

# **TerrainCut™ Front Mowers 1550, 1570, 1575, 1580, 1585 Series Serial No 80001-**



**JOHN DEERE**

## **OPERATOR'S MANUAL**

### **1500 Series TerrainCut™ Front Mowers**

**OMUC30513    ISSUE A4    (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.

**John Deere Turf Care**

North American Edition  
PRINTED IN U.S.A.

# Introduction

## Thank You for Purchasing a John Deere Product

We appreciate having you as a customer and wish you many years of safe and satisfied use of your machine.

MX00654,000020B-19-10MAY17

## Using Your Operator's Manual

This manual is an important part of your machine and should remain with the machine when you sell it.

Reading your operator's manual will help you and others avoid personal injury or damage to the machine. Information given in this manual will provide the operator with the safest and most effective use of the machine. Knowing how to operate this machine safely and correctly will allow you to train others who may operate this machine.

If you have an attachment, use the safety and operating information in the attachment operator's manual, along with the machine operator's manual, to operate the attachment safely and correctly.

This manual and safety signs on your machine may also be available in other languages (see your authorized dealer to order).

Sections in your operator's manual are placed in a specific order to help you understand all the safety messages and learn the controls so you can operate this machine safely. You can also use this manual to answer any specific operating or servicing questions. A convenient index located at the end of this book will help you find needed information quickly.

The machine shown in this manual may differ slightly

from your machine, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction that the machine will travel when going forward. When you see a broken line (-----), the item referred to is hidden from view.

Before delivering this machine, your dealer performed a predelivery inspection to ensure best performance.

MX00654,000020C-19-05JUN17

## Special Messages

Your manual contains special messages to bring attention to potential safety concerns and machine damage, as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

 **CAUTION: Avoid injury! This symbol and text highlight potential hazards or death to the operator or bystanders that may occur if the hazards or procedures are ignored.**

**IMPORTANT: Avoid damage! This text is used to tell the operator of actions or conditions that might result in damage to the machine.**

*NOTE: General information is given throughout the manual that may help the operator in the operation or service of the machine.*

MX00654,000020D-19-05JUN17

## Required Emission-Related Information

### Service Provider

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

DX,EMISSIONS,REQINFO-19-08DEC23

## Attachments for Your Machine

There is a John Deere attachment or kit to make your new machine perform more tasks or be more versatile, whether your machine is a lawn tractor, compact utility tractor, or a utility vehicle.

You can check out the entire line of attachments for your machine at [JohnDeere.com](http://JohnDeere.com) or ask your John Deere

dealer. From aerators to electric lift kits to tillers, there is a John Deere attachment or kit to fill every need.

OUMX068,000051C-19-05JUN17

## Service Literature

If you would like to purchase a copy of the Parts Catalog or Technical Manual for this machine, visit The John Deere Technical Information Store at:

# Introduction

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<https://techpubs.deere.com/>

or call:

- **U.S. & Canada:** 1-800-522-7448.
- **All Other Regions:** Your John Deere dealer.

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TH84124,0000199-19-29JUN22

## Parts

We recommend John Deere quality parts and lubricants, available at your John Deere dealer.

When you order parts, your John Deere dealer needs the serial number or product identification number (PIN) for your machine or attachment. These are the numbers that you recorded in the Product Identification section of this manual.

### Order Service Parts Online

Visit <https://partscatalog.deere.com/jdrc/> for your Internet connection to parts ordering and information.

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TC00531,00000E9-19-14JUN23

# Contents

|                                   |     |
|-----------------------------------|-----|
| Product Identification.....       | 5   |
| Safety Labels with Text.....      | 6   |
| Safety Labels without Text.....   | 11  |
| Safety.....                       | 16  |
| Machine Clean Out.....            | 24  |
| Operating Controls.....           | 25  |
| Operating Machine.....            | 29  |
| Service Intervals.....            | 59  |
| Service Lubrication.....          | 61  |
| Service Engine.....               | 64  |
| Service Transmission.....         | 79  |
| Service Steering & Brakes.....    | 83  |
| Service Electrical.....           | 85  |
| Service Miscellaneous.....        | 90  |
| Troubleshooting.....              | 98  |
| Storage.....                      | 102 |
| Specifications.....               | 104 |
| Warranty.....                     | 107 |
| John Deere Quality Statement..... | 110 |
| Service Record.....               | 112 |

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

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# Product Identification

## Record Identification Numbers

Front Mower

1550 PIN (080001—)

1570 PIN (080001—)

1575 PIN (080001—)

1580 PIN (080001—)

1585 PIN (080001—)

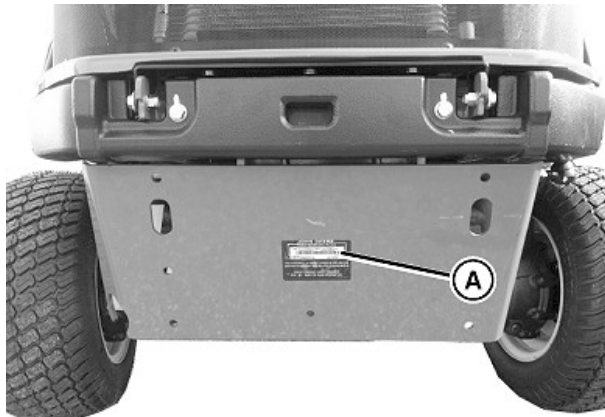
Contact an authorized service center for information on servicing. Always provide the product model and identification numbers.

Locate the identification numbers (PIN) for the machine and engine serial number. Record the information in the following spaces:

DATE OF PURCHASE:

DEALER NAME:

DEALER PHONE:

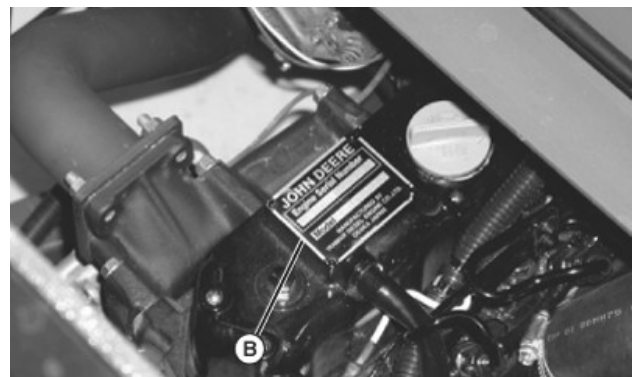


TCT007876—UN—11JUL13

PRODUCT IDENTIFICATION NUMBER (A):



TCT007877—UN—11JUL13



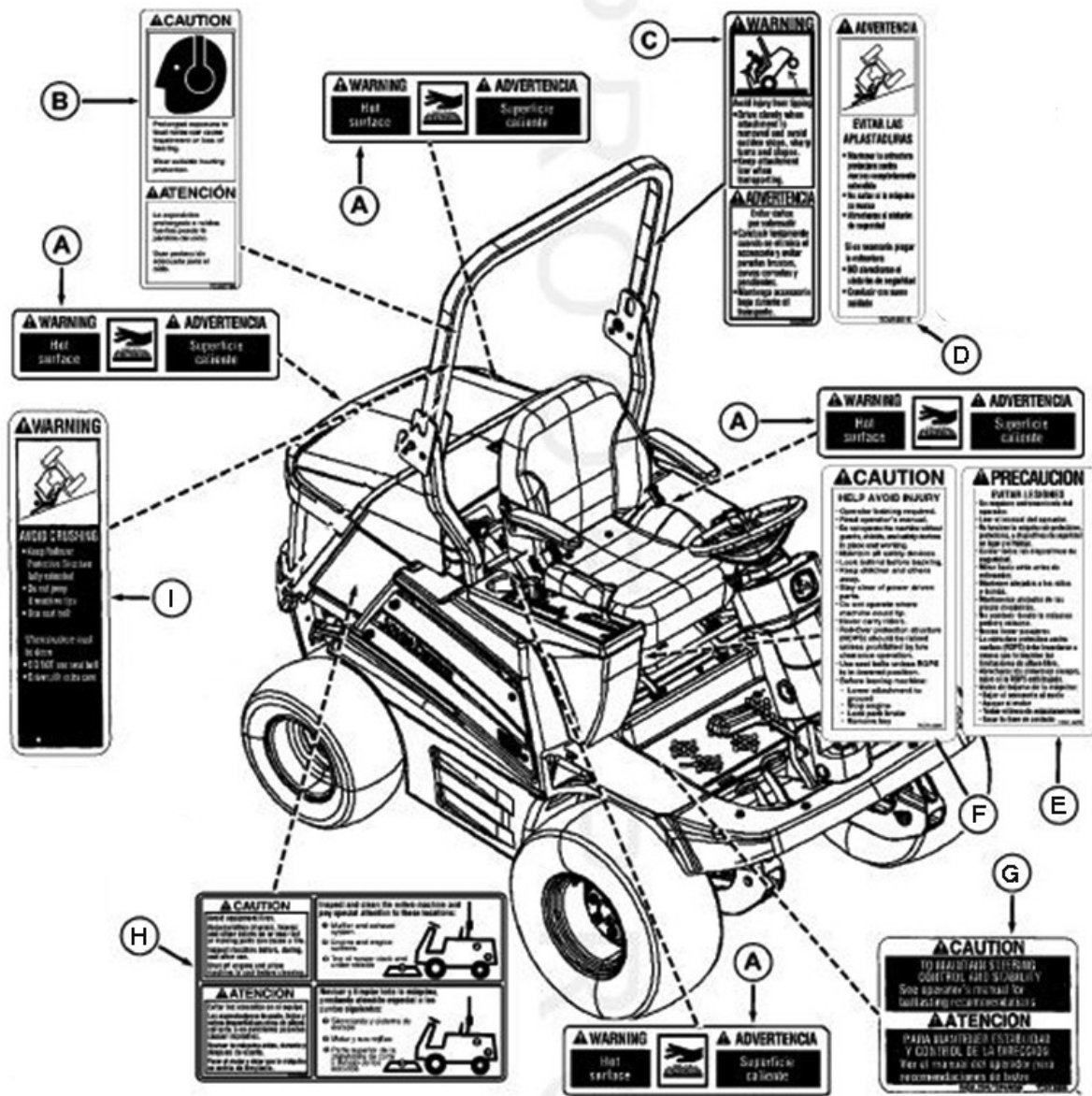
TCAL43291—UN—14MAR13

ENGINE SERIAL NUMBER (B):

SR99263,000091A-19-18MAY21

# Safety Labels with Text

## Safety Label Location (No Cab)



APY65200—UN—26JUL21

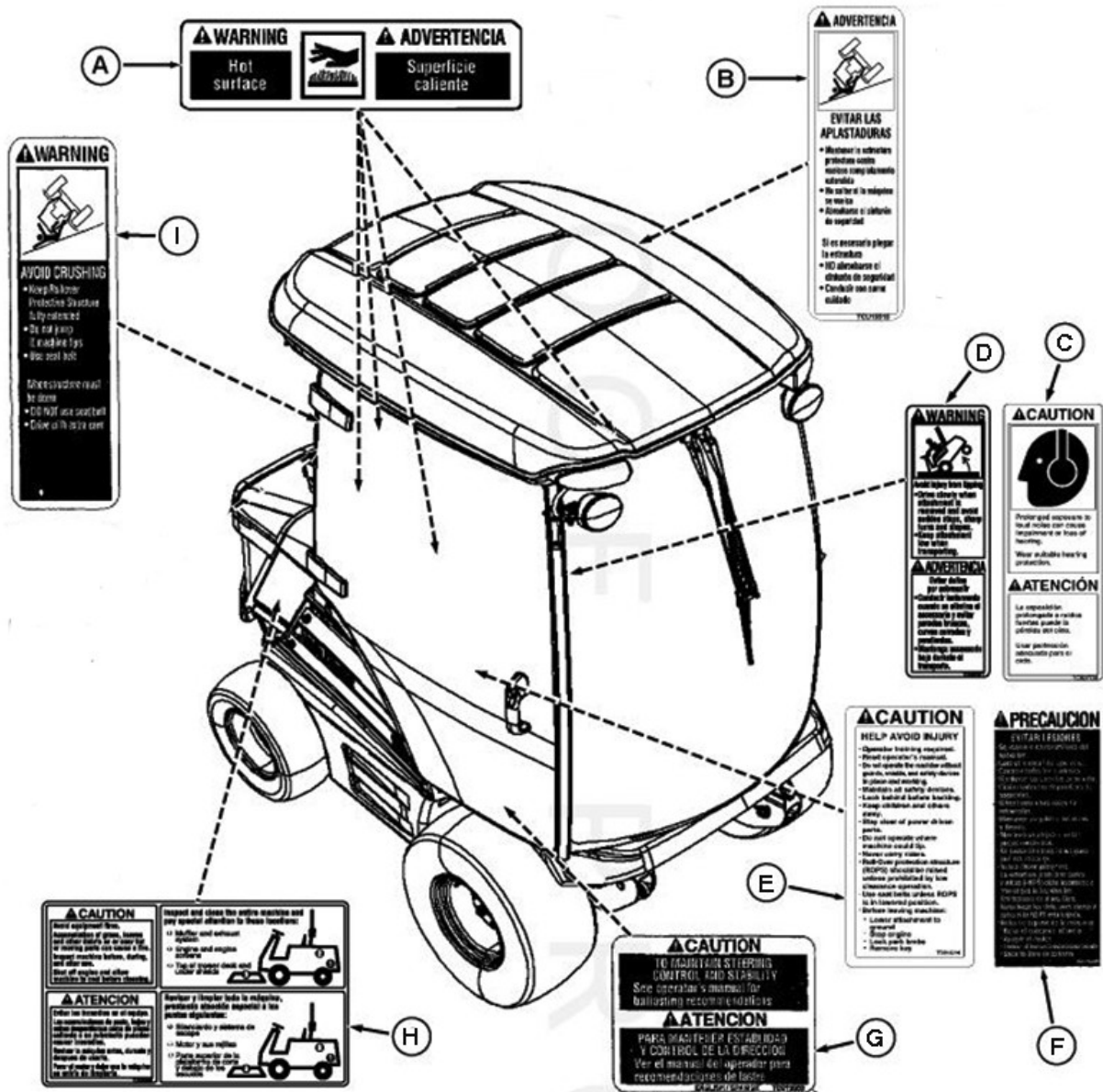
A—WARNING TCU13554 (2 on rear, and 2 behind seat)  
 B—CAUTION TCU27738  
 C—WARNING TCU39231  
 D—WARNING TCU13515 (Spanish)  
 E—CAUTION TCU13299 (Spanish)

F—CAUTION TCU13294  
 G—CAUTION TCU13909  
 H—CAUTION TCU33405  
 I—WARNING TCU13514

SR99263,00009DB-19-20JUL21

# Safety Labels with Text

## Safety Label Location (Cab)



A—WARNING TCU13554 (2 on rear, 2 behind seat)  
 B—WARNING TCU13515 (Spanish)  
 C—CAUTION TCU27738  
 D—WARNING TCU39231  
 E—CAUTION TCU13294

F—CAUTION TCU13299 (Spanish)  
 G—CAUTION TCU13909  
 H—CAUTION TCU33405  
 I—WARNING TCU13514

APY65199—UN—26JUL21

SR99263,00009DC-19-20JUL21

# Safety Labels with Text

## Understanding the Machine Safety Labels



MXAL42363—UN—22MAY13

The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards. DANGER or WARNING safety labels are located near specific hazards.

The operator's manual also explains any potential safety hazards whenever necessary in special safety messages that are identified with the word, CAUTION, and the safety-alert symbol.

On your machine safety labels, the words DANGER, WARNING, and CAUTION are used with this safety-alert symbol. DANGER identifies the most serious hazards:

- **DANGER;** The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING;** The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION;** The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

Replace missing or damaged safety labels. Use this operator's manual for correct safety label placement.

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

### French or Spanish Safety Labels and Operator's Manual

Operator's manuals and safety labels with content in French or Spanish are available for this machine through authorized John Deere dealers. See your John Deere dealer.

**NOTE:** Both text and no-text labels are shown. Your machine is only equipped with one of these types of labels.

MP47322,00F4601-19-21FEB23

## WARNING



TCAL43293—UN—14MAR13

Hot surface.

OUC0205,0000115-19-19MAR14

## WARNING



TCT013755—UN—04MAY16

### AVOID CRUSHING

- Keep Rollover Protective Structure fully extended
- Do not jump if machine tips
- Use seat belt

When structure must be down

- DO NOT use seat belt
- Drive with extra care

OUC0205,000036C-19-04MAY16

# Safety Labels with Text

## CAUTION



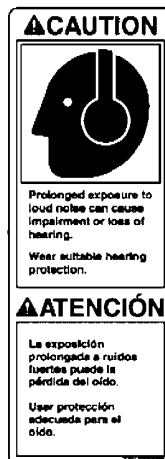
TCAL43298—UN—14MAR13

### TO MAINTAIN STEERING CONTROL AND STABILITY

See operator's manual for ballasting recommendations

OUO2005.0000116-19-15APR16

## CAUTION



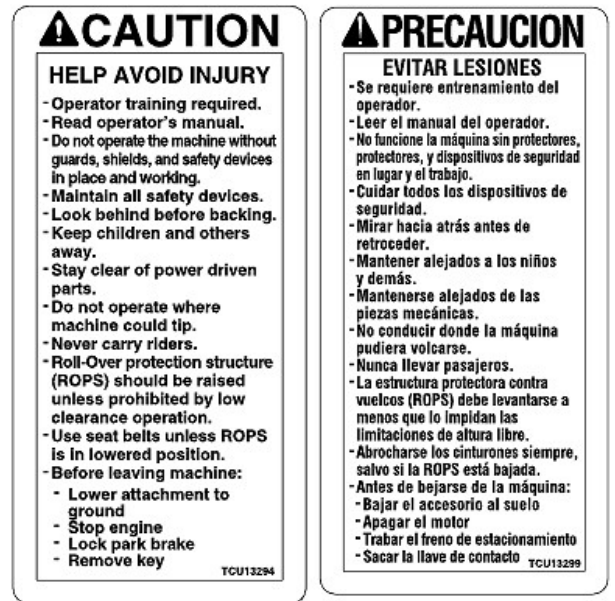
TCAL43292—UN—14MAR13

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear suitable hearing protection.

OUO2005.0000088-19-15APR16

## CAUTION



TCT010621—UN—18MAR14

### HELP AVOID INJURY

- Operator training required.
- Read operator's manual.
- Know all controls.
- Keep shields in place.
- Maintain all safety devices.
- Look behind before backing.
- Keep children and others away.
- Stay clear of power driven parts.
- Do not operate where machine could tip.
- Never carry riders.
- Roll-over protection structure (ROPS) should be raised unless prohibited by low clearance operation.
- Use seat belts unless ROPS is in lowered position.
- Before leaving machine:
  - Lower attachment to ground.
  - Stop engine.
  - Lock the park brake.
  - Remove key.

OUO2005.0000117-19-18MAR14

# Safety Labels with Text

## WARNING



TCT010622—UN—18MAR14

### Avoid injury from tipping

- Drive slowly when attachment is removed and avoid sudden stops, sharp turns and slopes.
- Keep attachment low when transporting.

OUO2005,0000118-19-15APR16

## 3.Top of mower deck and under shields

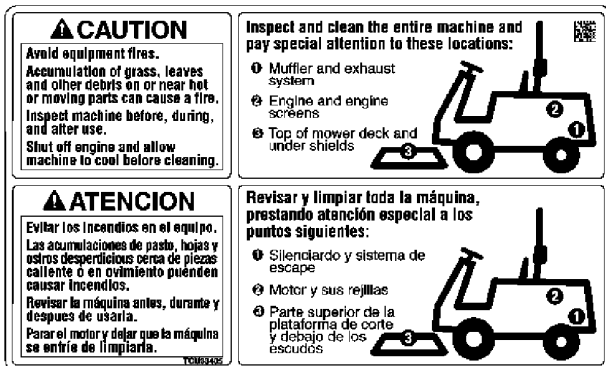
OUMX068,000067E-19-19MAR14

## Certification

Your product has been certified for compliance with American National Standards Institute B-71.4, Safety Specifications for Commercial Turf care Equipment.

OUO2005,0000092-19-31JUL13

## CAUTION



TCT010625—UN—03NOV15

### Avoid equipment fires.

Accumulation of grass, leaves and other debris on or near hot or moving parts can cause a fire.

Inspect machine before, during, and after use.

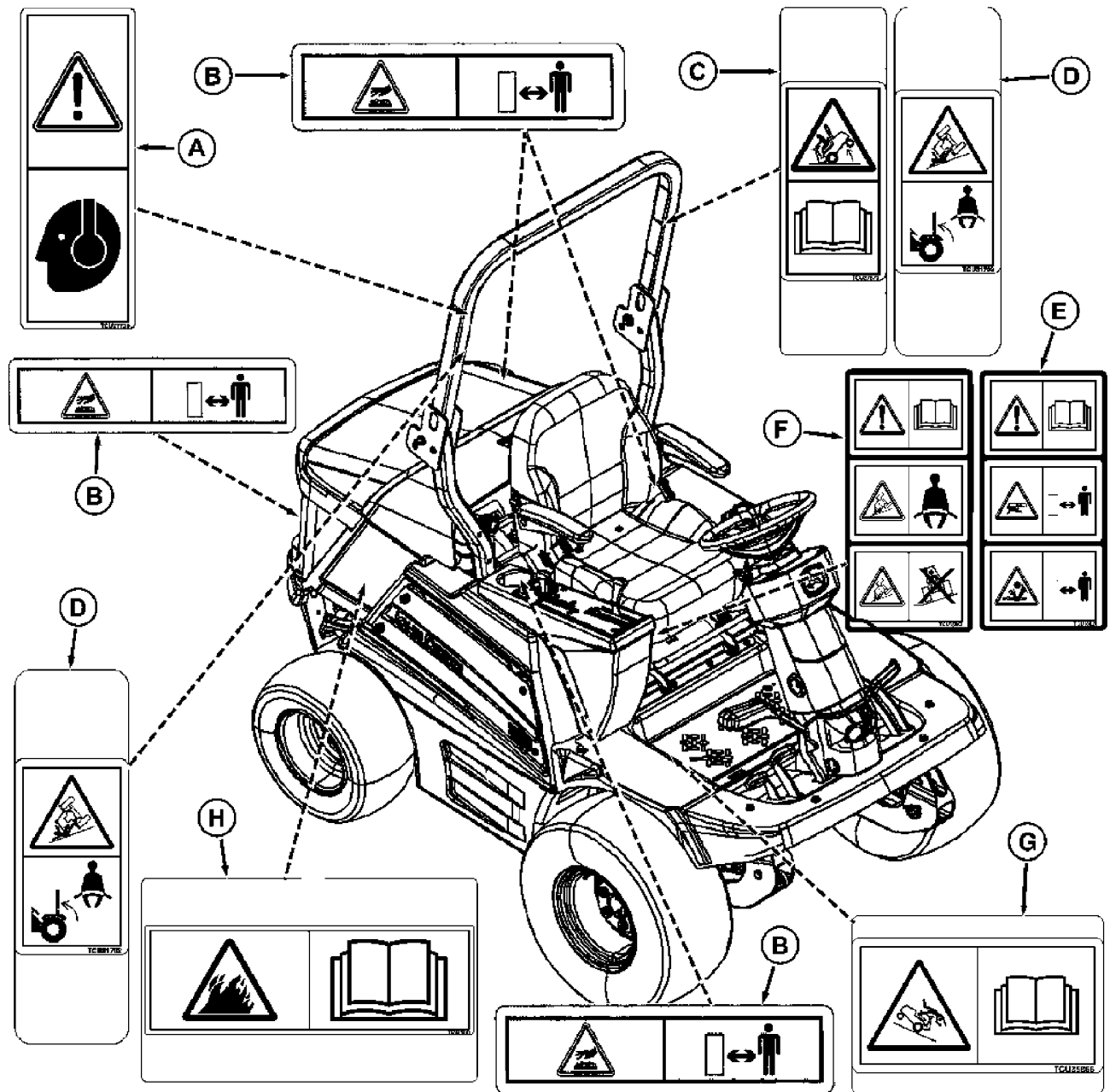
Shut off engine and allow machine to cool before cleaning.

### Inspect and clean the entire machine and pay special attention to these locations:

- 1.Muffler and exhaust system
- 2.Engine and engine screens

# Safety Labels without Text

## Safety Label Location (No Cab)



TCT008017—UN—29OCT15

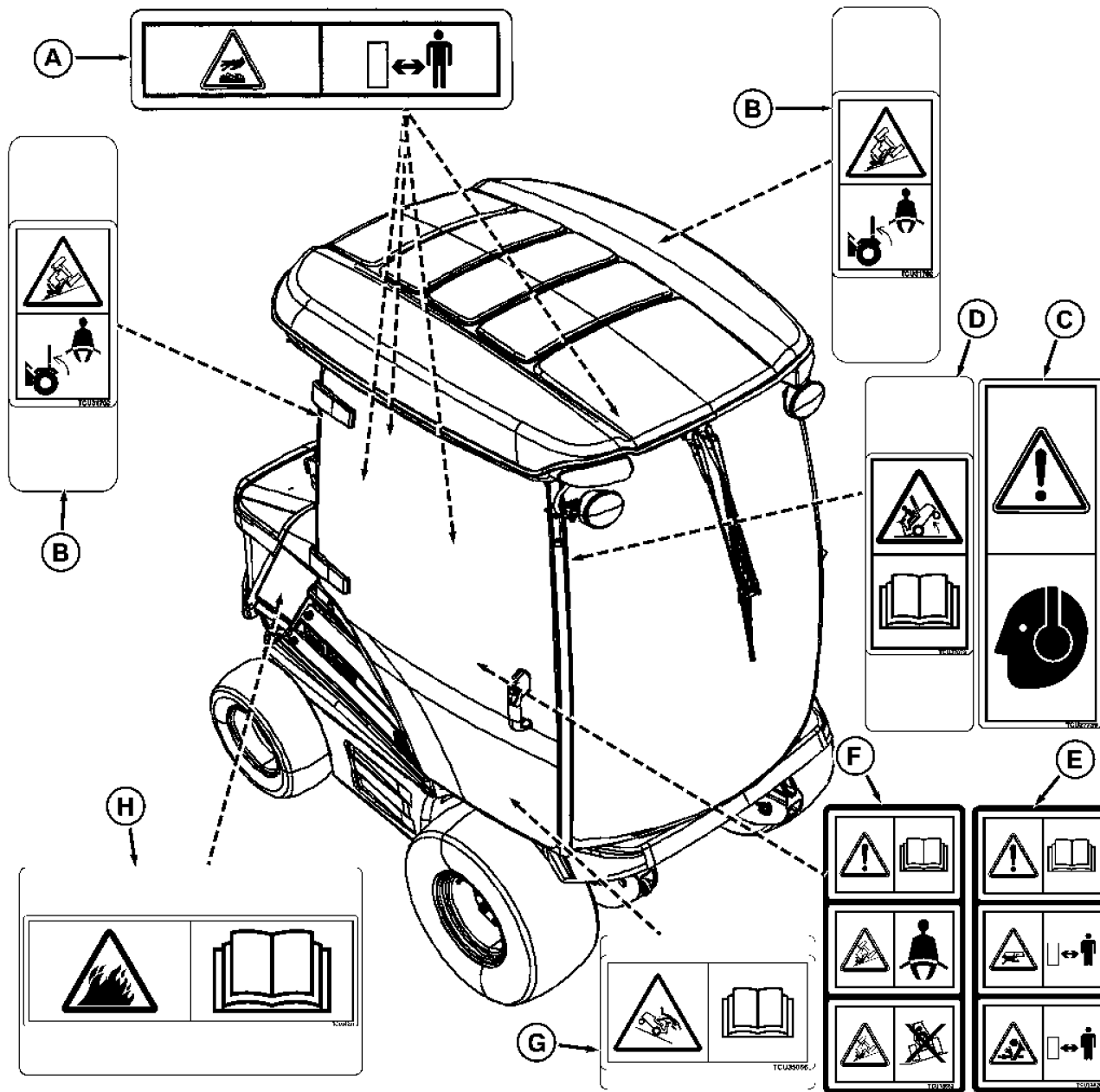
A—AVOID INJURY FROM EXPOSURE TO LOUD NOISE TCU27739  
 B—HOT SURFACES TCU13555 (2 on rear, 2 behind seat)  
 C—AVOID INJURY FROM TIPPING TCU37873  
 D—AVOID CRUSHING TCU31702

E—HELP AVOID INJURY TCU13520  
 F—HELP AVOID INJURY TCU36506  
 G—MAINTAIN STEERING CONTROL AND STABILITY TCU35866  
 H—AVOID INJURY FROM EQUIPMENT FIRES TCU34231

OUO2005.00000A5-19-06JUL16

## Safety Labels without Text

### Safety Label Location (Cab)



A—HOT SURFACES TCU13555 (2 on rear, 2 behind seat)  
 B—AVOID CRUSHING TCU31702  
 C—AVOID INJURY FROM EXPOSURE TO LOUD NOISE TCU27739  
 D—AVOID INJURY FROM TIPPING TCU37873

E—HELP AVOID INJURY TCU13520  
 F—HELP AVOID INJURY TCU36506  
 G—MAINTAIN STEERING CONTROL AND STABILITY TCU35866  
 H—AVOID INJURY FROM EQUIPMENT FIRES TCU34231

TCT009078—UN—03NOV15

OUC2005.000028F-19-06JUL16

### Understanding the Machine Safety Labels without Text



TCT005498—UN—11SEP12

The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

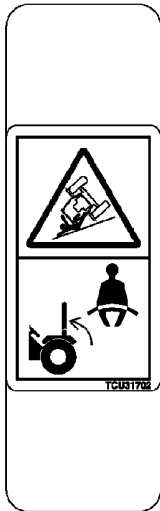
On your machine safety labels, the words DANGER, WARNING, and CAUTION are used with this safety-

# Safety Labels without Text

alert symbol. DANGER identifies the most serious hazards.

MX00654,0000389-19-09JAN23

## Avoid Crushing



TCAL25049—UN—24MAY12

- Keep Rollover Protective Structure fully extended
- Do not jump if machine tips
- Use seat belt

When structure must be down

- DO NOT use seat belt
- Drive with extra care

OUC02005,0000120-19-16AUG13

## Avoid Injury from Equipment Fires



MXT018019—UN—04MAY16

- Avoid equipment fires.
- Accumulation of grass, leaves, and debris on or near hot or moving parts can cause a fire.
- Inspect and clean the entire machine before, during and after use.
- Shut off engine and allow machine to cool before cleaning.
- Carefully read operator's manual Machine Cleanout section for details.

MX00654,0000390-19-30MAR20

## Hot Surfaces

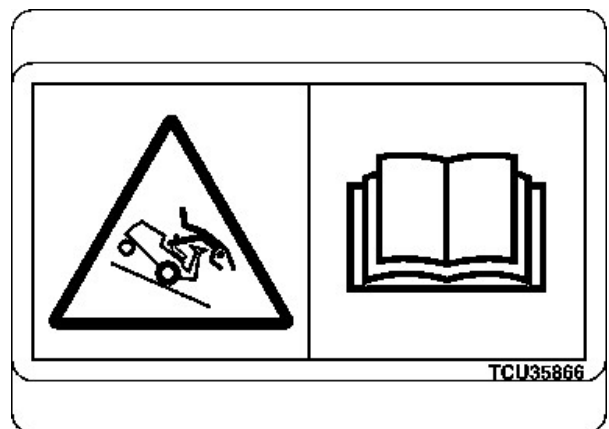


TCAL45198—UN—10APR13

Stay clear of hot surfaces.

OUC02005,0000121-19-16AUG13

## Maintain Steering Control and Stability TO MAINTAIN STEERING CONTROL AND STABILITY



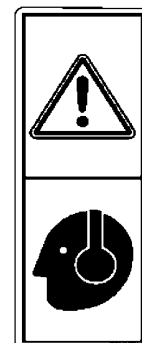
TCU35866

TCT008321—UN—14AUG13

- See operator's manual for ballasting recommendations.

OUC02005,00000A9-19-16AUG13

## Avoid Injury from Exposure to Loud Noise



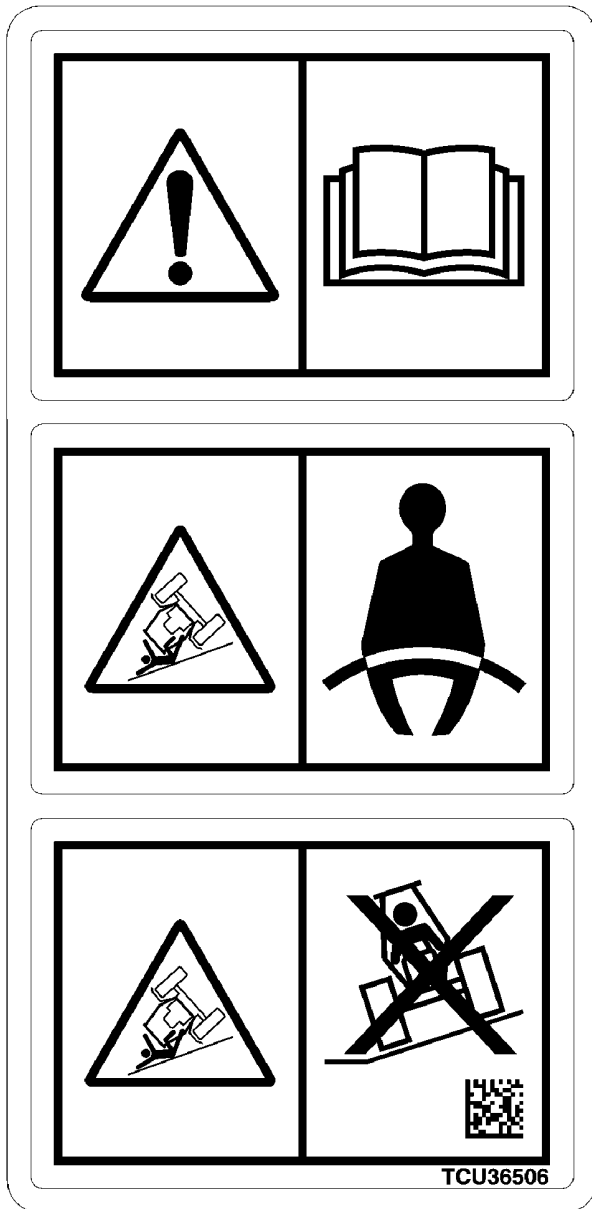
TCAL45197—UN—10APR13

- Prolonged exposure to loud noises can cause impairment or loss of hearing.
- Wear suitable hearing protection.

