (5) to highlight and select Dig mode from Work Mode menu.



T6477AQ—UN—19OCT88

*Boom*



T7884AE—UN—10NOV92

*Arm, Bucket, Swing*

Move machine to position shown for each test.

Record cycle time for each function.

**YES:** Go to next check.

**NO:** See your authorized dealer.

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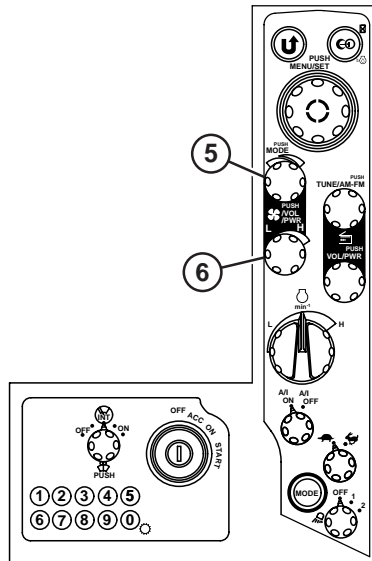
ER79617,0000DFA-19-05JUN14-48/52

**Specification**

Boom Raise (cylinder extend)—Cycle Time. . . . .	3.2—3.8 sec.
Boom Lower (cylinder retract)—Cycle Time. . . . .	2.0—2.6 sec.
Arm In (cylinder extend)—Cycle Time. . . . .	3.3—3.9 sec.
Arm Out (cylinder retract)—Cycle Time. . . . .	2.6—3.2 sec.
Bucket Load (cylinder extend)—Cycle Time. . . . .	2.8—3.4 sec.
Bucket Dump (cylinder retract)—Cycle Time. . . . .	2.2—2.8 sec.
Swing Left or Right, 3 Revolutions From a Running Start—Cycle Time. . . . .	13.3—15.3 sec.
Drive 20 m (65 ft.) From a Running Start (check in forward and reverse with travel speed switch in FAST position)—Cycle Time. . . . .	12.0—14.4 sec.
Drive 20 m (65 ft.) From a Running Start (check in forward and reverse with travel speed switch in SLOW position)—Cycle Time. . . . .	20.0—24.0 sec.
Track Raised for 3 Revolutions From a Running Start (check in forward and reverse with travel mode switch in FAST position)—Cycle Time. . . . .	32.2—36.2 sec.
Track Raised for 3 Revolutions From a Running Start (check in forward and reverse with travel mode switch in SLOW position)—Cycle Time. . . . .	32.2—36.2 sec.
<i>LOOK: Does machine perform within specifications?</i>	

ER79617,0000DFA-19-05JUN14-49/52

**Heater and Air  
Conditioning Circuit  
Check**



TX1086866—UN—13JAN11

*Switch Panel*

- 5—Temperature Control/Mode Switch**
- 6—Blower Speed Switch**

Start engine and warm to normal operating temperature.

Turn temperature control/mode switch (5) clockwise to maximum heat position.

*FEEL: Does warm air come from the vents?*

Turn temperature control/mode switch counterclockwise to maximum cold position.

*LISTEN: Does air conditioner compressor clutch solenoid "click"?*

*FEEL: Does cool air come from the vents?*

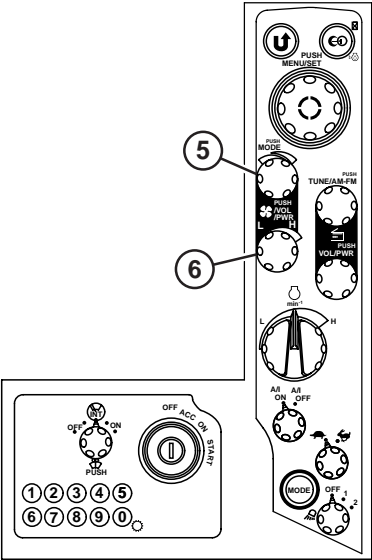
**YES:** Checks complete.

**NO:** See your authorized dealer.

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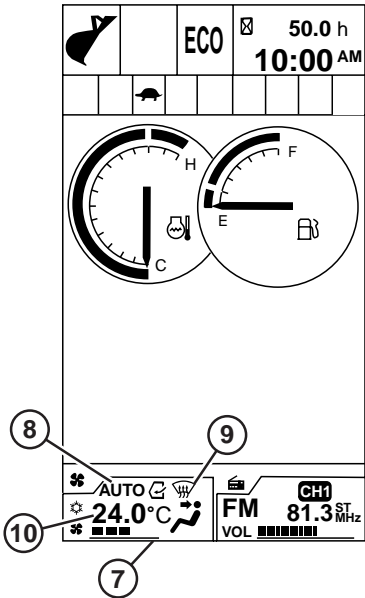
ER79617,0000DFA-19-05JUN14-50/52

Heater And Air  
Conditioner Controls  
Check (Automatic  
Temperature Control)



TX1086866—UN—13JAN11

Switch Panel



TX1087006—UN—17JAN11

Monitor-Air Conditioner and Heater Display

- 5—Temperature Control/Mode Switch
- 6—Blower Speed Switch
- 7—Fan Speed
- 8—AUTO Display
- 9—Vent Position
- 10—Temperature Setting

Key ON, press blower speed switch (6).

Start engine and warm to normal operating temperature.

Press blower speed switch.

*LISTEN: Does air conditioner compressor clutch solenoid “click”?*

*LOOK: Does AUTO display (8), display on monitor?*

**YES:** Checks complete.

**NO:** See your authorized dealer.

Continued on next page

ER79617,0000DFA-19-05JUN14-51/52

*LOOK: Does monitor display vent position (9), fan speed (7), and temperature setting (10)?*

Turn temperature control/mode switch (5) clockwise to maximum heat position.

*LOOK: Does vent position change?*

*LOOK: Does temperature setting increase?*

*FEEL: Does warm air come from the vents?*

Turn temperature control/mode switch counterclockwise to maximum cold position.

*LOOK: Does vent position change?*

*LOOK: Does temperature setting decrease?*

*FEEL: Does cool air come from the vents?*

Press blower speed switch.

*LISTEN: Does air conditioner compressor clutch solenoid "click"? (air conditioner and heater are ON in manual mode.)*

*LOOK: Does AUTO display go OFF?*

Turn temperature control/mode switch clockwise to maximum heat position.

*LOOK: Does vent position change?*

*LOOK: Does temperature setting increase?*

*FEEL: Does warm air come from the vents?*

Turn temperature control/mode switch counterclockwise to maximum cold position.

*LOOK: Does vent position change?*

*LOOK: Does temperature setting decrease?*

*FEEL: Does cool air come from the vents?*

Press temperature control/mode switch.

*LOOK: Does vent position change?*

Repeat for all four vent positions.

*LOOK: Does vent position change each time switch is pushed?*

Press blower speed switch.

*LOOK: Are air conditioner and heater OFF? (push blower speed switch to start air conditioner and heater).*

ER79617,0000DFA-19-05JUN14-52/52



# Miscellaneous—Troubleshooting

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## Troubleshooting Procedure

*NOTE: Troubleshooting charts are arranged from the simplest to verify, to least likely, more difficult to verify. When diagnosing a problem, use all possible means to isolate the problem to a single component or system. Use the following steps to diagnose problems:*

*Step 1. Operational Checkout Procedure*

*Step 2. Troubleshooting Charts*

*Step 3. Adjustments*

*Step 4. See your authorized John Deere dealer.*

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

**Engine**

Symptom	Problem	Solution
<b>Engine Cranks But Will Not Start Or Hard To Start</b>	No fuel	Add fuel. Bleed air.
	Incorrect fuel	Use correct fuel.
	Fuel filter clogged	Replace filter. Bleed air. Clean fuel tank inlet screen.
	Primary fuel filter and water separator clogged or not primed	Check primary fuel filter and water separator.
	Water in fuel	Check, drain, and refill.
	Low battery power	Charge or install new batteries.
	Slow cranking speed (poor electrical connection)	Clean and tighten battery and starter connections.
<b>Engine Will Not Crank</b>	Incorrect engine oil	Use correct oil.
	Weak battery	Replace battery.
	Corroded or loose battery connections	Clean battery terminals and connections.
<b>Engine Knocks, Runs Irregularly, Or Stops</b>	Fuse	Check ECU fuse (F8) and POWER ON 5 amp fuse (F17).
	Air filter clogged	Clean or replace elements. Clean system.
	Fuel filters clogged	Replace filters. Bleed air. Clean fuel tank inlet screen.
	Air in fuel system	Bleed air from fuel system.
	Contaminated fuel	Drain tank. Add clean fuel. Replace primary fuel filter and water separator.
<b>Excessive Fuel Consumption</b>	Engine speed control system	See authorized dealer.
	Air cleaner restricted or dirty	Replace air cleaner element as required.
	Poor fuel quality	Drain fuel and replace with quality fuel of the proper grade.
	Leaks in fuel supply system	Locate source of leak and repair as required.
<b>Excessive Oil Consumption</b>	Exhaust filter restricted—if equipped	See your authorized dealer.
	Poor fuel quality	Drain fuel and replace with quality fuel of the proper grade.

Continued on next page

ER79617,0000DD7-19-03JUN14-1/3

Symptom	Problem	Solution
<b>Engine Idles Poorly</b>	Air cleaner restricted or dirty	Replace air cleaner element as required.
	Worn engine	See authorized dealer.
	Poor fuel quality	Drain fuel and replace with quality fuel of the proper grade.
	Air in fuel system	Bleed air system.
	Air filters	Clean or replace engine air filters.
	Fuel filters	Clean or replace fuel filters.
	Engine speed control system	See your authorized dealer.
<b>Auto-Idle Does Not Work</b>	Exhaust filter restricted—if equipped	See your authorized dealer.
	Idle is not above 1000 rpm	Advance engine speed dial to high idle.
	Auto-idle is off	Turn auto-idle to the A/I ON position.
	Hydraulic functions operating	Release hydraulic functions for 10 seconds.
<b>Engine Not Developing Full Power</b>	Air filters clogged	Clean or replace filter elements.
	Fuel filter clogged	Change filter. Bleed air.
	Contaminated fuel	Drain fuel tank. Change primary fuel filter and water separator, change fuel filter, bleed air. Add clean fuel.
	Incorrect fuel	Use correct fuel.
	Fuel filter not installed correctly	Install new filter and o-ring. Ensure proper o-ring seal.
	Exhaust filter restricted—if equipped	See your authorized dealer.
	Worn engine	See authorized dealer.
	Hydraulic issue	See authorized dealer.
	Low crankcase oil level	Fill crankcase to proper oil level.
<b>Engine Oil Pressure Low</b>	Excessive oil temperature	Remove and inspect oil cooler.
	Incorrect oil	Drain crankcase and refill with correct oil.
	Worn engine	See authorized dealer.
	Incorrect oil	Drain crankcase and refill with correct oil.
<b>Engine Oil Pressure High</b>	Incorrect oil	Drain crankcase and refill with correct oil.
	Plugged air filter	Clean air filter, replace if necessary.
<b>Engine Coolant Temperature Above Normal</b>	Plugged air filter	Clean air filter, replace if necessary.

Continued on next page

ER79617,0000DD7-19-03JUN14-2/3

Symptom	Problem	Solution
	Lack of coolant in cooling system	Fill cooling system to proper level.
	Radiator core and/or side screens dirty	Clean radiator as required.
	Engine overloaded	Reduce engine load.
	Too low crankcase oil level	Fill crankcase to proper oil level.
	Loose recovery tank cap	Secure cap properly.
<b>Engine Emits Excessive Black or Gray Exhaust Smoke</b>	Incorrect fuel	Use correct fuel.
	Clogged or dirty air intake or exhaust system	Clean air intake and exhaust system.
	Exhaust filter is cracked or damaged— if equipped	See your authorized dealer.
<b>Engine Emits Excessive White Exhaust Smoke</b>	Wrong fuel	Use correct fuel.
	Cold engine	Run engine until warm.
	Exhaust filter is cracked or damaged— if equipped	See your authorized dealer.

ER79617,0000DD7-19-03JUN14-3/3

## Hydraulic System

Symptom	Problem	Solution
<b>No Hydraulic Functions</b>	Pilot shutoff lever	Place pilot shutoff in unlocked (DOWN) position.
	Low hydraulic oil	Add oil.
	Fuse	Check fuse F7.
	Clogged suction filter	Clean.
<b>Hydraulic Functions Are Slow or Have Little or No Power</b>	Low oil level	Fill hydraulic tank oil to full mark.
	Cold oil	Perform cold weather warmup.
	Incorrect oil	Use correct oil.
	Engine speed too slow	Increase speed.
	Suction screen clogged	Inspect and clean.
	Hydraulic tank cap/cover	Replace cap/cover.
<b>Hydraulic Oil Overheats</b>	Incorrect oil	Use correct oil.
	Clogged radiator or oil cooler	Clean and straighten fins.
	Radiator screen clogged	Clean screen.
	Clogged filters	Install new filters.
	Low oil level	Fill tank to full mark.
	Contaminated oil	Drain oil and refill.
<b>Oil Foams</b>	High or low oil level	Correct level.
	Incorrect oil	Use correct oil.
	Air leak on line from reservoir	Repair leak.
	Water in oil	Change oil.
	Kinks or dents in oil lines	Check lines.
<b>No Swing Function</b>	Pilot control hoses pinched or kinked	Inspect and correct.
<b>Swing Function Is Jerky</b>	Lack of grease	Fill with grease.
	Rocks or mud jammed in track frame	Remove or repair.
<b>Slow Travel Speed Only</b>	Pilot control valve hoses pinched or kinked	Inspect and correct.
<b>Travel Is Jerky</b>	Track sag adjustment	Adjust track sag.
	Rocks or mud jammed in track frame	Remove and repair.

