700J
Crawler Dozer
(Serial No. (S.N. 139436—) -)
Engine 6068HT066

OPERATOR'S MANUAL

700J Crawler Dozer (S.N. 139436—)
Engine 6068HT066

OMT227267 ISSUE I9 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

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

If this product contains a gasoline engine:

⚠ WARNING

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

Worldwide Construction And Forestry Division
PRINTED IN U.S.A.

Introduction

Foreword

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

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

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

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

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

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

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

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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.

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License Agreement for John Deere Software

LICENSE AGREEMENT FOR JOHN DEERE SOFTWARE

IMPORTANT -- READ CAREFULLY: THIS LICENSE AGREEMENT IS A LEGAL CONTRACT BETWEEN YOU AND JOHN DEERE SHARED SERVICES, INC., A CORPORATION HAVING A PRINCIPAL ADDRESS OF ONE JOHN DEERE PLACE, MOLINE, IL 61265 (THE "LICENSOR"). THIS LICENSE AGREEMENT GOVERNS YOUR USE OF ANY SOFTWARE ("SOFTWARE") AND OTHER MATERIALS (INDIVIDUALLY OR COLLECTIVELY "LICENSED MATERIALS" OR "LM") ASSOCIATED WITH ANY DISPLAY, ENGINE CONTROL UNIT, INVERTER, CONTROLLER, ELECTRONICS MODULE, SENSOR, ACTUATOR, OR COMPUTING UNIT (INDIVIDUALLY OR COLLECTIVELY "LICENSED PRODUCTS" OR "LP") OF THE JOHN DEERE EQUIPMENT THAT IS NOT OTHERWISE LICENSED BY A SEPARATE WRITTEN AGREEMENT BETWEEN YOU AND LICENSOR, OR ITS AFFILIATES.

BY ACTIVATING OR OTHERWISE USING THE LP, YOU ARE ACCEPTING AND AGREEING TO THE TERMS OF THIS LICENSE AGREEMENT WITH RESPECT TO THE LM THAT HAVE BEEN PRE-INSTALLED ON YOUR LP. YOU AGREE THAT THIS LICENSE AGREEMENT, INCLUDING THE WARRANTY DISCLAIMERS, LIMITATIONS OF LIABILITY, TERMINATION, AND ARBITRATION PROVISIONS BELOW, IS BINDING UPON YOU, AND UPON ANY COMPANY ON WHOSE BEHALF YOU USE THE LM AND LP AS WELL AS THE EMPLOYEES OF ANY SUCH COMPANY (COLLECTIVELY REFERRED TO AS "YOU" IN THIS LICENSE AGREEMENT). IF YOU DO NOT AGREE TO THE TERMS OF THIS LICENSE AGREEMENT, OR IF YOU ARE NOT AUTHORIZED TO ACCEPT THESE TERMS ON BEHALF OF YOUR COMPANY OR ITS EMPLOYEES, DECLINE THESE TERMS AND CONDITIONS AND DO NOT USE THE LP OR THE JOHN DEERE EQUIPMENT. THIS LICENSE AGREEMENT REPRESENTS THE ENTIRE AGREEMENT CONCERNING THE LM BETWEEN YOU AND THE LICENSOR AND IT REPLACES ANY PRIOR PROPOSAL, REPRESENTATION, OR UNDERSTANDING BETWEEN YOU AND THE LICENSOR.

1. **Description of Software.** Your Licensed Product ("LP") comes with all Software pre-installed for operation of your John Deere Equipment. Licensed Materials ("LM") shall mean any Software, data files, documentation, engine calibration tables, proprietary data messages, and controller area network (CAN) data messages that are in or communicated to or from any LP (e.g., to monitor, diagnose, or operate the John Deere Equipment). Data files shall include but not be limited to any data structure that adjusts engine control parameters, such as fuel metering, fuel injection rate, fuel injection timing, fuel pressure, engine speed versus torque relationship, intake boost pressure, fuel-to-air ratio or engine timing.

2. **License.** Licensor hereby grants to you, and you accept, a nonexclusive license to use the LM 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 LM. The LM may be used only on the LP in which it was initially installed and solely in conjunction with the John Deere Equipment in which it was initially installed; or, in the event of the inoperability of that LP, on a replacement LP provided to you by an authorized dealer pursuant to the Limited Warranty of Section 5. 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 LP or John Deere Equipment on which the LM covered by this Agreement are installed. If you sell or otherwise transfer the ownership of the LP or John Deere Equipment, you agree that you will require such transferee to accept terms no less restrictive than those in this License Agreement. This License Agreement also covers any and all hardware and additional software that may interact with the LM and/or the LP.

3. **Licensor's Rights.** You acknowledge and agree that the LM are proprietary to Licensor, or its affiliates or licensors, and is protected under copyright law, trade secret law, and laws governing confidential information. You shall maintain the confidentiality of the LM, any nonpublic information in the LM and the source code of the Software, regardless of whether the LM is labeled or marked with any proprietary legend or notice that indicates its confidential nature. You further acknowledge and agree that all right, title, and interest in and to the Software and the LM, including associated intellectual property rights, are and shall remain with Licensor, its affiliates, and their licensors. This License Agreement does not convey to you any title or interest in or to the LM, but only a limited right of use revocable in accordance with the terms of this License Agreement.

4. **License Restrictions, Reverse Engineering.** You may not reproduce, prepare derivative works based on, disclose, publish, distribute, rent, lease, modify, loan, display, or perform the LM or any part thereof. You may not reverse engineer, decompile, translate, adapt, or disassemble the LM, nor shall you attempt to create the source code from the object code for the Software. You may not transmit the LM over any network or via a hacking device, although you may use the LM to make transmissions of diagnostic data messages that are authorized by Licensor and you may receive Software updates authorized by Licensor over any Licensor-authorized communications channel. You also agree not to permit any third party acting under your control to do any of the foregoing activities related to reverse engineering of the Licensed Materials. You agree not to remove or obliterate any copyright, trademark or other proprietary rights notices from the LM, except as expressly permitted in writing by Licensor or its licensors or expressly permitted under applicable law notwithstanding these restrictions.

5. **License Restrictions, Circumvention.**
Security measures ("SM") means any of the following: technological measures under the Digital Millennium Copyright Act, copyright protection measures, application enabling mechanisms, passwords, key codes, encryption or other security devices. You agree that you will not: (a) attempt to defeat a SM or defeat a SM that protects the LM and that would constitute a violation under applicable U.S., U.K. or German law related circumvention of technological measures that protect software, copyrighted works, or other intellectual property rights, (b) purchase, manufacture, design, import, sell or distribute any circumvention or hacking device that is designed to circumvent or hack the LM or LP and that are unlawful to distribute under applicable U.S., U.K. or German law, (c) circumvent a SM that protects the LM if the circumvention can be used to access trade secrets or confidential information that is protected under applicable law; (d) apply circumvention devices or hacking devices to the LM, LP or John Deere Equipment (e.g., to bypass, temporarily or otherwise, one or more LPs) in a manner that violates any environmental

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regulations, laws, safety laws, or voluntary safety standards (e.g., ISO standards) that are supported by LPs, LMs, or (e) apply any circumvention devices or hacking devices from any third parties in an attempt to reverse engineer the LM or that could be used to access trade secrets or other confidential information in the LM that is protected under applicable law. You also agree not to permit any third party acting under your control to do any of the foregoing activities related to circumvention of SM.

6. **Consideration, License Fees**. The license fees or other good and valuable consideration paid by you are paid in consideration of the licenses granted under this License Agreement.

7. **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 LP to the place of purchase for repair or replacement of the non-performing Software. As used in this License Agreement. The "Warranty Period" is one (1) year from the date you take delivery of the LP.

8. **DISCLAIMER OF WARRANTIES**. YOU HEREBY AGREE THAT THE LIMITED WARRANTY PROVIDED ABOVE (THE "**LIMITED WARRANTY**") CONSTITUTES YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY PROBLEM WHATSOEVER WITH THE LM. EXCEPT AS PROVIDED IN THE LIMITED WARRANTY, THE LM IS LICENSED "AS IS," AND LICENSOR, ITS AFFILIATES AND THIRD PARTY SUPPLIERS EXPRESSLY DISCLAIM AND YOU EXPRESSLY WAIVE, RELEASE AND RENOUNCE ALL WARRANTIES ARISING BY LAW OR OTHERWISE WITH RESPECT TO THE LM, INCLUDING, BUT NOT LIMITED TO: ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; ANY IMPLIED WARRANTY ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE; ANY WARRANTY OF TITLE OR NON-INFRINGEMENT; AND, ANY OTHER WARRANTY ARISING UNDER ANY THEORY OF LAW, INCLUDING TORT, NEGLIGENCE, STRICT LIABILITY, CONTRACT OR OTHER LEGAL OR EQUITABLE THEORY. NO REPRESENTATION OR OTHER AFFIRMATION OF FACT INCLUDING, BUT NOT LIMITED TO, STATEMENTS REGARDING SUITABILITY FOR USE, SHALL BE DEEMED TO BE A WARRANTY BY LICENSOR OR ANY OF ITS AFFILIATES OR THIRD PARTY SUPPLIERS. LICENSOR DOES NOT WARRANT THAT THE LM AND/OR LP IS ERROR-FREE OR WILL OPERATE WITHOUT INTERRUPTION.

9. **LIMITATION OF LIABILITY**. EXCEPT AS SET FORTH IN THE LIMITED WARRANTY, UNDER NO CIRCUMSTANCES SHALL LICENSOR, ITS AFFILIATES OR ITS THIRD PARTY SUPPLIERS BE LIABLE TO YOU OR TO ANY THIRD PARTIES FOR DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY LOSS OR DAMAGE CAUSED BY THE LM; ANY PARTIAL OR TOTAL FAILURE OF THE LM; PERFORMANCE, NONPERFORMANCE OR DELAYS IN CONNECTION WITH ANY INSTALLATION, MAINTENANCE, WARRANTY OR REPAIRS OF THE LM, DAMAGES FOR CROP LOSS, DAMAGE TO LAND, DAMAGE TO MACHINES, LOST PROFITS, LOSS OF BUSINESS OR LOSS OF GOODWILL, LOSS OF USE OF EQUIPMENT OR SERVICES OR DAMAGES TO BUSINESS OR REPUTATION ARISING FROM THE PERFORMANCE OR NON-PERFORMANCE OF ANY ASPECT OF THE SOFTWARE, LM OR LP, WHETHER IN CONTRACT, TORT OR OTHERWISE, AND WHETHER OR NOT LICENSOR, ITS AFFILIATES OR ITS THIRD PARTY SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL LICENSOR'S CUMULATIVE LIABILITY TO YOU OR TO ANY OTHER PARTY FOR ANY LOSSES OR DAMAGES RESULTING FROM ANY CLAIMS, LAWSUITS, DEMANDS, OR ACTIONS ARISING FROM OR RELATING TO USE OF THE LM EXCEED YOUR TOTAL PAYMENT FOR THE LP AND FOR THE LICENSE OF THE LM.

10. **Software Maintenance**. Licensor may, at its sole option, offer you maintenance of the Software, even though the Warranty Period has expired. Such maintenance may include providing modifications, corrections or enhancements ("**Upgrades**") to the Software and/or the applicable Operators' Manuals. Licensor reserves the right, in its sole discretion, to charge you for maintenance (except in cases where corrections are provided under the Limited Warranty). Your acceptance of this License Agreement constitutes your agreement that any Upgrades will be deemed included in the Software as defined in this License Agreement and that they shall be governed by the terms and conditions applicable to the LM under this License Agreement.

11. **Termination of License**. Licensor may terminate the license granted under this License Agreement upon written notice of termination provided to you if you violate any material term of this License Agreement pertaining to your use of the LM or Licensor's rights, including, without limitation, the provisions of Sections 2 and 3 above.

12. **Compliance with Law**. You agree that you will use the LM in accordance with United States law and the laws of the country in which you are located, as applicable, including foreign trade control laws and regulations. The LM may be subject to export and other foreign trade controls restricting re-sales and/or transfers to other countries and parties. By accepting the terms of this License Agreement, you acknowledge that you understand that the LM may be so controlled, including, but not limited to, by the Export Administration Regulations and/or the foreign trade control regulations of the Treasury Department of the United States. The LM remains subject to applicable U.S. laws.

11. **Indemnification**. You agree to defend, indemnify and hold Licensor, its affiliates and third party supplier, and their, officers, directors, employees, agents and representatives (each an "**Indemnified Party**"), harmless from and against all claims, demands proceedings, injuries, liabilities, losses, or costs and expenses (including reasonable legal fees) brought by any third party against any such persons arising from or in connection with your use of the LM, regardless of whether such losses are caused, wholly or partially, by any negligence, breach of contract or other fault of an Indemnified Party.

12. **Trademark.** Licensor does not grant you any right, license, or interest to any Licensor trademarks, symbols, marks or names (collectively "Marks") or any trademarks that confusingly similar to the Marks and you agree that no such right, license, or interest shall be asserted by you with respect to such Marks.

13. **Costs of Litigation**. If any claim or action is brought by either party to this License Agreement against the other party regarding the subject matter hereof, the prevailing party shall be entitled to recover, in

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addition to any other relief granted, reasonable attorney, arbitrators, and dispute resolution center administrative fees and expenses of litigation.

14. **Severability and Waiver**. Should any term or provision of this License Agreement be declared void or unenforceable by any court of competent jurisdiction, such declaration shall have no effect on the remaining terms and remaining provisions hereof. The failure of either party to enforce any rights granted hereunder or to take action against the other party in the event of any breach hereunder shall not be deemed a waiver by that party as to subsequent enforcement of rights of subsequent actions in the event of future breaches.

15. **Language Clause**. Unless the laws of the location in which you reside require otherwise, the parties hereby acknowledge that they have required this License Agreement, and all other documents relating hereto, be drawn up in the English language only. There may be a translated version of this License Agreement. If there is an inconsistency or contradiction between the translated version and the English version of this License Agreement, the English version of this License Agreement shall control unless the laws of the location in which you reside require that a different version control. The parties acknowledge and agree that they have required that this agreement be prepared in the English language. Les parties reconnaissent avoir exigé que les présentes soient rédigées en langue anglaise.

16. **Assignment by Licensor**. Licensor may assign this License 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.

17. **Governing Law and Forum**. This License Agreement will be governed by and construed in accordance with the substantive laws in force in the State of Illinois, U.S.A. The respective courts of Rock Island County, Illinois have exclusive jurisdiction over all disputes relating to this License Agreement. This License 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.

18. **Arbitration**. IF YOU RESIDE IN A JURISDICTION WHEREIN THE ENFORCEABILITY OF THE TERMS OF SECTION 17 IS DEPENDENT UPON THE PARTIES AGREEING TO SUBMIT TO ARBITRATION, THEN ANY CONTROVERSY OR CLAIM ARISING OUT OF OR RELATING TO THIS LICENSE AGREEMENT SHALL BE DETERMINED BY ARBITRATION IN ACCORDANCE WITH THE INTERNATIONAL ARBITRATION RULES OF THE INTERNATIONAL CENTRE FOR DISPUTE RESOLUTION ("**ICDR**") IN EFFECT AT THE TIME OF ITS INITIATION. THE ARBITRATION SHALL BE HELD BEFORE ONLY ONE ARBITRATOR APPOINTED BY THE ICDR. THE PLACE OF ARBITRATION SHALL BE CHICAGO, ILLINOIS, USA AND THE LANGUAGE OF THE ARBITRATION SHALL BE ENGLISH.

19. **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 LM AND ON WHOSE BEHALF IT IS USED; AND, (D) AGREE TO PERFORM THE OBLIGATIONS OF THIS AGREEMENT.

20. **Notices**. All notices to Licensor shall be sent by certified or registered mail to John Deere Shared Services, Inc., One John Deere Place, Moline, IL 61265 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, a John Deere dealer, or another distribution partner of Licensor in connection with your purchase of the LP and/or John Deere Equipment. 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.

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Deere Open Source Compliance Team
P.O. Box 1202
Moline, IL 61266-1202
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.

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Conformity Marking for European Union (EU) and Eurasian Economic Union (EAEU)

NOTE: Some or all machine models listed on the front cover of this manual are available in optional factory configurations that meet or exceed European Union (EU) or Eurasian Economic Union (EAEU) conformity requirements.

To validate conformance of a particular machine for sale into the EU or EAEU markets, check for the applicable marking on the machine, or see an authorized John Deere dealer.

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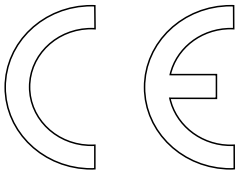

European Union (EU)

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Eurasian Economic Union (EAEU)

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EPA Non-road Emissions Control Warranty Statement—Compression Ignition

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JOHN DEERE

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

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

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

JOHN DEERE'S WARRANTY RESPONSIBILITY

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

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

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

EMISSION WARRANTY EXCLUSIONS

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

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

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

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

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

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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.

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

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CARB Non-road Emissions Control Warranty Statement—Compression Ignition

Emissions Control Warranty Statement 2016 through 2018

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JOHN DEERE

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

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

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

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2016 through 2018 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.

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JOHN DEERE'S WARRANTY RESPONSIBILITY:

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

Air Induction System

- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system

- Fuel injection system

Exhaust Gas Recirculation

- EGR valve

Catalyst or Thermal Reactor Systems

- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls

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

Positive Crankcase Ventilation (PCV) System

- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls

- NOx absorbers and catalysts

SCR systems and urea containers/dispensing systems

Miscellaneous Items used in Above Systems

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

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

OWNER'S WARRANTY RESPONSIBILITIES:

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

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

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

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

Emission_CI_CARB (13Jun14)

Continued on next page

Emissions Control Warranty Statement 2016 through 2018

DXLOGOV1 —UN—28APR09

JOHN DEERE

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

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

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

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2016 through 2018 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.

RG26035 —UN—24JUN14

Continued on next page

DX,EMISSIONS,CARB -19-03FEB17-3/8

JOHN DEERE'S WARRANTY RESPONSIBILITY:

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

Air Induction System

- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system

- Fuel injection system

Exhaust Gas Recirculation

- EGR valve

Catalyst or Thermal Reactor Systems

- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls

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

Positive Crankcase Ventilation (PCV) System

- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls

- NOx absorbers and catalysts

SCR systems and urea containers/dispensing systems

Miscellaneous Items used in Above Systems

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

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

OWNER'S WARRANTY RESPONSIBILITIES:

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

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

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

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

Emission_CI_CARB (13Jun14)

RG26036 —UN—24JUN14

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DX,EMISSIONS,CARB -19-03FEB17-4/8

Emissions Control Warranty Statement 2019 through 2021

DXLOGOV1 —UN—28APR09

JOHN DEERE

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

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

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

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT:

The California Air Resources Board (CARB) is pleased to explain the emission-control system warranty on 2019 through 2021 off-road diesel engines. In California, new off-road engines must be designed, built and equipped to meet the State’s stringent anti-smog standards. John Deere must warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your engine.

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

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

EMISSIONS WARRANTY EXCLUSIONS:

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

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

Continued on next page

JOHN DEERE'S WARRANTY RESPONSIBILITY:

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

Air Induction System

- Intake manifold
- Turbocharger
- Charge air cooler

Fuel Metering system

- Fuel injection system

Exhaust Gas Recirculation

- EGR valve

Catalyst or Thermal Reactor Systems

- Catalytic converter
- Exhaust manifold

Emission control labels

Particulate Controls

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

Positive Crankcase Ventilation (PCV) System

- PCV valve
- Oil filler cap

Advanced Oxides of Nitrogen (NOx) Controls

- NOx absorbers and catalysts

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Miscellaneous Items used in Above Systems

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

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Emission_CI_CARB (01Feb17)

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Emissions Control Warranty Statement 2019 through 2021

DXLOGOV1 —UN—28APR09

JOHN DEERE

CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

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RG29280 —UN—02FEB17

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DX,EMISSIONS,CARB -19-03FEB17-7/8

JOHN DEERE'S WARRANTY RESPONSIBILITY:

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

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- 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

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

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

Emission_CI_CARB (01Feb17)

RG29281 —UN—27FEB17

DX,EMISSIONS,CARB -19-03FEB17-8/8

Technical Information Feedback Form

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

SEND TO: John Deere Dubuque Works
18600 South John Deere Road
Attn: Publications, Dept. 324
Dubuque, IA 52004-0538
USA

FAX NUMBER: 1-563-589-5800 (USA)

Publication Number:_____

Page Number:_____

Ideas, Comments:_____

Name: _____

Phone: _____

Email Address: _____

THANK YOU!

TX,II,FAX -19-10JUL01-1/1

Contents

Continued on next page

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

Maintenance—Machine

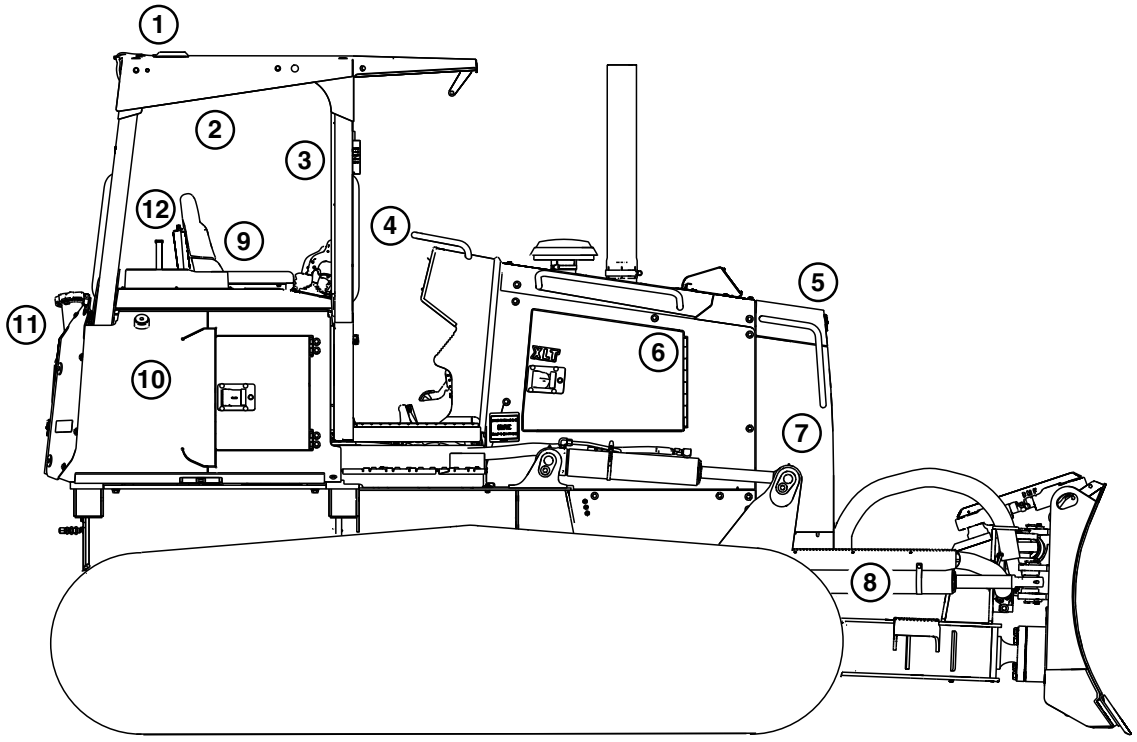
Maintenance—Periodic Maintenance

Maintenance—As Required

Maintenance—Every 10 Hours or Daily

Continued on next page

Safety and Operator Convenience Features



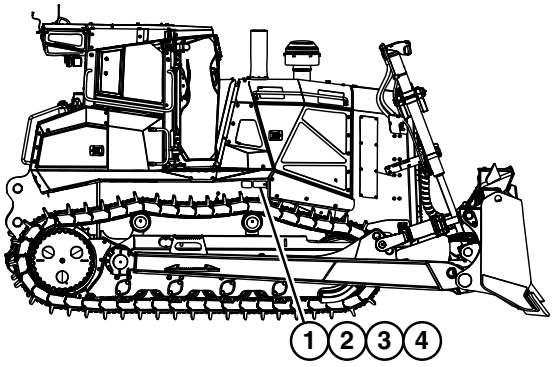
Safety Features

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

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

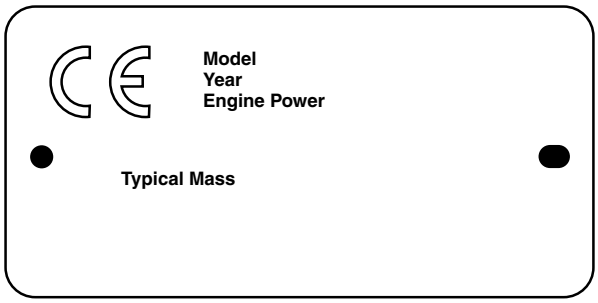
VD76477,0001032 -19-11JAN17-1/1

Information for European Union Directives and Eurasian Economic Union Technical Regulations Compliance



Crawler

TX1195036 —UN—03JUN15

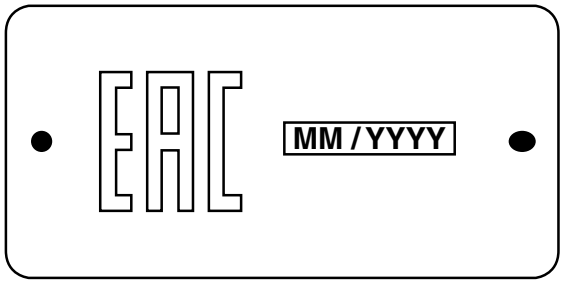


TX1066144 —UN—19OCT09

CE Mark

TX1066156 —UN—15OCT09

PIN Plate



TX1175987 —UN—03NOV14

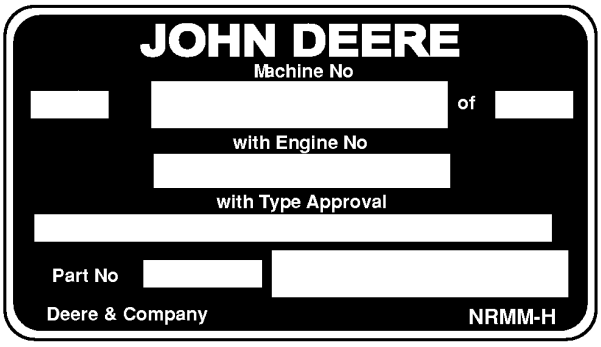
EAC Marking

To the Customer

Effective June, 2006, all machines sold in the European Union must comply with the machinery directive 2006/42/EC and any amendments. Each machine meeting these requirements must bear the conformity mark CE. In addition, each machine must be accompanied with a Declaration of Conformity by the machine manufacturer. This declaration must be kept with the machine at all times and does not declare conformity to national road regulations.

Effective February 15, 2013, all machines sold in the Eurasian Economic Union must comply with the Technical Regulations of the Eurasian Economic Union TR TS 010/2011 “On Safety of machinery and Equipment.” Each machine meeting these requirements must bear the EAC Marking.

NOTE: This machine may need country approval for travel on public roads in Europe as some European countries require special equipment and approvals.



TX1066630 —UN—21OCT09

EU Flex Label

1— PIN Plate
2— CE Mark (if required)
3— EAC Marking (if required)
4— EU Flex Label (if required)

Product Identification Number (PIN), CE Mark, EAC Marking, and EU Flex Label Locations

The machine is identified by the PIN that is stamped on a serial number plate. The PIN plate (1), CE Mark or EAC Marking, and if required, EU flex label are located on the machine as indicated in the machine image.

Continued on next page

NOTE: If this machine was certified (homologated) to the requirements of the European Union, there will be a CE mark affixed in indicated area (2). If required this machine will also be affixed with an EU Flex label (4) beside the CE mark in the indicated area.

If this machine was certified (homologated) to the requirements of the Eurasian Economic Union, there will be a EAC marking (3) affixed in the indicated area.

Sound and Vibration Specifications

Model	**700K**
Operator sound pressure and exterior sound power levels are:	
Cab	71 dB(A) and 109 dB(A) or less *
NOTE: Factors affecting listed values include operator performance, machine age, seat condition, the use of accessories, environment, and any machine movement. *(*) Data acquisition system precision values with a 2% technical uncertainty.* Sound levels were obtained using the test method specified per ISO 6396:2008 and ISO 6395:2008, respectively.	
Eurasian Economic Union Operator vibration levels are for properly maintained machines operating on a flat dirt area free of large objects such as trees and rocks. Whole body vibration levels were obtained using the test method specified per GOST 31191.1:2004.	
Whole Body	0.5 m/s^2 or less
Hand Arm	2.5 m/s^2 or less
NOTE: Factors affecting listed values include operator performance, machine age, the condition of window and door seals, the use of accessories, environment, and any machine movement.	
European Union Operator vibration levels are for properly maintained machines operating on a flat dirt area free of large objects such as trees and rocks. Vibration levels were obtained using the test method specified per ISO 2631-1:1997 or ISO TR 25398 where applicable.	
Whole Body	0.6 m/s^2 or less
Hand Arm	2.5 m/s^2 or less
NOTE: Factors affecting listed values include operator performance, machine age, the condition of window and door seals, the use of accessories, environment, and any machine movement.	

MB60223,0005076 -19-29NOV16-2/2

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.

T133555 —UN—15APR13

T133588 —19—28AUG00

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

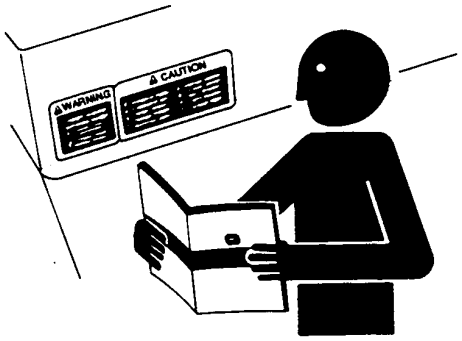
Follow Safety Instructions

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. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

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

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

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



TS201 —UN—15APR13

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

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

Operate Only If Qualified

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

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

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

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

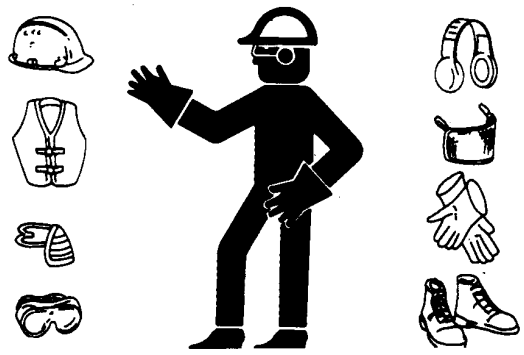
Wear Protective Equipment

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

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



TS206 —UN—15APR13

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

Avoid Unauthorized Machine Modifications

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

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

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

AM40430,00000A9 -19-01JUL15-1/1

Inspect Machine

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

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

T6607AQ —UN—15APR13

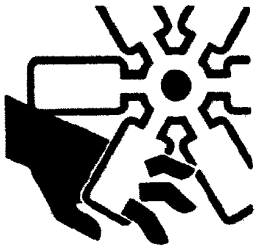
TX03679,0001734 -19-08JAN08-1/1

Stay Clear of Moving Parts

Entanglements in moving parts can cause serious injury.

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

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



T133592 —UN—15APR13

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

Avoid High-Pressure Fluids

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

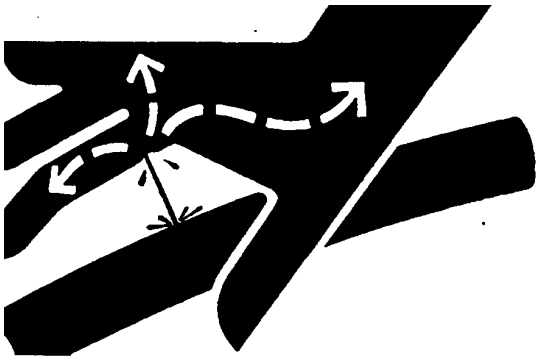
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

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

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

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



X9811 —UN—23AUG88

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

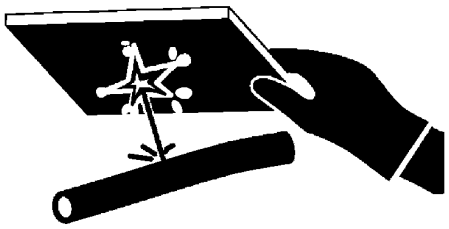
Avoid High-Pressure Oils

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

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

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

T133509 —UN—15APR13



T133840 —UN—20SEP00

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

Work In Ventilated Area

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

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

TS220 —UN—15APR13

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

Prevent Fires

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

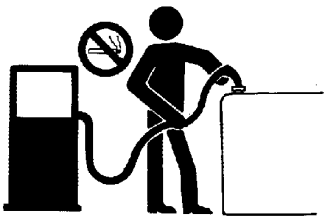
Clean Machine Regularly: Keep trash, debris, grease and oil from accumulating in engine compartment, around fuel lines, hydraulic lines, exhaust components and electrical wiring. Never store oily rags or flammable materials inside a machine compartment.

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

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

T133552 —UN—15APR13

T133553 —UN—07SEP00



T133554 —UN—07SEP00

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

Prevent Battery Explosions

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

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

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

TS204 —UN—15APR13

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

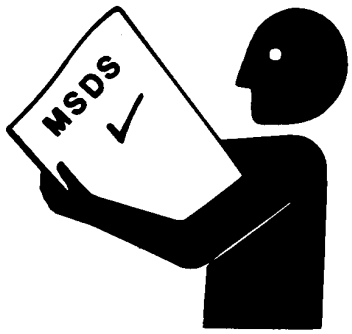
Handle Chemical Products Safely

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

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

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

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



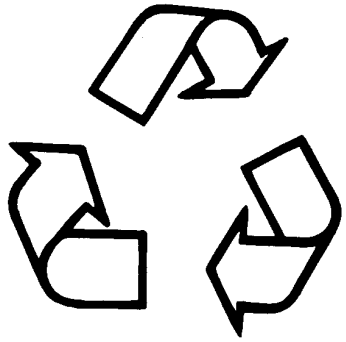
TS1132 —UN—15APR13

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

Decommissioning — Proper Recycling and Disposal of Fluids and Components

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

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



TS1133 —UN—15APR13

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

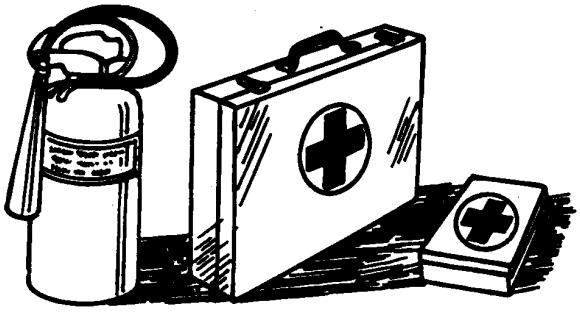
DX,DRAIN -19-01JUN15-1/1

Prepare for Emergencies

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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



TS291 —UN—15APR13

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

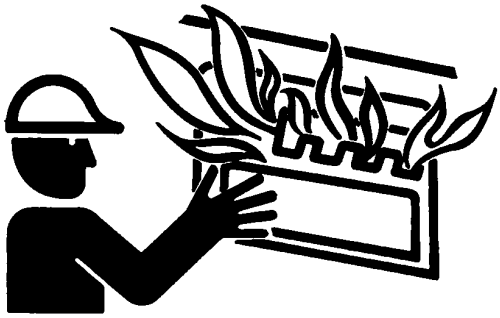
Clean Debris from Machine

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

Clean any oil spills or fuel spills on machine surfaces.

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

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



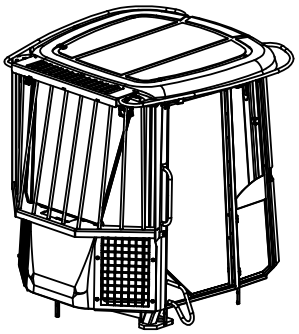
T6669AG —UN—15APR13

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

Add Cab Guarding For Special Uses

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

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



Cab Guarding

T141893 —UN—09JUN11

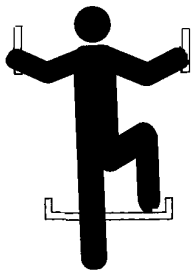
VD76477,0000504 -19-26JAN10-1/1

Safety—Operating Precautions

Use Steps and Handholds Correctly

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

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



T133468 —UN—15APR13

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

Start Only From Operator's Seat

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

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

T133715 —UN—15APR13

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

Use and Maintain Seat Belt

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

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

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

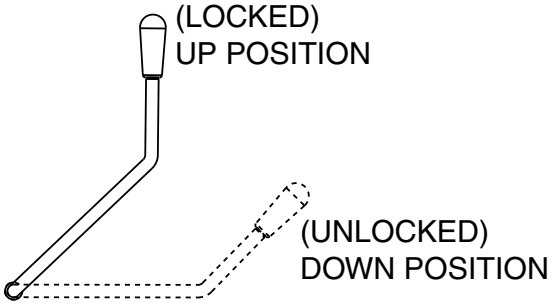
T133716 —19—17APR13

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

Prevent Unintended Machine Movement

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

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



T159027 —19—30AUG02

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

Avoid Work Site Hazards

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

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

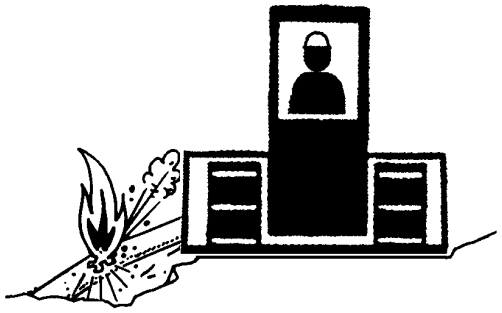
Avoid boom or attachment contact with overhead obstacles or overhead electrical lines. Never move machine closer than 3 m (10 ft) plus twice the line insulator length to overhead wires.

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

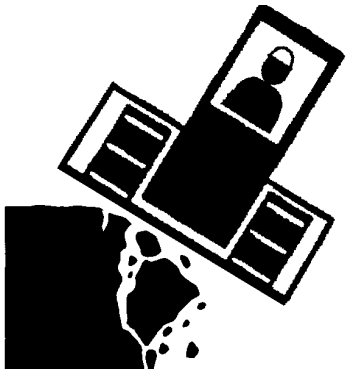
Operate only on solid footing with strength sufficient to support machine. Be especially alert working near embankments or excavations.

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

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



T139002 —UN—05MAR01



T139003 —UN—05MAR01

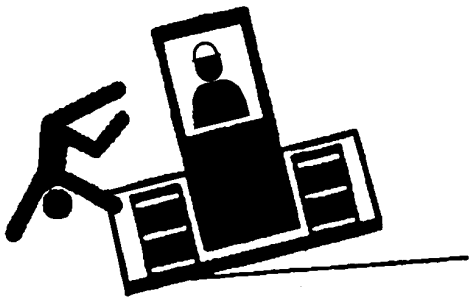
VD76477,000107A -19-26JUN09-1/1

Keep Riders Off Machine

Only allow operator on machine.

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

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



T137580 —UN—22FEB01

Keep Riders Off Machine

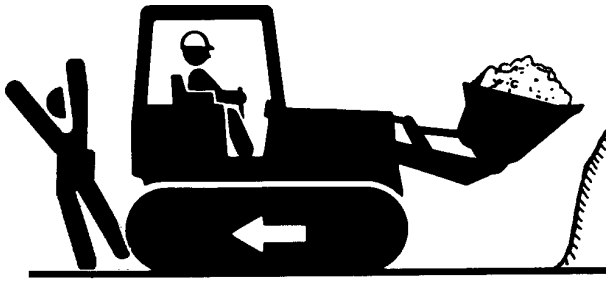
TX03768,0000B73 -19-03JUN15-1/1

Avoid Backover Accidents

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

Be certain backup warning alarm is working properly.

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



T138441 —UN—22FEB01

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

Avoid Machine Tip Over

Use seat belt at all times.

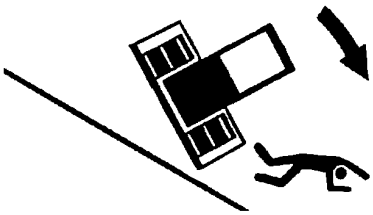
Do not jump if the machine tips. You will be unlikely to jump clear and the machine may crush you.

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

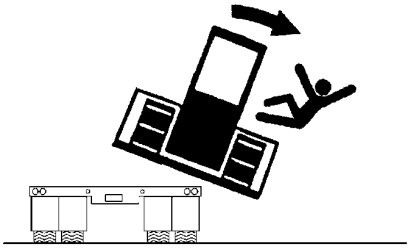
Be careful on slopes. Use extra care on soft, rocky or frozen ground because machine may slip sideways in these conditions. When traveling up or down steep slopes, keep the bucket or blade on uphill side and just above ground level.

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

T133716 —19—17APR13



T138416 —UN—22FEB01



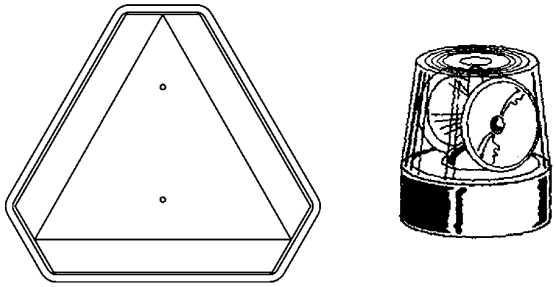
T138415 —UN—22FEB01

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

Operating or Traveling On Public Roads

Machines that work near vehicle traffic or travel slower than normal highway speeds must have proper lighting and markings to assure they are visible to other drivers.

Install additional lights, beacons, slow moving vehicle (SMV) emblems, or other devices and use as required to make the machine visible and identify it as a work machine. Check state and local regulations to assure compliance. Keep these devices clean and in working condition.



T141891 —UN—15APR13

TX03679,00017C8 -19-02MAR07-1/1

Inspect and Maintain ROPS

A damaged roll-over protective structure (ROPS) should be replaced, not reused.

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 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.

TX03679,000179F -19-07SEP06-1/1

Add and Operate Attachments Safely

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

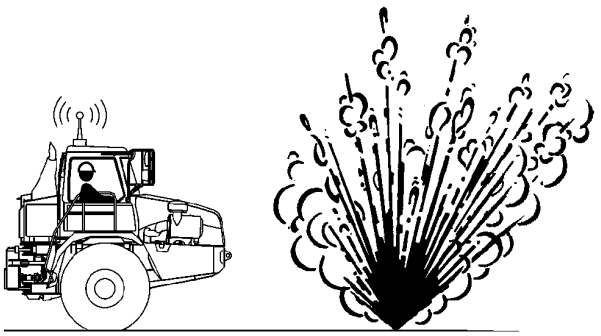
Ensure that a qualified person is involved in attachment installation. Add guards to machine if operator protection is required or recommended. Verify that all connections are secure and attachment responds properly to controls.

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

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

Prevent Unintended Detonation of Explosive Devices

Avoid serious injury or death from an explosion hazard. Deactivate all cellular or radio frequency devices on equipment stored or operating in an area, such as a blasting zone, where the use of radio transmitting devices are prohibited.



TX1023216 —UN—07MAY07

VD76477,0001543 -19-08JAN08-1/1

Park and Prepare for Service Safely

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

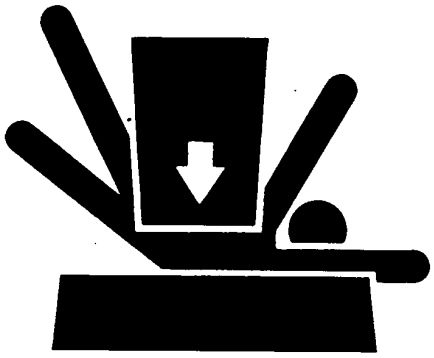
- Park machine on a level surface and lower blade and attachments to the ground.
- Place park lock lever(s) in “up” (locked) position. Stop engine.
- Attach a “Do Not Operate” tag in an obvious place in the operator's station.

Securely support machine or attachment before working under it.

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

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

T133332 —19—17APR13



TS229 —UN—23AUG88

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

Service Cooling System Safely

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

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

TS281 —UN—15APR13

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

Remove Paint Before Welding or Heating

Avoid potentially toxic fumes and dust.

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

Remove paint before heating:

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

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

TS220 —UN—15APR13

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

Dispose of paint and solvent properly.

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

Make Welding Repairs Safely

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

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

Remove paint properly. Do not inhale paint dust or fumes. Use a qualified welding technician for structural repairs.

T133547 —UN—15APR13

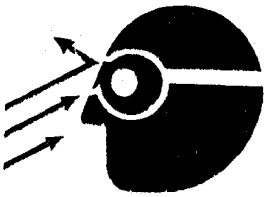
Make sure there is good ventilation. Wear eye protection and protective equipment when welding.

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

Drive Metal Pins Safely

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

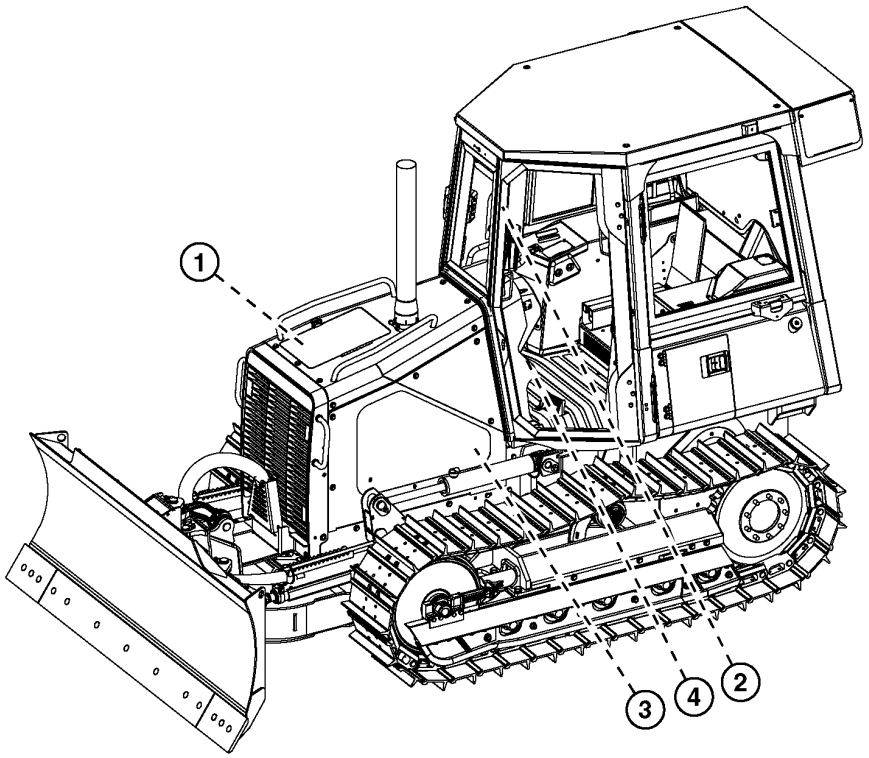
Use a soft hammer or a brass bar between hammer and object to prevent chipping.