OUC02005,0000122-19-16AUG13

## Safety Labels without Text

### Help Avoid Injury



TCT011362—UN—29OCT15

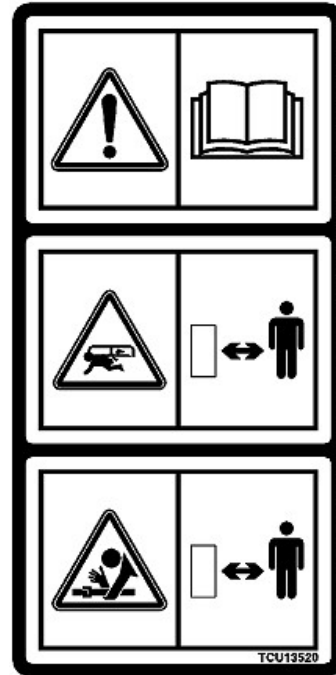
### HELP AVOID INJURY

- Operator training required.
- Do not operate where machine could tip.
- Never carry riders.
- Roll-over protection structure (ROPS) should be raised unless prohibited by low clearance operation.
- Use seat belts unless ROPS is in lowered position.
- Before leaving machine:
  - Lower attachment to ground.
  - Stop engine.
  - Lock the park brake.
  - Remove key.

- Do not use this machine on slopes greater than 10°.

MX00654,0000081-19-02NOV15

### Help Avoid Injury



TCT008323—UN—14AUG13

### HELP AVOID INJURY

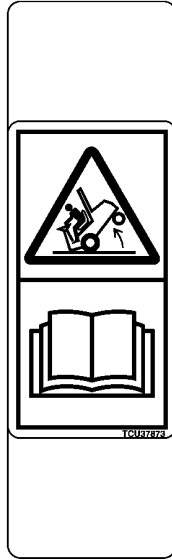
- Operator training required.
- Read operator's manual.
- Know all controls.
- Keep shields in place.
- Maintain all safety devices.
- Look behind before backing.
- Keep children and others away.
- Stay clear of power driven parts.

OOU2005,00000AC-19-16AUG13

## Safety Labels without Text

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### Avoid Injury from Tipping



TCT010623—UN—19MAR14

#### **Avoid injury from tipping:**

- Drive slowly when attachment is removed and avoid sudden stops, sharp turns and slopes.
- Keep attachment low when transporting.

OUMX068,000067D-19-19MAR14

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# Safety

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## Operator Training Required

- Read the operator's manual, attachment manuals, and other training material carefully. If the operator or mechanic cannot read English, it is the responsibility of the owner to explain this material to them. This publication is available in other languages.
- Become familiar with the safe operation of the equipment, operator controls, and safety signs.
- All operators and mechanics should be trained. The owner of the machine is responsible for training the users.
- Age, physical ability, and mental capacity can be factors in equipment-related injuries. Operators must be mentally and physically capable of operating the machine properly and safely.
- Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.
- The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people, or property.
- Operate the machine in an open, unobstructed area under the direction of an experienced operator.
- Test drive area with attachment lowered, if equipped, but not running. Slow down when you travel over rough ground.

OUC1082,000657E-19-15MAY18

## Preparation

- Evaluate the terrain and determine what accessories and attachments are required to perform the job safely and properly. Only use accessories and attachments approved by the manufacturer.
- Wear appropriate clothing including, safety glasses, and hearing protection. Long hair, loose clothing, or jewelry may get tangled in moving parts.
- Inspect the area where the equipment is to be used. Remove all objects such as rocks, toys, and wire which can be thrown by the machine.
- Use extra care when handling gasoline and other fuels. They are flammable and vapors are explosive.
  - a. Use only an approved container.
  - b. Never remove gas cap or add fuel when engine is running. Do not smoke.
  - c. Never refuel or drain the machine indoors.
- Check that the operator presence controls, safety switches, and shields are attached and functioning properly. Do not operate machine unless all safety devices are functioning properly.

OUC1082,000657E-19-15MAY18

## Operating Safely

- Never run an engine in an enclosed area where dangerous carbon monoxide fumes can collect.
- Only operate in good light, keeping away from holes and hidden hazards.
- Be sure all drives are in neutral and parking brake is engaged before starting engine. Only start engine from the operator's position. Use seat belts if provided.
- Slow down and use extra care on hillsides. Be sure to travel in the recommended direction on hillsides. For this machine, drive up and down hillsides, not across. Turf conditions can affect the machine's stability. Use caution while operating near drop-offs.
- Slow down and use caution when making turns and when changing directions on slopes.
- Never raise deck with the blades running.
- Never operate with the PTO shield, or other guards, not securely in place. Be sure all interlocks are attached, adjusted properly, and functioning properly.
- Never operate with the discharge deflector raised, removed or altered, unless using a grasscatcher. Do not operate mower without discharge chute or entire grasscatcher in place.
- Do not change the engine governor setting or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.
- Stop on level ground, lower implements, disengage drives, engage parking brake, and shut off engine before leaving the operator's position for any reason including emptying the grasscatchers or unclogging the chute.
- Stop equipment and inspect blades after striking objects or if an abnormal vibration occurs. Make necessary repairs before resuming operations.
- Keep hands and feet away from the cutting units.
- Look behind and down before backing up to be sure of a clear path.
- Never carry passengers and keep pets and bystanders away.
- Slow down and use caution when making turns and crossing roads and sidewalks. Stop blades if not mowing. Watch for traffic when operating near or crossing roadways.
- Be aware of the mower discharge direction and do not point it at anyone.
- Do not operate the machine while under the influence of alcohol or drugs.
- Use care when loading or unloading the machine into or off of a trailer or truck.
- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
- Inspect machine before you operate. Be sure hardware is tight. Repair or replace damaged, badly

# Safety

worn, or missing parts. Be sure guards and shields are in good condition and fastened in place. Make any necessary adjustments before you operate.

- Before using, always visually inspect to see that the blades, blade bolts and the mower assembly are not worn and damaged. Replace worn and damaged blades and bolts in sets to preserve balance.
- Keep safety labels visible when installing accessories and attachments.
- Do not wear radio or music headphones. Safe service and operation require your full attention.
- When machine is left unattended, stored, or parked, lower the mower deck unless a positive mechanical lock is used.

OUO1023,000044C-19-13MAR13

## Using a Spark Arrestor

The California Public Resources Code, Section 4442.5 provides as follows:

No person shall sell, offer for sale, lease, or rent to any person any internal combustion engine subject to Section 4442 or 4443, and not subject to Section 13005 of the Health and Safety Code, unless the person provides a written notice to the purchaser or bailee, at the time of sale or at the time of entering into the lease or rental contract, stating that it is a violation of Section 4442 or 4443 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrestor, as defined in Section 4442, maintained in effective working order or the engine is constructed, equipped, and maintained for the prevention of fire pursuant to Section 4443. Cal. Pub. Res. Code 4442.5.

Other states or jurisdictions may have similar laws. A spark arrestor for your machine may be available from your authorized dealer. An installed spark arrestor must be maintained in good working order by the operator.

OUO2005,0000213-19-05JUL17

## Checking Mowing Area



MXAL41932—UN—22MAY13

- Clear mowing area of objects that might be thrown. Keep people and pets out of mowing area.
- Low-hanging branches and similar obstacles can injure the operator or interfere with mowing operation. Before mowing, identify potential

obstacles, such as low-hanging branches, and trim or remove those obstacles.

- Study mowing area. Set up a safe mowing pattern. Do not mow where traction or stability is doubtful.
- Test drive area with mower lowered (if equipped) but not running. Slow down when you travel over rough ground.
- Survey all mowing sites to determine which slopes are safe for machine operation and which slopes should be maintained through other maintenance techniques.

MP47322,00F4617-19-05JUL17

## Parking Safely

1. Stop machine on a level surface, not on a slope.
2. Disengage mower blades or any other attachments.
3. Lower attachments to the ground.
4. Lock the park brake.
5. Stop the engine.
6. Remove the key.
7. Wait for engine and all moving parts to stop before you leave the operator's seat.
8. Close fuel shut-off valve, if your machine is equipped.
9. Disconnect the negative battery cable or remove the spark plug wire(s) (for gasoline engines) before servicing the machine.

OUO1023,0000035-19-21FEB13

## Rotating Blades are Dangerous



MXAL41928—UN—18FEB13

- Rotating blades can cut off arms and legs, and throw objects. Failure to observe safety instructions could result in serious injury or death.
- Keep hands, feet and clothing away from mower deck when engine is running.
- Be alert at all times, drive forward and in reverse carefully. People, especially children can move quickly into the mowing area before you know it.
- Before backing up, stop mower blades or attachments and look down and behind the machine carefully, especially for children.
- Do not mow in reverse.
- Shut off blades when you are not mowing.
- Park machine safely before leaving the operator's

# Safety

station for any reason including emptying the grasscatchers or unplugging the chute.

MX00654,000001F-19-27MAR14

## Protect Children

- Death or serious injury can occur when young children associate having fun with a lawn mowing machine simply because someone has given them a ride on a machine.
- Children are attracted to lawn mowing machines and mowing activities. They don't understand the dangers of rotating blades or the fact that the operator is unaware of their presence.
- Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
- Tragic accidents with children can occur if the operator is not alert to the presence of children, especially when a child approaches a machine from behind. Before and while backing up, stop mower blades and look down and behind the machine carefully, especially for children.
- Never carry children on a machine or attachment, even with the blades off. Do not tow children in a cart or trailer. They can fall off and be seriously injured or interfere with safe machine operation.
- Never use the machine as a recreational vehicle or to entertain children.
- Never allow children or an untrained person to operate the machine. Instruct all operators not to give children a ride on the machine or in an attachment.
- Keep children indoors, out of the mowing area, and in the watchful eye of a responsible adult, other than the operator, when a mower is being operated.
- Stay alert to the presence of children. Never assume that children will remain where you last saw them. Turn the machine off if a child enters the work area.

OUO2005,0000217-19-05FEB13

## Operating on Slopes

### Identify Slopes for Safe Operation

- Establish your own special procedures and rules for operating on slopes. These procedures must include a survey of all mowing sites to determine which slopes are safe for machine operation. Always use common sense and good judgement when performing this survey.
- Lay a straight piece of sturdy lumber 1.2 m (4 ft) long on the slope and measure the angle of the slope with an angle indicator or protractor level.
- Never mow or operate machine on slope angles greater than 25°.

- Exceeding the maximum recommended slope angle of 25° increases the risk of rollover accidents that can result in serious injury or death.
- Always consider potential turf conditions and slope angles when determining the risk of loss-of-control and tip-over accidents.
- On slope angles of 15° or less the risk of rollover is low, but as the slope angle increases to the John Deere recommended maximum of 25° the risk increases to a moderate level.
- The recommended slope angles are for a machine in its basic configuration. The basic configuration is mower deck only, no cab, MCS or other attachments. The addition of a cab, MCS or other attachments will increase the risk of a rollover and decrease the recommended operating slope.

### Operate Safely on Slopes

- Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution.
- If you feel uneasy on a hillside, do not mow it.
- Mow up and down slopes, not across.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Choose a low ground speed so you will not have to stop or shift while on a slope.
- Rollover can occur before the tires lose traction.
- Use caution if moving when grass is wet or slippery. Tires may lose traction. Tires may lose traction or slip on slopes even though the brakes are functioning properly.
- Avoid starting, stopping or turning on a slope. If the tires lose traction, disengage the PTO and proceed slowly, straight down the slope.
- Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to roll over.
- Use extra care while operating machine with grass catchers or other attachments, they can affect stability of the machine. Do not use on steep slopes.
- Do not mow or operate machine in areas adjacent to hazards that may cause the machine to roll over. The machine could suddenly lose traction, slide, and/or roll over if a wheel goes over the edge or if the edge breaks away. Leave a buffer area of at least as wide as the machine between the hazard and the mowing area.
- Follow the manufacturer's recommendations for wheel weights or counterweights for added stability when operating on slopes or using front or rear mounted attachments. Remove weights when not required.

# Safety

- Drive machine very slowly and avoid quick stops or sharp turns when attachment is removed.
- Keep attachments lowered to the ground while operating on slopes. Raising attachments while operating on slopes can cause machine to become unstable.
- Transport machine with attachments lowered to improve stability.

OUO2005,0000166-19-27MAR14

## Use Seat Belt Properly



TCAL42361—UN—08MAR13

- Use a seat belt when you operate with a Roll-Over Protective Structure (ROPS) to minimize chance of injury from an accident, such as an overturn.
  - Do not use a seat belt if operating with a folding ROPS in the folded position. Return the folding ROPS to the upright position as soon as possible.
  - Never modify, disassemble or attempt to repair the seat belt.
  - Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.
  - Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with John Deere-approved replacement parts.
  - Layers of heavy clothing can interfere with proper positioning of the seat belt and can reduce the effectiveness of the seat belt.
- cutting. It must be replaced to maintain the manufacturer's certification of the structure.
  - The seat is part of the ROPS safety zone. Replace only with a John Deere approved seat.
  - Be certain that the seat belt can be released quickly in the event of an emergency.
  - Never attempt to repair a damaged or altered ROPS. It must be replaced to maintain the manufacturer's certification of the structure.
  - Check carefully for overhead clearances (i.e. branches, doorways, electrical wires) before driving under any objects and do not contact them.
  - The ROPS is an integral and effective safety device. Keep a folding ROPS in the raised and locked position and use the seat belt when operating the machine.
  - Lower a folding ROPS temporarily only when absolutely necessary. Do not wear the seat belt when folded down.
  - Be aware there is no rollover protection when a folded ROPS is in the down position.
  - Check the area to be mowed and never fold down a folding ROPS in areas where there are slopes, drop offs, ditches or embankments or bodies of water.

MX00654,000001D-19-27MAR14

## Keep Riders Off

- Only allow the operator on the machine. Keep riders off.
- Riders on the machine or attachment may be struck by foreign objects or thrown off the machine causing serious injury.
- Riders obstruct the operator's view resulting in the machine being operated in an unsafe manner.

OUO2005,000021B-19-05FEB13

## Use Rollover Protection System (ROPS) Properly

- Never operate the machine without the ROPS installed.
- DO NOT remove the ROPS.
- Keep the ROPS in safe operating condition by periodically thoroughly inspecting for damage and keeping all mounting hardware tight. Make certain all parts of the ROPS are installed correctly if the ROPS structure is loosened or removed for any reason. All ROPS hardware should be tightened to the proper torque per manufacturer's recommendations.
- Replace a damaged ROPS. Do not repair or revise. The protection provided 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

## Driving Safely on Public Roads

Avoid personal injury or death resulting from a collision with another vehicle on public roads:

- Use safety lights and devices. Slow moving machines when driven on public roads are hard to see, especially at night.
- Whenever driving on public roads, use flashing warning lights and turn signals according to local regulations. Extra flashing warning lights may need to be installed.

OUO2005,000021C-19-05FEB13

# Safety

## Checking Wheel Hardware

- A serious accident could occur causing serious injury if wheel hardware is not tight.
- Check wheel hardware tightness often during the first 100 hours of operation.
- Wheel hardware must be tightened to specified torque using the proper procedure anytime it is loosened.

OUO2005,000021D-19-05FEB13

## Wear Appropriate Clothing



TCT015572—UN—24MAY18

- Always wear safety goggles, or safety glasses with side shields when operating the machine.
- Wear close fitting clothing and safety equipment appropriate for the job.
- While operating this machine, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
- Wear a suitable protective device such as earplugs. Loud noise can cause impairment or loss of hearing.

TC00531,00001DE-19-26JUN18

## Towing Loads Safely

- Stopping distance increases with speed and weight of towed load. Travel slowly and allow extra time and distance to stop.
- Total towed weight must not exceed combined weight of pulling machine, ballast and operator. Use counterweights or wheel weights as described in the attachment or pulling machine operator's manual.
- Excessive towed load can cause loss of traction and loss of control on slopes. Reduce towed weight when operating on slopes.
- Never allow children or others in or on towed equipment.
- Use only approved hitches. Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the approved hitch point.
- Follow the manufacturer's recommendations for weight limits for towed equipment and towing on slopes.
- If you cannot back up a slope with a towed load, the

slope is too steep to operate on with the towed load. Reduce the towed load or do not operate.

- Do not turn sharply. Use additional caution when turning or operating under adverse surface conditions. Use care when reversing.
- Do not shift to neutral and coast downhill.

OUO1082,000634B-19-14FEB13

## Maintenance and Storage



TCAL43414—UN—15MAR13

- Never operate machine in a closed area where dangerous carbon monoxide fumes can collect.
- Disengage drives, lower implement (if equipped), lock parking brake, stop engine and remove key or disconnect spark plug (for gas engines). Wait for all movement to stop before adjusting, cleaning or repairing.
- Clean grass and debris from cutting units, drives, mufflers, and engine to help prevent fires. Clean up oil or fuel spillage.
- Let engine cool before storing and do not store near flame.
- Shut off fuel while storing or transporting. Do not store fuel near flames or drain indoors.
- Park machine on level ground. Never allow untrained personnel to service machine. Understand service procedure before doing work.
- Use jack stands or lock service latches to support components when required. Securely support any machine elements that must be raised for service work.
- Before servicing machine or attachment, carefully release pressure from any components with stored energy, such as hydraulic components or springs.
- Release hydraulic pressure by lowering attachment or cutting units to the ground or to a mechanical stop and move hydraulic control levers back and forth.
- Disconnect battery (if equipped) or remove spark plug (for gas engines) before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.
- Use care when checking tines or blades. Wrap the tines or blades, or wear gloves, and use caution when servicing them. Only replace tines or blades. Never straighten or weld them.
- Keep hands, feet, clothing, jewelry and long hair away from moving parts. If possible, do not make adjustments with the engine running.

# Safety

- Charge batteries (if equipped) in an open well ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.
- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
- Check grass catcher components and the discharge guard frequently and replace with manufacturer's recommended parts, when necessary. Grass catcher components are subject to wear, damage, and deterioration which could expose moving parts or allow objects to be thrown.
- Keep all nuts and bolts tight, especially tines or blades attachment bolts, to be sure the equipment is in safe working condition.
- Check brake operation frequently. Adjust and service as required.
- On multi-bladed machines, take care as rotating one tine or blade can cause others to rotate.

TH84124,00001DF-19-26JUL18

## Avoid High Pressure Fluids



TCAL25960—UN—24MAY12

- Hydraulic hoses and lines can fail due to physical damage, kinks, age, and exposure. Check hoses and lines regularly. Replace damaged hoses and lines.
- Hydraulic fluid connections can loosen due to physical damage and vibration. Check connections regularly. Tighten loose connections.
- 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 from Deere & Company Medical Department in Moline, Illinois, U.S.A. Information may be obtained in the United States and Canada only by calling 1-800-822-8262.

OUO2005,0000220-19-05FEB13

## Prevent Fires

- Please review these recommendations with all operators. See your John Deere dealer with questions.
- Always follow all safety procedures posted on the machine and in this operator's manual. Before carrying out any inspection or cleaning, always shut off engine, set parking brake, and remove ignition key.
- Besides routine maintenance, one of the best ways to keep your John Deere equipment running efficiently and to reduce fire risk is to regularly remove debris buildup from the machine.
- After operating, allow machine to cool in an open area before cleaning or storing. Do not park machine near flammable materials, such as wood, cloth, or chemicals, or near an open flame or other sources of ignition, such as a water heater or furnace.
- Completely remove any combustible materials from equipment before storing by emptying any grass catcher bags, containers, and cargo boxes.
- Debris can accumulate anywhere on the machine, especially on horizontal surfaces. Remove grass and debris completely from engine compartment, muffler area, and from the mower deck or cutting units both before and after operating machine. Additional cleaning may be necessary when mowing or mulching in dry conditions.
- In addition to cleaning machine before using and storing, keeping engine area clean provides the greatest impact on fire prevention. Other areas requiring regular inspection and cleaning include behind wheel rims, wire harness, hose or line routing, mowing attachments, etc. Compressed air, leaf blowers, or water assists in keeping these areas clean.
- Frequency of these inspections and cleaning will vary depending on a number of factors, including operating conditions, machine configuration, operating speeds, and weather conditions (particularly dry, hot, and windy conditions). When you are operating in these conditions, inspect and clean these areas frequently throughout the day.
- Excess lubrication or fuel/oil leaks or spills on the machine can also serve as collection sites for debris. Prompt machine repair and oil and fuel clean-up reduces the potential for debris collection.
- Bearing failures or overheating can result in a fire. To reduce this risk, always follow the instructions in the machine operator's manual regarding lubrication intervals and locations. Contact your local dealer if you have any questions about the lubrication intervals or location and if any unusual noises are coming from areas where bearings might be located. Washing the machine while warm may also reduce bearing life and increase potential for premature bearing failure.

# Safety

- Always shut off fuel when storing or transporting machine, if the machine has a fuel shutoff.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

OUO2005,0000221-19-27MAR19

## Transport Safely

- Use care when loading or unloading the machine into a trailer or truck.
- Use full width ramps for loading machine into trailer or truck.
- Tie the machine down securely using appropriate straps, chains, cable, or ropes. Both front and rear straps should be directed down and outward from the machine.
- Refer to "Transporting Machine" in the Operating section for more information.

MX00654,000001E-19-25MAR14

## Tire Safety



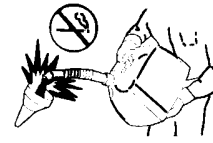
TCAL25965—UN—24MAY12

Explosive separation of a tire and rim parts can cause serious injury or death:

- Do not attempt to mount a tire without the proper equipment and experience to perform the job.
- Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.
- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly.
- Check tires for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

OUO2005,0000222-19-10MAY17

## Handling Fuel Safely



MXAL41938—UN—18FEB13

**To avoid personal injury or property damage, use extreme care in handling fuel. Fuel is extremely flammable and fuel vapors are explosive:**

- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only an approved fuel container. Use only non-metal, portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials (ASTM). If using a funnel, make sure it is plastic and has no screen or filter.
- Never remove the fuel tank cap or add fuel with the engine running. Allow engine to cool before refueling.
- Never add fuel to or drain fuel from the machine indoors. Move machine outdoors and provide adequate ventilation.
- Clean up spilled fuel immediately. If fuel is spilled on clothing, change clothing immediately. If fuel is spilled near machine, do not attempt to start the engine but move the machine away from the area of spillage. Avoid creating any source of ignition until fuel vapors have dissipated.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water heater or other appliance.
- Prevent fire and explosion caused by static electric discharge. Static electric discharge can ignite fuel vapors in an ungrounded fuel container.
- Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before fueling.
- Remove fuel-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather than from a fuel dispenser nozzle.
- Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until the fueling is complete. Do not use a nozzle lock-open device.
- Never overfill fuel tank. Replace fuel tank cap and tighten securely.
- Replace all fuel container caps securely after use.

## Safety

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- For gasoline engines, do not use gas with methanol. Methanol is harmful to your health and to the environment.

OUO2005,0000223-19-12OCT16

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### Handling Waste Product and Chemicals

Waste products, such as, used oil, fuel, coolant, brake fluid, and batteries, can harm the environment and people:

- Do not use beverage containers for waste fluids - someone may drink from them.
- See your local Recycling Center or authorized dealer to learn how to recycle or get rid of waste products.
- A Safety Data Sheet (SDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques. The seller of the chemical products used with your machine is responsible for providing the SDS for that product.

OUO2005,0000224-19-11OCT18

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# Machine Clean Out

## General Cleaning Guidelines

Machine must be inspected periodically throughout the day. Buildup of debris must be removed to ensure proper machine function and to reduce the risk of fire. Frequency of these inspections and cleanings vary depending on a number of factors including operating conditions, machine configuration, operating speeds, and weather conditions. Inspections and cleanings may be required multiple times throughout the day particularly in dry, hot, and windy conditions.

**IMPORTANT: Avoid fire! Regular and thorough cleaning of machine combined with other routine maintenance procedures listed in the Operator's Manual greatly reduce the risk of fire, downtime, and improve machine performance.**

**Besides proper maintenance the condition of the material being handled is the most significant factor contributing to fires. Dry, light, and fluffy materials that can create a dust cloud are the most likely to catch fire. Debris can accumulate in various areas especially on horizontal surfaces. Conditions such as wind speed and direction can change where the material accumulates. Be aware of these changing conditions and adjust your cleaning schedule and practices to ensure proper machine function and to reduce the risk of fire.**

Always follow all safety procedures posted on the machine and in the Operator's Manual. Before carrying out any inspection or cleaning, always park machine safely. (See Parking Safely in the Safety Section).

The entire machine should be inspected, with extra attention given to the areas noted below.

OUMX068,0001043-19-03NOV21

## Clean Out Areas

Inspect and clean the entire machine and pay special attention to these locations:



TCT011363—UN—03NOV15

1. Muffler and exhaust system (A).

2. Engine and engine screens (B).

3. Top of mower deck and under shields (C).

MX00654,0000082-19-02NOV15

## Install Enclosure Kit

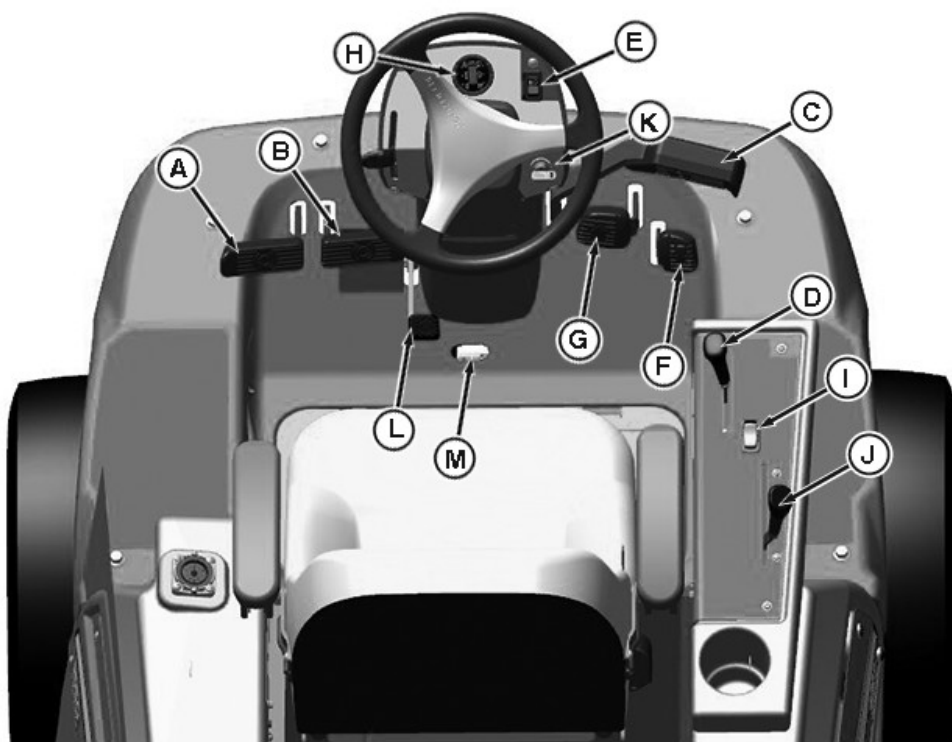
**IMPORTANT: Avoid damage from fire! Installation of and maintenance of the enclosure kit on all machines using a rear discharge deck helps prevent the accumulation of debris on the machine. Debris accumulation can increase the risk of fire. The installation of the enclosure kit does not eliminate the need to clean the machine.**

An enclosure kit must be installed when using a rear discharge mower deck. Follow the installation instructions included when installing the aftermarket kit.

MX00654,0000261-19-12MAR20

# Operating Controls

## Operator Station Controls—1550, 1570 and 1580



APY65198—UN—26JUL21

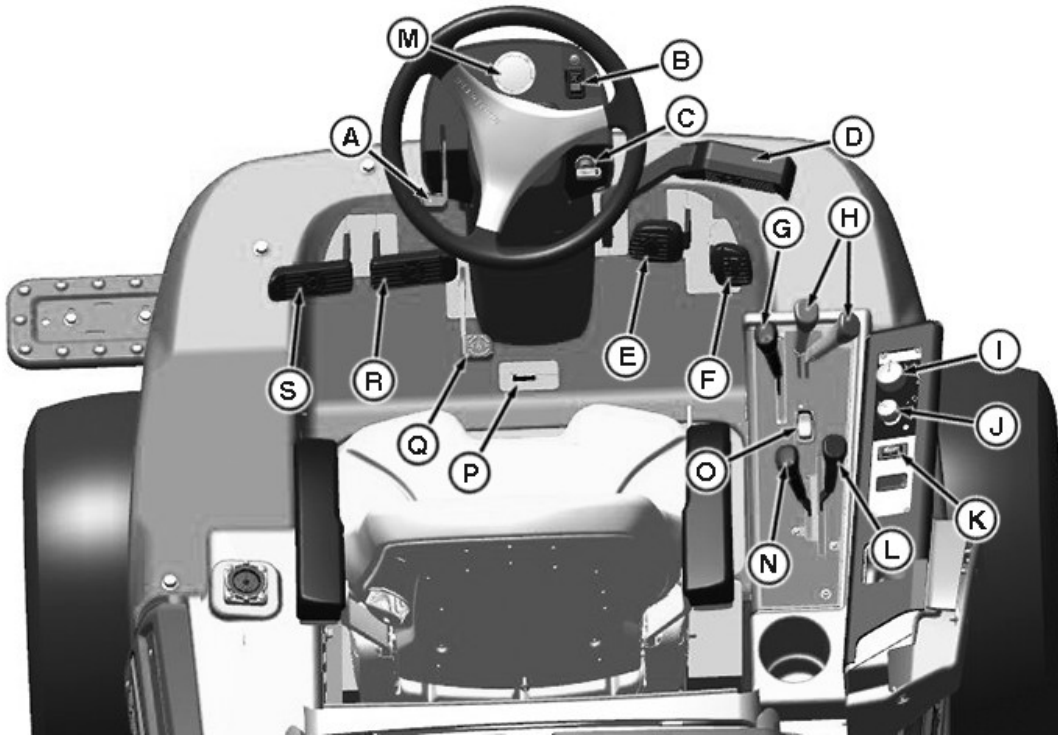
A—Left Turn Brake Pedal  
B—Right Turn Brake Pedal  
C—Park Brake Pedal  
D—Attachment Lift Lever  
E—Work Lamp Switch  
F—Reverse Pedal  
G—Forward Pedal

H—Display  
I—PTO Switch  
J—4WD Control Lever  
K—Key Switch  
L—Traction Assist Pedal  
M—Park Brake Lock Lever

SR99263,000091B-19-21JUL21

# Operating Controls

## Operator Station Controls—1575 and 1585 (Cab Models)



APY65197—UN—26JUL21

A—Throttle Lever  
B—Work Lamp Switch  
C—Key Switch  
D—Park Brake Pedal  
E—Forward Pedal  
F—Reverse Pedal  
G—Attachment Lift Lever  
H—Auxiliary Hydraulics Control Lever  
I—Light Switch  
J—Windshield Wiper Switch

K—Turn Signal Switch  
L—4WD Control Lever  
M—Operator Display  
N—Axle Speed Lever  
O—PTO Switch  
P—Park Brake Lock Lever  
Q—Traction Assist Pedal  
R—Right Turn Brake Pedal  
S—Left Turn Brake Pedal  
T—Steering Column Tilt Lever Lock

SR99263,00009DD-19-21JUL21

# Operating Controls

## Seat Controls

**IMPORTANT: Avoid Injury! Fasten Safety belts when operating machine with Roll-Over Protective Structure (ROPS) in upright position and pinned in place. If ROPS must be folded to operate in a low clearance area, do not use the seat belt. Raise ROPS and use seat belt as soon as conditions permit.**

### Seat Controls – Deluxe Comfort Seat with Armrests

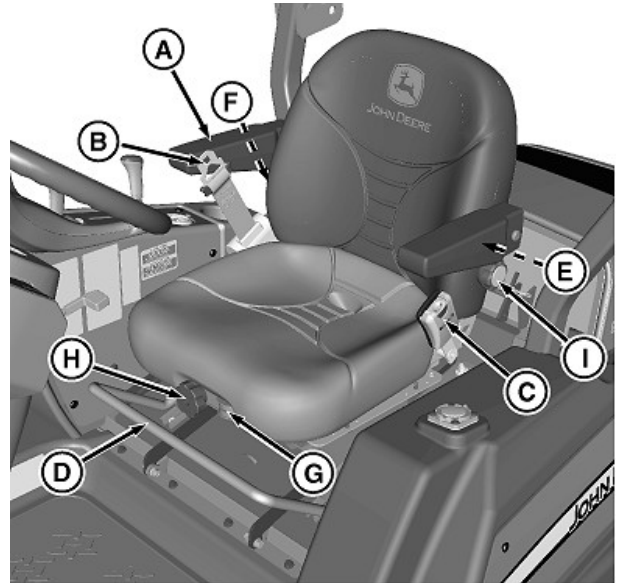


TC100839—UN—10JUL19

- A—Folding Armrest
- B—Seat Belt Latch
- C—Seat Belt Buckle
- D—Seat Fore/Aft Adjustment Lever
- E—Armrest height adjusting knob

- Adjust fore/aft position to maximize comfort but to maintain control of machine as well.
- Make certain that steering wheel and foot pedals can be easily used when operating.
- The armrests can be lowered or raised by adjusting the knobs under each armrest.