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ER79617,0000DD4-19-25FEB11-1/2

Symptom	Problem	Solution
<b>Engine Stops When Travel Or Control Lever Actuated</b>	Water separator clogged	Drain. Change element.
<i>NOTE: If any other problems are encountered which require special tools or machine knowledge to correct, see your authorized dealer.</i>		
ER79617,0000DD4-19-25FEB11-2/2		

## Electrical System

Symptom	Problem	Solution
<b>No Electrical Functions</b>	Battery undercharged or dead	Recharge or replace.
	Fuse malfunction	Check ALT 65 amp fuse (F60) and BAT 45 amp fuse (F61), and replace if necessary.
<b>Batteries Undercharged</b>	Loose or corroded connections	Clean and tighten or replace batteries.
<b>Batteries Will Not Take A Charge</b>	Loose or corroded connections	Clean and tighten.
	Low battery power	Replace both batteries.
<b>Battery Uses Too Much Water</b>	Cracked battery case	Replace batteries.
	High ambient temperature	Refill with water.
<b>Cracked Battery Case</b>	No battery hold down clamp	Replace both batteries and install hold down clamp.
	Loose battery hold down clamp	Replace both batteries and install hold down clamp.
	Frozen battery	Replace both batteries. Keep batteries fully charged in cold weather.
<b>Low Battery Output</b>	Low water level	Add water.
	Dirty or wet battery top, causing discharge	Clean and wipe battery top dry.
	Corroded or loose battery cables	Clean and tighten battery cables.
	Broken battery post	Wiggle battery post by hand. If post wiggles or turns, replace both batteries.
<b>Starter Will Not Turn</b>	Battery undercharged or dead	Recharge or replace both batteries.
	Battery cables making poor connections	Clean connections.
	Fuse	Check Controller Key Switch Signal 10 A Fuse (Marked POW ON), and replace if necessary.
	Starter	Repair or replace starter.
	Starter pinion jammed in flywheel gear	Repair or replace starter, or ring gear.
<b>Starter Turns But Will Not Crank Engine</b>	Starter	Repair or replace starter.
<b>Engine Cranks Slowly</b>	Battery cables damaged or broken internally	Inspect and replace cables.
	Battery or starter cable connections loose or corroded	Clean and tighten connections.

Continued on next page

ER79617,0000DDE-19-03JUN14-1/2

Symptom	Problem	Solution
	Battery discharged or will not hold a charge	Recharge or replace both batteries.
	Starter	Repair or replace starter.
	Low battery voltage	Recharge or replace both batteries.
<b>Starter Continues To Run After Engine Starts</b>	Starter	Repair or replace starter.
	Key switch malfunction	Disconnect battery ground. Replace key switch.
<b>Charging Indicator Light On, Engine Running</b>	Loose or corroded electrical connections on battery, ground strap, starter, or alternator	Inspect, clean, or tighten electrical connections.
	Fuse	Check CONTROLLER 5 amp fuse (F10) and ECU fuse (F8), and replace if necessary.
<b>Noisy Alternator</b>	Worn drive belt	Replace belt.
	Worn pulleys	Replace pulleys and belt.
	Pulley misaligned	Adjuster alternator mount.
	Alternator bearing	Loosen alternator belts. Turn pulley by hand. If any roughness is felt, repair alternator.
<b>No Monitor Panel Indicators Or Gauges Work</b>	Fuse	Check CONTROLLER 5 amp fuse (F10), and replace if necessary.
<b>No Switch Panel Switches Or Engine Speed Dial Work</b>	Fuse	Check POWER ON 5 amp fuse (F17), MONITOR 5 amp fuse (F14), SOLENOID 20 amp fuse, and BACK UP 10 amp fuse, and replace if necessary.

ER79617,0000DDE-19-03JUN14-2/2

## Software Update

Symptom	Problem	Solution
<b>Service ADVISOR™ Remote (SAR) Updates Not Operating Properly</b>	Software updates not operating properly	Follow screen instructions on the display monitor.  If problem persists, see an authorized John Deere dealer.

Service ADVISOR is a trademark of Deere & Company

OUT4001,00006CA-19-19MAY15-1/1



# 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 buildup due to condensation.

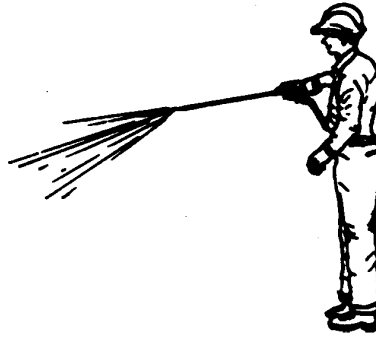
**NOTE:** For blends up to and including B20, it is recommended that biodiesel is used within 3 months of its manufacture. For blends greater than B20, it is recommended that the biodiesel is used within 45 days. The poor oxidation stability characteristic of biodiesel can result in long-term storage problems. John Deere does not recommend using biodiesel in engines powering standby applications or machines operating on a seasonal basis. Consult an authorized 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. If necessary, install new parts to avoid needless delays later.
3. Replace air cleaner elements.

**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



Prepare Machine for Storage

6. 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.

7. Retract all hydraulic cylinders if possible. If not, coat exposed cylinder rods with LPS® 3 Rust Inhibitor.
8. Place a DO NOT OPERATE tag on the right control lever.
9. Lubricate all grease points.

**NOTE:** If the batteries are kept disconnected for more than 1 month or when the batteries are reconnected, contact an authorized John Deere dealer. Resetting of the information controller (ICX) may be required.

10. Remove the batteries and store in a dry, protected place after charging fully. If not removed, disconnect the negative battery cable from the negative (–) terminal.
11. Add a fuel stabilizer additive and top off fuel tank with fuel to prevent condensation.
12. Drain water separator.
13. Remove keys and lock all covers and doors.

T5813AM—UN—09FEB89

ER93822,000007D-19-16MAY18-1/1

## Monthly Storage Procedure

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

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

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

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

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

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

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

Start engine and run until machine reaches normal operating temperature.

- If engine does not start or runs poorly after starting, change fuel filters. Bleed fuel system.
10. Operate all controls, levers, seat adjustments, etc.
    - If equipped, operate air conditioning system for 2 minutes.
  11. Run machine back and forth several times.
  12. Park the machine with cylinder rods retracted, if possible. Shut off engine.
  13. Place a DO NOT OPERATE tag in operator's station
  14. Check condition of all hoses and connections.
  15. Drain water and sediment from fuel tank.
  - IMPORTANT:** LPS 3 Rust Inhibitor can destroy painted finish. **DO NOT** spray LPS 3 Rust Inhibitor on painted areas.
  16. Apply LPS 3 Rust Inhibitor to exposed cylinder rod areas.
  17. Lock all covers and doors if equipped

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

# Miscellaneous—Machine Numbers

## Record Product Identification Number (PIN)

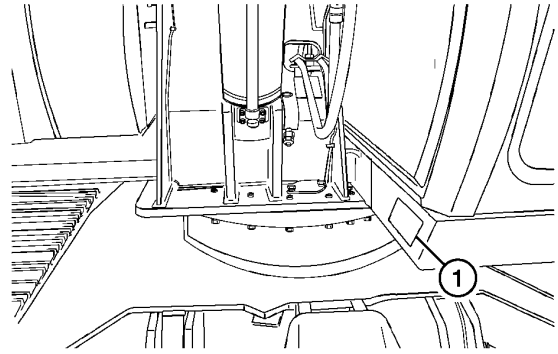
Purchase Date

Product Identification Number (PIN)

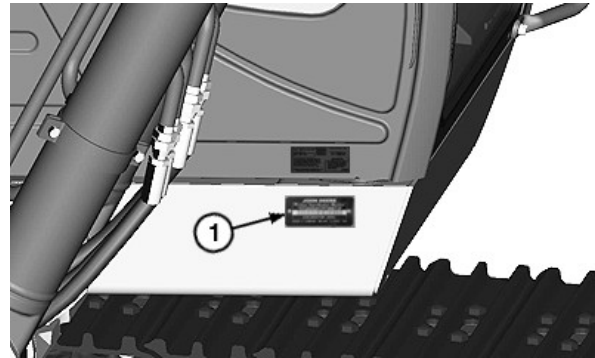
**NOTE:** Record all 17 characters of the product identification number (PIN).

The PIN plate (1) is located on the front right corner of the operator's station frame.

1—PIN Plate



PIN Plate Location—Early Production



PIN Plate Location—Late Production

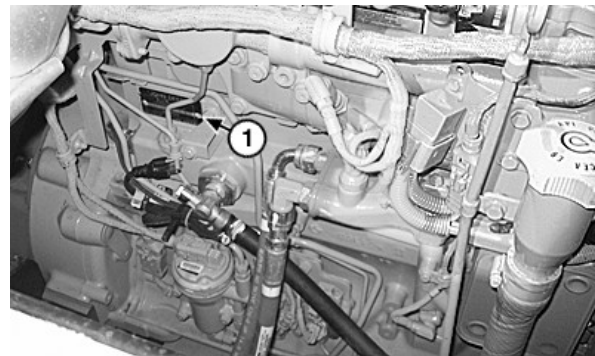
KR46761,0000C4F-19-23OCT17-1/1

## Record Engine Serial Number—6068HT073 Engine Only

Engine Serial Number

The engine serial number plate (1) is located on the front side of the engine and left of the fill tube.

1—Engine Serial Number Plate



Engine Serial Number Plate

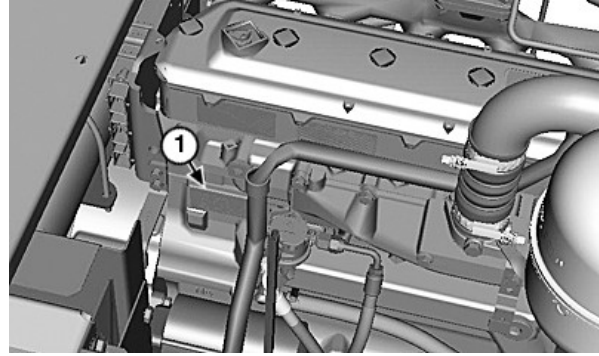
ER79617,0000DCC-19-14JAN11-1/1

## Record Engine Serial Number—6068HT062 and 6068HT82 Engines Only

Engine Serial Number

The engine serial number plate (1) is located on the front side of the engine and left of the fill tube.

1—Engine Serial Number Plate



TX1086930A—UN—14JAN11

Engine Serial Number Plate

ER79617,0000DCD-19-11FEB11-1/1

## Record Travel Motor Serial Numbers

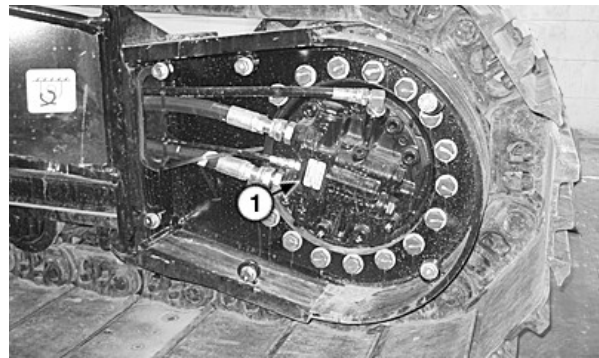
Travel Motor Serial Number

Travel Motor Serial Number

**NOTE:** Remove cover to access travel motor serial number plate (1).

The travel motor serial number plate (1) is located behind the travel motor cover.

1—Travel Motor Serial Number Plate



TX1086495A—UN—04JAN11

Travel Motor Serial Number Plate (left side shown)

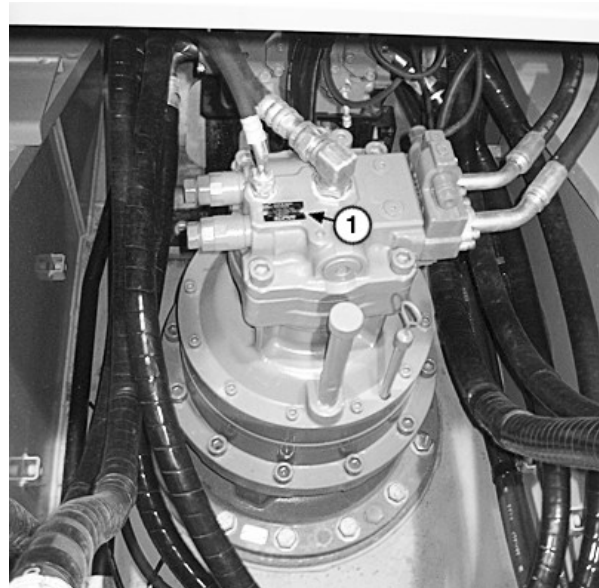
ER79617,0000D8E-19-29JAN15-1/1

## Record Swing Motor Serial Number

Swing Motor Serial Number

The swing motor serial number plate (1) is located on top of the swing motor.