T133738 —UN—15APR13

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

Safety Signs



TX1107749

TX1107749 —UN—07FEB12

Safety Sign Locations

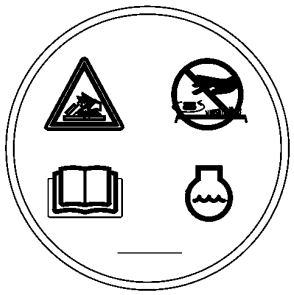
1— WARNING, Pressurized System
2— WARNING, Seat Belt Should Be Worn At All Times
3— DANGER, Start Only From Seat
4— CAUTION, Engine Start and Stop Procedure

MB60223,00002A6 -19-07FEB12-1/5

1. **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 message is positioned on the surge tank cap.



TX1099924 —UN—24OCT11

Continued on next page

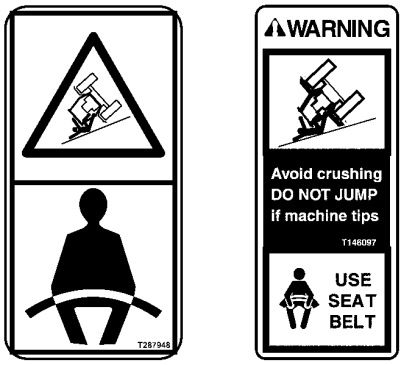
MB60223,00002A6 -19-07FEB12-2/5

2. **WARNING, Seat Belt Should Be Worn At All Times**

   A seat belt should be worn at all times during machine operation to prevent serious injury or death in the event of an accident or machine overturn. Failure to wear a seat belt during machine operation may result in serious injury or death.

   Avoid crushing DO NOT JUMP if machine tips. Use seat belt.

   This safety message is positioned on the ROPS post inside the cab.



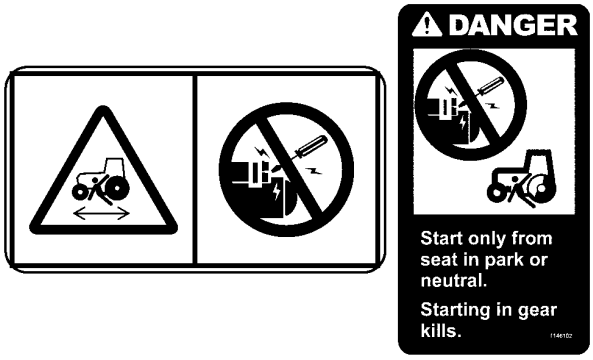
TX1099887 —19—05DEC11

MB60223,00002A6 -19-07FEB12-3/5

3. **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.



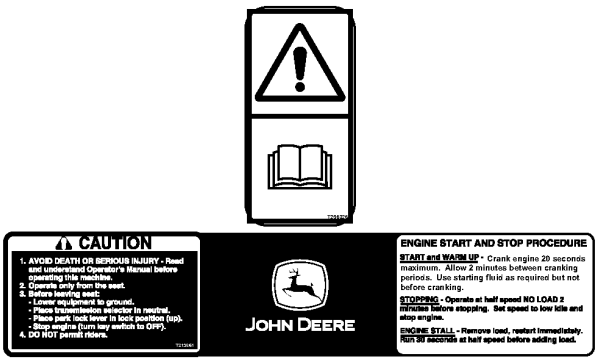
TX1099889 —19—05DEC11

MB60223,00002A6 -19-07FEB12-4/5

4. **CAUTION, Engine Start and Stop Procedure**

   Engine start and stop procedure.

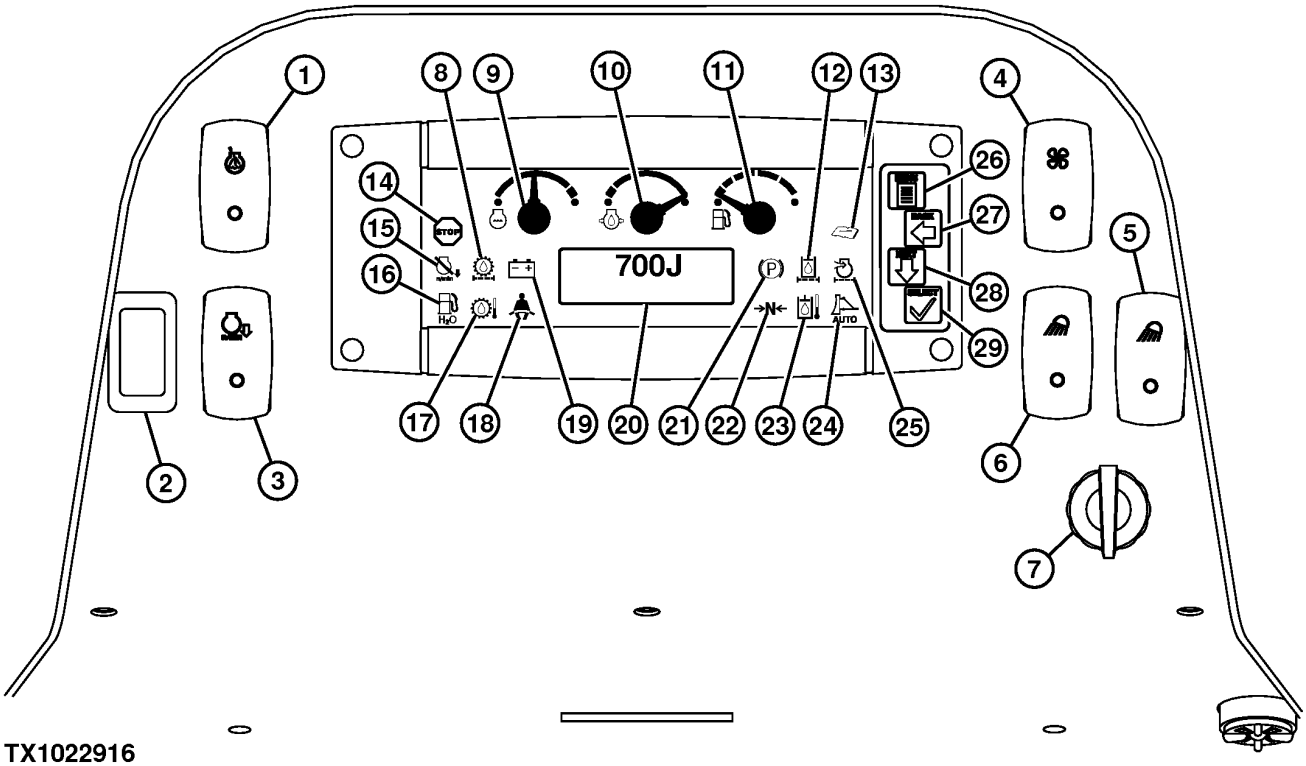
   This safety message is positioned under the monitor on the front console.



TX1099888 —19—06DEC11

MB60223,00002A6 -19-07FEB12-5/5

Instrument Panel



TX1022916

TX1022916 —UN—10MAY07

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

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

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

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

VD76477,0001096 -19-10MAY07-1/1

Instrument Panel Functions

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

2—Not Used

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

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

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

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

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

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

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

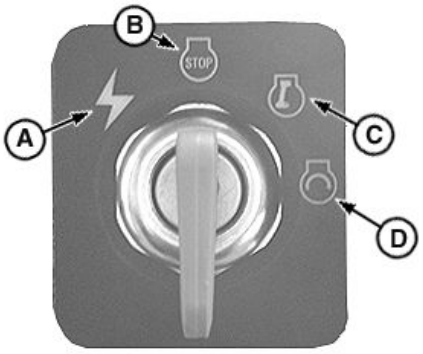
9—Engine Coolant Temperature Gauge: Indicator will light, STOP indicator will flash and audible alarm will sound when pointer is in red zone. Immediately take load off the machine and run engine at fast idle. If indicators continue to stay on after several minutes of operation, stop engine and check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

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

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

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

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



TX10130002A —UN—05OCT06

A—Accessory
B—OFF
C—ON
D—Start

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

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

14—STOP Indicator:

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

The STOP indicator flashes and alarm sounds when:

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

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

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

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

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

Continued on next page

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

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

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

19—Engine Alternator Voltage Indicator: Indicator will light when battery/alternator is below 25-volts and when key switch is ON and engine is not running.

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

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

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

22—Return to Neutral Indicator: With park lock lever in up position (LOCKED) and transmission control lever out of neutral position, turning key switch ON will cause the return to neutral indicator to light.

23—Hydraulic Oil Temperature Indicator: When hydraulic oil temperature reaches 112°C (235°F), hydraulic oil temperature indicator will flash, the STOP indicator will light and the alarm sounds until the hydraulic oil temperature falls below 110°C (230°F). It is not necessary to stop operation, but the temperature must be monitored.

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

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

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

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

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

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

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

VD76477,0001097 -19-29NOV07-2/2

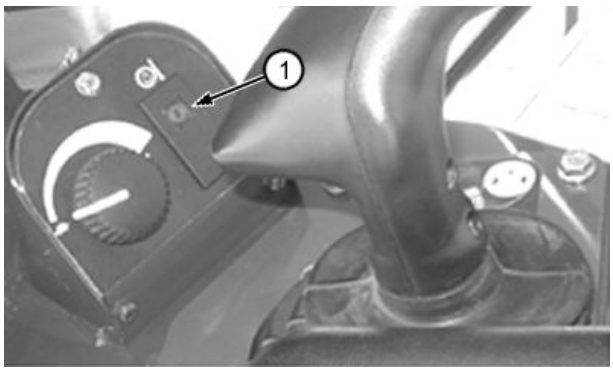
Warm-Up Indicator

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

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

The indicator will remain lit and engine rpm will be limited until the transmission oil reaches a specified temperature or the engine has run for ten minutes. Indicator light will turn off automatically when system is to operating temperature. Rotate engine speed control knob back to low idle in order to reset engine speed once speed is no longer limited.

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



T202721A —UN—18JAN05

1— Warm-Up Indicator

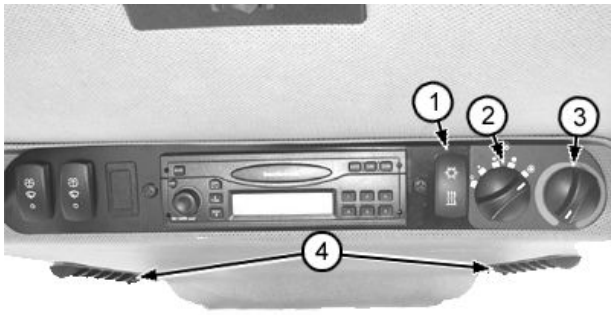
VD76477,00012BE -19-11JAN07-1/1

Air Conditioning and Cab Heater

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

Check refrigerant for proper charge before using air conditioner.

- Push upper half of switch (1) up to turn air conditioner on. Push lower half of switch to turn heat on.
- Turn temperature control knob (3) clockwise to increase temperature.
- Turn blower control knob (2) clockwise to increase blower speed.
- If temperature in cab becomes too cold, the temperature knob can be turned to add heat even though air conditioner is on.
- Move louvers (4) left or right to direct or restrict air flow.



T200589A —UN—02JUN04

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

HG31779,0000360 -19-14JAN08-1/1

Windshield Wiper and Washer Controls

Window Wiper Operation

Windshield wiper knob (1) has three positions:

- Turn windshield wiper knob to first position to operate front window wiper.
- Turn windshield wiper knob to second position to operate rear window wiper.
- Turn windshield wiper knob to third position to operate front and rear door wipers.

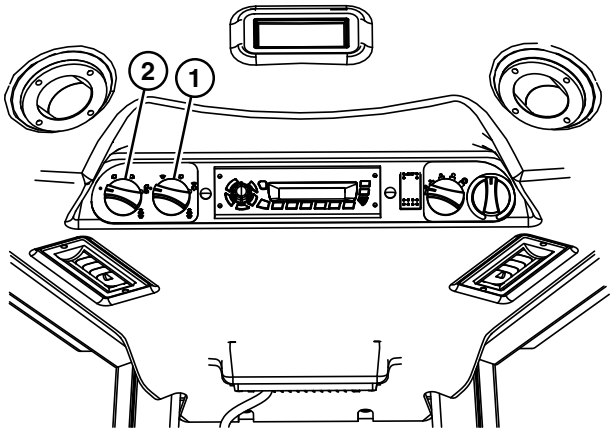
Push knob to operate windshield washers.

Door Wiper Operation

Door wiper knob (2) has three positions:

- Turn door wiper knob to first position to operate left door wiper.
- Turn door wiper knob to second position to operate right door wiper.
- Turn door wiper knob to third position to operate both left and right door wipers.

Push knob to operate door window washers.



TX1151234 —UN—16JAN14

Windshield Wiper Controls

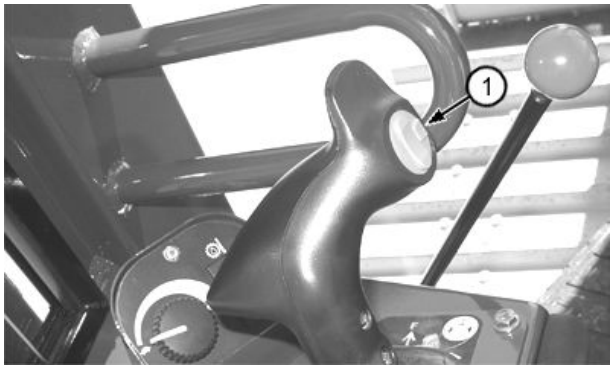
1— Windshield Wiper Knob
2— Door Wiper Knob

JK47244,0000375 -19-21JAN14-1/1

Horn Switch

Push horn switch (1) to sound horn.

1— Horn



T200593A —UN—02JUN04

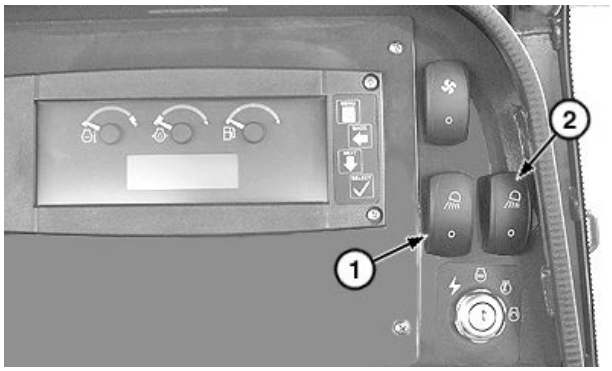
HG31779,000001C -19-14JAN08-1/1

Operating Cab Lights

Push upper half of switch (1) to turn front and rear work lights on. Push lower half to turn lights off.

Push upper half of switch (2) to turn optional lights on. Push lower half to turn lights off.

1— Front and Rear Work Lights Switch **2— Optional Lights Switch**



TX10173474 —UN—08JAN07

VD76477,000138E -19-08JAN07-1/1

Side Windows—Secondary Exits

The side windows can be used as secondary exits.

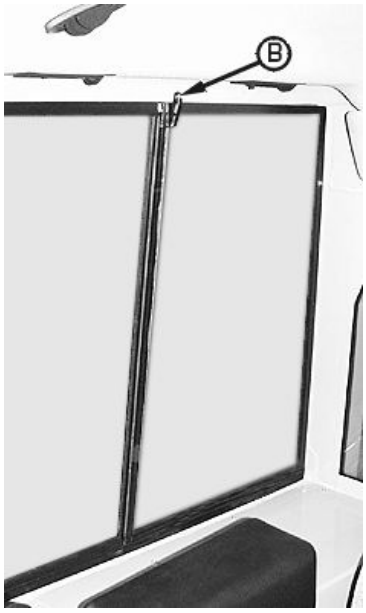
To open windows, pull locking lever (B) down and squeeze two forward tabs (A). Slide window forward to desired position.

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

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

A—Tabs **B—Lock Lever**

T118726B —UN—15DEC98



T121302B —UN—03MAY99

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

Adjust Deluxe Mechanical Suspension Seat—If Equipped

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

Lift lever (D) to adjust cushion position.

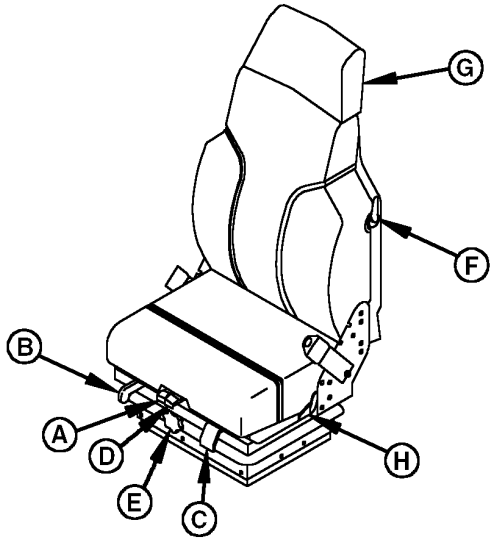
Lift seat fore-aft lever (A) to move seat forward and rearward. Release lever at one of several positions.

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

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

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

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



T118252

T118252 —UN—16DEC98

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

OUO1043,00001E6 -19-22NOV00-1/1

Adjust Air Suspension Seat—If Equipped

Seat height adjusts automatically to weight of operator.

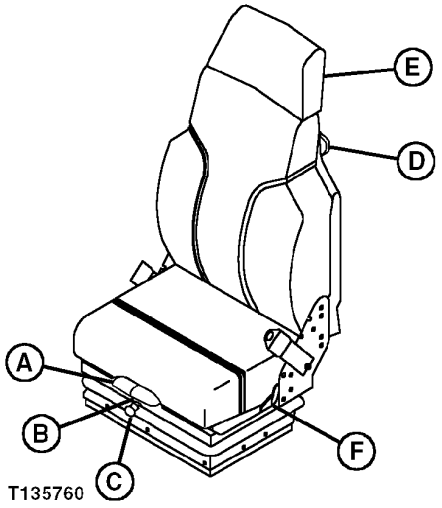
Lift seat fore-aft lever (A) to move seat forward or rearward. Release lever to lock seat in position.

Lift seat cushion adjustment lever (B) to adjust cushion position. Release lever to lock seat in position.

Pull ride adjustment knob (C) out to raise seat. Push ride adjustment knob in to lower seat. Release knob to lock seat into position.

While sitting in seat, turn lumbar support lever (D) to increase or decrease support to lower back.

While sitting in seat, lift seat back tilt lever (F) to tilt seat back forward or backward. Release lever to lock seat in position.



T135760

T135760 —UN—22NOV00

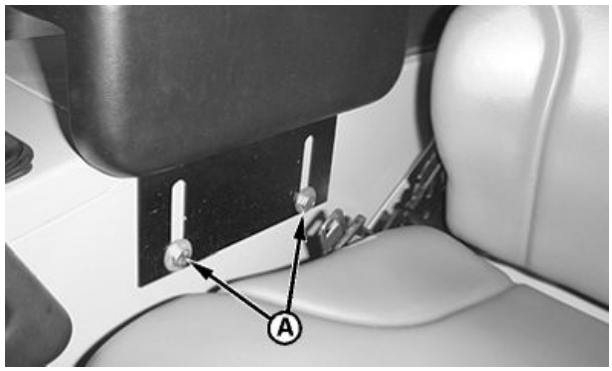
A—Fore-Aft Lever
B—Seat Cushion Adjustment Lever
C—Ride Adjustment Knob
D—Lumbar Support Adjustment Lever
E—Head Rest
F—Seat Back Tilt Lever

OUO1043,00001E4 -19-01DEC16-1/1

Adjust Armrest

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

A—Cap Screw (2 used)



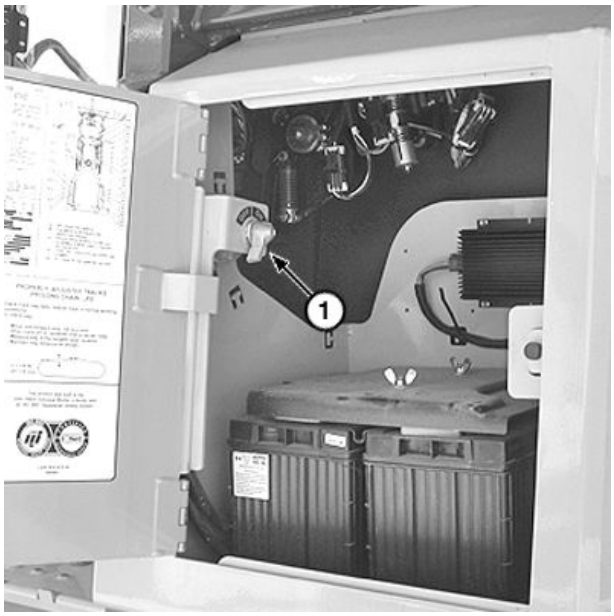
T117826B —UN—20OCT98

CED,OUO1032,797 -19-16OCT98-1/1

Battery Disconnect Switch

Battery disconnect switch (1) is located on left side of machine in the service compartment.

1— Battery Disconnect Switch



TX1012636A —UN—27SEP06

VD76477,0001082 -19-08JAN07-1/1

Under-Seat Heater—If Equipped

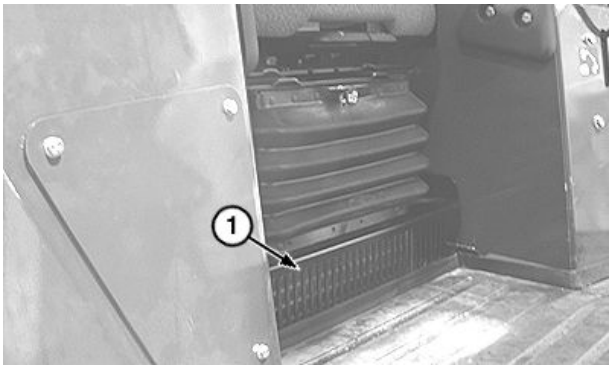
NOTE: Heater valve (C) on engine coolant pump housing must be OPEN for under-seat heater operation. Heater valve should be kept CLOSED during warm-weather operation.

Heater vent (A) is located under seat.

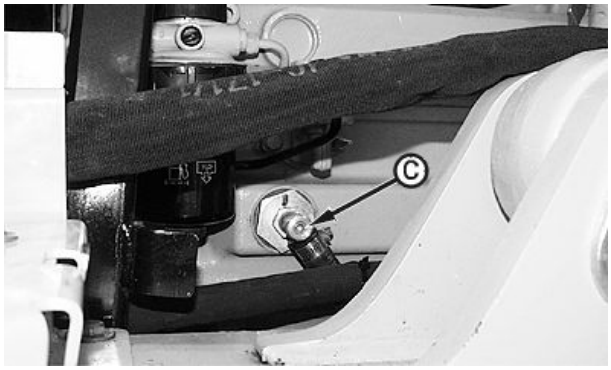
Push upper half of under-seat heater switch (B) to turn under-seat heater on.

Push lower half of under-seat heater switch to turn under-seat heater off.

A—Heater Vent
B—Under-Seat Heater Switch
C—Heater Valve



TX1012719A —UN—05OCT06



T133012B —UN—14AUG00

VD76477,0001095 -19-28SEP06-1/1

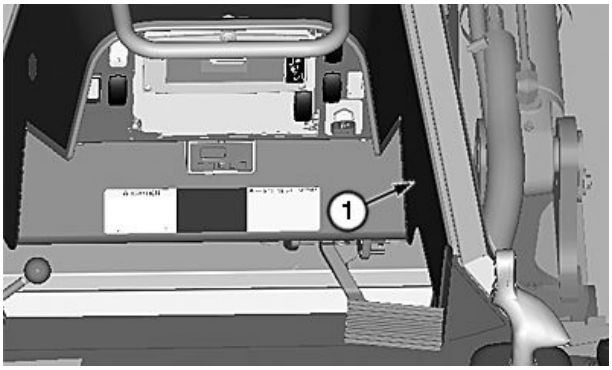
Fire Extinguisher

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

A portable fire extinguisher is used to aid in the extinguishing of small fires. Refer to individual manufacturers' instructions and proper fire fighting procedures before the need to use the fire extinguisher arises. For fire prevention safety rules, see Prevent Fires. (Section 1-2.)

IMPORTANT: Avoid possible machine damage. Replace or recharge fire extinguisher after every use according to the manufacturer's instructions.

The designated location for the fire extinguisher is on the right side of control console (1). Check gauge (if equipped) on fire extinguisher. If fire extinguisher is not fully charged, recharge or replace it according to the manufacturer's instructions.



TX1081973A —UN—17SEP10

1— Control Console

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

CS58540,000010D -19-17SEP10-1/1

Inspect Machine Daily Before Starting

1. Check track sag (A).
2. Check coolant level in engine coolant surge tank (B).
3. Grease the crossbar and C-frame pivots (C).
4. Check engine oil level at dipstick (D).
5. Drain sediment from fuel and water separator (E).
6. Check oil level at hydraulic reservoir sight tube (F).
7. Check oil level at hydrostatic transmission reservoir sight tube (G).
8. Check and empty engine air cleaner dust unloader valve (H).
9. Grease the dozer linkage (I).

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

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

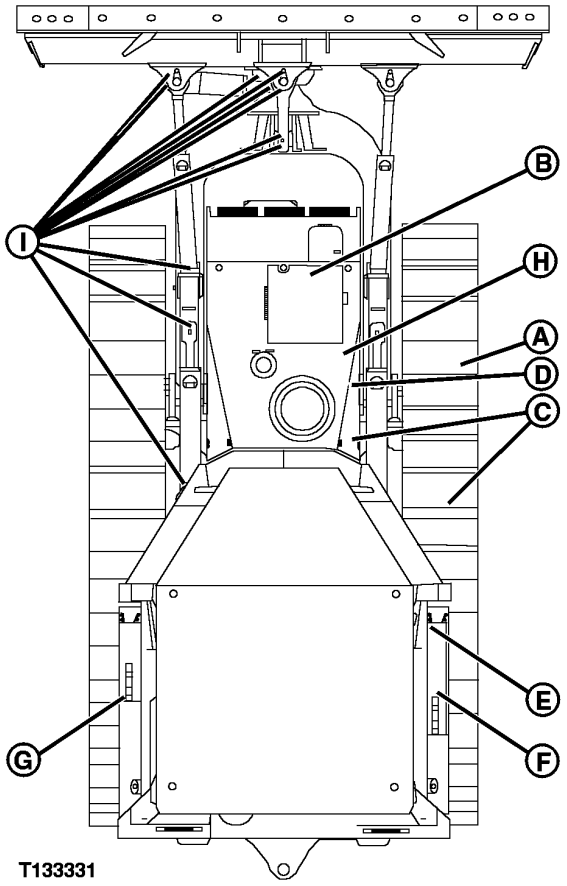
HYDRAULIC SYSTEM: Check for leaks, missing or loose clamps, kinked hoses, and lines or hoses that rub against each other or other parts.

LUBRICATION: Check lubrication points shown on Periodic Maintenance Chart.

PROTECTIVE DEVICES: Check guards, shields, canopy or cab, covers, seat belt, reverse warning alarm.

FIRE PREVENTION: Clean machine of debris.

SAFETY: Walk around machine to clear all persons from machine area.



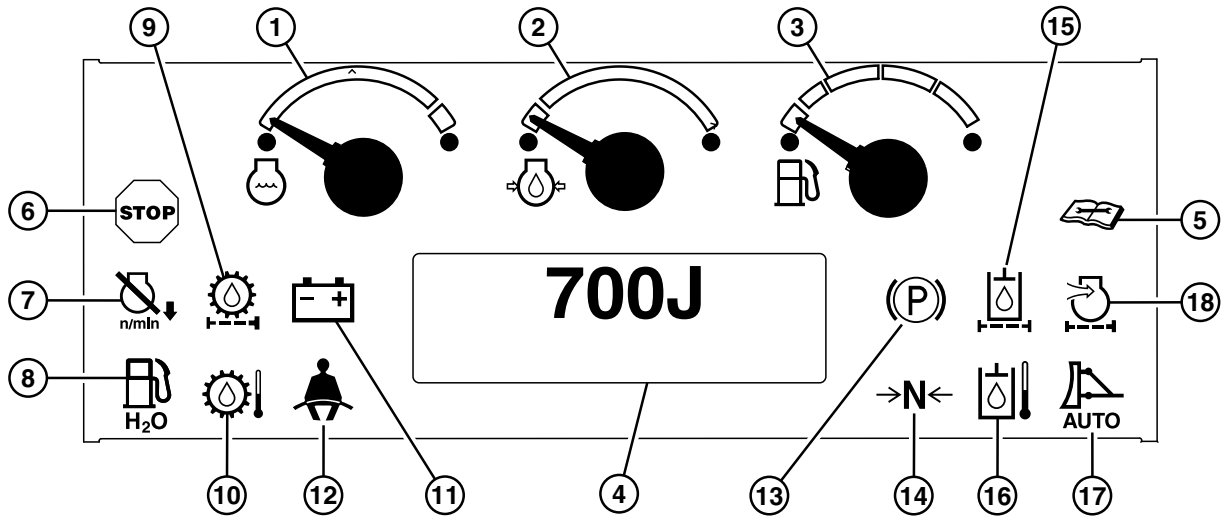
T133331

T133331 —UN—23AUG00

A—Track Sag (Right Side Shown)
B—Engine Coolant Surge Tank
C—Crossbar and C-Frame Pivot Lubrication Fittings (Right Side Shown)
D—Engine Oil Dipstick
E—Fuel and Water Separator Drain Screw
F—Hydraulic Reservoir Sight Tube
G—Hydrostatic Transmission Reservoir Sight Tube
H—Engine Air Cleaner Dust Unloader Valve
I— Dozer Linkage Lubrication Fittings (left side shown)

VD76477,0001083 -19-26SEP06-1/1

Check Instruments Before Starting



TX1021085

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

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

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

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

VD76477,00012A8 -19-23MAR07-1/1

Engine Break-In Period

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

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

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

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

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

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

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

Break-In Plus is a trademark of Deere & Company

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

Starting the Engine

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

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

TS220 —UN—15APR13

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

NEVER start engine while standing on ground. Start engine only from operator's seat with transmission control lever in N "Neutral" and park lock levers up.

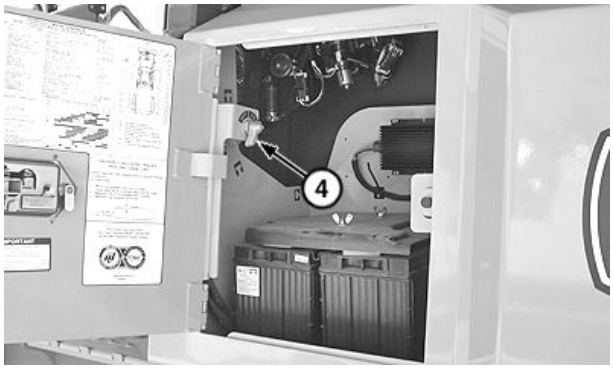
T6607AO —UN—18OCT88

Continued on next page

VD76477,0001084 -19-18JAN07-1/4

1. Turn battery disconnect switch (4) clockwise to ON position.

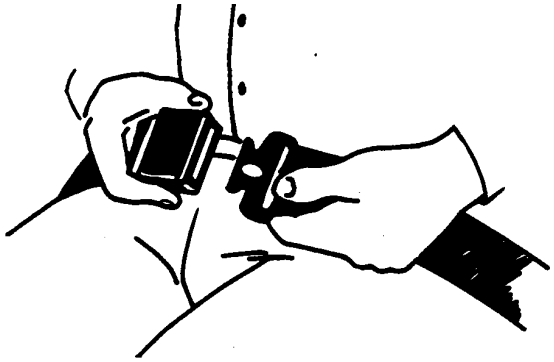
4— Disconnect Switch



TX1012638A —UN—27SEP06

VD76477,0001084 -19-18JAN07-2/4

2. Sit in seat and fasten seat belt.



TS175 —UN—23AUG88

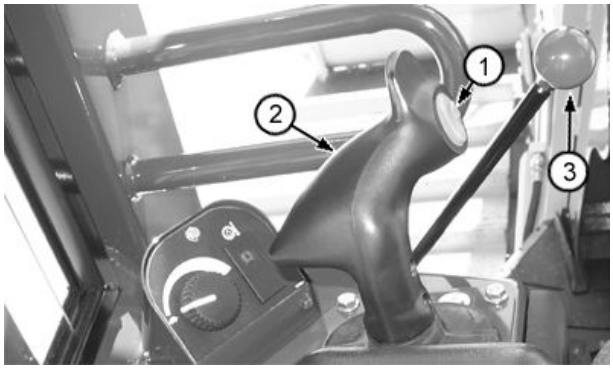
VD76477,0001084 -19-18JAN07-3/4

NOTE: Machine will start with the transmission control lever in gear but must be cycled to neutral before machine will move.

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

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

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



T200597A —UN—02JUN04

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

VD76477,0001084 -19-18JAN07-4/4

Starting Fluid (Cold Weather Starting Aid)—If Equipped

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

Using Starting Fluid

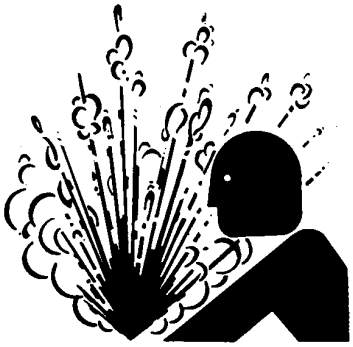
CAUTION: Prevent possible injury from exploding container. Starting fluid is highly flammable. Keep container away from heat, sparks, and open flame. Contents are pressurized. Do not puncture or incinerate container. Remove container from machine if engine does not need starting fluid.

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

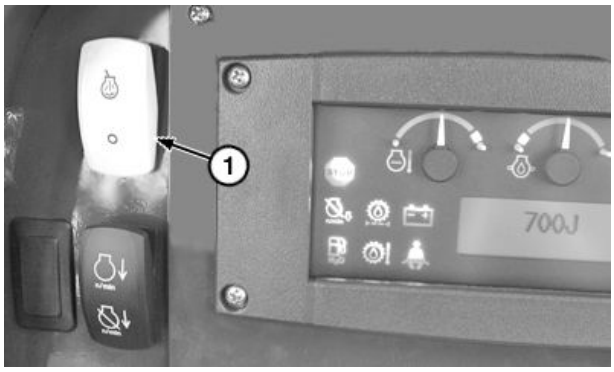
1. Turn key switch clockwise to Start position.

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

2. After one or two revolutions of engine crankshaft, push and hold starting aid switch (1) for short intervals. Crank engine for 20 seconds maximum, then allow 2 minutes between cranking periods.



TS281 —UN—15APR13



TX10012864A —UN—05OCT06

1— Start Aid Switch

Continued on next page

VD76477,000108F -19-03JAN07-1/2

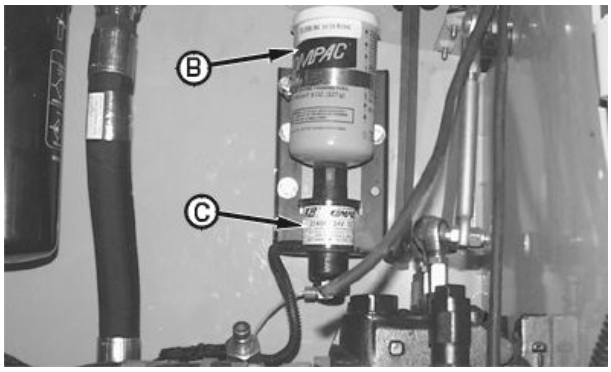
Replacing Starting Aid Can

1. Turn starting aid can (B) counterclockwise to remove.
2. Remove safety cap and spray button from new starting aid can.
3. Turn starting aid can clockwise in starting aid base (C) to install.

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

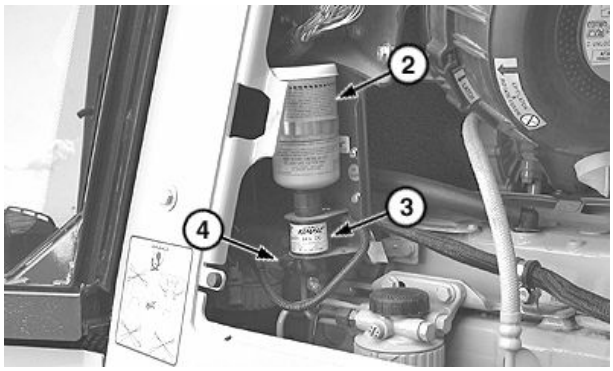
4. If no starting aid fluid is needed, remove starting aid can from machine and install dust cap (D) on starting aid base.

B—Starting Aid Can
C—Starting Aid Base
D—Dust Cap



T131074C —UN—16AUG00

T8594AF —UN—09NOV95



TX1011933A —UN—27NOV06

Starting Aid Can and Base (Machines Equipped with IGC)

VD76477,000108F -19-03JAN07-2/2

Using Coolant Heater—If Equipped

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

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

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

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

CED,OUO1032,1401 -19-24APR99-1/1

Engine Warm-Up

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

HG31779,0000020 -19-02JUN04-1/1

Cold Weather Warm-Up

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

In extremely cold conditions, an extended warming-up period will be necessary.

Avoid sudden operation of hydraulic functions until engine is thoroughly warmed up.

Remove ice, snow, and mud from machine before operation.

1. Run engine at 1/2 speed for 5 minutes.
2. Cycle all hydraulic functions to distribute warmed oil until all functions operate freely.

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

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

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

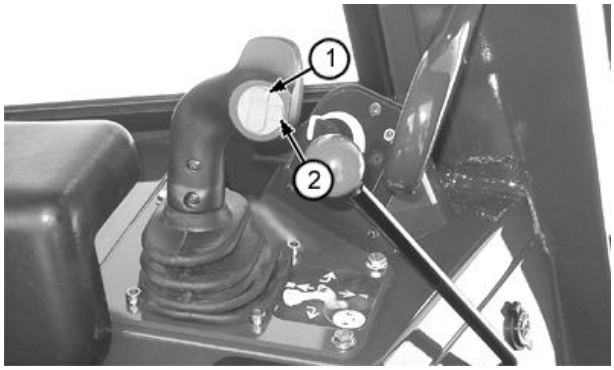
ER93822,0000068 -19-07NOV07-1/1

Transmission Control Lever (TCL)

Push the top of the transmission Speed-In-Grip button (1) to increase transmission speed. Push the bottom of the switch to lower the machine transmission speed.

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

The transmission control lever (TCL) controls the direction (forward and reverse), steering (left turn, right turn), pivot turn, and counter-rotation.



TX1017364A —UN—08JAN07

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

2— Horn Button

VD76477,000138F -19-10JAN07-1/1

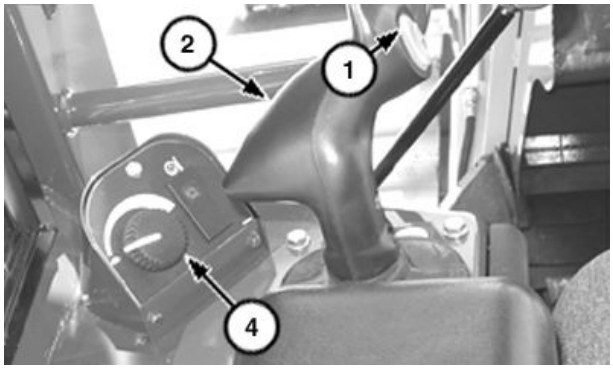
Driving the Machine

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

NOTE: Transmission Speed-In-Grip (SIG) button may be adjusted at any time.

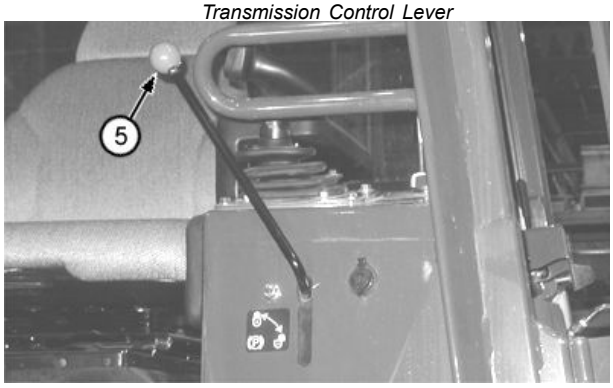
7. Place TCL in desired position.
8. Press transmission SIG (1) to desired setting (P1.0—P3.0) as seen in lower left corner of display window (6). The transmission speed range is pre-set for a startup speed range of P1.6. The transmission speed range can vary depending on operator's preference from P1 to P3 (machine speed can vary from 0 to 5 mph).
9. Slowly release decelerator pedal to move machine.
10. Rotate engine speed control knob (4) to a desired rpm setting.
11. Move TCL in desired turning direction to steer.

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



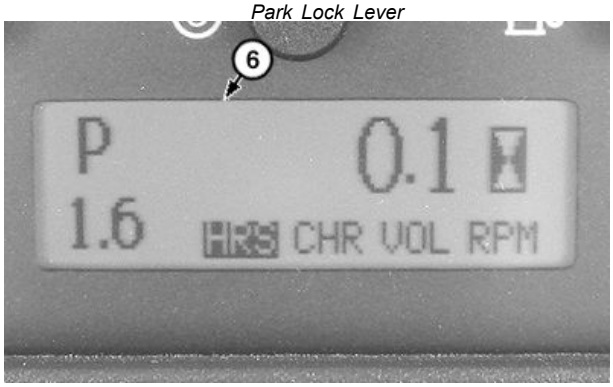
Transmission Control Lever

TX1017374A —UN—09JAN07



Park Lock Lever

T196490B —UN—19NOV03



Display Window

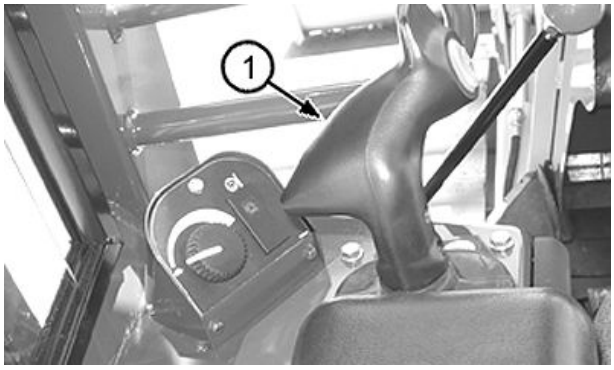
TX1012926A —UN—05OCT06

VD76477,0001390 -19-10MAR11-1/1

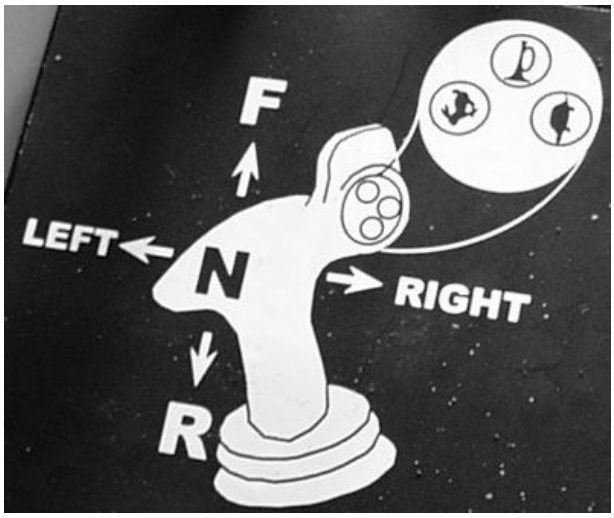
Steering the Machine

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

1— Transmission Control Lever (TCL)



TX1017371A —UN—08JAN07



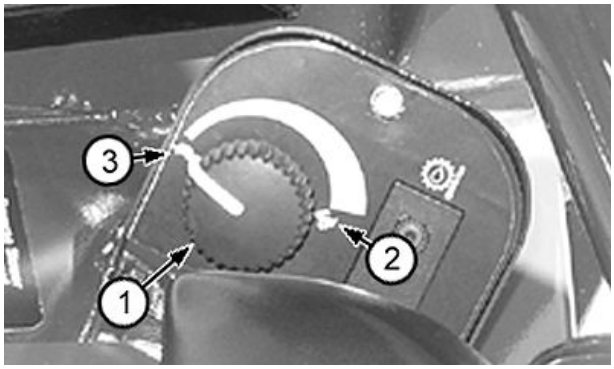
T122746B —UN—29JUL99

VD76477,0001393 -19-18JAN07-1/1

Using Engine Speed Control Knob

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

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



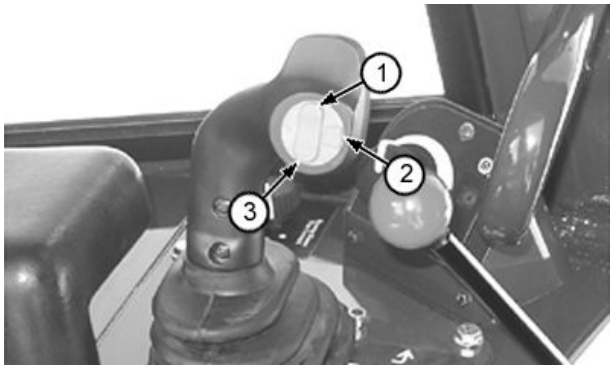
TX1017370A —UN—08JAN07

VD76477,0001392 -19-11JAN07-1/1

Travel Speed Using Transmission Control Lever (TCL)

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

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



T200614A —UN—04JUN04

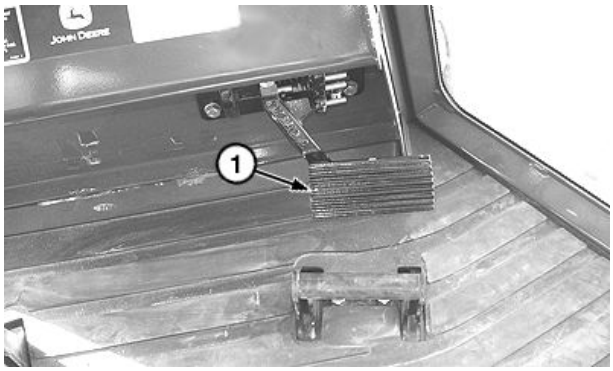
HG31779,0000366 -19-10JAN07-1/1

Foot Pedal

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

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

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



TX1012701A —UN—29SEP06

1— Decelerator/Brake Pedal

VD76477,0001091 -19-28SEP06-1/1

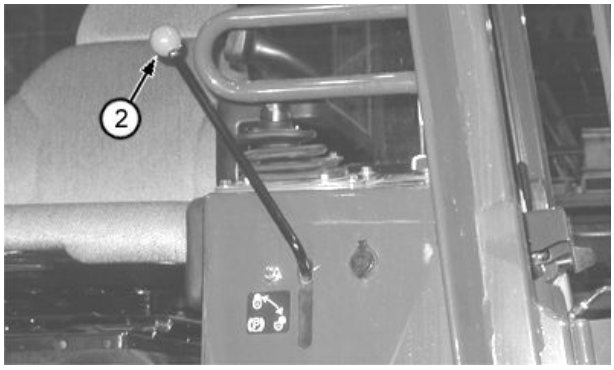
Using Park Lock Lever

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

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

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

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



T196490C —UN—19NOV03

T196491A —UN—19NOV03

1— UNLOCKED Park Lock Lever

2— LOCKED Park Lock Lever

CED,OUO1032,1070 -19-28OCT98-1/1

Hydraulic Pilot Enable Switch/Hydraulic Accumulator Discharge—EH Machines Only

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

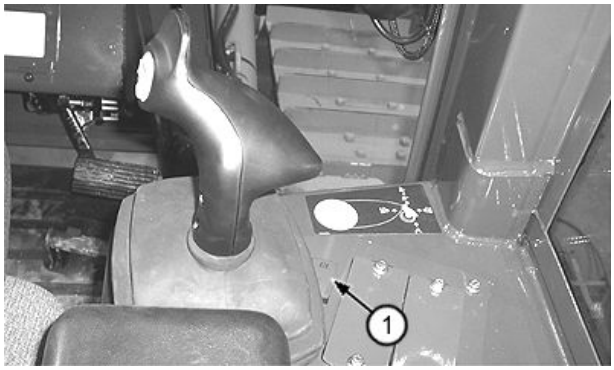
Hydraulic pilot enable switch (1) is used to lock out blade hydraulic control lever.