### Seat Controls – Comfort Adjust Suspension Seat with Armrests



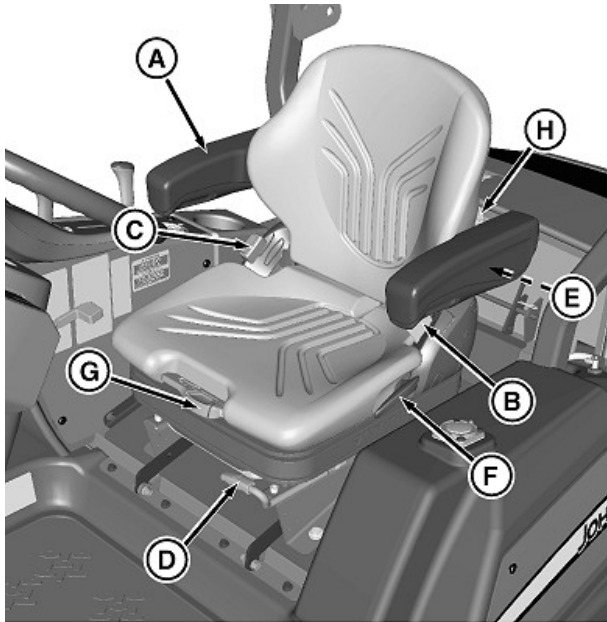
TCT008506—UN—20SEP13

- A—Folding Armrests
- B—Seat Belt Latch
- C—Seat Belt Buckle
- D—Seat Fore/Aft Adjustment Lever
- E—Armrest height adjusting knob
- F—Seat Back Adjustment Knob
- G—Scale Weight Indicator
- H—Seat Suspension Adjustment Crank
- I—Lumbar Support Knob

- Adjust fore/aft position to maximize comfort but to maintain control of machine as well.
- Make certain that steering wheel and foot pedals can be easily used when operating.
- The armrests can be lowered or raised by adjusting the knobs under each armrest.
- Use hand crank to adjust suspension.
- Monitor scale indicator to maintain setting at operator's weight.
- Adjust seat rake to desired angle using seat back adjustment knob.
- Support for lower back can be adjusted using lumbar support knob on right side of seat back.

# Operating Controls

## Seat Controls –Air Ride Suspension Seat



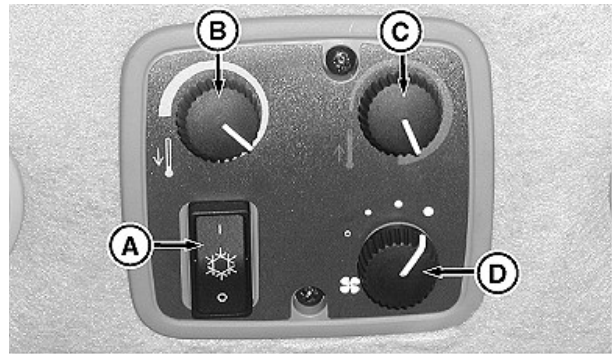
TCT008507—UN—20SEP13

- A—Folding Armrests
- B—Seat Belt Latch
- C—Seat Belt Buckle
- D—Seat Fore/Aft Adjustment Lever
- E—Armrest height adjusting knob
- F—Seat Back Adjustment Lever
- G—Air Pressure Switch
- H—Lumbar Support Knob

- Adjust fore/aft position to maximize comfort but to maintain control of machine as well.
- Make certain that steering wheel and foot pedals can be easily used when operating.
- The armrests can be lowered or raised by adjusting the knobs under each armrest.
- Use air pressure switch to adjust suspension.
- Adjust seat rake to desired angle using seat back adjustment lever.
- Support for lower back can be adjusted using lumbar support knob on left side of seat back.

MX00654,00002E7-19-11MAR20

## Air Temperature Controls (Cab)



TCT008311—UN—13AUG13

- A—Air Conditioning and Deicing Switch
- B—Air Conditioning Temperature Control Knob
- C—Heater Temperature Control Knob
- D—Blower Speed Control Knob

OUC02005,000010F-19-14AUG13

# Operating Machine

## Daily Operating Checklist

### Before Each Use

- ☐ Check engine oil
- ☐ Check hydraulic oil
- ☐ Check coolant
- ☐ Check for leaks
- ☐ Inspect tires and check air pressure
- ☐ Check safety interlock system, lights
- ☐ Check brake system
- ☐ Check air cleaner restriction indicator
- ☐ Check for loose, missing, or damaged parts
- ☐ Check all safety guards and shields
- ☐ Check fuel / water separator
- ☐ Check belts
- ☐ Check pedals and / or steering control
- ☐ Check seat belt
- ☐ Check and clean hood sealing surfaces

### After Each Use

- ☐ Check / fill fuel
- ☐ Clean debris from machine
- ☐ Clean debris from cooling system
- ☐ Clean debris from mower and / or attachment drive systems
- ☐ Clean debris from cutting units and attachments
- ☐ Clean debris from underside of mower deck
- ☐ Check mower deck drive belts
- ☐ Check mower blades
- ☐ Lubricate machine after washing

OUO2005,0000200-19-09NOV18

## Avoid Damage to Plastic and Painted Surfaces

- Do not wipe plastic parts unless rinsed first. Using a dry cloth may cause scratches.
- Insect repellent spray may damage plastic and painted surfaces. Do not spray insect repellent near machine.
- Be careful not to spill fuel on machine. Fuel may damage surface. Wipe up spilled fuel immediately.
- Prolonged exposure to sunlight will damage hood surfaces.

OUO1023,0000462-19-13MAR13

## Entering and Exiting Machine (Cab)

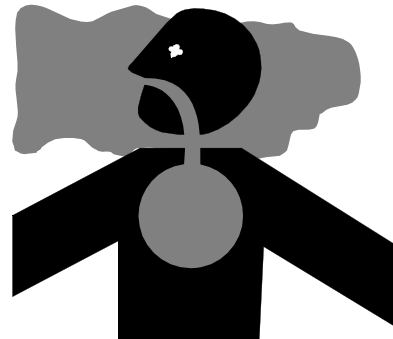


TCT008319—UN—14AUG13

1. To enter cab on either right or left side, press button (A) on handle and open door. Close door until door locks into closed position.
2. To exit cab, twist handle on inside of door handle and open door.

OUO2005,0000111-19-04NOV13

## Testing Safety Systems



TCAL41599—UN—22JAN13

**CAUTION:** Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- Move the machine to an outside area before running the engine.
- Do not run an engine in an enclosed area without adequate ventilation.
- Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.
- Allow fresh outside air into the work area to clear the exhaust fumes out.

The safety systems installed on your machine should be checked before each machine use. Be sure you have read the machine operator manual and are completely

# Operating Machine

familiar with the operation of the machine before performing these safety system checks.

Use the following checkout procedures to check for normal operation of machine.

If there is a malfunction during one of these procedures, do not operate machine. **See your authorized dealer for service.**

Perform these tests in a clear open area. Keep bystanders away.

OUMX068,0000464-19-14MAR13

## Testing PTO Switch

1. Sit on the seat and verify seat is properly adjusted for operator's weight. (Seat should spring down slightly so seat switch is actuated.)
2. Lock the park brake.
3. Turn on the PTO switch.
4. Try to start engine.

**Result:** The engine can start but the PTO must not engage.

5. Unlock the park brake keeping the PTO switch on.

**Result:** The PTO must not engage. If it does, there is a problem with the safety interlock circuit.

6. Cycle the PTO switch.

**Result:** The PTO engages.

OUMX068,00006A5-19-02NOV15

## Testing Seat and Park Brake Switch

1. Sit on the seat and verify seat is properly adjusted for operator's weight. (Seat should spring down slightly so seat switch is actuated.)
2. Turn off the PTO switch: Push PTO knob on switch down to the "OFF" position.
3. Push down master brake pedal.
4. Start engine.
5. Release master brake pedal.
6. Rise up off of seat, but do not get off machine.

**Result:** Engine should stop after a few seconds. If engine does not stop, there is a problem with the safety interlock circuit.

OUMX068,00006A5-19-02NOV15

## Testing the Park Brake

Stop machine on a 17° slope (30% grade). Stop the engine and lock the park brake.

**Result:** Park brake must hold the machine stationary. (ANSI standards permit movement of no more than 61cm (24 in.) in one hour.) If machine moves more than that, brakes need to be adjusted. See your John Deere Dealer.

OUMX068,0000467-19-13MAR13

## Using Proper Ballast



TCT007879—UN—11JUL13

- Attachments used with this machine may require ballast to prevent tipping and loss of control when the attachment is raised.
- Ballast may vary depending on the model and year of the machine or attachment.
- Check the attachment operator's manual and see your John Deere dealer for ballasting information.

OUMX068,00006B0-19-05JUN14

## Adjusting Seat (Deluxe Suspension)

### Adjusting Seat Position

1. Sit on seat.
2. Pull seat adjustment lever up, out of locked position.
3. Slide seat forward or rearward to desired position. Operator's right heel should be able to rest firmly on the floor in front of the forward and reverse pedals.
4. Release lever.

### Adjusting Seat Spring Tension

1. Turn seat spring adjustment knob to adjust seat spring tension while watching weight indicator.
2. Match weight of operator to value shown in weight indicator. Seat must spring slightly so that operator's

# Operating Machine

presence switch will be actuated, allowing engine to start.

## Adjusting Seat Height

1. Pull up on the front of the base of the seat, and the seat height adjustment lever, until the seat height lock disengages.
2. Raise or lower the operator's seat to desired height. (There are four positions available.)
3. Release the seat height lock lever and continue to move the seat slightly until it latches in place.

OUC1023,0000469-19-13MAR13

## Adjusting Seat (Comfort Adjust Suspension)

### Adjusting Seat Position

1. Sit on Seat.
2. Pull seat adjustment lever up, out of locked position
3. Slide seat forward or rearward to desired position. Operator's right heel should be able to rest firmly on the floor in front of the forward and reverse pedals.
4. Release lever.

### Adjusting Seat Suspension

Turn knob to desired position per operator weight on gauge.

### Adjusting Seat Back

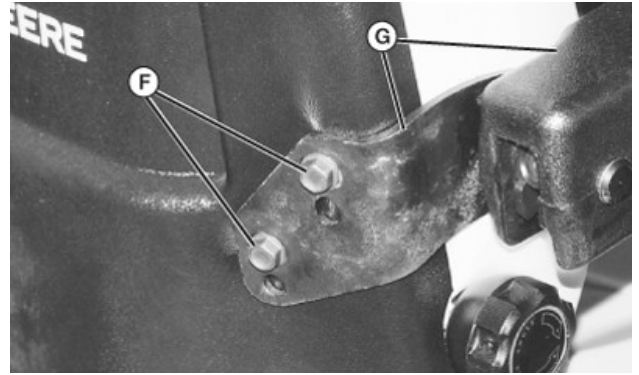
- Bring the seat back to a vertical position by turning the knob to the right (clockwise).
- Turn the knob to the left (counterclockwise) to recline the seat back slightly.

### Adjusting Lumbar Support

- Turn the lumbar support knob to the left (counterclockwise) to decrease lumbar support.
- Turn the lumbar support knob to the right (clockwise) to increase lumbar support.

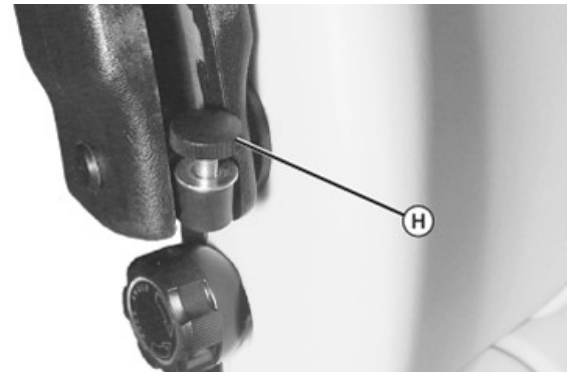
### Adjusting Armrest

- To raise or lower armrest both sides:



TCAL43313—UN—14MAR13

- a. Remove two bolts (F) and raise armrest and bracket (G) to the other set of holes.
  - b. Install bolts and tighten.
- To change the angle of the armrest both sides:



TCAL43314—UN—14MAR13

- a. Lift armrest to reveal knob (H).
- b. Turn knob (H) to raise or lower knob height and change the angle of the armrest.

OUC1023,000046A-19-13MAR13

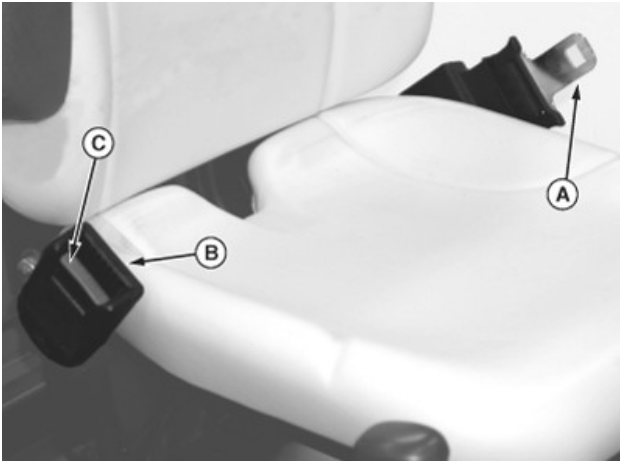
## Using Seat Belt

**CAUTION:** Always wear seat belt when operating machine with folding Roll-Over Protective Structure (ROPS) in upright position. Do not jump from machine if machine tips.

If ROPS must be folded to operate in a low clearance area, do not use seat belt. Raise ROPS and use seat belt as soon as conditions permit.

1. Sit in seat.

# Operating Machine



TCAL43315—UN—14MAR13

2. Pull out seat belt buckle (A) and stretch across your lap in one non-stop motion.
3. Insert seat belt buckle into latch (B) until it locks.
4. To release seat belt, press red button (C) until buckle comes out of latch.

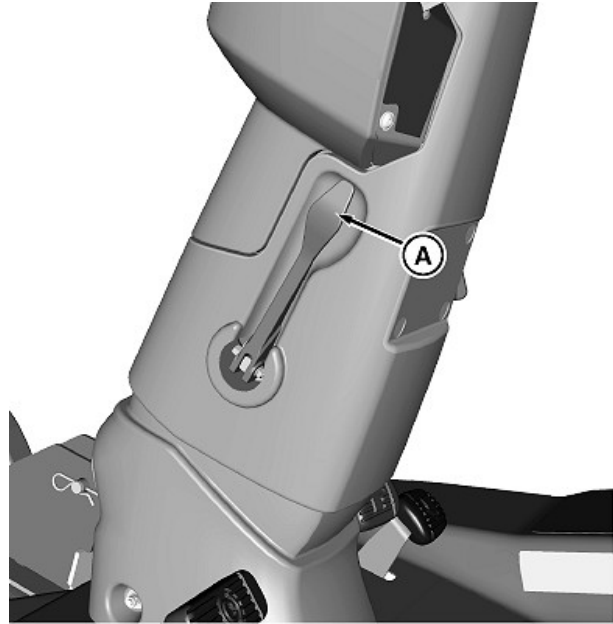
OUC1023,000046B-19-29JUN22

## Adjusting Steering Column

**CAUTION: Avoid Injury! Do not attempt to adjust the steering wheel while the machine is moving. The operator can lose control of the machine.**

- Stop the machine before adjusting the steering wheel.
- Lock the steering wheel in position before driving the machine.

1. Stop machine travel.



TCT009086—UN—04NOV13

2. Pull steering column tilt lever (A) outward to release steering column.
3. Move steering column forward or rearward to desired position.
4. Push lever back in to lock steering column in place.

OUMX068,0000681-19-20MAR14

## Using PTO Switch

The starter engages if the PTO switch is ON, however the PTO does not engage until the switch is cycled. Turn PTO switch OFF, then ON. The PTO disengages if any of the following conditions exist:

- High engine coolant temperature.
- Low engine oil pressure.
- High hydraulic oil temperature.
- Master brake pedal is depressed.
- To turn PTO off: Push switch to the OFF position.
- To turn PTO on: Push switch to the ON position.

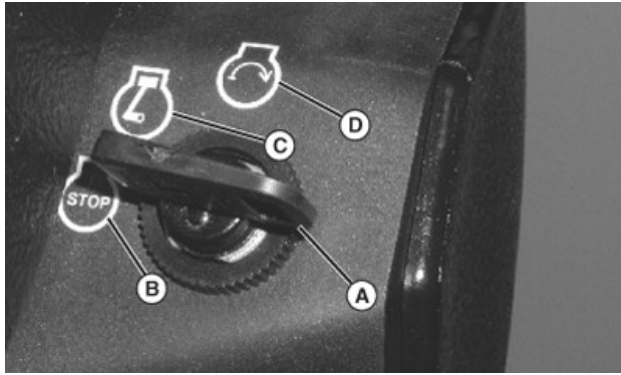
OUMX068,00006A7-19-02NOV15

## Using Key Switch (1550)

**NOTE:** Starting motor engages only if the following conditions exist:

- PTO is off.
- Master brake pedal is depressed.

# Operating Machine



TCAL43316—UN—14MAR13

- To turn off ignition, turn the key (A) to the STOP position (B).
- To turn on ignition, turn the key to the RUN position (C). The beeper sounds, and the following indicator lights on the operator display illuminate:
  - Engine Oil Pressure Light
  - Battery Discharge Light
  - Engine Coolant Temperature Light
  - Engine Glow Plug Light
- To start engine, turn key to the START position (D). Once the engine begins to run, the key should return to the RUN position (C).

*NOTE: With the key switch in the START position, the following indicator lights on the operator display illuminate:*

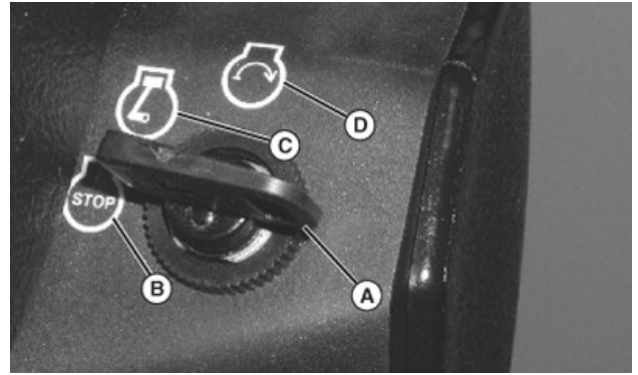
- Engine Oil Pressure Light
- Engine Coolant Temperature Light
- Hydraulic Oil Temperature Light

OUMX068,00006A8-19-06NOV15

## Using Key Switch (1570, 1575, 1580, and 1585)

*NOTE: Starting motor engages only if the following conditions exist:*

- Master brake pedal is depressed.
- Traction pedals are in neutral.



TCAL43316—UN—14MAR13

- To turn ignition off, turn the key (A) to the STOP position (B).
- To turn ignition on, turn the key to the RUN position (C). The beeper sounds, and the machine runs through a 2 second startup sequence. The display screen flashes the JD Logo, and then rests at the hour meter screen.
- To start engine, turn the key to the START position (D). Once engine begins to run, the key should return to the RUN position (C).

*NOTE: With the key switch in the START position, the display may reset during engine cranking.*

OUMX068,00006A9-19-06NOV15

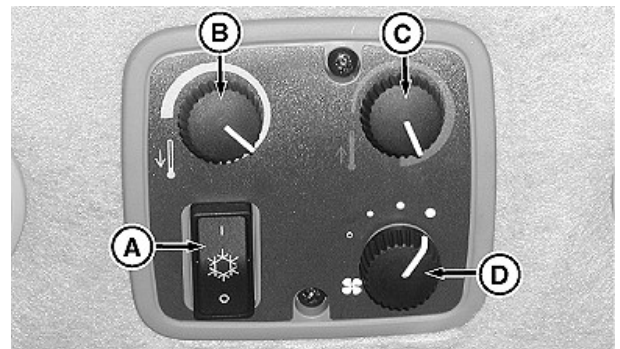
## Using Throttle Lever

- Pull the throttle lever to the rear for slow idle. Use this position to start engine and maneuver the mower in confined spaces.
- Push throttle lever fully forward to the fast idle position for transporting and mowing.

OOU1023,000046F-19-13MAR13

## Using Cab Controls

### Using Temperature Controls



TCT008311—UN—13AUG13

- A—Air Conditioning and Deicing Switch  
B—Air Conditioning Temperature Control Knob  
C—Heater Temperature Control Knob

# Operating Machine

## D—Blower Speed Control Knob

### Air Conditioner and Deicing System

- Push top half of air conditioning and deicing switch to turn system ON. Push bottom half of switch to turn system OFF.

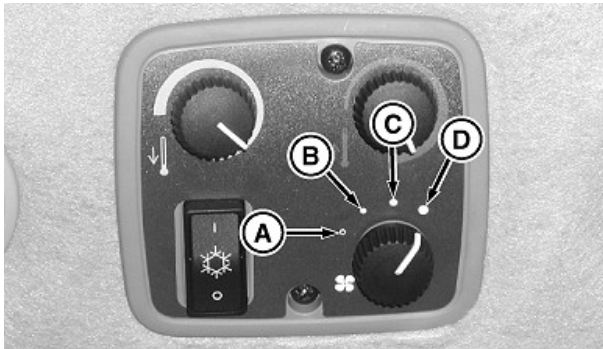
### Adjusting Air Conditioning Temperature

- Turn air conditioning temperature control knob clockwise to circulate warmer air through vents. Turn knob counterclockwise to circulate cooler air through vents. The thicker the blue bar is on knob label indicates a cooler temperature setting and a thin bar indicates a less cool setting.

### Adjusting Heater Temperature

- Turn heater temperature control knob clockwise to circulate warmer air through vents. Turn knob counterclockwise to circulate cooler air through vents. The thicker the red bar is on knob label indicates a warmer temperature setting and a thin bar indicates a less warm setting.

### Adjusting Blower Speed



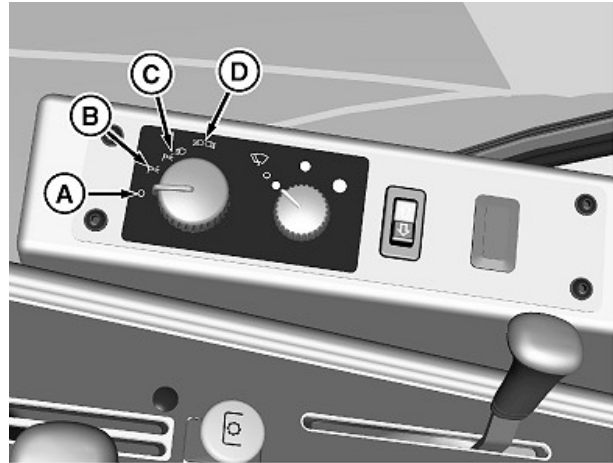
TCT008312—UN—13AUG13

Turn blower speed control knob to desired setting:

- Off (A)
- Low (B)
- Medium (C)
- High (D)

### Using Light Switch

**CAUTION:** Avoid injury! Do not operate on roads with light switch in the field position. Rear work lights may blind or confuse operators of oncoming vehicles.

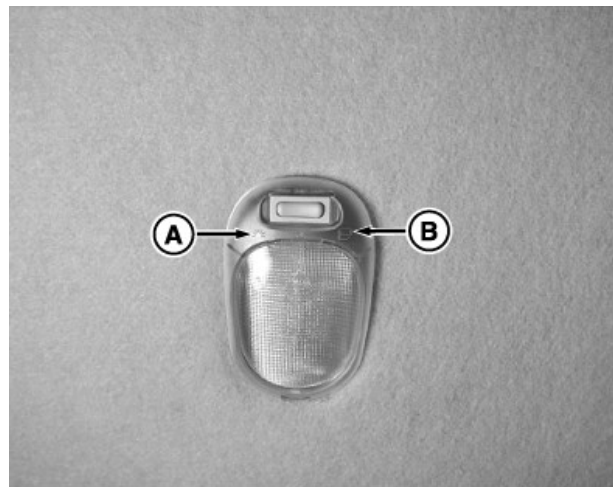


TCT008314—UN—13AUG13

- A—All lights off.
- B—Warning flasher lights and taillights on.
- C—Road Position: headlights, taillights, and warning flasher lights on.
- D—Field Position: headlights and optional working lights on.

### Using Dome Light

**IMPORTANT:** Avoid damage! Before exiting cab, make sure dome light is in OFF position. Failure to do so will cause the battery to lose its charge.



TCT008313—UN—31MAR14

Dome light has two positions:

- ON (A) - Dome light comes on.
- OFF (B) - Dome light does not light.

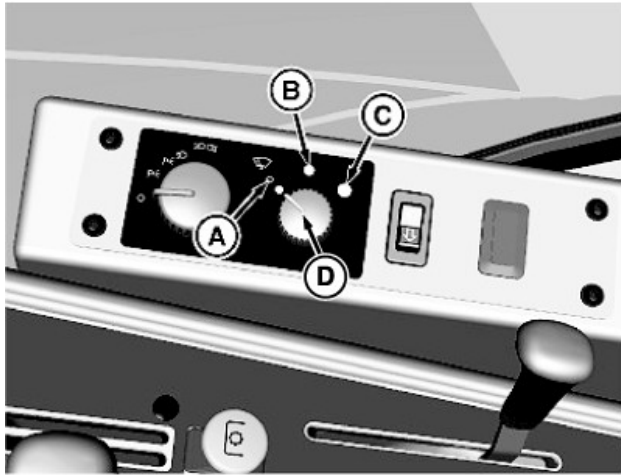
### Using Turn Signal Switch

- Push the left side of the turn signal switch down to signal a left turn.
- Push the right side of the turn signal switch down to signal a right turn.

# Operating Machine

## Using Windshield Wiper

**NOTE:** The front wiper will return to the park position whenever it is switched off.



TC102111—UN—24MAY22

The front wiper switch has three positions:

- OFF (A)
- SLOW (B)
- FAST (C)
- Windshield Washer (D) ( push down to operate)

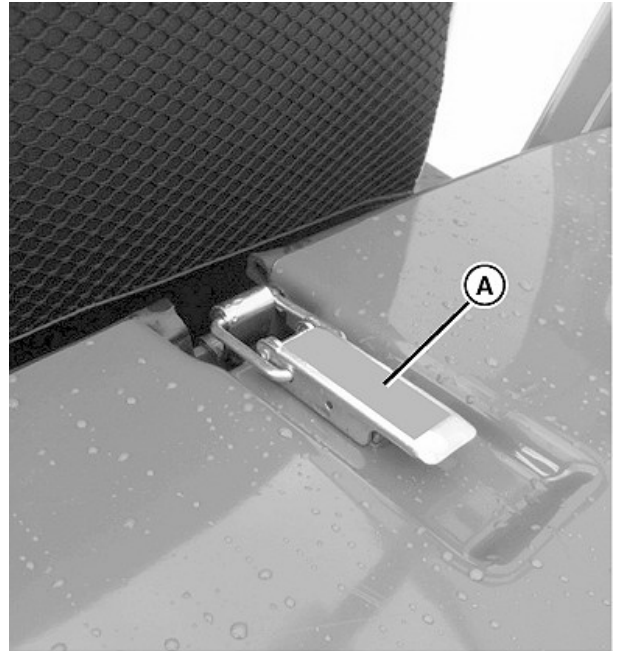
OUO2005,0000110-19-24MAY22

## Opening Engine Cover

**IMPORTANT:** Do not operate machine with engine cover open. Engine cover must be closed for proper engine cooling and exhaust.

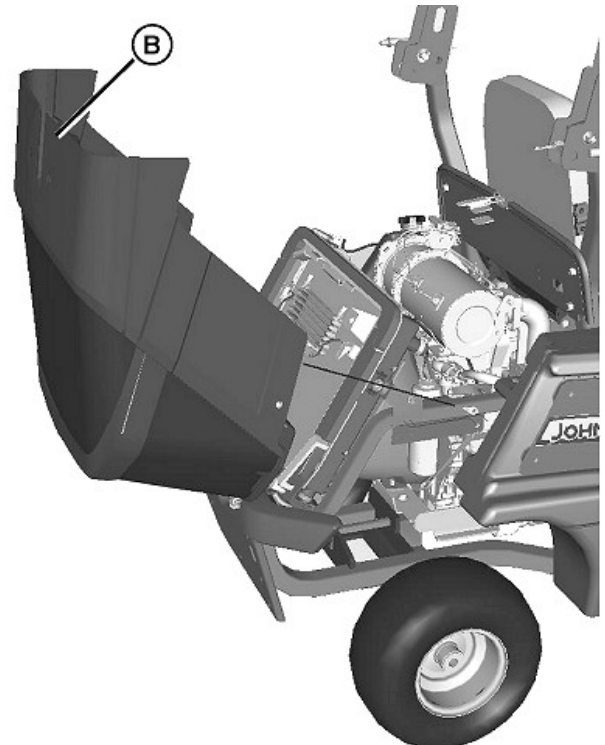
1. Park machine safely. (See Parking Safely in the SAFETY section).

**NOTE:** Some models are equipped with a locking latch. This must be unlocked first.



TCT007880—UN—11JUL13

2. Lift latch mechanism (A) and unlatch hood.



TCT007881—UN—11JUL13

3. Lift hood (B) and place in open position.
4. To close the engine cover, lower it back over the engine compartment.
5. Engage latch hasp with hook and pivot back to secure.
6. To lock the engine cover latch, insert key in slot and turn clockwise (If equipped with optional lock).

OUO2005,0000064-19-05NOV13

# Operating Machine

## Using Four Wheel Drive (4WD) (1550, 1570, 1575)

**CAUTION:** To avoid loss of control or damage to turf, do not turn suddenly or at high speeds while machine is in four wheel drive. Do not use four wheel drive any longer than required.

- Pull 4WD control lever rearward to use on-demand four wheel drive. Rear wheels will engage whenever front wheel slip is detected, and will disengage automatically. Rear wheels are not driven in reverse.
- Push 4WD lever forward to engage full time four wheel drive. Four wheel drive is locked in for forward and reverse travel.
- Traveling forward (slowly) while pushing the 4WD lever forward helps to engage the 4WD on demand.
- Traveling rearward (slowly) while pulling the 4WD lever rearward helps to disengage the 4WD lock.

OUO2005,0000065-19-09NOV15

## Using Four Wheel Drive (4WD) (1580 and 1585)

**CAUTION:** To avoid loss of control or damage to turf, do not turn suddenly or at high speeds while machine is in four wheel drive. Do not use four wheel drive any longer than required.

- Move the 4WD control lever to the center position to use on-demand (automatic) four wheel drive. Rear wheels will engage whenever front wheel slip is detected, and will disengage automatically or when machine is reversed.
- Pull the 4WD control lever rearward to disengage 4WD
- Push 4WD control lever forward to engage full time 4WD. Four wheel drive is locked in for forward and reverse travel.
- Traveling forward (slowly) while pushing the 4WD lever forward helps to engage the 4WD on demand.
- Traveling rearward (slowly) while pulling the 4WD lever backward helps to disengage the 4WD lock.

OUO2005,0000066-19-09NOV15

## Using Two-Speed Transaxle (1580 and 1585)

- Push the two-speed transaxle shift lever up to the highest position to shift the transaxle into the high gear range. This is used to transport machine or move quickly in light duty applications.
- Place the two-speed transaxle shift lever in the

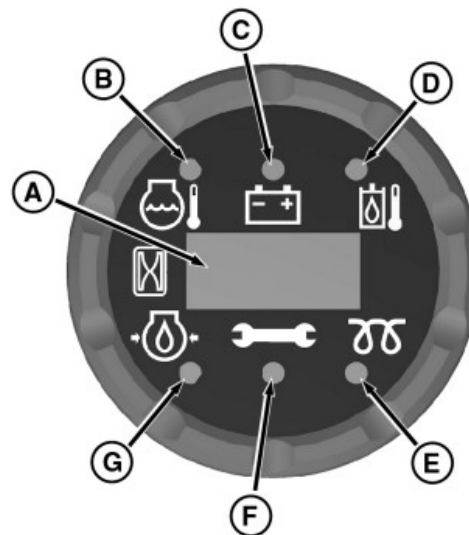
centered position to shift transaxle into neutral. This position is used to push or tow the machine.

- Pull the two-speed transaxle shift lever down to the lowest position to shift the transaxle into the low gear range. This is used for climbing hills and powering through deep grass or materials.
- Slowly moving the machine with no load while changing gear range helps to engage the gears.

OUO2005,0000067-19-04NOV13

## Using Display (1550)

*NOTE: For any codes displayed, see Troubleshooting Guide for Common DTC's in the Troubleshooting section.*



TCT007012—UN—18MAR13

**A—Hour meter** will display number of hours engine has run. Electronic hour meters can be read with key switch in ON position. Use the hour meter and the service interval chart to determine when service procedures need to be performed on the machine and mower deck.

**B—Engine Coolant Temperature Indicator** will glow if engine temperature becomes excessive. Stop engine and determine cause.

**C—Battery Discharge Indicator** will glow when alternator is not producing adequate current. Stop engine and determine cause. Indicator light will also flash a diagnostic code to help the operator identify operational and electrical problems.

**D—Hydraulic Oil Temperature Indicator** will glow when hydraulic oil temperature is high. Stop all hydraulic functions immediately. Let hydraulic oil temperature cool by allowing engine to idle under a no-load situation. This keeps the oil flowing through the oil cooler and cools the oil. Check oil level and make sure oil cooler coils are clean. Continued

# Operating Machine

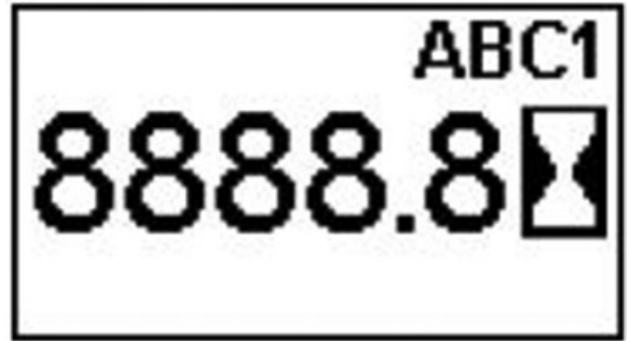
operation may cause higher temperatures, resulting in damage.

**E—Engine Air Preheat Indicator** (Diesel models) will glow when key switch is turned to the run position. The light will no longer glow after approximately three to fifteen seconds.

**F—Service Indicator** is not applicable on this machine.

**G—Engine Oil Pressure Indicator** will glow when engine oil pressure is low. If lamp glows when engine is running, stop engine immediately. See your John Deere distributor.

OUO2005.0000068-19-17APR15



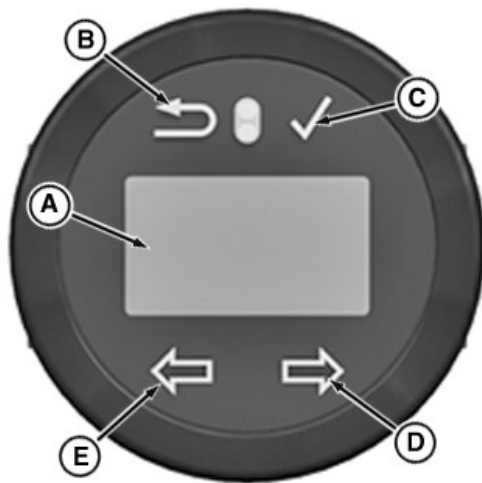
APY66002—UN—26JUL21

Hour Meter Top-Level Screen

## Using Display (1570, 1575, 1580, 1585)

**NOTE:** For any codes displayed, see *Troubleshooting Guide for Common DTC's in the Troubleshooting section*.

For further information regarding the operator display, see your machine technical manual.