1—Swing Motor Serial Number Plate



TX1086471A—UN—04JAN11

Swing Motor Serial Number

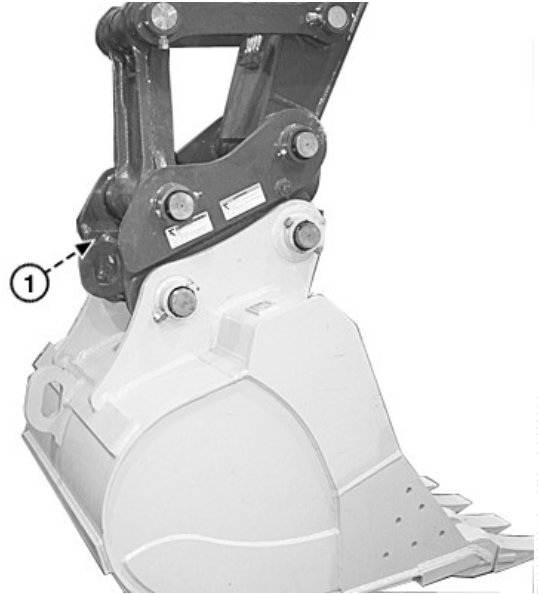
ER79617,0000D89-19-04JAN11-1/1

## Record Hydraulic Coupler Serial Number—If Equipped

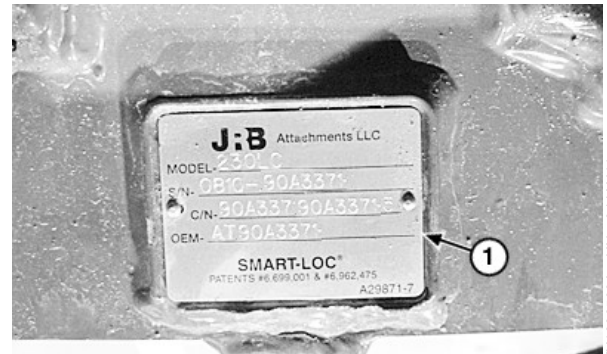
Hydraulic Coupler Serial Number:

The hydraulic coupler serial number plate (1) is located on the front side of the coupler.

1—Hydraulic Coupler Serial Number Plate



Hydraulic Coupler Serial Number Plate Location



Hydraulic Coupler Serial Number Plate

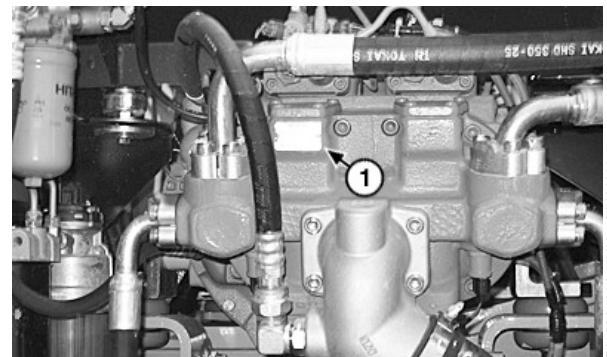
ER79617,0000D8F-19-05JAN16-1/1

## Record Hydraulic Pump Serial Number

Hydraulic Pump Serial Number:

Open the right service door to access the hydraulic pump. The hydraulic pump serial number plate (1) is located on the front of the hydraulic pump.

1—Hydraulic Pump Serial Number Plate



Hydraulic Pump Serial Number Plate

ER79617,0000D8D-19-06APR20-1/1

## 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

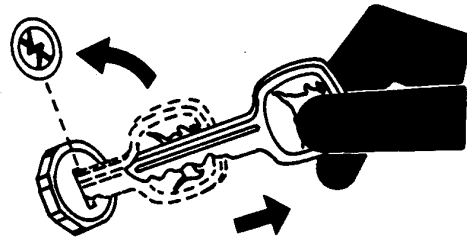


TS1680—UN—09DEC03

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

# Miscellaneous—Specifications

## 250GLC Engine Specifications—6068HT073 Engine Only

Item	Measurement	Specification
John Deere PowerTech PVX 6.8 L	Type	4-Stroke Cycle, Turbocharged, with air-to-air charge air cooler
	Bore And Stroke	106 x 127 mm 4.17 x 5.0 in.
	Cylinders	6
	Displacement	6.8 L 415 cu in.
	Net Torque @ 1500 RPM	820 N·m 603 lb.-ft.
	Compression Ratio	17:1
	Power At 2100 RPM	140 kW 188 hp
	Cooling Fan	Variable Hydraulic Suction
	Electrical system	24 Volt
	Batteries (2) 12 volt	320 Minutes Reserve Capacity

ER79617,0000D5C-19-07MAY15-1/1

## 250GLC Engine Specifications—6068HT062 and 6068HT082 Engines Only

Item	Measurement	Specification
John Deere PowerTech Plus 6.8 L—6068HT062 Engines Only John Deere PowerTech 6.8 L—6068HT082 Engines Only	Type	4-Stroke Cycle, Turbocharged, With Charge Air-to-Air Cooler
	Bore And Stroke	106 x 127 mm 4.17 x 5.0 in.
	Cylinders	6
	Displacement	6.8 L 415 cu in.
	Net Torque @ 1400 RPM	786 N·m 578 lb.-ft.
	Compression Ratio	17:1
	Power At 2000 RPM	132 kW 177 hp
	Lubrication	Pressure System With Full-Flow Filter
	Cooling Fan	Suction
	Electrical system	24 Volt
	Batteries (2) 12 volt	320 Minutes Reserve Capacity

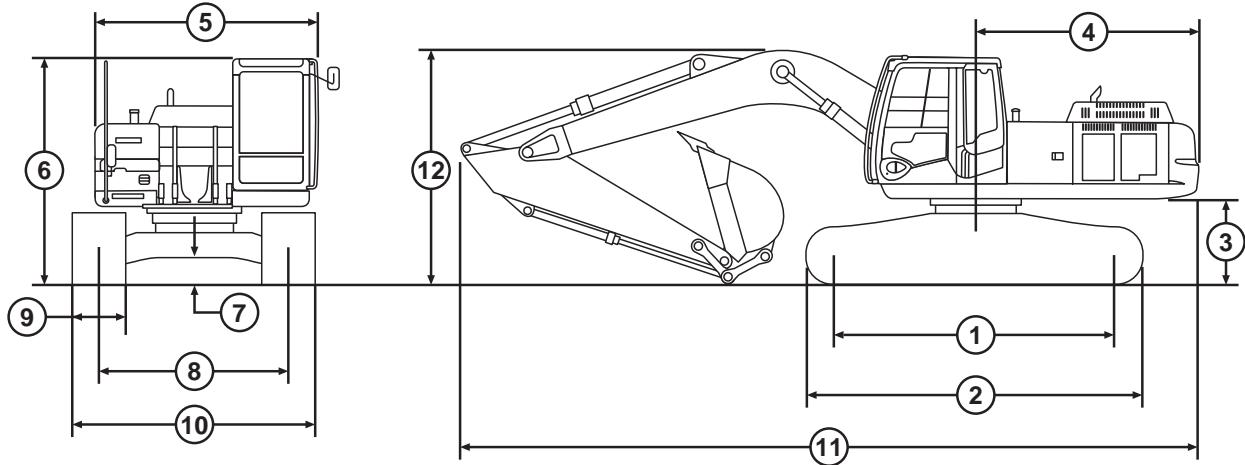
ER79617,0000E1C-19-07MAY15-1/1

**250GLC Drain and Refill Capacities**

Item	Measurement	Specification
Fuel Tank	Capacity	500.0 L 132.0 gal.
Cooling System	Capacity	23.0 L 6.0 gal.
Engine	Oil Capacity, Including Filter Change	19.5 L 5.2 gal.
Hydraulic Reservoir	Oil Capacity	147.6 L 39.0 gal.
Hydraulic System	Oil Capacity	240.0 L 63.4 gal.
Swing Gear Case	Oil Capacity	7.0 L 1.8 gal.
Travel Gear Case (each)	Oil Capacity	6.2 L 1.6 gal.
Pump Drive Gear Case	Oil Capacity	1.1 L 1.2 qt.

ER79617,0000D18-19-17SEP13-1/1



**250GLC Machine Specifications****TX1001680***250GLC Excavator*

- |                                   |                            |                                            |                     |
|-----------------------------------|----------------------------|--------------------------------------------|---------------------|
| 1—Sprocket Center To Idler Center | 4—Rear End Swing Radius    | 8—Center Of Sprocket To Center Of Sprocket | 11—Overall Length   |
| 2—Undercarriage Length            | 5—Upperstructure Width     | 9—Track Shoe Width                         | 12—Transport Height |
| 3—Counterweight Clearance         | 6—Cab Height               | 10—Overall Width                           |                     |
|                                   | 7—Minimum Ground Clearance |                                            |                     |

**NOTE:** Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE standards. Except where otherwise noted these specifications are based on a machine equipped with 800 mm (32 in.) shoes, 5112 kg (11 270 lb.) counterweight, 3.61 m (11 ft. 10 in.) arm, 871 kg (1920 lb.) 1.06 m<sup>3</sup> (1.38 yd<sup>3</sup>) bucket, full fuel tank, 79 kg (175 lb.) operator and standard equipment.

Item	Measurement	Specification
1—Sprocket Center To Idler Center	Distance	3840 mm 12 ft. 7 in.
2—Undercarriage	Length	4640 mm 15 ft. 3 in.
3—Counterweight Clearance	Distance	1090 mm 3 ft. 7 in.
4—Rear End Swing Radius	Distance	3140 mm 10 ft. 4 in.
5—Upperstructure	Width	2890 mm 9 ft. 6 in.
6—Cab	Height	3010 mm 9 ft. 11 in.