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

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

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

1. Lower blade to ground and stop engine.
2. Turn key switch to ON but do not start engine.
3. Set hydraulic pilot enable switch to enable position (front half of switch pressed down).



T208165A —UN—08FEB05

1— Pilot Enable Switch

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

VD76477,0001391 -19-08JAN07-1/1

Stopping the Machine

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

Stop machine by doing one of the following:

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

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

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

HG31779,0000025 -19-02JUN04-1/1

Parking the Machine

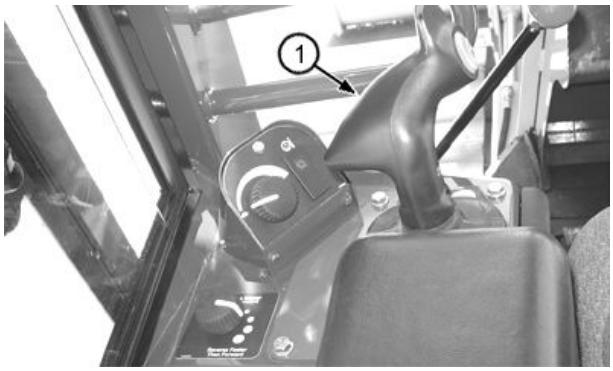
1. Park machine on a level surface.
2. Lower equipment to the ground.
3. Move transmission control lever (TCL) (1) to neutral.

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

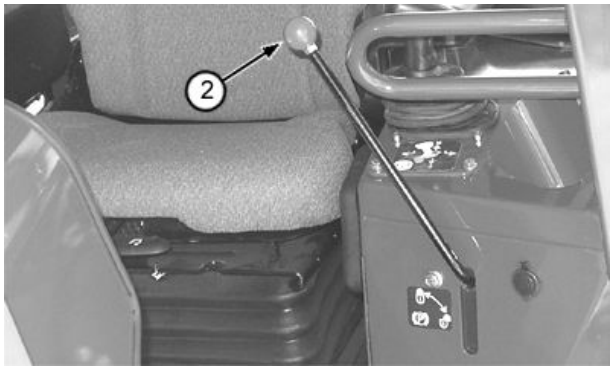
4. Move park lock lever (2) to up LOCKED position.

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

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



T200609B —UN—02JUN04



T200594B —UN—02JUN04

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

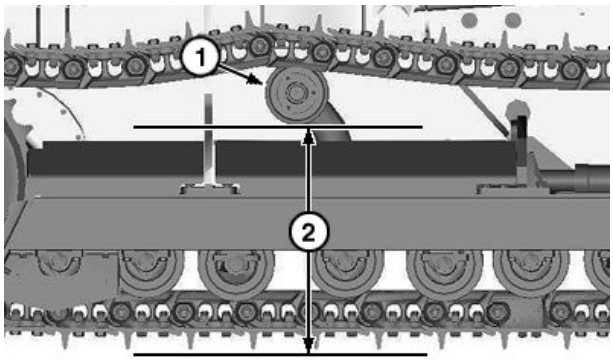
HG31779,0000026 -19-03JAN07-1/1

Operating in Water and Mud

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

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

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



XJ1276625A —UN—16APR19

Maximum Fording Depth

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

PN36905,00099D6 -19-17APR19-1/1

Blade Pitch Operation

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

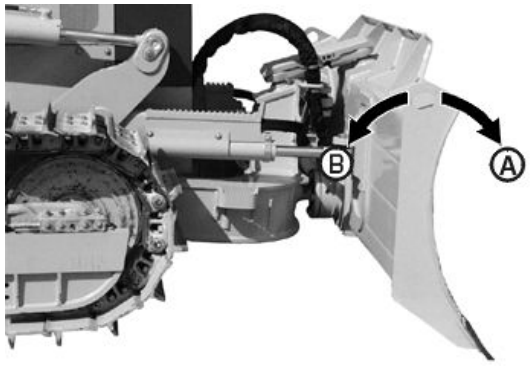
Pitching the Blade Forward Advantages

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

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

Pitching the Blade Back Advantages

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



T133348B —UN—23AUG00

A—Pitch Forward **B—Pitch Back**

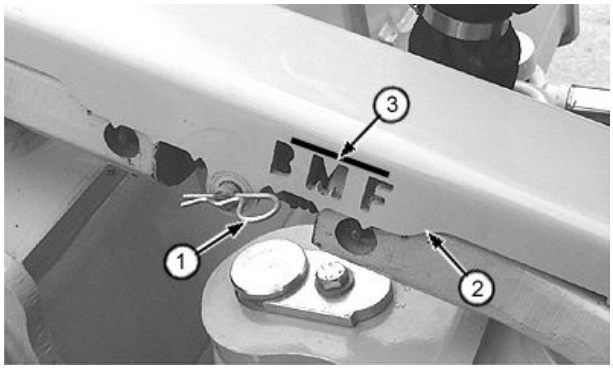
CED,OUO1079,525 -19-09AUG00-1/1

Blade Pitch Linkage Adjustment

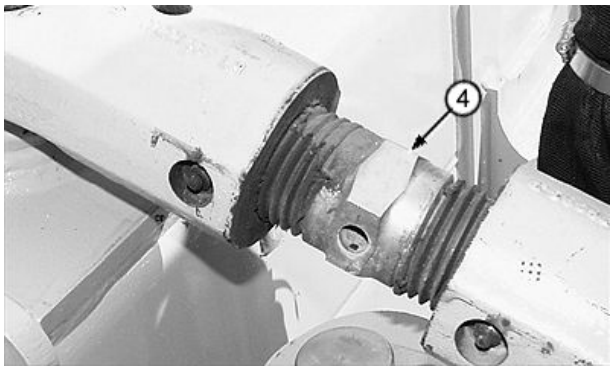
The machine has an adjustable pitch link that can vary the pitch of the blade (angle cutting edge makes with the ground) from 51.5° to 58.5°. The letters (3) BMF represent Back pitch, Mid pitch, and Forward pitch. The pitch link has a threaded turnbuckle with left and right hand threads that you turn to lengthen or shorten.

1. Raise the blade several inches off the ground. Shut the engine off.
2. Remove spring pin (1) and pin and cover (2).
3. Turn adjustment nut (4) (nut size is 2 1/4 in.). A wrench can be use to turn nut or a rod can be inserted through nut through-hole to turn nut.
4. Install cover, centering pin, and spring pin.

1— Spring Pin
2— Pitch Blade Cover
3— BMF Setting
4— Adjustment Nut



T129657B —UN—28MAR00



T129658B —UN—28MAR00

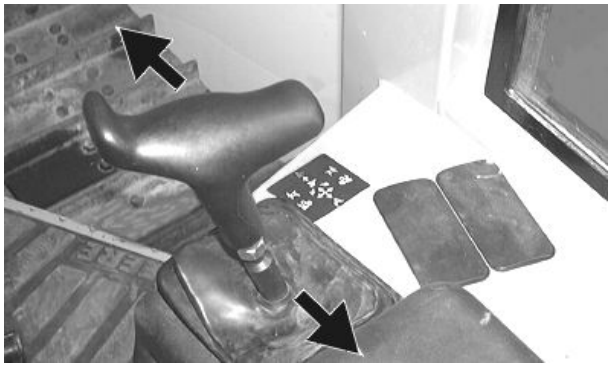
CED,TX03768,2721 -19-28MAR00-1/1

Operating Blade

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

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

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



T121338C —UN—11MAY99

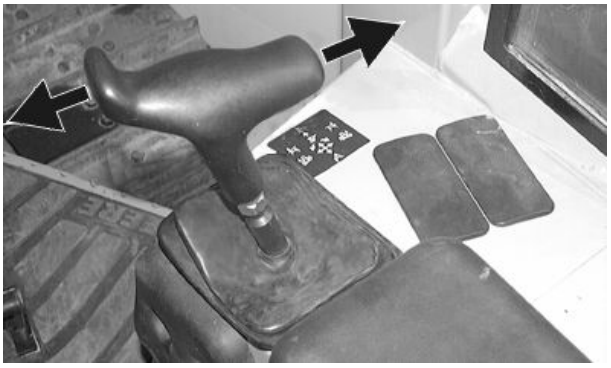
CED,OUO1032,1119 -19-02NOV98-1/1

Tilting Blade

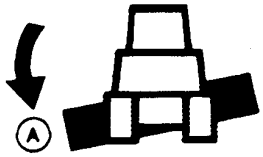
Move the blade control lever left to tilt the blade left.

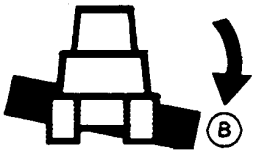
Move the blade control lever right to tilt the blade right.

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



T121338D —UN—11MAY99





T6508AW —UN—19MAY89

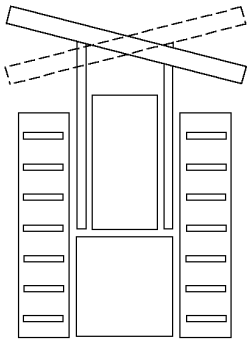
CED,OUO1032,1120 -19-02NOV98-1/1

Angling Blade

Twist lever to right to angle blade to right.

Twist lever to left to angle blade to left.

T121338E —UN—11MAY99



T118641

T118641 —UN—01DEC98

CED,OUO1032,1121 -19-02NOV98-1/1

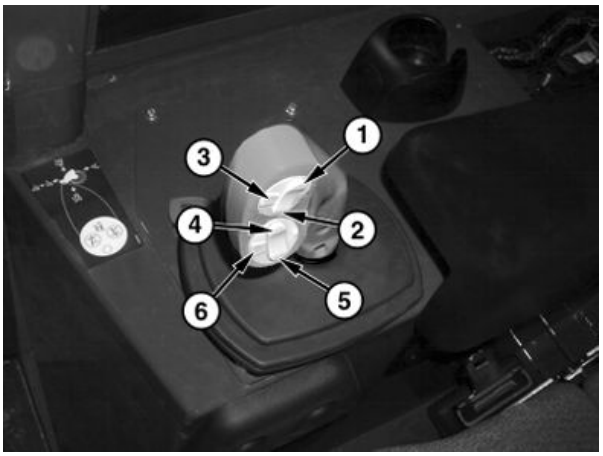
Avoid Track Damage

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

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

Blade Control Lever—Operation

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



TX1010864A —UN—03AUG06

IGC Blade Control Lever Shown

Continued on next page

VD76477,0001372 -19-03JAN07-1/2

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

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

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

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

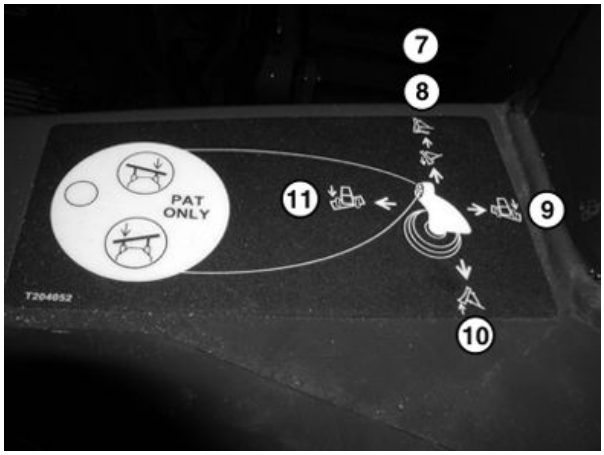
Electronic blade control lever is used for all hydraulic functions on IGC units.

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

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

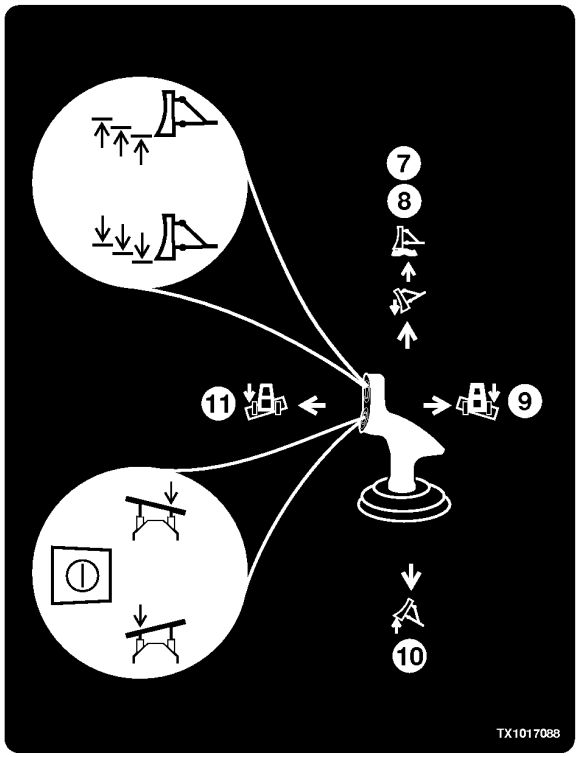
To disable blade float, push the lever forward or rearward after the joystick has returned to neutral. Moving the lever to the left or right will not disable blade float.

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



TX1010863A —UN—07AUG06

Power Angle Tilt



TX1017088 —UN—27DEC06

IGC Machines

VD76477,0001372 -19-03JAN07-2/2

Ripper Control Lever—If Equipped

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

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

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

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

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

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

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

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

TX1026010A —UN—05JUL07

1— Lower Direction (Forward Position)

2— Raise Direction (Rearward Position)

On slopes, always rip going downhill.

Operation Of The Ripper

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

OUT4001,000032B -19-15AUG07-1/1

Operating 4000S Winch—If Equipped

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

Operate the winch only from operator's station.

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

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

A—Move lever to FREE SPOOL position so cable can be pulled out freely.

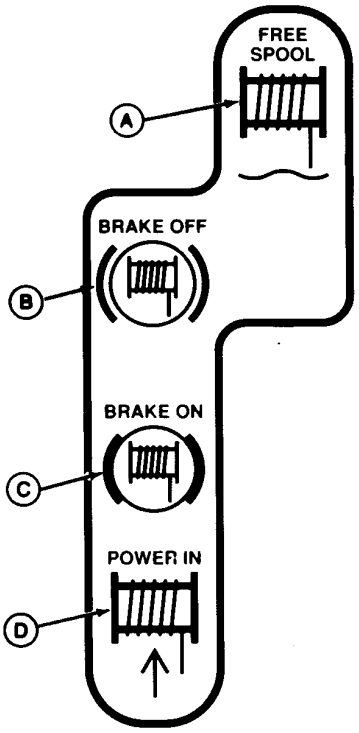
B—Move lever to the BRAKE OFF position so cable can be pulled out with tension.

C—Move lever to the BRAKE ON position to hold cable.

D—Move lever to POWER IN position to wind cable on drum.

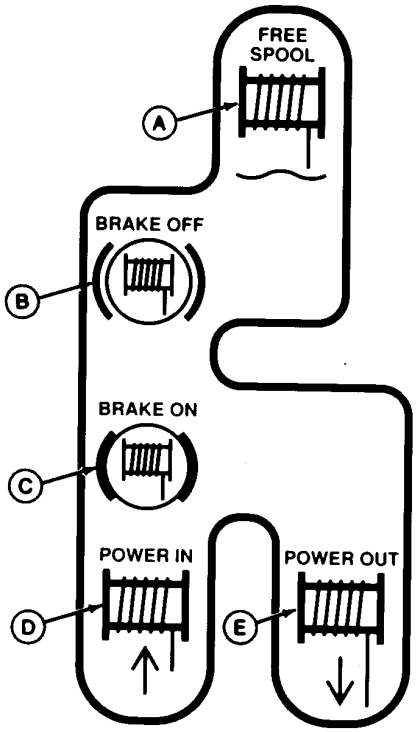
E—Move lever to POWER OUT position (if equipped) to unwind cable from drum.

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



T7440BG —UN—20DEC90

Standard Control Pattern



T7440BH —UN—20DEC90

Power In, Power Out Control Pattern

OUO1079,00002D7 -19-02JUN03-1/1

Fasten Cable to Winch Drum—4000S Series

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

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

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

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

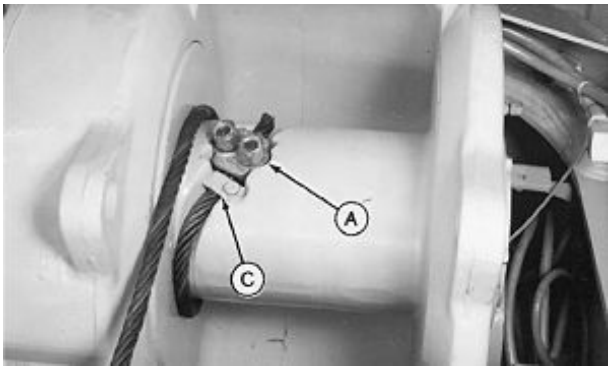
IMPORTANT: If a ferruled cable is used, the drum plug (B) MUST be installed to prevent cable from bending cable slot.

- **First Method—Breakaway Anchor:**

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

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

T7347AS —UN—27SEP90



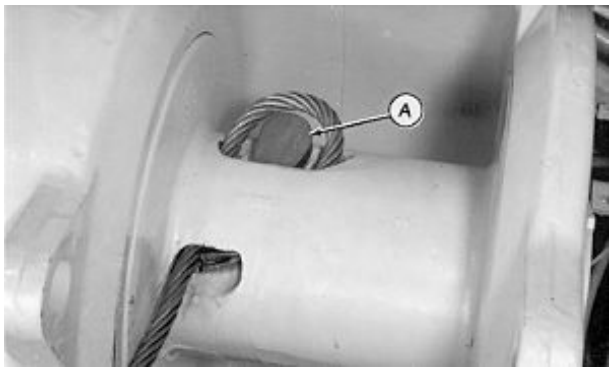
T7382AH —UN—03OCT90

Continued on next page

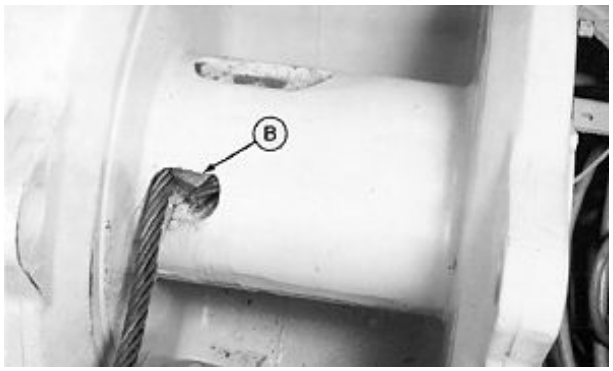
TX,35,RR,798 -19-27JAN00-1/3

- **Second Method—Fixed Anchor:**

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



T7382AK —UN—03OCT90



T7382AJ —UN—03OCT90

A—Wedge **B—Wedge Installed in Drum**

Continued on next page

TX,35,RR,798 -19-27JAN00-2/3

- **Third Method:**

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

1. Remove drum plug (B).

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

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

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

B—Drum Plug

T7347AS —UN—27SEP90

T7382AI —UN—03OCT90

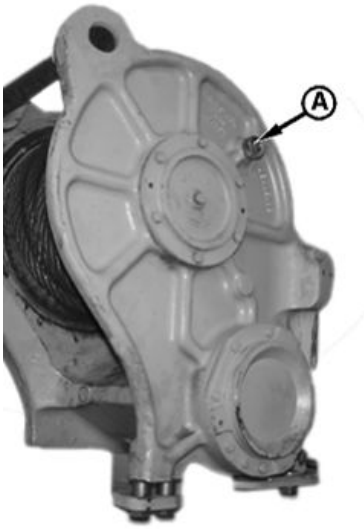
TX,35,RR,798 -19-27JAN00-3/3

Winch Free Spool Drag Adjustment

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

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

A—Winch Free Spool Drag Adjustment Jam Nut



T1182408 —UN—12NOV98

TX,35,RR4679 -19-20DEC94-1/1

Loading Machine on a Trailer

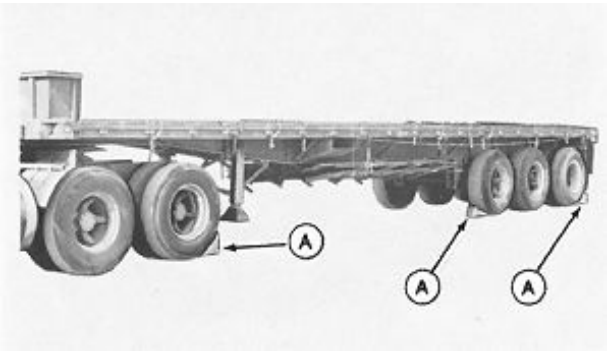
1. Keep the trailer bed clean.
2. Put chock blocks (A) against truck wheels.
3. Use a ramp or loading dock. Ramps must be strong enough, have a low angle, and be of correct height.
4. Fasten seat belt before starting engine.
5. Load and unload the machine on a level surface.

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

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

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

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



T87155 —UN—09NOV88

A—Chock Blocks

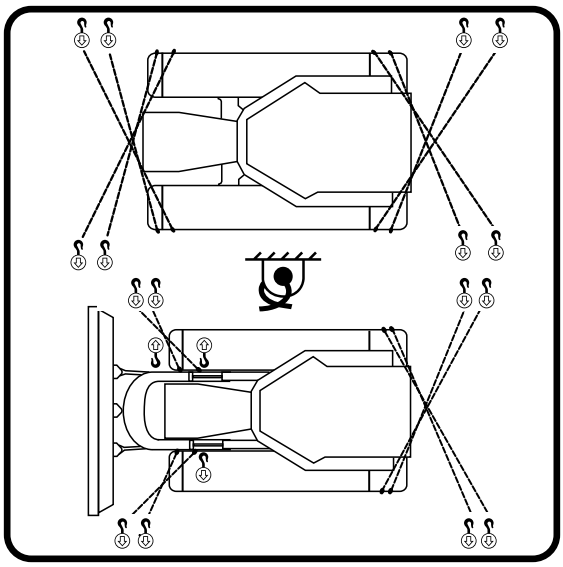
13. Turn key switch to OFF. Stop engine.
14. Remove key from switch.
15. Release hydraulic pressure by moving control lever until equipment does not move.
16. Turn battery disconnect switch OFF.
17. Cover exhaust opening to prevent entry of wind and water.

Continued on next page

HG31779,0000368 -19-10JAN07-1/2

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

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



T200748 —UN—07JUN04

HG31779,0000368 -19-10JAN07-2/2

Loading Machine with Crane—If Equipped With Lift Kit

NOTE: Typical weight for the XLT version will be 27,500 lb (with cab and retrieval hitch). LGP weight will be 28,600 lb. Options will add weight. Ripper weight is 2,400 lb. The ocean line shipping company puts the blade or attachments next to the unit being shipped.

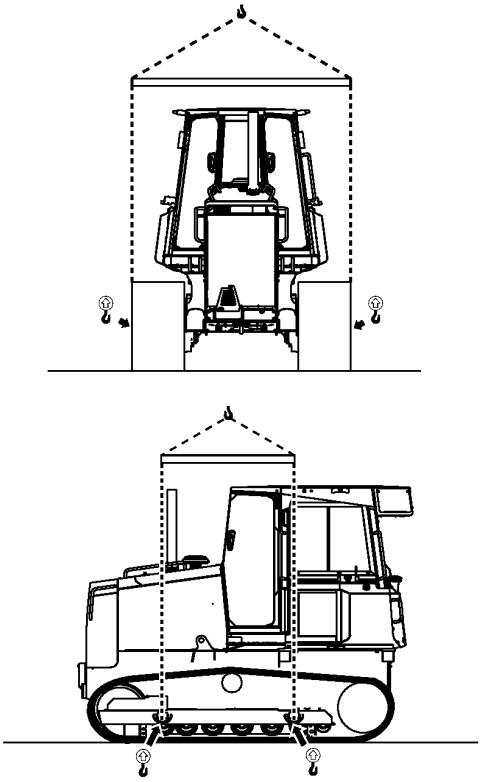
When lifting the machine with a crane, observe the following:

1. Lower all attachments to the ground.
2. Place all operating and control levers into neutral position.
3. Stop machine engine. (See Stopping the Machine and Parking the Machine in this section.)
4. Secure all doors, covers and hoods.

NOTE: Machine can only be lifted by lifting eyes. If lifting eyes are not equipped, they must be installed before machine can be lifted.

5. Install shackles and hooks to four lifting eyes.
6. Ensure lifting cables are of adequate length and lifting capacity.
7. Ensure lifting device to be used has adequate lifting capacity.

⚠ CAUTION: To prevent injury or death, ensure no one is on, near or under machine being lifted.



TX1009510 —UN—18JUL06

8. Carefully lift and lower machine.

VD76477,00013DC -19-23JAN07-1/1

Releasing Park Brake to Tow the Machine

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

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

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

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

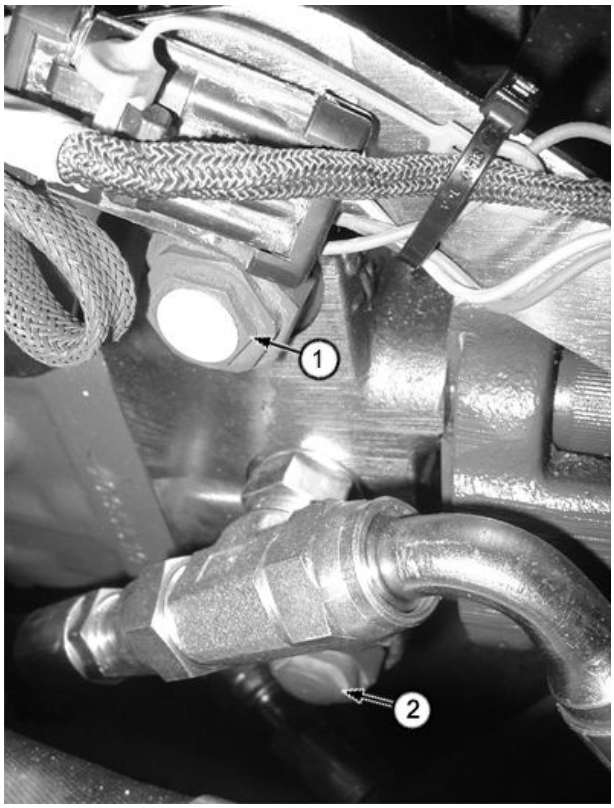
1. Remove transmission control unit (TCU) cover.
2. Remove rubber mat and floor plate from operator's station.

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

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

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

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



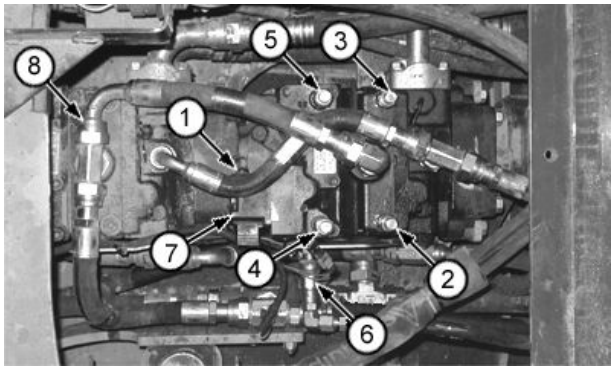
T158857C —UN—14JUN04

1— Top Multi-Function Valve
2— Bottom Multi-Function Valve

TE14778,000002F -19-28MAY10-1/3

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

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



T198205A —UN—01MAR04

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TE14778,000002F -19-28MAY10-2/3

5. Install tee assembly using fittings (as necessary).
   a. Press TCU MENU button until RATE appears. Press SELECT.
   b. Press NEXT until BRAK appears. Press SELECT.
   c. Press NEXT until TOW appears. Press SELECT.

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

6. Press TCU MENU button until DIAG appears. Press SELECT.

   Press NEXT until CHRG appears.

NOTE: CHRG will display pressure seen in the brake circuit.

7. Put park lock lever in DOWN position.

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

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

8. Pressurize brake circuit to specification.

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

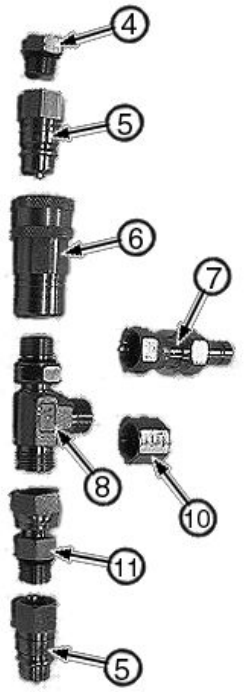
CAUTION: Prevent possible injury from unexpected machine movement. Place blocks at front and rear of tracks and secure machine to prevent it from rolling.

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

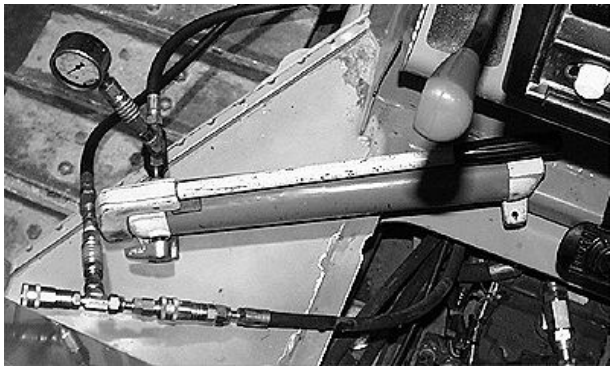
IMPORTANT: DO NOT tow machine faster than 1.6 km/h (1 mph) (646 motor rpm max) for 10 minutes or not to exceed 305 m (1000 ft) of total tow distance. Failure to do this may result in extensive machine damage.

9. Tow machine.

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



T200902A —UN—14JUN04



T119229B —UN—22DEC98

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

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

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

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

Standard Display Monitor (SDM) Main Menu

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

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

TX1014928 —19—14DEC06

VD76477,00010A7 -19-09NOV06-1/1

Standard Display Monitor (SDM) Main Menu—Codes

Press the MENU button to display the Main Menu.

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

The submenus under Codes include:

1. Active Codes
2. Stored Codes

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

TX1014929 —19—14DEC06

VD76477,00010A9 -19-04JAN07-1/1

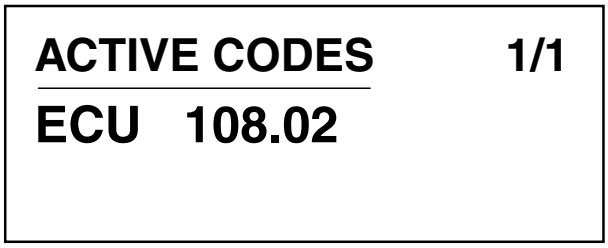
Standard Display Monitor (SDM) Main Menu—Codes—Active Codes

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

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

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

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



TX1014930 —19—14DEC06

VD76477,00010AB -19-09APR07-1/1

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

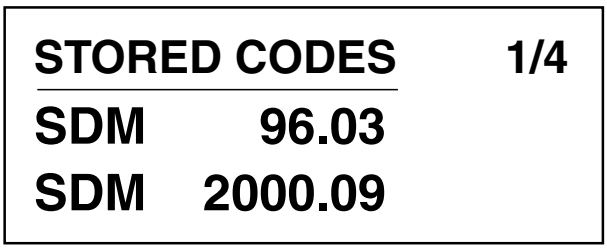
The Stored Codes submenu will display up to 20 of the latest Diagnostic Trouble Codes (DTCs) that have occurred on the machine. Each diagnostic trouble code will be saved in the order it occurred. If 20 codes exist and another DTC is present, the listing will be adjusted first in/first out.

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

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

Press SELECT again to view occurrences.

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



TX1014931 —19—14DEC06

VD76477,00010AD -19-22DEC06-1/1

Standard Display Monitor (SDM) Main Menu—Machine Settings

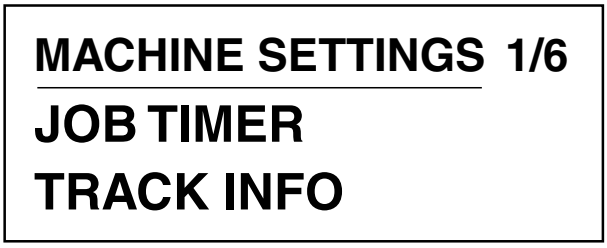
The Machine Settings menu allows the operator to make changes to various operating conditions of the machine. The last selection of the machine settings will be stored, and upon turning the ignition switch on, the last value will be retrieved.

Press NEXT at the Main Menu to highlight Machine Settings.

Press SELECT to display submenu.

The submenus under Machine Settings include:

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



TX1014932 —19—10JAN07

VD76477,00013A4 -19-12JAN07-1/1

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

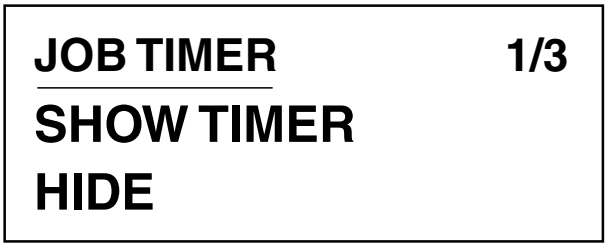
The job timer is a resettable meter that can be used to time tasks to the nearest tenth of an hour. The maximum capacity displayed is 999.9 hours. The job timer will stop and the value will be set to zero when it exceeds 999.9 hours. The job timer will run even when the Job Timer submenu is not active.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

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

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

The job timer submenu include the following options:

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



TX1014933 —19—23JAN07

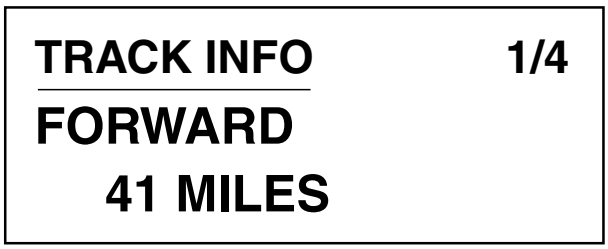
VD76477,00010AF -19-28NOV06-1/1

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

This menu displays track information calculated by the Transmission Control Unit (TCU).

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

1. Forward—The distance the machine has traveled in forward direction is displayed in kilometers or miles.
2. Reverse—The distance the machine has traveled in reverse direction is displayed in kilometers or miles.
3. Forward—The hours the machine has spent traveling in forward direction is displayed.
4. Reverse—The hours the machine has spent traveling in reverse direction is displayed.



TX1014938 —19—19DEC06

VD76477,00010C5 -19-10JAN07-1/1

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

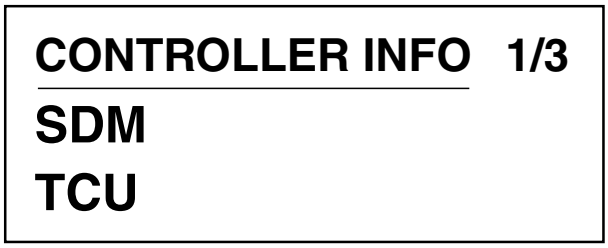
This menu displays the software version numbers and hardware part numbers for various devices on the machine.

Navigate to the desired option using the NEXT button.

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

The submenus under Controller Info include:

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



TX1014934 —19—19DEC06

VD76477,00010C2 -19-10JAN07-1/1

Standard Display Monitor (SDM) Main Menu—Machine Settings—Transmission

This menu contains settings that affect transmission function and performance. The feel of the machine can be fine-tuned by adjusting the rates on the transmission controller unit. Listed below are the adjustable rates as listed in the display window.

TX1014935 —19—14DEC06

Rate	Description	Factory Setting
Aggressiveness	Affects operator perception of machine power. Affects engine pull-down and opposite track movement when the track drive goes over relief.	Low
Decel Response	Affects decelerator responsiveness to pedal movement.	Low
FNR Shift Rate	Affects how quickly the dozer shifts between forward and reverse.	Med
Steer Rate	Affects steering response to steering lever movement.	Med
Steer Modulation	Affects amount of steering that occurs per amount of lever movement.	Med
Reverse Ratio	Affects the ratio of forward speed to reverse speed	80

VD76477,00010C3 -19-10JAN07-1/1

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

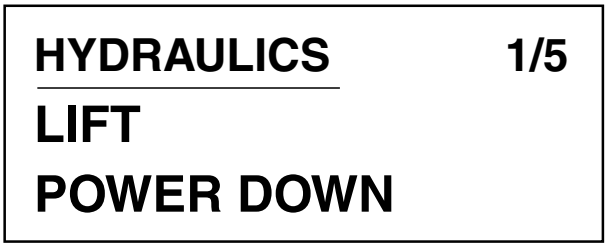
The Hydraulics menu will be displayed if machines is equipped with electro-hydraulics controls. This menu displays the hydraulic settings of machine.

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

The Hydraulics submenu include the following options:

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

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



TX1017565 —19—16JAN07

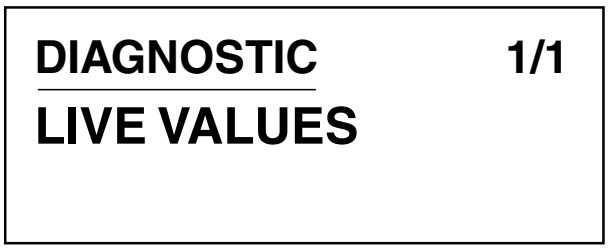
VD76477,00013A6 -19-12JAN07-1/1

Standard Display Monitor (SDM) Main Menu—Diagnostic

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

Press NEXT at Main Menu to highlight Diagnostic.

Press SELECT to display submenu.



TX1014939 —19—14DEC06

VD76477,00010C6 -19-28NOV06-1/1

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

Press the MENU button to display Main Menu.

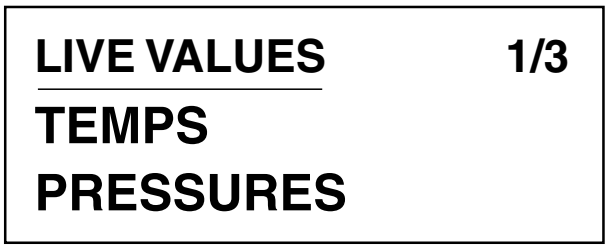
Use the NEXT button to navigate to the Diagnostic option.

Press SELECT to display Live Values.

This menu displays the live values that the controllers see.

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

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



TX1014940 —19—14DEC06

VD76477,00010C7 -19-11OCT06-1/1

Standard Display Monitor (SDM) Main Menu—Monitor

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

Press the MENU button to display Main Menu.

Use the NEXT button to navigate to Monitor.

Press SELECT to display submenu.

The submenus under Monitor include:

1. Units
2. Monitor Config
3. Contrast

TX1017228 —19—08JAN07

VD76477,0001394 -19-22JAN07-1/1

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

Press the MENU button to display Main Menu.

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

Units will be highlighted, press SELECT to display Units.

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

TX1014942 —19—14DEC06

VD76477,00012E4 -19-08DEC06-1/1

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

Press the MENU button to display Main Menu.

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

Navigate to Monitor Config and press SELECT.

The machine configuration will be displayed on the monitor.

VD76477,00013D9 -19-22JAN07-1/1

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

Press the MENU button to display Main Menu.

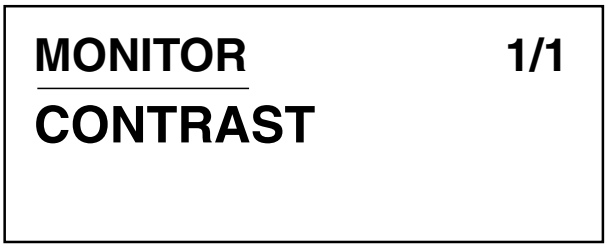
Use the NEXT button to navigate to Monitor and press SELECT.

Navigate to Contrast and press SELECT.

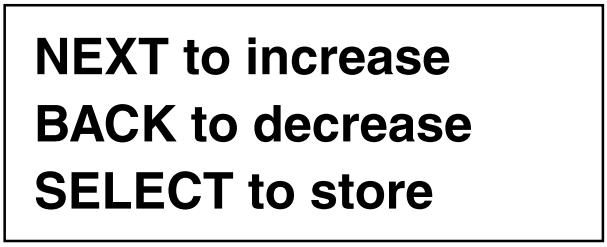
Use the NEXT button to increase the contrast of the display window.

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

Press the SELECT button to store setting.



TX1014944 —19—14DEC06



TX1016830 —19—19DEC06

VD76477,00012E8 -19-15DEC06-1/1

Required Emission-Related Information

Service Provider

A qualified 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 -19-12JUN15-1/1

Engines With Tier 3-Stage IIIA/MAR-I Emission Control

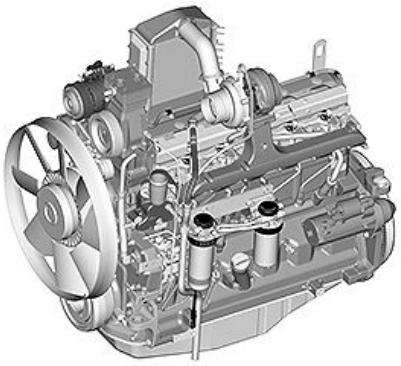
Emission control programs set emission limits for engines and reduce vehicle and machinery impact on air quality.

Tier 3-Stage IIIA certified engines meet US EPA Tier 3, EU Stage IIIA, and PROCONVE MAR-IÞmission requirements for construction and forestry machinery.

The programs consider both machinery and fuel as an integrated system. Correct use and maintenance of the machine is required.

Fuel quality and sulfur content must comply with the specifications in this manual.

IMPORTANT: If the engine or the engine auxiliaries fail during the lifespan, contact an authorized John Deere dealer for proper maintenance to ensure the correct emission control.



Tier 3-Stage IIIA Engine

BM010705 —UN—22JAN16

KR46761,000147B -19-01JUL19-1/1

Diesel Fuel

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

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

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

Required Fuel Properties

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

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

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

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

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

E-Diesel fuel

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

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

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

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

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

Sulfur Content for Tier 3 and Stage III A Engines

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

Sulfur Content for Tier 2 and Stage II Engines

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

Sulfur Content for Other Engines

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

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

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

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

Lubricity of Diesel Fuel

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

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

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

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

Lubricity of BioDiesel Fuel

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

DX,FUEL5 -19-07FEB14-1/1

Handling and Storing Diesel Fuel

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

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

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

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

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

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

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

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

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

Biodiesel Fuel

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

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

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

John Deere Stage V Engines Operating in the European Union

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

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

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

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

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

John Deere Engines Without Exhaust Filter

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

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

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

Biodiesel Use Requirements and Recommendations

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

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

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

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

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

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

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

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

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

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

Continued on next page

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

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

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

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

Testing Diesel Fuel

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

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

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

Minimizing the Effect of Cold Weather on Diesel Engines

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

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

Use Winter Grade Fuel

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

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

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

Air Intake Heater

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

Ether

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

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

Coolant Heater

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

Seasonal Viscosity Oil and Proper Coolant Concentration

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

Diesel Fuel Cold Flow Additive

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

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

Biodiesel

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

Winterfronts

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

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

Radiator Shutters

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

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

For more information, see your John Deere dealer.

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

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

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 CJ-4	**ACEA E9**
API CI-4 PLUS	**ACEA E7**
API CI-4	**ACEA E6**
API CH-4	**ACEA E5**
API CG-4	**ACEA E4**
API CF-4	**ACEA E3**
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.

VD76477,0001322 -19-17MAR16-1/1

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.

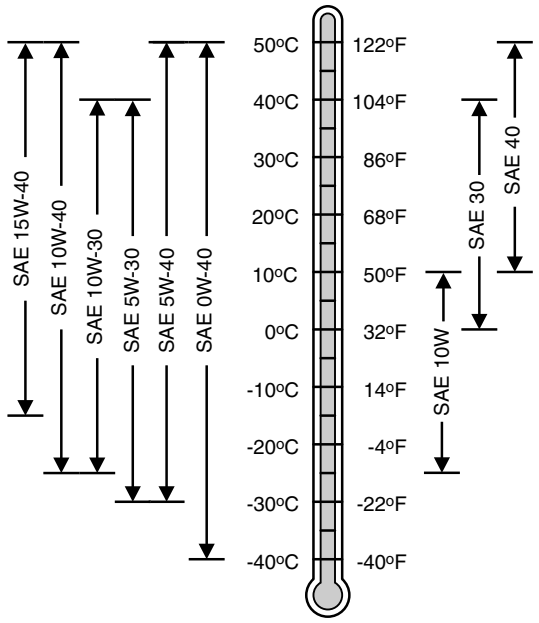
Other oils may be used if they meet one or more of the following standards:

- 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).

DX,ENOIL11 -19-23APR19-1/1

Diesel Engine Oil and Filter Service Intervals

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

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

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

- Use of diesel fuel with sulfur content less than 0.10% (1000 mg/kg) is strongly recommended.
- Use of diesel fuel with sulfur content 0.10% (1000 mg/kg) to 0.50% (5000 mg/kg) may result in REDUCED oil and filter change intervals as shown in the table.
- BEFORE using diesel fuel with sulfur content greater than 0.50% (5000 mg/kg), contact your John Deere dealer.
- DO NOT use diesel fuel with sulfur content greater than 1.00% (10 000 mg/kg).

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

Oil types in the table include:

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

Use of lower specification oils in Tier 3 engines may result in premature engine failure.

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

- *Engine equipped with an extended drain interval oil pan*
- *Use of diesel fuel with sulfur content less than 0.50% (5000 mg/kg)*
- *Use of John Deere Plus-50™ II or John Deere Plus-50 oil*
- *Use of an approved John Deere oil filter*

	U.S. Tier 3 and EU Stage III A - PowerTech Plus™				**U.S. Tier 3 and EU Stage III A -** PowerTech™		
	Oil Pan Size (L/kW)				Oil Pan Size (L/kW)		
Oil pan capacity	Greater than or equal to 0.10	Greater than or equal to 0.12	Greater than or equal to 0.14	Greater than or equal to 0.22	Greater than or equal to 0.10	Greater than or equal to 0.12	Greater than or equal to 0.14
Fuel Sulfur	Less than 0.10% (1000 mg/kg)				Less than 0.10% (1000 mg/kg)		
Plus-50	375 hours	500 hours	500 hours	500 hours	375 hours	500 hours	500 hours
Other Oils	250 hours	250 hours	250 hours	250 hours	250 hours	250 hours	250 hours
Fuel Sulfur	0.10 - 0.20% (1000 - 2000 mg/kg)				0.10 - 0.20% (1000 - 2000 mg/kg)		
Plus-50	300 hours	300 hours	500 hours	500 hours	300 hours	400 hours	500 hours
Other Oils	200 hours	200 hours	250 hours	250 hours	200 hours	200 hours	250 hours
Fuel Sulfur	0.20 - 0.50% (2000 - 5000 mg/kg)				0.20 - 0.50% (2000 - 5000 mg/kg)		
Plus-50	250 hours	250 hours	300 hours	500 hours	275 hours	350 hours	500 hours
Other Oils	150 hours	150 hours	200 hours	250 hours	150 hours	175 hours	250 hours
Fuel Sulfur	0.50 - 1.00% (5000 - 10 000 mg/kg)				0.50 - 1.00% (5000 - 10 000 mg/kg)		
Plus-50	Contact John Deere Dealer (dealer refers to DTAC solutions)				187 hours	250 hours	250 hours
Other Oils	Contact John Deere Dealer (dealer refers to DTAC solutions)				125 hours	125 hours	125 hours
The service interval of “Other Oils” may be extended only if oil analysis is performed to determine the actual service life, to a maximum not to exceed that of Plus-50.							