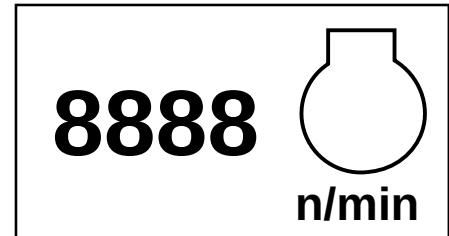


PY44597—UN—07SEP17

The operator should become familiar with the basic capabilities of the Operator Display. The Operator Display is located in the control console on the right side of the seat. This display consists of the LCD Screen (A) and four buttons (B, C, D, and E).

The Operator Display has four (4) main screens. The operator can display each of the four main screens by pressing the right or left arrow key (D or E). Each of these four screens has some functionality:

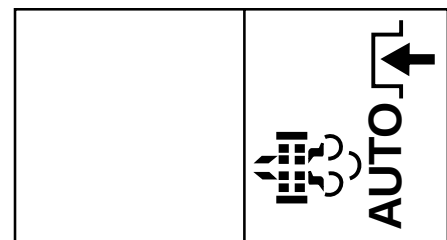
- **Hour-meter Screen:** Displays quantity of hours machine has been used. Select key (C) can select language with "Language 1" selecting English and "Language 2" selecting Spanish.



PY46268—UN—07SEP17

Engine rpm

- **Engine Tachometer Screen:** Displays engine speed.



PY46269—UN—07SEP17

Diesel Particulate Filter Status Screen

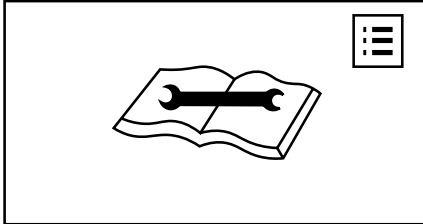
- **Diesel Particulate Filter (DPF) Status Screens:** The diesel particulate filter status screen shows if auto regeneration is enabled or disabled. The screens that appear are condition-dependent. The screens display the current state of any active DPF regeneration. Submenus include options of auto regeneration, parked regeneration, and service recovery. Select key (C) allows the operator to enable or

# Operating Machine

disable the automatic mode of the DPF regeneration function. Operator should ensure that this remains in the automatic mode when machine is being operated in typical conditions. The default mode is "Auto". When the machine is shut down and restarted, it always returns to the auto mode.

indicates what actions an operator would take to resolve the DTC 110.0.

SR99263,00009EA-19-28JUN22



PY46270—UN—07SEP17

*Service Menu Screen*

- **Service Screen:** This screen introduces a number of functions and is pass code protected. The default numerical pass code is 0 0 0. When a new pass code is entered into the display, it remains there even if the machine's battery is discharged or replaced.

The Operator Display can also communicate to the operator with a number of pop-up screens that could indicate with icons and a Diagnostic Trouble Code (DTC) when a machines critical function is impaired. (See the Troubleshooting Guide for Common DTC in the Troubleshooting section for further information.)

**Example:** When debris clogs the radiator the machine could overheat. The Operator Display would indicate this by showing a screen with these icons and DTC:



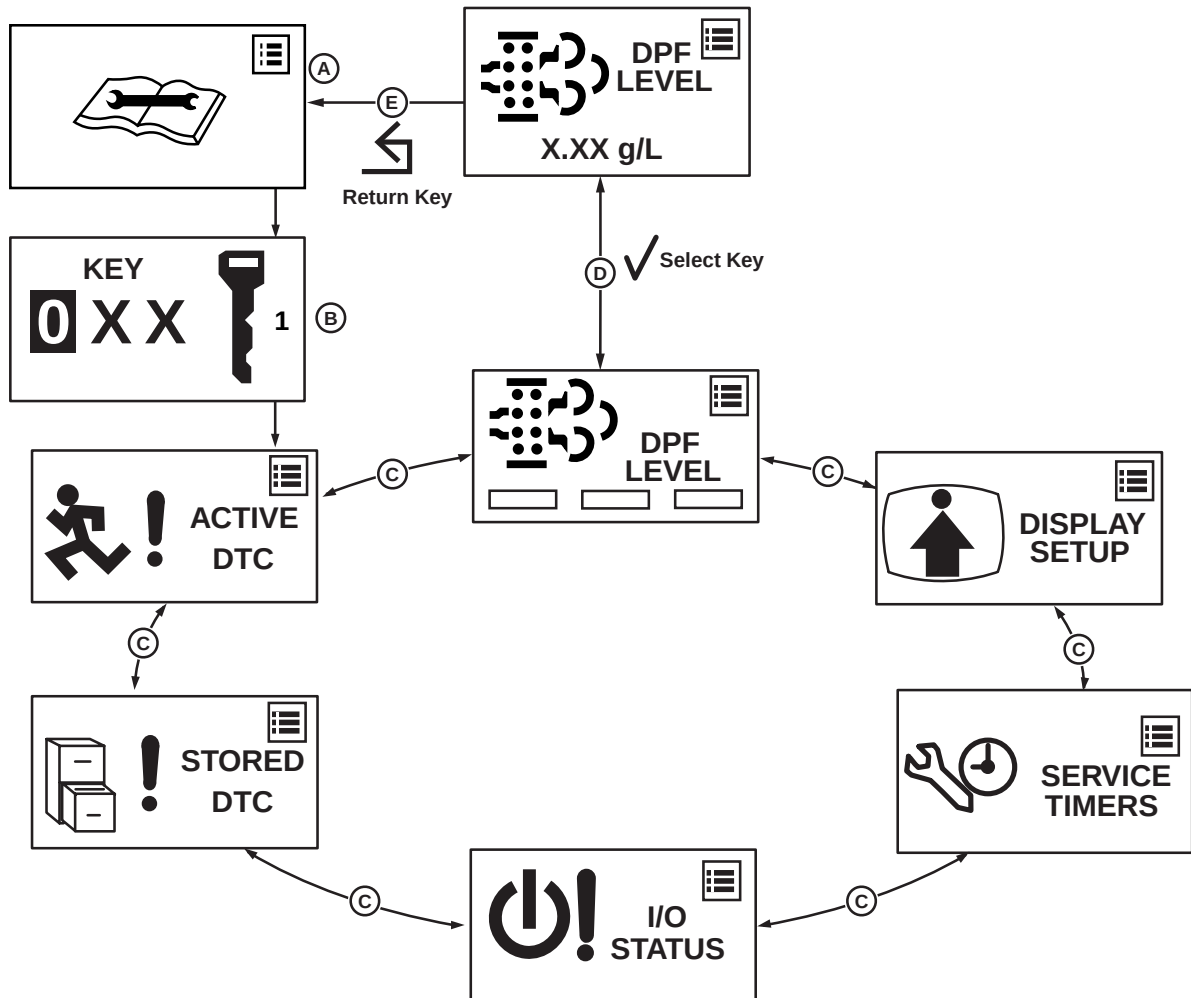
PY46273—UN—07SEP17

*DTC Example*

This screen would indicate by the Stop sign icon to stop the machine. The icon on the right indicates that the engine coolant temperature is high. The numerical code in the lower right of the screen is the DTC and this can be referenced in the Troubleshooting Guide. The Guide

# Operating Machine

## Using Service Menu Displays



A—Service Mode Screen  
B—Pass Code Entry Screen  
C—Left and Right Arrows

Pressing the select key from the Service Mode screen (A) displays the Pass Code Entry screen (B).

Entering the pass code (See Pass Codes to set), and then pressing the select key, displays the service menu screens:

- Active DTC
- Stored DTC
- DPF Level
- Input-Output Status
- Service Timers
- Display Setup

The screens cycle through (C) by pressing the left and right arrows. The return key (E) on each screen returns to the Service Mode screen (A).

D—Select Key  
E—Return Key

Pressing the select key at any of the service sublevel screens give you the menus for that service function.

PY46284—UN—08SEP17

RM87422,0000808-19-15SEP17

### Pass-Codes

There are two levels of password protection to enhance machine security and restrict access to certain features.

- Owner level
- Operator level

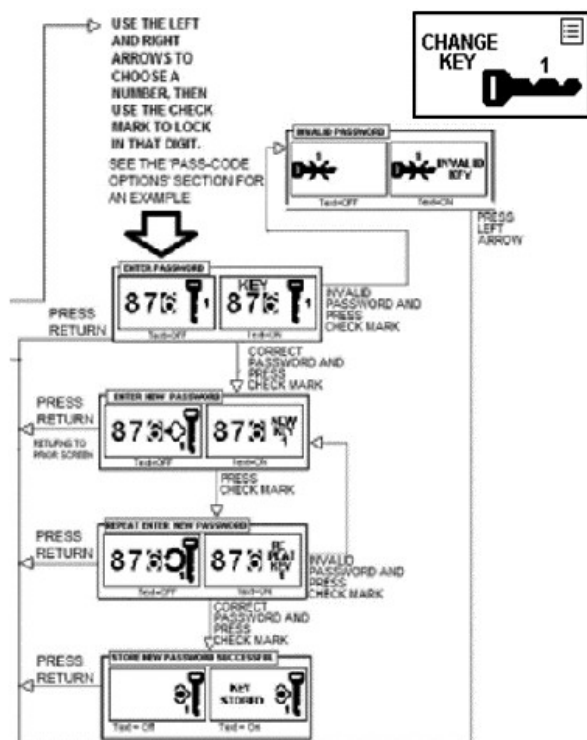
There is also a text enable and disable pass-code. This code is "702" and cannot be changed.

NOTE: The operator will only be prompted for a pass-code if the machine has been switched off for 10 minutes or more.

# Operating Machine

## Owner Level

NOTE: Pass-code 1 is for the owner pass-code.



APY42012—UN—25AUG20

The owner pass-code is capable of performing the following:

- Owners pass-code change
- Operators pass-code enable or disable
- Reset operators pass-code without knowing operator pass-code
- Machine start pass-code feature enable or disable
- Change owner pass-code
- Access service screens
- Access all sub service screens
- Enter machine start pass-code whether operator pass-code is enabled or not
- Machine start and operation

The owner pass-code can access the following screens:

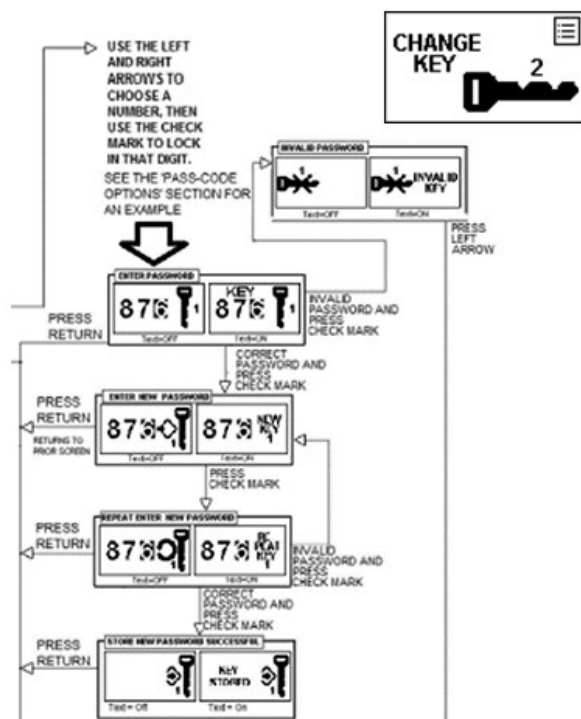
- PDU setup
- Service menus
- Machine start pass-code enable or disable

The default owner pass-code is "000".

In the event of a lost pass-code, a manual procedure is required to reset. (see Factory Pass-Code Reset).

## Operator Level

NOTE: Pass-code 2 is for the Operator pass-code. Operator pass-code can be changed using the current owner or operator pass-code.



APY42013—UN—25AUG20

The operator level pass-code is capable of setting the following:

- Start and operate the machine only. The operator cannot change any internal settings.

NOTE: The operator pass-code is disabled by default.

The operator pass-code is set at the owner level.

## Factory Pass-Code Reset

### Factory Default Pass-Code Settings

1. Owner Pass-Code: '000'
2. Operator Pass-Code: '000'
3. Text Mode Pass-Code: '702' (cannot be changed)
4. DPF Recovery Regeneration Pass-Code: '463' (cannot be changed)

Using a sequence of button presses shown below:

1. At power up and before the John Deere logo appears, press the CHECK MARK button and hold it for at least 5 seconds after the Deere logo appears. As long as the key is held, the logo remains displayed. After the 5 seconds, the amber LED will blink to show completion of this step.
2. Within 1 second after releasing the CHECK MARK button, press and hold the LEFT ARROW button for

## Operating Machine

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at least 1 second. After 1 second, the amber LED will blink to show completion of this step.

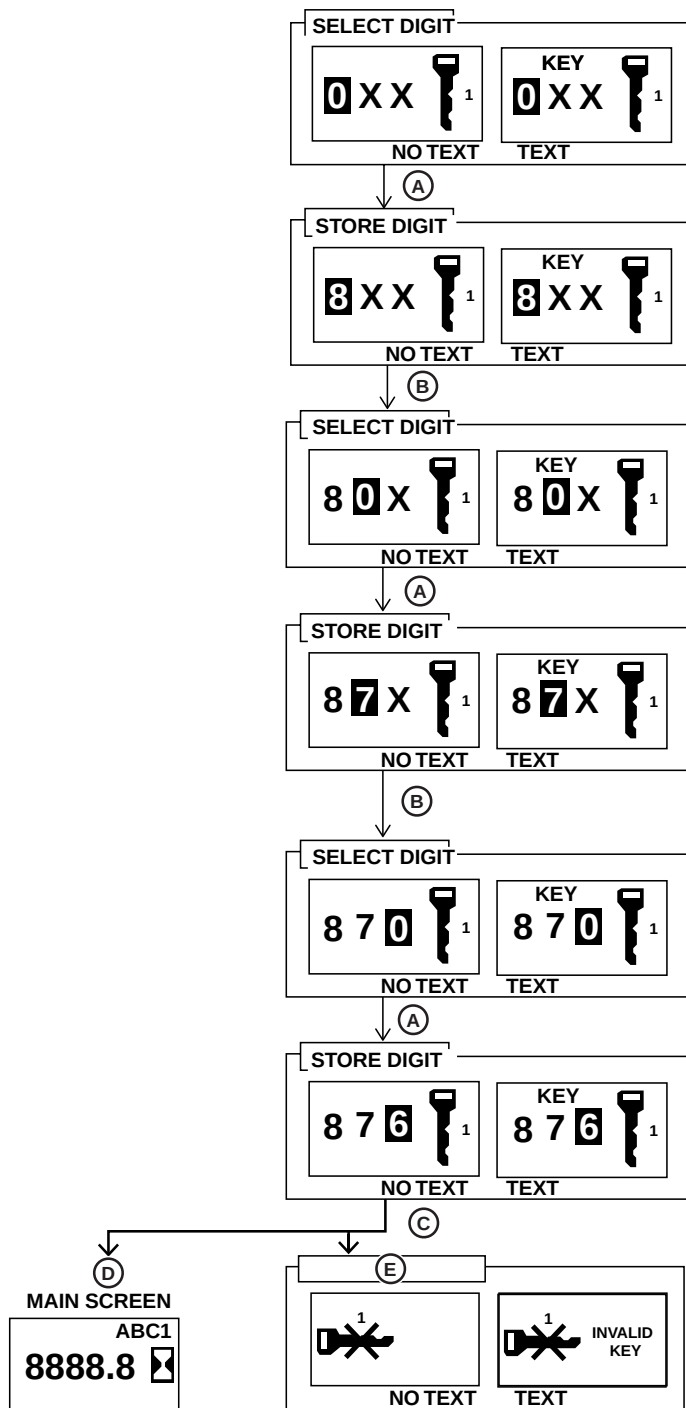
3. Within 1 second after releasing the LEFT ARROW button, press and hold the RIGHT ARROW button for at least 1 second. After 1 second, the amber LED will blink to show completion of this step.
4. Within 1 second after releasing the RIGHT ARROW

button, press the LEFT ARROW button for at least 1 second. The amber LED blinks to show completion of this step.

5. Sequence is complete and Pass-Codes reverts to the default values.

### **Pass-Code Entry**

# Operating Machine



Machine Start Pass-Code Entry

PY46292—UN—08SEP17

- A—Use Left and Right Buttons to Select a Number
- B—Press Check Mark Button to Store Digit
- C—Press Check Mark Button to Store/Verify Pass-Code

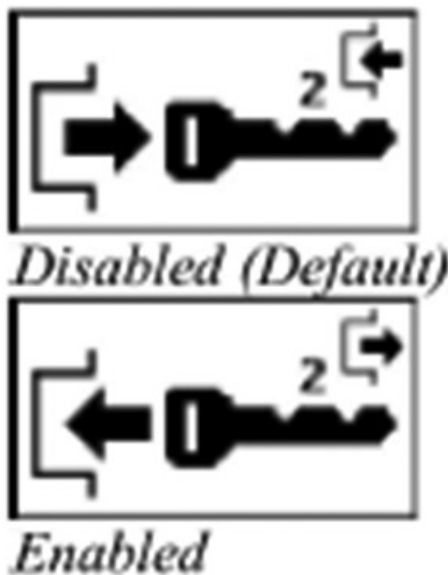
- D—Valid Password
- E—Invalid Password

NOTE: It is allowable to replace '0XX' with '000' as a starting value.

NOTE: Pressing the return button causes the display to jump to the previous screen before the pass-code entry began.

# Operating Machine

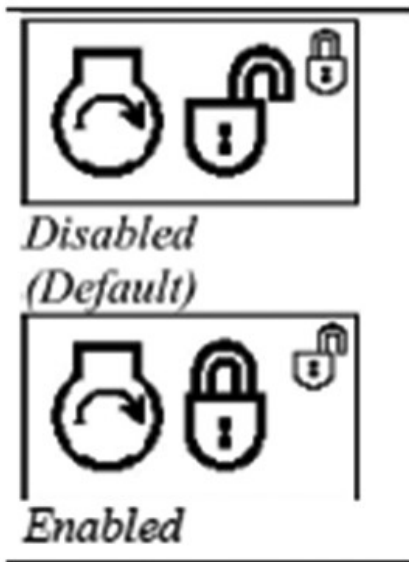
## Operator Pass-Code Enable/Disable Screen



APY42014—UN—25AUG20

- Allows the operator pass-code to start the machine.
- Enabled/Disabled using the check mark button.

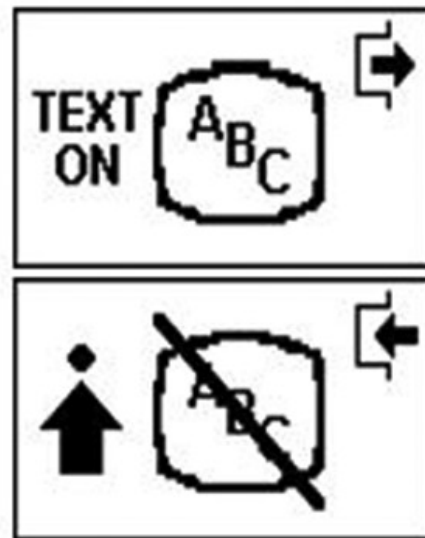
## Machine Start Pass-Code Enable/Disable



APY42015—UN—25AUG20

- Prevents the machine from starting unless the owner or operator (if enabled) is entered.
- Enabled/Disabled using the check mark button.

## Text Mode Enable/Disable



APY42016—UN—25AUG20

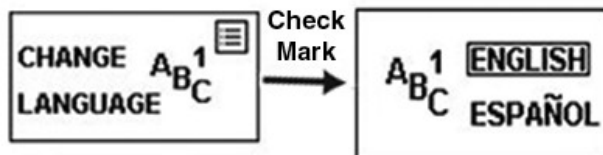
- Allows the owner to turn off on all screens.
- Enabled/Disabled using the check mark button and entering pass-code 702.



APY42017—UN—25AUG20

Example: Left is TEXT ON and right is TEXT OFF.

## Change Language 1



APY42018—UN—25AUG20

NOTE: Use left and right arrow to scroll through languages and check mark to select language.

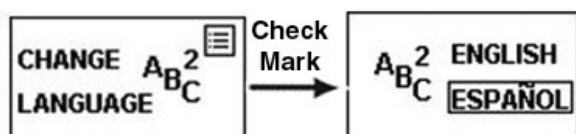
# Operating Machine

- Allows you to change language 1. There are eight languages to choose from (English, Spanish, Italian, French, German, Portuguese, Russian, and Chinese).

*NOTE: English is the default language for “Language 1.”*

- Language can be toggled between “Language 1” and “Language 2” on the home screen.

## Change Language 2



APY42019—UN—25AUG20

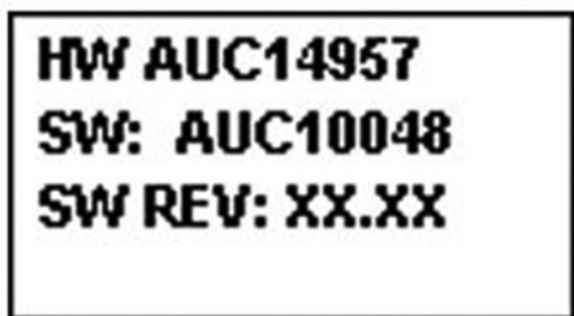
*NOTE: Use left and right arrow to scroll through languages and check mark to select language.*

- Allows you to change language 2. There are eight languages to choose from (English, Spanish, Italian, French, German, Portuguese, Russian, and Chinese).

*NOTE: Spanish is the default language for “Language 2.”*

- Language can be toggled between “Language 1” and “Language 2” on the home screen.

## Software Part Number Screen 1



APY42020—UN—25AUG20

This screen is one of two screens that gives software information about the display.

## Software Part Number Screen 2



APY42021—UN—25AUG20

The screen is one of two screens that give software information about the display.

SR99263,0000402-19-18JUL22

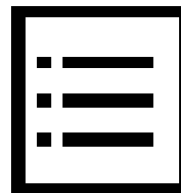
## Machine Status Pop-Up Notifications

### Generic DTC Information

*NOTE: Notifications and Diagnostic Trouble Codes (DTCs) are listed with their associated Suspect Parameter Number (SPN) and Failure Mode Indicator (FMI) in the format SPN.FMI.*

Common DTCs have icons to direct the user to the source of the DTC. For DTCs which do not have icons, the SPN, FMI, and Source Address (SA) information is given. This information can be used to help diagnose the issue.

### DTC Details Button



Details Icon

TCT010994—UN—04APR14

When a DTC occurs, a pop-up screen appears. For some DTCs, the Details Icon appears below the Select Key. This button opens further details related to the fault. For some DPF related faults, text descriptions can be available.

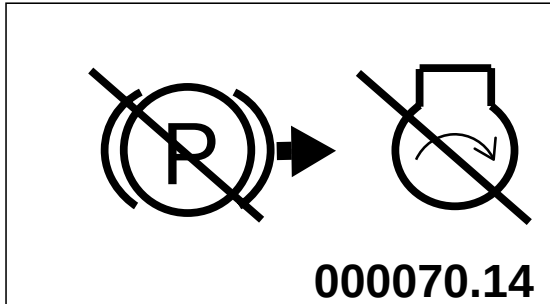
### Start Interlock Diagnostics

These DTC's alert the operator to conditions that

## Operating Machine

prevent the starter from engaging. These screens display only while the key is in start position and the interlock violation exists. They will automatically disappear when the condition is no longer present.

### DTC 70.14 - Park Brake Not Engaged

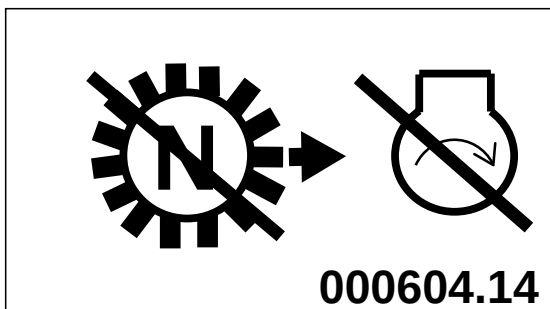


PY47418—UN—06SEP17

DTC 70.14

Park brake must be engaged for engine to crank.

### DTC 604.14 – Neutral Start Switch Interlock

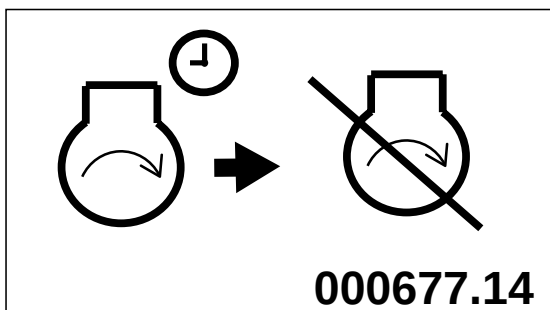


PY47419—UN—06SEP17

DTC 604.14

Motion control levers must be in the neutral lock position and the park brake locked to start the engine.

### DTC 677.14 – Crank Time Exceeded

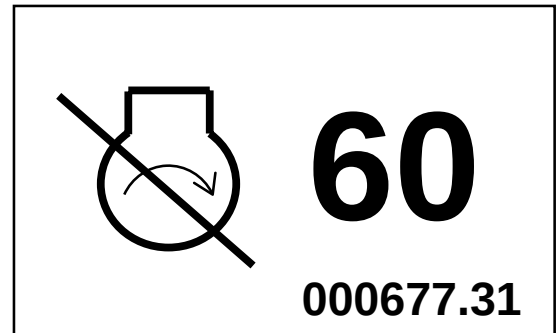


PY47420—UN—06SEP17

DTC 677.14

Excessive engine cranking requires a cool down period before allowing the engine to crank again.

### DTC677.31 – Crank Time Exceeded



PY47421—UN—06SEP17

DTC677.31

Operator must wait for 60 seconds before the engine is allowed to crank again.

### PTO Interlock Diagnostics

These DTC's alert the operator to conditions that prevent the PTO from engaging.

### DTC 3941.31 – Park Brake ON, Not Mowing



PY47422—UN—07SEP17

DTC 3941.31

PTO can not engage until park brake is released. Release park brake and cycle PTO switch to engage.

### DTC 3941.14 – PTO Switch ON, But Not Mowing



PY47423—UN—07SEP17

DTC 3941.14

PTO switch is in the ON position but the PTO is not

## Operating Machine

engaged. This shows up if an interlock is broken. Cycle the switch. If it still does not engage, then see the Troubleshooting Guide for Common DTC's in the Troubleshooting section for further information.

### Machine Diagnostics

These DTC's alert the operator to machine conditions that require immediate attention

#### DTC 1638.0 – Hydraulic Oil Temperature High



DTC 1638.0

PY47425—UN—06SEP17

Stop and shut down the machine. Contact a qualified John Deere service technician.

#### DTC 100.1 - Engine Oil Pressure Low



DTC 100.1

PY47426—UN—06SEP17

Stop and shut down the machine. Check oil level and verify that the correct oil type is in the crank case. (Refer to Service Engine section.)

#### DTC 110.0 - Engine Coolant Temperature High



DTC 110.0

PY47427—UN—06SEP17

Stop and shut down the machine. Check coolant level and clean radiator fins of debris. (Refer to Service Engine section.)

#### Generic Engine Fault – Stop Lamp Status

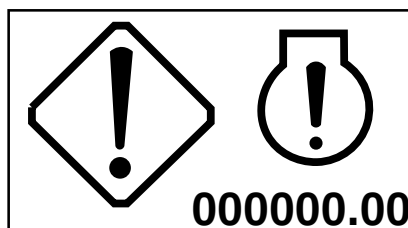


Generic Engine Fault - Stop Lamp Status

PY44596—UN—06SEP17

Stop and shut down the machine. (See the Troubleshooting Guide for Common DTC's in the Troubleshooting section for further information.)

#### Generic Engine Fault – Warn Lamp Status



Generic Engine Fault - Warn Lamp Status

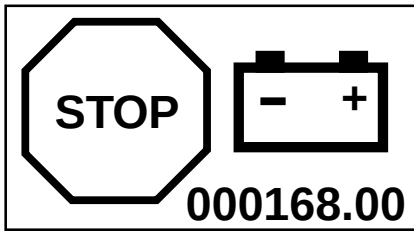
PY46275—UN—07SEP17

Stop and shut down the machine. Contact a qualified John Deere service technician.

#### DTC 168.0 / DTC 168.1 - Battery Voltage Fault

# Operating Machine

*NOTE: DTC code appears in the bottom right hand corner depending on the fault.*



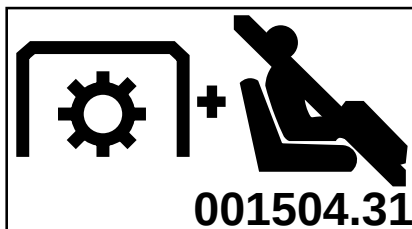
PY46278—UN—07SEP17  
*DTC 168.0 / DTC 168.1*

Stop and shut down the machine. Contact a qualified John Deere service technician.

DTC 168.0: Battery Voltage (VBAT), Critical High Voltage (above normal operating range (>18V))

DTC 168.1: Battery Voltage (VBAT), Critical Low Voltage (below normal operating range (<8V))

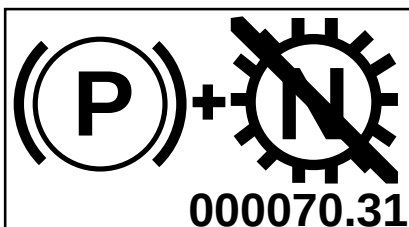
**DTC 1504.31 – PTO ON and Out of Seat**



PY46277—UN—07SEP17  
*DTC 1504.31*

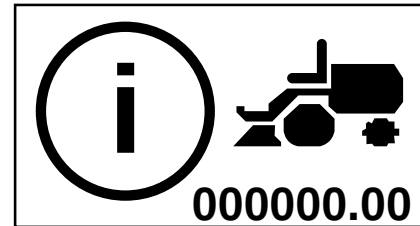
This DTC appears if the PTO is engaged and the operator leaves the seat. The PTO switch must be cycled with all interlocks met before PTO will re-engage.

**DTC 70.31 – Park Brake ON and Out of Neutral**



PY46279—UN—07SEP17  
*DTC 70.31*

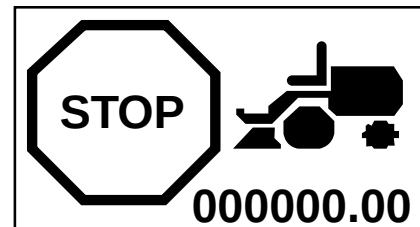
**Generic Machine Fault – Information**



PY46280—UN—07SEP17  
*Generic Machine Fault – Information*

Stop and shut down the machine. Contact a qualified John Deere service technician.

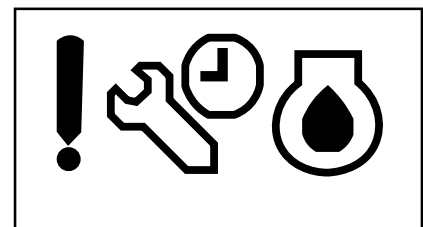
**Generic Machine Fault – Warn Lamp Status**



PY46281—UN—07SEP17  
*Generic Machine Fault – Warn Lamp Status*

Stop and shut down the machine. Contact a qualified John Deere service technician.

**Service Timer Alert – Engine Oil**

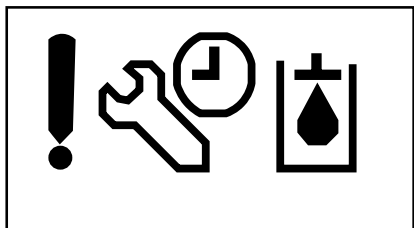


PY46282—UN—07SEP17  
*Service Timer Alert – Engine Oil*

The machine factory default timer for engine oil is set for 50 hours.

**Service Timer Alert – Hydraulic Oil**

# Operating Machine



PY46283—UN—07SEP17  
Service Timer Alert – Hydraulic Oil

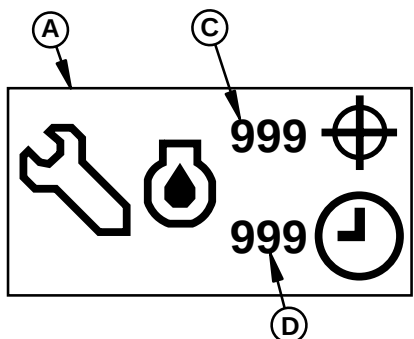
The machine factory default timer for hydraulic oil is set for 50 hours.

SR99263,00009F0-19-26JUL21

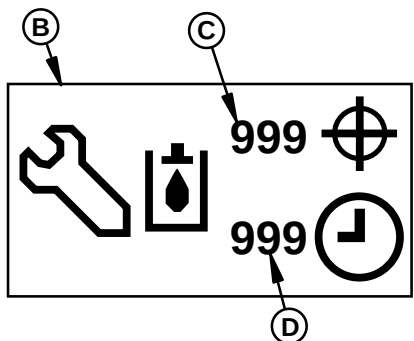
## Using Service Timers

**NOTE:** If while setting the timer, you wish to back out, you can press the left arrow to return to the previous menu. Your changes will not be saved.

1. Cycle through the Service Menu screens until you reach the Service Timers screen. (See Using Service Menu Displays)
2. Press the right arrow to adjust the service timers.



PY46285—UN—07SEP17



PY46286—UN—07SEP17

A—Engine Oil Service Timer  
B—Hydraulic Oil Service Timer

C—Service Interval  
D—Timer

3. Press the select key to change between engine oil (A) or hydraulic oil (B) service timers.

Press the left arrow to return to the previous menu.

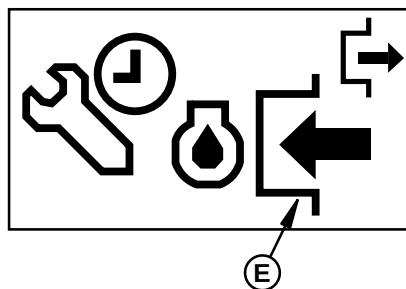
4. Press the right arrow to make adjustments to the service timer interval or timer values.