Continued on next page

ER79617,0000DA3-19-24SEP13-1/2

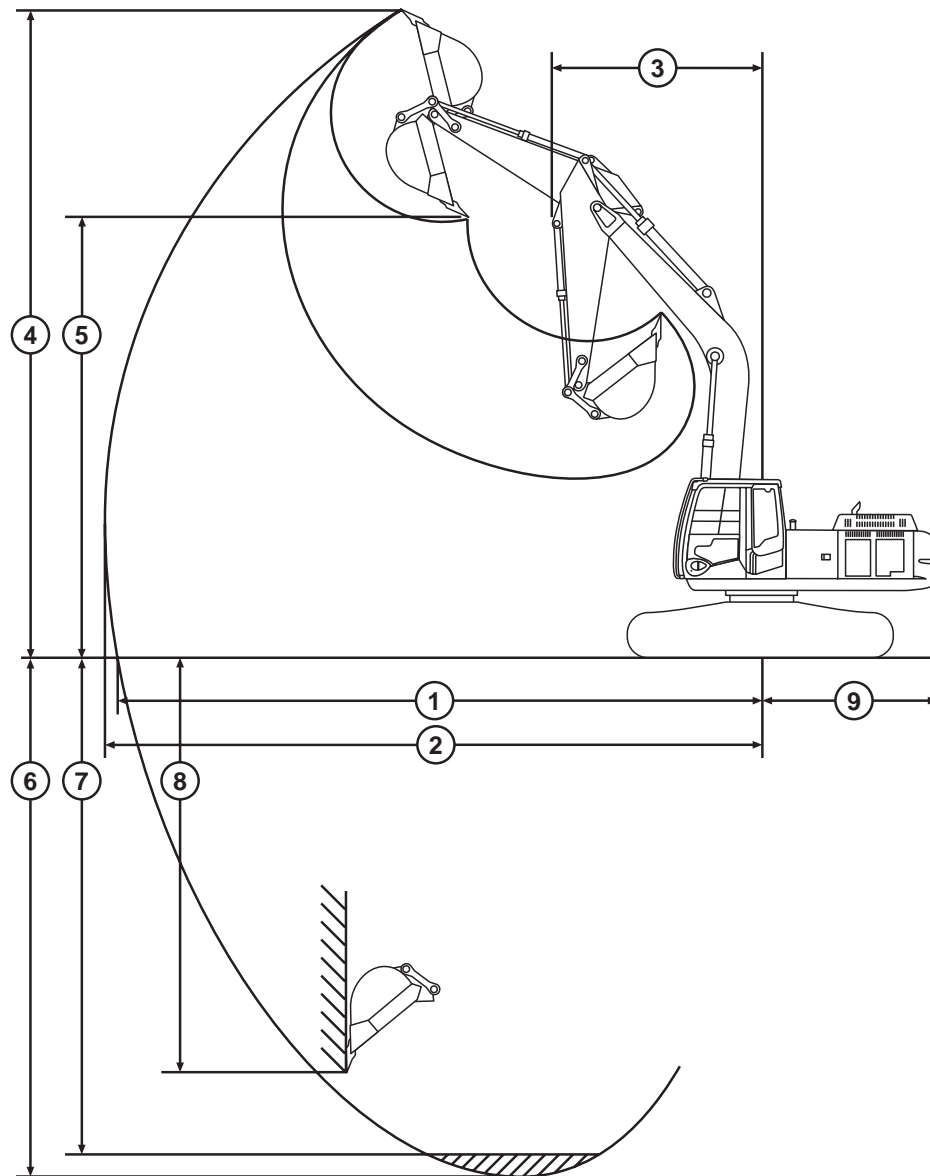
TX1001680—UN—03JAN06

*Miscellaneous—Specifications*

<b>Item</b>	<b>Measurement</b>	<b>Specification</b>
7—Minimum Ground Clearance	Distance	460 mm 1 ft. 6 in.
8—Center Of Sprocket To Center Of Sprocket	Distance	2590 mm 8 ft. 6 in.
9—Track Shoe	Width	600 mm (24 in.) 700 mm (28 in.) 800 mm (32 in.)
10—Machine	Overall Width	With 600 mm shoes: 3190 mm With 24 in. shoes: 10 ft. 6 in. With 700 mm shoes: 3290 mm With 28 in. shoes: 10 ft. 10 in. With 800 mm shoes: 3390 mm With 32 in. shoes: 11 ft. 3 in.
11—Machine	Overall Length	With 2.50 m Arm: 10 470 mm With 8 ft. 2 in. Arm: 34 ft. 4 in. With 2.96 m Arm: 10 350 mm With 9 ft. 9 in. Arm: 33 ft. 11 in. With 3.61 m Arm: 10 410 mm With 11 ft. 10 in. Arm: 34 ft. 2 in.
12—Machine	Transport Height	With 2.50 m Arm: 3370 mm With 8 ft. 2 in. Arm: 11 ft. 1 in. With 2.96 m Arm: 3070 mm With 9 ft. 9 in. Arm: 10 ft. 1 in. With 3.61 m Arm: 3140 mm With 11 ft. 10 in. Arm: 10 ft. 4 in.
Machine	Operating Weight	25 281 kg 55 736 lb.

ER79617,0000DA3-19-24SEP13-2/2

## 250GLC Working Ranges



TX1001681

### Working Ranges

- |                                         |                          |                                       |                         |
|-----------------------------------------|--------------------------|---------------------------------------|-------------------------|
| 1—Maximum Digging Reach                 | 3—Minimum Swing Radius   | 6—Maximum Digging Depth               | 8—Maximum Vertical Wall |
| 2—Maximum Digging Reach At Ground Level | 4—Maximum Cutting Height | 7—Maximum Digging Depth (flat bottom) | 9—Tail Swing Radius     |
|                                         | 5—Maximum Dumping Height |                                       |                         |

Continued on next page

ER79617,0000DD0-19-24SEP13-1/3

TX1001681—UN—03JAN06

**NOTE:** Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE standards. Except where otherwise noted these specifications are based on a machine equipped with 800 mm (32 in.) shoes, 5112 kg (11 270 lb.) counterweight, 3.61 m (11 ft. 10 in.) arm, 871 kg (1920 lb.) 1.06 m<sup>3</sup> (1.38 yd<sup>3</sup>) bucket, full fuel tank, 79 kg (175 lb.) operator and standard equipment.

#### **Working Ranges—equipped with a 2.50 m (8 ft. 2 in.) Arm**

Item	Measurement	Specification
1—Maximum Digging Reach	Distance	9880 mm 32 ft. 5 in.
2—Maximum Digging Reach At Ground Level	Distance	9690 mm 31 ft. 9 in.
3—Minimum Swing Radius	Radius	3480 mm 11 ft. 5 in.
4—Maximum Cutting Height	Height	9950 mm 32 ft. 8 in.
5—Maximum Dumping Height	Height	6990 mm 22 ft. 11 in.
6—Maximum Digging Depth	Depth	6500 mm 21 ft. 4 in.
7—Maximum Digging Depth (flat bottom)	Depth	6260 mm 20 ft. 6 in.
8—Maximum Vertical Wall	Depth	5580 mm 18 ft. 4 in.
9—Tail Swing Radius	Radius	3140 mm 10 ft. 4 in.

#### **Working Ranges—equipped with a 2.96 m (9 ft. 9 in.) Arm**

Item	Measurement	Specification
1—Maximum Digging Reach	Distance	10 290 mm 33 ft. 9 in.
2—Maximum Digging Reach At Ground Level	Distance	10 110 mm 33 ft. 2 in.
3—Minimum Swing Radius	Radius	3440 mm 11 ft. 3 in.
4—Maximum Cutting Height	Height	10 160 mm 33 ft. 4 in.
5—Maximum Dumping Height	Height	7200 mm 23 ft. 7 in.
6—Maximum Digging Depth	Depth	6960 mm 22 ft. 10 in.
7—Maximum Digging Depth (flat bottom)	Depth	6750 mm 22 ft. 2 in.
8—Maximum Vertical Wall	Depth	6030 mm 19 ft. 9 in.
9—Tail Swing Radius	Radius	3140 mm 10 ft. 4 in.

#### **Working Ranges—equipped with a 3.61 m (11 ft. 10 in.) Arm**

Item	Measurement	Specification
------	-------------	---------------

Continued on next page

ER79617,0000DD0-19-24SEP13-2/3

1—Maximum Digging Reach	Distance	10 910 mm 35 ft. 10 in.
2—Maximum Digging Reach At Ground Level	Distance	10 750 mm 35 ft. 3 in.
3—Minimum Swing Radius	Radius	3430 mm 11 ft. 3 in.
4—Maximum Cutting Height	Height	10 560 mm 34 ft. 8 in.
5—Maximum Dumping Height	Height	7580 mm 24 ft. 10 in.
6—Maximum Digging Depth	Depth	7610 mm 25 ft. 0 in.
7—Maximum Digging Depth (flat bottom)	Depth	7440 mm 24 ft. 5 in.
8—Maximum Vertical Wall	Depth	6740 mm 22 ft. 1 in.
9—Tail Swing Radius	Radius	3140 mm 10 ft. 4 in.

ER79617,0000DD0-19-24SEP13-3/3

**250GLC Lift Capacity—Arm: 2.50 m (8 ft. 2 in.); Bucket: 851 kg (1876 lb.); Shoe 600 mm (28 in.)**

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Figures do not exceed 87 percent of hydraulic capacity or

Arm: 2.50 m (8 ft. 2 in.)		Bucket: 851 kg (1876 lb.)		Shoe: 600 mm (28 in.)	
Power Dig: On					
LIFTING OVER FRONT					
Load Point Height		Horizontal Distance from Centerline of Rotation			
m (ft.)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	
6.0 (20)			5534* (12 200*)		
4.5 (15)		7575* (16 700*)	6214* (13 700*)	5647* (12 450*)	
3.0 (10)		9866* (21 750*)	7212* (15 900*)	5693 (12 550)	
1.5 (5)		11 657* (25 700*)	7983 (17 600)	5534 (12 200)	
Ground Line		12 292* (27 100*)	7779 (17 150)	5420 (11 950)	
-1.5 (-5)	9163* (20 200*)	12 020* (26 500*)	7711 (17 000)		
-3.0 (-10)	15 150* (33 400*)	10 886* (24 000*)	7824 (17 250)		
-4.5 (-15)	11 521* (25 400*)	8255* (18 200*)			
LIFTING OVER SIDE					
Load Point Height		Horizontal Distance from Centerline of Rotation			
m (ft.)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	
6.0 (20)			5534* (12 200*)		
4.5 (15)		7575* (16 700*)	5511 (12 150)	3697 (8150)	
3.0 (10)		8210 (18 100)	5194 (11 450)	3561 (7850)	
1.5 (5)		7620 (16 800)	4899 (10 800)	3402 (7500)	
Ground Line		7394 (16 300)	4717 (10 400)	3311 (7300)	
-1.5 (-5)	9163* (20 200*)	7371 (16 250)	4672 (10 300)		
-3.0 (-10)	15 150* (33 400*)	7507 (16 550)	4763 (10 500)		
-4.5 (-15)	11 521* 25 400*)	7847 (17 300)			

\* Hydraulically Limited Capacities

CN93077,0000122-19-16SEP13-1/1

**250GLC Lift Capacity—Arm: 2.50 m (8 ft. 2 in.); Bucket: 851 kg (1876 lb.); Shoe 700 mm (28 in.)**

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

Figures do not exceed 87 percent of hydraulic capacity or

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Arm: 2.50 m (8 ft. 2 in.)		Bucket: 851 kg (1876 lb.)		Shoe: 700 mm (28 in.)	
Power Dig: On					
LIFTING OVER FRONT					
Load Point Height		Horizontal Distance from Centerline of Rotation			
m (ft.)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	
6.0 (20)			5534* (12 200*)		
4.5 (15)		7575* (16 700*)	6214* (13 700*)	5647* (12 450*)	
3.0 (10)		9866* (21 750*)	7212* (15 900*)	5783 (12 750)	
1.5 (5)		11 657* (25 700*)	8142 (17 950)	5625 (12 400)	
Ground Line		12 292* (27 100*)	7915 (17 450)	5534 (12 200)	
-1.5 (-5)	9163* (20 200*)	12 020* (26 500*)	7870 (17 350)		
-3.0 (-10)	15 150* (33 400*)	10 886* (24 000*)	7938* (17 500*)		
-4.5 (-15)	11 521* (25 400*)	8255* (18 200*)			
LIFTING OVER SIDE					
Load Point Height		Horizontal Distance from Centerline of Rotation			
m (ft.)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	
6.0 (20)			5534* (12 200*)		
4.5 (15)		7575* (16 700*)	5625 (12 400)	3765 (8300)	
3.0 (10)		8346 (18 400)	5284 (11 650)	3629 (8000)	
1.5 (5)		7756 (17 100)	4990 (11 000)	3493 (7700)	
Ground Line		7530 (16 600)	4808 (10 600)	3379 (7450)	
-1.5 (-5)	9163* (20 200*)	7530 (16 600)	4763 (10 500)		
-3.0 (-10)	15 150* (33 400*)	7643 (16 850)	4853 (10 700)		
-4.5 (-15)	11 521* (25 400*)	7983 (17 600)			

\* Hydraulically Limited Capacities

CN93077,0000120-19-17SEP13-1/1

**250GLC Lift Capacity—Arm: 2.50 m (8 ft. 2 in.); Bucket: 851 kg (1876 lb.); Shoe 800 mm (32 in.)**

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Figures do not exceed 87 percent of hydraulic capacity or

Arm: 2.50 m (8 ft. 2 in.)		Bucket: 851 kg (1876 lb.)		Shoe: 800 mm (32 in.)	
Power Dig: On					
LIFTING OVER FRONT					
Load Point Height		Horizontal Distance from Centerline of Rotation			
m (ft.)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	
6.0 (20)			5534* (12 200*)		
4.5 (15)		7575* (16 700*)	6214* (13 700*)	5647* (12 450*)	
3.0 (10)		9866* (21 750*)	7212* (15 900*)	5851 (12 900)	
1.5 (5)		11 657* (25 700*)	8165* (18 000*)	5715 (12 600)	
Ground Line		12 292* (27 100*)	8029 (17 700)	5602 (12 350)	
-1.5 (-5)	9163* (20 200*)	12 020* (26 500*)	7961 (17 550)		
-3.0 (-10)	15 150* (33 400*)	10 886* (24 000*)	7938* (17 500*)		
-4.5 (-15)	11 521* (25 400*)	8255* (18 200*)			
LIFTING OVER SIDE					
Load Point Height		Horizontal Distance from Centerline of Rotation			
m (ft.)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	
6.0 (20)			5534* (12 200*)		
4.5 (15)		7575* (16 700*)	5670 (12 500)	3810* (8400*)	
3.0 (10)		8437 (18 600)	5352 (11 800)	3674 (8100)	
1.5 (5)		7847 (17 300)	5058 (11 150)	3538 (7800)	
Ground Line		7620 (16 800)	4876 (10 750)	3425 (7550)	
-1.5 (-5)	9163* (20 200*)	7620 (16 800)	4831 (10 650)		
-3.0 (-10)	15 150* (33 400*)	7734 (17 050)	4899 (10 800)		
-4.5 (-15)	11 521* (25 400*)	8074 (17 800)			