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

DX,ENOIL13 -19-03AUG09-1/1

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

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

The following oils are preferred:

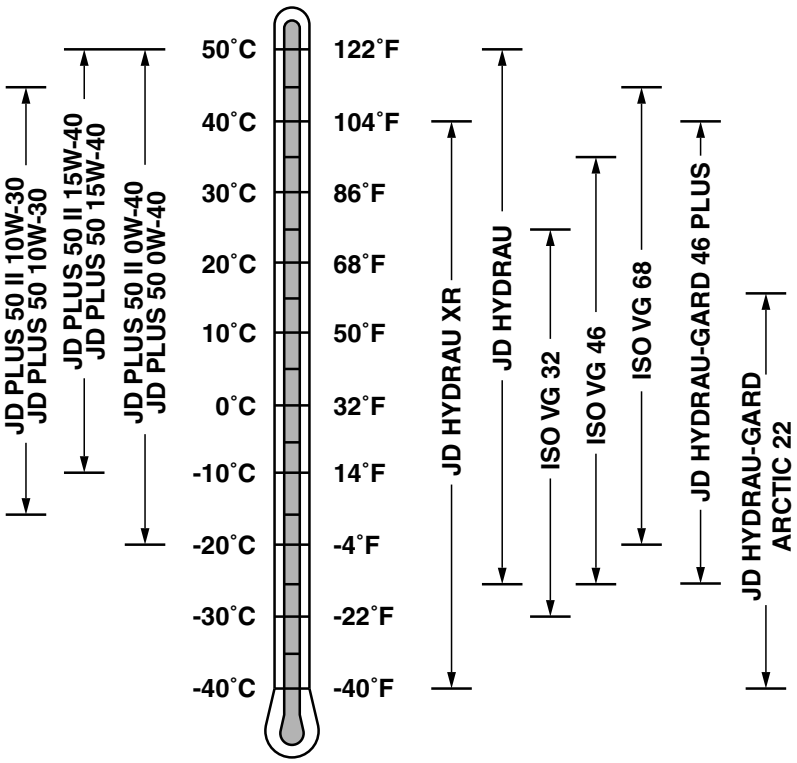
- John Deere GEAR LUBRICANT (SAE 80W90)
- John Deere EXTREME-GARD

The following oils are recommended:

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

OUT4001,0000029 -19-03DEC07-1/1

Hydraulic and Hydrostatic Oil



TX1180348

TX1180348 —UN—18DEC14

Oil Viscosities for Ambient Temperature Ranges

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

IMPORTANT: Avoid machine damage. Do not mix fluids of different type or brand. Do not mix zinc-free and zinc-based. Mixing fluids can result in additive fall-out and lubricant degradation. Zinc-free oils are not approved for use.

2000-Hour Change Interval

The following oils are preferred:

- John Deere Hydrau™
- John Deere Hydrau™XR
- John Deere Plus-50™ II
- John Deere Plus-50™
- John Deere Hydrau-Gard™ 46 Plus[1]

1000-Hour Change Interval

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

- Minimum API classification CI-4
- Anti-Wear Hydraulic Oils (AWHO):
  - ISO 11158 Category HV
  - DIN 51524-3

Cold weather operation only:

- John Deere Hydrau-Gard™ 22 Arctic[1]

[1]*Fluid is not available in the United States or Canada.*

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

CN93077,0000332 -19-06MAR17-1/1

Final Drive Oil

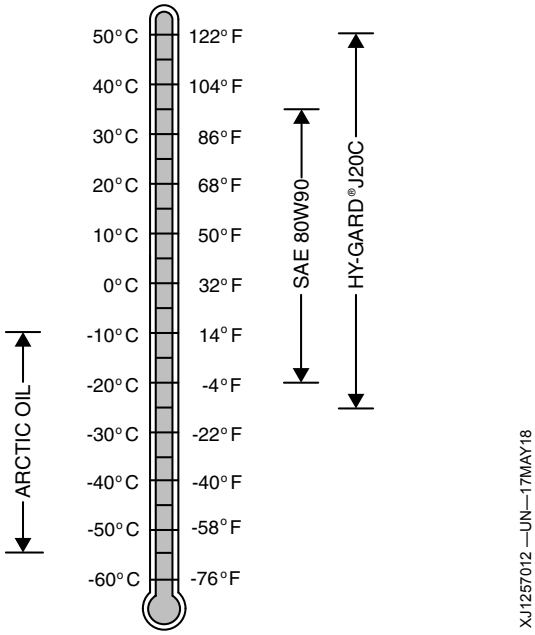
Depending on the expected air temperature range between oil changes, use oil viscosity shown on the chart above.

John Deere Hy-Gard™ is preferred.

Other oils may be used if they meet the following:

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

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



Final Drive Oil Temperature Specifications

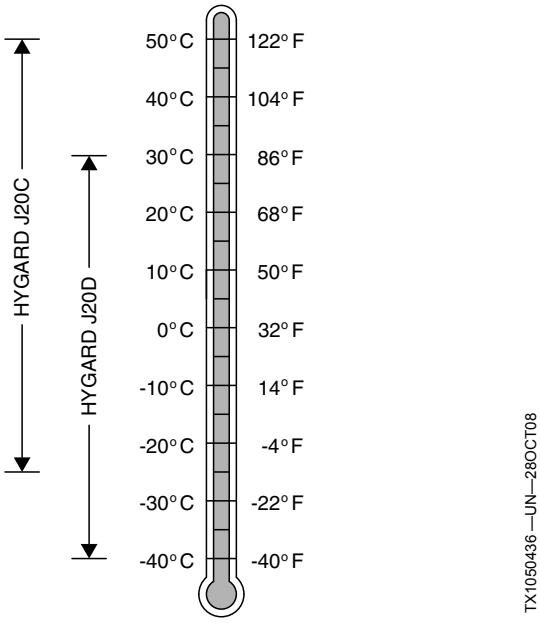
Hy-Gard is a trademark of Deere & Company

MD04263,0000001 -19-21MAY18-1/1

Winch Oil

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

John Deere Hy-Gard™ is preferred.



Winch Oil Temperature Specifications

Hy-Gard is a trademark of Deere & Company

MD04263,0000002 -19-09JAN12-1/1

Multipurpose Extreme Pressure (EP) Grease

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

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

John Deere SD Polyurea Grease is preferred.

The following greases are also recommended:

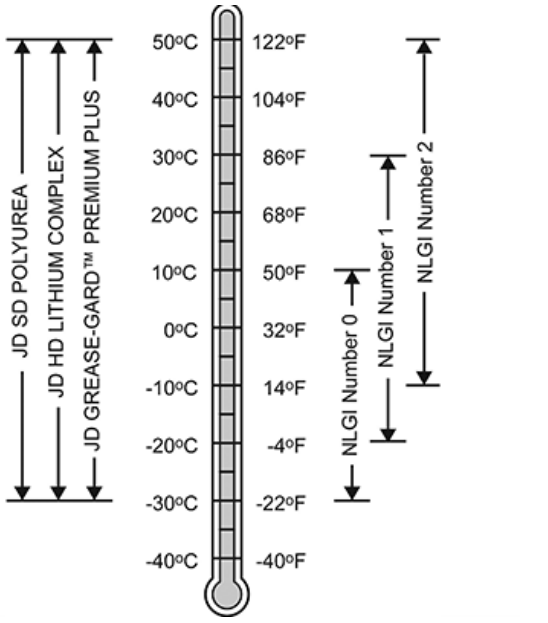
- John Deere HD Lithium Complex Grease
- John Deere Grease-Gard™ Premium Plus

Other greases may be used if they meet the following:

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

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

Grease-Gard is a trademark of Deere & Company



Greases for Air Temperature Ranges

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

Diesel Engine Coolant (engine with wet sleeve cylinder liners)

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

Preferred Coolants

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

The following pre-mix engine coolants are preferred:

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

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

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

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

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

Additional Recommended Coolants

The following engine coolant is also recommended:

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

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

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

Other Coolants

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

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

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

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

Water Quality

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

Coolant Drain Intervals

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

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

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

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

Do not mix ethylene glycol and propylene glycol base coolants.

Do not use coolants that contain nitrites.

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

Drain Intervals for Diesel Engine Coolant

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

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

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

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

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

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

John Deere COOL-GARD™ II Coolant Extender

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

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

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

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

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

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

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

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

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

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

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

Supplemental Coolant Additives

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

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

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

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

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

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

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

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

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

Operating in Warm Temperature Climates

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

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

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

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

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

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

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

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

Coolant Specifications

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

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

Replenish Coolant Additives

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

Why use John Deere COOL-GARD II Coolant Extender?

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

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

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Avoid Automotive-type Coolants

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

Water Quality

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

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

Freeze Protection

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

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

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

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

Testing Diesel Engine Coolant

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

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

Coolant Test Strips

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

When Using John Deere COOL-GARD II

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

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

When Using Nitrite-Containing Coolants

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

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

Coolant Analysis

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

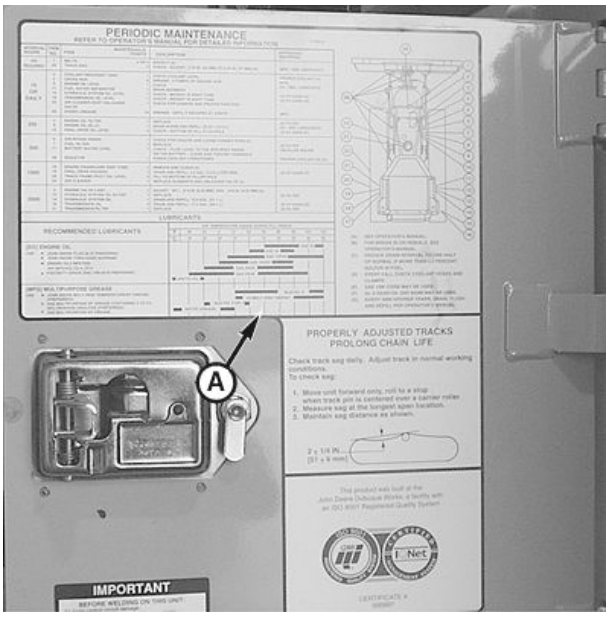
Contact your John Deere dealer for more information on coolant analysis.

DX,COOL9 -19-11APR11-1/1

Service Your Machine at Specified Intervals

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

A—Periodic Maintenance Chart



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Located Inside Left-Side Service Door

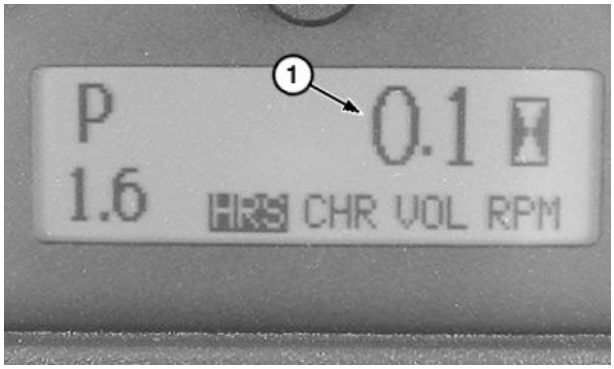
CED,OUO1079,543 -19-05OCT07-1/1

Check the Hour Meter Regularly

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

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

1— Hour Meter



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Prepare Machine for Maintenance

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

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

Fuel Tank

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

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

Specification	
Fuel Tank—Capacity	227.0 L 60.0 gal

TS185 —UN—23AUG88

CED,OUO1079,495 -19-02JUN10-1/1

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, usually prior to a filter and/or fluid change interval. Certain systems require more frequent sampling. Consult your authorized John Deere dealer on a maintenance program for your specific application. Your authorized John Deere dealer has the sampling products and expertise to assist you in lowering your overall operating costs through fluid sampling.

Fluid Analysis Kits

TX1003513A —UN—20FEB06

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

Service Intervals

Model: 700J (S.N. 139436—)	**PIN/Serial Number:**
Hour Meter Reading:	
SERVICE INTERVALS	
Service your machine at intervals shown on this chart. Also, perform service on items at multiples of the original requirement. For example, at 2000 hours also service those items (if applicable) listed under 1000 hours, 500 hours, 250 hours and 10 hours or daily.	
FLUID SAMPLING	
Take fluid samples from each system as indicated on this form. The manufacturer of the fluid analysis kits will provide maintenance recommendations based upon the results of the fluid analysis and the operating information you supply. Regular fluid sampling extends the operational life of your machine.	
As Required	
□ Inspect belts	□ Check and adjust track sag
□ Clean and replace cab fresh air filter	□ Clean and replace cab recirculating air filter
□ Add coolant extender as indicated by COOL-GARD™ II test strips	
Every 10 Hours Or Daily	
□ Check coolant level at surge tank	□ Check transmission oil level
□ Grease frame crossbar	□ Clean engine air cleaner dust unloader valve
□ Check engine oil level	□ Grease dozer linkage and blade socket
□ Drain sediment from primary fuel filter water separator bowl	□ Check hydraulic system oil level
□ Check winch oil—if equipped	
Every 50 Hours	
□ Grease ripper—if equipped	
Initial Service—250 Hours[1]	
□ Change engine break-in oil and filter element	
[1]Perform initial service once after the first 250 hours of operation.	
Every 250 Hours	
□ Check final drive oil level	□ Take engine oil sample
□ Check blade pivot shim adjustment	
Every 500 Hours	
□ Check air intake hoses	□ Take final drive oil sample
□ Replace primary and final fuel filters	□ Take transmission oil sample
□ Check battery water level; clean and tighten terminals	□ Take hydraulic oil sample
□ Replace winch oil filter—if equipped	□ Take engine coolant sample
□ Check coolant conditioner	□ Take diesel fuel sample
□ Drain and refill engine oil and replace filter element	
Every 1000 Hours	
□ Clean engine crankcase vent tube	□ Replace engine air cleaner elements and dust unloader valve
□ Drain and refill final drive housing oil	□ Check track frame pivot oil level
□ Drain and refill winch oil and replace filter—if equipped	□ Clean or replace winch hydraulic breather filter—if equipped
□ Check coolant	
Every 2000 Hours	
□ Check and adjust engine valve lash	□ Drain and refill transmission system oil and replace filter
□ Drain and refill hydraulic system oil and replace filter	
Every 4500 Hours	
□ Replace engine crankshaft damper	

Continued on next page

CS58540,000006F -19-24SEP13-1/2

Every 6000 Hours
□ Drain and refill engine cooling system

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CS58540,000006F -19-24SEP13-2/2

Required Parts

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	**Part Number**	**Initial Service[1]—250 Hours**	**Every 250 Hours**	**Every 500 Hours**	**Every 1000 Hours**	**Every 2000 Hours**	**Every 4500 Hours**	**Every 6000 Hours**
Engine Oil Filter	RE504836	1		1	1	1	1	1
Primary Fuel Filter	RE529643			1	1	1	1	1
Final Fuel Filter	RE522878			1	1	1	1	1
Cold Weather Fuel Filter—optional	RE516477			1	1	1	1	1
Winch Oil Filter—if equipped	AT219961			1	1	1	1	1
Winch Hydraulic Reservoir Breather Filter—if equipped	AT101565				1	1		1
Hydraulic System Oil Filter:								
• (S.N. 139436—182619)	T175002					1		1
• (S.N. 182670—)	T280007					1		1
Transmission Oil Filter:								
• (S.N. 139436—182619)	T175002					1		1
• (S.N. 182670—)	T280007					1		1
Engine Rocker Arm Cover Gasket	R524469					1		1
Engine Crankshaft Damper	RE505939						1	
Primary Engine Air Filter Element	AT300487	As Required						
Secondary Engine Air Filter Element	AT314583	As Required						
Engine Air Cleaner Dust Unloader Valve	M89679	As Required						
Cab Fresh Air Filter	AT191102	As Required						
Cab Recirculation Filter	AT315957	As Required						
John Deere PLUS-50™ II Engine Oil:								
• Engine Oil	TY26674[2]	27.5 L (7.3 gal.)		27.5 L (7.3 gal.)	27.5 L (7.3 gal.)	27.5 L (7.3 gal.)	27.5 L (7.3 gal.)	27.5 L (7.3 gal.)
• Transmission Oil	TY26674[2]					65.0 L (17.2 gal.)		65.0 L (17.2 gal.)
• Hydraulic Oil	TY26674[2]					51.0 L (13.5 gal.)		51.0 L (13.5 gal.)
Final Drive Oil	TY6354[2]				26.5 L (7.0 gal.)	26.5 L (7.0 gal.)		26.5 L (7.0 gal.)
Winch Oil—if equipped	TY6354[2]				38.0 L (10.0 gal.)	38.0 L (10.0 gal.)		38.0 L (10.0 gal.)
COOL-GARD™ II Pre-mix	TY26575							23.3 L (6.2 gal.)
COOL-GARD™ II Coolant Extender	TY26603	As Required						
Fluid Analysis Kits[3]								
• Diesel Engine Oil	AT346594		1	1	1	1	1	1
• Transmission Oil	AT346594			2	2	2	2	2
• Hydraulic Oil	AT346594			1	1	1	1	1
• Final Drive Oil	AT346594			2	2	2	2	2
• Diesel Fuel	AT180344			1	1	1	1	1
• Engine Coolant	TY26873			1	1	1	1	1
• COOL-GARD™ II Test Strips	TY26605				1	1	1	1

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

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Continued on next page

MD04263,000008C -19-25JAN13-1/2

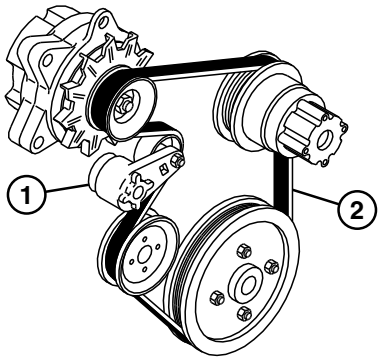
Inspect Serpentine Belt

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

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

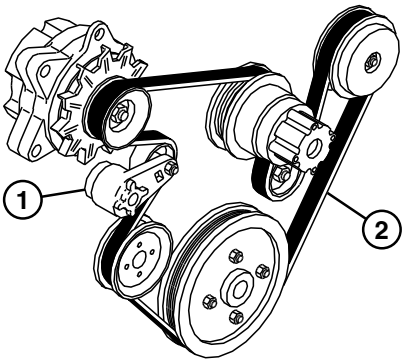
1. Start engine and run at fast idle.
2. Belt (2) must not emit a loud squealing sound at slow idle, fast idle, or rapid acceleration. If belt produces a squealing sound under any of these conditions, see your authorized dealer. If belt does not produce a squealing sound, proceed to next step.
3. Turn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

1— Automatic Belt Tensioner 2— Belt



TX1136899 —UN—22MAY13

Belt Routing



TX1136897 —UN—22MAY13

Belt Routing with Air Conditioning

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

Check Track Sag

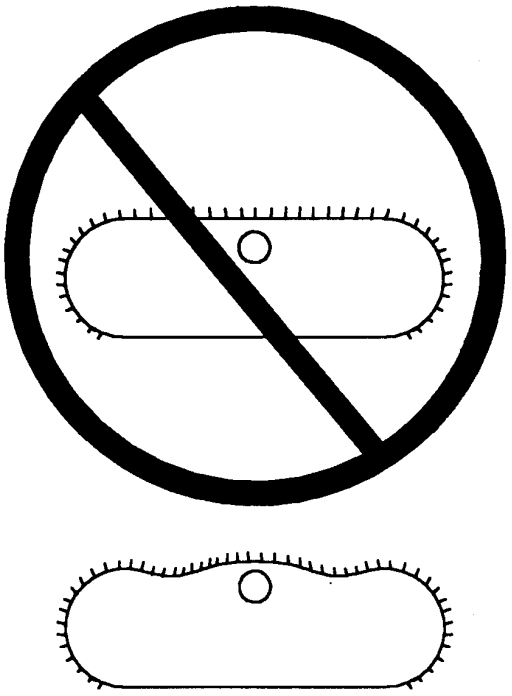
PROPER TRACK SAG ADJUSTMENT: Maintaining the proper amount of track sag is the single most important adjustment the operator can make. Tight tracks can reduced the amount of wear life by more than 50% over tracks which are properly maintained at 51 mm (2 in.) of sag. Tight tracks increase the loading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

1. Drive machine forward only and roll to a stop when a track pin is centered over carrier roller.
2. Measure track sag at the longest span location from the top of track grouser (A) to a straight edge (B). If adjustment is needed, see Adjust Track Sag. (Section 3-3.)

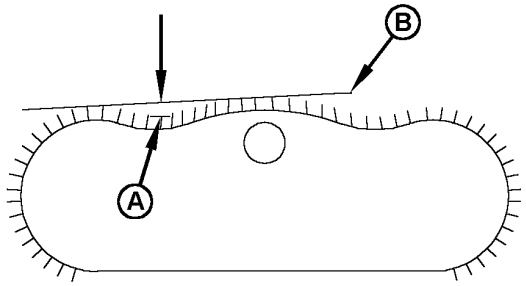
Specification

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

A—Grouser **B—Straight Edge**



T7800AH —UN—31JUL92



T120959

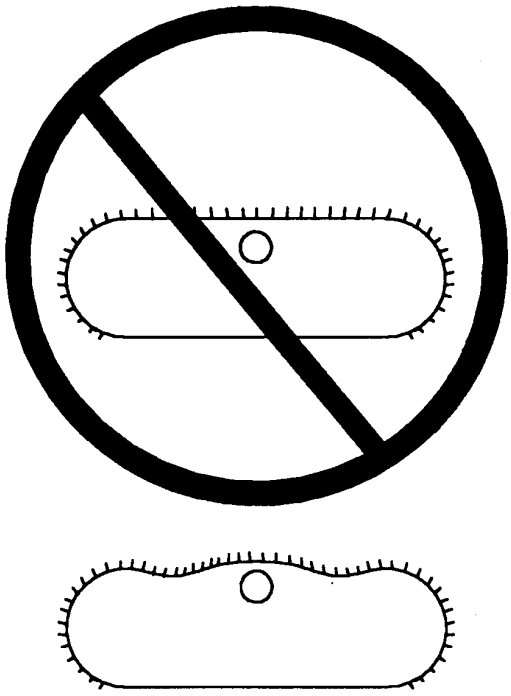
T120959 —UN—20APR99

TX,55,RR2718 -19-17MAR10-1/1

Adjust Track Sag

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

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



T7800AH —UN—31JUL92

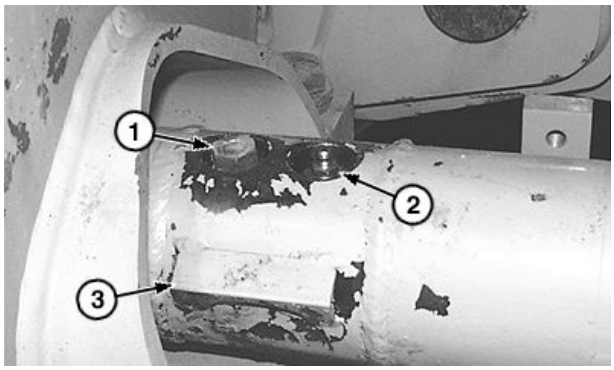
CED,OUO1079,535 -19-20MAR15-1/2

Decreasing Track Sag

1. Tighten check valve nut (1) securely.
2. Apply grease to lubrication fitting (2) using a 55 200 kPa (552 bar) (8000 psi) capacity grease gun. See Grease. (Section 3-1.)
3. Drive machine slowly in forward and reverse directions to allow track adjuster cylinder to fully adjust.
4. Check track sag again.

Increasing Track Sag

1. Loosen check valve nut (1), NOT the lubrication fitting, one-to-three turns counterclockwise to release grease through vent hole (3).
2. Tighten check valve nut.
3. Drive machine slowly in forward and reverse directions to allow track adjuster cylinder to fully adjust.
4. Check track sag again.



T131684B —UN—19JUN00

Right Side Shown

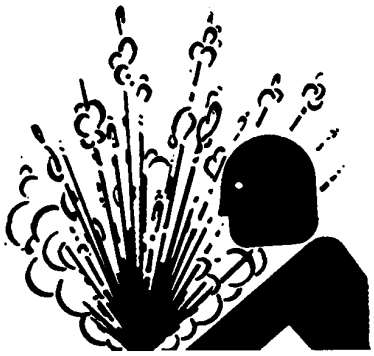
1— Check Valve Nut
2— Lubrication Fitting
3— Vent Hole

For more information about track sag, see Track Sag General Information. (Section 4-1.)

CED,OUO1079,535 -19-20MAR15-2/2

Check Coolant

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



T6464AV —UN—18OCT88

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

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

1. Remove surge tank cap (2) and test coolant solution. Use one of the following kits to check coolant.

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

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

Specification	
Cooling System—Capacity	23.3 L 6.2 gal

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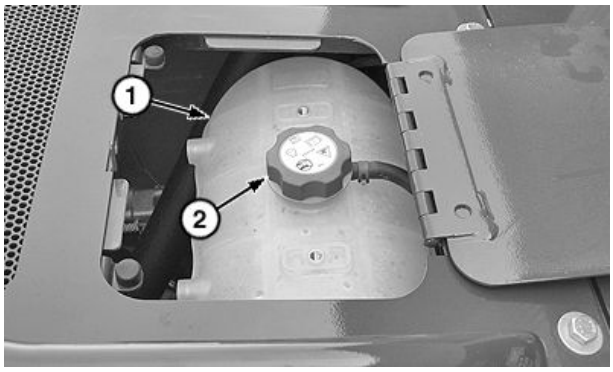


TX1011923A —UN—08SEP06

1— Surge Tank **2— Surge Tank Cap**

3. Install surge tank cap.

MB60223,00000FE -19-14MAR13-1/1

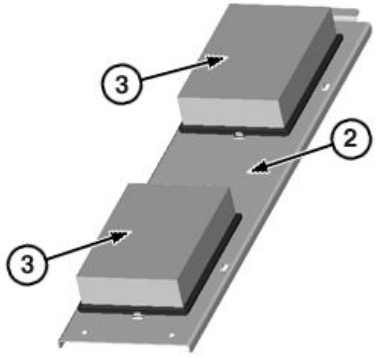
Clean or Replace Cab Fresh Air Filter

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

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

Fresh Air Filters Panel

TX1103251A —UN—20DEC11



Fresh Air Filters

TX1103241A —UN—09DEC11

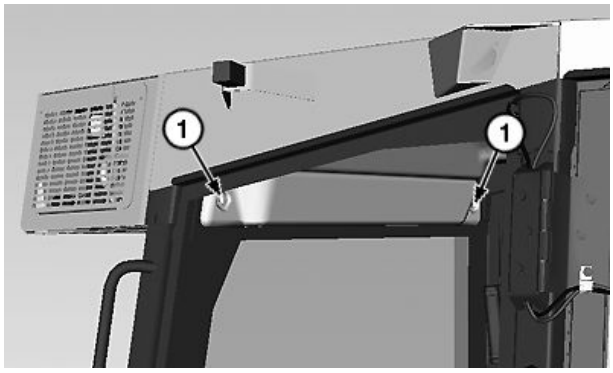
ER93822,0000009 -19-24SEP13-1/1

Clean or Replace Cab Recirculating Air Filter

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

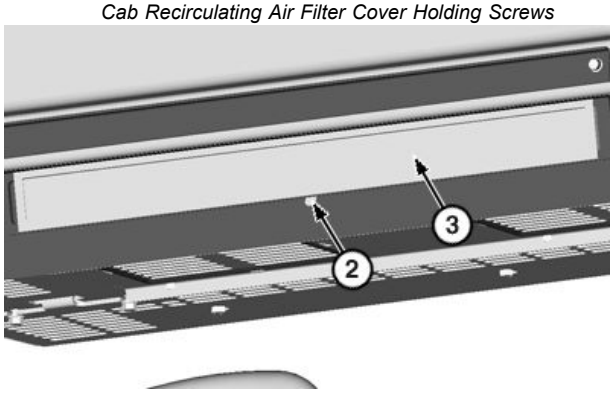
1. Remove cab air recirculating filter cover holding screws (1).
2. Remove filter cover.
3. Pull filter tab (2) to remove recirculating air filter (3).
4. Use compressed air under 210 kPa (2.1 bar) (30 psi). Direct air opposite to normal air flow.
5. Wash filter in warm, soapy water, rinse and dry.
6.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

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



Cab Recirculating Air Filter Cover Holding Screws

TX1144481A —UN—24SEP13



Recirculating Air Filter and Tab

TX1103238A —UN—09DEC11

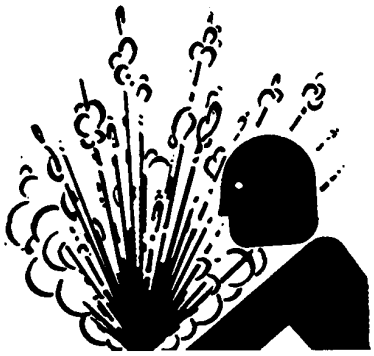
JS93577,0000670 -19-24SEP13-1/1

Check Coolant Level

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.

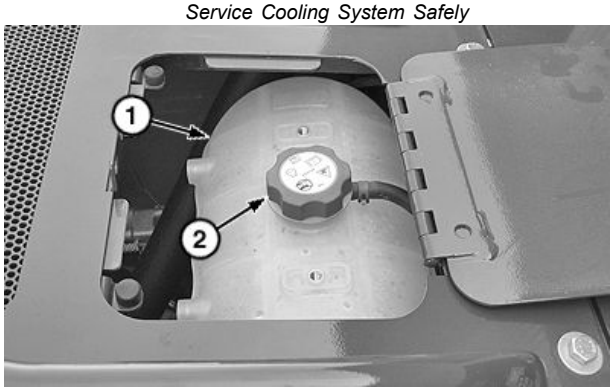
1. With the engine cold, coolant level must be between MAX COLD and MIN COLD marks on surge tank (1).
2. If coolant is below the MIN COLD mark, add coolant to the surge tank.
3. If there is no coolant in the surge tank, remove surge tank cap (2) and add coolant.

1— Surge Tank **2— Surge Tank Cap**



T6464AV —UN—18OCT88

Service Cooling System Safely

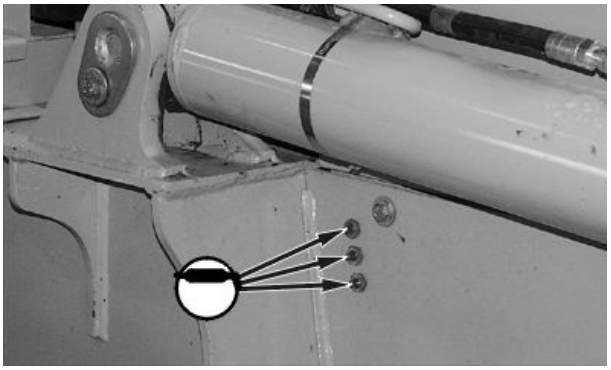


TX1011923A —UN—08SEP06

Surge Tank

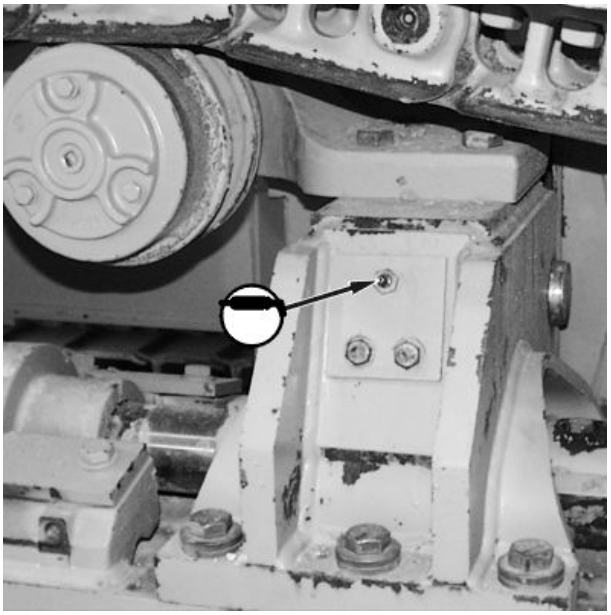
VD76477,0001036 -19-09JAN17-1/1

Grease Track Frame Crossbar and C-Frame Pivots



3 Points

T133101B —UN—15AUG00



2 Points—Right Side Shown

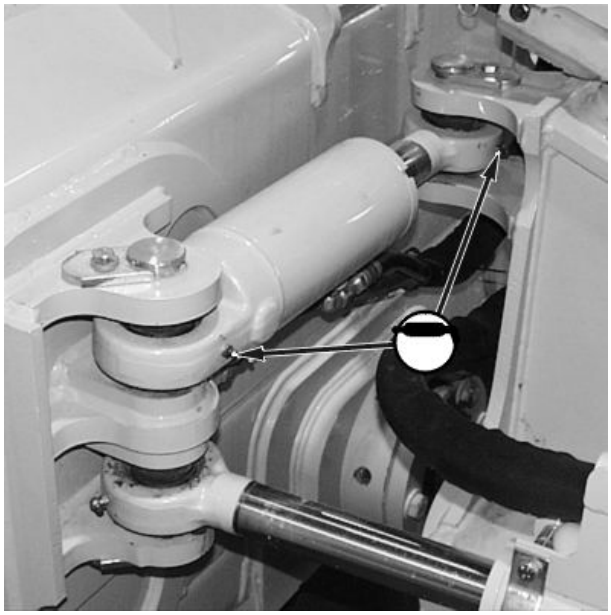
T133117B —UN—15AUG00

Using a grease gun, lubricate each grease fitting with two pumps of grease. See Grease. (Section 3-1.)

- Top Fitting—C-Frame Right-Side Pivot Pin
- Middle Fitting—Track Frame Crossbar Oscillating Pivot Pin
- Bottom Fitting—C-Frame Left-Side Pivot Pin

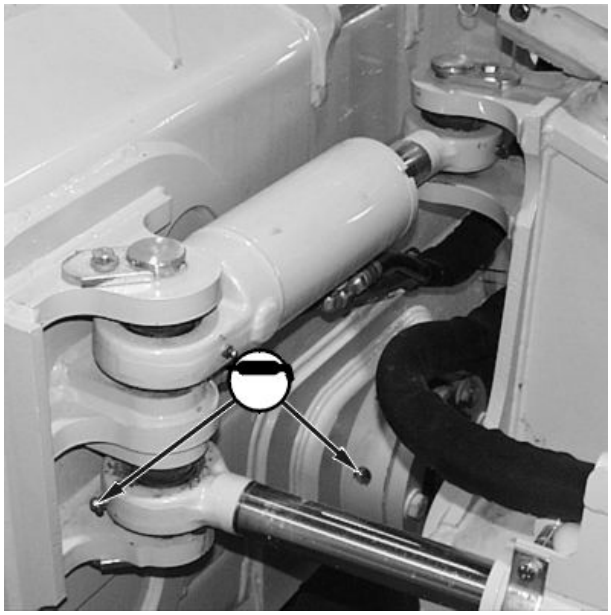
CED,OUO1079,527 -19-20MAR15-1/1

Grease Dozer Linkage



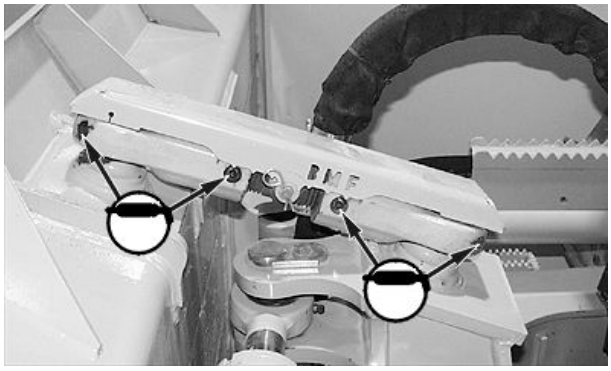
T133102B —UN—15AUG00

2 Points



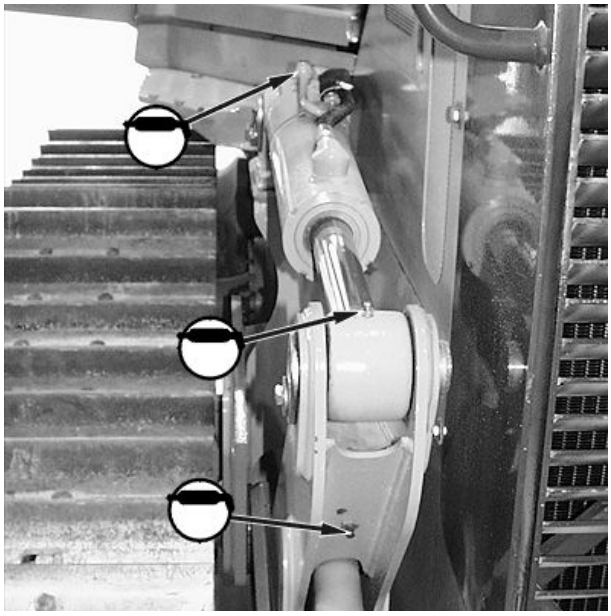
T133102C —UN—15AUG00

4 Points—Left Side Shown



T133094C —UN—15AUG00

4 Points



T133103B —UN—15AUG00

6 Points—Right Side Shown

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

CED,OUO1079,550 -19-20MAR15-1/1

Check Engine Oil Level

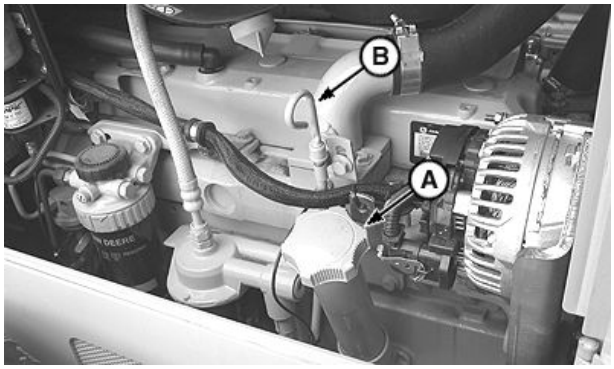
IMPORTANT: Do not run engine when oil level is below the ADD mark.

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

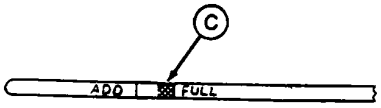
1. Park machine on a level surface.
2. Engage the park lock lever in the up “locked” position.
3. Make sure dipstick (B) is fully seated.
4. Remove dipstick to check oil level.

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

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



TX1011874A —UN—13SEP06



RG5421 —UN—15DEC88

A—Fill Tube Cap
B—Dipstick
C—Dipstick Cross-Hatch Area

VD76477,0001037 -19-21JUN07-1/1

Draining Fuel and Water Separator Sediment

NOTE: Drain waste into a container. Dispose of waste properly.

1. Attach a hose to drain screw (1). Route hose into a container.
2. Loosen drain screw. Drain liquid for several seconds or until water and sediment are removed.
3. Tighten drain screw.
4. Bleed fuel system. See Replace Primary Fuel Filter. (Section 3-8.)

1— Drain Screw

TX1011926A —UN—08SEP06

VD76477,0001047 -19-20MAR15-1/1

Check Hydraulic Oil Level

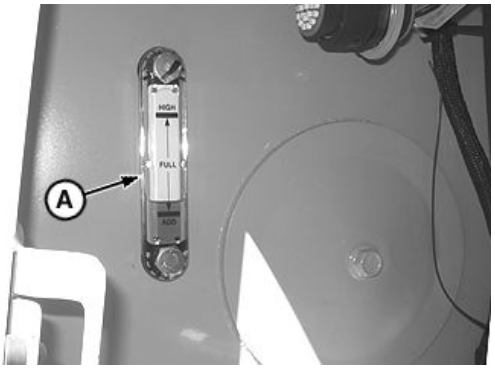
IMPORTANT: DO NOT operate engine without oil in hydraulic reservoir.

NOTE: Hydraulic reservoir, fill port, and sight tube are located on right side of machine.

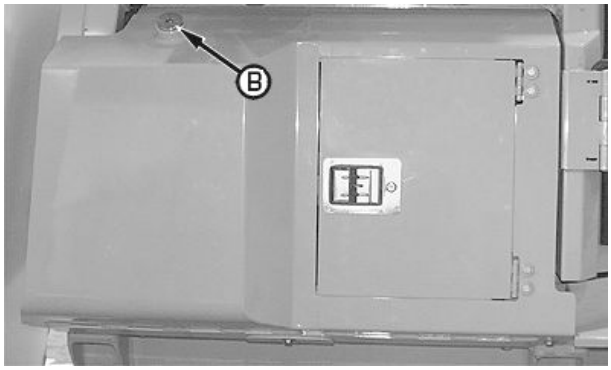
1. Park machine on level surface and lower all equipment to ground.
2. Turn key switch to OFF.
3. Check oil level at hydraulic reservoir fill level sight tube (A). Oil must be between ADD and FULL marks.
4. If necessary, remove cap and add oil at hydraulic reservoir fill port (B). See Transmission and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

A—Hydraulic Reservoir Fill Level Sight Tube

B—Hydraulic Reservoir Fill Port



TX1011873A —UN—06SEP06



T1331798 —UN—23AUG00

VD76477,0001038 -19-20MAR15-1/1

Check Transmission Oil Level

IMPORTANT: DO NOT operate engine without oil in transmission reservoir.

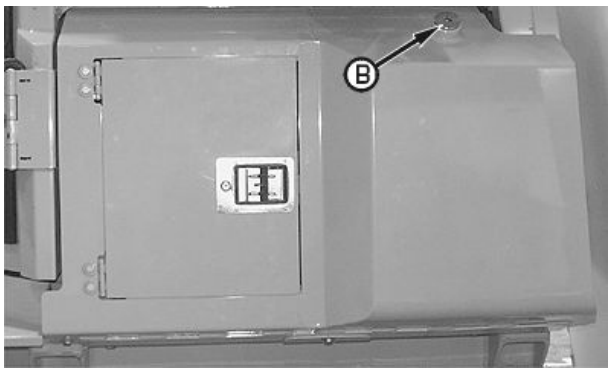
NOTE: Transmission reservoir, fill port, and sight tube are located on left side of machine.

1. Park machine on level ground.
2. Turn key switch to OFF.
3. Check oil level at transmission reservoir fill level sight tube (A). Oil must be between ADD and FULL marks.
4. If necessary, add oil at transmission reservoir fill port (B). See Transmission and Hydraulic Oil. (Section 3-1.)
5. Check O-ring on cap before installing.

A—Transmission Reservoir Fill Level Sight Tube

B—Transmission Reservoir Fill Port

TX1011876A —UN—06SEP06



T1331818 —UN—23AUG00

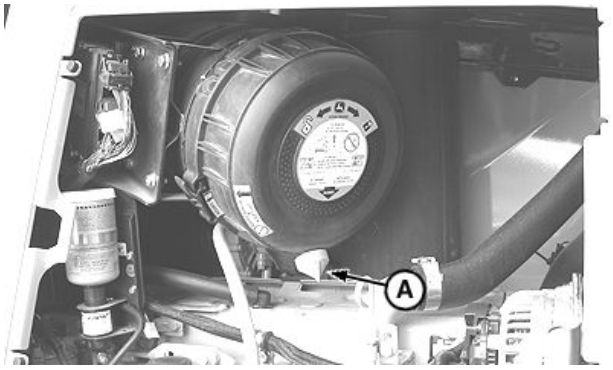
VD76477,0001039 -19-23MAR15-1/1

Clean Air Cleaner Dust Unloader Valve

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

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

If operating in high-dust conditions, clean dust unloader valve after every few hours of operation to release dust.



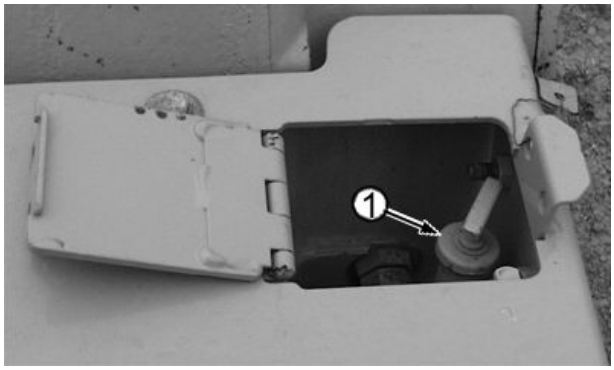
TX1011877A —UN—06SEP06

A—Dust Unloader Valve

VD76477,000103A -19-06SEP06-1/1

Check Winch Oil—If Equipped

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



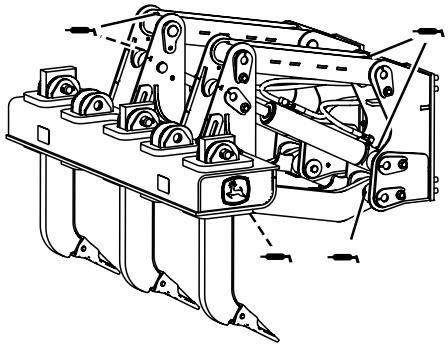
T133718B —UN—07SEP00

1— Winch Oil Dipstick

VD76477,00013C7 -19-23MAR15-1/1

Grease Ripper—If Equipped

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



TX1032902 —UN—05DEC07

12 Points Total; 6 Per Side

KH31969,0000088 -19-05DEC07-1/1

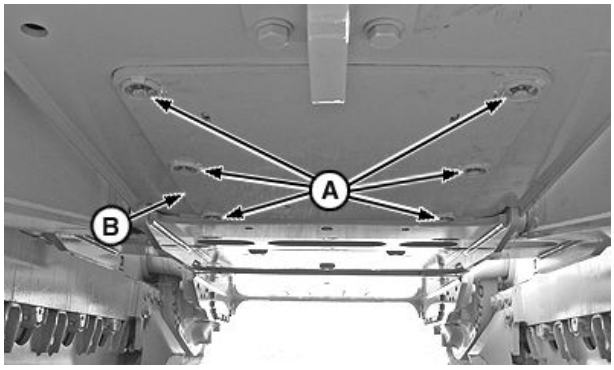
Change Engine Break-In Oil and Filter

1. Run engine to warm oil. Stop engine.
2. Remove cap screws (A) and remove oil pan access cover (B) (located below engine).
3. Drain oil.
   a. If equipped with environmental drain valve, remove drain valve cap (C) and attach a hose to drain valve. Route the drain hose into a container and open drain valve. Dispose of waste properly.
   b. If not equipped with environmental drain valve, remove drain plug and allow oil to drain into a container. Dispose of waste properly.
4. Install drain plug or drain valve cap, if equipped.
5. Turn engine oil filter (F) counterclockwise to remove.
6. Apply thin film of oil to gasket of new filter.
7. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
8. Tighten 1/2 turn more.
9. Remove fill tube cap (G). Fill engine with oil at fill tube. See Diesel Engine Oil. (Section 3-1.)