The service interval is top display (C) and the timer is bottom display (D). The service warning (exclamation point) will activate after the duration set in the interval display (C). Navigate to the display you want to modify.

## Adjusting Service Timer

1. Press and hold the select key to reset the timer. A progressing indicator fills while you hold the button. When it is full, the timer should reset to 000. The timer should be reset after service is performed. For example, if the engine oil is changed, you should reset the timer to 000 for the engine oil service timer.
2. Press the right arrow to advance to the next screen. (Enabling and Disabling Service Warning).

## Enabling or Disabling Service Warning

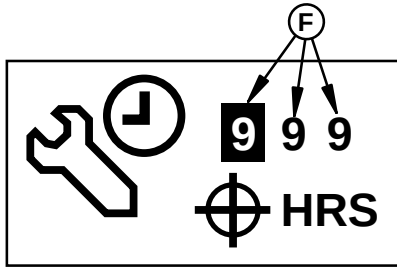


PY46287—UN—07SEP17

1. Press the right arrow to advance to the service warning screen.
2. Press the select key to enable or disable the warning. When the arrow (E) is pointing inward (as shown), the service warning is enabled. If the arrow is pointing outward, the service warning is disabled.

## Adjusting Service Interval

1. Press the right arrow to move to the next screen. When you reach this screen, you are able to adjust the intervals for which the service warning alerts the operator.



PY46288—UN—07SEP17

- Press the select key to adjust each digit (F). The digit will start at 0 and count upward by one. If you go past your intended digit, you can cycle through past 9 and reach 0 again. Press the right arrow once you have the correct value in each position. You have now set the service interval timer.

SR99263,00009F1-19-26JUL21

## Understanding Diesel Particulate Filter (DPF) Regeneration

Your machine is equipped with an emission-compliant engine, which cleans and filters the engine exhaust.

### Regeneration

Regeneration is the process of increased exhaust temperatures to oxidize the accumulated particulate matter, or soot, from the walls of the DPF. There are five types of regeneration that can occur. Passive Regeneration, Enhanced Passive Regeneration, Active Regeneration, Parked Regeneration, and DPF Recovery.

### Passive Regeneration

Passive regeneration occurs naturally in the DPF when the operating conditions produce sufficient exhaust gas temperatures for the oxidation of soot to occur. The engine ECU takes no action during passive regeneration. There is no fuel dosing or closing of the air throttle to increase exhaust gas temperatures. No indicators are present on the operators interface during the passive regeneration.

### Enhanced Passive Regeneration

When the soot level in the DPF reaches a predetermined level and the vehicle operating conditions are not resulting in sufficient exhaust gas temperatures to promote sufficient passive regeneration, the engine ECU activates the enhanced passive regeneration strategy. During enhanced passive regeneration, the engine ECU closes the air throttle and changes injection timing to increase the exhaust gas temperature to a level that promotes passive regeneration. The engine is allowed to be operated normally and no fuel is dosed during the enhanced passive regeneration. No indicators are

present on the operators interface during the enhanced passive regeneration.

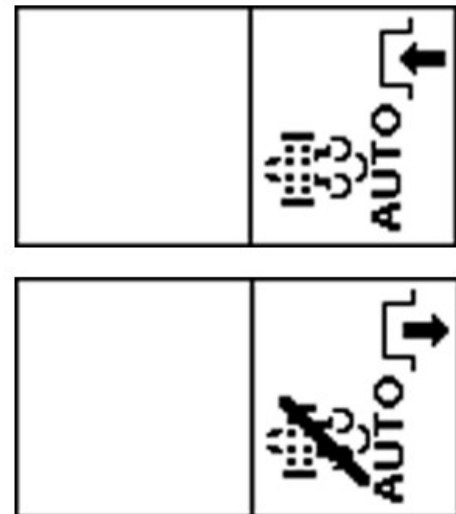
### Active Regeneration

When the soot level in the DPF reaches a predetermined level or soot is accumulating at a rate greater than can be managed by the enhanced passive regeneration, an active regeneration will be initiated. During an active regeneration, the ECU initiates the in-cylinder fuel dosing strategy, modifies fuel injection timing, and closes the air throttle to increase exhaust gas temperatures to promote rapid oxidation and removal of the soot in the DPF. The exhaust gas temperatures during the active regeneration are higher than the temperatures in the enhanced passive regeneration. During this regeneration, the engine is allowed to be operated normally.

### Inhibiting Active Regeneration

**IMPORTANT: Avoid damage! Under normal machine operation, the system is in auto regeneration mode and requires minimal operator interaction.**

If your vehicle must be used in a situation not suited for higher temperatures created during active regeneration, temporarily disable the system.



PY44598—UN—08SEP17

To disable the auto regeneration function temporarily, depress select key on the top menu Active Regeneration status screen. The auto regeneration symbol appears with a line through the symbol indicating auto regeneration is disabled. To avoid soot buildup in the exhaust filter, be sure to return to auto regeneration mode as soon as possible. See [Accessing Diesel Particulate Filter Displays](#).

**NOTE:** Auto regeneration is enabled whenever the key switch is cycled off.

# Operating Machine



PY44599—UN—08SEP17

While active regeneration is inhibited, if the system determines that soot buildup in the exhaust filter requires cleaning, the AUTO Disabled Regen Rqd DTC 003695.14 appears on the PDU. To enable the automatic Active Regeneration cycle through the PDU screens to the active regeneration enable-disable screen. See [Accessing Diesel Particulate Filter Displays](#).

Do not disable active regeneration unless it is necessary. If active regeneration is disabled frequently, the system eventually activates a parked regeneration. This means that the engine performance is reduced, machine function is limited, and does not return to normal until a parked regeneration is performed.

## Parked Regeneration

When the soot level reaches a predetermined level, the ECU mandates a parked regeneration be performed. When a parked regeneration is needed, the ECU derates the engine to encourage the parked regeneration be performed. During a parked regeneration, the ECU increased the engine speed to 2200 rpm, initiates the in-cylinder fuel dosing strategy, modifies fuel injection timing, and closes the air throttle to increase exhaust gas temperatures to promote rapid oxidation and removal of the soot in the DPF. The vehicle must remain parked until the parked regeneration has ended.

## Recovery Regeneration

If the soot in the DPF reaches a severe level, a recovery regeneration is required to reduce the soot level. Running the vehicle with the regenerations inhibited or not performing a parked regeneration when needed can cause the recovery regeneration to be needed. During a recovery regeneration, the vehicle must be parked, the ECU closes the air throttle, and changes injection timing to increase the exhaust gas temperature to a level that promotes passive regeneration. No fuel is dosed during the portion of the recovery. After sufficient time has passed and the soot level is at a low level, a parked regeneration is performed before the recovery regeneration is complete. The vehicle must remain parked until the recovery regeneration has ended.

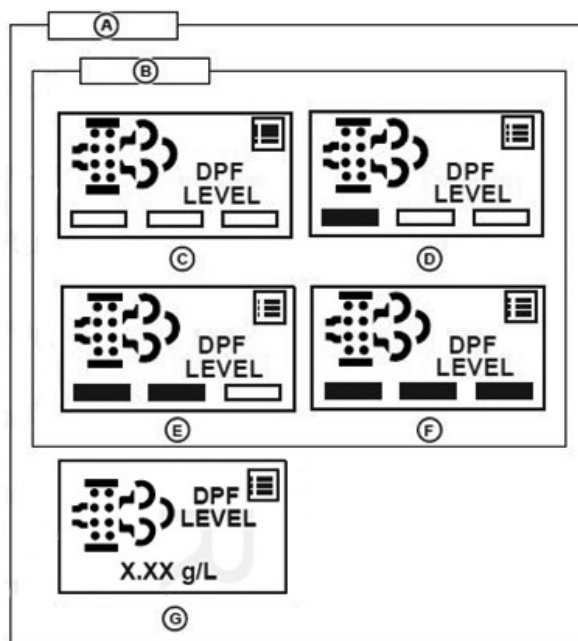
RM87422,000080C-19-12SEP17

## Diesel Particulate Filter Load Level and Value

From the Service Menu, cycle through the screens until you reach the DPF Level screen. (See [Using Service Menu Displays](#))

Pressing the select key of the DPF Level screen displays DPF Load Level screens and menus.

The DPF load level screen informs the operator of the state of the diesel particulate filter status. There are four states that this status can be in, but the progress bars are not linearly related to the actual soot loading value. If the notepad select key is selected, the actual soot loading value is displayed.



APY66001—UN—26JUL21

- A—DPF Load Level Screen
- B—DPF Bar Graph States
- C—Regen not needed
- D—DPF state low
- E—DPF state moderate
- F—DPF state high
- G—Soot Load Level Screen

Specific DPF load value can be obtained by pressing the select key button.

SR99263,00009F2-19-26JUL21

## Diesel Particulate Filter (DPF) Regeneration Functionality

### Status Detection

The screen icons are determined by the state of the Diesel Particulate Filter and whether the machine is parked.

# Operating Machine

## No Regeneration Required



PY44595—UN—06SEP17

Auto Regeneration Enabled

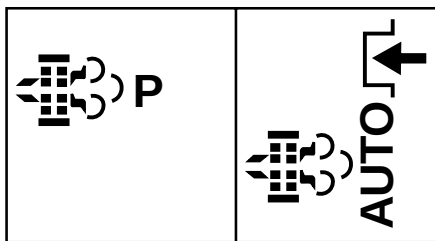
- DPF Auto Icon: when Auto Regeneration is enabled, above image is shown. When disabled, a line crosses through the icon.

## Parked Re-Generation Available

*NOTE: Button B has the same function for all DPF Status Screens in section.*

- Before starting a Parked Regeneration Cleaning, the operator should:
  - a. Park the vehicle on a paved surface.
  - b. Ensure that the vehicle is in neutral.
  - c. Engage the park brake (ON).
  - d. Disengage the cutting units (PTO Switch OFF).
  - e. Move the throttle lever to the low idle position.

*NOTE: If the engine is not at low idle, a parked regeneration will not start.*

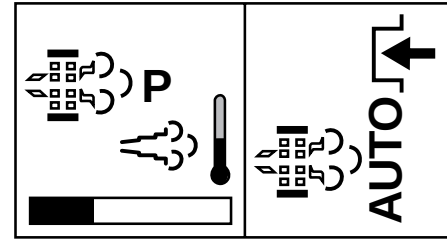


PY46290—UN—07SEP17

Parked Re-generation (Left) Auto Regeneration Disabled  
(Right) Auto Regeneration Enabled

- When button B (Filter with “P”) icon shown above is flashing, user may press and hold the button for two seconds to initiate a Parked Regeneration operation.

*NOTE: A delay occurs before the engine rpm increases and the parked regeneration begins.*



PY46289—UN—07SEP17

The above graphic shows the DPF top-level screen during a Parked Regeneration. The progress bar reflects the percentage complete of the Parked Regeneration process.

## Parked Regeneration Interlock Notification Pop-Ups

If user presses the Parked Regeneration button when it is not flashing (when regeneration is required, but interlocks are not met), then one of the following machine status notifications will appear:

### Park Brake Off

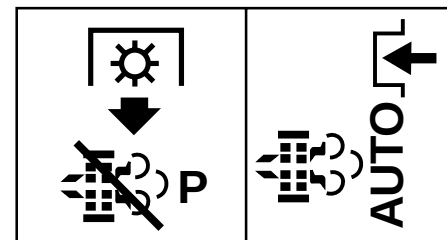


PY44594—UN—06SEP17

Park Brake Off, Parked Regeneration Interlock

Park brake must be set to start a Parked Regeneration.

### PTO Engaged



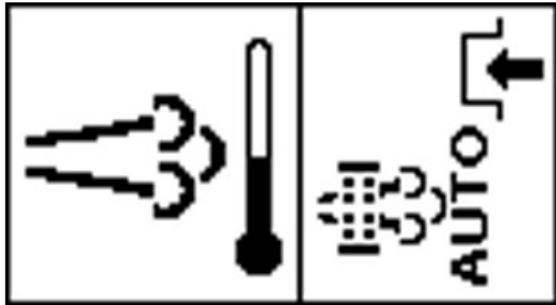
PY46291—UN—07SEP17

PTO Engaged, Parked Regeneration Interlock

PTO must not be on to start a Parked Regeneration.

# Operating Machine

## Warning Indicator



PY44600—UN—08SEP17  
*Exhaust Gas Temp Elevated*

When regeneration is occurring and exhaust temperatures are above normal, the above icon (cloud with thermometer in center-left area) displays.

## Cleaning Required



PY44593—UN—06SEP17  
*DTC 3695.14*

The above pop-up screen will display when the 'Auto' Regeneration button is disabled and the filter needs cleaning. This can be remedied by setting the 'Auto' Regeneration button to 'Enabled'.



PY44610—UN—12SEP17  
*Cleaning Required - Auto Regeneration Disabled*

The above icon (filter in left area) indicates that an active cleaning is required, but the Auto Regeneration

feature is disabled. The user should enable Auto Regeneration via select key ('Enable' icon).

## Cleaning Required Engine Power Limited

The following DTC's are displayed when the DPF soot has reached an elevated level and cleaning is required. Engine power is limited until a cleaning is performed.

## Parked Cleaning Required (Amber Warning Lamp)



PY44591—UN—06SEP17  
*DTC 3719.16*

The above pop-up screen displays when the filter particulate level is too high. A parked cleaning operation is required. See Parked Re-Generation Available section.

## Ash Cleaning Required (Amber Warning Lamp)



PY44592—UN—06SEP17  
*DTC 3720.16*

The above pop-up screen will display when the filter particulate level is too high. A parked cleaning operation is required. Additional service may be required. See Parked Re-Generation Available section.

## DPF Status Screen When DTC 3719.16 or 3720.16 is Active

# Operating Machine



PY44611—UN—12SEP17

*Parked Cleaning Required (Amber Warning Lamp)*

The above icon on the left-hand side indicates that a warning lamp DTC exists. Parked cleaning is required.

## Cleaning Required Engine Power and PTO Power Limited

The following DTC's are displayed when the DPF has reached its maximum soot levels and requires immediate service. Engine power is extremely limited and PTO power is disabled.

## Service Regeneration Required (Red Stop Lamp)



PY44589—UN—06SEP17

*DTC 3719.00*



PY44590—UN—06SEP17

*DTC 3720.00*

The above pop-up screen will display when the filter

particulate level is too high. A forced regeneration by a qualified John Deere service technician is required.

RM87422,0000807-19-12SEP17

## Using Hydrostatic Pedals

### Using the Forward Pedal

1. Push the forward pedal down slightly to begin forward motion. Push the pedal down farther to travel faster.
2. Release the pedal to return to neutral and stop the mower.

### Using the Reverse Pedal

**CAUTION: Rotating blades are dangerous. Children or bystanders may be injured by runover and rotating blades.**

**Before backing up, carefully check the area around the machine.**

1. Push the reverse pedal down slightly to begin reverse travel. Push the pedal down farther to travel faster.
2. Release pedal to return to neutral and stop the machine.

OUC1023,0000478-19-13MAR13

## Using Brakes

### Using Master Brake Pedal

*NOTE: When the master brake is engaged, the PTO is disengaged.*

Push the master brake pedal down to hold the machine stationary on a slope, or for an emergency stop. PTO will disengage when master brake pedal is depressed, and PTO switch will have to be recycled once brake is released to restart PTO.

### Using Park Brake

1. Lock the park brake by pulling the park brake lock lever (B) upwards and fully depressing the master brake pedal (A). The pedal should stay locked down.
2. Unlock the park brake by depressing the master brake pedal and pushing the park brake lock lever down. Release the master brake pedal.

### Using Turn-Brakes

The turn-brakes are used to change direction quickly within the width of the machine. Avoid locking the tire with turn-brake in areas where turf damage is not acceptable. Turn-brakes will not turn machine if traction assist is engaged.

# Operating Machine

1. Depress the right turn-brake pedal to slow or stop the right front wheel, while power is applied to the left wheel. The machine will turn to the right. Release the turn-brake pedal to resume driving in a straight line.
2. Depress the left turn-brake pedal to turn to the left.

OUC1023,0000479-19-13MAR13

## Using Traction Assist Pedal

The traction assist lock is used to help improve traction on slopes and on slippery surfaces. The front drive axle will lock so that the front wheels turn together.

**IMPORTANT:** Using the traction assist function improperly can damage the transaxle:

- Reduce speed and allow drive wheels to rotate at same speed before engaging or disengaging traction assist.
- Disengage traction assist when driving on dry asphalt or concrete.
- Use traction assist only when necessary for improved ground engagement.

### To Lock the Traction Assist

Push the traction assist lock pedal down with the left foot and hold it.

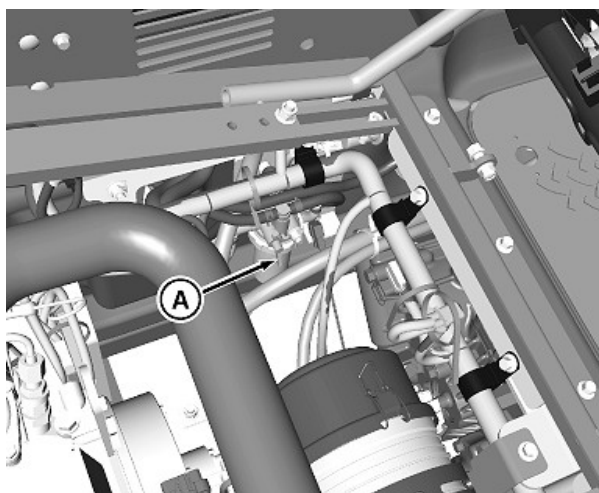
### To Unlock the Traction Assist

1. Release the pedal.
2. The traction assist will stay locked as long as wheel rotation is unequal. Once the load on the transmission is equalized and reduced, the traction assist lock will disengage automatically.

OUC1023,000047A-19-13MAR13

## Using Fuel Shutoff Valve (1550)

**NOTE:** Close fuel shutoff valve when storing machine or when transporting on a trailer.



TCT008008—UN—29JUL13

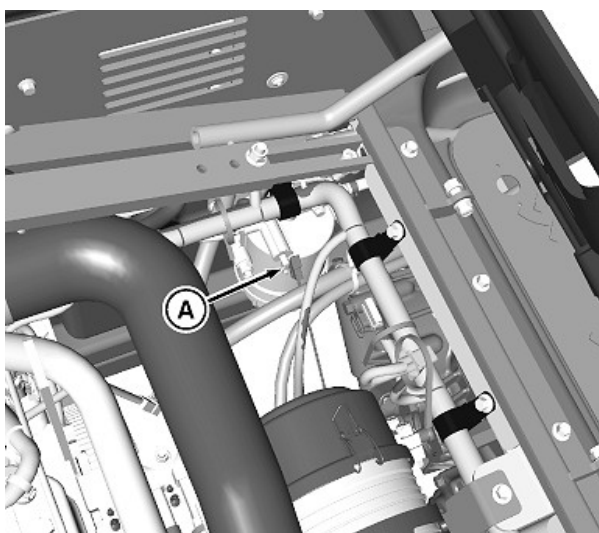
Open the engine cover. Locate the fuel shutoff valve (A) on the left side of the engine.

- To open the fuel shutoff valve:
  - Turn the handle so the pointer is facing down.
- To close the fuel shutoff valve:
  - Turn the handle so the pointer is facing rearward.

OUC2005,000006A-19-04NOV13

## Using Fuel Shutoff Valve (1570, 1575, 1580, 1585)

**NOTE:** Close fuel shutoff valve when storing machine or when transporting on a trailer.



TCT008009—UN—29JUL13

Open the engine cover. Locate the fuel shutoff valve (A) on the left side of the engine.

- To open the fuel shutoff valve:
  - Turn the handle so the pointer is facing down, as shown.

# Operating Machine

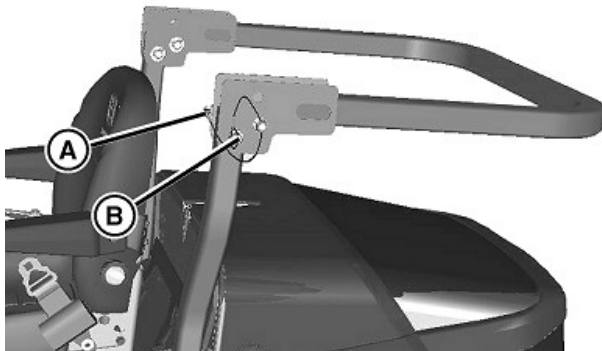
- To close the fuel shutoff valve:
  - Turn the handle so it is pointing rearward.

OUC2005,000006B-19-04NOV13

## Raising and Lowering ROPS

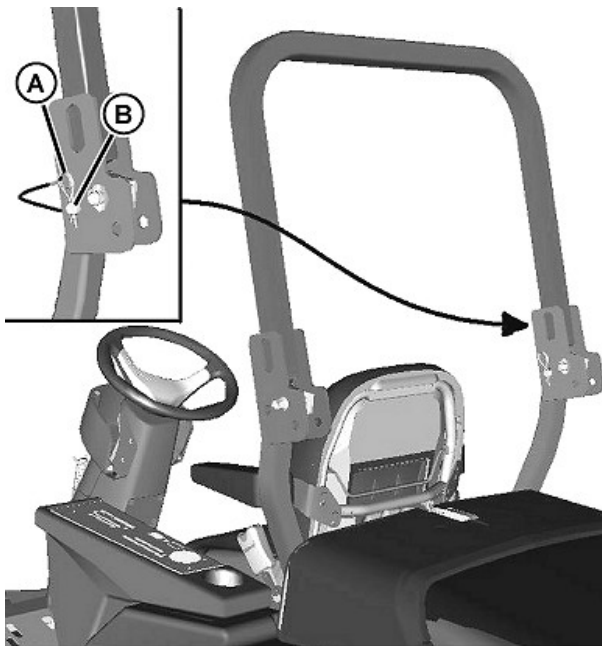
### Raising ROPS

1. Park machine safely. (See Parking Safely in the SAFETY section.)



TCT007882—UN—11JUL13

2. Remove spring pin (A) from drilled pin (B) on left and right side of ROPS.
3. Remove drilled pin from left and right side of ROPS.



TCT007883—UN—01NOV13

4. Push ROPS into upright position.
5. Install drilled pin (B) into holes on left and right side of ROPS, and secure in place with spring pins (A).

### Lowering ROPS

**CAUTION:** Always wear seat belt when operating machine with folding Roll-Over Protective Structure (ROPS) in upright position. Do not jump from machine if machine tips.

If ROPS must be folded to operate in a low clearance area, do not use seat belt. Raise ROPS and use seat belt as soon as conditions permit.

1. Park machine safely. (See Parking Safely in the SAFETY section).
2. Remove spring pin (A) from drilled pin (B) on left and right side of ROPS.
3. Remove drilled pin from left and right side of ROPS.
4. Pull ROPS rearward to lower.
5. Install drilled pins and spring pins back into hole in ROPS to secure in place.

OUC2005,000006C-19-04NOV13

## Raising and Lowering the Attachment

**CAUTION:** Do not raise the attachment on slopes or when traveling at high speeds, as the machine could become unstable. Avoid hard braking with attachment raised.

The PTO will continue to run after the attachment is raised. Turn off PTO before raising attachment.

The attachment will lower when the lift lever is pushed forward, even when the engine is off and operator is not on the seat. Never operate controls while not on seat. Check that the area under the attachment is clear before lowering.

Turn off PTO. Raising an attachment will not stop the PTO; the attachment continues to run in the raised position.

### To Raise Attachment

- Pull lift lever rearward. Attachment will rise up until lever is released, or attachment reaches top of travel, whichever occurs first.

### To Lower Attachment

- Push lift lever forward. Attachment will lower until lever is released, or attachment reaches the ground, whichever occurs first.

### To Float Attachment

- Push lift lever forward until it latches into float

# Operating Machine

position. Attachment will rise and lower, as needed, to follow contour of ground.

OUC1023,000047E-19-04NOV13

## Using Auxiliary Hydraulic Control Levers

1. Move hydraulic control levers back and forth several times to relieve pressure in hydraulic system.
2. Remove dust caps from couplers.
3. Follow instructions in attachment Operator's Manual to connect attachment hydraulic hoses and operate attachment.

Hydraulic control lever functions are determined by attachment:

- Pull levers rearward to pressurize the male coupler line and perform an attachment function.
- Pull or push levers to middle position to neutralize pressure in both coupler lines.
- Push levers forward to pressurize the female coupler line and perform an attachment function.

MX00654,00001F5-19-18DEC14

## Starting Engine

**CAUTION:** Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- Move the machine to an outside area before running the engine.
- Do not run an engine in an enclosed area without adequate ventilation.
- Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.
- Allow fresh outside air into the work area to clear the exhaust fumes out.

*NOTE: The engine will not start unless the PTO is off, and the master brake pedal is depressed.*

1. Open the fuel shutoff valve.
2. Sit on the operator's seat. (Seat should spring down slightly so seat switch is actuated.)
3. Put on seat belt (if ROPS is not in folded position).
4. Depress master brake pedal if park brake is not locked.
5. Push down the PTO knob to the off position.
6. Pull the throttle lever back to the slow idle position.
7. Turn the key to the on position.

8. 1550 Only: Wait for the engine preheat light to turn off.

**IMPORTANT:** Do not overheat starter. Do not operate starter more than ten seconds at a time. Wait two minutes before trying again if engine does not start.

9. Turn the key to the start position for no longer than ten seconds. Release key to run position after engine starts.
  - If starter engages, but engine does not start, wait two minutes and try again for no longer than ten seconds.

**IMPORTANT:** Do not idle engine for long periods of time. Excessive idling can cause engine overheating, carbon build-up, and poor performance.

10. Let engine run at half-speed position for two minutes to allow it to warm up before operating machine.

OUC2005,000006D-19-04NOV13

## Stopping Engine

1. Push PTO switch down to the OFF position.
2. Move throttle lever back to the SLOW IDLE position. Let engine run at slow idle a few seconds.
3. Lock the park brake.
4. Lower attachment to the ground.
5. Turn the key switch to STOP position.
6. Remove key.

OUC2005,000006E-19-29JUL13

## Moving Machine with Engine Off

**CAUTION:** When the bypass valve is open, the machine will have unrestricted motion.

- Do not open the bypass valve when the machine is stopped on an incline to prevent it from going downhill out of control.

**IMPORTANT:** Transmission damage may occur if the machine is towed or moved incorrectly:

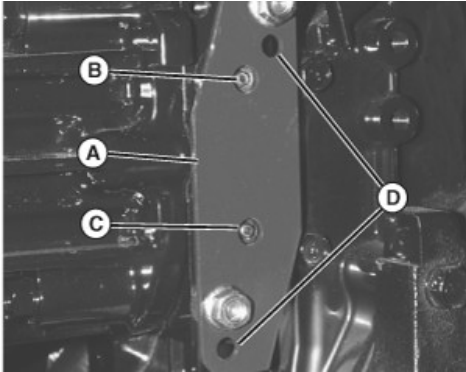
- Move machine by hand only.
- Do not use another vehicle to move machine.
- Do not tow machine.

Turn key switch to OFF position.

# Operating Machine

## 1550, 1570, 1575 (Single Speed Transmission)

1. Push 2WD or 4WD lever into FORWARD position.



TCAL43326—UN—14MAR13

2. Open service hatch and locate the red plate (A) on the right side of the transaxle housing.
3. Lock the park brake.
  - For pushing machine short distances in the forward direction, push in and release the top relief valve (B) with a small tool.
  - For pushing machine short distances in the reverse direction, push in and release the bottom relief valve (C) with a small tool.
  - For pushing machine longer distances in forward and reverse, remove the two M8 flange head nuts and install plate to lower set of drilled holes (D). Install nuts.
4. Unlock the park brake.
5. Push machine slowly by hand, or using winch, using brakes when necessary.
6. Do not use another vehicle to push or tow mower at high speed.
7. If red plate was moved to the lower set of holes, move it back to original position.

## 1580, 1585 (Dual Speed Transmission)

1. Push 4WD lever down into 2WD position.
2. Place two-speed transaxle shift lever to centered neutral position.
3. Unlock the park brake.
4. Push machine slowly by hand or using winch, using brakes when necessary.

SB31882,000026E-19-23JUL18

## Transporting Machine on Trailer

**CAUTION:** Use extra care when loading or unloading the machine onto a trailer or truck.

- Park trailer on a level surface.
- Use of a trailer with sides is recommended.

- Keep wheels away from drop-offs and edges.
- Back slowly and in a straight line.
- Close fuel shut-off valve, if your machine is equipped.

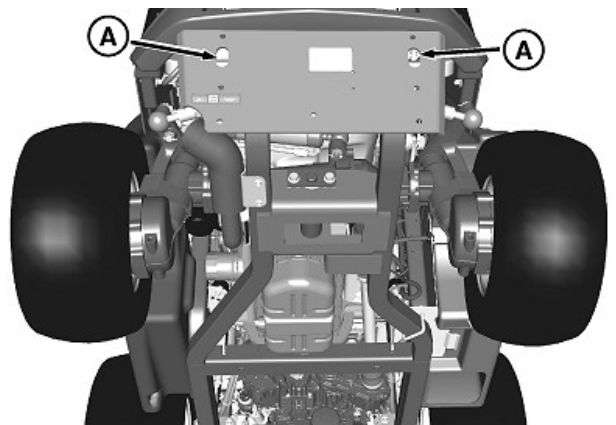
**IMPORTANT:** Transporting a machine on a trailer or on a truck bed at high speeds can result in hood or engine cover raising and possibly coming off machine if not secured.

- Position machine on trailer so hood or engine cover opens from rear of trailer to prevent wind from blowing hood or cover open.
- Secure hood or engine cover with existing machine locks or latches.
- Secure hood or engine cover with tie down straps if no locks or latches exist.

Be sure trailer has all the necessary lights and signs required by law.

1. Stop PTO.
2. Drive onto heavy-duty trailer with attachment raised.
3. Lower attachment down to platform of trailer.
4. Stop engine, remove key, lock park brake.
5. Close the fuel shutoff valve (diesel model only).
6. Fasten machine to trailer with heavy-duty straps, chains, or cables.

**NOTE:** Both front and rear straps must be directed down and outward from machine.

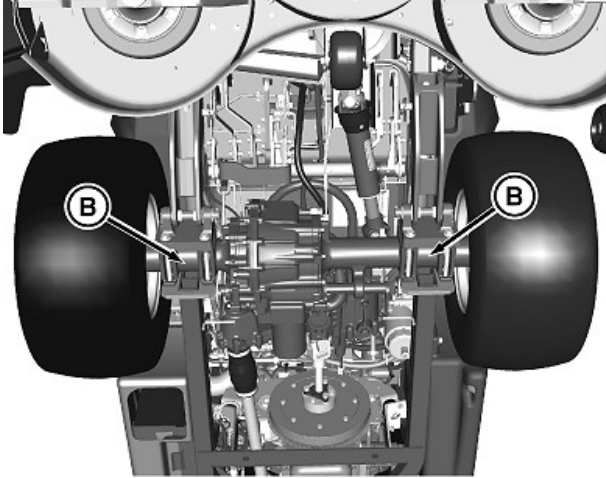


TCT008010—UN—11DEC13

7. Fasten rear straps:
  - No Weight Kit Installed: Fasten rear straps to vertical slots (A) in rear panel.
  - Weight Kit Installed (Not Shown): Fasten rear straps to weight kit bracket.

## Operating Machine

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TCT008011—UN—11DEC13

8. Fasten front straps around front transaxle (B).
9. Check that engine cover is closed and latched. Fold ROPS to avoid overhead clearance problems while on trailer.

OUO2005.0000071-19-11DEC13

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### Using Power Outlet

**⚠ CAUTION:** Do not use personal electronics or wear headphones while operating machine. Keep electrical cords from hanging into operator's station and sides of machine.



TCAL43327—UN—14MAR13

The power outlet provides 12 volts direct current (VDC) to power accessories. It is fused at 10 amps and powered regardless of ignition switch position. The outlet has a weather resistant spring-loaded cover. Always unplug devices and close cover before storing machine.

OUO1023.0000484-19-13MAR13

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# Service Intervals

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## Servicing Your Machine

**IMPORTANT: Avoid damage! Operating in extreme conditions may require more frequent service intervals:**

- Engine components may become dirty or plugged when operating in extreme heat, dust or other severe conditions.
- Engine oil can degrade if machine is operated constantly at slow or low engine speeds or for frequent short periods of time.
- High-pressure washer can cause damage to machine components.

Please use the following timetables to perform routine maintenance on your machine.

Park the vehicle safely. See Park Safely in the SAFETY Section.

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OUO2005,0000291-19-08FEB21

## Break-In

### After First 10 Hours of Operation

- Check and tighten wheel hardware.

### After First 50 Hours of Operation

*NOTE: The machine factory default timer alert for engine and hydraulic oil is set for 50 hours. When the 50 hour interval expires, the timer needs to be reset to the normal interval of 250 hours for engine oil and hydraulic oil. (See Using Service Timers)*

- Change engine oil and filter.
- Change transaxle oil and filter.
- Reset service timer interval.

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OUO2005,0000363-19-13MAR20

## Every 50 Hours or Yearly

- Clean cabin air filter (cab units).
- Lubricate deck components.
- Lubricate cutting unit or mower lift components.
- Lubricate drive shafts.
- Clean battery terminals and check battery fluid level (if applicable).
- Lubricate rear axle components.
- Lubricate steering cylinder.
- Check mower deck belts.
- 4WD Model: Check rear axle oil level.
- Check and tighten wheel hardware.

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OUO2005,0000364-19-02NOV15

## Every 100 Hours

- Lubricate rear axle pivot.
- Lubricate hydrostatic linkage.
- Lubricate turn brake pedals.

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OUO2005,0000365-19-07MAR14

## Every 250 Hours

- Change engine oil and filter.
- Change transaxle oil and filter.

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OUO2005,0000366-19-07MAR14

## Every 500 Hours

- Check torque on ROPS hardware.
- Replace fuel filter.
- 4WD Model: Change rear axle oil.
- Check toe-in adjustment on rear axle.
- Inspect rear axle pivot pin for wear or damage.

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OUO2005,0000367-19-17APR15

## Every 1000 Hours

- Check valve clearance.

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OUO2005,0000368-19-07MAR14

## Every 1500 Hours

- Check coolant freeze point and clarity.
- Check fuel injectors.

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OUO2005,0000369-19-07MAR14

## Every 2000 Hours or Two Years

- Change engine coolant and thermostat.