\* Hydraulically Limited Capacities

CN93077,0000121-19-16SEP13-1/1



**250GLC Lift Capacity—Arm: 2.96 m (9 ft. 9 in.); Bucket: 871 kg (1920 lb.); Shoe: 700 mm (28 in.)**

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

Figures do not exceed 87 percent of hydraulic capacity or

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Arm: 2.96 m (9 ft. 9 in.)		Bucket: 871 kg (1920 lb.)		Shoe: 700 mm (28 in.)	
Power Dig: On					
LIFTING OVER FRONT					
Load Point Height	Horizontal Distance from Centerline of Rotation				
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)
6.0 (20)				5126* (11 207*)	4261*
4.5 (15)			7138* (15 343*)	5939* (12 881*)	5358* (11 712*)
3.0 (10)			9529* (20 456*)	7053* (15 254*)	5900* (12 831*)
1.5 (5)			11 578* (24 945*)	8135* (17 591*)	6109 (13 128)
Ground Line			12 543* (27 129*)	8576 (18 423)	5973 (12 839)
-1.5 (-5)		8446* (19 259*)	12 551* (27 188*)	8471 (18 196)	5919 (12 733)
-3.0 (-10)	9964* (22 420*)	14 599* (33 304*)	11 732* (25 372*)	8509 (18 290)	
-4.5 (-15)		13 748* (29 522*)	9758* (20 866*)		
LIFTING OVER SIDE					
Load Point Height	Horizontal Distance from Centerline of Rotation				
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)
6.0 (20)				5126* (11 207*)	4218
4.5 (15)			7138* (15 343*)	5939* (12 881*)	4155 (8903)
3.0 (10)			9253 (19 947)	5839 (12 571)	4012 (8610)
1.5 (5)			8596 (18 513)	5515 (11 872)	3852 (8276)
Ground Line			8277 (17 798)	5295 (11 393)	3728 (8013)
-1.5 (-5)		8446* (19 259*)	8201 (17 622)	5203 (11 192)	3679 (7916)
-3.0 (-10)	9964* (22 420*)	14 599* (33 304*)	8282 (17 803)	5237 (11 275)	
-4.5 (-15)		13 748* (29 522*)	8530 (18 366)		

\* Hydraulically Limited Capacities

OUT4001,000076C-19-16SEP13-1/1

**250GLC Lift Capacity—Arm: 2.96 m (9 ft. 9 in.); Bucket: 871 kg (1920 lb.); Shoe: 800 mm (32 in.)**

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

Figures do not exceed 87 percent of hydraulic capacity or

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Arm: 2.96 m (9 ft. 9 in.)		Bucket: 871 kg (1920 lb.)		Shoe: 800 mm (32 in.)	
Power Dig: On					
LIFTING OVER FRONT					
Load Point Height	Horizontal Distance from Centerline of Rotation				
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)
6.0 (20)				5126* (11 207*)	4261*
4.5 (15)			7138* (15 343*)	5939* (12 881*)	5358* (11 712*)
3.0 (10)			9529* (20 456*)	7053* (15 254*)	5900* (12 831*)
1.5 (5)			11 578* (24 945*)	8135* (17 591*)	6182 (13 286)
Ground Line			12 543* (27 129*)	8676 (18 639)	6046 (12 998)
-1.5 (-5)		8446* (19 259*)	12 551* (27 188*)	8571 (18 413)	5993 (12 891)
-3.0 (-10)	9964* (22 420*)	14 599* (33 304*)	11 732* (25 372*)	8588* (18 506)	
-4.5 (-15)		13 748* (29 522*)	9758* (20 866*)		
LIFTING OVER SIDE					
Load Point Height	Horizontal Distance from Centerline of Rotation				
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)
6.0 (20)				5126* (11 207*)	4261*
4.5 (15)			7138* (15 343*)	5939* (12 881*)	4203 (9007)
3.0 (10)			9347 (20 149)	5902 (12 708)	4059 (8714)
1.5 (5)			8690 (18 716)	5578 (12 009)	3900 (8380)
Ground Line			8371 (18 001)	5358 (11 530)	3776 (8116)
-1.5 (-5)		8446* (19 259*)	8295 (17 825)	5266 (11 329)	3727 (8019)
-3.0 (-10)	9964* (22 420*)	14 599* (33 304*)	8376 (18 005)	5300 (11 412)	
-4.5 (-15)		13 748* (29 522*)	8624 (18 568)		

\* Hydraulically Limited Capacities

OUT4001,000076E-19-16SEP13-1/1

## 250GLC Lift Capacity—Arm: 3.61 m (11 ft. 10 in.); Bucket: 871 kg (1920 lb.); Shoe: 700 mm (28 in.)

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

Figures do not exceed 87 percent of hydraulic capacity or

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Arm: 3.61 m (11 ft. 10 in.)		Bucket: 871 kg (1920 lb.)			Shoe: 700 mm (28 in.)	
Power Dig: On						
LIFTING OVER FRONT						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
6.0 (20)				4380* (9584*)	4073* (8643*)	
4.5 (15)				5228* (11 347*)	4823* (10 535*)	
3.0 (10)		(29 360*)	8377* (17 995*)	6404* (13 856*)	5440* (11 830*)	3825* (7436*)
1.5 (5)			10 707* (23 066*)	7613* (16 465*)	6104* (13 196)	4493 (8810*)
Ground Line		4492* (10 371*)	12 136* (26 233*)	8537* (18 478*)	5970 (12 828)	4417 (8130*)
-1.5 (-5)	4381* (9836*)	7698* (17 525*)	12 576* (27 229*)	8438 (18 120)	5872 (12 622)	
-3.0 (-10)	8049* (18 103*)	12 146* (27 656*)	12 165* (26 317*)	8413 (18 073)	5876 (12 649)	
-4.5 (-15)	12 636* (28 581*)	15 638* (33 670*)	10 774* (23 160*)	7773* (16 579*)		
-6.0 (-20)			7472*			
LIFTING OVER SIDE						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
6.0 (20)				4380* (9584*)	4073* (8643*)	
4.5 (15)				5228* (11 347*)	4236 (9080)	
3.0 (10)		(29 360*)	8377* (17 995*)	5954 (12 814)	4066 (8728)	2875 (6140)
1.5 (5)			8785 (18 917)	5589 (12 027)	3877 (8327)	2792 (5971)
Ground Line		4492* (10 371*)	8327 (17 907)	5314 (11 431)	3720 (7992)	2721 (5829)
-1.5 (-5)	4381* (9836*)	7698* (17 525*)	8149 (17 510)	5167 (11 111)	3631 (7804)	
-3.0 (-10)	8049* (18 103*)	12 146* (27 656*)	8158 (17 531)	5145 (11 070)	3635 (7828)	
-4.5 (-15)	12 636* (28 581*)	15 638* (33 670*)	8328 (17 916)	5263 (11 351)		
-6.0 (-20)			7472*			

\* Hydraulically Limited Capacities

OUT4001,000076D-19-16SEP13-1/1

**250GLC Lift Capacity—Arm: 3.61 m (11 ft. 10 in.); Bucket: 871 kg (1920 lb.); Shoe: 800 mm (32 in.)**

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

Figures do not exceed 87 percent of hydraulic capacity or

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Arm: 3.61 m (11 ft. 10 in.)		Bucket: 871 kg (1920 lb.)			Shoe: 800 mm (32 in.)	
Power Dig: On						
LIFTING OVER FRONT						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
6.0 (20)				4380* (9584*)	4073* (8643*)	
4.5 (15)				5228* (11 347*)	4823* (10 535*)	
3.0 (10)		(29 360*)	8377* (17 995*)	6404* (13 856*)	5440* (11 830*)	3825* (7436*)
1.5 (5)			10 707* (23 066*)	7613* (16 465*)	6104* (13 251*)	4503* (8810*)
Ground Line		4492* (10 371*)	12 136* (26 233*)	8537* (18 478*)	6043 (12 986)	4438* (8130*)
-1.5 (-5)	4381* (9836*)	7698* (17 525*)	12 576* (27 229*)	8538 (18 336)	5945 (12 780)	
-3.0 (-10)	8049* (18 103*)	12 146* (27 656*)	12 165* (26 317*)	8513 (18 290)	5950 (12 807)	
-4.5 (-15)	12 636* (25 581*)	15 638* (33 670*)	10 774* (23 160*)	7773* (16 579*)		
-6.0 (-20)			7472*			
LIFTING OVER SIDE						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
6.0 (20)				4380* (9584*)	4073* (8643*)	
4.5 (15)				5228* (11 347*)	4284 (9184)	
3.0 (10)		(29 360*)	8377* (17 995*)	6018 (12 951)	4114 (8831)	2914 (6223)
1.5 (5)			8879 (19 119)	5652 (12 164)	3925 (8431)	2830 (6055)
Ground Line		4492* (10 371*)	8421 (18 109)	5378 (11 568)	3768 (8095)	2759 (5912)
-1.5 (-5)	4381* (9836*)	7698* (17 525*)	8243 (17 712)	5230 (11 248)	3679 (7907)	
-3.0 (-10)	8049* (18 103*)	12 146* (27 656*)	8252 (17 734)	5209 (11 207)	3683 (7932)	
-4.5 (-15)	12 636* (28 581*)	15 638* (33 670*)	8422 (18 118)	5327 (11 488)		
-6.0 (-20)			7472*			

\* Hydraulically Limited Capacities

OUT4001,000076F-19-16SEP13-1/1

## 290GLC Engine Specifications—6068HT073 Engine Only

Item	Measurement	Specification
John Deere PowerTech PVX 6.8 L	Type	4-Stroke Cycle, Turbocharged, with air-to-air charge air cooler
	Bore And Stroke	106 x 127 mm 4.17 x 5.0 in.
	Cylinders	6
	Displacement	6.8 L 415 cu in.
	Net Torque @ 1400 RPM	832 N·m 614 lb.-ft.
	Compression Ratio	17:1
	Power At 2100 RPM	140 kW 188 hp
	Cooling Fan	Variable Hydraulic Suction
	Electrical system	24 Volt
	Batteries (2) 12 volt	440 Minutes Reserve Capacity

ER79617,0000D7C-19-17SEP13-1/1

## 290GLC Engine Specifications—6068HT062 and 6068HT082 Engines Only

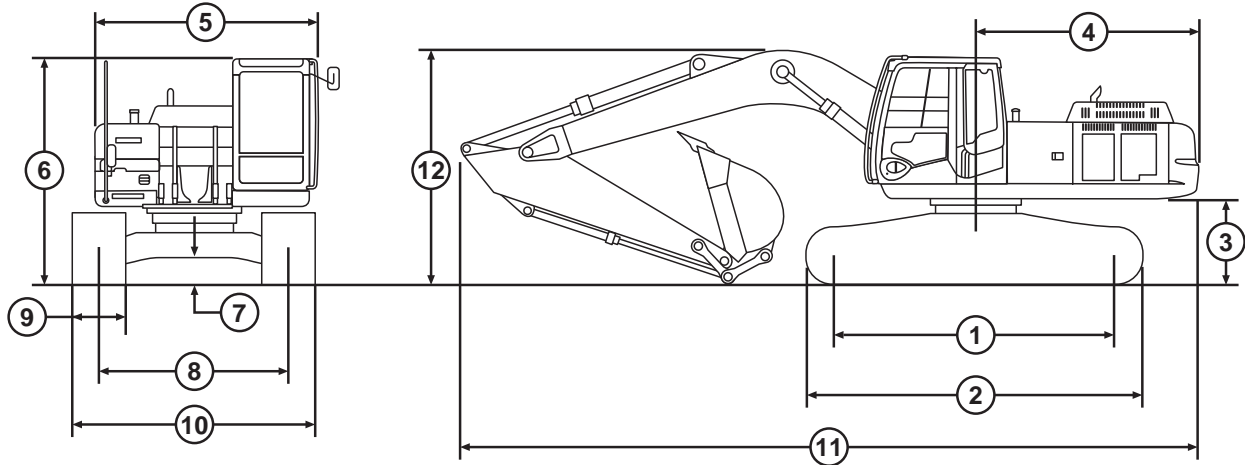
Item	Measurement	Specification
John Deere PowerTech Plus 6.8 L—6068HT062 Engines Only John Deere PowerTech 6.8 L—6068HT082 Engines Only	Type	4-Stroke Cycle, Turbocharged, With Charge Air-to-Air Cooler
	Bore And Stroke	106 x 127 mm 4.17 x 5.0 in.
	Cylinders	6
	Displacement	6.8 L 415 cu in.
	Net Torque @ 1400 RPM	786 N·m 578 lb.-ft.
	Compression Ratio	17:1
	Power At 2000 RPM	140 kW Net SAE 188 hp Net SAE
	Lubrication	Pressure System With Full-Flow Filter
	Cooling Fan	Suction
	Electrical system	24 Volt
	Batteries (2) 12 volt	440 Minutes Reserve Capacity:

ER79617,0000E1D-19-17SEP13-1/1

**290GLC Drain and Refill Capacities**

Item	Measurement	Specification
Fuel Tank	Capacity	500.0 L 132.0 gal.
Cooling System	Capacity	23.0 L 6.0 gal.
Engine	Oil Capacity, Including Filter Change	19.5 L 5.2 gal.
Hydraulic Reservoir	Oil Capacity	147.6 L 39.0 gal.
Hydraulic System	Oil Capacity	240.0 L 63.4 gal.
Swing Gear Case	Oil Capacity	8.5 L 2.2 gal.
Travel Gear Case (each)	Oil Capacity	7.6 L 2.0 gal.
Pump Drive Gear Case	Oil Capacity	1.1 L 1.2 qt.