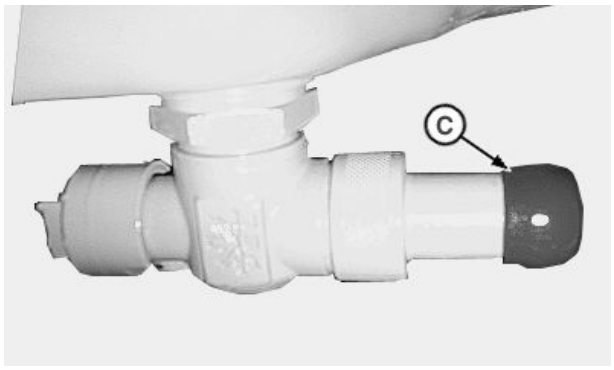
Specification	
Engine Oil (Including Filter)—Capacity	27.5 L 7.3 gal

10. Install fill tube cap and start engine.

    Engine oil pressure indicator on monitor must go out within 15-20 seconds. If not, stop engine immediately and find the cause.
11. After running engine for 2 minutes, stop engine. Check oil level.
12. Check for leaks around filter and drain plug. Tighten only enough to stop leaks.
13. Install oil pan access cover.

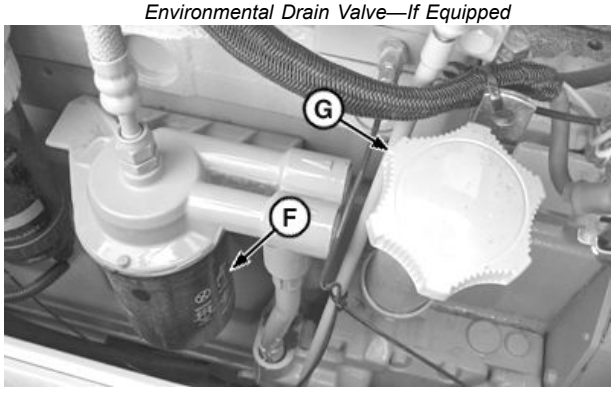


TX1012018A —UN—13SEP06



TX1012022A —UN—16JAN07

Environmental Drain Valve—If Equipped



TX1011954A —UN—13SEP06

A—Cap Screw (6 used)
B—Access Cover
C—Drain Valve Cap
F—Engine Oil Filter
G—Fill Tube Cap

VD76477,000103B -19-09NOV10-1/1

Check Final Drive Oil Level

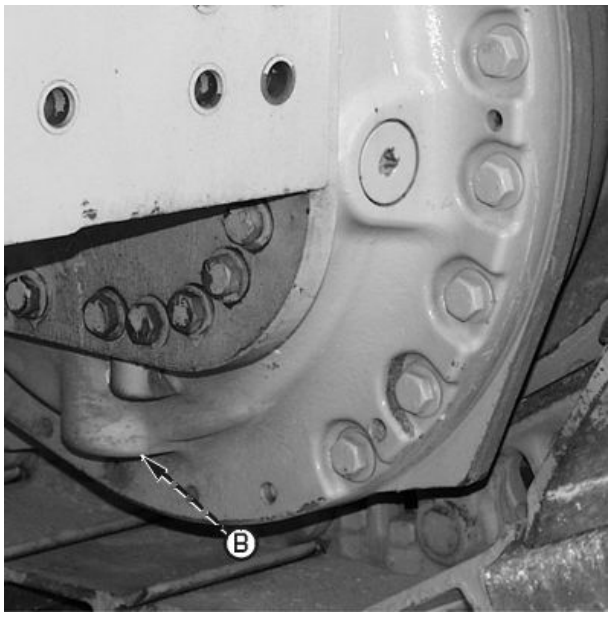
1. Park machine on a level surface so that final drive oil drain plug (B) is at bottom of sprocket and turn engine OFF.
2. Remove final drive oil check and fill plug (A). Oil MUST be within 13 mm (0.5 in.) of bottom of fill port.

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

3. Add oil if needed. See Final Drive and Winch Oil. (Section 3-1.)
4. Install check and fill plug.
5. Repeat procedure for other final drive.

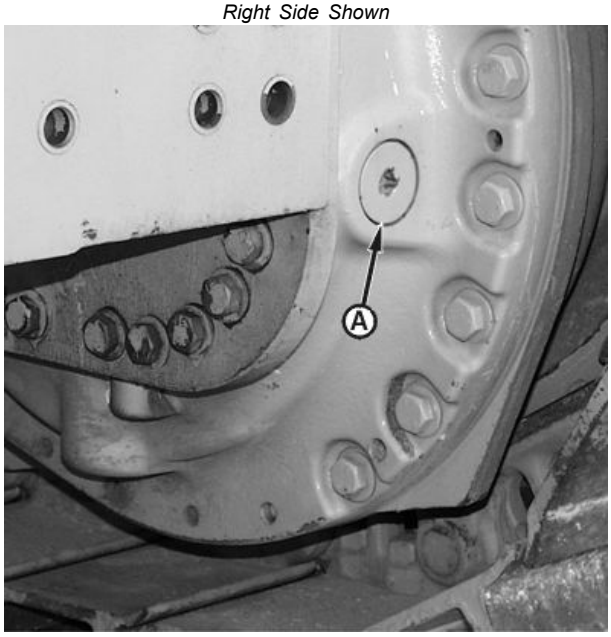
A—Final Drive Oil Check and Fill Plug (2 used, 1 per side)

B—Final Drive Oil Drain Plug (2 used, 1 per side)



T133337C —UN—23AUG00

Right Side Shown

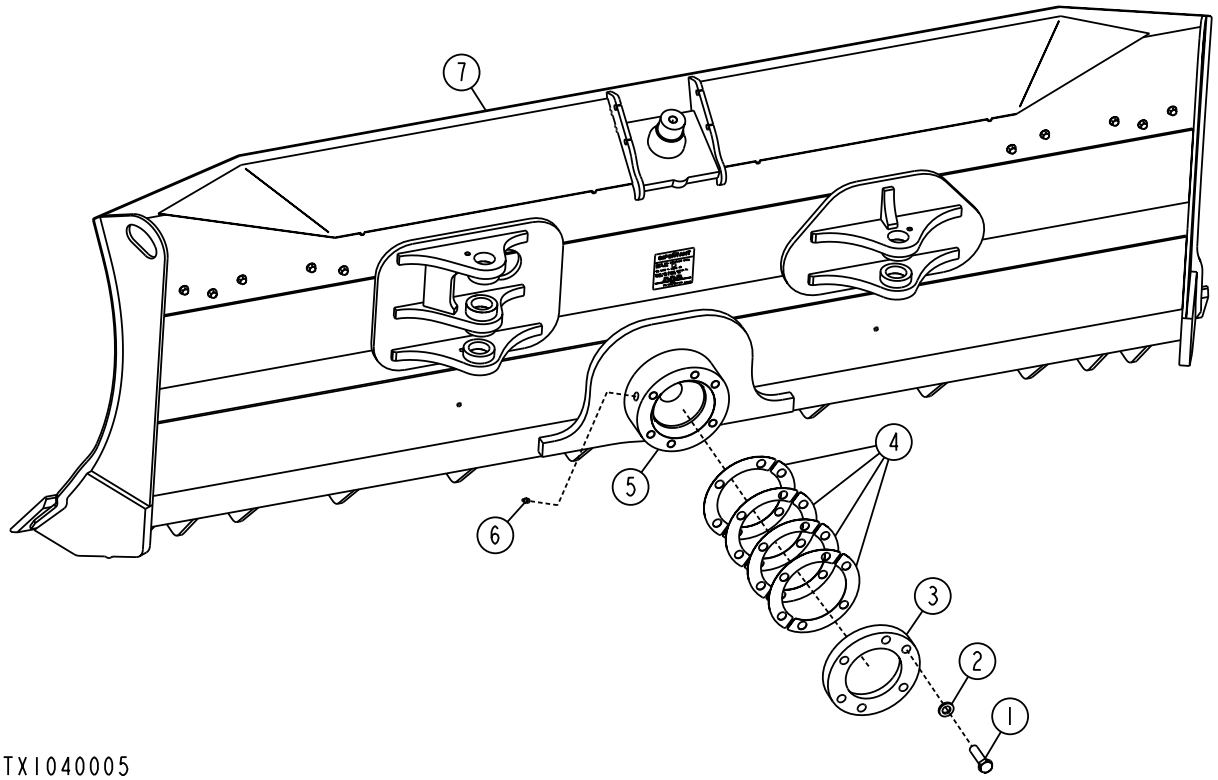


T133337B —UN—23AUG00

Right Side Shown

OUT4001,0000295 -19-12MAY16-1/1

Blade Pivot Shim Adjustment (—XXXXXX)



TX1040005 —UN—02JUN10

1— Cap Screw (6 used)
2— Washer (6 used)
3— Socket Retainer
4— Shim (4 included)
5— Socket
6— Lubrication Fitting
7— Blade

1. Park machine on level surface. Lower blade to ground.
2. Remove cap screws (1) and washers (2) from socket retainer (3). Remove shims (4).
3. Install ball socket retainers without shims. Measure gap, remove ball socket retainers.
4. Install enough shims to fill gap, plus one extra shim.

NOTE: DO NOT USE ANTISEIZE on these cap screws.

5. Install ball socket retainers. Dip threads of socket cap screws in clean engine oil and install socket cap screws to blade ball. Tighten pivot cap screws to specification.

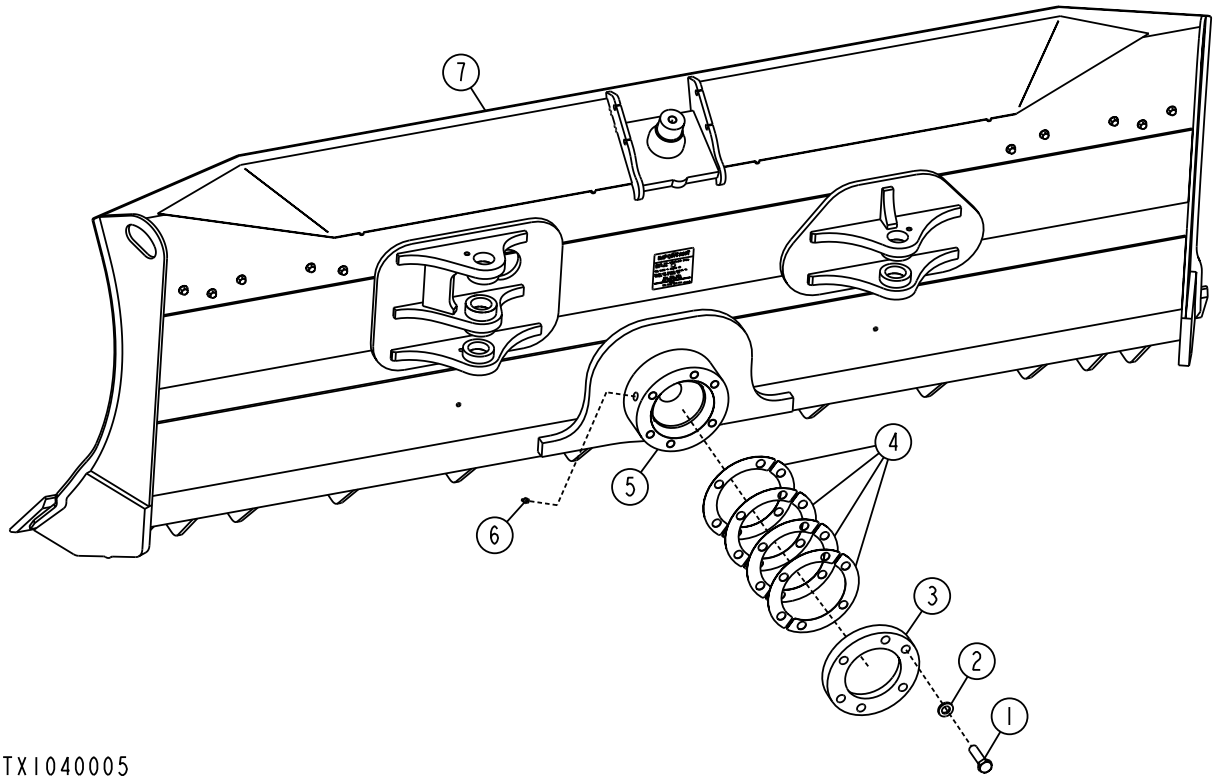
Specification	
Socket Retainer Cap Screws—Torque	500 N·m 370 lb-ft

NOTE: There should be some play in the ball and socket joint.

6. Check to ensure the ball and socket joint is bound.

MB60223,0000110 -19-23SEP09-1/1

Blade Pivot Shim Adjustment (XXXXXX—)



1— Cap Screw (6 used)
2— Washer (6 used)
3— Socket Retainer
4— Shim (4 included)
5— Socket
6— Lubrication Fitting
7— Blade

1. Park machine on level surface. Lower blade to ground.
2. Remove cap screws (1) and washers (2) from socket retainer (3). Remove shims (4).
3. Install ball socket retainers without shims. Measure gap, remove ball socket retainers.
4. Install enough shims to fill gap, plus one extra shim.

NOTE: DO NOT USE ANTISEIZE on these cap screws.

5. Install ball socket retainers and install socket cap screws to blade ball. Tighten pivot cap screws to specification.

Specification

Socket Retainer Cap Screws—Torque	490 N·m 361 lb-ft

NOTE: There should be some play in the ball and socket joint.

6. Check to ensure the ball and socket joint is bound.

MB60223,0000035 -19-23SEP09-1/1

Take Engine Oil Sample

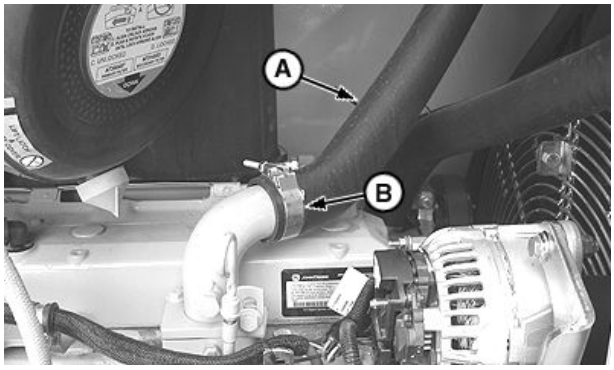
See your authorized dealer.

OUT4001,000039B -19-14MAR12-1/1

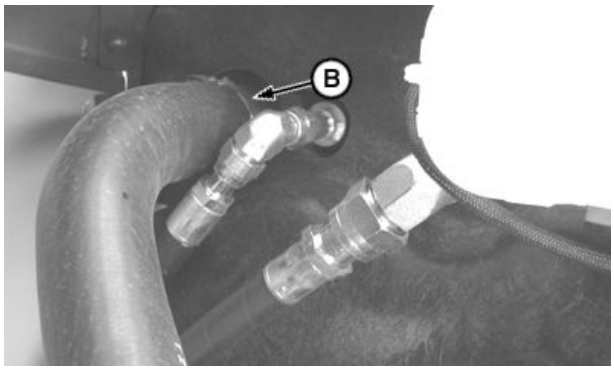
Check Air Intake Hose

1. Check engine air intake hose (A) for cracks.
2. Check hose clamps (B). Tighten if necessary.

A—Engine Air Intake Hose **B—Hose Clamp (2 used)**



TX1011879A —UN—06SEP06



TX1011881A —UN—06SEP06

VD76477,000103C -19-06SEP06-1/1

Replace Primary Fuel Filter

1. Thoroughly clean primary fuel filter and water separator assembly and surrounding area.
2. Connect a drain line to filter drain adapters and drain all fuel from filters.
3. Firmly grasp the retaining ring and rotate it counterclockwise 1/4 turn. Remove ring with filter element (1).
4. Inspect filter mounting base for cleanliness. Clean as required.
5. Remove water separator bowl (2). Drain and clean separator bowl. Dry with compressed air.
6. Install water separator bowl onto new filter element. Tighten securely.

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

7. Thoroughly inspect filter base seal ring. Replace as needed.

NOTE: Fill the new filter with fuel prior to installation.

8. Install new filter element onto mounting base and position element using a slight rocking motion. Be sure element is properly indexed on mounting base.
9. Install retaining ring onto mounting base and tighten about 1/3 turn until ring “snaps” into the detent. DO NOT overtighten the retaining ring.

TX1011949A —UN—13SEP06

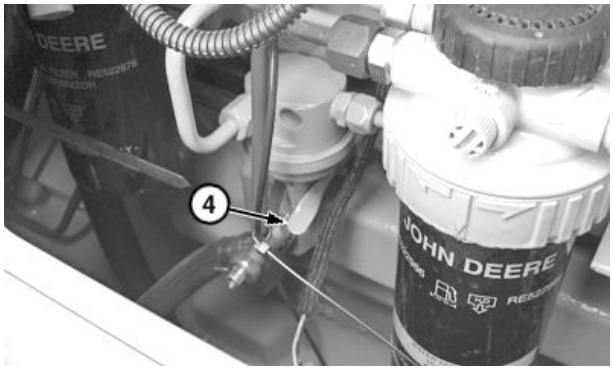
1— Filter Element
2— Separator Bowl
3— Bleed Screw

10. Open bleed screw (3) two full turns by hand.

VD76477,000103D -19-11SEP06-1/2

11. Pump the mechanical pump (4) on the engine until a noticeable amount of fuel and air comes out of vent opening. Continue pumping and close vent screw when fuel starts to flow.
12. Pump the mechanical pump several times until resistance is felt. Continue pumping and open air bleed vent screw again.
13. Close air bleed vent screw and pump the mechanical pump several times until resistance is felt again.

4— Mechanical Pump



TX1011950A —UN—13SEP06

VD76477,000103D -19-11SEP06-2/2

Replace Final Fuel Filter

NOTE: Drain waste into a container. Dispose of waste properly.

1. Turn retaining ring (A) counterclockwise and remove filter (B). Allow sediment to drain into a container.
2. Remove drain knob (C) from filter and install on new filter.
3. Clean filter base (D).

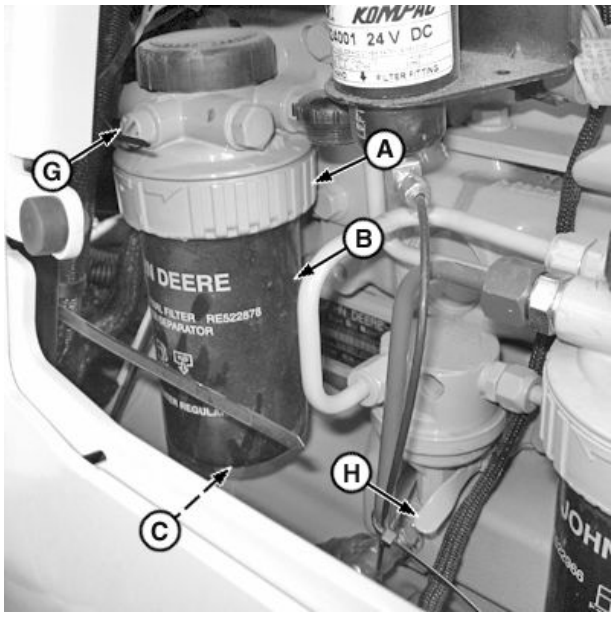
NOTE: Do not attempt to turn filter element onto base.

4. Install new filter by aligning vertical locators (F) into slots (E) on filter base. Push filter up firmly until filter snaps against base.
5. Turn retaining ring clockwise onto filter base until retaining ring clicks tightly into place.
6. Turn bleed screw (G) counterclockwise to loosen.
7. Operate primer lever (H) until fuel flow from bleed screw is free of air bubbles.

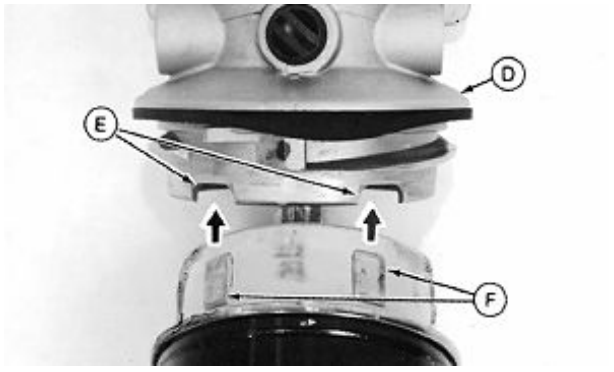
NOTE: If there is no fuel flow, push primer lever up and turn crankshaft using start motor to reposition camshaft. Repeat step 7.

8. Tighten bleed screw.
9. Push primer lever up as far as possible.

A—Retaining Ring
B—Filter
C—Drain Knob
D—Filter Base
E—Slots
F—Vertical Locators
G—Bleed Screw
H—Primer Lever



TX1012009A —UN—13SEP06



T7896AJ —UN—25NOV92

VD76477,0001055 -19-11SEP06-1/1

Check Battery Electrolyte Level and Terminals

CAUTION: Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

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

Always remove grounded (–) battery clamp first and replace it last.

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

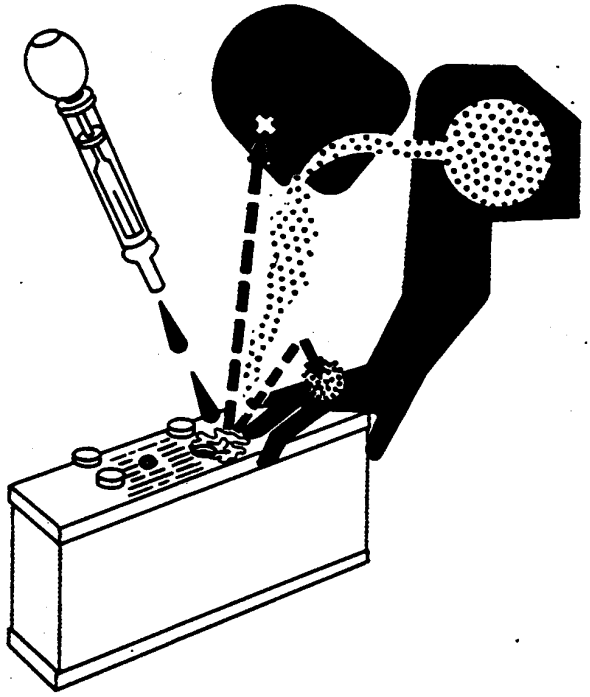
- **Filling batteries in a well-ventilated area.**
- **Wearing eye protection and rubber gloves.**
- **Avoiding breathing fumes when electrolyte is added.**
- **Avoiding spilling or dripping electrolyte**
- **Using proper jump start procedure.**

If you spill acid on yourself:

1. **Flush your skin with water.**
2. **Apply baking soda or lime to help neutralize the acid.**
3. **Flush your eyes with water for 10—15 minutes. Get medical attention immediately.**

If acid is swallowed:

1. **Drink large amounts of water or milk.**
2. **Then drink milk of magnesia, beaten eggs, or vegetable oil.**
3. **Get medical attention immediately.**



TS203 —UN—23AUG88

1. Remove hold-down clamps.
2. Remove battery covers.
3. Clean all excess dirt or debris from top of batteries before removing cell caps.

Continued on next page

TX,9015,RB21 -19-05OCT07-1/2

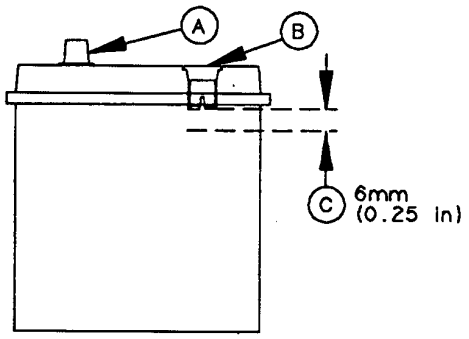
IMPORTANT: During freezing weather, batteries must be charged after water is added to prevent battery freezing. Charge battery using a battery charger or by running the engine.

4. Fill each cell to within specified range with distilled water. DO NOT overfill.

CAUTION: Battery gas can explode from sparks of battery causing personal injury. Always remove grounded (—) battery clamp first and replace it last.

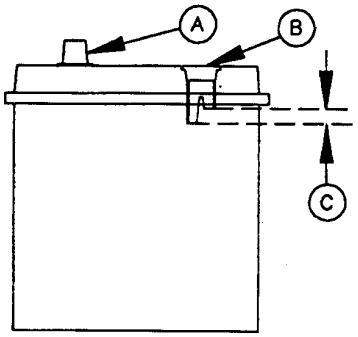
5. Disconnect battery clamps, grounded clamp first.
6. Clean battery terminals (A) and clamps with a stiff brush.
7. Apply lubricating grease around battery terminal base only.
8. Install and tighten clamps, grounded clamp last.
9. Install hold-down clamps.

A—Battery Terminal
B—Fill Tube
C—Electrolyte Level Range



T6996DB —UN—10FEB89

Single Level Fill Tube Application



T6996DA —UN—10FEB89

Dual Level Fill Tube Application

TX,9015,RB21 -19-05OCT07-2/2

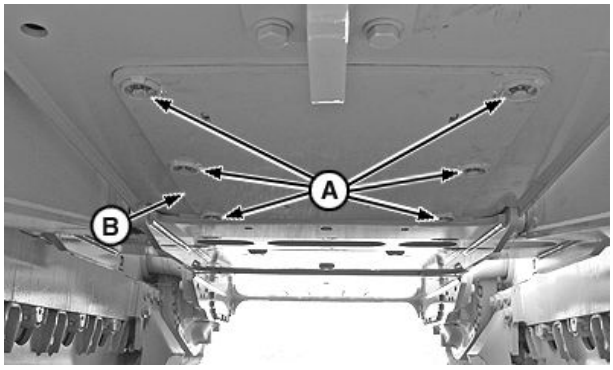
Change Engine Oil and Filter

1. Run engine to warm oil. Stop engine.
2. Remove cap screws (A) and remove oil pan access cover (B) (located below engine).
3. Drain oil.
   a. If equipped with environmental drain valve, remove drain valve cap (C) and attach a hose to drain valve. Route the drain hose into a container and open drain valve. Dispose of waste properly.
   b. If not equipped with environmental drain valve, remove drain plug and allow oil to drain into a container. Dispose of waste properly.
4. Install drain plug or drain valve cap, if equipped.
5. Turn engine oil filter (F) counterclockwise to remove.
6. Apply thin film of oil to gasket of new filter.
7. Install new filter. Turn filter clockwise by hand until gasket touches mounting surface.
8. Tighten 1/2 turn more.
9. Remove fill tube cap (G). Fill engine with oil at fill tube. See Diesel Engine Oil. (Section 3-1.)

Specification	
Engine Oil (Including Filter)—Capacity	27.5 L 7.3 gal

10. Install fill tube cap and start engine.

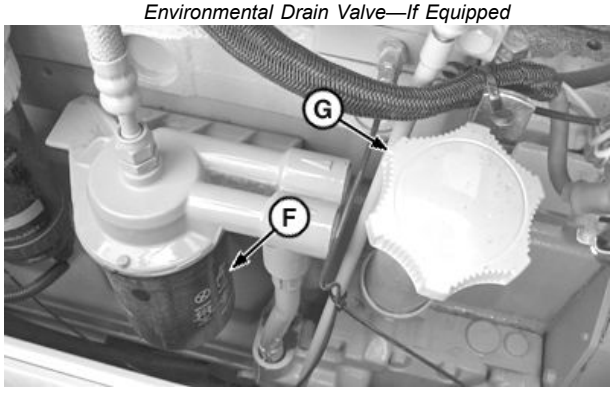
    Engine oil pressure indicator on monitor must go out within 15-20 seconds. If not, stop engine immediately and find the cause.
11. After running engine for 2 minutes, stop engine. Check oil level.
12. Check for leaks around filter and drain plug. Tighten only enough to stop leaks.
13. Install oil pan access cover.



TX1012018A —UN—13SEP06

TX1012022A —UN—16JAN07

Environmental Drain Valve—If Equipped



TX1011954A —UN—13SEP06

A—Cap Screw (6 used)
B—Access Cover
C—Drain Valve Cap
F—Engine Oil Filter
G—Fill Tube Cap

VD76477,0001056 -19-09NOV10-1/1

Change Winch Oil Filter—If Equipped

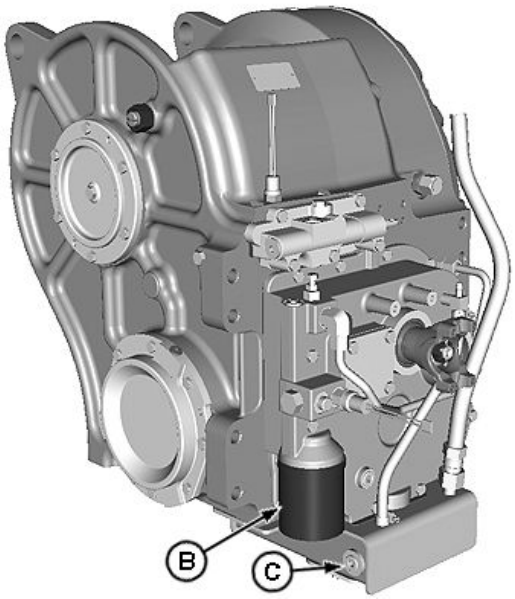
1. The location (A) of the winch oil filter is on the right side between winch and crawler.
2. Remove three cap screws from oil filter access cover.
3. Remove oil filter access cover.

NOTE: The filter canister has a recessed 1/2 in. drive on bottom to assist removal of filter.

4. Remove filter (B) by turning counterclockwise.
5. Apply a thin film of oil to gasket of new filter.
6. Install new filter.
7. Install oil filter access cover with three cap screws.

A—Winch Oil Filter Location
B—Filter
C—Drain Plugs

TX1024261A —UN—25MAY07



TX1024315A —UN—25MAY07

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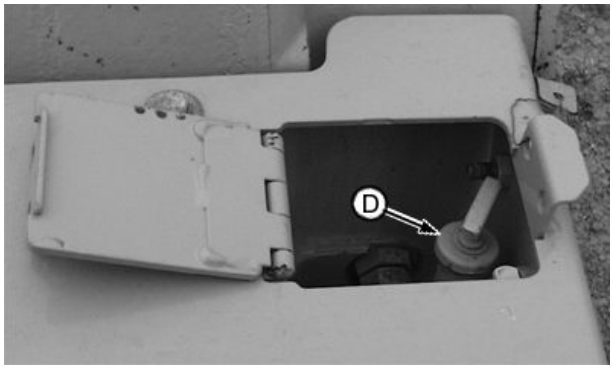
VD76477,00013BF -19-25MAY07-1/2

8. Run engine at slow idle. Check oil level on dipstick. Oil must be between ADD and FILL marks on dipstick. Add oil through dipstick fill port (D) if necessary.
9. Check oil level again.

D—Dipstick Fill Port



T133718D —UN—29AUG02

VD76477,00013BF -19-25MAY07-2/2

Take Fluid Samples

See your authorized dealer for taking the following fluid samples:

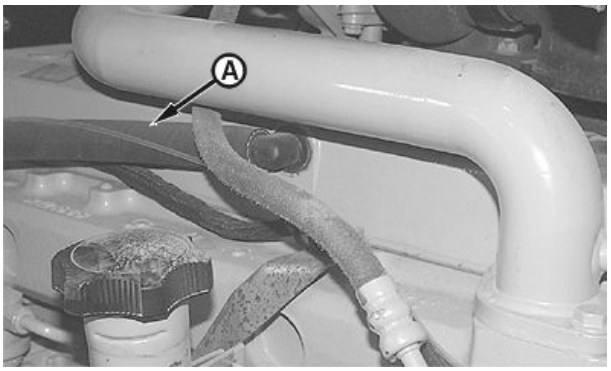
- Hydraulic Oil
- Transmission Oil
- Coolant
- Diesel Fuel
- Final Drive

CC28724,0000001 -19-29JUN09-1/1

Clean Engine Crankcase Ventilation Tube

Remove engine crankcase ventilation tube (A). Clean and install.

A—Engine Crankcase Ventilation Tube



T133189B —UN—24AUG00

VD76477,000103E -19-23JAN07-1/1

Change Final Drive Oil

1. Park machine on a level surface so that final drive oil drain plug (B) is at bottom of sprocket and turn engine OFF.
2. Remove final drive oil check and fill plug (A).
3. Remove final drive oil drain plug.

NOTE: Drain waste into a container. Dispose of waste properly.

4. Drain all oil. Allow oil to drain into a container.

Specification	
Final Drive Oil (Each Side) (S.N. — 275597)—Capacity	13.2 L 3.5 gal
Final Drive Oil (Each Side) (S.N. 275598—)—Capacity	10.9 L 2.9 gal

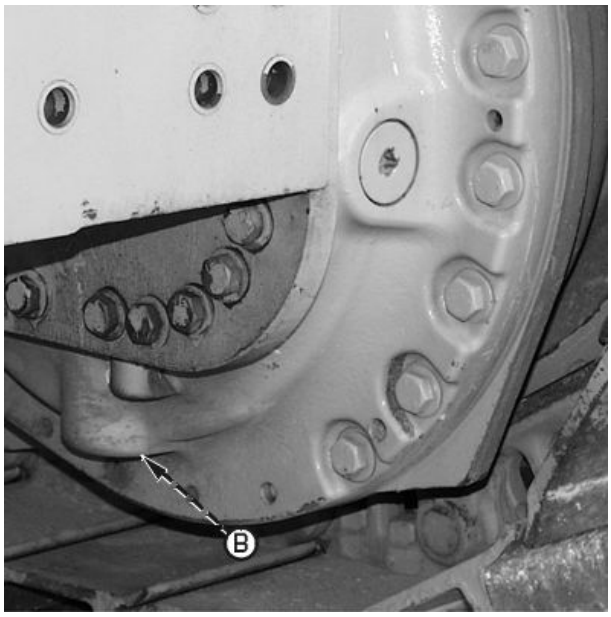
5. Install drain plug.

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

6. Fill housing with oil until oil flows from fill port. See Final Drive and Winch Oil. (Section 3-1.)
7. Install check and fill plug.
8. Repeat procedure for other final drive.

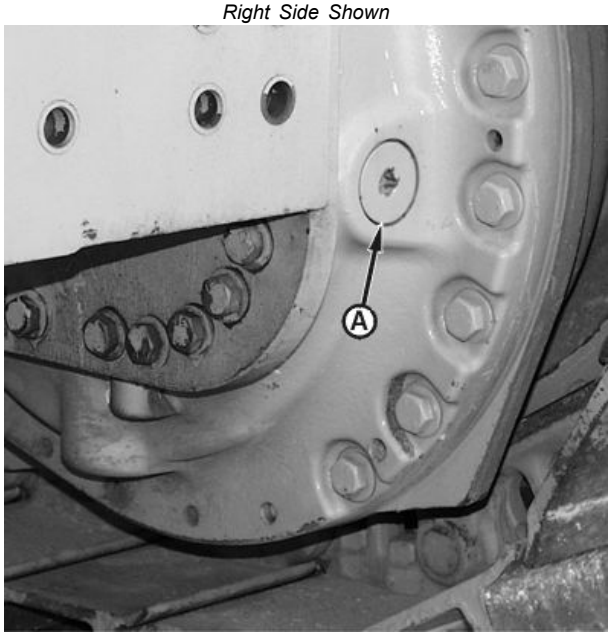
A—Final Drive Oil Check and Fill Plug (2 used, 1 per side)

B—Final Drive Oil Drain Plug (2 used, 1 per side)



T133337C —UN—23AUG00

Right Side Shown



T133337B —UN—23AUG00

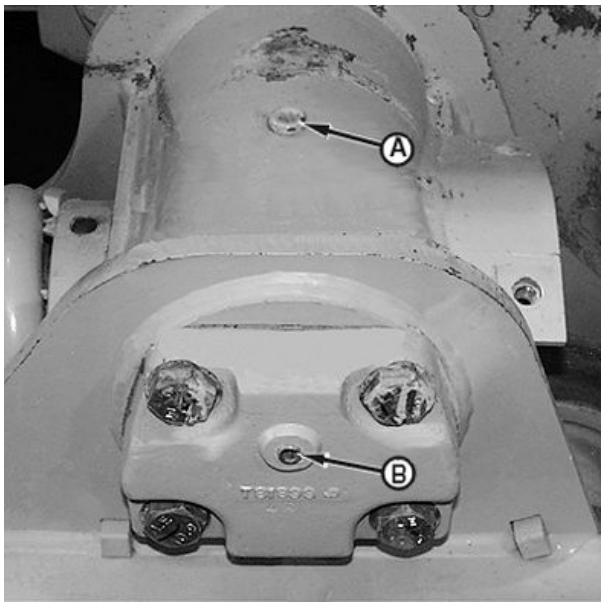
Right Side Shown

OUT4001,0000296 -19-20OCT17-1/1

Check Track Frame Pivot Oil Level

1. Park the machine on level surface.
2. Remove check plug (B) from track frame pivot cover. Oil level should be at bottom edge of check port.
3. If needed, add oil through fill port (A) until oil flows from check port.
4. Install check plug and fill plug.
5. Repeat steps 2—4 for other side.

A—Fill Plug **B—Check Plug**



T133454B —UN—28AUG00

Left Side Shown

CED,OUO1079,568 -19-17AUG00-1/1

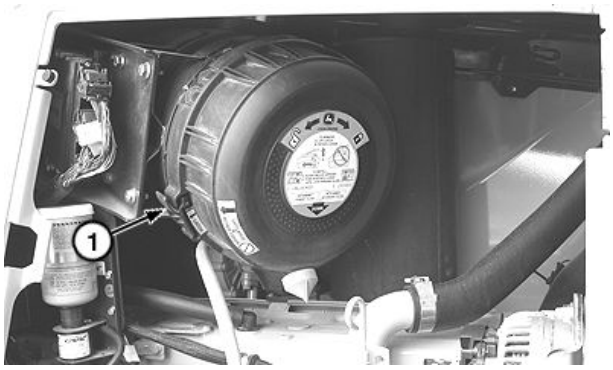
Replace Air Cleaner Elements

1. Lift latch (1) and rotate cover to remove.
2. Remove primary element (2).
3. Clean air cleaner housing.
4. Remove secondary element (3).

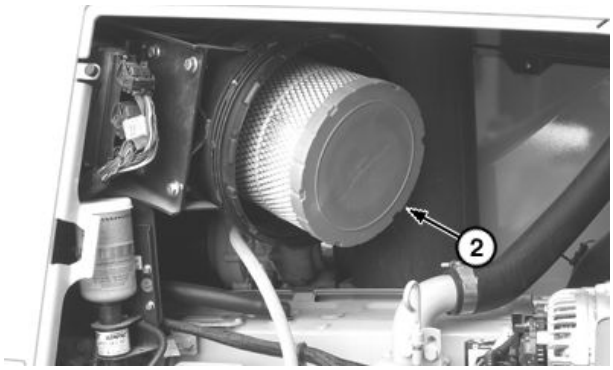
IMPORTANT: Do not install secondary element backward.

5. Install new elements. Make sure elements are fully seated into housing.
6. Align unlock arrows on cover with arrows on housing.
7. Push and rotate cover until lock arrows align.

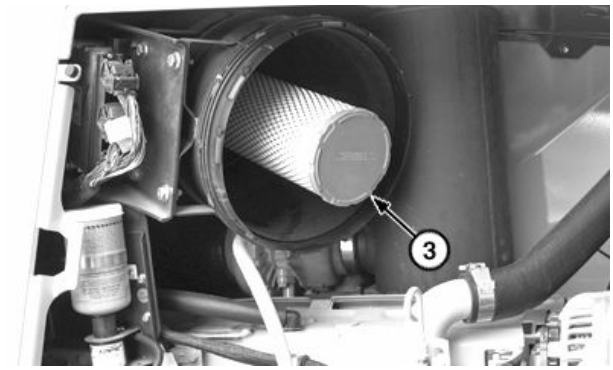
1— Latch
2— Primary Element
3— Secondary Element



TX1011887A —UN—06SEP06



TX1011890A —UN—06SEP06



TX1011894A —UN—06SEP06

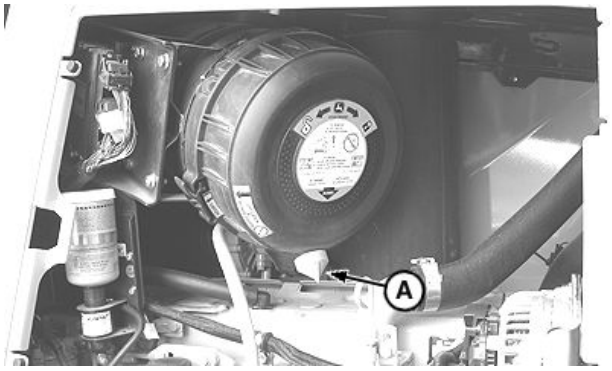
VD76477,000103F -19-06SEP06-1/1

Replace Air Cleaner Dust Unloader Valve

NOTE: A properly functioning air cleaner dust unloader valve will suck closed when engine is operated faster than 1/3 speed. Replace a dust unloader valve that is dry, cracked, or does not function properly.

1. Remove dust unloader valve (A). Pry valve collar from mounting flange on air cleaner housing.
2. Install new dust unloader valve. Stretch valve collar over mounting flange on air cleaner housing. Ensure that there are no gaps between valve collar and mounting flange.

A—Dust Unloader Valve



TX1011877A —UN—06SEP06

VD76477,0001040 -19-06SEP06-1/1

Change Winch Oil and Filter—If Equipped

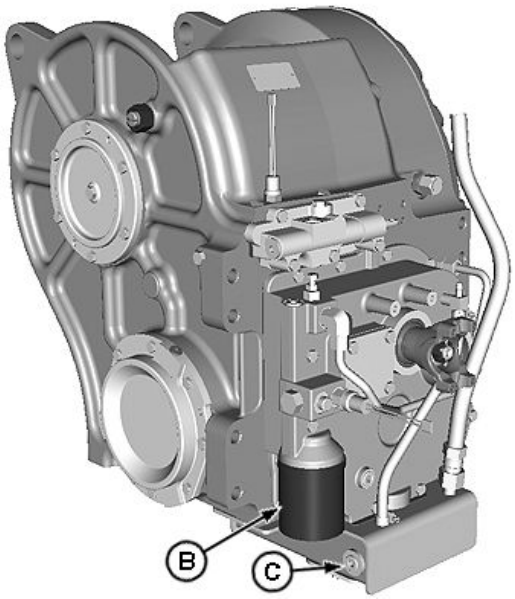
The location (A) of the winch oil filter is on the right side between winch and crawler .

1. Remove three cap screws from oil filter access cover.
2. Remove oil filter access cover.

NOTE: The filter canister has a recessed 1/2 in. drive on bottom to assist removal of filter.

3. Remove filter (B) by turning counterclockwise.
4. Remove drain plugs (C). Allow oil to drain into container. Dispose of waste properly.
5. Install drain plugs.
6. Apply a thin film of oil to gasket of new filter.
7. Install new filter.

TX1024261A —UN—25MAY07



TX1024315A —UN—25MAY07

A—Winch Oil Filter Location
B—Filter
C—Drain Plugs

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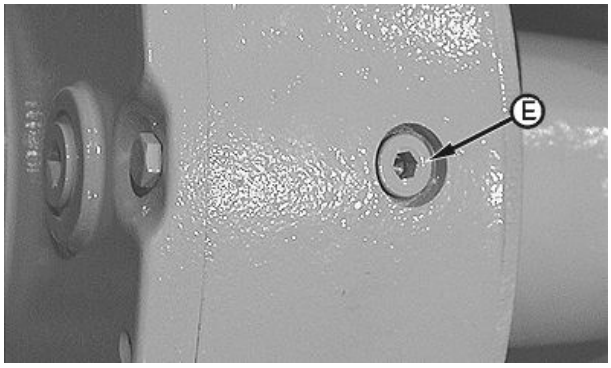
VD76477,00013C0 -19-25MAY07-1/2

8. Fill winch oil reservoir through fill port located at top of winch (E) with 34 L (9 gal) of oil. See Final Drive and Winch Oil. (Section 3-1.)
9. Add remaining 4 L (1 gal) of oil through dipstick fill port (D).
10. Run engine at slow idle. Check oil level on dipstick. Oil must be between ADD and FILL marks on dipstick. Add oil if necessary. Check oil level again.
11. Install oil filter access cover with three cap screws.

D—Dipstick Fill Port **E—Fill Port**



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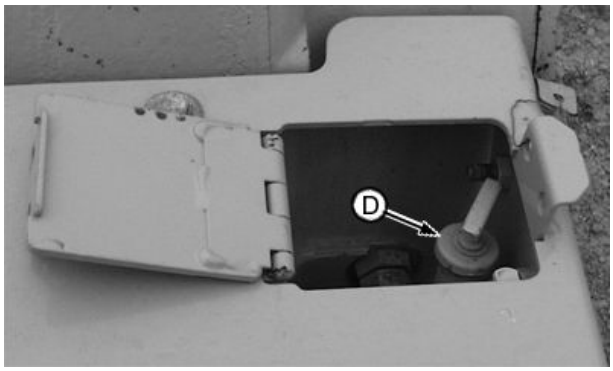


T133718D —UN—29AUG02

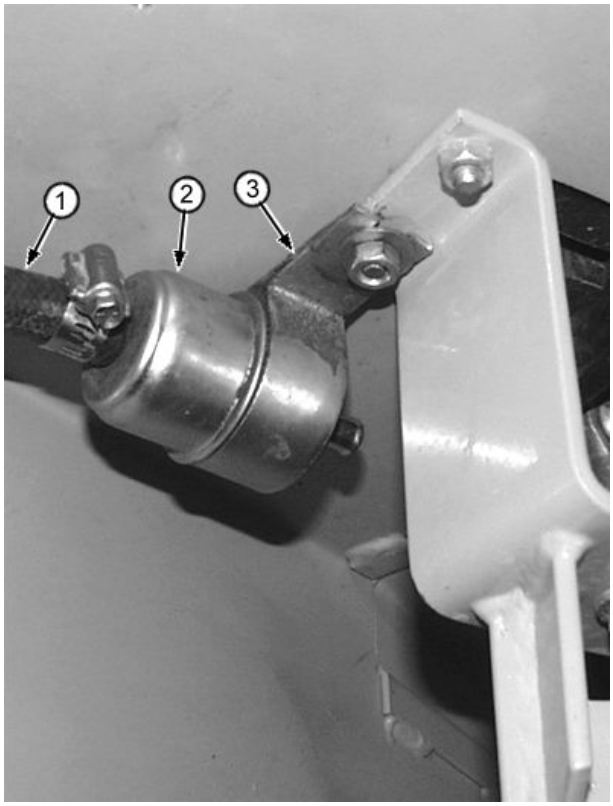
VD76477,00013C0 -19-25MAY07-2/2

Clean or Replace Winch Hydraulic Breather Filter—If Equipped

The breather filter is located in the right service compartment.