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OUO2005,000036A-19-06MAR14

## Service Intervals After Converting to BioDiesel Fuel

**IMPORTANT: Only use biodiesel fuel that complies with EN14214 (European Standards) or ASTM D-7467 (USA Standards) in B6 through B20 blends.**

**Biodiesel fuel must be used within three months of the date of production by the fuel supplier.**

# Service Intervals

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*NOTE: The use of John Deere Biodiesel Fuel Conditioner is recommended whenever a biodiesel blended fuel is used.*

Use the service procedures below at the intervals listed for machines converted to use biodiesel B6-B20 fuel blends:

## Daily

- Check and drain water separator as required.
- Check engine oil. If oil level rises, change engine oil immediately.

## Engine Oil and Filter Change Interval

- Change at 50% of Service Interval listed in Operator Manuals for regular diesel fuel usage.

## Fuel Filter Change Interval

- Change at 50% of Service Interval listed in Operator Manuals for regular diesel fuel usage.

## Every 1000 Hours

- Clean, inspect and adjust fuel injectors.

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OUO1023,0000493-19-13MAR13

# Service Lubrication

## Grease

**IMPORTANT:** Use recommended John Deere greases to avoid component failure and premature wear.

The recommended John Deere greases are effective within an average air temperature range of -29 to 135 degrees C (-20 to 275 degrees F).

If operating outside that temperature range, contact your Servicing dealer for a special-use grease.

The following greases are preferred:

### High Speed Applications

Use John Deere Multi-Purpose SD Polyurea Grease or John Deere Multi-Purpose HD Lithium Complex Grease for the following high speed applications:

- Engine drive shaft (1 place).
- PTO shaft (3 places).

### Other Applications

Use John Deere Multi-Purpose HD Lithium Complex Grease or John Deere Moly High Temperature EP Grease for all other applications.

If not using any of the preferred greases, be sure to use a general purpose grease with a NLGI grade No. 2 rating. Avoid use of John Deere Moly High Temperature EP Grease on high speed applications such as mower spindles and the rear axle.

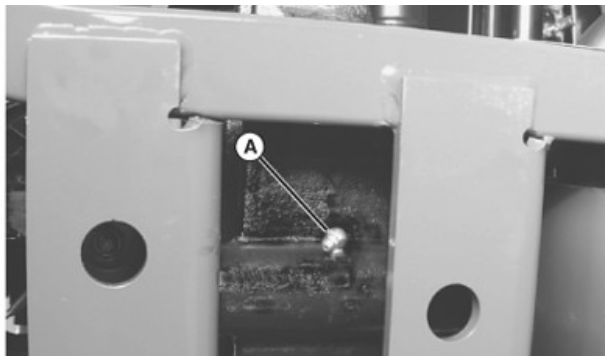
Operating in extremely wet conditions may require use of special purpose greases. See your John Deere dealer.

Wipe off all grease fittings before and after lubrication to prevent contamination.

OUO1023,0000494-19-13MAR13

## Lubricating Rear Axle Pivot Pin

1. Park machine safely. (See Parking Safely in the SAFETY Section.)



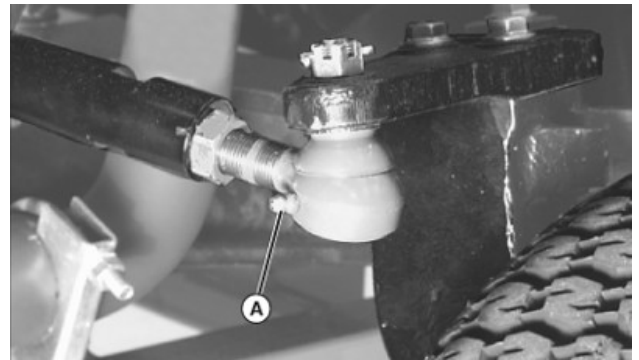
TCAL43328—UN—14MAR13

2. Locate rear axle pivot pin grease fitting (A) under rear of machine between frame members on bottom of rear axle.
3. Lubricate grease fitting with John Deere Multi-Purpose HD Lithium Complex Grease or John Deere Moly High Temperature EP Grease until grease can be seen seeping out at front and rear of axle casting.

OUO1023,0000495-19-13MAR13

## Lubricating Rear Tie Rod

1. Park machine safely. (See Parking Safely in the SAFETY Section.)



TCAL43329—UN—14MAR13

2. Lubricate left and right side of the rear tie rod (A) with John Deere Multi-Purpose HD Lithium Complex Grease or John Deere Moly High Temperature EP Grease.

OUO1023,0000496-19-13MAR13

## Lubricating Hydraulic Steering Cylinder

1. Park machine safely. (See Parking Safely in the SAFETY Section.)



TCAL43330—UN—14MAR13

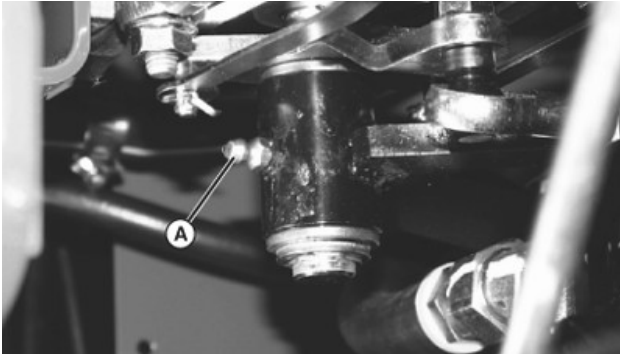
2. Lubricate hydraulic steering cylinder ends (A) at rear of machine with John Deere Multi-Purpose HD Lithium Complex Grease or John Deere Moly High Temperature EP Grease.

OUO1023,0000497-19-13MAR13

## Service Lubrication

### Lubricating Hydrostatic Linkage

1. Park machine safely. (See Parking Safely in the SAFETY Section.)



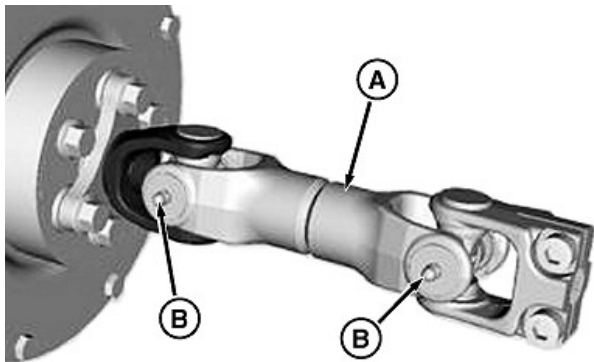
TCAL43331—UN—14MAR13

2. Locate hydrostatic linkage grease fitting (A) under service hatch in operator's platform, or to the rear of the right front tire.
3. Lubricate linkage with John Deere Multi-Purpose HD Lithium Complex Grease or John Deere Moly High Temperature EP Grease.

OUO1023,0000498-19-13MAR13

### Lubricating Engine Drive Shaft

1. Park machine safely. (See Parking Safely in the SAFETY Section.)



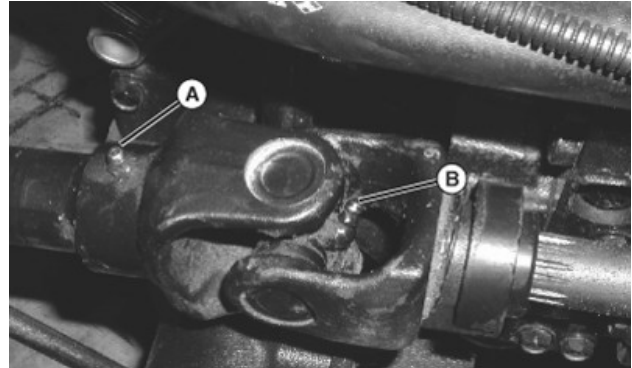
TCT010615—UN—06MAR14

2. Lubricate front universal joint of engine drive shaft (A) with John Deere Multi-Purpose SD Polyurea Grease or John Deere Multi-Purpose HD Lithium Complex Grease.
3. Pump grease into two grease fittings (B) until it can be seen seeping from all four bearing caps on the inside of each universal joint.

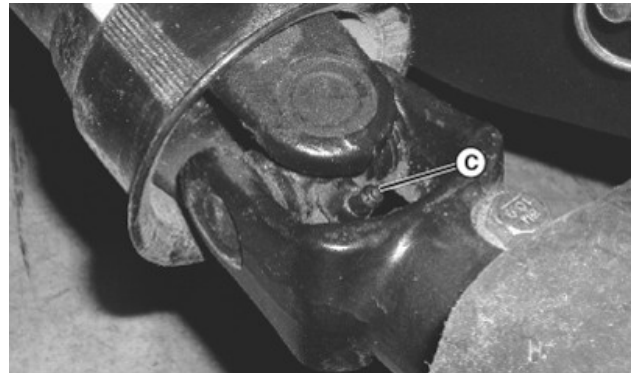
OUO2005,000036B-19-06MAR14

### Lubricating PTO Shaft

1. Park machine safely. (See Parking Safely in the SAFETY Section.)



TCAL43333—UN—14MAR13



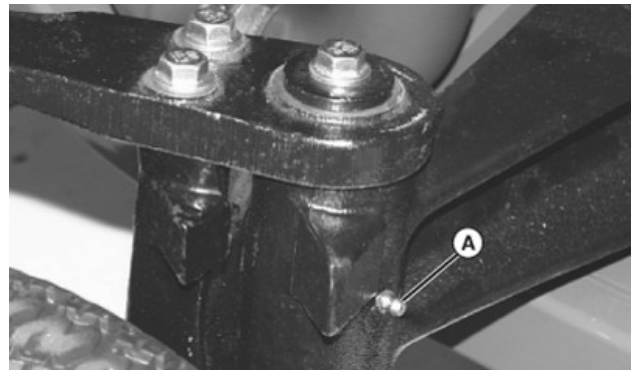
TCAL43334—UN—14MAR13

2. Lubricate grease fittings (A-C) with John Deere Multi-Purpose SD Polyurea Grease or John Deere Multi-Purpose HD Lithium Complex Grease.
3. Pump grease into grease fittings (B and C) until it can be seen seeping from all four bearing caps on the inside of each universal joint.

OUO1023,000049A-19-14MAR13

### Lubricating Steering Spindles (2WD Only)

1. Park machine safely. (See Parking Safely in the SAFETY Section.)



TCAL43335—UN—14MAR13

2. Locate steering spindle grease fitting (A) on front

## Service Lubrication

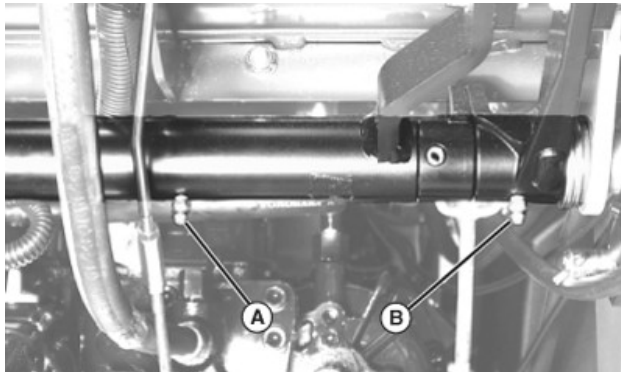
side of rear axle steering spindles (two wheel drive models only).

3. Lubricate linkage with John Deere Multi-Purpose HD Lithium Complex Grease or John Deere Moly High Temperature EP Grease.
4. Repeat for steering spindle grease fitting on other side of machine.

OUO1023,000049B-19-13MAR13

### Lubricating Brake Pedal Linkage

1. Park machine safely. (See Parking Safely in the SAFETY section.)



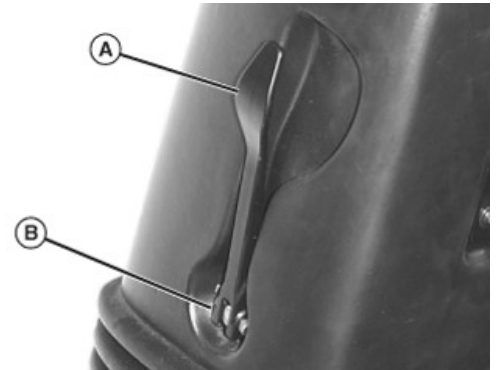
TCAL43336—UN—14MAR13

2. Locate brake pedal linkage grease fittings (A and B) under the front left of the operator's platform.
3. Lubricate linkage with John Deere Multi-Purpose HD Lithium Complex Grease or John Deere Moly High Temperature EP Grease.

OUO1023,000049C-19-13MAR13

### Lubricating Steering Column Tilt-Lock

1. Park machine safely. (See Parking Machine Safely in the SAFETY section.)

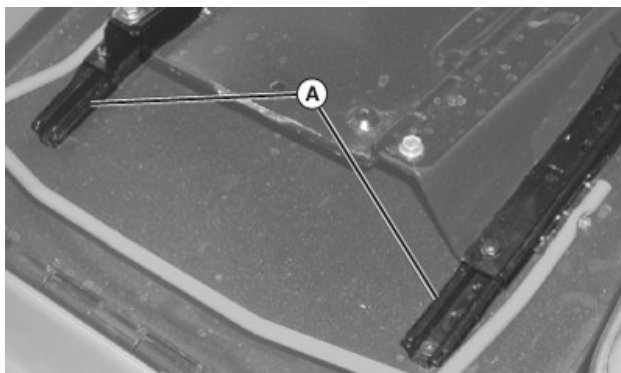


TCAL43338—UN—14MAR13

2. Pull lever (A) outward to release steering column.
3. Lubricate cam mechanism (B) using a dry lubricant such as John Deere Super Lube™.

OUO1023,000049E-19-13MAR13

### Lubricating Operator Seat Slides



TCAL43337—UN—14MAR13

1. Lubricate operator seat slides (A) using a dry, teflon lubricant, such as John Deere Super Lube.
2. Spray seat slides while moving seat forward and back.

OUO1023,000049D-19-01APR15

# Service Engine

## Emissions Service Information

Within the warranty period, John Deere will reimburse reasonable service costs incurred at service providers outside the John Deere authorized network only in an unsafe, emergency condition if an authorized John Deere dealer is not available and the failure does not arise from the owner's misuse or failure to perform required maintenance. An emergency situation exists under this section if, after 30 days, the authorized John Deere network is unable to perform the repairs or source replacement parts.

## Emission Control System Certification Label

**NOTE:** *Tampering with emission controls and components by unauthorized personnel may result in severe fines or penalties. Emission controls and components can only be adjusted by EPA and/or CARB authorized service centers. Contact your John Deere Retailer concerning emission controls and component questions.*

The presence of an emissions label signifies that the engine has been certified with the United States Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB).

The emissions warranty applies only to those engines marketed by John Deere that have been certified by the EPA and/or CARB; and used in the United States and Canada in off-road mobile equipment.

## Altitude Adjustment (Gasoline or Propane Converted Engines Only)

If your engine features a carburetor it is calibrated by the engine manufacturer and is not adjustable.

If your engine is operated at altitudes below 610 m (2,000 ft.), a high altitude carburetor jet kit is not required. If your engine is operated at altitudes above 610 m (2,000 ft.), a high altitude carburetor jet kit may be required for proper engine performance and emissions control. Operating the engine with the wrong carburetor configuration at a given altitude may increase the engine's emissions and decrease fuel efficiency and performance.

See a qualified service provider for details on jet kit requirements for your specific product.

TC00531,00000EC-19-03JAN24

## Avoid Fumes

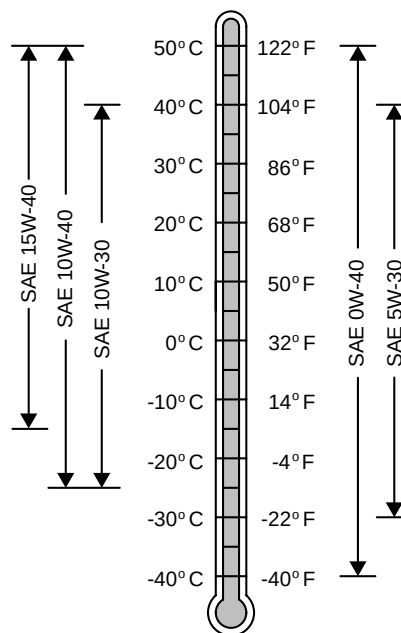
**CAUTION:** Engine exhaust fumes contain carbon monoxide and can cause serious illness or death.

- Move the machine to an outside area before running the engine.
- Do not run an engine in an enclosed area without adequate ventilation.

- Connect a pipe extension to the engine exhaust pipe to direct the exhaust fumes out of the area.
- Allow fresh outside air into the work area to clear the exhaust fumes out.

OUC1023,000049F-19-13MAR13

## Engine Oil



TS1691—UN—18JUL07

Oil Viscosities for Air Temperature Ranges

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

## The following John Deere oils are preferred:

- John DeerePlus-50™ II
- John DeereTorq-Gard™ Supreme

**Other oils may be used if John Deere oils are not available, provided they meet one of the following specifications:**

- API Service Classification CJ-4, or CK-4
- ACEA Specification E6 or E9
- JASO Specification DH-2

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

UP00731,1004800-19-12JAN17

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

# Service Engine

## Raising and Lowering the Seat Platform

### Raising the Seat Platform

1. Park machine safely. (See Parking Safely in the SAFETY section.)

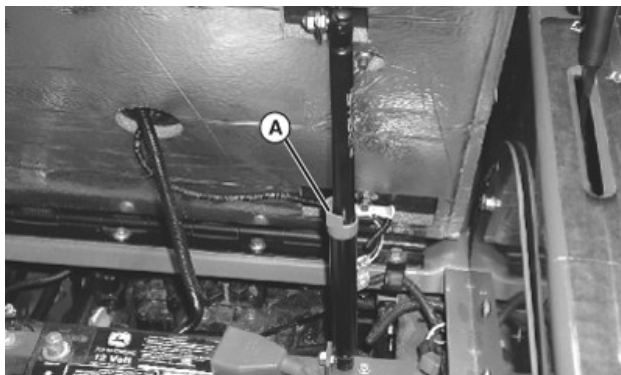
**CAUTION:** Fingers and hands can be pinched or crushed. Be aware of potential pinch points and keep hands away.



TCAL43342—UN—14MAR13

2. Pull forward on the release lever (A), while pulling forward on the backrest of the operator's seat.
  - The seat platform will rise until the gas strut extends and latches in the open position.

### Lowering the Seat Platform



TCAL43343—UN—14MAR13

1. Push in the lock lever (A) on the gas strut.
2. Pull rearward on the seat backrest until the seat platform lowers and latches.

OUO1023,00004A2-19-13MAR13

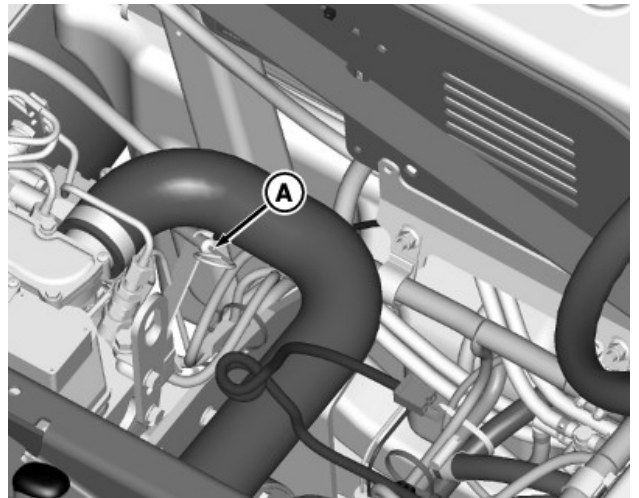
## Checking Engine Oil Level (1550)

**IMPORTANT:** Avoid damage! Avoid dirt and other contaminants from entering the oil dipstick tube location. Clean area around dipstick before removing.

Failure to check the oil level regularly could lead to serious engine problems if oil level is low:

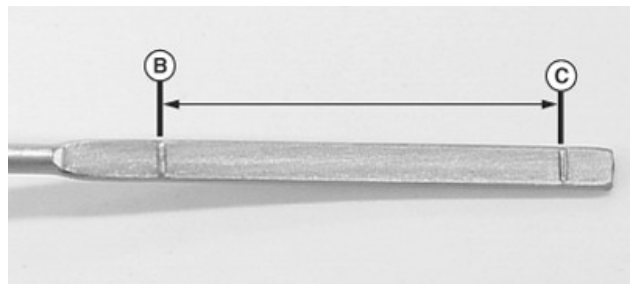
- Check oil level before operating.
- Check oil level when the engine is cold and not running.
- Keep level between the full and the add marks.
- Shut off engine before adding oil.
- Check oil level twice a day if you run engine over 4 hours a day.

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Tilt operator's seat platform forward.



TCT010630—UN—21MAR14

3. Remove dipstick (A) located on the left side of the engine under the seat. Wipe dipstick with a clean cloth.



TCAL43345—UN—14MAR13

4. Install dipstick, then remove again. Check oil level. Oil should be between levels (B) and (C) on the dipstick.

## Service Engine

- If oil is low, add oil to bring oil level no higher than level (B) on the dipstick.
- If oil is above level (B) on the dipstick, drain to proper level.

5. Install dipstick.

6. Lower operator's seat platform.

OUMX068,0000685-19-21MAR14

### Checking Engine Oil Level (1570, 1575, 1580, 1585)

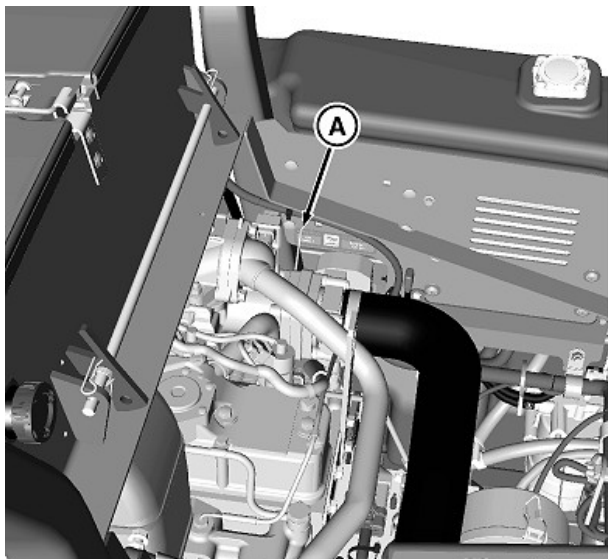
**IMPORTANT: Avoid damage! Avoid dirt and other contaminants from entering the oil dipstick tube location. Clean area around dipstick before removing.**

Failure to check the oil level regularly could lead to serious engine problems if oil level is low:

- Check oil level before operating.
- Check oil level when the engine is cold and not running.
- Keep level between the full and the add marks.
- Shut off engine before adding oil.
- Check oil level twice a day if you run engine over 4 hours a day.

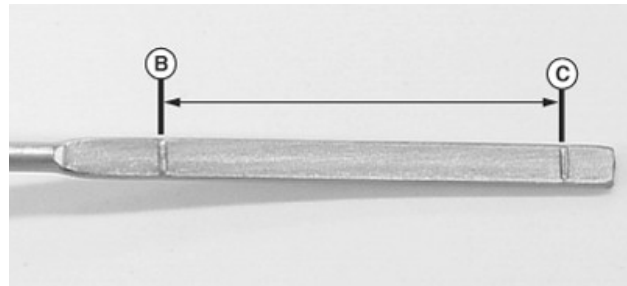
1. Park machine safely. (See Parking Safely in the SAFETY section.)

2. Tilt operator's seat platform forward.



TCT008509—UN—20SEP13

3. Remove dipstick (A) located on the left side of the engine under the seat. Wipe dipstick with a clean cloth.



TCAL43345—UN—14MAR13

4. Install dipstick, then remove again. Check oil level. Oil should be between levels (B) and (C) on the dipstick.

- If oil is low, add oil to bring oil level no higher than level (B) on the dipstick.
- If oil is above level (B) on the dipstick, drain to proper level.

5. Install dipstick.

6. Lower operator's seat platform.

OUMX068,0000686-19-21MAR14

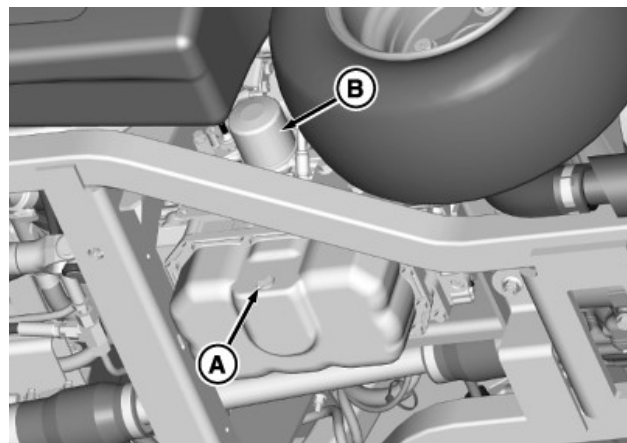
### Changing Engine Oil and Filter (1550)

1. Run engine to warm oil.

2. Park machine safely. (See Parking Safely in the SAFETY section.)

3. Open engine cover and seat platform.

4. Place a drain pan under the oil drain location.



TCT010631—UN—21MAR14

5. Remove drain plug (A) located under the engine.

6. Remove oil filter (B) located on the lower left side of the engine. Turn filter counterclockwise to remove.

7. Clean filter mounting surface on engine with a clean cloth.

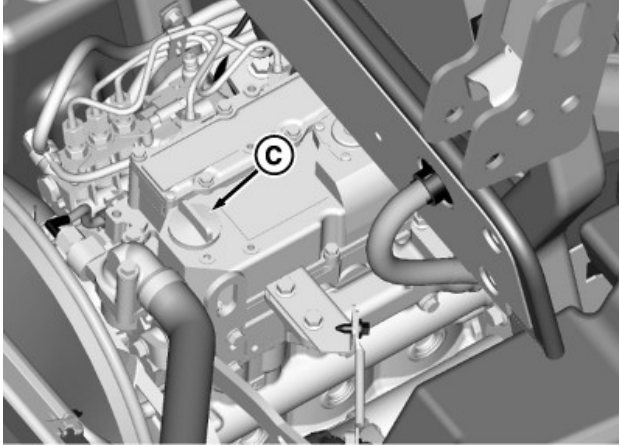
8. Apply a film of clean engine oil on gasket of new filter.

9. Install new filter.

## Service Engine

- Turn filter clockwise until filter makes contact with the mounting surface. Tighten 1/2-3/4 turn after gasket contact.

10. Install oil drain plug. Do not overtighten.



TCT010632—UN—21MAR14

11. Remove oil fill cap (C) on top of engine.

12. Add oil to engine as follows:

### Engine Oil — Specification

1550—Capacity. . . . . 3.1 L (3.3 qt.)

13. Install oil fill cap.

14. Start engine.

- Run engine at slow idle speed for approximately 2 minutes.
- Check area under engine for oil leaks.

15. Stop engine.

16. After approximately 2 minutes check engine oil level.

**IMPORTANT: Avoid damage! Avoid dirt and other contaminants from entering the oil dipstick tube location. Clean area around dipstick before removing.**

**Failure to check the oil level regularly could lead to serious engine problems if oil level is low:**

- Check oil level before operating.
- Check oil level when the engine is cold and not running.
- Keep level between the full and the add marks.
- Shut off engine before adding oil.
- Check oil level twice a day if you run engine over 4 hours a day.

17. Remove dipstick. Wipe with a clean cloth.

18. Install dipstick.

19. Check oil level.

- If oil is low, add oil to bring oil level to fill mark on the dipstick.
- If oil is above fill mark on the dipstick, drain to proper level.

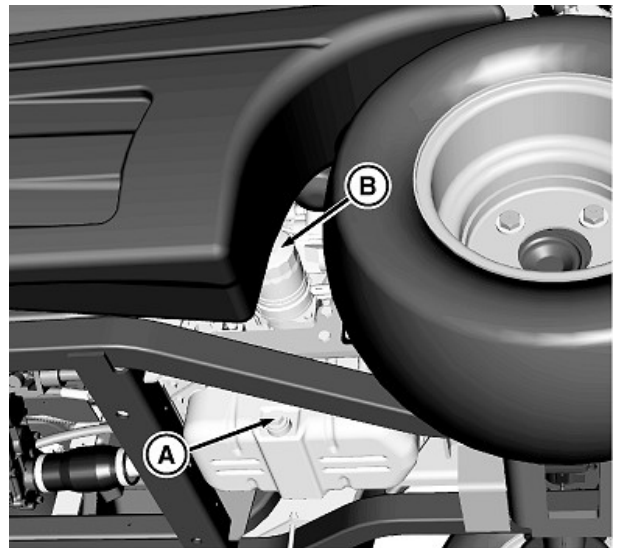
20. Install dipstick.

21. Close engine cover and lower seat platform.

OUMX068,0000687-19-21MAR14

## Changing Engine Oil and Filter (1570, 1575, 1580, 1585)

1. Run engine to warm oil.
2. Park machine safely. (See Parking Safely in the SAFETY section.)
3. Open engine cover and seat platform.
4. Place a drain pan under the oil drain location.

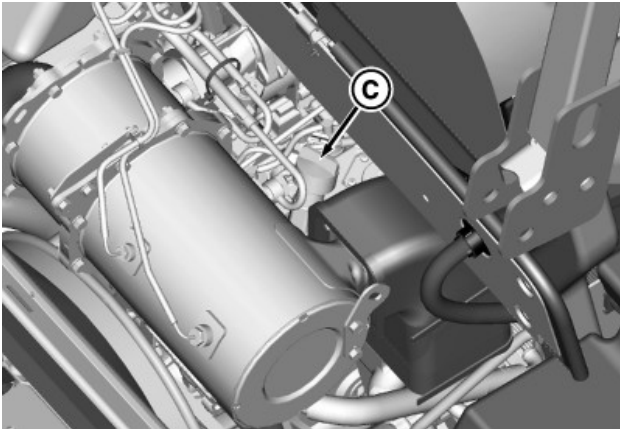


TCT008012—UN—29JUL13

5. Remove drain plug (A) located under the engine.
6. Remove oil filter (B) located on the lower left side of the engine. Turn filter counterclockwise to remove.
7. Clean filter mounting surface on engine with a clean cloth.
8. Apply a film of clean engine oil on gasket of new filter.
9. Install new filter.
  - Turn filter clockwise until filter makes contact with the mounting surface. Tighten 1/2-3/4 turn after gasket contact.

10. Install oil drain plug. Do not overtighten.

## Service Engine



TCT010633—UN—21MAR14

11. Remove oil fill cap (C) on top of engine.

12. Add oil to engine as follows:

### Engine Oil — Specification

1570, 1575, 1580,  
1585—Capacity. . . . . 4.1 L (4.3 qt.)

13. Install oil fill cap.

14. Start engine.

- Run engine at slow idle speed for approximately 2 minutes.
- Check area under engine for oil leaks.

15. Stop engine.

16. After approximately 2 minutes check engine oil level.

**IMPORTANT: Avoid damage! Avoid dirt and other contaminants from entering the oil dipstick tube location. Clean area around dipstick before removing.**

Failure to check the oil level regularly could lead to serious engine problems if oil level is low:

- Check oil level before operating.
- Check oil level when the engine is cold and not running.
- Keep level between the full and the add marks.
- Shut off engine before adding oil.
- Check oil level twice a day if you run engine over 4 hours a day.

17. Remove dipstick. Wipe with a clean cloth.

18. Install dipstick.

19. Check oil level.

- If oil is low, add oil to bring oil level to fill mark on the dipstick.
- If oil is above fill mark on the dipstick, drain to proper level.

20. Install dipstick.

21. Close engine cover and lower seat platform.

OUMX068,0000688-19-09NOV18

## Cleaning Air Intake Screen

**CAUTION:** Compressed air can cause debris to fly a long distance.

- Clear work area of bystanders.
- Wear eye protection when using compressed air for cleaning purposes.
- Reduce compressed air pressure to 210 kPa (30 psi).

**IMPORTANT:** An obstructed air intake screen can cause engine damage due to overheating. Keep air intake screen and other external surfaces of the engine, including cooling fins, clean at all times to allow adequate air intake.

1. Park machine safely. (See Parking Safely in the SAFETY section.)

2. Open engine cover.



TCT007884—UN—11JUL13

3. Clean screens (A) with a brush, compressed air or water.

4. Close engine cover.

OOU2005,0000074-19-29JUL13

# Service Engine

## Cleaning Oil Cooler and Radiator

**CAUTION:** Compressed air can cause debris to fly a long distance.

- Clear work area of bystanders.
- Wear eye protection when using compressed air for cleaning purposes.
- Reduce compressed air pressure to 210 kPa (30 psi).

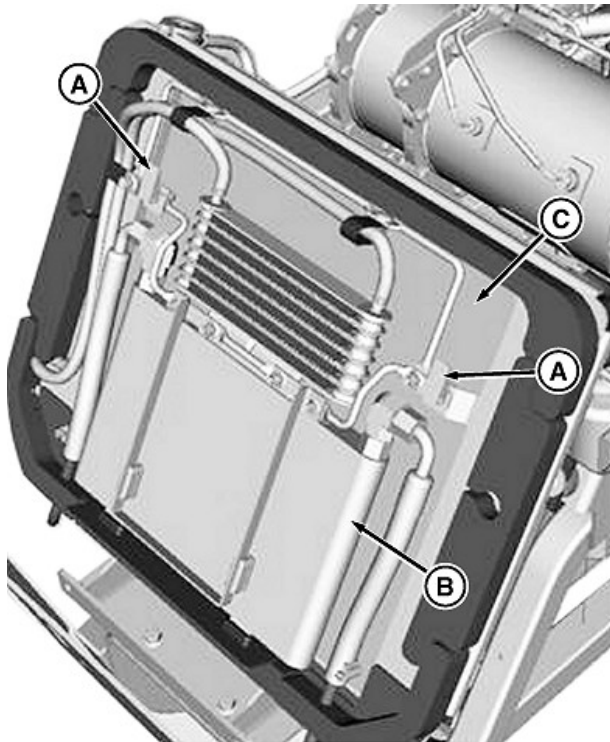
**IMPORTANT:** Oil cooler coils and radiator cooling fins must be clean to prevent the engine from overheating and to allow adequate air intake.

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Open engine cover.

**IMPORTANT:** When cleaning the oil cooler and radiator, keep the compressed air or power washer nozzle at least 15 cm (6 in.) away from fins while cleaning. Spray radiator from front side (fan side) only.