ER79617,0000D19-19-17SEP13-1/1

**290GLC Machine Specifications****TX1001680***290GLC Excavator*

- |                                   |                            |                                            |                     |
|-----------------------------------|----------------------------|--------------------------------------------|---------------------|
| 1—Sprocket Center To Idler Center | 4—Rear End Swing Radius    | 8—Center Of Sprocket To Center Of Sprocket | 11—Overall Length   |
| 2—Undercarriage Length            | 5—Upperstructure Width     | 9—Track Shoe Width                         | 12—Transport Height |
| 3—Counterweight Clearance         | 6—Cab Height               | 10—Overall Width                           |                     |
|                                   | 7—Minimum Ground Clearance |                                            |                     |

**NOTE:** Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE standards. Except where otherwise noted these specifications are based on a machine equipped with 800 mm (32 in.) shoes, 5812 kg (12 813 lb.) counterweight, 3.76 m (12 ft. 4 in.) arm, 930 kg (2050 lb.) 1.34 m<sup>3</sup> (1.75 yd<sup>3</sup>) bucket, full fuel tank, 79 kg (175 lb.) operator and standard equipment.

Item	Measurement	Specification
1—Sprocket Center To Idler Center	Distance	4050 mm 13 ft. 3 in.
2—Undercarriage	Length	4940 mm 16 ft. 2 in.
3—Counterweight Clearance	Distance	1180 mm 3 ft. 10 in.
4—Rear End Swing Radius	Distance	3140 mm 10 ft. 4 in.
5—Upperstructure	Width	2890 mm 9 ft. 6 in.
6—Cab	Height	3110 mm 10 ft. 2 in.

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ER79617,0000DA4-19-24SEP13-1/2

TX1001680—UN—03JAN06

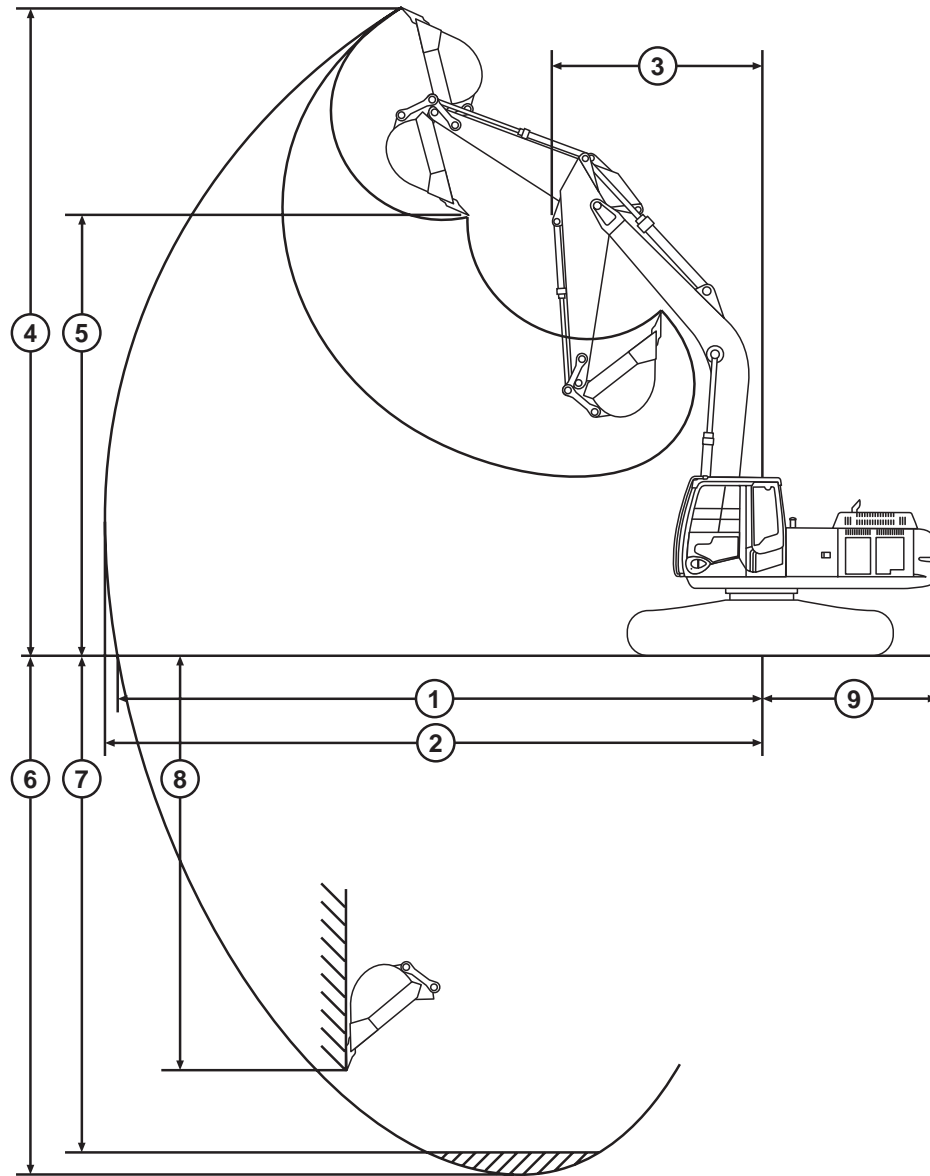
*Miscellaneous—Specifications*

<b>Item</b>	<b>Measurement</b>	<b>Specification</b>
7—Minimum Ground Clearance	Distance	510 mm 1 ft. 8 in.
8—Center Of Sprocket To Center Of Sprocket	Distance	2590 mm 8 ft. 6 in.
9—Track Shoe	Width	600 mm (24 in.) 700 mm (28 in.) 800 mm (32 in.)
10—Machine	Overall Width	With 600 mm shoes: 3190 mm With 24 in. shoes: 10 ft. 6 in. With 700 mm shoes: 3290 mm With 28 in. shoes: 10 ft. 10 in. With 800 mm shoes: 3390 mm With 32 in. shoes: 11 ft. 3 in.
11—Machine	Overall Length	With 3.11 m Arm: 10 540 mm With 10 ft. 2 in. Arm: 34 ft. 7 in.
	Overall Length	With 3.76 m Arm: 10 590 mm With 12 ft. 4 in. Arm: 34 ft. 9 in.
12—Machine	Transport Height	With 3.11 m Arm: 3170 mm With 10 ft. 2 in. Arm: 10 ft. 5 in. With 3.76 m Arm: 3310 mm With 12 ft. 4 in. Arm: 10 ft. 10 in.
Machine	Operating Weight	30 090 kg 66 338 lb.

ER79617,0000DA4-19-24SEP13-2/2



## 290GLC Working Ranges



TX1001681

### Working Ranges

- |                                         |                          |                                       |                         |
|-----------------------------------------|--------------------------|---------------------------------------|-------------------------|
| 1—Maximum Digging Reach                 | 3—Minimum Swing Radius   | 6—Maximum Digging Depth               | 8—Maximum Vertical Wall |
| 2—Maximum Digging Reach At Ground Level | 4—Maximum Cutting Height | 7—Maximum Digging Depth (flat bottom) | 9—Tail Swing Radius     |
|                                         | 5—Maximum Dumping Height |                                       |                         |

Continued on next page

ER79617,0000DD1-19-24SEP13-1/2

TX1001681—UN—03JAN06

**NOTE:** Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE standards. Except where otherwise noted these specifications are based on a machine equipped with 800 mm (32 in.) shoes, 5812 kg (12 813 lb.) counterweight, 3.76 m (12 ft. 4 in.) arm, 930 kg (2050 lb.) 1.34 m<sup>3</sup> (1.75 yd<sup>3</sup>) bucket, full fuel tank, 79 kg (175 lb.) operator and standard equipment.

#### **Working Ranges—equipped with a 3.11 m (10 ft. 2 in.) Arm**

Item	Measurement	Specification
1—Maximum Digging Reach	Distance	10 710 mm 35 ft. 2 in.
2—Maximum Digging Reach At Ground Level	Distance	10 520 mm 34 ft. 6 in.
3—Minimum Swing Radius	Radius	3910 mm 12 ft. 10 in.
4—Maximum Cutting Height	Height	10 260 mm 33 ft. 8 in.
5—Maximum Dumping Height	Height	7310 mm 24 ft. 0 in.
6—Maximum Digging Depth	Depth	7230 mm 23 ft. 9 in.
7—Maximum Digging Depth (flat bottom)	Depth	7050 mm 23 ft. 2 in.
8—Maximum Vertical Wall	Depth	6480 mm 21 ft. 3 in.
9—Tail Swing Radius	Radius	3140 mm 10 ft. 4 in.

#### **Working Ranges—equipped with a 3.76 m (12 ft. 4 in.) Arm**

Item	Measurement	Specification
1—Maximum Digging Reach	Distance	11 270 mm 37 ft. 0 in.
2—Maximum Digging Reach At Ground Level	Distance	11 100 mm 36 ft. 5 in.
3—Minimum Swing Radius	Radius	3900 mm 12 ft. 10 in.
4—Maximum Cutting Height	Height	10 460 mm 34 ft. 4 in.
5—Maximum Dumping Height	Height	7520 mm 24 ft. 8 in.
6—Maximum Digging Depth	Depth	7880 mm 25 ft. 10 in.
7—Maximum Digging Depth (flat bottom)	Depth	7720 mm 25 ft. 4 in.
8—Maximum Vertical Wall	Depth	7050 mm 23 ft. 2 in.
9—Tail Swing Radius	Radius	3140 mm 10 ft. 4 in.

ER79617,0000DD1-19-24SEP13-2/2

**290GLC Lift Capacity—Arm: 3.11 m (10 ft. 2 in.); Bucket: 930 kg (2050 lb.); Shoe: 800 mm (32 in.)**

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

Figures do not exceed 87 percent of hydraulic capacity or

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Arm: 3.11 m (10 ft. 2 in.)		Bucket: 930 kg (2050 lb.)			Shoe: 800 mm (32 in.)	
Power Dig: On						
LIFTING OVER FRONT						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
6.0 (20)				5607* (12 235*)	5543* (12 217*)	
4.5 (15)			8080* (17 332*)	6681* (14 472*)	6011* (13 120*)	
3.0 (10)			11 031* (23 653*)	8082* (17 465*)	6737* (14 643*)	4902*
1.5 (5)			13 516* (29 105*)	9432* (20 388*)	7489* (16 252*)	5743
Ground Line			14 734* (31 860*)	10 378* (22 461*)	7605 (16 351)	
-1.5 (-5)	5847* (13 118*)	9276* (21 093*)	14 900* (32 277*)	10 752* (23 171)	7533 (16 204)	
-3.0 (-10)	10 936* (24 567*)	15 478* (35 216*)	14 200* (30 733*)	10 428* (22 524*)	7591	
-4.5 (-15)		17 555* (37 798*)	12 366* (26 562*)	8917* (18 906*)		
LIFTING OVER SIDE						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
6.0 (20)				5607* (12 235*)	5104 (10 924)	
4.5 (15)			8080* (17 332*)	6681* (14 472*)	4992 (10 714)	
3.0 (10)			10 874 (23 449)	6920 (14 907)	4810 (10 337)	3461
1.5 (5)			10 146 (21 856)	6551 (14 108)	4618 (9931)	3384
Ground Line			9808 (21 093)	6305 (13 571)	4473 (9620)	
-1.5 (-5)	5847* (13 118*)	9276* (21 093*)	9730 (20 911)	6200 (13 343)	4409 (9488)	
-3.0 (-10)	10 936* (24 567*)	15 478* (35 216*)	9816 (21 101)	6228 (13 411)	4461	
-4.5 (-15)		17 555* (37 798*)	10 068 (21 670)	6425 (13 880)		

\* Hydraulically Limited Capacities

OUT4001,0000770-19-17SEP13-1/1

## 290GLC Lift Capacity—Arm: 3.76 m (12 ft. 4 in.); Bucket: 930 kg (2050 lb.); Shoe: 800 mm (32 in.)

Ratings are at bucket lift hook, using standard counterweight, situated on firm, level, uniform supporting surface.

Figures do not exceed 87 percent of hydraulic capacity or

75 percent of weight needed to tip machine. Figures marked with an asterisk (\*) are hydraulically-limited capacities. Remaining figures are stability-limited capacities.