1. Loosen clamp cap screw.
2. Remove hose (1) from breather filter (2).
3. Using compressed air, clean filter. If filter can not be cleaned, replace filter.
4. Install hose end on filter making sure arrow points in same direction (toward reservoir).
5. Tighten clamp (3) with cap screw.

1— Breather Hose
2— Breather Filter
3— Clamp



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CED,OUO1047,4 -19-23JAN07-1/1

Check Coolant

See Check Coolant. (Section 3-3.)

OUT4001,0000365 -19-28JUL14-1/1

Adjust Engine Valve Lash (Clearance)

See your authorized dealer.

CED,OUO1032,1136 -19-14JAN08-1/1

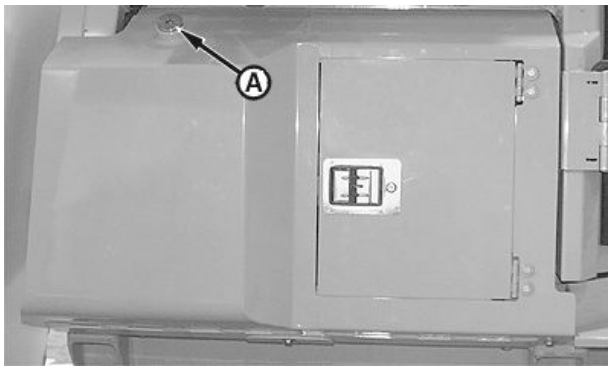
Change Hydraulic Oil and Filter

IMPORTANT: DO NOT operate engine without oil in reservoir.

NOTE: The hydraulic reservoir, filter, and drain are located on right side of machine.

1. Remove hydraulic reservoir fill cap (A).

A—Hydraulic Reservoir Fill Cap



T133179C —UN—23AUG00

VD76477,0001041 -19-11FEB11-1/3

2. Remove access cover (B). Open service door. Remove nut (C) and washer (D). Remove access cover.

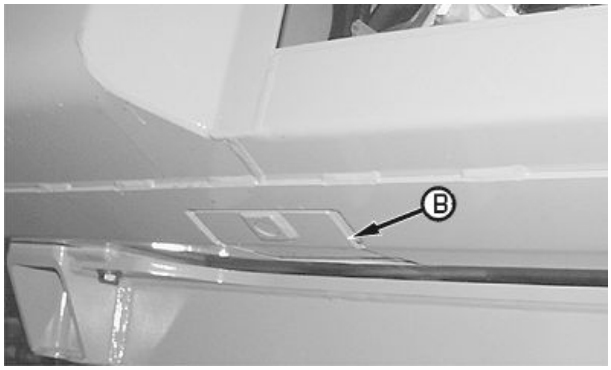
NOTE: Drain waste into a container. Dispose of waste properly.

3. Attach hose to drain valve (E). Route hose into a container. Open drain valve and drain oil. Dispose of waste properly.

Specification

Hydraulic Oil Reservoir—Capacity..... 51.0 L (13.5 gal)

B—Access Cover
C—Nut
D—Washer
E—Drain Valve



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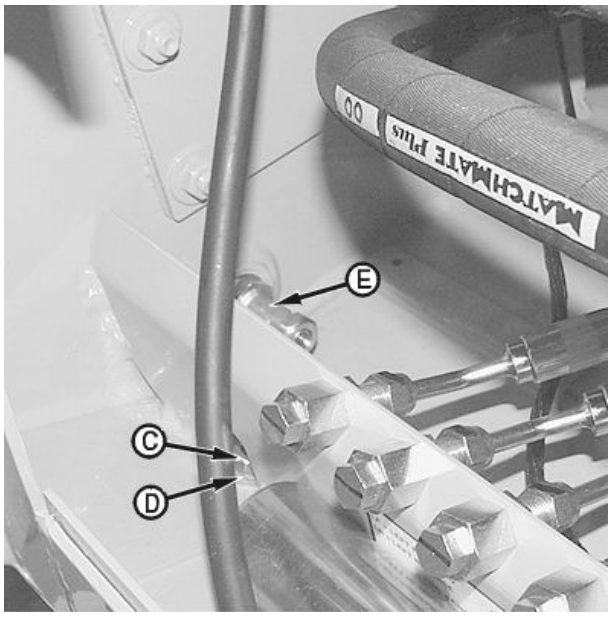

T133194B —UN—17NOV00

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VD76477,0001041 -19-11FEB11-2/3

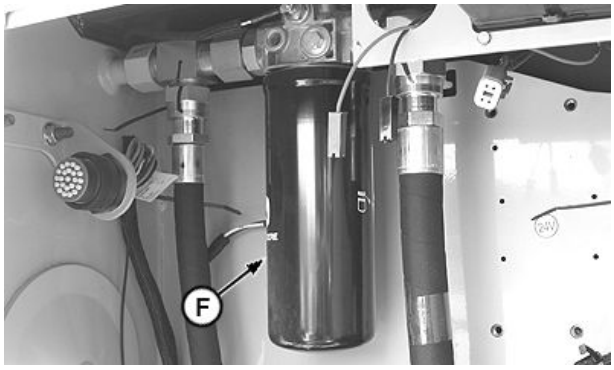
4. Remove hydraulic oil filter element (F) by turning counterclockwise.
5. Apply thin film of oil to gasket of new filter element.
6. Install new filter element. Turn filter element clockwise by hand until gasket touches mounting surface.
7. Tighten additional 1/2 turn.
8. Fill hydraulic reservoir with oil. See Transmission and Hydraulic Oil. (Section 3-1.)

Specification

Hydraulic Oil Reservoir—Capacity..... 51.0 L 13.5 gal

9. Check O-ring on fill cap and replace if necessary. Install fill cap.
10. Start engine and run for 2 minutes. Stop engine and check for leaks around filter base. Tighten filter element only enough to stop leaks.
11. Check oil level at hydraulic reservoir sight tube (G). Oil level must be between the ADD and FULL marks. Add oil if necessary.

F—Hydraulic Oil Filter Element



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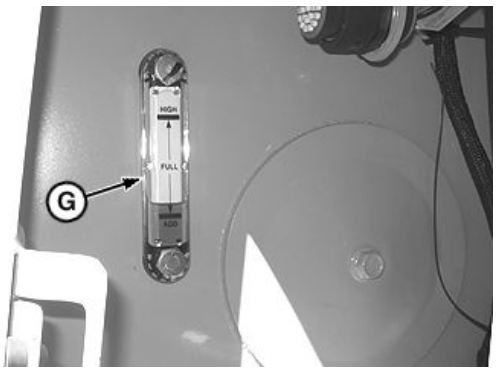
G—Hydraulic Reservoir Sight Tube



TX1011901A —UN—06SEP06

VD76477,0001041 -19-11FEB11-3/3

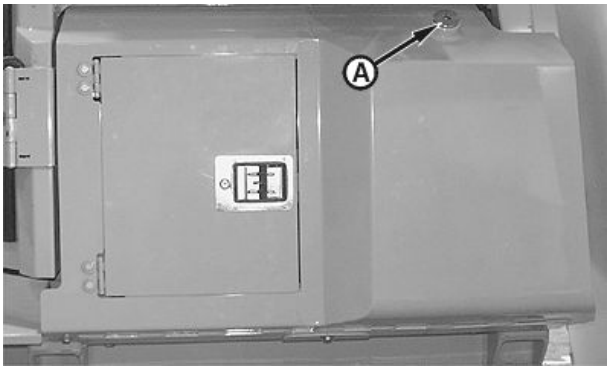
Change Transmission Oil and Filter

IMPORTANT: DO NOT operate engine without oil in reservoir.

NOTE: The transmission reservoir, filter, and drain are located on left side of machine.

1. Remove transmission reservoir fill cap (A).

A—Transmission Reservoir Fill Cap



T133181C —UN—23AUG00

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VD76477,0001052 -19-30AUG10-1/3

2. Remove access cover (B). Open service door. Remove nut (C) and washer (D). Remove access cover.

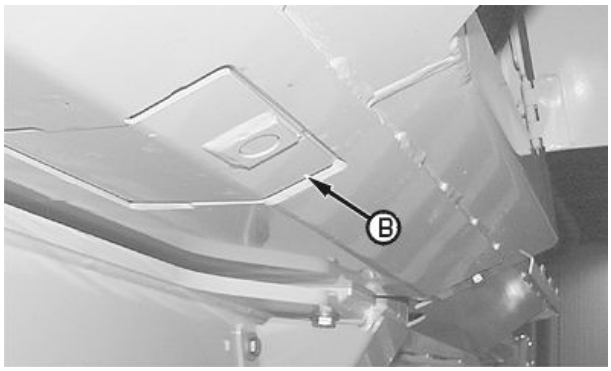
NOTE: Drain waste into a container. Dispose of waste properly.

3. Attach hose to drain valve (E). Route hose into a container. Open drain valve and drain oil. Dispose of waste properly.

Specification

Transmission Oil
Reservoir—Capacity..... 65.0 L
17.2 gal

B—Access Cover
C—Nut
D—Washer
E—Drain Valve



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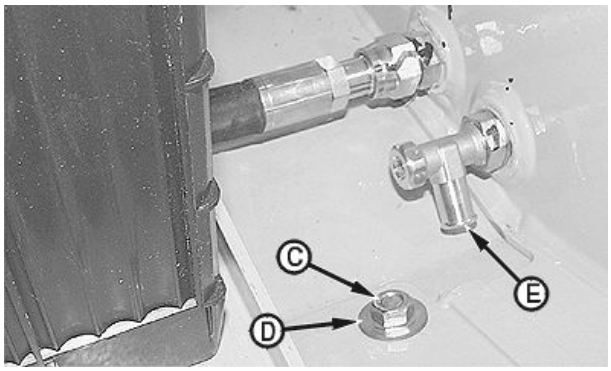

T133195B —UN—17NOV00

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VD76477,0001052 -19-30AUG10-2/3

4. Remove transmission oil filter element (F) by turning counterclockwise.
5. Apply thin film of oil to gasket of new filter element.
6. Install new filter element. Turn filter element clockwise by hand until gasket touches mounting surface.
7. Tighten additional 1/2 turn.
8. Fill transmission reservoir with oil. See Transmission and Hydraulic Oil. (Section 3-1.)

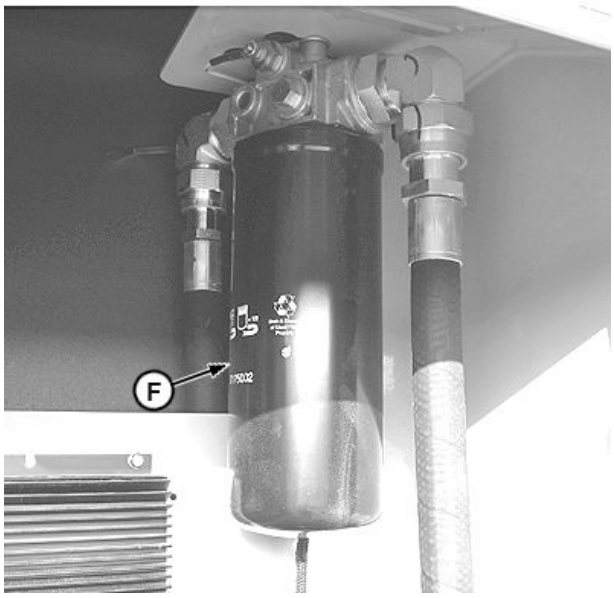
Specification

Transmission Oil Reservoir—Capacity..... 65.0 L
17.2 gal

9. Check O-ring on fill cap and install fill cap.
10. Start engine and run for 2 minutes. Stop engine and check for leaks around filter base. Tighten filter element only enough to stop leaks.
11. Check oil level at transmission reservoir sight tube (G). Oil level must be between the ADD and FULL marks. If necessary, add more oil.

F—Transmission Oil Filter Element

G—Transmission Reservoir Sight Tube



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TX1011995A —UN—13SEP06

VD76477,0001052 -19-30AUG10-3/3

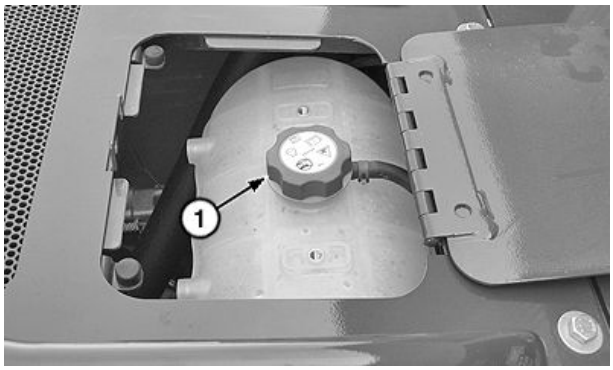
Maintenance—Every 4500 Hours

Replace Engine Crankshaft Dampener

The crankshaft dampener assembly is not repairable and should be replaced every five years or 4500 hours, whichever occurs first, or whenever crankshaft is replaced. See your authorized dealer.

VD76477,0001360 -19-03DEC07-1/1

Drain the Cooling System



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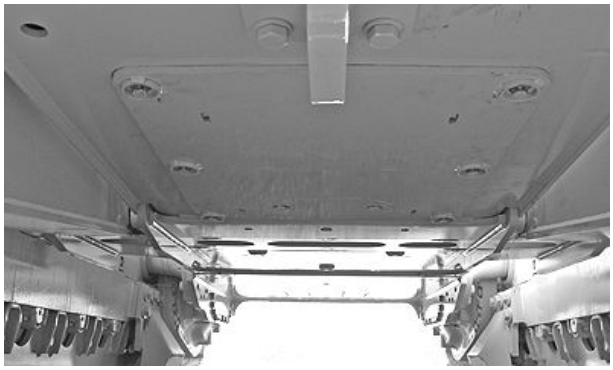
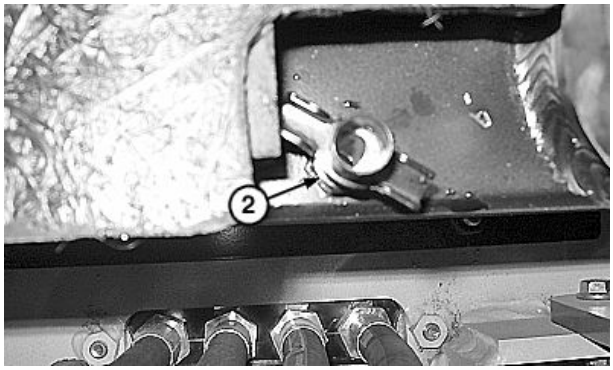


TX1012061A —UN—13SEP06

Access Cover



TX1011941A —UN—08SEP06

⚠ 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: Drain and flush cooling system every 6000 hours using clean water, and refill with new coolant.

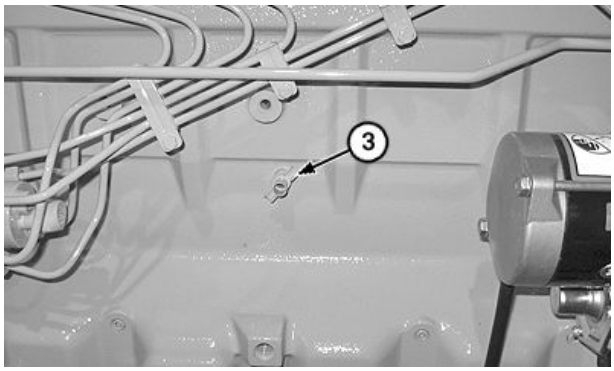
1. Release pressure and then remove surge tank cap (1).
2. Remove access cover under machine.

NOTE: Drain waste into a container. Dispose of waste properly.

3. Open radiator drain valve (2). Drain coolant into a container.

Specification	
Cooling System—Capacity	23.3 L 6.2 gal

4. Open engine block coolant drain valve (3). Drain coolant into a container.
5. Flush system using commercial product.



TX1011942A —UN—13SEP06

1— Surge Tank Cap
2— Radiator Drain Valve
3— Engine Block Coolant Drain Valve

6. Close drain valves.
7. Fill the cooling system. See Fill the Cooling System in this section.
8. Check drain valves for leakage. Tighten only enough to stop leaks.
9. Install access cover.

MB60223,00000F8 -19-14MAR13-1/1

Fill the Cooling System

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.

With the engine cold, coolant level must be between MAX COLD and MIN COLD marks on surge tank (1).

NOTE: John Deere COOL-GARD™ II Pre-Mix is recommended when adding new coolant to cooling system.

Follow directions on container for correct mixture ratio.

If coolant is below MIN COLD mark, add coolant to the surge tank.

If there is no coolant in the surge tank, remove surge tank cap (2) and add coolant.

FREEZING TEMPERATURES: Fill with permanent-type low silicate, ethylene glycol antifreeze (without stop-leak additive) and clean, soft water. Add John Deere COOL-GARD™ II Coolant Extender as required.

Deaeration

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

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.

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.

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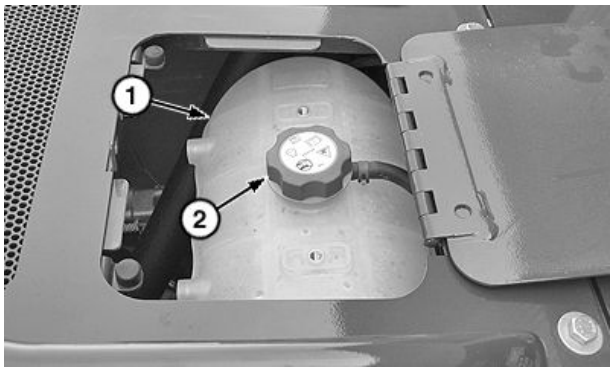
TS281 —UN—15APR13



TX1011923A —UN—08SEP06

1— Surge Tank **2— 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 ensure 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 MAX COLD mark.
6. Install surge tank cap.

MB60223,00000FD -19-14MAR13-1/1

Opening and Closing the Grille

Opening the Grille

1. Remove hose guard cap screw(s) (1) and move hose guard (2) aside.

⚠ CAUTION: Prevent possible injury from falling object. Always inspect grille hinge points at bottom edge of grille before opening grille. If grille hinge points appear damaged, DO NOT remove grille cap screws. See your authorized dealer.

⚠ CAUTION: Prevent possible injury lifting heavy objects. The approximate weight of the standard grille is 43 kg (95 lb). The approximate weight of the heavy-duty grille is 45 kg (99 lb). Use adequate lifting device to move grille.

Grille—Specification

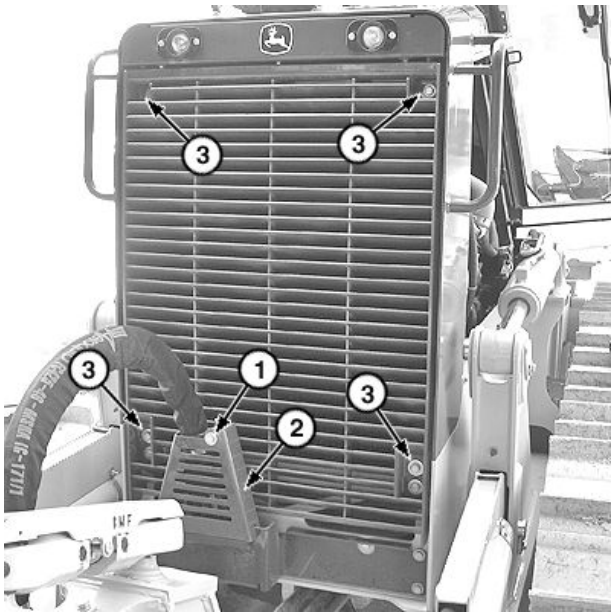
Standard —Weight	43 kg 95 lb
Heavy-Duty —Weight	45 kg 99 lb

2. Remove grille cap screws (3) and tilt the grille forward.

Closing the Grille

1. Tilt the grille into place and install grille cap screws.
2. Move hose guard into position and install hose guard cap screw(s).

1— Hose Guard Cap Screw (1 used on Standard Grille; 3 used on Heavy-Duty Grille)
2— Hose Guard
3— Grille Cap Screw (4 used)



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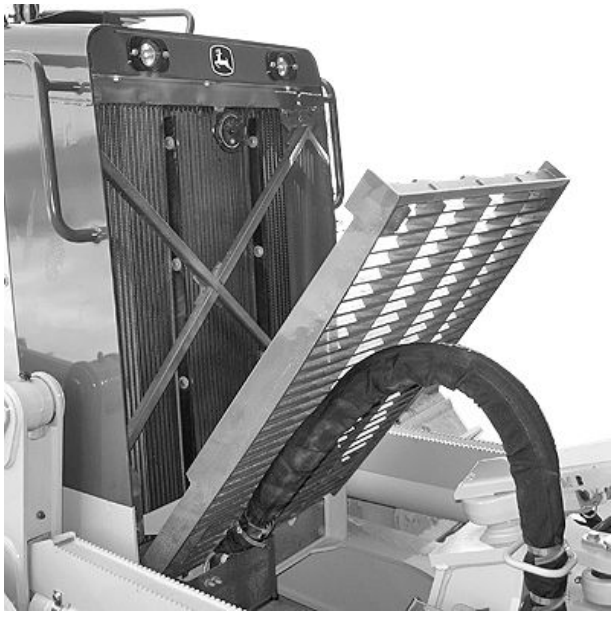

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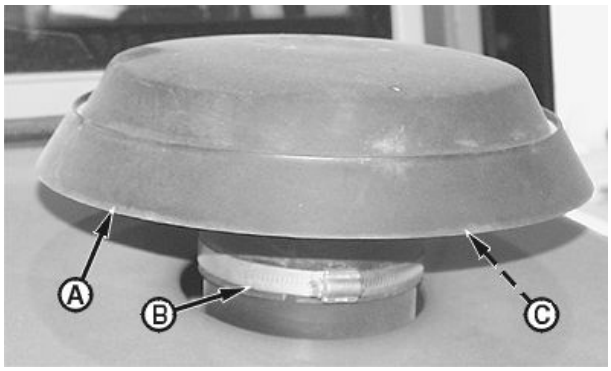
VD76477,000104A -19-07SEP06-1/1

Clean the Engine Air Precleaner Screen

IMPORTANT: The engine air precleaner screen removes only part of the dirt as air goes into the engine. You must still service the air cleaner dust unloader valve and elements regularly.

1. Remove hose clamp (B) and bowl (A).
2. Shake bowl to remove debris from precleaner screen (C).

A—Bowl
B—Hose Clamp
C—Precleaner Screen



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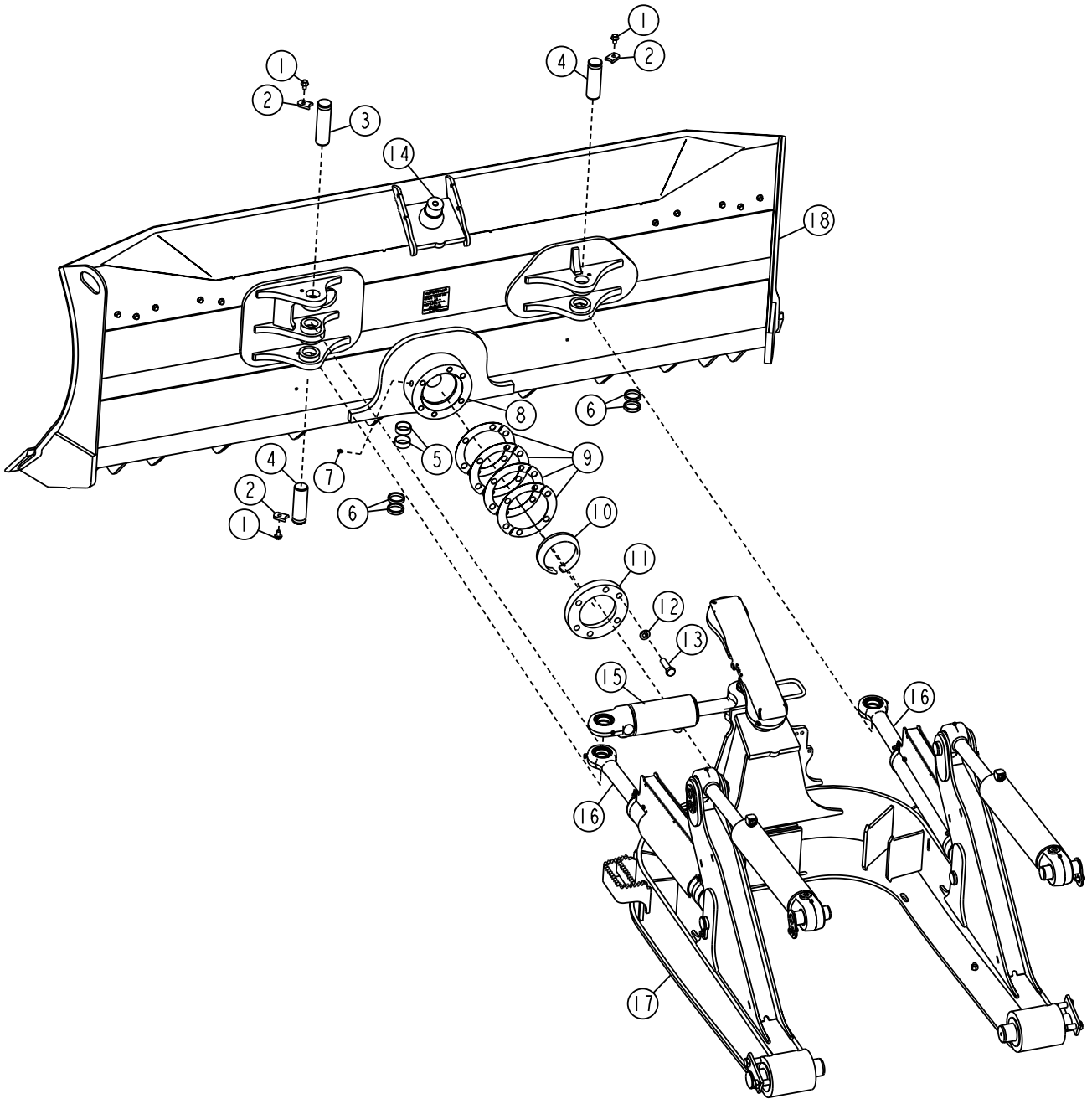
CED,OUO1079,561 -19-16AUG00-1/1

Blade Installation—Initial



TX1039995 —UN—13AUG10

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MB60223,0000033 -19-10APR08-1/4

1— Cap Screw (3 used)
2— Pin Flag(3 used)
3— Pin (1 used)
4— Pin (2 used)
5— Bushing (2 used)Blade and Cutting Edges
6— Bushing (4 used)
7— Lubrication Fitting
8— Socket C-Frame
9— Shim (4 used)
10— Inner Split Bearing
11— Solid Outer Retaining Ring
12— Washer (6 used)
13— Cap Screw (6 used)
14— Pin Fastener
15— Tilt Cylinder
16— Angle Cylinder
17— C-Frame
18— Blade Weldment

1. Raise C-Frame and support with shop stands. Shut off engine.

CAUTION: Blade is heavy. Use appropriate lifting device.

2. Install blade to C-frame with shims (9), washers (12), and cap screws (13).

NOTE: DO NOT USE ANTISEIZE on these cap screws.

3. Dip threads of socket cap screws in clean engine oil and install socket cap screws to blade ball. Tighten pivot cap screws to specification.

Specification	
Blade Ball and Socket Cap Screws —Torque	500 N·m (370 lb-ft)

4. Connect rod ends of angle cylinders and head end of tilt cylinder to blade with pins (4), bushings (6), cap screws (1) and pin flags (2).

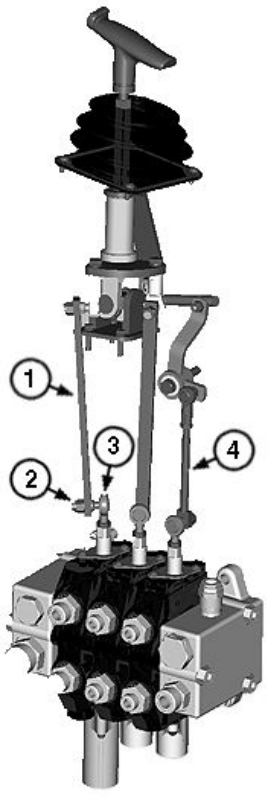
5. Connect pitch link to blade with pin (3), bushings (5), cap screw (1) and pin flag (2).

MB60223,0000033 -19-10APR08-2/4

NOTE: Angle and tilt functions have been disconnected for shipping.

6. Remove lock nut (2) from ball joint (3)
7. Connect ball joint (3) to valve spool stem
8. connect tilt link (1) to ball joint (3).
9. connect angle link (4) to ball joint (3).

1— Tilt Link
2— Lock Nut
3— Ball Joint
4— Angle Link



TX1040197A —UN—09APR08

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MB60223,0000033 -19-10APR08-3/4

10. Install torque specification decal (1) to rear of blade as shown.

IMPORTANT: Grease socket and ball joint every ten hours or daily. Only use grease specified on machines periodic maintenance chart. Add grease until it escapes at joint.

1— Torque Specification Decal

T212395A —UN—22JUN05

Torque Specification Decal

MB60223,0000033 -19-10APR08-4/4

Do Not Service or Adjust Injection Nozzles or Injection Pump

If injection nozzles are not working correctly or are dirty, the engine will not run normally. See your authorized dealer for service.

Changing the injection pump in any way not approved by the manufacturer will end the warranty. See your copy of the John Deere warranty on this machine.

Do not service an injection pump that is not operating correctly. See your authorized injection pump service center.

TX,90,FF3116 -19-03NOV08-1/1

Inspecting and Cleaning Dusty Primary Element

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

Install new elements:

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

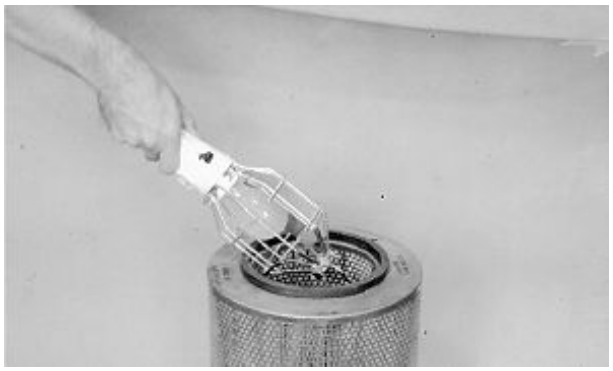
DO NOT clean a secondary element. Install a new element carefully centering it in the canister.

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

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

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

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



T90684 —UN—10NOV88

T47764 —UN—09NOV88

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

VD76477,0001043 -19-21NOV06-1/1

Precautions for Alternator and Regulator

When batteries are connected, follow these rules:

1. Disconnect negative (–) battery cable when you work on or near alternator or regulator.
2. DO NOT TRY TO POLARIZE ALTERNATOR OR REGULATOR.
3. Be sure alternator wires are correctly connected BEFORE you connect batteries.
4. Do not ground alternator output terminal.
5. Do not disconnect or connect any alternator or regulator wires while batteries are connected or while alternator is operating.
6. Connect batteries or a booster battery in the correct polarity (positive [+] to positive [+] and negative [–] to negative [–]).
7. Do not disconnect the batteries when engine is running and alternator is charging.
8. Disconnect battery cables before you connect battery charger to the batteries.

T82,EXMA,I -19-03NOV08-1/1

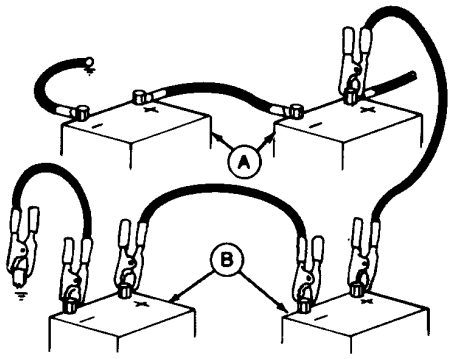
Using Booster Batteries—24-Volt System

Before boost starting, machine must be properly shut down to prevent unexpected machine movement when engine starts.

CAUTION: An explosive gas is produced while batteries are in use or being charged. Keep flames or sparks away from the battery area. Make sure the batteries are charged in a well-ventilated area.

IMPORTANT: The machine electrical system is a 24-volt negative (-) ground. Connect two 12-volt booster batteries together as shown for 24 volts.

1. Connect one end of the positive (+) cable to the positive (+) terminal of the machine batteries (A) and the other end to the positive (+) terminal of the booster batteries (B).
2. Connect one end of the negative (-) cable to the negative (-) terminal of the booster batteries. Connect the other end of the negative (-) cable to the machine frame as far away from the machine batteries as possible.
3. Start engine.



T7233JN —UN—21MAY90

Booster Batteries, 2-Battery Application

A—Machine Battery (2 used) **B—Booster Battery (2 used)**

4. Immediately after starting engine, disconnect the end of the negative (-) cable from the machine frame. Then disconnect the other end of the negative (-) cable from the negative (-) terminal of the booster batteries.
5. Disconnect positive (+) cable from booster batteries and machine batteries.

OUT4001,0000238 -19-09MAR17-1/1

Using Battery Charger

CAUTION: Prevent possible injury from exploding battery. Do not charge a battery if the battery is frozen or it may explode. Warm battery to 16°C (60°F) before charging.

Turn off charger before connecting or disconnecting it.

IMPORTANT: Do not use battery charger as a booster if a battery has a 1.150 specific gravity reading or lower.

Disconnect battery ground (-) clamp before charging batteries in the machine to prevent damage to electrical components.

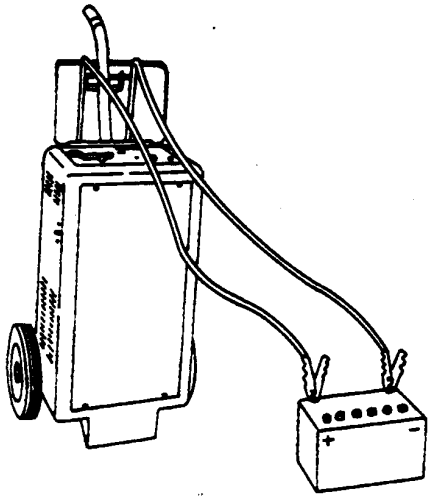
A battery charger may be used as a booster to start engine.

Ventilate the area where batteries are being charged.

Stop or cut back charging rate if battery case feels hot or is venting electrolyte. Battery temperature must not exceed 52°C (125°F).

TS204 —UN—15APR13

Prevent Battery Explosions



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Charger

OUT4001,0000239 -19-13JAN16-1/1

Handling, Checking and Servicing Batteries Carefully

CAUTION: Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

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

Always remove grounded (-) battery clamp first and replace it last.

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

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

If you spill acid on yourself:

1. **Flush your skin with water.**
2. **Apply baking soda or lime to help neutralize the acid.**
3. **Flush your eyes with water for 15—30 minutes. Get medical attention immediately.**

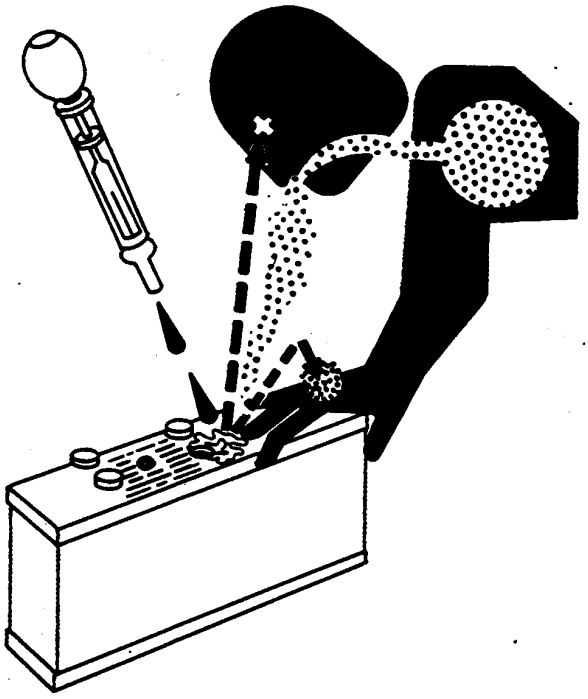
If acid is swallowed:

1. **Do not induce vomiting.**
2. **Drink large amounts of water or milk, but do not exceed 1.9 L (2 qt).**
3. **Get medical attention immediately.**

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

If electrolyte spills on the floor, use one of the following mixtures to neutralize the acid: 0.5 kg (1 lb) baking soda in 4 L (1 gal) water, or 0.47 L (1 pt) household ammonia in 4 L (1 gal) water.

TS204 —UN—15APR13



TS203 —UN—23AUG88

IMPORTANT: Do not overfill the battery cells.

Check the specific gravity of electrolyte in each battery cell.

Continued on next page

TX03679,0001788 -19-29APR11-1/2

See your authorized dealer for JT05460 SERVICEGARD™ battery and coolant tester. Follow directions included with the tester.

A fully charged battery will have a corrected specific gravity reading of 1.260. If the reading is below 1.200, charge the battery.

T85402 —UN—10NOV88

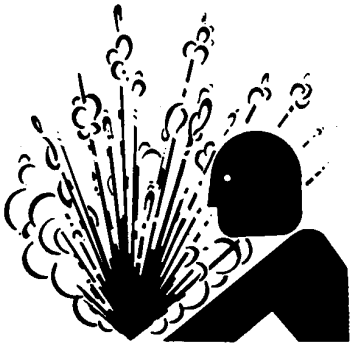
Battery And Coolant Tester

SERVICEGARD is a trademark of Deere & Company

TX03679,0001788 -19-29APR11-2/2

Replacing Batteries

Batteries (1) are located in left-side service compartment.



TS281 —UN—15APR13

CAUTION: Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

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

If you spill acid on yourself:

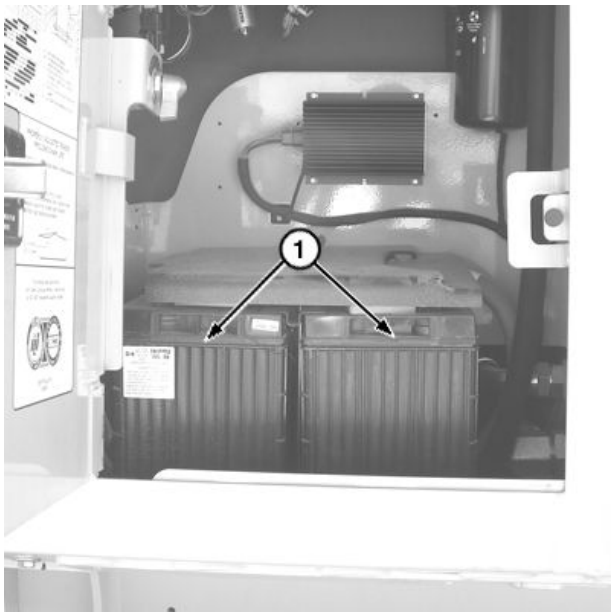
1. **Flush your skin with water.**
2. **Apply baking soda or lime to help neutralize the acid.**
3. **Flush your eyes with water for 10—15 minutes. Get medical attention immediately.**

If acid is swallowed:

1. **Drink large amounts of water or milk.**
2. **Then drink milk of magnesia, beaten eggs, or vegetable oil.**
3. **Get medical attention immediately.**

Your machine will have two 12-volt batteries with negative (–) ground, connected in series for 24 volts. Use only batteries meeting the following specifications:

Dual Battery	Battery Group 31
950 cold cranking amps at –18°C (0°F)	190 minutes reserve capacity at 25 amps



TX1012703A —UN—29SEP06

1— Battery (2 used)

VD76477,0001092 -19-28SEP06-1/1

Removing Batteries

Batteries (1) are located in the left-side service compartment.

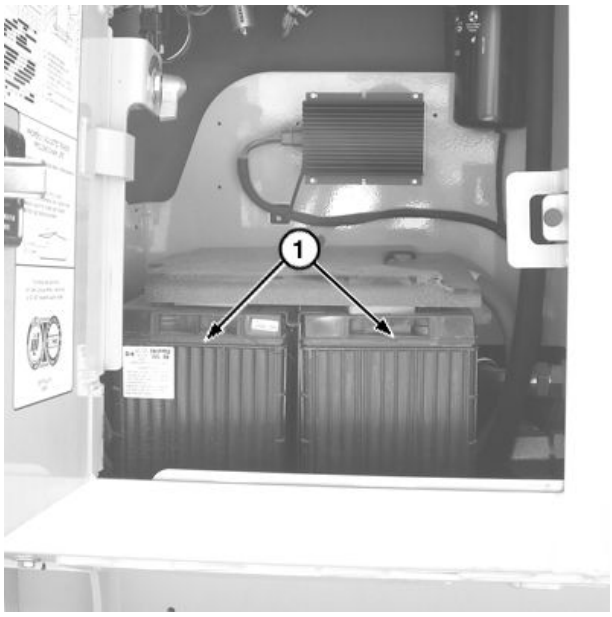
CAUTION: Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

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.

1. Turn battery disconnect switch, if equipped, to OFF.
2. Remove battery cover.
3. Disconnect negative (—) battery cable(s) first, then positive (+) cable(s).
4. Remove nuts to remove hold-down frame(s).
5. Lift out battery/batteries.
6. Check cables and clamps for damage and wear.
7. Make certain that the battery/batteries are fully charged.
8. Set the batteries in the compartment, making sure they are level.
9. Install hold-down frames.
10. Connect cables, positive (+) then negative (—).
11. Install battery cover.
12. Turn battery disconnect switch, if equipped, to ON.

TS204 —UN—15APR13



TX1012703A —UN—29SEP06

1— Battery (2 used)

VD76477,0001093 -19-28SEP06-1/1

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

JDLink™ Machine Monitoring System (MMS)—If Equipped

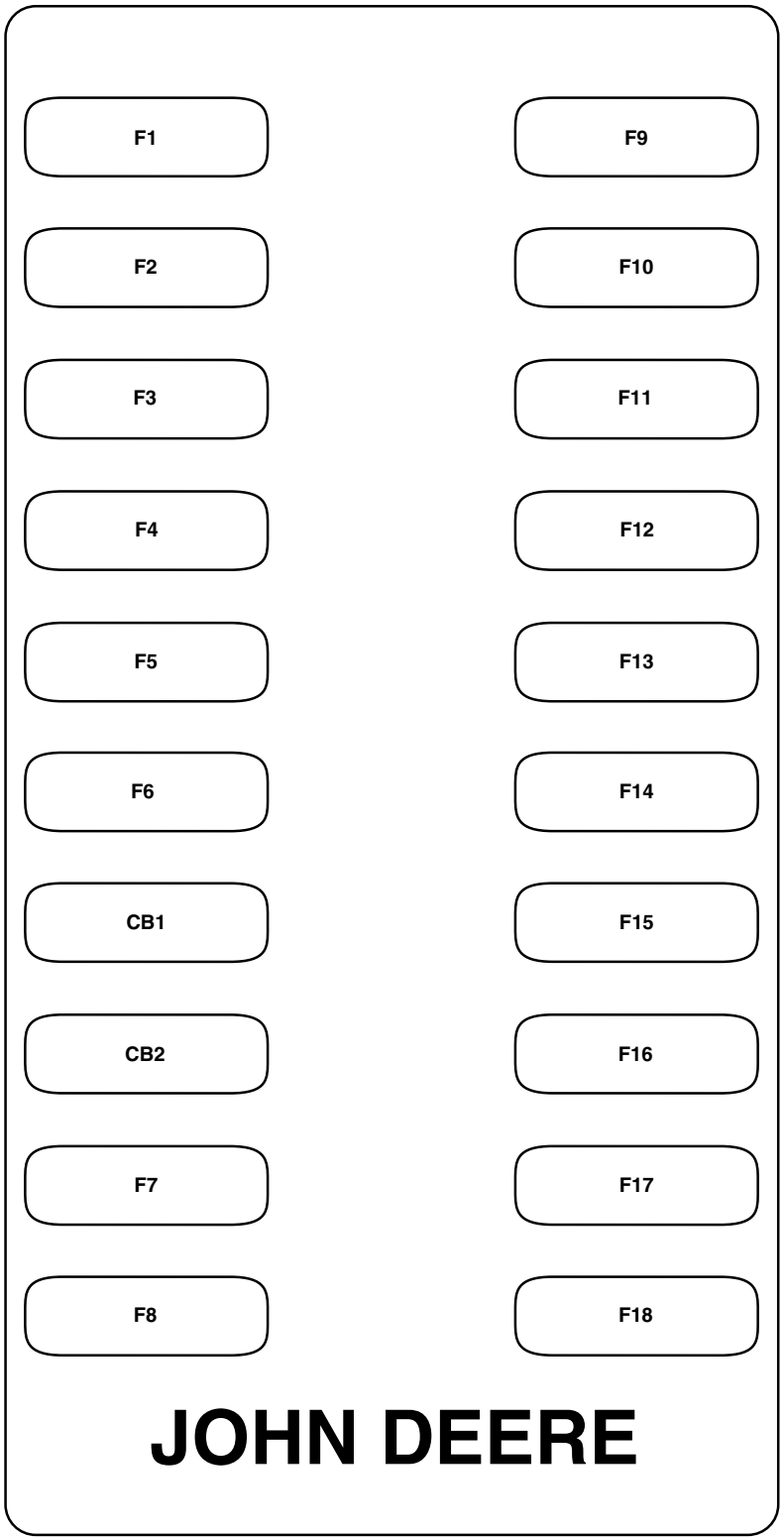
JDLink™ is an equipment monitoring and information delivery system. JDLink™ automatically collects and manages information about where and how construction and forestry equipment is being used, as well as critical machine health data and service status.

For more information, see an authorized John Deere dealer or visit www.deere.com (browse to Construction, Services and Support, JDLink™).