4. Swing oil cooler away from radiator:

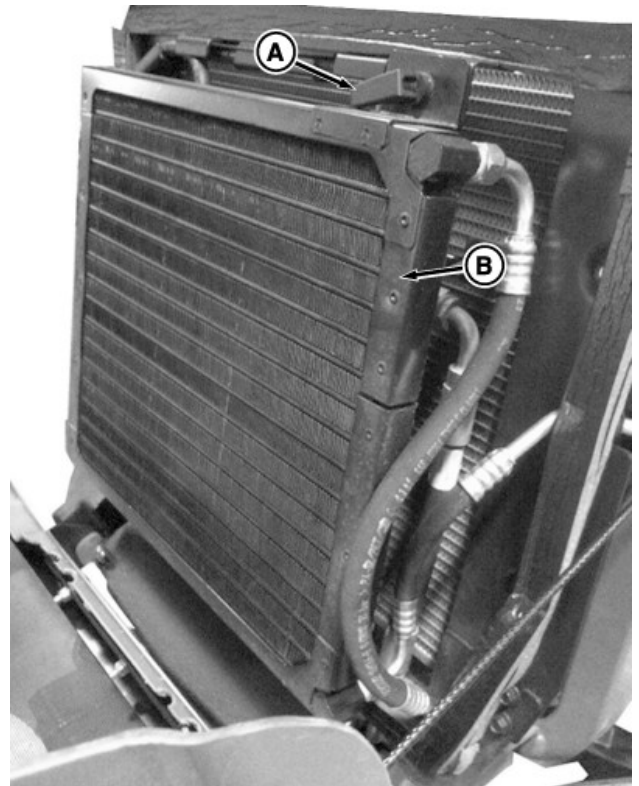
### Machines without AC



TCT010616—UN—07MAR14

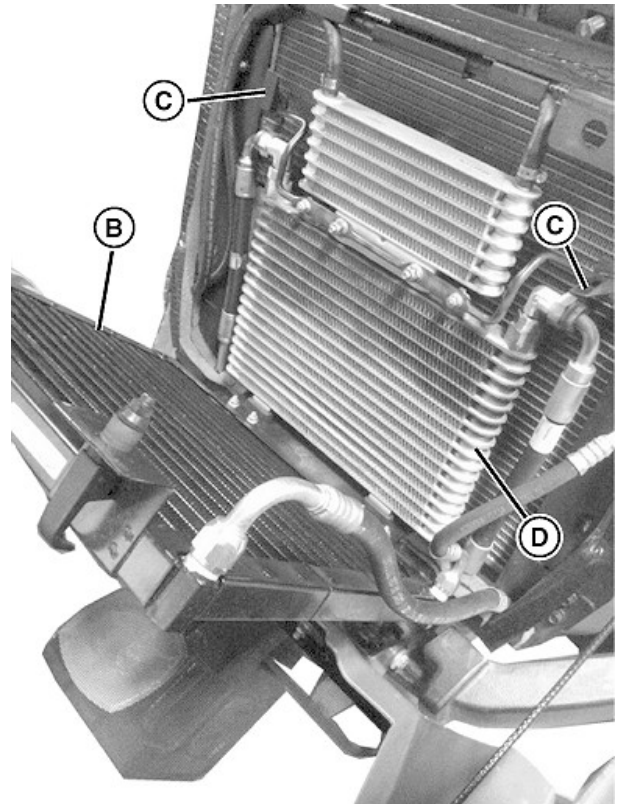
- Rotate two handles (A) forward to release oil cooler (B) from radiator frame.
- Move engine oil cooler (B) open slightly to access radiator cooling fins (C).

### Machines with AC



TCT007885—UN—21MAR14

- Rotate handle (A) up and towards front of machine to release latch on air conditioner condenser (B).



TCT007886—UN—13AUG13

## Service Engine

- Swing air conditioner condenser (B) forward, as shown.
  - Rotate two handles (C) forward and swing oil cooler (D) forward.
5. Remove dirt and debris from radiator and oil cooler using compressed air or water sprayed from the front to the rear.
  6. Check oil cooler coils and radiator fins for damage.

**NOTE:** Before rotating oil cooler back into position, be certain to route and install all hoses into brackets.

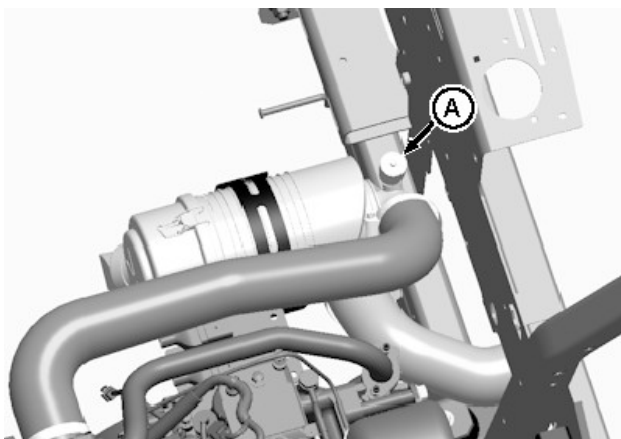
7. Swing oil cooler against radiator and secure with two handles.
8. Machines with AC: Install air conditioner condenser back onto frame and secure with release latch handle.
9. Close engine cover.

OUC02005,0000075-19-07MAR14

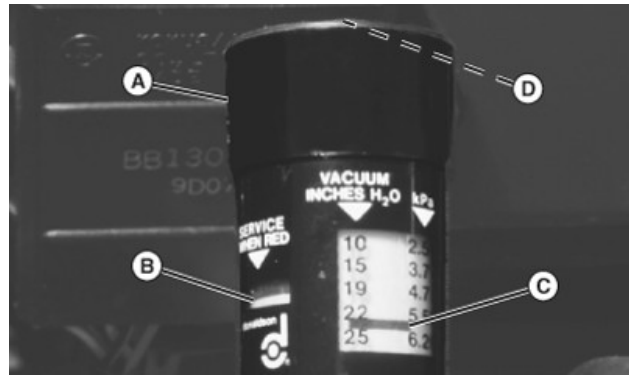
### Checking Air Filter Restriction Indicator

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Raise seat platform or remove battery cover.

**NOTE:** Indicator will not function correctly if plastic indicator housing is damaged.



TCT011364—UN—03NOV15



TCAL43352—UN—14MAR13

3. Check air restriction indicator (A).
  - When the indicator window (B) is yellow, no air cleaner service is required.
  - When the indicator window is red, air cleaner element needs replacement.
  - Vacuum scale (C) on indicator shows how restricted the air cleaner elements are becoming.
4. Depress the rubber button (D) on top of the housing to reset indicator.
5. Lower seat platform or install battery cover.

OUC02005,0000292-19-03NOV15

### Servicing Air Cleaner Elements

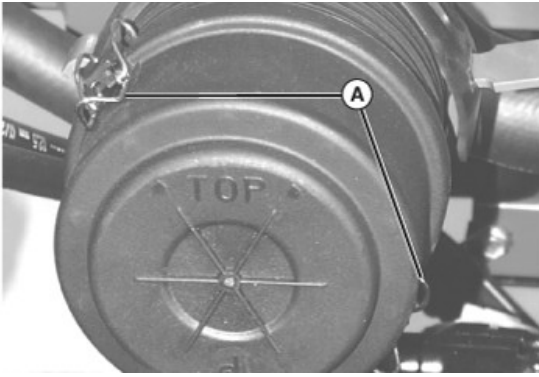
**IMPORTANT:** When operating the machine in extreme heat, dust or other severe conditions, check the air restriction indicator daily.

- Never run the engine without the air cleaner elements installed.
- Do not wash the paper elements.
- Do not attempt to clean paper element by tapping against another object.
- Do not use pressurized air to clean element.

#### Primary Air Cleaner Element

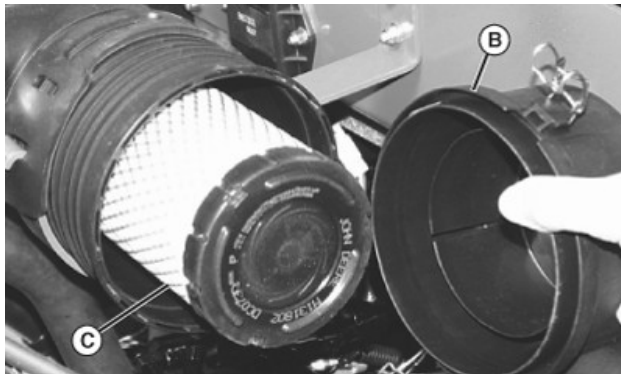
1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Raise seat platform.

## Service Engine



TCAL43353—UN—14MAR13

4. Release spring latches (A), and unhook latches from air cleaner housing.

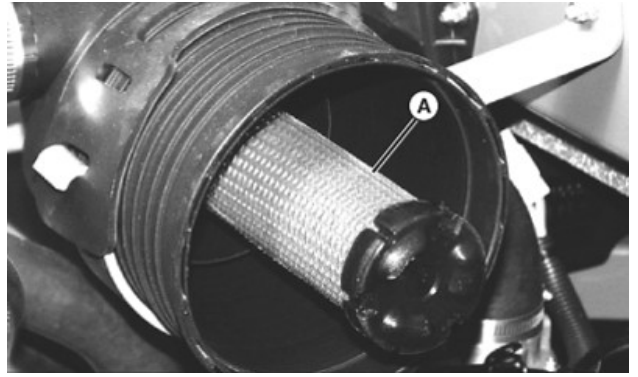


TCAL43354—UN—14MAR13

5. Remove air cleaner cover (B).
6. Remove and discard primary element (C).
7. Install new primary element.
8. Install air cleaner cover, making sure the word "TOP" is facing upwards.
9. Reset air restriction indicator.
10. Start engine and run at high idle for 1 minute.
11. Stop engine. Check air restriction indicator:
  - If indicator window remains yellow, air cleaner is ready for operation.
  - If indicator window has turned red, change secondary air filter element.

### Secondary Air Filter Element

1. Remove air cleaner cover.
2. Remove primary air cleaner element.



TCAL43355—UN—14MAR13

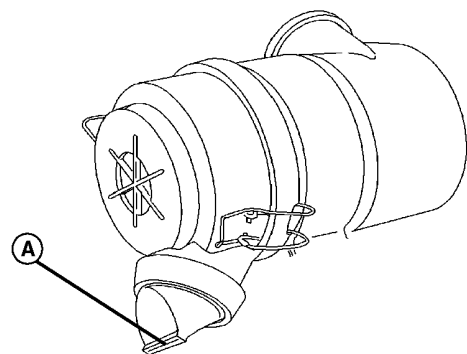
3. Remove and discard secondary element (A).
4. Install a new secondary element.
5. Install primary air cleaner element.
6. Install air cleaner cover, making sure the word "TOP" is facing upwards.
7. Lower seat platform.

OUC02005,0000293-19-04NOV13

### Cleaning Dust Unloading Valve

**IMPORTANT:** Do not operate engine without air cleaner element and rubber dust unloading valve installed.

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Access the engine compartment.



TCAL43356—UN—14MAR13

4. Squeeze dust unloading valve (A) to clean. Remove and replace if damaged.

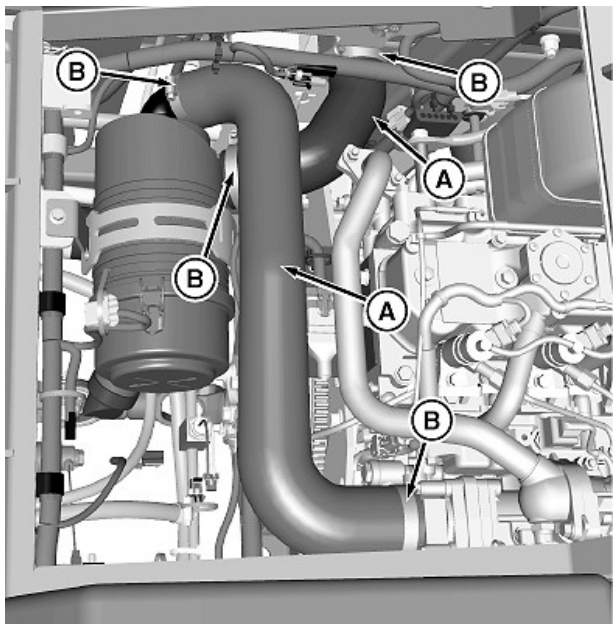
OUC1023,00004A9-19-13MAR13

### Checking Air Intake Hoses and Clamps

1. Park machine safely. (See Parking Safely in the SAFETY section.)

## Service Engine

2. Allow engine to cool.
3. Open engine cover.



TCT009083—UN—04NOV13

4. Check air intake hoses (A) for cracks or damage. Replace if necessary.
5. Tighten hose clamps (B).

OOU02005,0000294-19-04NOV13

### Checking Radiator Hoses and Clamps

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Open engine cover.
4. Check both radiator hoses and overflow hose for cracks or damage. Replace if necessary.
5. Tighten radiator hose clamps and overflow hose clamps, if needed.
6. Close engine cover.

OOU1023,00004AB-19-13MAR13

### Diesel Engine Coolant

#### Preferred coolants:

The following pre-mix engine coolants are preferred:

- John Deere Cool-Gard™ II
- John Deere Cool-Gard™ II PG

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

#### Other Coolants

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

- Pre-mix coolant meeting ASTM D6210 requirements
- Coolant concentrates meeting ASTM D6210 requirements in a 40% to 60% mixture of concentrate with quality water
- Pre-mix coolant meeting ASTM D3306 requirements
- Coolant concentrates meeting ASTM D3306 requirements in a 40% to 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:

- Is formulated with a quality 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. Distilled, deionized, or demineralized water is recommended for mixing with ethylene 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 operating hours.

*Cool-Gard is a trademark of Deere & Company*

# Service Engine

If a coolant other than Cool-Gard™ II or Cool-Gard™ II PG is used, reduce the drain interval to 2 years or 2000 operating hours.

## IMPORTANT: Avoid Damage!

- 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.

UP00731,0000022-19-17JAN19

## Service Cooling System Safely



TCAL42226—UN—08MAR13

**CAUTION:** The radiator will be hot and can burn skin. Built-up pressure may cause explosive release of coolant when the radiator cap is removed:

- Shut off the engine and allow to cool.
- Do not remove the cap unless the radiator and the engine are cool enough to touch with bare hands.
- Slowly loosen the cap to the first stop to release all pressure. Then remove the cap.

OUC01023,00004AD-19-14MAR13

## Checking Coolant Level

**IMPORTANT:** Using incorrect coolant mixture can damage the radiator:

- Do not operate engine with plain water.
- Do not exceed a 50% mixture of coolant and water.
- Aluminum engine blocks and radiators require approved ethylene-glycol based antifreeze.

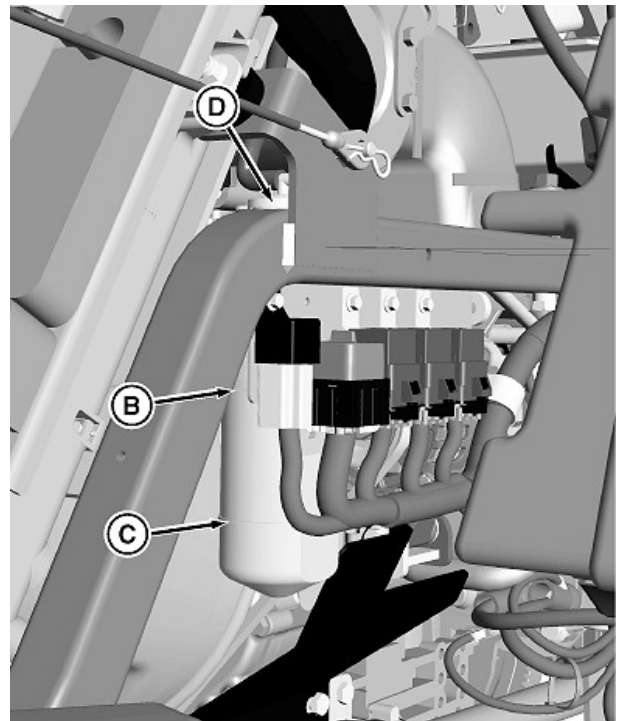
1. Park machine safely. (See Parking Safely in the SAFETY section.)

2. Allow engine to cool. Open engine cover.



TCAL43359—UN—14MAR13

3. Slowly open and remove radiator cap (A), and check that coolant level is up to filler neck.
4. If coolant level is low, open air bleed vent on right side of radiator, add coolant, and close air bleed.
5. Install radiator cap.
6. Check coolant recovery tank. Make sure the overflow hose is not touching the bottom of the recovery tank.



TCT009084—UN—04NOV13

7. Coolant recovery tank should be approximately between FULL (B) and LOW (C) lines at engine operating temperature.
8. Remove cap (D) and add coolant if level is low.
9. Check condition of hoses and clamps. Check for leaks or loose connections.

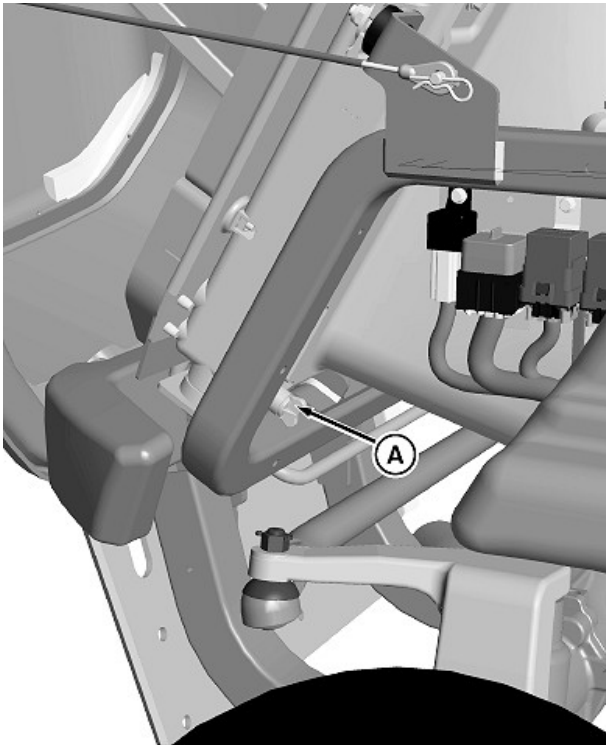
OUC02005,0000295-19-04NOV13

# Service Engine

## Servicing Cooling System

### Draining Cooling System

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Open engine cover.
4. Slowly open radiator cap to the first stop to release all pressure.



TCT009085—UN—04NOV13

5. Open the radiator drain (A) located on the bottom of the radiator, under the rear bumper. Drain coolant into a pan.
6. Close radiator drain after all coolant has drained from the radiator.
7. Flush the cooling system.

### Flushing Cooling System

1. Drain cooling system and add John Deere Cooling System Cleaner, or John Deere Cooling System Quick Flush or equivalent. Fill system with clean water. Follow directions on can.
2. Install and tighten radiator cap.
3. Start and run engine until it reaches operating temperature.
4. Stop engine.
5. Open radiator drain valve. Drain cooling system immediately before rust and dirt settle.
6. Close radiator drain valve.

7. Fill cooling system with clean water and repeat flushing until system is clean.
8. Drain system and fill with coolant.

### Filling Cooling System

**IMPORTANT: Using incorrect coolant mixture can damage the radiator:**

- Do not operate engine with plain water.
- Do not exceed a 50% mixture of coolant and water.
- Aluminum engine blocks and radiators require approved ethylene-glycol based antifreeze.

1. With engine and cooling system cool, open radiator cap to the first stop to release all pressure. Press down on cap slightly and turn counterclockwise to remove.

2. Fill cooling system.

- Cooling system capacity is as follows:

#### Cooling System — Specification

|                        |                |
|------------------------|----------------|
| 1550—Capacity. . . . . | 7.1 L (7.5 qt) |
| 1570, 1575, 1580 and   |                |
| 1585—Capacity. . . . . | 7.6 L (8.0 qt) |

- Certain geographical areas may require lower temperature protection. See the label on your antifreeze container or consult your John Deere dealer to obtain the latest information and recommendations.
  - John Deere Cooling System Sealer or its equivalent may be added to the radiator to seal leaks. Do not use any other additives in the cooling system.
3. Start engine and watch coolant level in radiator. Add coolant if necessary to bring coolant level up to filler neck.
  4. Install and tighten radiator cap. Run engine until at operating temperature.
  5. Stop engine and allow to cool down.
  6. Add coolant, if necessary, to coolant recovery tank.
  7. Check condition of hoses and clamps. Check for leaks or loose connections.

*NOTE: Coolant recovery tank is used to catch overflow from radiator, and will remain about half full during operation. Coolant will flow back into radiator as needed after system cools.*

OUO2005,0000076-19-04NOV13

# Service Engine

## Servicing Fuel Filter (1550)

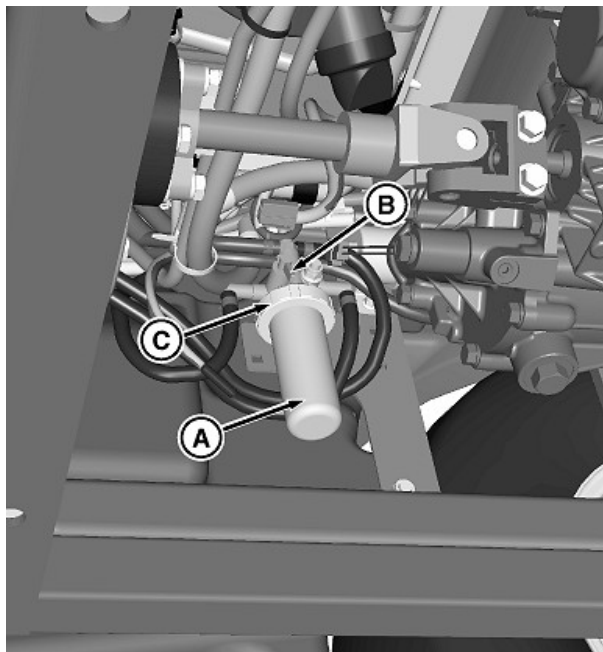
**⚠ CAUTION:** Fuel vapors are explosive and flammable:

- Do not smoke while handling fuel.
- Keep fuel away from flames or sparks.
- Shut off engine before servicing.
- Cool engine before servicing.
- Work in a well-ventilated area.
- Clean up spilled fuel immediately.

*NOTE:* Change filter when fuel level is low.

### Checking

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Open engine cover.



TCT008013—UN—29JUL13

4. Locate the fuel filter sediment bowl (A) on the left side of the engine.
5. Look for water in the sediment bowl indicated by the red float ring being lifted up off the bottom.

### Cleaning and Replacing

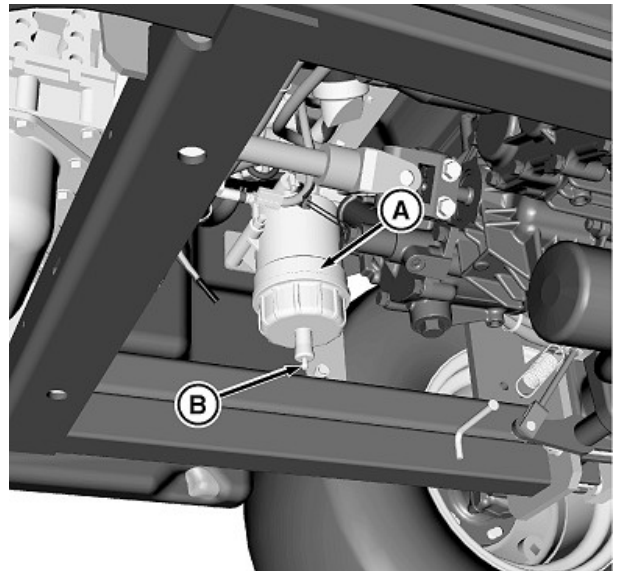
1. Close fuel shut-off valve (B) by turning to the horizontal position.
2. Unscrew collar (C) to remove bowl and filter. Discard filter.
3. Clean bowl and install new filter.
4. Install bowl and collar. Tighten collar hand tight.

5. Open fuel shut-off valve by turning lever to vertical position (shown).
6. Prime fuel system using primer lever on fuel pump.
7. Start engine and check for leaks.

OUC02005,0000077-19-20MAR14

## Draining Water Separator (1570, 1575, 1580, 1585)

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.



TCT008014—UN—29JUL13

3. Locate the fuel filter sediment bowl (A) on the left side of the engine.
4. Look for water in the sediment bowl indicated by the red float ring being lifted up off the bottom.
5. If water is present, loosen drain (B) at the bottom of the sediment bowl and drain water.
6. Close drain (B).

OUC02005,0000078-19-14AUG13

## Changing Fuel Filter (1570, 1575, 1580, 1585)

**⚠ CAUTION:** Fuel vapors are explosive and flammable:

- Do not smoke while handling fuel.
- Keep fuel away from flames or sparks.
- Shut off engine before servicing.
- Cool engine before servicing.
- Work in a well-ventilated area.

## Service Engine

- Clean up spilled fuel immediately.

*NOTE: Change filter when fuel level is low.*

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Open engine cover.
4. Turn fuel shutoff, located on water separator, to the OFF position.



TCT008015—UN—29JUL13

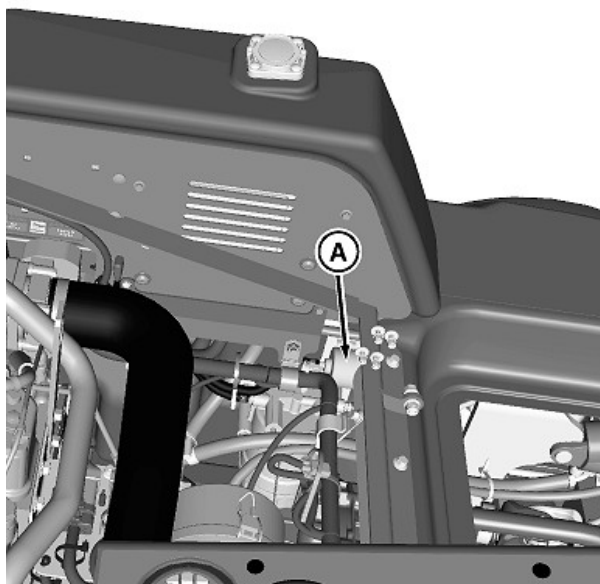
5. Turn fuel filter (A) counterclockwise to remove.
6. Apply a film of clean fuel on gasket of new filter.
7. Install new fuel filter.
8. Turn fuel shutoff to ON position.
9. Start engine and check for leaks.

OUC02005,0000079-19-20MAR14

### Priming Fuel System

*NOTE: It may be necessary to prime the fuel system after running out of fuel or changing the fuel filter.*

1. Make sure the machine is on a level surface, not a slope.
2. Turn off PTO switch.
3. Lower attachments to the ground.
4. Lock the park brake.
5. Remove the key.



TCT009484—UN—11DEC13

*Electric boost pump is located under the seat on the left side of machine.*

6. Turn key switch to RUN position for 2 minutes prior to starting engine. The fuel pump (A) will pressurize the fuel and remove any air in the system.
7. Start engine. If engine will not start, repeat previous step.

OUC02005,00002D3-19-20MAR14

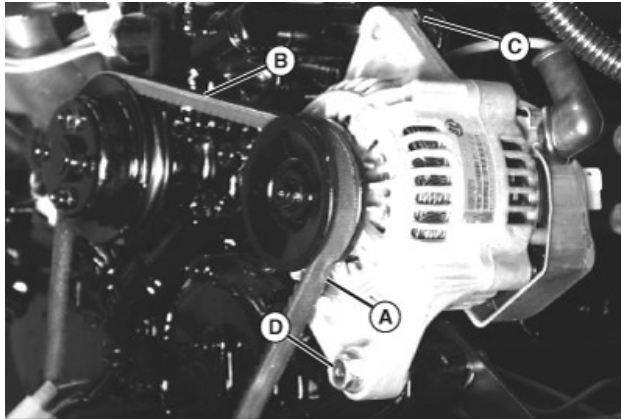
### Checking and Adjusting Alternator Belt

**⚠ CAUTION:** Rotating parts can catch fingers, loose clothing, or long hair. Wait for engine and all moving parts to stop before leaving operator's station to adjust or service machine.

### Checking Belt Tension

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Allow engine to cool.
3. Open engine cover.

## Service Engine



TCAL43368—UN—14MAR13

#### 4. Check alternator belt (A).

- Inspect belt for excessive wear, damage or stretching while mounted on engine.
- Apply finger pressure to the belt approximately halfway between the alternator and water pump pulleys at (B). Belt should deflect the specified distance. Adjust if too tight or too loose.

#### Specification

Alternator Belt—Deflection. . . . . 10-15 mm (3/8-1/2 in.)

#### Adjusting Belt Tension

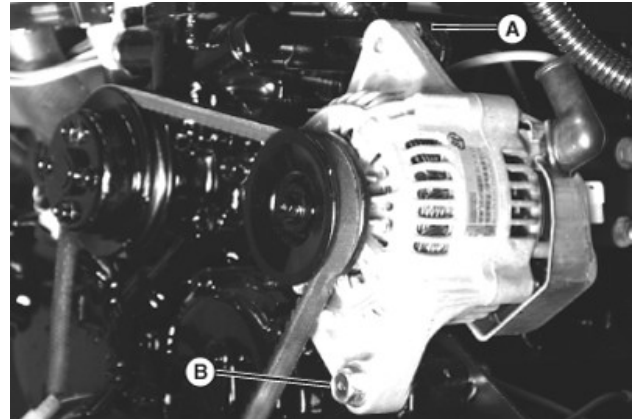
1. Loosen adjustment bolt (C).
2. Loosen alternator mounting bolt (D).
3. Apply outward pressure to the alternator housing.
4. Tighten adjustment bolt (C) and mounting bolt (D).
5. Check belt tension.
6. Close engine cover.

OUO1023,00004B5-19-14MAR13

#### Replacing Alternator Belt

**⚠ CAUTION:** Touching hot surfaces can burn skin. The engine, components, and fluids will be hot if the engine has been running. Allow the engine to cool before servicing or working near the engine and components.

1. Park machine safely. (See Parking Safely in the Safety section.)
2. Allow engine to cool.
3. Open engine cover.



TCAL43369—UN—14MAR13

#### 4. Loosen adjustment bolt (A).

5. Loosen alternator mounting bolt (B).
6. Push alternator in towards engine to loosen alternator belt tension.
7. Remove the worn alternator belt from the machine.

*NOTE: It may be necessary to remove alternator adjustment bolt to loosen belt enough for it to come off of pulleys.*

8. Install new belt over fan blades and install onto engine and alternator pulleys.
9. Adjust alternator belt tension.
10. Close engine cover.

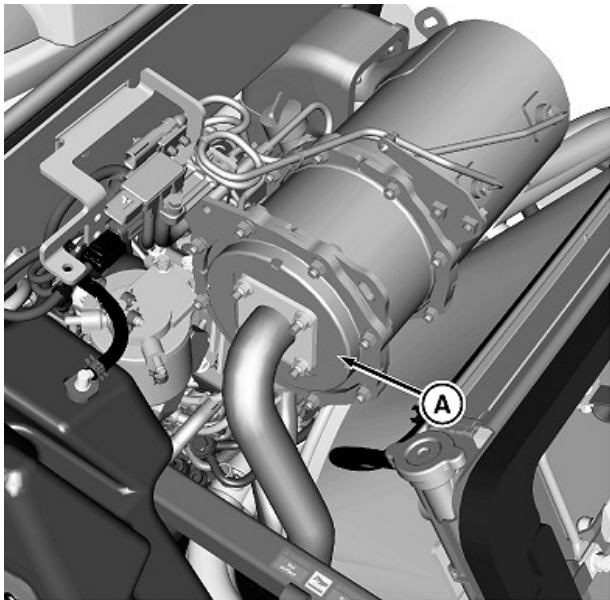
OUO2005,000007A-19-29JUL13

#### Service Exhaust Filter

**⚠ CAUTION:** Under federal, state, and/or local laws or regulations, exhaust filter ash may be classified as a hazardous waste. Hazardous waste must be disposed of in accordance with all applicable federal, state, and local laws or regulations governing hazardous waste disposal. Only a qualified service provider should remove ash from the exhaust filter. See your authorized dealer for exhaust filter ash handling and disposal.

## Service Engine

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TCT010611—UN—28FEB14

The exhaust filter (A) is designed to retain residual ash, which is a noncombustible result of additives used in crankcase lubrication oils and the fuel. As ash levels rise, the capacity for soot storage is reduced. Engine performance can be reduced due to increased exhaust system back pressure. The residual ash must be removed from the filter. Ash removal is performed by removing the exhaust filter from machine and having it cleaned by specialized equipment or replacing the exhaust filter.

**IMPORTANT: Avoid Damage! Do not attempt to remove exhaust filter from machine. Contact your authorized dealer to remove exhaust filter for ash removal or replacement.**

Failure to follow the approved ash removal methods may violate U.S. federal, state, and local hazardous waste laws, along with damage to the exhaust filter, resulting in potential denial of the emissions warranty.

OUO2005,000035B-19-28FEB14

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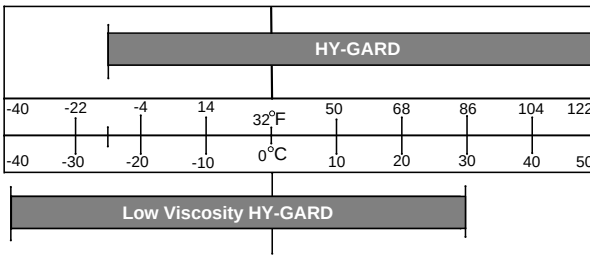
### Spark Arrestor Maintenance (If Equipped)

Spark arrestor assemblies include a screen element that should be inspected and cleaned periodically. Visually inspect the screen for tears, broken wires, or loose welds. Replace the spark arrestor assembly if any of these conditions exist. If the screen is determined to be in good condition, proceed with cleaning the screen by brushing away loose dirt or carbon using a brush.

RM87422,00002DA-19-05JUL17

# Service Transmission

## Transaxle Oil



TCAL43372—UN—14MAR13

**NOTE:** Transaxle is filled with John Deere HY-GARD® (J20C) transmission oil at the factory. DO NOT mix oils.

Use only HY-GARD® (J20C) transmission oil.

Do not use type “F” automatic transmission fluid.