Arm: 3.76 m (12 ft. 4 in.)		Bucket: 930 kg (2050 lb.)			Shoe: 800 mm (32 in.)	
Power Dig: On						
LIFTING OVER FRONT						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
7.5 (25)					4406*	
6.0 (20)					4840* (10 650*)	
4.5 (15)				5848* (12 677*)	5397* (11 777*)	4555* (8804*)
3.0 (10)		(30 440*)	9647* (20 700*)	7312* (15 807*)	6195* (13 465*)	5616* (11 915*)
1.5 (5)			12 454* (26 816*)	8800* (19 025*)	7042* (15 284*)	5761 (12 367)
Ground Line		5560* (12 750*)	14 199* (30 686*)	9959* (21 554*)	7607 (16 350)	5662 (12 165)
-1.5 (-5)	5556* (12 430*)	8978* (20 367*)	14 843* (32 139*)	10 591* (22 935*)	7489 (16 101)	5300*
-3.0 (-10)	9347* (20 976*)	13 520* (30 688*)	14 578* (31 555*)	10 594* (22 911*)	7479 (16 093)	
-4.5 (-15)	13 921* (31 383*)	19 464* (41 978*)	13 317* (28 694*)	9723* (20 862*)		
-6.0 (-20)		14 928*	10 296* (21 623*)			
LIFTING OVER SIDE						
Load Point Height	Horizontal Distance from Centerline of Rotation					
m (ft.)	1.5 (5)	3.0 (10)	4.5 (15)	6.0 (20)	7.5 (25)	9.0 (30)
7.5 (25)					4406*	
6.0 (20)					4840* (10 650*)	
4.5 (15)				5848* (12 677*)	5076 (10 897)	3591 (7667)
3.0 (10)		(30 440*)	9647* (20 700*)	7054 (15 189)	4871 (10 465)	3502 (7495)
1.5 (5)			10 359 (22 310)	6637 (14 290)	4649 (9995)	3395 (7274)
Ground Line		5560* (12 750*)	9862 (21 211)	6329 (13 620)	4468 (9606)	3304 (7088)
-1.5 (-5)	5556* (12 430*)	8978* (20 367*)	9672 (20 787)	6164 (13 261)	4363 (9382)	3265
-3.0 (-10)	9347* (20 976*)	13 520* (30 688*)	9683 (20 810)	6135 (13 203)	4354 (9375)	
-4.5 (-15)	13 921* (31 383*)	19 464* (41 978*)	9859 (21 207)	6247 (13 467)		
-6.0 (-20)		14 928*	10 264 (21 623*)			

\* Hydraulically Limited Capacities

OUT4001.0000771-19-17SEP13-1/1

# Index

	Page		Page
<b>A</b>			
Adjustment		Auxiliary function	
Armrest.....	2-1-16	Lever	
Belt tension .....	3-9-5, 3-9-6	If equipped.....	2-3-9
Seat.....	2-1-16	Auxiliary function enable	
Track sag.....	3-3-2	Switch	
Air		If equipped.....	2-1-9
Intake hoses .....	3-8-6	Auxiliary function lever	
Air cleaner		Horn button	
Clean .....	3-9-7	If equipped.....	2-3-9
Replace .....	3-9-7	Power boost button	
Unloader valve .....	3-3-1, 3-9-8	If equipped.....	2-3-9
Air cleaner dust unloader		Auxiliary indicator.....	2-2-1
Replace .....	3-9-8	Avoid static electricity risk when fueling .....	1-2-5
Air conditioner		<b>B</b>	
Cab .....	2-1-10	Back	
Air conditioner belt		Button.....	2-1-2
Check and adjust .....	3-7-6	Back button .....	2-1-3
Air conditioner display .....	2-2-1	Backover Accidents .....	1-3-3
Air filter		Battery	
Cab fresh air		Acid burns.....	3-7-4
Clean .....	3-8-8	Booster batteries .....	4-1-7
Cab recirculating air		Clean and tighten .....	3-3-3
Clean .....	3-8-8	Electrolyte level check.....	3-7-4
Clean .....	3-9-7	Explosion.....	3-7-4
Replace .....	3-9-7	Handling, checking, and servicing .....	4-1-3
Air suspension seat		Specification .....	4-1-7
Adjusting .....	2-1-17	Terminals.....	3-7-4
Alternative exit		Using charger.....	4-1-5
Tool .....	2-1-13	Battery charger	
Window.....	2-1-14	Using .....	4-1-5
Alternator		Before starting work.....	2-3-1
Precautions .....	4-1-2	Belt	
Arm		Tension adjust .....	3-9-5, 3-9-6
Lubricate .....	3-7-7	Belt tension	
Arm regenerative valve		Air conditioner .....	3-7-6
Operational check.....	4-2-31	Biodiesel fuel.....	3-1-3
Armrest		Blower speed	
Adjustment .....	2-1-16	Switch .....	2-1-2
Attachments		Blower speed switch	
Adding safely .....	1-3-5	Function .....	2-1-3
Operating safely.....	1-3-5	Bolt and screw torque values	
Auto shutdown indicator.....	2-2-1	Metric.....	4-1-22
Auto-idle		Unified inch .....	4-1-21
Switch .....	2-1-2	Boom	
Auto-idle circuit		Lubricate .....	3-7-7
Operational check.....	4-2-19	Boom lower	
Auto-idle indicator .....	2-2-1	With engine stopped.....	2-3-25
Auto-idle switch		Boom regenerative valve	
Function .....	2-1-3	Operational check.....	4-2-30
		Boom up, arm in, and bucket combined function	
		Operational check.....	4-2-29

Continued on next page

	Page		Page
Boost starting .....	4-1-7	Clock .....	2-2-1
Break-in engine oil		Change setting .....	2-2-16
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V .....	3-1-7	Cold weather	
Break-In engine oil .....	3-1-7	Starting .....	2-3-4
Breaker .....	3-2-7	Cold weather start aid .....	2-3-4
Bucket		Cold weather warm-up	
Heavy-duty tooth, replace .....	4-1-15	Engine .....	2-3-5
Lubricate .....	3-5-4, 3-7-7	Console	
Teeth-TK series		Adjust height .....	2-1-17
Replacing .....	4-1-15	Control lever	
Tooth, replace .....	4-1-13	Pattern conversion .....	2-3-21
Bucket install mud and dirt (MAD) seal		Control lever pattern	
Mud and dirt (MAD) seal .....	4-1-17	Conversion .....	2-3-20
Bucket install O-ring seal		Control lever pattern check	
O-ring seal .....	4-1-18	Operational check .....	4-2-21
Bucket install split O-ring seal		Control pattern .....	1-2-2
Split O-ring seal .....	4-1-19	Control pattern, operation .....	2-3-19
Bucket regenerative valve		Control valve lift check valve	
Operational check .....	4-2-32	Operational check .....	4-2-28
Bucket remove		Control valves	
Remove bucket .....	4-1-16	Do not service .....	4-1-2
Bucket remove and install		Conversion	
Bucket .....	4-1-16	Control lever pattern .....	2-3-20
Bucket teeth-TK series		Coolant	
Replacing .....	4-1-15	Diesel engine	
Button		Engine with wet sleeve cylinder liners .....	3-1-17
Back .....	2-1-2	Disposing .....	3-1-19
Home .....	2-1-2	Mixing with concentrate, water quality .....	3-1-18
Horn .....	2-1-4	Sample .....	3-8-8
Power boost .....	2-1-5	Test .....	3-9-9
Power mode .....	2-1-2, 2-1-3	Testing freeze point .....	3-1-19
		Warm temperature climates .....	3-1-18
<b>C</b>		Coolant level	
Cab		Surge tank .....	3-4-2
Air conditioner .....	2-1-10	Coolant temperature gauge .....	2-2-1
Heater .....	2-1-10	Coolant temperature mark .....	2-2-1
Cab dome light		Cooling system	
Switch .....	2-1-14	Cleaning .....	4-1-1
Cab door		Deaeration .....	3-13-2, 3-13-4
Window .....	2-1-15	Drain .....	3-13-1, 3-13-3
Cab fresh air filter		Fill .....	3-13-2, 3-13-4
Clean .....	3-8-8	Service safely .....	1-4-1
Cab recirculating air filter		Coupler, hydraulic	
Clean .....	3-8-8	Locking .....	2-3-16
Celsius and fahrenheit		Lubrication .....	3-4-4
Selecting display .....	2-1-11	Reset lock controller .....	2-3-17, 2-3-18
Charge air cooler		Unlocking .....	2-3-18
Cleaning .....	4-1-1	Cover	
Check track shoe hardware torque		Engine .....	3-2-6
Track shoe hardware .....	3-6-1	Crankcase vent filter .....	3-10-1
		Crankshaft damper replacement .....	3-11-1
		Cycle times check	
		Operational check .....	4-2-37, 4-2-39

Continued on next page

	Page		Page
Cylinder stroke end .....	2-3-6	<b>E</b>	
Cylinders		ECO (economy) mode	
Do not service .....	4-1-2	Operational check .....	4-2-17
<b>D</b>		Effect of cold weather on diesel engines .....	3-1-5
Daily machine check .....	2-3-1	Electrical	
Damage		System .....	4-1-10
Avoiding .....	1-3-4	System, troubleshooting .....	4-3-7
Date		Electrical accessory	
Change setting .....	2-2-16	Adding .....	4-1-9
Decals		Electrical control main switch .....	2-1-9
Safety .....	1-5-12	Engine	
Default screen .....	2-2-1	250GLC Specifications .....	4-6-1
Diagnose malfunctions		250GLC Specifications IT4 .....	4-6-1
Troubleshooting procedure .....	4-3-1	290GLC Specifications .....	4-6-15
Diagnostic trouble code check		290GLC Specifications IT4 .....	4-6-15
Operational check .....	4-2-1	Break-in .....	2-3-2
Dial		Cold weather warm-up .....	2-3-5
Engine speed .....	2-1-2	Coolant	
Monitor .....	2-1-2	Test .....	3-9-9
Diesel engine oil		Crankcase vent filter .....	3-10-1
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V .....	3-1-12	Crankcase vent tube .....	3-9-5
Service interval for operation at high altitude .....	3-1-13	Crankshaft damper replacement .....	3-11-1
Tier 2 and stage II .....	3-1-8	Identification .....	3-2-2
Tier 3 and stage IIIA .....	3-1-10	Oil drain and refill .....	3-8-7
Diesel engines, cold weather effect .....	3-1-5	Oil filter, replace .....	3-8-7
Diesel fuel .....	3-1-1	Oil level check .....	3-4-1
Sample .....	3-8-8	Oil specification	
Supplemental additives .....	3-1-4	Break-In .....	3-1-7
Diesel fuel		Starting .....	2-3-3
Specifications .....	3-1-1	Troubleshooting .....	4-3-2
Diesel fuel specifications .....	3-1-1	Valve lash	
Diesel fuel, testing .....	3-1-4	Check and adjust .....	3-10-1
Dig function drift		Warming .....	2-3-3
Operational check .....	4-2-25, 4-2-26	Engine coolant	
Digging operation		Disposing of .....	3-1-19
Grading operation .....	2-3-6	Engine cover .....	3-2-6
Display and clear trouble codes		Engine oil	
Operational check .....	4-2-1	Break-In	
Display unit		Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V .....	3-1-7
Software update menu .....	2-3-15	Diesel	
Door		Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V .....	3-1-12
Engine access .....	3-2-5	Service interval for operation at high altitude .....	3-1-13
Drain and refill		Tier 2 and stage II .....	3-1-8
Capacities		Tier 3 and stage IIIA .....	3-1-10
250GLC .....	4-6-2	Engine oil and filter service intervals .....	3-1-11
290GLC .....	4-6-16	Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V	
Driving		0.12 L/kW or greater oil pan .....	3-1-13
Slopes .....	2-3-21	Operation at high altitude .....	3-1-13
		Tier 2 and stage II	
		Extended drain oil pan .....	3-1-9

Continued on next page

[illegible]

Continued on next page



**Continued on next page**

	Page		Page
Lower front		Setting menu	
Window .....	2-1-15	Display item selection .....	2-2-21
Lubricant		Exhaust filter .....	2-2-18
Mixing .....	3-1-6	Rear view camera monitor .....	2-2-20
Lubricant Storage		Sub meter selection .....	2-2-19
Storage, Lubricant .....	3-1-6	Maintenance	
Lubricants, safety .....	3-1-6	Machine position .....	3-2-1
Lubricate		Schedule and record .....	3-2-8, 3-2-11
Swing bearing gear .....	3-8-1	Mechanical suspension seat	
Lubrication		Adjusting .....	2-1-16
Hydraulic coupler .....	3-4-4	Metric bolt and screw torque values .....	4-1-22
Lubricity of diesel fuel .....	3-1-1	Mixing lubricants .....	3-1-6
		Monitor .....	2-2-1
<b>M</b>		Air conditioner .....	2-2-11
Machine		Air conditioner display .....	2-2-1
Clean regularly .....	4-1-9	Alarm list .....	2-2-5
Lifting .....	2-3-28	Auto shutdown indicator .....	2-2-1
Required stop warning .....	2-3-22	Auto-idle indicator .....	2-2-1
Machine damage		Auxiliary indicator .....	2-2-1
Avoiding .....	1-3-4	Back button .....	2-1-3
Machine modifications		Clock .....	2-2-1
Avoid .....	1-2-2	Coolant temperature gauge .....	2-2-1
Machine movement		Coolant temperature mark .....	2-2-1
Unintended .....	1-3-2	Default screen .....	2-2-1
Machine number		Dial .....	2-1-2, 2-1-3
Hydraulic pump .....	4-5-3	Engine preheat indicator .....	2-2-1
Machine specifications		Exhaust filter indicator .....	2-2-1
250GLC .....	4-6-3	Fuel gauge .....	2-2-1
290GLC .....	4-6-17	Fuel mark .....	2-2-1
Machine tip over		Functions .....	2-2-2
Avoiding .....	1-3-4	Home button .....	2-1-3
Machine, inspect .....	1-2-3	Hour meter .....	2-2-1
Main menu .....	2-2-4	Information menu .....	2-2-23
Air conditioner .....	2-2-11	Maintenance .....	2-2-25
Information menu .....	2-2-23	Monitoring .....	2-2-26
Monitoring .....	2-2-26	Operation .....	2-2-24
Operation .....	2-2-24	Troubleshooting .....	2-2-25
Troubleshooting .....	2-2-25	Main menu .....	2-2-4
Radio .....	2-2-13	Power mode indicator .....	2-2-1
Setting menu .....	2-2-15	Radio .....	2-2-13
Attachment name input .....	2-2-16	Radio display .....	2-2-1
Auto-shutdown .....	2-2-17	Seat belt indicator .....	2-2-1
Brightness adjustment .....	2-2-21	Setting menu .....	2-2-15
Date and time .....	2-2-16	Attachment name input .....	2-2-16
Language .....	2-2-21	Auto-shutdown .....	2-2-17
Main menu sequence change .....	2-2-22	Brightness adjustment .....	2-2-21
Unit selection .....	2-2-22	Date and time .....	2-2-16
Work mode .....	2-2-14	Display item selection .....	2-2-21
Main Menu		Exhaust filter .....	2-2-18
Alarm list .....	2-2-5	Language .....	2-2-21
Information menu		Main menu sequence change .....	2-2-22
Maintenance .....	2-2-25	Rear view camera monitor .....	2-2-20
		Sub meter selection .....	2-2-19