JDLink is a trademark of Deere & Company

VD76477,0001541 -19-26MAR15-1/1

Fuse Specifications (S.N. —150489)



TX1081474

TX1081474 —UN—02SEP10

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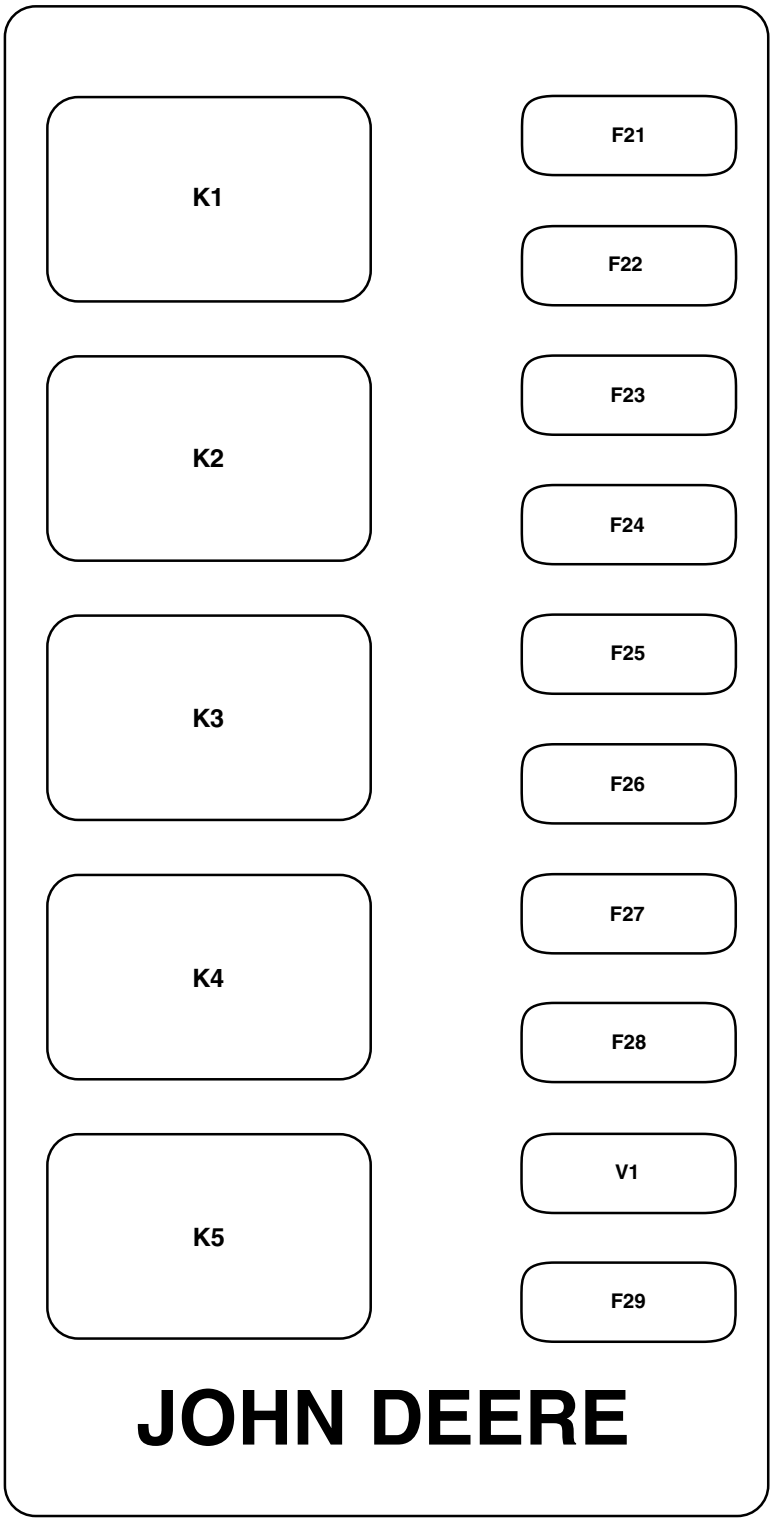
MD04263,0000080 -19-30AUG10-1/3



TX1081472

TX1081472 —UN—03SEP10

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MD04263,0000080 -19-30AUG10-2/3

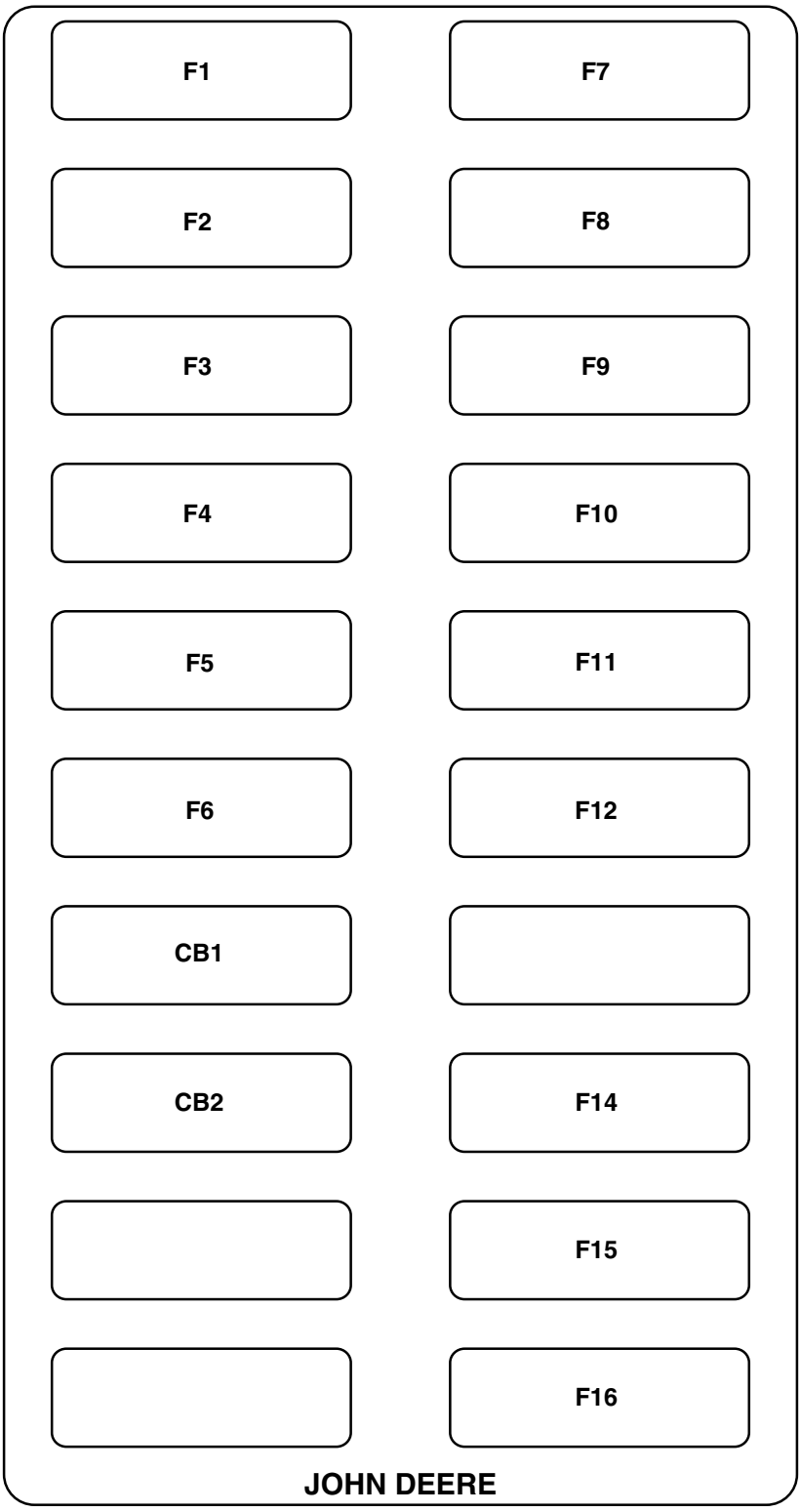
F1— Monitor Unswitched Power 5 A Fuse
F2— ECU Unswitched Power 10 A Fuse
F3— Horn 5 A Fuse
F4— Radio Unswitched Power 5 A Fuse
F5— Service Advisor 5 A Fuse
F6— Spare 5 A Fuse
CB1— Standard Lights 15 A Fuse
CB2— Optional Lights 20 A Fuse
F7— Spare 10 A Fuse
F8— Spare 10 A Fuse
F9— Underseat Heater 15 A Fuse
F10— Spare 5 A Fuse
F11— Front/Rear Wiper 10 A Fuse
F12— Right/Left Wiper 10 A Fuse
F13— Air Ride Seat 10 A Fuse
F14— Radio/Dome/Powerport 10 A Fuse
F15— Hydraulic Lockout 5 A Fuse
F16— Spare/Beacon 5 A Fuse
F17— Heater Blower 10 A Fuse
F18— Switch Lighting 5 A Fuse
K1—Standard Worklights Relay
K2—Optional Worklights Relay
K3—A/C Condenser Fans Relay
K4—A/C Compressor Relay
K5—Horn Relay
F21— Monitor Switched Power 5 A Fuse
F22— Start Relay 5 A Fuse
F23— Condenser Fan #1 15 A Fuse
F24— Condenser Fan #2 15 A Fuse
F25— A/C Compressor 10 A Fuse
F26— Start Aid 10 A Fuse
F27— ECU Switched Power 10 A Fuse
F28— TCU Switched Power 10 A Fuse
V1— Alternator Excitation 5 A Fuse
F29— Spare 10 A Fuse

IMPORTANT: Install fuse with correct amperage rating to prevent electrical system damage from overload.

The fuse block is located on right side of machine through access cover.

MD04263,0000080 -19-30AUG10-3/3

Fuse Specifications (S.N. 150490—)



TX1080839

TX1080839 —UN—02SEP10

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MD04263,0000081 -19-30AUG10-1/4

F1— Monitor Unswitched Power 5 A Fuse
F2— ECU Unswitched Power 10 A Fuse
F3— Horn 5 A Fuse
F4— Radio Unswitched Power 5 A Fuse
F5— Service Advisor 5 A Fuse
F6— JDLink™ Unswitched Power 5 A Fuse—If Equipped
CB1— Standard Lights 15 A Fuse
CB2— Optional Lights 20 A Fuse
F7— Underseat Heater 15 A Fuse
F8— Spare 10 A Fuse
F9— Front/Rear Wiper 10 A Fuse
F10— Right/Left Wiper 10A Fuse
F11— Air Ride Seat 10 A Fuse
F12— Radio/Dome/Powerport 10 A Fuse
F14— Spare/Beacon 5 A Fuse
F15— Heater Blower 15 A Fuse
F16— Switch Backlighting 5 A Fuse

IMPORTANT: Install fuse with correct amperage rating to prevent electrical system damage from overload.

The fuse block is located on right side of machine through access cover.

JDLink is a trademark of Deere & Company

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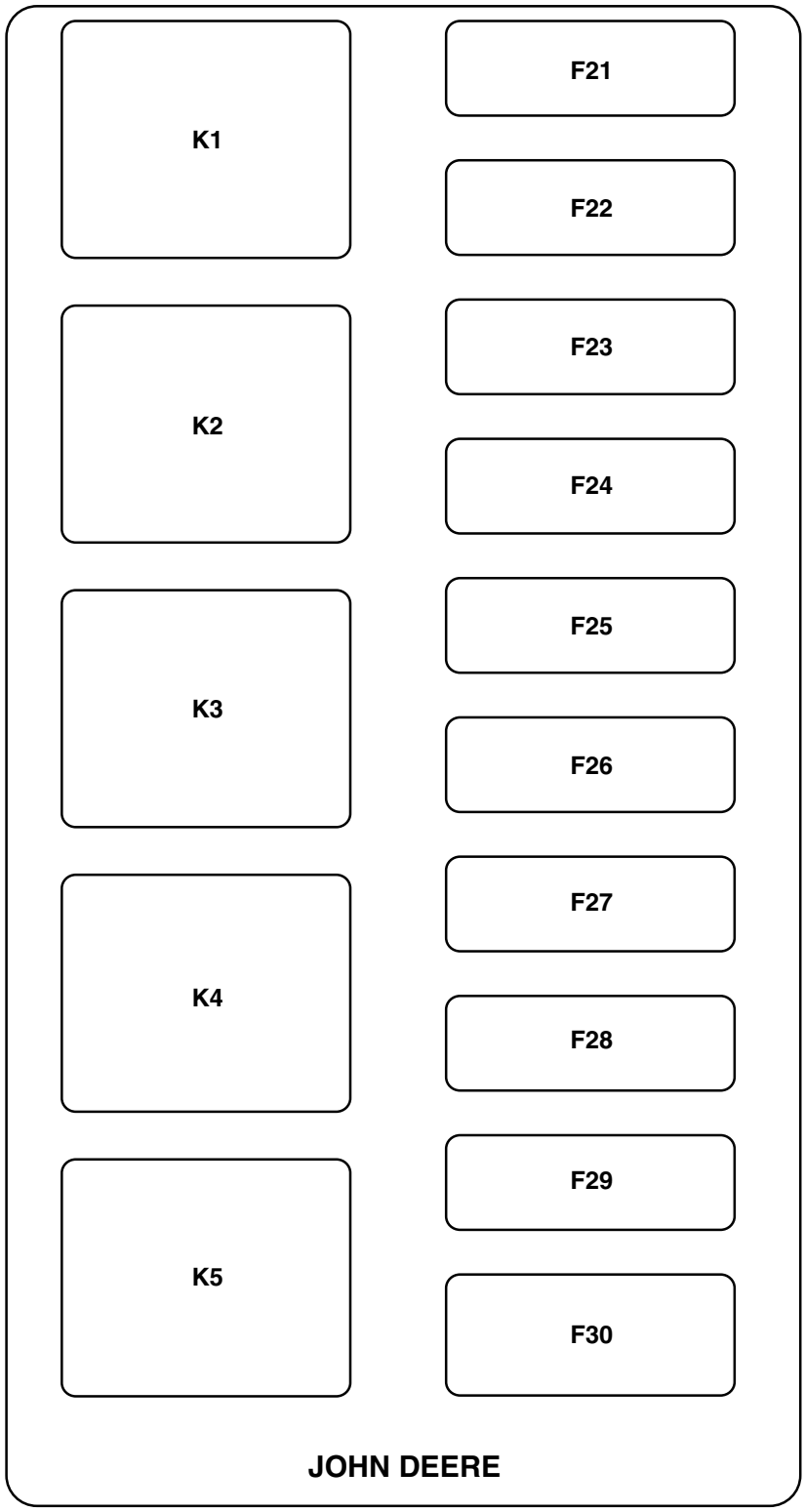
MD04263,0000081 -19-30AUG10-2/4



TX1081477

TX1081477 —UN—02SEP10

Continued on next page

K1—Standard Worklights Relay
K2—Optional Worklights Relay
K3—A/C Condenser Fans Relay
K4—A/C Compressor Relay
K5—Horn Relay

F21— Monitor Switched Power 5 A Fuse
F22— Start 5 A Fuse
F23— Condenser Fan #1 15 A Fuse
F24— Condenser Fan #2 15 A Fuse
F25— A/C Compressor 10 A Fuse

F26— Start Aid 10 A Fuse
F27— ECU Switched Power 5 A Fuse
F28— TCU Switched Power 10 A Fuse
F29— Hyd Lockout 5 A Fuse
F30— JDLink™ Switched Power 5 A Fuse—If Equipped

IMPORTANT: Install fuse with correct amperage rating to prevent electrical system damage from overload.

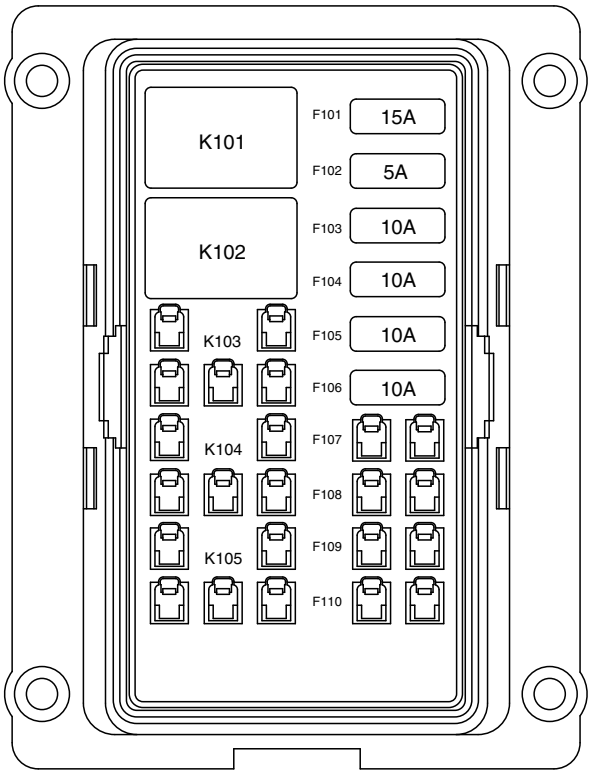
The fuse block is located on right side of machine through access cover.

JDLink is a trademark of Deere & Company

MD04263,0000081 -19-30AUG10-4/4

Fuse Specification—EH Machines

F101— IGC Switched Power 15-Amp Fuse
F102— BCJ Switched Power 5-Amp Fuse
F103— EHC Switched Power 10-Amp Fuse
F104— IGC Unswitched Power_1 10-Amp Fuse
F105— IGC Unswitched Power_2 10-Amp Fuse
F106— IGC Unswitched Power_3 10-Amp Fuse
K101— IGC Switched Power Relay
K102— BCJ and EHC Switched Power Relay



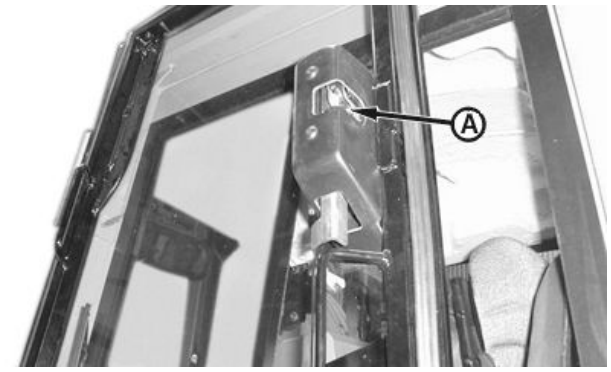
IGC Fuse and Relay Box (If Equipped)

VD76477,00011FE -19-05JUN07-1/1

Lubricating Door Latches

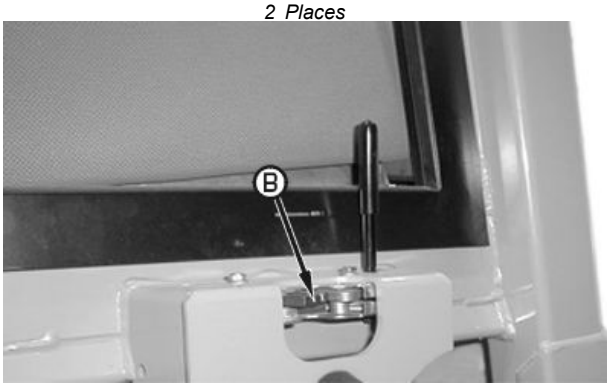
Lubricate inner door latches (A) and outer door latches (B) with dry graphite when necessary.

A—Inner Door Latch (2 used) **B—Outer Door Latch (2 used)**



T118296C —UN—04OCT00

2 Places



T118297C —UN—04OCT00

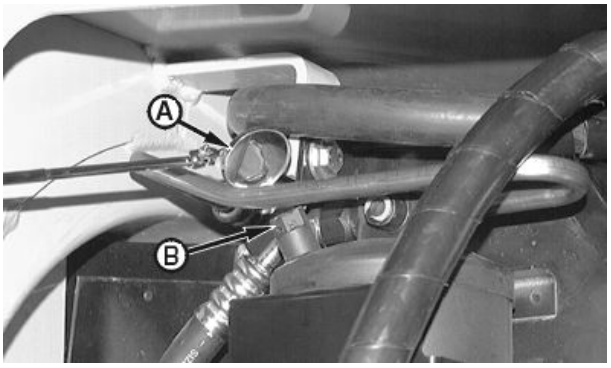
2 Places

OUO1079,000028E -19-10JAN07-1/1

Check Air Conditioner Refrigerant Level—If Equipped

IMPORTANT: Prevent possible compressor damage. If receiver/dryer moisture eye color indicates "wet" (pink), dryer is saturated and should be changed within the next 100 machine hours to prevent further buildup of moisture in refrigerant.

1. Remove left side access cover of air conditioning compartment.
2. Using a mirror (A), check color of sight glass (B) to see if receiver/dryer is wet (pink) or dry (blue).
3. If wet (pink), see your authorized dealer within the next 100 machine hours to service receiver/dryer.



T121303B —UN—03MAY99

A—Mirror **B—Moisture Sight Glass**

CED,OUO1032,1175 -19-27APR99-1/1

Track Sag General Information

Properly adjusted tracks prolong chain life. To get the maximum life out of track bushings, keep the track sag properly adjusted. Improperly adjusted track wears at a more rapid rate.

A tight track causes higher loading which will increase wear on the pins, bushings, links, sprocket and front idler. The graph (A) shows how the loading on the track chain increases significantly when tracks are too tight. Also, a tight track requires more horsepower, increasing fuel consumption and decreasing productivity.

Periodically check track sag. In some applications, tracks may require adjustment several times during a working day. This is especially true when working in different conditions on the same job site, as moisture content of the soil changes.

Tracks should always be adjusted in the actual operating conditions. If material packs in the undercarriage, the tracks should be adjusted with the material packed in the components.

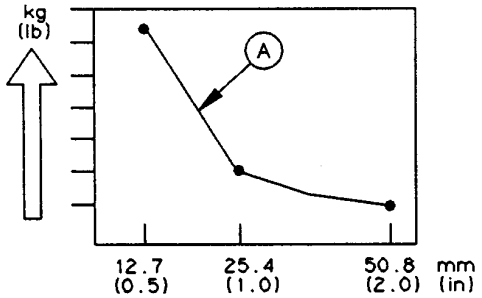
When packing occurs, track sag is taken up and must be loosened to extend wear life. The track spring will recoil and the machine will continue to operate with tight track. However, continued operation without loosening the tracks will result in excessive pin and bushing wear, sprocket popping, tooth tip wear, and excessive loads on the entire undercarriage and final drive system.

With sealed chain, internal pin and bushing wear creates sag which reduces the effects of packing. However, if a sealed chain is too tight, accelerated bushing wear occurs.

Lubricated chain is different due to the absence of internal pin and bushing wear. It is absolutely essential to keep sag adjusted to prevent accelerated bushing outside diameter wear.

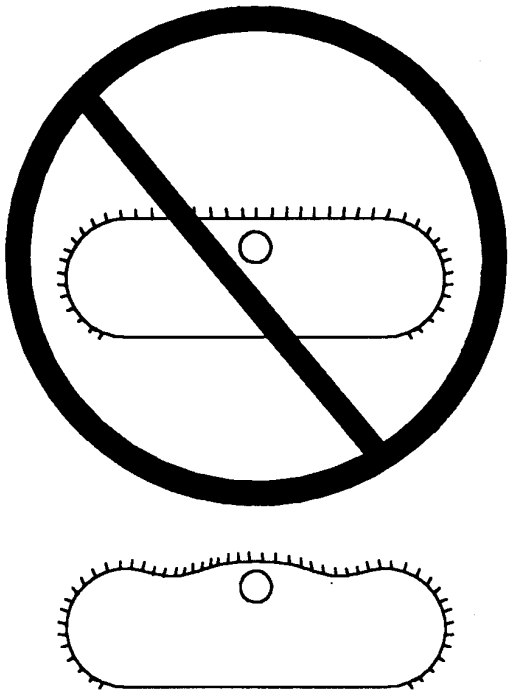
Maintaining track sag is very important regardless of the type of track being used.

A—Graph



T7800AJ —UN—31JUL92

Track Tension kg (lb) vs. Track Sag mm (in.)



T7800AH —UN—31JUL92

Proper Track Sag

TX,90,RR2516 -19-12JAN12-1/1

Check and Adjust Idler Vertical Movement

Checking Idler Bracket-to-Track Frame Gap

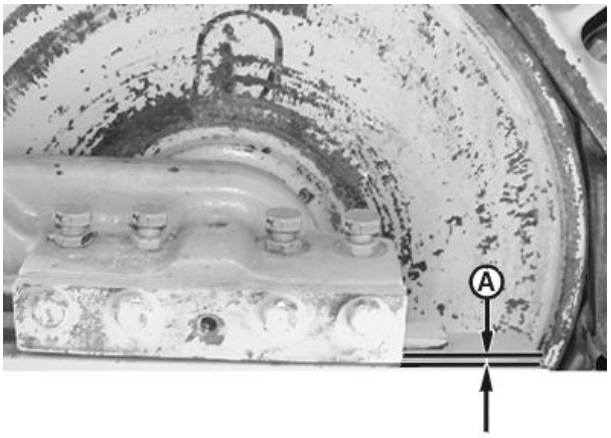
1. Drive machine onto wood block. Ensure block is under front idler.
2. Use feeler gauge to measure gap (A) between idler bracket and track frame.

Specification	
Idler Bracket-to-Track Frame—Gap	2.0 mm 0.079 in.

3. If gap is greater than specification, adjust gap.

NOTE: Always check gap for both the inner and outer brackets on each idler to ensure even wear.

4. Repeat steps 2 and 3 for inner and outer idler brackets on each side of machine.



T132080C —UN—15AUG00

Outer Right-Side Idler Bracket Shown

A—Idler Bracket-to-Track Frame Gap

CED,OUO1079,521 -19-08AUG00-1/2

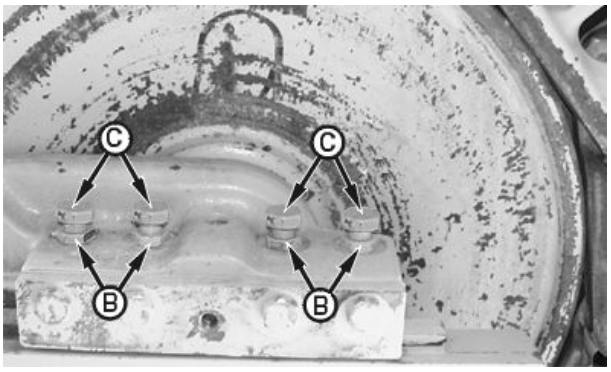
Adjusting Idler Bracket-to-Track Frame Gap

NOTE: Perform gap adjustment while machine is positioned as described in checking procedure.

1. Drive machine onto wood block. Ensure block is under front idler. Check idler bracket-to-track frame gap.
2. Loosen jam nuts (B) on idler bracket.
3. Tighten all idler bracket adjustment caps screws (C) until no gaps are present.
4. Loosen each idler bracket adjustment cap screw 1-1/2 turns.
5. Check idler bracket-to-track frame gap.
6. Repeat steps 3—5 if necessary to obtain correct gap.
7. Tighten jam nuts.

NOTE: Always adjust gap for both the inner and outer brackets on each idler to ensure even wear.

8. Repeat steps 2—7 for inner and outer idler brackets on each side of machine.



T132080D —UN—15AUG00

Outside Right Idler Bracket Shown

B—Jam Nut (4 used per bracket)

C—Idler Bracket Adjustment Cap Screw (4 used per bracket)

If gaps cannot be adjusted within specification, re-shim the bracket wear surfaces. See your authorized dealer.

CED,OUO1079,521 -19-08AUG00-2/2

Checking Track Carrier Roller Oil Level

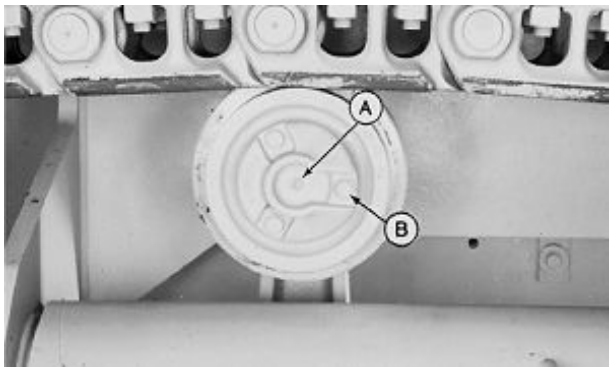
Removing the oil level check plug (B) in the roller does not always show oil, due to a vacuum in the oil cavity. Components that appear low or out of oil may have sufficient oil. A small amount of low-volume air forced into the roller will overcome the vacuum inside the roller and force a small amount of oil to flow out.

1. Position the oil level check plug at the 3 o'clock or 9 o'clock position.
2. Remove the oil level fill plug (A). If oil runs out, oil level is correct.

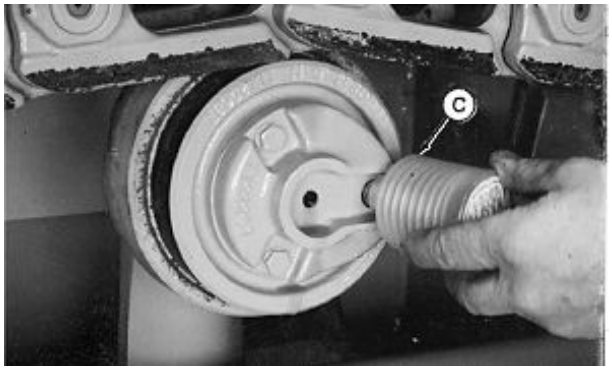
   If oil does not run out of the fill hole, remove the oil level check plug. Insert the nozzle of the plastic bottle (C) into the check hole and squeeze air pressure inside the roller assembly. A slight amount of air pressure inside the roller will relieve any vacuum inside the assembly and allow oil to flow out fill hole.

   Oil must be level with fill hole or not more than 3 mm (0.12 in.) below the bottom of the hole.
3. Install plugs.

A—Oil Level Fill Plug
B—Oil Level Check Plug
C—Plastic Bottle



T6499EF1 —UN—09FEB89



T7883AN —UN—09NOV92

TX,90,RR2741 -19-14JAN08-1/2

Adding Oil to Track Carrier Roller

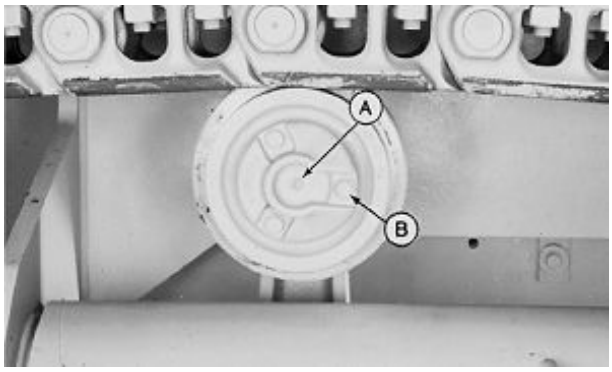
1. To add oil, remove the oil level check plug (B).
2. Remove the oil level fill plug (A) and IMMEDIATELY install a John Deere adapter fitting AN142253 or equivalent adapter (male 7/16 x 20 O-ring thread to female 1/8 in. NPT grease fitting into the adapter) (E).
3. Fill a grease gun with oil. See Track Rollers, Front Idler and Carrier Roller Oil. (Section 3-1.)
4. Add oil to grease fitting until it comes out of the oil level check port (C).
5. Install oil level check plug. Tighten to specification.

Specification

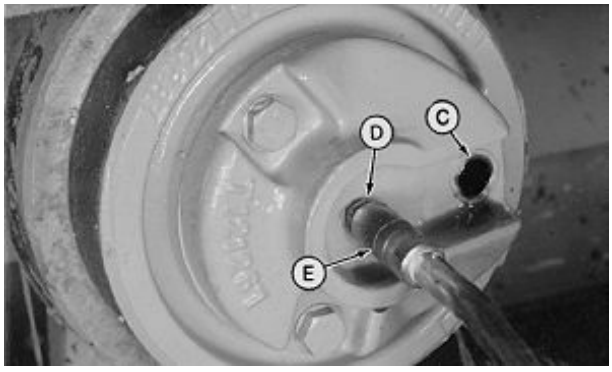
Carrier Roller Oil Level
Check Plug—Torque.....41 N·m
30 lb-ft

6. Remove grease fitting and adapter. Install oil level fill plug.

A—Oil Level Fill Plug
B—Oil Level Check Plug
C—Oil Level Check Port
D—Oil Level Fill Port
E—Adapter Fitting



T6499EF1 —UN—09FEB89



T8059CG —UN—03AUG93

TX,90,RR2741 -19-14JAN08-2/2

Check Front Idler Oil Level

Removing the idler oil level plug (1) does not always indicate oil level. Possible vacuum in the oil cavity can keep oil from flowing out. Idlers that appear low or out of oil may have sufficient oil. Applying a small amount of low volume forced air into the idler will overcome the vacuum and allow a small amount of oil to flow from idler.

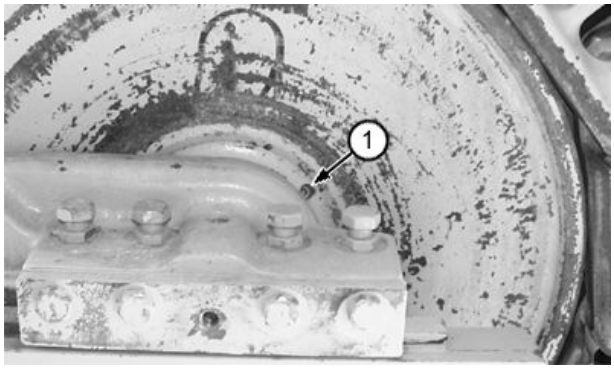
NOTE: The oil fill hole is on outside of idler on the right side of machine. The oil fill hole is on the inside of idler on the left side of the machine.

1. Rotate plug opening (1) to a 45° angle.
2. Remove the oil level fill plug (1).

   If oil flows out, oil level is correct.

   If oil does not flow, insert the nozzle of a plastic bottle into the hole and squeeze air pressure into idler. A slight amount of pressure inside the idler will relieve any vacuum and allow oil to flow from fill hole.
3. Add proper oil slowly until oil flows from oil level hole.
4. Apply pipe sealant or TEFLON® tape to new plug. Install and tighten oil level plug.

TEFLON is a trademark of Du Pont Co.



T132080B —UN—28JUN00

1— Oil Level Plug

Front Idler—Specification

Oil Level Plug—Torque	41 N·m 30 lb-ft

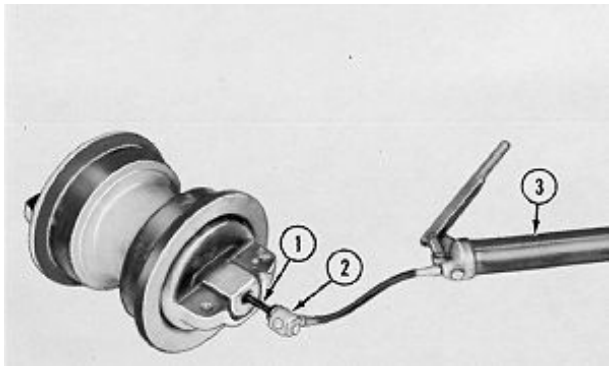
CED,TX03399,5960 -19-03JAN07-1/1

Adding Oil to Track Roller

1. Thoroughly clean JD313-1 Lube Nozzle (1), from JD313A Front Idler Lube Nozzle Kit, and around the plug end of track roller shaft. (See your authorized dealer to obtain JD313A Front Idler Lube Nozzle Kit.)
2. Remove track roller shaft plug.
3. Insert nozzle in roller shaft with flat side up, as far as possible. This will allow bleeding of air from housing while filling.

NOTE: Track roller shaft oil capacity is approximately 378.5 mL (12.8 oz).

4. Slowly pump recommended oil into shaft. See Track Rollers, Front Idler and Carrier Roller Oil. (Section 3-1.) Use JD313-2 Adapter (2) and grease gun (3) until oil without air bubbles is seen leaking past the flat on nozzle.
5. Install track roller shaft plug.



T6090AI —UN—26OCT88

Shown Removed from Machine for Clarity of Photo

1— JD313-1 Lube Nozzle
2— JD313-2 Adapter
3— Grease Gun

CED,OUO1079,566 -19-16AUG00-1/1

Do Not Service Control Valves and Cylinders

Special tools and information are needed to service control valves and cylinders.

If these parts need service, see your authorized dealer.

T82,BHMA,K -19-03NOV08-1/1

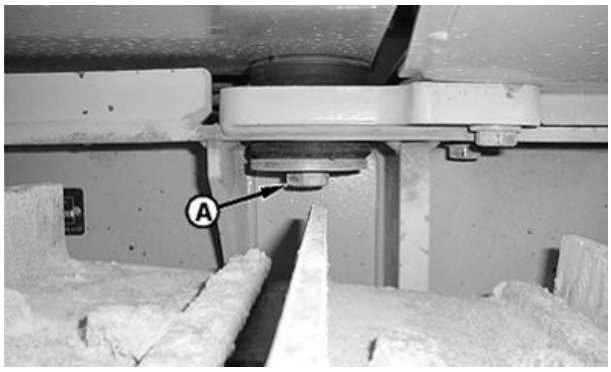
Keep ROPS Installed Properly

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts (A) to proper torque.

Specification	
ROPS Mounting Bolts—Torque	624 N·m 460 lb-ft

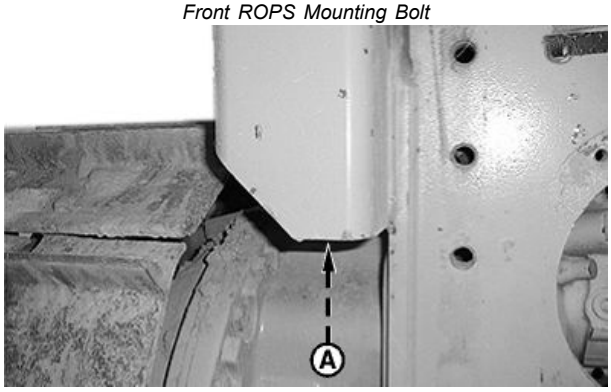
The protection offered by the ROPS will be impaired if the ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.

A—Bolts



T117812B —UN—20OCT98

Front ROPS Mounting Bolt



T117813B —UN—20OCT98

Rear ROPS Mounting Bolt

TX,90,RB48 -19-14JAN08-1/1

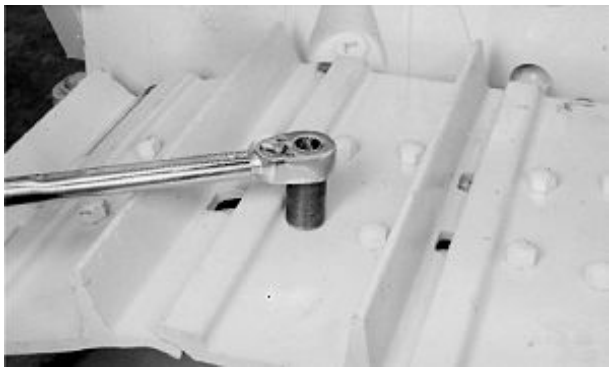
Checking Track Shoe Cap Screw Torque

Track shoe cap screw torque should be periodically checked. If the cap screws do not meet the torque specifications, remove the shoes and clean the mating surfaces of the shoes and links before tightening the cap screws.

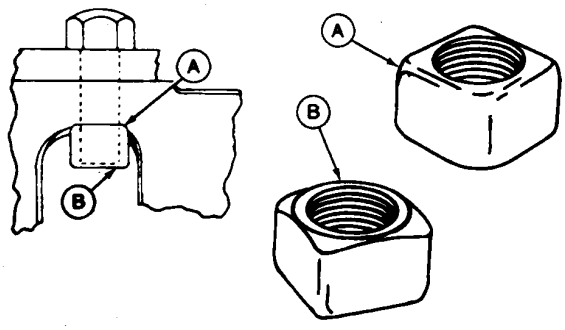
If machine is operated with loose track shoes, the cap screw holes in the shoes and links will wallow out and it may be difficult to keep the track shoes tight. Loose shoes can also cause hardware failure and loss of track shoes.

Install all track shoe nuts with rounded edges against the link and chamfered edges away from the link. Be sure nut is properly positioned in the link so there is full contact area between the nut and the link.

A—Rounded Edge **B—Chamfered Edge**



T6009AN —UN—09FEB89



T6794AM —UN—23FEB89

Continued on next page

CED,OUO1079,523 -19-08AUG00-1/2

IMPORTANT: Tighten cap screws to torque specification using a criss-cross pattern. Then repeat torque pattern again.

NOTE: Replacement track shoe hardware should be lubricated when torquing to specification.

Tighten cap screws using torque-turn torque method.

Track Shoe Cap Screw—Specification

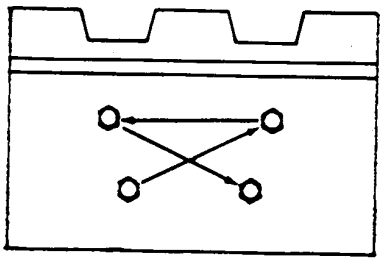
Initial—Torque.....163 N·m
120 lb-ft

Final—Torque..... Turn Additional 1/3 (120°)

Master Split Link Cap Screw—Specification

Initial—Torque.....163 N·m
120 lb-ft

Final—Torque..... Turn Additional 1/2 (180°)



T6352AH —UN—23FEB89

CED,OUO1079,523 -19-08AUG00-2/2

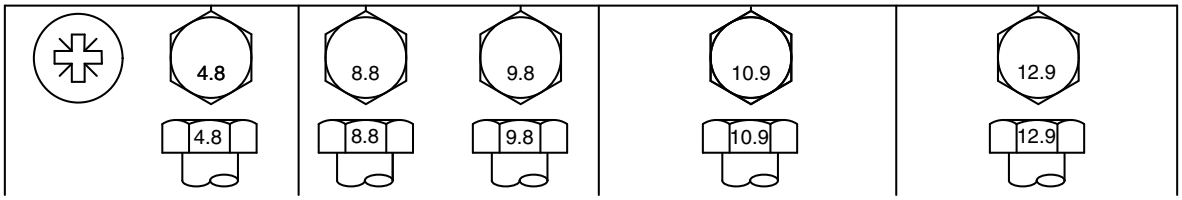
Hardware Torque Specifications

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

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

Metric Bolt and Screw Torque Values

TS1742 —UN—31MAY18



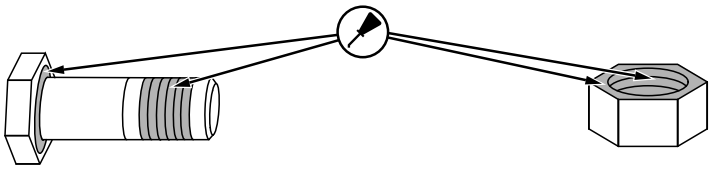
Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]		Hex Head[a]		Flange Head[b]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497
M24	—	—	—	—	468	345	518	382	666	491	738	544	780	575	864	637
M27	—	—	—	—	683	504	758	559	973	718	1080	797	1139	840	1263	932
M30	—	—	—	—	932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265
M33	—	—	—	—	1258	928	1398	1031	1788	1319	1986	1465	2092	1543	2324	1714
M36	—	—	—	—	1617	1193	1789	1319	2303	1699	2548	1879	2695	1988	2982	2199

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

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

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

TS1741 —UN—22MAY18

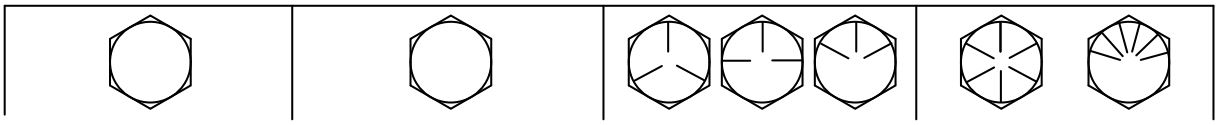


[a]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[b]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2 -19-30MAY18-1/1

Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



Bolt or	SAE Grade 1				SAE Grade 2[a]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
Screw	Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]	
Size	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in
1/4	3,7	33	4,7	42	6	53	7,5	66	9,5	84	12	106	13,5	120	17	150
													N·m	lb-ft	N·m	lb-ft
5/16	7,7	68	9,8	86	12	106	15,5	137	19,5	172	25	221	28	20.5	35	26
									N·m	lb-ft	N·m	lb-ft				
3/8	13,5	120	17,5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			N·m	lb-ft	N·m	lb-ft	N·m	lb-ft								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	N·m	lb-ft														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a] Grade 2 applies for hex cap screws (not hex bolts) up to 6. in (152 mm) long. Grade 1 applies for hex cap screws over 6 in. (152 mm) long, and for all other types of bolts and screws of any length.

[b] "Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C zinc flake coating.

[c] "Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B zinc flake coating.

TORQ1 -19-24APR03-1/1

Miscellaneous—Operational Checkout

Operational Checkout

Use this procedure to make a quick check of machine operation by doing a walk around inspection and performing specific checks from operator's seat.

Complete visual checks (oil levels, oil condition, external leaks, loose hardware, linkage, wiring, etc.) before performing checkout.

Most checks will require machine systems to be at normal operating temperatures and a level area with adequate space to operate machine. Some checks may require varied surfaces.

No special tools are necessary to perform the checkout.

If no problem is found, go to next check. If problem is indicated, an additional check or repair procedure will be suggested.

VD76477,000126E -19-31OCT18-1/29

❶ Operational Checks—Key Switch OFF, Engine OFF

VD76477,000126E -19-31OCT18-2/29

Battery Check

TX1014412A —UN—03NOV06

Press SELECT button and hold until battery volts are displayed.

LOOK: Do battery volts read a minimum of 24 volts?

YES: Check complete.

NO: If one battery will not hold a charge, replace both batteries.

VD76477,000126E -19-31OCT18-3/29

Horn Check

Push horn button.

LISTEN: Does horn work with key switch OFF?

YES: Check complete.

NO: Check horn circuit.

VD76477,000126E -19-31OCT18-4/29

Seat Control Checks

NOTE: For seat adjustment procedures, see Adjust Deluxe Mechanical Suspension Seat—If Equipped or see Adjust Air Suspension Seat—If Equipped. (Operator's Manual.)

If machine is equipped with air seat, key switch must be ON to raise seat.

Does seat raise and lower easily?

Does seat angle change easily?

Does lever move easily to unlock seat support?

Does seat move forward and rearward easily?

Does lever lock seat support in position when released?

Does seat back tilt forward and rearward easily?

Does lever unlock and lock easily to hold seat back in position?

YES: Check complete.

NO: See your authorized dealer.

Continued on next page

VD76477,000126E -19-31OCT18-5/29

❷ Operational Checks—Key Switch ON, Engine OFF

VD76477,000126E -19-31OCT18-6/29

Monitor Check—Key Switch ON, Engine OFF	Turn key switch ON. Observe monitor and note changes for first 3 seconds (bulbs, indicators, and gauges). *LOOK/LISTEN: Do all lights come on and does alarm sound?* *LOOK: Does the display show "John Deere" and the model number?* *LOOK: Do all the gauge indicators point to approximately 12 o'clock position?* *LOOK: Is backlighting of gauges on?* After 4 seconds observe changes in monitor. *LOOK: Do gauge indicators change from 12 o'clock to normal readings?*	**YES:** Check complete. **NO:** Check Monitor Switched Power 5A Fuse (F21).

VD76477,000126E -19-31OCT18-7/29

Diagnostic Trouble Code (DTC) Check—Key Switch ON, Engine ON	Start engine and check for any diagnostic trouble codes. Diagnostic trouble codes can be displayed by using one of the following methods. • Standard Display Monitor (SDM) • SERVICE ADVISOR™ Application *LOOK: Are diagnostic trouble codes present?*	**YES:** See your authorized dealer. **NO:** Go to next check.

VD76477,000126E -19-31OCT18-8/29

Start Aid Check	Open right rear service door. Check position of canister. Inspect plastic line from bottom of starting aid to air intake manifold. Press and hold starting aid button down to operate starting aid. *LOOK: Is plastic line free of kinks or breaks, and are ends installed securely?* Check for dot on ether starting aid nozzle in air intake manifold. *LOOK: Is dot at 12 o'clock position on the fitting of air intake manifold?*	**YES:** Check complete. **NO:** Replace plastic line if kinks or breaks are present. Adjust fitting so dot is in correct position.

Continued on next page

VD76477,000126E -19-31OCT18-9/29

Battery Disconnect Switch Check	 T118722B —UN—01DEC98 *NOTE: Battery disconnect switch is located inside the left rear service door.* Turn battery disconnect switch OFF. Turn key switch ON. *LOOK: Do monitor indicator lights come on?*	**YES:** Switch is malfunctioning. Check battery disconnect switch. **NO:** Go to next step in check.
	Turn battery disconnect switch ON. Turn key switch ON, but do not start engine. *LOOK: Do monitor indicator lights come on?*	**YES:** Check complete. **NO:** Check battery disconnect switch.

VD76477,000126E -19-31OCT18-10/29

Park Lock Lever Switch Check	Move park lock lever to unlock (down) position. Move transmission control lever (TCL) to neutral position. Fully depress decel/brake pedal to apply brakes. Turn key switch to Start position. *LISTEN: Does starter engage?*	**YES:** Check park lock lever switch (S20) and connectors. **NO:** Go to next step in this check.

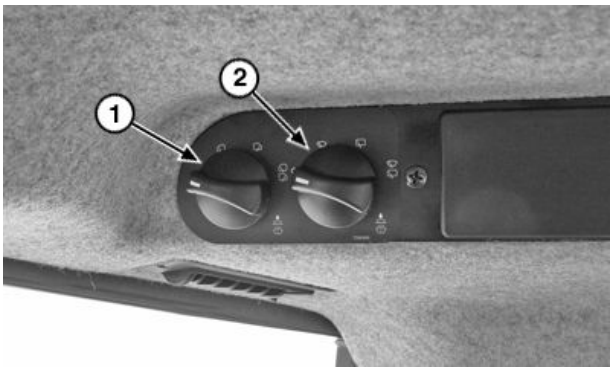
VD76477,000126E -19-31OCT18-11/29

Backup Alarm Check	Move park lock lever to unlock (down) position. Move TCL to reverse position. *LISTEN: Does backup alarm sound?*	**YES:** Check complete. **NO:** See your authorized dealer.

Continued on next page

VD76477,000126E -19-31OCT18-12/29

Front/Rear Wiper and Washer Motor Check—If Equipped



TX1114380A —UN—21MAY12

Wiper Switches

1— Left/Right Door Wiper Switch
2— Front/Rear Wiper Switch

Key switch ON.

Turn front/rear wiper switch (2) to the number three (end) position.

LOOK: Do front and rear wipers operate?

Push switch fully to momentary position and hold.

LOOK: Do both front and rear washer pumps operate?

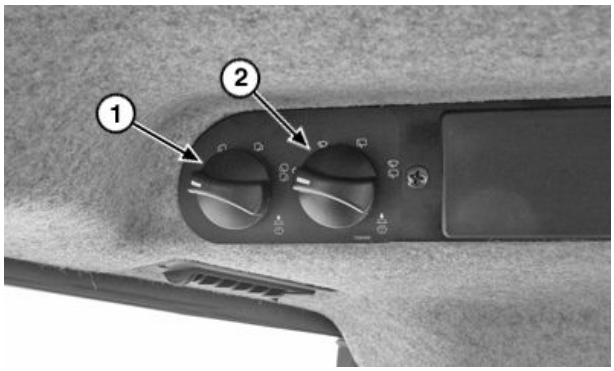
LOOK: Do front and rear wipers continue to operate?

YES: Check complete.

NO: Washer fluid reservoir may be empty. Check front/rear wiper 10 A fuse (F11). See Fuse Specifications. (Section 4-1.)

Continued on next page

Left/Right Wiper and Washer Motor Check—If Equipped



TX1114380A —UN—21MAY12

Wiper Switches

1— Left/Right Door Wiper Switch
2— Front/Rear Wiper Switch

Key switch ON.

Turn left/right door wiper switch (1) to the number three (end) position.

LOOK: Do left and right wipers operate?

Push switch fully to momentary position and hold.

LOOK: Do both left and right washer pumps operate?

LOOK: Do left and right wipers continue to operate?

YES: Check complete.

NO: Washer fluid reservoir may be empty. Check left/right wiper 10 A fuse (F12). See Fuse Specifications. (Section 4-1.)

VD76477,000126E -19-31OCT18-14/29

Heater Blower Motor Check—If Equipped

T199304A —UN—16APR04

1— Air Conditioning Switch
2— Blower Switch
3— Temperature Control
4— Air Duct (8 used)

Turn blower switch (2) to 1st, 2nd, 3rd, and 4th positions.

FEEL: Does air exit all ducts from roof?

YES: Check complete.

NO: Check fuse. Replace if necessary.

VD76477,000126E -19-31OCT18-15/29

❸ Operational Checks—Key Switch ON, Engine ON

Continued on next page

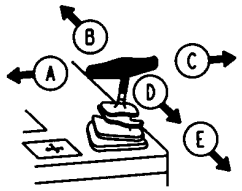
VD76477,000126E -19-31OCT18-16/29

Diagnostic Trouble Code (DTC) Check—Key Switch ON, Engine ON	Start engine and check for any diagnostic trouble codes. Diagnostic trouble codes can be displayed by using one of the following methods. • Standard Display Monitor (SDM) • SERVICE ADVISOR™ Application *LOOK: Are diagnostic trouble codes present?*	**YES:** See your authorized dealer. **NO:** Go to next check.

VD76477,000126E -19-31OCT18-17/29

Blade Float Check	Raise front of crawler off ground with blade. Push hydraulic control lever into float detent. *LOOK: Does front of crawler lower to ground?* *FEEL: Does hydraulic control lever stay in float detent position?*	**YES:** Check complete. **NO:** See your authorized dealer.

VD76477,000126E -19-31OCT18-18/29

Blade Control Lever Check	 T8404AC —UN—14FEB95 **A—Blade Tilt Right** **B—Blade Raise** **C—Blade Tilt Left** **D—Blade Lower** **E—Blade Float** *LOOK/FEEL: Does lever move to all positions easily and return to neutral when released?* *NOTE: Hydraulic control lever will not return to neutral when moved to blade float position (E); lever must be manually pulled from float position.*	**YES:** Continue check. **NO:** See your authorized dealer.
	Operate engine at slow idle. Slowly move blade control lever to all positions except blade float (E) and release. *LOOK/FEEL: Does control lever move to all positions easily and return to neutral when released? Does hydraulic function operate smoothly without hesitation?* *LOOK: A=Tilt Right, B=Blade Raise, C=Tilt Left, D=Blade Lower, E=Float.*	**YES:** Check complete. **NO:** See your authorized dealer

VD76477,000126E -19-31OCT18-19/29

Transmission Speed Check	Operate engine at slow idle. Check transmission speed. Transmission speed should default to 1.6. *LOOK: Does transmission speed default to 1.6?* Increase transmission speed to 3.0. *LOOK: Does transmission speed increase to 3.0?*	**YES:** Check complete. **NO:** See your authorized dealer.

Continued on next page

VD76477,000126E -19-31OCT18-20/29

Slow and Fast Idle Check

Operate engine at slow and fast idle. Record rpm readings on monitor.

LOOK: Are slow and fast idle speeds displayed correctly on monitor?

Engine—Specification

Slow Idle—Speed..... 875—925 rpm
Fast Idle—Speed..... 2250—2300 rpm

YES: Check complete.

NO: Check monitor inputs. See your authorized dealer.

VD76477,000126E -19-31OCT18-21/29

Air Conditioning Check—If Equipped

T199304A —UN—16APR04

1— Air Conditioning Switch
2— Blower Switch
3— Heater Temperature Control
4— Air Duct (8 used)

Operate engine at fast idle.

Push air conditioning switch (1) to ON position.

NOTE: On position is up (snowflake). Down position is not used for this test.

Turn blower switch (2) to 4th position.

Wait several seconds for warm air in duct system to dissipate.

FEEL: Is air from ducts cool?

YES: Check complete.

NO: See your authorized dealer.

VD76477,000126E -19-31OCT18-22/29

Alternator Check

LOOK: Is BATTERY CHARGING VOLTS indicator light on when engine is running?

YES: Check and recharge batteries.

NO: Check complete.

VD76477,000126E -19-31OCT18-23/29

Air Restriction Indicator Check

T206395 —UN—21DEC04

Air Restriction Indicator Light

LOOK: Does indicator light come on when engine is running?

YES: Clean or replace air cleaner elements.

NO: Check complete.

Continued on next page

VD76477,000126E -19-31OCT18-24/29

TCL Lever Check

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

Engine speed at 1500 rpm. Transmission speed to 2.0.

Make several shifts from neutral to forward, neutral to reverse and then forward to reverse.

Specification

Engine—Speed.....1500 rpm

LOOK: Does machine shift smoothly?

LOOK: Does machine operate in forward and reverse?

YES: Check complete.

NOTE: Transmission shift rate can be set to operator preference. Low has a slower reaction time, and high has a quicker reaction time. See your authorized dealer to change transmission shift rate.

NO: Test TCL sensor.

VD76477,000126E -19-31OCT18-25/29

Decelerator/Brake Pedal and Park Brake Check

CAUTION: Pushing on decel/brake pedal will stop machine abruptly.

Move park lock lever to unlock (down) position.

Operate machine slowly in forward. Fully depress decel/brake pedal and then release.

LOOK: Does machine stop when pedal is depressed and move when pedal is released?

Depress decel/brake pedal until spring resistance is felt.

Adjust engine speed to fast idle and transmission speed to 3.0.

Move TCL to forward position.

Release decel/brake pedal.

LOOK: Does machine accelerate smoothly to maximum speed?

YES: Check complete.

NOTE: Decel/brake response time can be set to operator preference.

NO: Inspect park brake valve. See your authorized dealer.

VD76477,000126E -19-31OCT18-26/29

Park Brake Valve Leakage Check

Hydraulic oil must be at operating temperature 66°C (150°F).

Adjust engine speed control to slow idle with park lock lever up.

Observe charge pressure reading on transmission control unit (TCU) display.

LOOK: Does pressure drop as park lock lever is moved down, then return to original value?

Fully depress decel/brake pedal.

YES: Isolate park brakes, brake valve to locate leakage. See your authorized dealer.

LOOK: Does pressure drop as decel/brake pedal is released, then return to original value?

YES: Tracks move in neutral. Inspect park brake valve. See your authorized dealer.

LOOK: Do tracks creep or move?

NO: Check complete.

Continued on next page

VD76477,000126E -19-31OCT18-27/29

Cycle Time Check	Use the standard display monitor (SDM) or SERVICE ADVISOR™ Application to read engine rpm and hydraulic oil temperature. **Specification** Hydraulic Oil—Temperature..... 60—72°C 140—160°F **Engine Fast Idle—Specification** 700J-II—Speed..... 2250—2300 rpm **Blade Raise—Specification** 700J-II—Cycle Time.....2.3 seconds **Blade Lower in Float Detent—Specification** 700J-II—Cycle Time.....1.7 seconds **Blade Power Down—Specification** 700J-II—Cycle Time.....1.3 seconds **Blade Angle (left and right)—Specification** 700J-II—Cycle Time.....3.2 seconds **Blade Tilt (left)—Specification** 700J-II—Cycle Time.....0.8 seconds **Blade Tilt (right)—Specification** 700J-II—Cycle Time.....0.9 seconds Do cycle times meet or exceed specification?	**YES:** Check complete. **NO:** See your authorized dealer.

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VD76477,000126E -19-31OCT18-28/29

Tracking and Maximum Speed Check	**IMPORTANT: Track sag must be at specification and machine must be driven on a level surface for all tracking checks.** Transmission speed at 3.0. TCL in forward position. Slowly increase engine speed from slow to fast idle using decelerator. *LOOK: Does machine speed increase as engine rpm increases? Is tracking straight at all speeds?* Repeat check for reverse travel.	**YES:** Check complete. **NO:** See your authorized dealer.

VD76477,000126E -19-31OCT18-29/29

Miscellaneous—Troubleshooting

Troubleshooting Procedure

NOTE: Troubleshooting charts are arranged from the simplest to verify, to least likely, more difficult to verify. When diagnosing a problem, use all possible means to isolate the problem to a single component or system. Use the following steps to diagnose problems:

Step 1. Operational Checkout Procedure

Step 2. Troubleshooting Charts

Step 3. Adjustments

Step 4. See an authorized John Deere dealer.

HG31779,0000020 -19-27JAN16-1/1

Engine

Symptom	Problem	Solution
Engine Will Not Start or Starts Hard	Transmission control lever (TCL) not in neutral	Move transmission control lever (TCL) to neutral.
	Battery disconnect switch OFF	Turn switch ON.
	Fuel tank empty	Check fuel quantity.
	Fuel tank vent plugged	Remove cap and listen to sound of air entering tank. Replace cap.
	Water in fuel or water frozen in fuel line	Drain water from fuel filter(s). Change filter(s). Inspect fuel filter(s) for water.
	Debris in fuel or wrong grade of fuel	Check fuel/water separator for debris. Check fuel grade.
	Air leak on suction side of fuel system	Check for bubbles in fuel filter and tighten connections. Inspect fuel lines for damage. See your authorized dealer.
	Fuel transfer pump diaphragm leaking	Check engine oil for fuel dilution.
	Slow cranking speed	Check battery and connections.
	Restricted air filter	Check air filter restriction indicator light and air filters.
	Valve clearance	Check and adjust valves.
Engine Surges or Stalls Frequently	Air in fuel	Inspect filter for evidence of air in fuel. Tighten connections and bleed fuel system.
	Fuel tank vent plugged	Remove cap and listen to sound of air entering tank. Replace cap.
	Debris in fuel or wrong grade of fuel	Check fuel/water separator for debris. Check fuel grade.
	Water in fuel	Drain water from fuel filter(s). Change filter(s).
	Fuel filter plugged	Replace filter(s).
Engine Misses	Air in fuel	Check for evidence of air in filter. Tighten connections and bleed fuel system.
	Debris in fuel or wrong fuel grade	Check fuel filter(s) for debris. Clean. Check grade of fuel.

Continued on next page

Symptom	Problem	Solution
Engine Does Not Develop Full Power	Fuel filter clogged	Replace fuel filter(s).
	Wrong grade of fuel	Drain and add correct fuel.
	Air system restricted	Check air filter restriction indicator and air filters.
	Incorrect high idle speed (too low)	See your authorized dealer.
Engine Emits Excessive Black or Gray Exhaust Smoke	Restricted air filter	Check air filter restriction indicator and air filters. Replace.
	Incorrect grade of fuel	Use correct grade of fuel.
Engine Emits Excessive Blue or White Smoke	Cranking speed too slow	Check batteries and connections.
	Incorrect grade of fuel	Use correct grade of fuel.
	Engine running too cold	Check thermostat operation. See your authorized dealer.
Slow Acceleration	Improper fuel	Use correct grade of fuel.
Abnormal Engine Noise	Low or incorrect engine oil	Add correct oil to proper level.
	Loose or worn hydraulic pump	Inspect. See your authorized dealer.
	Engine oil diluted	Inspect engine oil. Determine cause.
Low Oil Pressure (Oil Pressure Light On, Red STOP Indicator Flashing)	Low oil level	Add oil to proper level. Inspect engine oil.
	Wrong viscosity oil/oil diluted with diesel fuel	Change oil.
Engine Overheats (Engine Coolant Indicator and Red STOP Indicator Flashing)	Low coolant level	Fill cooling system and check for leaks.
	Low engine oil level	Add oil.
	Loose or broken fan belt	Check for correct tension or replace belt.
	Fan on backwards	Check for correct fan installation.
	Radiator dirty or plugged	Check air flow. Clean radiator.
	Radiator shroud missing or damaged	Inspect. Repair or replace.
	Engine overloaded	Reduce load.
	Wrong fuel	Use correct grade of fuel.

Continued on next page

Symptom	Problem	Solution
	Radiator cap	Replace cap.
	Thermostat missing, cooling system coated with lime deposits	Flush cooling system. See your authorized dealer.
Excessive Fuel Consumption	Air system restricted	Check filter restriction indicator and air filters. Replace.
	Leakage in fuel system	Inspect. Repair.
	Incorrect grade of fuel	Drain and fill with correct fuel.
	Operator holding hydraulics in relief mode	Return control levers to neutral position.

VD76477,00012D3 -19-03JAN07-3/3

Electrical System

Symptom	Problem	Solution
Starter Will Not Crank Engine	Transmission control lever (TCL) not in neutral	Move transmission control lever (TCL) to neutral.
	Battery disconnect switch turned OFF	Turn switch ON.
	Starter	Listen for click from starter solenoid. If click is heard, the starter control circuit is functioning. If click is not heard, see your authorized dealer.
	Starter relay	With vehicle in neutral, open right engine service door and listen for click from starter relay when the key switch is in Start position. If click is heard, the key switch, circuit breaker, start fuse connectors, and neutral start switch are functioning and the starter relay, relay ground, or starter is damaged. See your authorized dealer.
Starter Solenoid Chatters	Poor or corroded connections at battery, battery ground strap, or starter	Inspect, clean, and tighten if necessary.
Engine Cranks Slowly	Loose or corroded battery cables	Inspect and clean or tighten.
	Loose battery ground cable	Open battery cover and inspect and tighten battery ground cable.
	Excessive engine load	Change engine oil to proper grade for temperature.
Starter Continues to Run	Starter solenoid stuck	Shut engine off. See your authorized dealer.
	Starter relay stuck on	Shut engine off. See your authorized dealer.
Battery Uses Too Much Water	Cracked battery case	Replace battery.
	High ambient temperature	Fill with distilled water.
Cracked Battery Case	No battery hold down clamp	Replace battery and install hold down clamp.
	Loose battery hold down clamp	Replace battery and install hold down clamp.
	Battery hold down clamp too tight	Replace battery and install battery hold down clamp correctly.
	Frozen battery	Keep battery fully charged in cold weather.

Continued on next page

Symptom	Problem	Solution
Low Battery Output	Low water level	Add distilled 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 battery.
Charge Indicator and Low Oil Pressure Indicator Stays On with Key Off	Broken ground wire to alternator	Inspect and repair.
	Worn alternator	Repair or replace alternator.
Voltage Indicator Light (Remains On with Engine Running)	Loose or glazed belt. Engine rpm low	Check belt. Replace if glazed. Raise engine rpm above 1200 rpm. If light remains on, see your authorized dealer.
	Diode or phase winding	Increase engine rpm to fast idle. If light goes out, it indicates a damaged diode or phase winding. See your authorized dealer.
	Loose or corroded electrical connections on battery, ground strap, starter, or alternator	Inspect, clean, or tighten electrical connections.
Alternator Light Out, but Low Charging System Voltage	Indicator light bulb	Inspect and replace.
	Loose wiring connector	Inspect and repair.
Noisy Alternator	Worn or damaged bearings in alternator	Remove belt and feel for rough bearing while turning alternator pulley.
	Drive belt	Inspect and replace if necessary.
	Pulley not aligned	Inspect.

VD76477,00012D4 -19-03JAN07-2/2

Hydraulic System

Symptom	Problem	Solution
Blade Lifts and/or Blade Tilts Too Slowly	Cold oil	Allow oil to warm up.
	Oil viscosity too high (too thick)	Use correct oil.
	Control valve linkage	Inspect linkage. Repair or adjust. See your authorized dealer.
	Worn hydraulic pump	Check blade raise cycle time.
Blade Fails to Lift and Blade Fails to Tilt	Low hydraulic oil level	Check. Add hydraulic oil.
Blade Hard to Control	Front idler vertical movement excessive	Adjust front idler to side frame clearance.
Pump Excessively Noisy	Cold oil	Allow unit to warm up.
	Low oil level	Check, add oil.
	Oil viscosity too high (oil too thick)	Change oil to correct viscosity oil.
Hydraulic Oil Overheats	Operator holds control valve open too long, causing system relief valve to open	Instruct operator on correct operation of dozer.
	Oil viscosity too high (oil too thick)	Change oil to correct viscosity.
Hydraulic Oil Foams	Water in oil	Inspect oil. Change.
	Using wrong oil	Inspect. Change oil.

HG31779,00000D4 -19-14JAN08-1/1

Hydrostatic Transmission

Symptom	Problem	Solution
Transmission Oil Filter Restriction Indicator Light Remains On with the Unit at Operating Temperature	Plugged filter	Change filter.
	Sender wire grounded	Remove wires from sender. If light remains on, circuit is grounded. See your authorized dealer.
Transmission Oil Overheats	Low oil level	Check and add transmission oil.
	Oil cooler core restricted with debris or fins damaged	Clean core. Add sand screen to protect core.
Low Transmission Oil Pressure (Filter Restriction Indicator Light May or May Not Be On)	Low oil level	Check. Add oil.
	Wrong oil viscosity	Drain and fill with correct oil.
	Oil overheated	Check temperature sending circuit. See your authorized dealer.
Crawler Will Not Move	Park lock switch	Check service codes. See your authorized dealer.
	Transmission problem	Check service codes. See your authorized dealer.
Crawler Mistracks	Air in transmission control circuit	See your authorized dealer.
	Misadjusted motor	Check service codes. See your authorized dealer.
	Transmission control lever (TCL) sticks or does not return to non-steer position	Check transmission control lever (TCL) boot. See your authorized dealer.
	Left and right track sag not adjusted the same	Adjust track sag to specifications.

HG31779,00000D5 -19-03SEP02-1/1

Gauges and Indicators

Symptom	Problem	Solution
Engine Coolant Temperature Indicator Light Does Not Indicate Overheating or Bulb Does Not Light in ON Position	Indicator light open circuit	Turn key to ON. If no light, see your authorized dealer.
Transmission Temperature Indicator Light Bulb Does Not Indicate Overheating or Bulb Does Not Light in ON Position	Indicator light open circuit	Turn key to ON. If no light, see your authorized dealer.
Engine Oil Pressure Indicator Will Not Light	Indicator light open circuit	Turn key to ON. If no light, see your authorized dealer.
Alternator Indicator Will Not Light	Indicator light open circuit	Turn key to ON. If no light, see your authorized dealer.
Horn Does Not Sound	Horn ground	Ground horn to tractor frame. See your authorized dealer.
	Horn	Replace horn. See your authorized dealer.
	Horn button	Replace horn button. See your authorized dealer.
Windshield Wiper Does Not Operate	Wiper fuse	Check and replace.
Heater Fan Does Not Operate	Heater fuse	Check and replace.
No Work Lights	Bulb burned out	Replace bulb.
	Poor ground light switch	Inspect and tighten. See your authorized dealer.
Rear Light Does Not Operate	Loose connector in wiring harness of ROPS	Inspect and reconnect. See your authorized dealer.
Dim Lights	Low battery charge	Check battery connections.
	Low alternator output	Check belt tension.
	Poor ground at lights	Clean and tighten.

NOTE: If any other problems are encountered which require special tools or machine knowledge to correct, see your authorized dealer.

VD76477,00012D5 -19-22NOV06-1/1

Access Diagnostic Trouble Codes (DTCs)

NOTE: Diagnostic trouble codes (DTCs) will display when a problem occurs. When a DTC appears, shut engine off and restart to check if the DTC is an intermittent problem. Recall and record all diagnostic trouble codes. See your authorized dealer.

1. Engine off, park lock on.
2. Press the MENU button to display the Main Menu.
3. Codes will be highlighted. Press the SELECT button to display the Codes submenu.
4. The submenus under Codes include Active and Stored codes. Use the NEXT button to navigate to desired submenu.
5. Use the NEXT button to navigate to a DTC and press SELECT to view a description of the DTC.
6. Press the BACK button to return to the list of codes.

VD76477,0001302 -19-08JAN07-1/1

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 build up due to condensation.

NOTE: For blends up to and including B20, it is recommended that biodiesel be used within three months of its manufacture. For blends greater than B20, it is recommended that the biodiesel be used within 45 days. The poor oxidation stability characteristic of biodiesel can result in long-term storage problems. John Deere does not recommend using biodiesel in engines powering standby applications or vehicles operating on a seasonal basis. Consult your John Deere dealer or fuel supplier for additives to improve fuel storage and performance of biodiesel fuels. These additives must be added to the biodiesel close to its time of production for them to be effective.

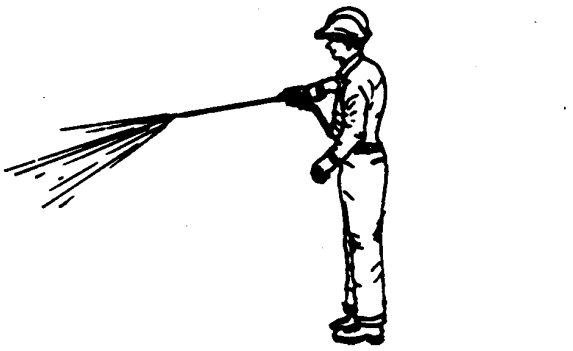
2. Repair worn or damaged parts. Install new parts, if necessary, to avoid needless delays later.
3. Clean primary air cleaner.

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

4. Wash the machine. Use low pressure wash operations (less than 1379 kPa (13.8 bar) (200 psi) until 30 days after receipt of machine have elapsed. Paint areas to prevent rust. Replace decals, where needed.
5. Fill fuel tank to prevent condensation.
6. Check tire pressure to ensure tires are properly inflated

LPS is a trademark of the Holt Lloyd Corporation.

T47764 —UN—09NOV88



T5813AM —UN—09FEB89

7. Apply waste oil to track chains. Run machine back and forth several times. Park machine on a hard surface to prevent tracks from freezing to ground.
8. 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.

9. Retract all hydraulic cylinders, if possible. If not, coat exposed cylinder rods with LPS ® 3 Rust Inhibitor.
10. Place a "DO NOT OPERATE" tag on the right control lever.
11. Lubricate all grease points.
12. Remove batteries.
13. Remove seat cushion and other perishable items.
14. Remove keys and lock all covers and doors.

CC28724,0000002 -19-29JUN09-1/1

Avoid Track Damage

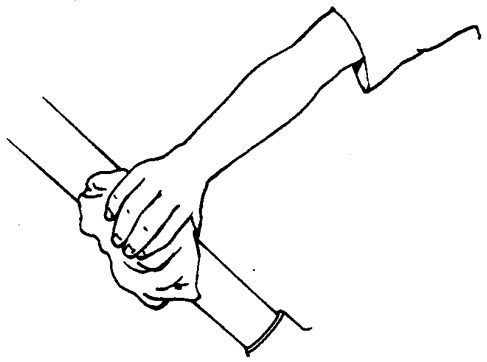
IMPORTANT: Avoid machine damage. If machine is equipped with a sealed and lubricated track, avoid water being forced between the plastic pins and rubber plugs while washing machine with pressure washer.

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

Monthly Storage Procedure

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

1. Drain water and sediment from fuel tank when air temperature is above freezing.
2. Remove LPS 3® Rust Inhibitor from cylinder rods with a cleaning solvent.



T6191AA —UN—18OCT88

Clean Cylinder Rods

LPS 3 Rust Inhibitor is a trademark of Illinois Tool Works.

VD76477,00016A3 -19-24FEB14-1/2

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

3. Check all fluid levels. If low, check for leaks and add oil as required.
4. Check belts.
5. Check condition of all hoses and connections.
6. Check battery electrolyte level. Charge and install battery.
7. For machines with **tires**, check condition of tires and tire pressure.

   For machines with **tracks**, check condition of tracks and track sag.

   On crawler machines with non sealed-and-lubricated track chains, apply oil to the pin-to-bushing joints. Run machine back and forth several times.
8. Park machine on a hard surface to prevent tracks from freezing to ground.
9. Fill fuel tank.
10. Pre-lubricate turbocharger bearings, if equipped:

    a. Disconnect fuel shutoff fuse.

    b. Crank engine for 10 seconds.

    c. Connect fuel shutoff fuse.
11. Inspect engine compartment, and remove any foreign material that may have accumulated. Start engine and run until it reaches operating temperature. Run at 1/2 speed for five minutes. Do not run at fast or slow idle.

    - If engine fails to start or runs poorly after starting, change fuel filter(s). Bleed fuel system.

T6181AU —UN—18OCT88

Check Oil on Dipstick

12. Operate all controls, levers, seat adjustments, etc.

CAUTION: Prevent possible injury from unexpected machine movement. Clear the area of all persons before running machine through the operation procedure.

13. Make sure the area is clear to allow for movement. Cycle all hydraulic functions several times. Check condition of all hoses and connections.
14. Park the machine with cylinder rods retracted, if possible. Turn key switch to OFF.
15. Apply LPS 3 Rust Inhibitor to exposed cylinder rod areas.

VD76477,00016A3 -19-24FEB14-2/2

Miscellaneous—Machine Numbers

Record Product Identification Number (PIN)

Purchase Date _____

Product Identification Number _____

NOTE: Record all 13 characters of Product Identification Number.

A—Product Identification Number Tag

T133324B —UN—23AUG00

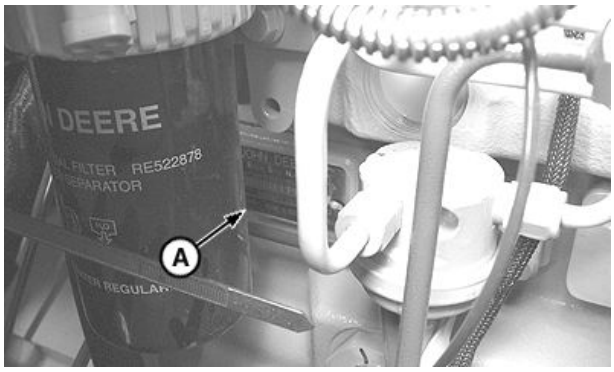
OUO1079,0000277 -19-29JUN09-1/1

Record Engine Serial Number

The engine serial number is located on right side of engine.

Engine Serial Number _____

A—Engine Identification Tag

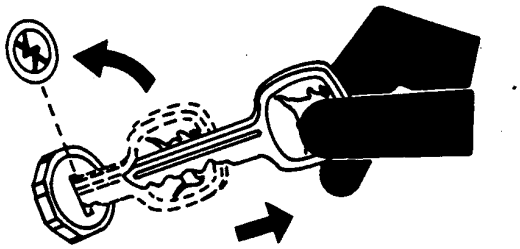


TX1011906A —UN—08SEP06

VD76477,0001044 -19-10JAN07-1/1

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

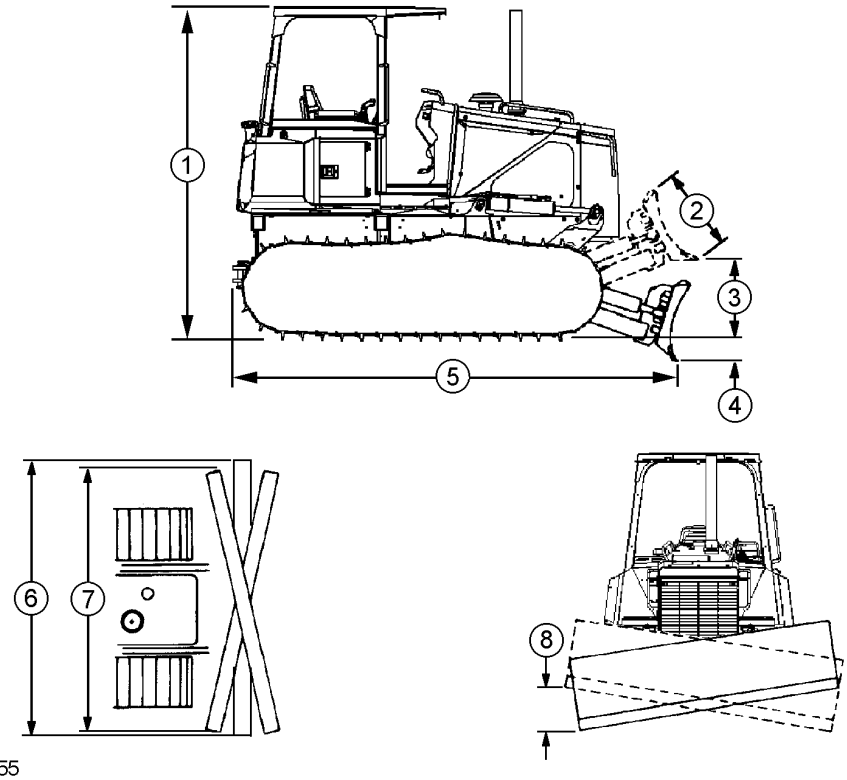
Keep Proof of Ownership

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

700J Crawler Dozer Dimensions



T132555

T132555 —UN—20JUL00

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with ISO and SAE standards. Except where otherwise noted, these specifications are based on a unit with roll-over protective structure, full fuel tank, 80 kg (175 lb) operator, and standard equipment.

Item	Measurement	Specification
1—Overall Height		
Canopy or Cab	Height	2985 mm 118 in.
With Limb Risers	Height	3099 mm 122 in.
2—Blade Height		
LT	Height	998 mm 39 in.
XLT	Height	998 mm 39 in.
LGP	Height	998 mm 39 in.
3—Blade Lift Height		
LT	Height	909 mm 36 in.
XLT	Height	980 mm 39 in.
LGP	Height	980 mm 39 in.

Continued on next page

Item	Measurement	Specification
4—Blade Digging Depth		
LT	Depth	500 mm 20 in.
XLT	Depth	541 mm 21 in.
LGP	Depth	541 mm 21 in.
5—Overall Length—LT		
Overall Length	Length	4580 mm 180 in.
Overall with Extended Drawbar	Length	4905 mm 193 in.
Overall With Retrieval Hitch	Length	4580 mm 180 in.
Overall With Winch	Length	5283 mm 208 in.
5—Overall Length—XLT		
Overall Length	Length	4765 mm 188 in.
Overall with Extended Drawbar	Length	5089 mm 200 in.
Overall With Retrieval Hitch	Length	4765 mm 188 in.
Overall With Winch	Length	5467 mm 215.3 in.
5—Overall Length—LGP		
Overall Length	Length	4765 mm 188 in.
Overall with Extended Drawbar	Length	5089 mm 200 in.
Overall With Retrieval Hitch	Length	4765 mm 188 in.
Overall With Winch	Length	5467 mm 215.3 in.
6—Blade Width		
LT	Width	3048 mm 120 in.
XLT	Width	3048 mm 120 in.
LGP	Width	3353 mm 132 in.
7—Blade Width, Fully Angled		
LT	Width	2769 mm 109 in.
XLT	Width	2769 mm 109 in.

Continued on next page

Item	Measurement	Specification
LGP	Width	3073 mm 121 in.
8—Blade Tilt Distance		
LT	Distance	424 mm 17 in
XLT	Distance	424 mm 17 in
LGP	Distance	467 mm 18 in
Blade Angle		
LT	Angle	25°
XLT	Angle	25°
LGP	Angle	25°
Blade Capacity		
LT	Capacity	2.63 m^3
XLT	Capacity	2.63 m^3
LGP	Capacity	2.87 m^3
Machine Ground Clearance, Minimum		
LT With Single-Bar Grouser	Clearance	381 mm 15 in.
XLT With Single-Bar Grouser	Clearance	381 mm 15 in.
LGP With Single-Bar Grouser	Clearance	381 mm 15 in.
Blade Cutting Edge Angle, Adjustable		
LT	Angle	7°
XLT	Angle	7°
LGP	Angle	7°
Cut Reach		
LT	Distance	51 mm 2 in.
XLT	Distance	25 mm 1 in.
LGP	Distance	-25 mm -1 in.
Width Over Track		
LT	Width	2286 mm 90 in.
XLT	Width	2338 mm 92 in.
LGP	Width	2743 mm 108 in.

Continued on next page

Item	Measurement	Specification
Cast Reach		
LT	Distance	401 mm 16 in.
XLT	Distance	375 mm 15 in.
LGP	Distance	330 mm 13 in.

VD76477,0001341 -19-29JUN09-4/4

700J Crawler Dozer Specifications

Item	Measurement	Specification
John Deere POWERTECH™ 6068T 6-Cylinder Turbocharged Diesel Engine		
	Non-Road Emission Standards	Meets PROCONVE MAR-I and Tier 3/Stage IIIA Emissions
SAE Gross	Power	92 kW 123 hp
SAE Net @ 2100 rpm	Power	86 kW 115 hp SAE net
Piston	Displacement	6.8 L 414 cu in.
Maximum Net @ 1300 rpm	Torque	525 N·m 410 lb-ft
Engine Low Idle	Speed	900 rpm
Engine High Idle	Speed	2275 rpm
Oil Pan Size	Capacity	0.29 L/kW
Electrical System		
Electrical System	Voltage	24 V
Alternator	Amperage	55 amp
Transmission—Hydrostatic		
Low, With Engine at Fast Idle	Gauge Setting	SP1.0-to-SP2.1
	Travel Speed	0—5.6 km/hr 0—3.5 mph
Medium, With Engine at Fast Idle	Gauge Setting	SP1.0-to-SP3.0
	Travel Speed	0—8.9 km/hr 0—5.5 mph
High, With Engine at Fast Idle	Gauge Setting	SP1.0-to-SP3.2
	Travel Speed	0—9.7 km/hr 0—6.0 mph
Hydraulic System—Open Center		
Pump	Type	Gear
Main Relief	Pressure	22 064 kPa 220.6 bar 3200 psi
Rated @ 2100 rpm	Flow Rate	95 L/min 25 gpm
Undercarriage—LT		
Oscillation	Distance	178 mm 7.0 in.
Final Drives	Type	Triple Gear Reduction
Track Rollers (Each Side)	Quantity	6 rollers
Carrier Rollers (Each Side)	Quantity	1 roller

Continued on next page

Item	Measurement	Specification
Track Shoes (Each Side)	Quantity	40 shoes
Track Pitch	Length	176 mm 6.9 in.
Track Gauge	Width	1778 mm 70 in.
Track on Ground	Length	2413 mm 95 in.
With 20 in. Grouser (Closed-Center, Single-Bar)	Grouser Width	508 mm 20 in.
	Ground Contact Area	24 518 cm^2 (3800 sq in.)
	Ground Pressure	47 kPa) 0.47 bar 6.8 psi
With 22 in. Grouser (Closed-Center, Single-Bar)	Grouser Width	559 mm 22 in.
	Ground Contact Area	26 969 cm^2
	Ground Pressure	43 kPa 0.43 bar 6.2 psi
Undercarriage—LGP		
Oscillation	Distance	196 mm (7.7 in.)
Final Drives	Type	Triple Gear Reduction
Track Rollers (Each Side)	Quantity	7 rollers
Carrier Rollers (Each Side)	Quantity	1 roller
Track Shoes (Each Side)	Quantity	42 shoes
Track Pitch	Length	176 mm 6.9 in.
Track Gauge	Width	1981 mm 78 in.
Track on Ground	Length	2591 mm 102 in.
With 20 in. Grouser (Closed-Center, Single-Bar)	Grouser Width	508 mm 20 in.
	Ground Contact Area	26 324 cm^2
	Ground Pressure	45 kPa 0.45 bar 6.5 psi
With 22 in. Grouser (Closed-Center, Single-Bar)	Grouser Width	559 mm 22 in.
	Ground Contact Area	28 957 cm^2
	Ground Pressure	41 kPa 0.41 bar 6.0 psi

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Item	Measurement	Specification
With 24 in. Grouser (Closed-Center, Single-Bar)	Grouser Width	610 mm 24 in.
	Ground Contact Area	31 589 cm^2
	Ground Pressure	38 kPa 0.38 bar 5.6 psi
With 30 in. Grouser (Closed-Center, Single-Bar)	Grouser Width	762 mm (30 in.) 6120 sq in.
	Ground Contact Area	39 486 cm^2
	Ground Pressure	31 kPa 0.31 bar 4.6 psi
With 30 in. Swamp Shoe	Grouser Width	762 mm 30 in.
	Ground Contact Area	39 486 cm^2
	Ground Pressure	31 kPa 0.31 bar 4.6 psi

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700J Crawler Dozer Weights

Item	Measurement	Specification
SAE Operating Weight		
LT (With Canopy and Standard Equipment)	Weight	11 701 kg 25 800 lb
LT (With Air-Conditioned Cab and Standard Equipment)	Weight	11 989 kg 26 435 lb
LGP (With Canopy and Standard Equipment)	Weight	12 653 kg 27 900 lb
LGP (With Air-Conditioned Cab and Standard Equipment)	Weight	12 941 kg 28 535 lb
Optional Equipment		
4000S Winch	Weight	652 kg 1437 lb
Winch Fairlead, Four Roller	Weight	85 kg 187 lb
Log Arch	Weight	354 kg 780 lb
Parallelogram Ripper, 3-tooth	Weight	1444 kg 3183 lb

OUT4001,000001E -19-28NOV07-1/1

700J Dozer Drain and Refill Capacities

Item	Measurement	Specification
Drain and Refill Capacities		
Cooling System (Including Surge Tank)	Capacity	23.3 L 6.2 gal
Fuel Tank	Capacity	227.0 L 60.0 gal
Engine Oil (Including Filter)	Capacity	27.5 L 7.3 gal
Final Drive (Each Side) (S.N. —275597)	Capacity	13.2 L 3.5 gal
Final Drive (Each Side) (S.N. 275598—)	Capacity	10.9 L 2.9 gal
Hydraulic Reservoir (Including Filter)	Capacity	51.0 L 13.5 gal
Transmission Reservoir (Including Filter)	Capacity	65.0 L 17.2 gal
Winch—If Equipped	Capacity	38.0 L 10.0 gal

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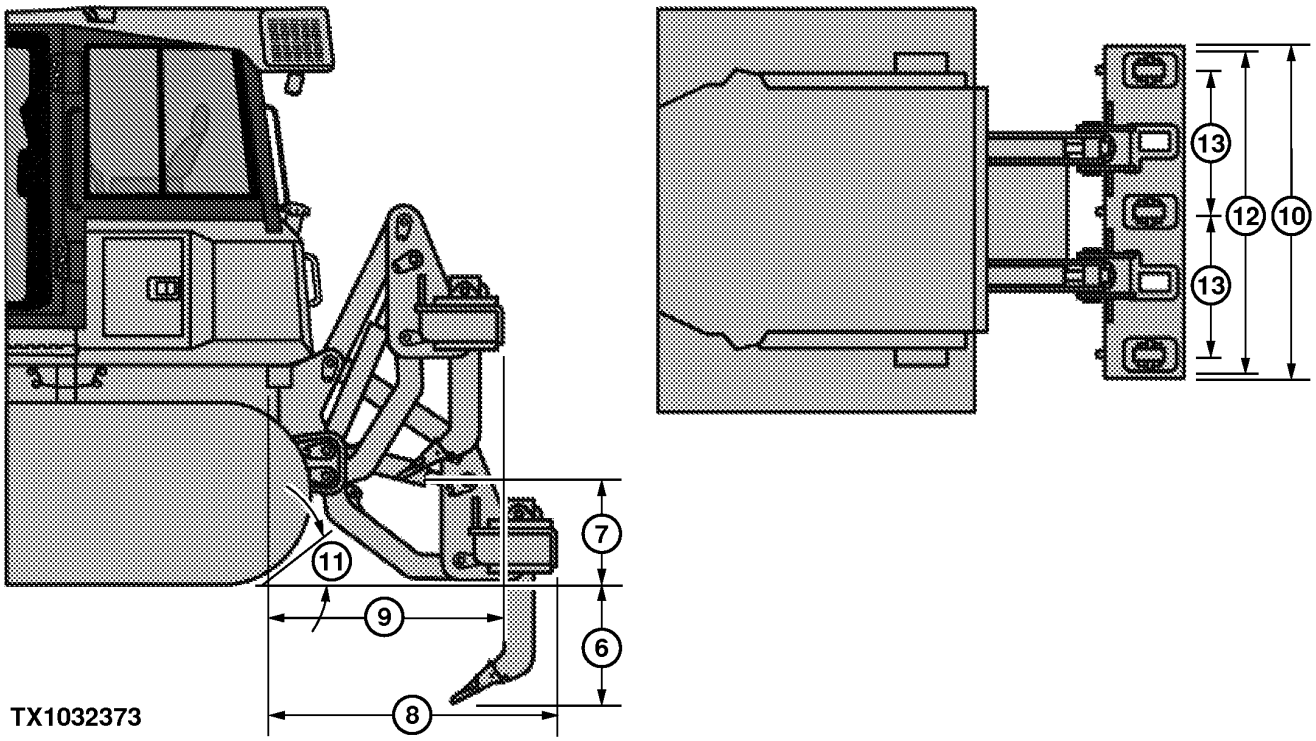
700J Parallelogram Ripper



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Parallelogram linkage with manual valve control and hydraulic float, tool bar, five ripper shanks.

Item	Measurement	Specification
6—Ripping Depth	Maximum Depth	563 mm 1 ft. 10 in.
7—Clearance	Maximum Clearance Under Tip	584 mm 1 ft. 11 in.
8—Overall Length, Attachment Lowered	Length	1494 mm 4 ft. 11 in.
9—Overall Length, Attachment Raised	Length	1210 mm 4 ft.
10—Overall Beam Width	Width	1930 mm 6 ft. 4 in.
11—Slope Angle (full raise)	Degrees	26°
12—Ripping Width	Width	1673 mm 5 ft. 6 in.
13—Distance Between Shanks (three installed)	Distance	806 mm 2 ft. 8 in.
Parallelogram Ripper, 3-tooth	Weight	1444 kg 3183 lb

OUT4001,000001F -19-03DEC07-1/1

4000S Winch

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

TX,115,RR2763 -19-10JAN07-1/1

Eurasian Economic Union

This information applies only to products which bear the EAC conformity mark of the Eurasian Economic Union member states.

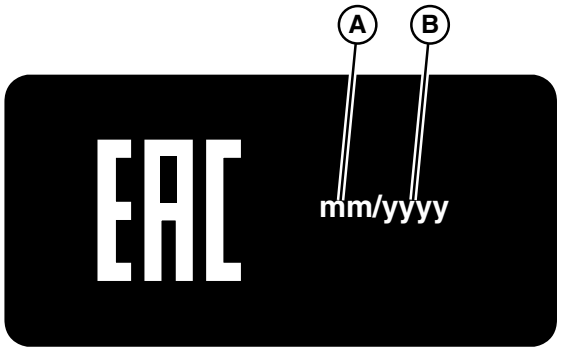
Manufacturer:
Deere & Company, Moline, Illinois U.S.A.

Name of the authorized representative in the Eurasian Economic Union:
Limited Liability Company
“John Deere Rus”

Address of the authorized representative:
142050, Russia, Moscow region, Domodedovo district, Domodedovo, Beliye Stolbi micro district, vladenye “Warehouse 104”, Building 2

For technical support, contact an authorized John Deere dealer.

Date of manufacture is denoted by the product marking on or near the serial number plate.



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EAC Marking

A—Month of Manufacture **B—Year of Manufacture**

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Machine Design Life

This machine is designed and manufactured to provide a long life of productive operation, however actual attainable life depends on a number of factors including the severity of working conditions and completion of recommended maintenance. (See the Service section of this manual.)

Periodically inspect and review the machine in conjunction with your John Deere dealer. The review may result in recommendations for service, component repair, remanufacture or replacement, or, if at the end of life, that the machine be removed from operation. (See separate decommissioning section of this manual for information on disposal and recycling of machine components.)

No machine should be operated if safety-related components are missing or in need of service. All missing or damaged safety-related components, including safety signs, should be repaired or replaced before operating.

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