Continued on next page

	Page		Page
Unit selection .....	2-2-22	Boom up, arm in, and bucket combined function .....	4-2-29
Start-up .....	2-2-3	Bucket regenerative valve .....	4-2-32
Sub meter		Control lever pattern check .....	4-2-21
Breaker hour consumption .....	2-2-1	Control valve lift check valve .....	4-2-28
Fuel consumption .....	2-2-1	Cycle times check .....	4-2-37, 4-2-39
Travel speed indicator .....	2-2-1	Diagnostic trouble code check .....	4-2-1
Work mode .....	2-2-14	Dig function drift .....	4-2-25, 4-2-26
Work mode indicator .....	2-2-1	Display and clear trouble codes .....	4-2-1
Monitor and gauge circuit		ECO (economy) mode .....	4-2-17
Operational check .....	4-2-14	Engine speed dial .....	4-2-16
Monitor dial .....	2-1-3	Fuel gauge .....	4-2-3
Monitor functions .....	2-2-2	H/P (high power) mode .....	4-2-18
Monitor start up		Heater and air conditioner controls check .....	4-2-41
Operational check .....	4-2-4	Heater and air conditioning circuit check .....	4-2-40
Monitor, gauges and battery relay		Horn circuit .....	4-2-2
Operational check .....	4-2-5	Hour meter .....	4-2-3
Motors		Hydraulic oil tank pressurization .....	4-2-21
Do not service .....	4-1-2	Key switch off, engine off .....	4-2-1
Mounting location		Key switch on, engine off .....	4-2-3
Fire extinguisher .....	2-1-13	Key switch on, engine on .....	4-2-13
		Light circuit .....	4-2-9
<b>O</b>		Monitor and gauge circuit .....	4-2-14
Oil		Monitor start up .....	4-2-4
Change attachment .....	3-2-7	Monitor, gauges and battery relay .....	4-2-5
Engine		Pilot shutoff circuit .....	4-2-15
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V .....	3-1-12	PWR (power) mode .....	4-2-17
Tier 2 and stage II .....	3-1-8	Rear camera .....	4-2-6
Tier 3 and stage IIIA .....	3-1-10	Swing dynamic braking .....	4-2-22
Engine filter .....	3-8-7	Swing park brake and circuit drift .....	4-2-23
Engine, level .....	3-4-1	Swing power check .....	4-2-24
Filter hydraulic .....	3-9-2	Swing priority circuit .....	4-2-27
Hydraulic sample .....	3-8-8	Travel alarm .....	4-2-20
Hydraulic specification .....	3-1-14	Travel alarm cancel switch circuit .....	4-2-20
Pump drive gear case drain and refill .....	3-9-4	Travel lever and pedal .....	4-2-8
Pump drive gear case specification .....	3-1-15	Travel speed selection .....	4-2-33
Swing gear case specification .....	3-1-15	Travel system maneuverability .....	4-2-36
Track gear case specification .....	3-1-15	Travel system tracking .....	4-2-34
Travel gear case		Travel system tracking while operating a dig function .....	4-2-35
Check .....	3-7-6	Windshield washer circuit .....	4-2-13
Travel gear case drain and refill .....	3-10-1	Windshield washer control .....	4-2-11
Oil cooler		Windshield wiper circuit .....	4-2-12
Cleaning .....	4-1-1	Windshield wiper controls .....	4-2-10
Oil level		Operator conveniences .....	1-1-1
Hydraulic .....	3-4-3	Operator's station .....	2-1-1
Open crankcase ventilation (OCV) hose			
Clean .....	3-9-4	<b>P</b>	
Operation qualification .....	1-2-1	Panels	
Operational check		Location .....	2-1-1
Arm regenerative valve .....	4-2-31	Parked cleaning	
Auto-idle circuit .....	4-2-19	Operation .....	2-3-12
Boom regenerative valve .....	4-2-30	Parking machine .....	2-3-26

Continued on next page

[illegible]

	Page		Page
Safety		Hydraulic oil.....	3-1-14
Fire.....	1-2-6	Pump drive gear case oil.....	3-1-15
Safety features .....	1-1-1	Swing gear case oil.....	3-1-15
Safety hazards		Travel gear case oil.....	3-1-15
Travel .....	1-3-5	Specifications	
Safety signs.....	1-5-12	250GLC Engine .....	4-6-1
Hydraulic coupler.....	1-5-12	250GLC engine, IT4 engine .....	4-6-1
Safety, high-pressure fluids		290GLC Engine .....	4-6-15
Avoid high-pressure fluids.....	1-2-3	290GLC engine, IT4 engine .....	4-6-15
Safety, information		Starting	
Recognize.....	1-2-1	Cold weather .....	2-3-4
Safety, lubricants .....	3-1-6	Starting engine .....	2-3-3
Sample		Steering	
Engine oil .....	3-7-7	Lever.....	2-3-8
Sample ports		Machine .....	2-3-8
Fluid sample .....	4-1-8	Pedal .....	2-3-8
Schedule		Steps	
Periodic maintenance.....	3-2-8, 3-2-11	Use correctly	
Screen		Handholds .....	1-3-1
Fuel tank inlet		Storage	
Remove and clean.....	3-3-1	Machine .....	4-4-1
Seat		Monthly .....	4-4-2
Adjustment .....	2-1-16	Storing fuel .....	3-1-2
Air suspension.....	2-1-17	Sub meter	
Seat belt indicator.....	2-2-1	breaker hour consumption .....	2-2-1
Seat heater		Fuel consumption .....	2-2-1
Switch		Surge tank	
If equipped.....	2-1-6	Coolant level check .....	3-4-2
Selecting display		Swing	
Celsius and fahrenheit.....	2-1-11	Area cleaning .....	2-3-21
Serial number.....	4-5-1, 4-5-2	Gear case oil level check .....	3-7-1
Hydraulic coupler		Swing bearing gear	
If equipped.....	4-5-3	Grease.....	3-8-1
Hydraulic pump.....	4-5-3	Lubricate .....	3-8-1
Swing motor .....	4-5-2	Swing dynamic braking	
Travel motor .....	4-5-2	Operational check.....	4-2-22
Service ADVISOR Remote		Swing gear case	
Overview .....	2-3-14	Oil drain and refill .....	3-9-1
Reprogramming .....	2-3-14	Swing gear case oil	
Service ADVISOR remote (SAR)		Drain and refill.....	3-9-1
Switch .....	2-1-8	Sample .....	3-8-8
Service intervals.....	3-2-8, 3-2-11	Swing motor serial number .....	4-5-2
Shoe		Swing park brake and circuit drift	
Cap screw inspection.....	3-6-1	Operational check.....	4-2-23
Slopes		Swing power check	
Driving up .....	2-3-21	Operational check.....	4-2-24
Software update		Swing priority circuit	
Download and installation.....	2-3-15	Operational check.....	4-2-27
Troubleshooting .....	4-3-8	Switch	
Specification		Auto-idle .....	2-1-2, 2-1-3
Fuel tank .....	3-2-6	Auxiliary function enable	
Grease.....	3-1-16	If equipped.....	2-1-9
Hardware torque .....	4-1-20	Blower speed .....	2-1-2, 2-1-3

Continued on next page

	Page		Page
Cab dome light .....	2-1-14	Torque charts	
Exhaust filter parked cleaning switch .....	2-1-7	Metric .....	4-1-22
Key .....	2-1-2, 2-1-3	Unified inch .....	4-1-21
Left console .....	2-1-6	Torque values	
Radio power and volume .....	2-1-2	Roll-over protective structure .....	4-1-9
Radio tuning .....	2-1-2	Torquing replacement track shoe hardware	
Reversing fan		Track shoe hardware .....	3-6-1
If equipped .....	2-1-6, 2-1-7	Towing machine .....	2-3-28
Right console .....	2-1-8	Track	
Right enable .....	2-1-8	Sag .....	4-1-20
Seat heater		Sag adjustment .....	3-3-2
If equipped .....	2-1-6	Sag check .....	3-3-2
Service ADVISOR remote (SAR) .....	2-1-8	Shoe, cap screw torque .....	3-6-1
Temperature control/mode .....	2-1-2, 2-1-3	Track shoe hardware	
Travel alarm .....	2-1-6	Check cap screws .....	4-1-20
Travel alarm cancel .....	2-1-6	Transport	
Travel mode .....	2-1-2, 2-1-3	Loading machine .....	2-3-27
Windshield wiper and washer .....	2-1-2, 2-1-3	Unloading machine .....	2-3-27
Work light .....	2-1-2, 2-1-3	Travel alarm	
Switch panel .....	2-1-2	Operational check .....	4-2-20
Switch panel		Switch .....	2-1-6
Auto-idle switch .....	2-1-3	Travel alarm cancel	
Back button .....	2-1-3	Switch .....	2-1-6
Blower speed switch .....	2-1-3	Travel alarm cancel switch circuit	
Engine speed dial .....	2-1-3	Operational check .....	4-2-20
Functions .....	2-1-3	Travel gear case	
Home button .....	2-1-3	Oil	
Key switch .....	2-1-3	Check .....	3-7-6
Keypad .....	2-1-3	Oil drain and refill .....	3-10-1
Monitor dial .....	2-1-3	Travel gear case	
Power mode button .....	2-1-3	Sample .....	3-8-8
Radio power and volume switch .....	2-1-3	Travel lever and pedal	
Radio tuning switch .....	2-1-3	Operational check .....	4-2-8
Temperature control/mode switch .....	2-1-3	Travel mode	
Travel mode switch .....	2-1-3	Switch .....	2-1-2
Windshield wiper and washer switch .....	2-1-3	Travel mode switch	
Work light switch .....	2-1-3	Function .....	2-1-3
		Travel motor	
		Serial number .....	4-5-2
		Travel speed indicator .....	2-2-1
		Travel speed selection	
		Operational check .....	4-2-33
		Travel system maneuverability	
		Operational check .....	4-2-36
		Travel system tracking	
		Operational check .....	4-2-34
		Travel system tracking while operating a dig function	
		Operational check .....	4-2-35
		Troubleshooting	
		Electrical system .....	4-3-7
		Engine .....	4-3-2
		Hydraulic system .....	4-3-5
		Software update .....	4-3-8

## T

## Table

Periodic maintenance .....	3-2-8, 3-2-11
Temperature control/mode	
Switch .....	2-1-2
Temperature control/mode switch	
Function .....	2-1-3
Testing diesel fuel .....	3-1-4
Time	
Change setting .....	2-2-16
Tip over	
Avoiding .....	1-3-4
Tool	
Alternative exit .....	2-1-13

Continued on next page

	Page		Page
Troubleshooting procedure.....	4-3-1	Window	
<b>U</b>		Alternative exit.....	2-1-14
undefined		Cab door .....	2-1-15
Ash handling and disposal.....	1-2-8	Lower front.....	2-1-15
undefined		Upper front.....	2-1-14
Use correctly .....	1-3-1	Windshield washer circuit	
Unified inch bolt and screw torque values .....	4-1-21	Operational check.....	4-2-13
Unloader valve		Windshield washer control	
Air cleaner .....	3-3-1	Operational check.....	4-2-11
Air cleaner, replace .....	3-9-8	Windshield washer fluid .....	3-3-1
Upper front		Windshield wiper and washer	
Window.....	2-1-14	Switch .....	2-1-2
<b>V</b>		Windshield wiper and washer switch	
Valve		Function .....	2-1-3
Air cleaner dust unloader .....	3-3-1	Windshield wiper circuit	
<b>W</b>		Operational check.....	4-2-12
Warning		Windshield wiper controls	
Required machine stop.....	2-3-22	Operational check.....	4-2-10
Water separator		Work light	
Drain.....	3-5-1, 3-5-2	Switch .....	2-1-2
Replace .....	3-8-2, 3-8-3	Work light switch	
Welding.....	4-1-8	Function .....	2-1-3
Welding repairs .....	1-4-2	Work mode indicator.....	2-2-1
		Work site hazards	
		Avoid.....	1-3-2
		Working ranges	
		250GLC .....	4-6-5
		290GLC .....	4-6-19
		Working tool pivots	
		Lubricate .....	3-5-4