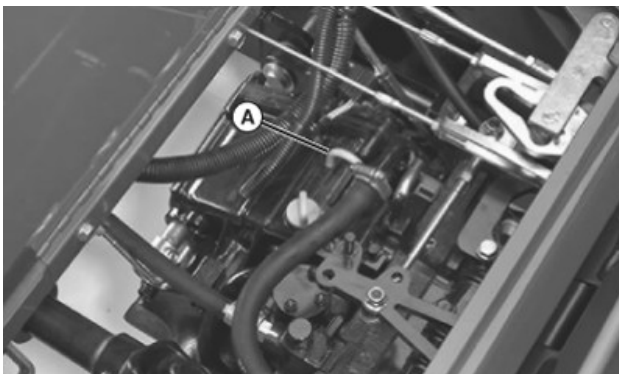
John Deere HY-GARD® (J20C) transmission oil is specially formulated to provide maximum protection against mechanical wear, corrosion, and foaming.

**IMPORTANT:** If operating temperatures are below – 18°C (0°F), you must use Low Viscosity HY-GARD® (J20D) or transmission damage will occur.

OUC1023,00004B8-19-13MAR13

## Checking the Transaxle Oil Level

1. Run engine for 30 seconds before checking transaxle oil level.
2. Park machine safely. (See Parking Safely in the SAFETY section.)
3. Open service hatch on operator's platform.



TCAL43373—UN—14MAR13

4. Locate the dipstick (A) on the top of the transaxle.
5. Remove the dipstick and wipe off with a clean shop towel.
6. Insert the dipstick fully into the transaxle housing and remove again.

7. Oil level should be in XXX range on dipstick. Add oil to transaxle if level does not show on dipstick. Remove oil if level is too high.
8. Install dipstick and close service hatch. If oil was added, check oil level after driving machine.

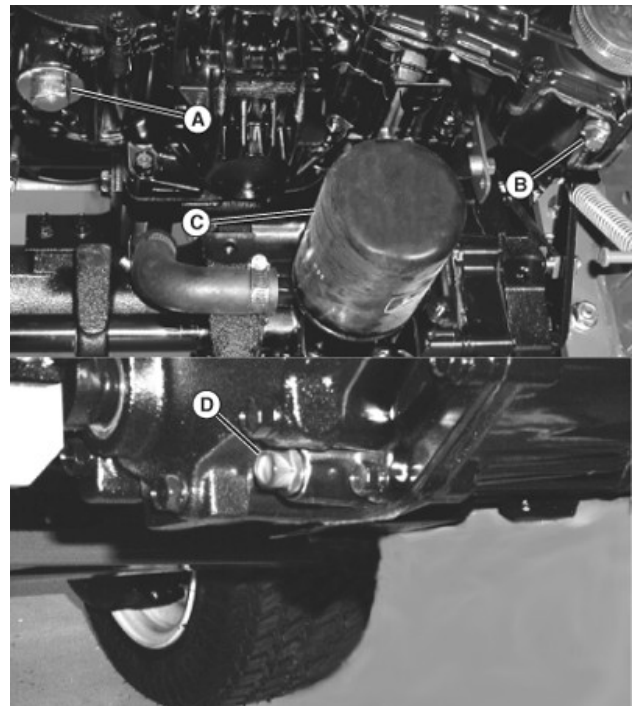
OUC1023,00004B9-19-13MAR13

## Changing the Transaxle Oil and Filter

**CAUTION:** Escaping fluid under pressure can penetrate skin and cause serious injury, including gangrene.

- Relieve pressure before disconnecting hydraulic or other pressurized lines.
- Use a piece of cardboard to search for leaks. Do not expose hands or body to high pressure fluids.
- Tighten all connections before applying pressure.

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Lower all attachments to the ground.
3. Place a drain pan under the transaxle.

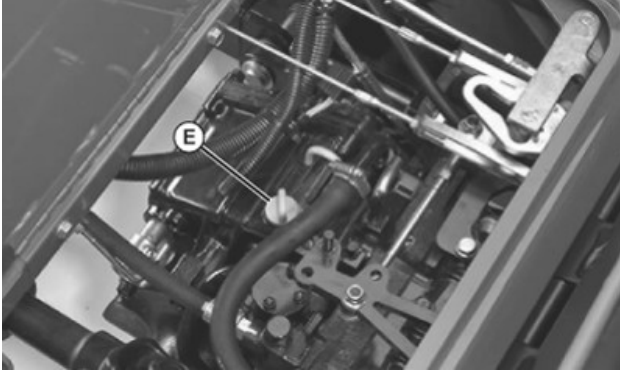


TCAL43374—UN—14MAR13

4. Clean away debris and remove drain plugs (A, B, and D) from locations shown above. Allow transaxle to drain.
5. Remove transaxle oil filter (C) and allow transaxle to drain. Clean oil filter mounting flange with a clean shop towel.

# Service Transmission

- Lubricate the gasket of a new oil filter with a few drops of transaxle oil, and install the filter onto the mounting flange. Tighten filter 1/2 to 3/4 turn after it contacts the flange.
- Install drain plugs.



- Raise service hatch and remove transaxle oil filler cap (E).
- Fill transaxle with recommended oil until level is up to top of XXX marks on dipstick. Dry transaxle capacity is listed below, but it may take less when performing an oil change. Do not overfill.

## Specification

|                                                      |                  |
|------------------------------------------------------|------------------|
| Transaxle (2WD)—Capacity. . . . .                    | 8.5 L (9 qt)     |
| Transaxle (4WD - 1550, 1570)—Capacity. . . . .       | 8.7 L (9.2 qt)   |
| Transaxle (4WD - 1575, 1580, 1585)—Capacity. . . . . | 10.0 L (10.5 qt) |

- Run machine, cycling forward and reverse pedals to purge air from transaxle. Stop machine and recheck oil level.

OUO2005,000007B-19-29JUL13

## Adjusting Forward and Reverse Pedals

Adjust forward and reverse pedals to make sure hydrostatic transmission will operate within full range of speed.

### Checking Forward and Reverse Pedal Travel

- Park machine safely. (See Parking Safely in the SAFETY section.)
- Fully depress forward pedal.
- Measure distance between bottom of pedal and floor plate. Bottom of pedal should be specified distance from floor plate. If not, adjust pedal travel.

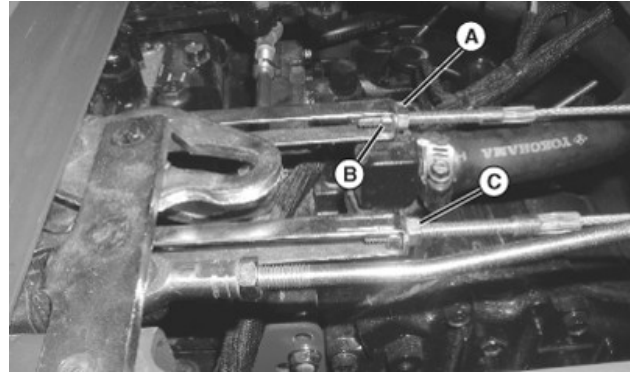
## Specification

|                                                        |                   |
|--------------------------------------------------------|-------------------|
| Forward/Reverse Pedal to Floor Plate—Distance. . . . . | 12.5 mm (0.5 in.) |
|--------------------------------------------------------|-------------------|

- Repeat steps 2 and 3 for reverse pedal.

## Adjusting Forward and Reverse Pedal Travel

- Open service hatch.



- Loosen nuts (A and B) from forward pedal linkage.
- Rotate nuts along cable end until the distance between floor plate and bottom of forward pedal is within specifications with forward pedal fully depressed.

## Specification

|                                                        |                   |
|--------------------------------------------------------|-------------------|
| Forward/Reverse Pedal to Floor Plate—Distance. . . . . | 12.5 mm (0.5 in.) |
|--------------------------------------------------------|-------------------|

- Tighten nuts (A and B).
- Repeat procedure for reverse pedal linkage (C).

OUO1023,00004BB-19-13MAR13

## Adjusting Transaxle Neutral

**CAUTION:** Do not attempt this adjustment unless you are a qualified and properly trained technician. Improper adjustment can result in an unsafe machine.

Adjust transmission neutral to assure that machine does not creep forward or rearward when pedals are in the neutral position.

- Park machine on a firm, level surface. Place controls in following position:
  - PTO disengaged.
  - 4WD disengaged (if equipped).
  - Differential lock disengaged.
  - Attachment removed or service latch locked.
  - Park brake locked.
  - Engine off.
  - Service hatch on operator's platform unlocked.
- Chock rear tires and raise front of machine so front tires are off of ground. Place jack stands under left and right side of front axle and lower machine onto jack stands.
- If 4WD option is installed, jack up rear of machine

## Service Transmission

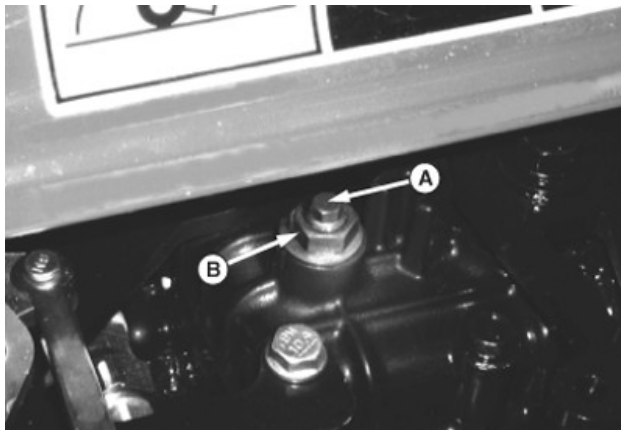
so tires are off of ground. Place jack stands under left and right side of rear axle and lower machine onto jack stands.

**CAUTION:** Do not raise or lower attachment, engage 4WD, differential lock, or PTO during adjustment. Keep people clear of machine while running.

Always raise all four wheels off ground if 4WD option is installed. 4WD is always engaged and will push the machine off jack stands if any of the tires are able to get traction.

Stay away from tires while making adjustments.

4. Start engine. Unlock the park brake.
5. Watch tires for forward or rearward rotation.
6. Cycle forward and reverse hydrostatic pedals and allow to them to return to the centered, neutral position. Check again for tire rotation while in neutral, indicating a neutral adjustment is necessary.



TCAL43377—UN—14MAR13

7. Open service hatch in operator's platform. Locate neutral adjuster screw (A) on top of transaxle.
8. Loosen lock nut (B).
9. Rotate screw until tires stop rotating.
10. Tighten lock nut. Cycle hydrostatic drive pedals and allow to return to neutral. Adjust screw again if necessary.

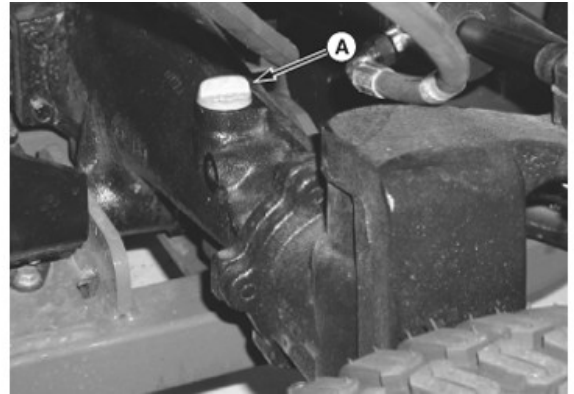
OOU1023,00004BC-19-13MAR13

### 4WD Oil

- John Deere GL-5 Gear Lubricant is recommended.
- Other oils may be used provided they meet the following specifications:
  - API Class GL-5.

OOU1023,00004BD-19-13MAR13

### Checking the 4WD Oil Level



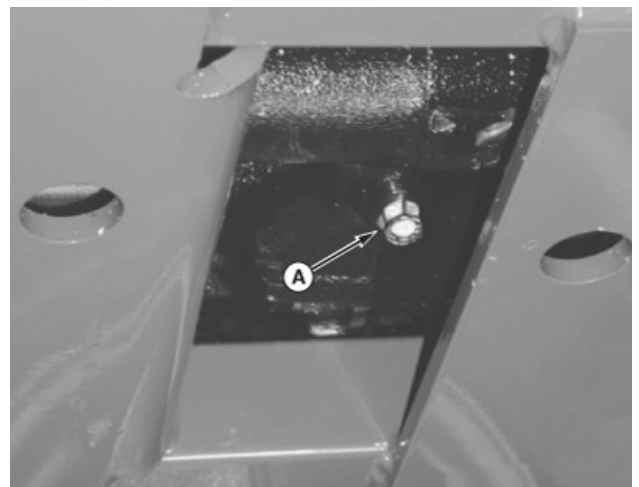
TCAL43378—UN—14MAR13

1. Open the engine cover and locate the rear axle filler cap and dipstick (A) on the right rear side of the rear axle.
2. Unscrew filler cap and wipe dipstick clean.
3. Install filler cap back into axle housing but do not turn threads back in.
4. Remove dipstick and check oil level on it. Oil should be in XXX area on dipstick but not above top mark.
5. Add oil if needed. Do not overfill.

OOU1023,00004BE-19-13MAR13

### Changing the 4WD Oil

1. Park machine safely. (See Parking Safely in the Safety section.)
2. Raise rear of machine so tires are off of ground, and support rear axle with jack stands.
3. Remove rear wheels from axle.

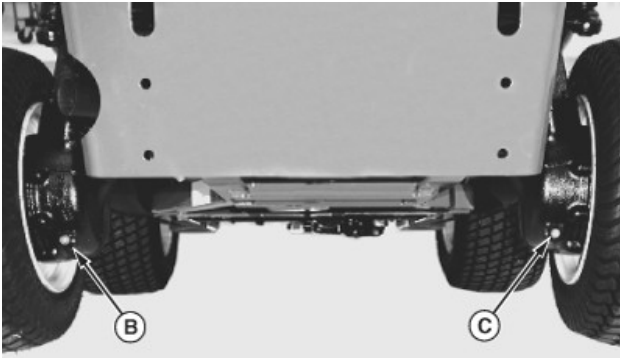


TCAL43379—UN—14MAR13

4. Place drain pan under center of rear axle housing and remove center drain plug (A).
5. Install center drain plug.

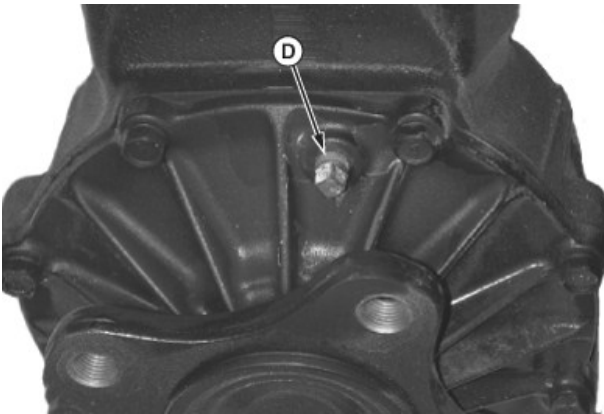
## Service Transmission

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TCAL43380—UN—14MAR13

6. Remove left side final drive housing drain plug (B), and allow to drain.
7. Install drain plug.
8. Repeat steps six and seven for right side housing (C).



TCAL43381—UN—14MAR13

9. Remove air bleed screw (D) from top of left and right side final drive gear case.
10. Fill rear axle housing with recommended oil until oil begins to run out of air bleed screws. Install air bleed screws and continue filling rear axle until specified amount of oil has been put in. Do not overfill. Check oil level with dipstick. Run machine in 4WD, and check oil level.

### Specification

Rear Axle Housing

Oil—Capacity. . . . . 2.1 L (2-1/4 qt)

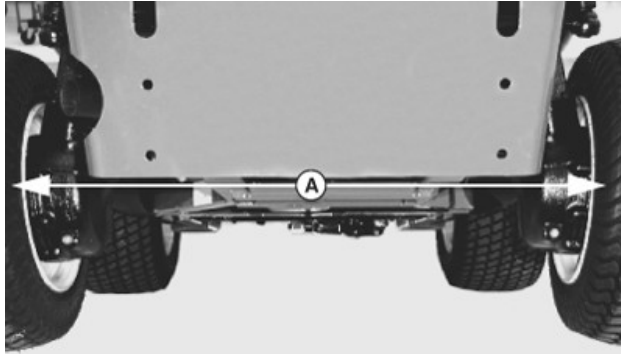
OUO1023,00004BF-19-13MAR13

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# Service Steering & Brakes

## Adjusting Toe-In

1. Park the machine safely. (See Parking Safely in the Safety section.)

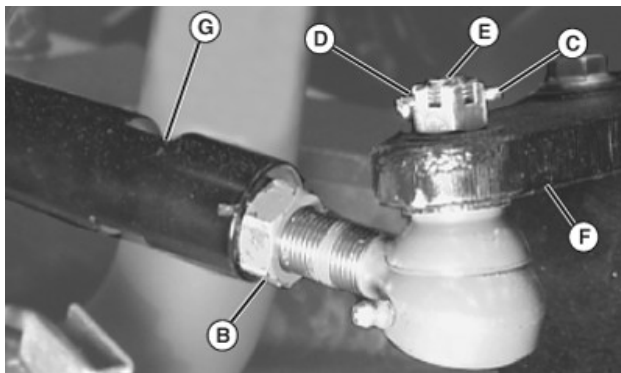


TCAL43382—UN—14MAR13

2. Measure the distance (A) between the rear tires at the rear of tires.
3. Measure the distance between rear tires at front of tires.
4. Distance between tires (toe-in) should be less within specifications in front than in rear.

### Specification

Distance Between Tire (Toe-In)—Distance. . . . . 3-9 mm (0.12-0.35 in.)



TCAL43383—UN—14MAR13

5. If toe-in requires adjustment, proceed as follows:
  - a. Loosen lock nuts (B) on left and right side of tie-rod ends. (Left side lock nut has left-hand threads.)
  - b. Remove the cotter key (C) from tie-rod castle nut (D) and remove nut.
  - c. Remove tie-rod mounting stud (E) from the steering arm (F).
  - d. Turn body of tie-rod (G) to adjust toe-in, keeping tie-rod mounting stud upright while turning tie-rod.
  - e. Install tie-rod stud into steering arm and loosely install castle nut onto stud.
  - f. Measure toe-in again. If correct, tighten castle

nut and install cotter key. Tighten lock nuts on left and right side of machine.

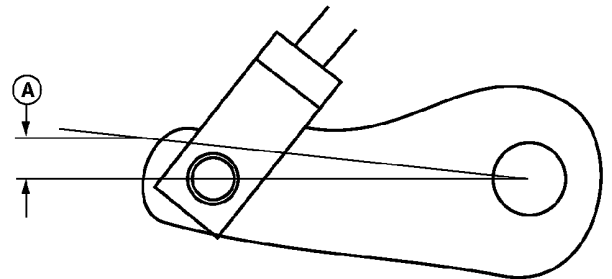
OOU1023,00004C0-19-13MAR13

## Adjusting Brakes

**CAUTION:** Do not attempt this adjustment unless you are a qualified and properly trained technician. Improper adjustment can result in an unsafe machine.

### Checking Brake Pedal Free Play

1. Park machine safely on level ground. (See Parking Safely in the Safety section.)
2. Unlock the parking brake.
3. Remove the brake return springs from brake linkage.
4. Block the turn brake and master brake pedals up to their highest position.



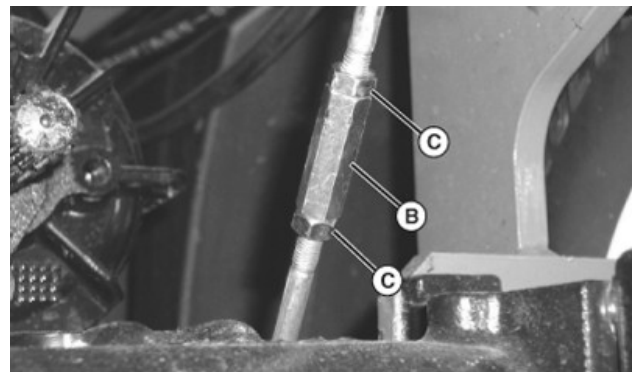
TCAL43384—UN—14MAR13

5. Check the left and right brake cam arm freeplay (A). The freeplay should be within specifications as measured from the end of the cam arm. If freeplay is greater than 5 mm, adjust brakes.

### Specification

Brake Pedal—Play. . . . . 3-5 mm

## Adjusting Brakes



TCAL43385—UN—14MAR13

1. Locate the adjustment turnbuckles (B) on the brake rods under the operator's platform.

## Service Steering & Brakes

2. Loosen the lock nuts (C), and adjust the turnbuckles until the brake cam freeplay is within specifications.

### Specification

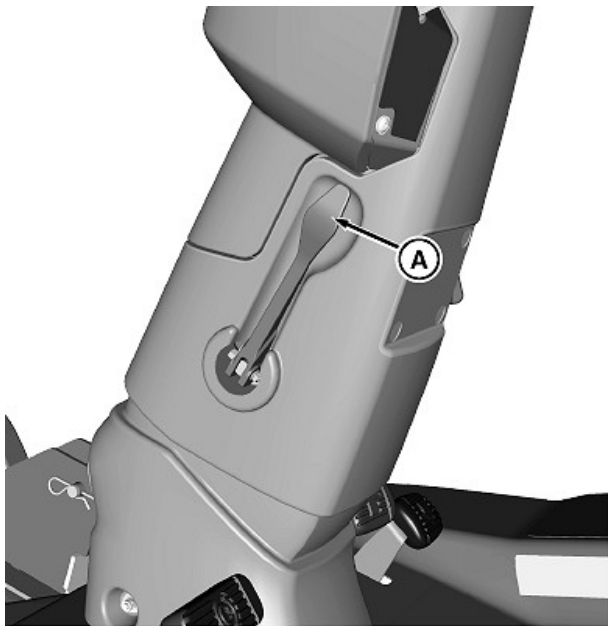
Brake Pedal—Play. . . . . 3-5 mm

3. Repeat for brake rod on other side of machine, keeping left and right side pedals adjusted evenly.
4. Tighten all turnbuckle lock nuts.
5. If brakes cannot be adjusted within the range of the turnbuckles, see your John Deere Dealer.

OUC1023,00004C1-19-13MAR13

### Adjusting Steering Column Tilt-Lock

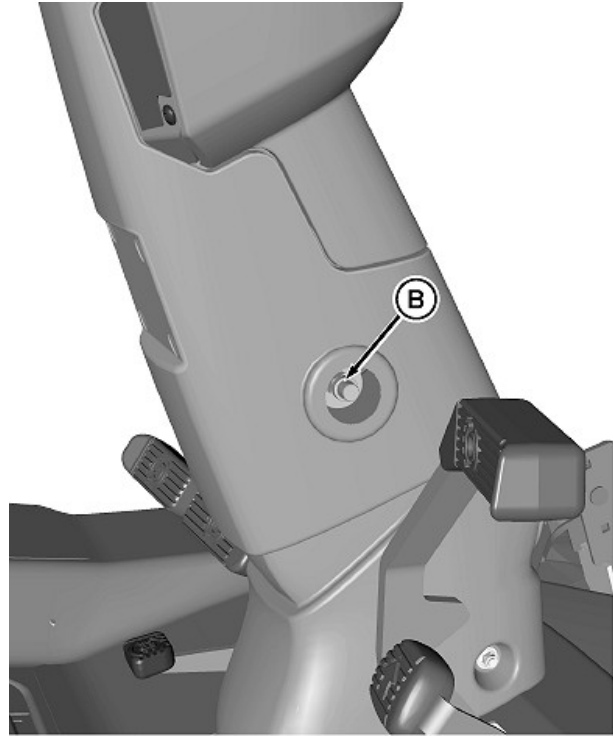
1. Park machine safely. (See Parking Machine Safely in the SAFETY section.)



TCT009086—UN—04NOV13

2. Pull lever (A) outward to release steering column.
3. Move steering column forward or rearward to center steering column in its travel range.

**NOTE:** A small amount of dry lubricant on the tilt-lock lever will ease amount of force required to move lever.



TCT009087—UN—04NOV13

4. Tighten nylock nut (B) on steering column to operator's preference, but do not exceed specifications.

### Specification

Steering Column Nylock

Nut—Torque. . . . . 48 N·m (35 ft-lb)

OUC2005,0000296-19-04NOV13

# Service Electrical

## Service Electrical

**WARNING:** Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**

OOU1023,00004C3-19-14MAR13

## Service the Battery Safely



TCAL42287—UN—08MAR13

**CAUTION:** Battery electrolyte contains sulfuric acid. It is poisonous and can cause serious burns:

- Wear eye protection and gloves.
- Keep skin protected.
- If electrolyte is swallowed, get medical attention immediately.
- If electrolyte is splashed into eyes, flush immediately with water for 15-30 minutes and get medical attention.
- If electrolyte is splashed onto skin, flush immediately with water and get medical attention if necessary.

The battery produces a flammable and explosive gas. The battery may explode:

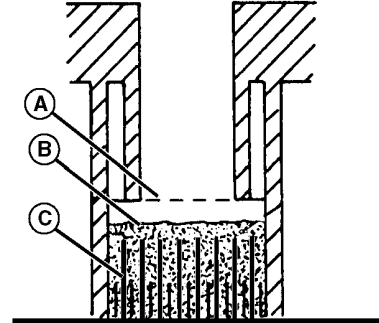
- Do not smoke near battery.
- Wear eye protection and gloves.
- Do not allow direct metal contact across battery posts.
- Remove negative cable first when disconnecting.
- Install negative cable last when connecting.

OOU1023,00004C4-19-15MAR13

## Checking Battery Electrolyte Level

**NOTE:** Add only distilled water to replace battery electrolyte.

1. Park the machine safely. (See Parking Safely in the SAFETY section.)
2. Remove battery cell caps. Make sure cap vents are not plugged.



TCAL41096—UN—18JAN13

3. Check electrolyte level. Electrolyte (B) should be approximately halfway between bottom of filler neck (A) and top of plates (C).

**IMPORTANT:** Do not overfill battery. Electrolyte can overflow when battery is charged and cause damage.

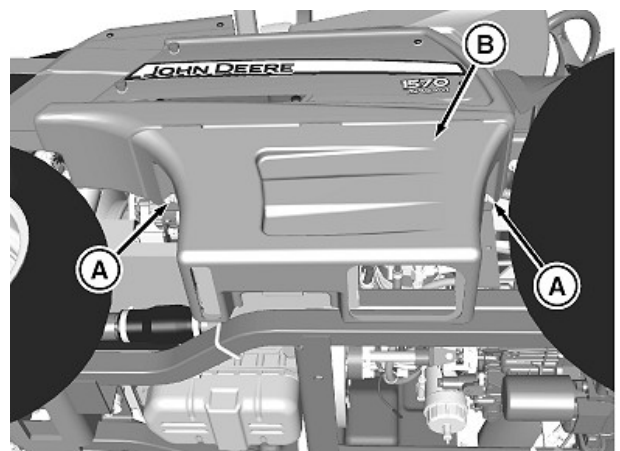
4. Add only distilled water if necessary.
5. Install battery cell caps.

OOU1023,00004C5-19-14MAR13

## Removing and Installing the Battery

### Removing

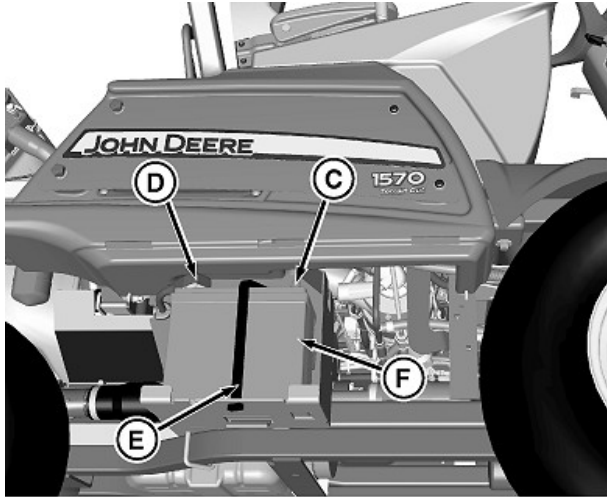
1. Park machine safely. (See Parking Safely in the SAFETY section.)



TCT008205—UN—02AUG13

2. Remove two wing nuts (A) and battery cover panel (B).

## Service Electrical



TCT008508—UN—20SEP13

3. Disconnect negative (–) battery cable (C).
4. Pull up red plastic cover (D) from positive (+) battery clamp and disconnect positive (+) cable clamp from battery terminal.
5. Remove rubber strap (E) from bottom of battery hold-down bracket.
6. Remove battery (F) from machine. Do not use battery terminals to lift battery.

### Installing

1. Install battery with positive terminal (+) toward rear side of machine.
2. Install rubber strap on bottom of battery hold-down bracket.
3. Install positive cable clamp (red cable) onto positive (+) battery terminal. Pull red plastic cover over positive cable clamp.
4. Install negative cable clamp (black cable) onto negative (–) battery terminal.
5. Apply spray lubricant on battery terminals to help prevent corrosion.
6. Install battery cover panel with two wing nuts.

OUC02005,0000201-19-20SEP13

### Cleaning Battery and Terminals

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Disconnect and remove battery.
3. Wash battery with solution of four tablespoons of baking soda to one gallon of water. Be careful not to get the soda solution into the cells.
4. Rinse the battery with plain water and dry.
5. Clean terminals and battery cable ends with wire brush until bright.

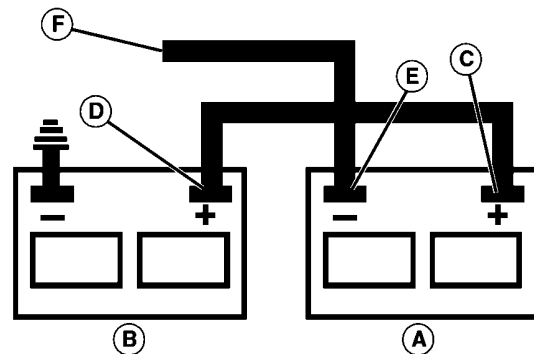
6. Install battery.
7. Attach cables to battery terminals, beginning with the positive cable, using washers and nuts.
8. Apply spray lubricant to terminal to prevent corrosion.

OUC1023,00004C7-19-13MAR13

### Using Booster Battery

**CAUTION:** The battery produces a flammable and explosive gas. The battery may explode:

- Do not smoke or have open flame near battery.
- Wear eye protection and gloves.
- Do not jump start or charge a frozen battery. Warm battery to 16°C (60°F).
- Do not connect the negative (–) booster cable to the negative (–) terminal of the discharged battery. Connect at a good ground location away from the discharged battery.



TCAL42290—UN—08MAR13

A—Booster Battery  
B—Disabled Vehicle Battery

1. Connect positive (+) booster cable to booster battery (A) positive (+) post (C).
2. Connect the other end of positive (+) booster cable to the disabled vehicle battery (B) positive (+) post (D).
3. Connect negative (–) booster cable to booster battery negative (–) post (E).

**IMPORTANT:** Electric charge from booster battery can damage machine components. Do not install negative booster cable to machine frame. Install only to the engine block.

Install negative booster cable away from moving parts in the engine compartment, such as belts and fan blades.

4. Connect the other end (F) of negative (–) booster

## Service Electrical

cable to a metal part of the disabled machine engine block away from battery.

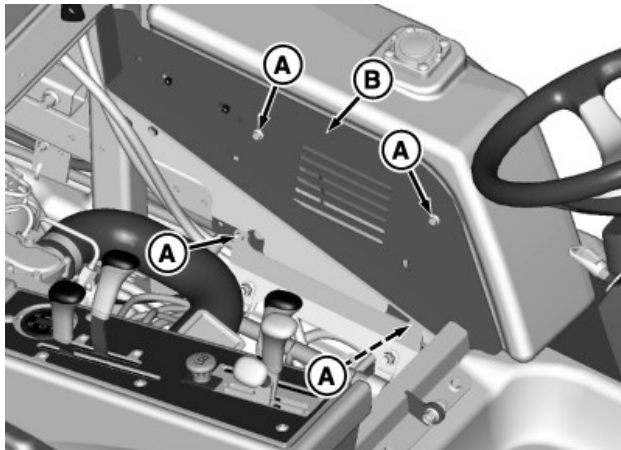
5. Start the engine of the disabled machine and run machine for several minutes.
6. Carefully disconnect the booster cables in the exact reverse order: negative cable first and then the positive cable.

OUO1023,00004C8-19-14MAR13

### Checking and Replacing Fuses (1550)

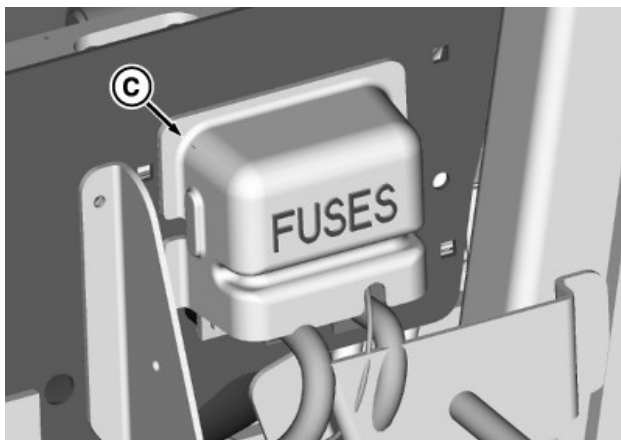
#### Replacing Main Fuse

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Raise or remove the seat platform.



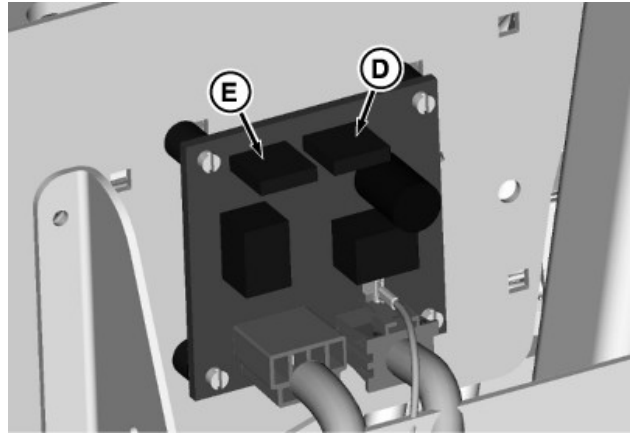
TCT010635—UN—31MAR14

3. Remove four screws (A) securing panel (B) to the left side of the machine.
4. Carefully remove the panel to locate the electrical control box.



TCT010636—UN—24MAR14

5. Remove the cover (C) from the electrical control box.

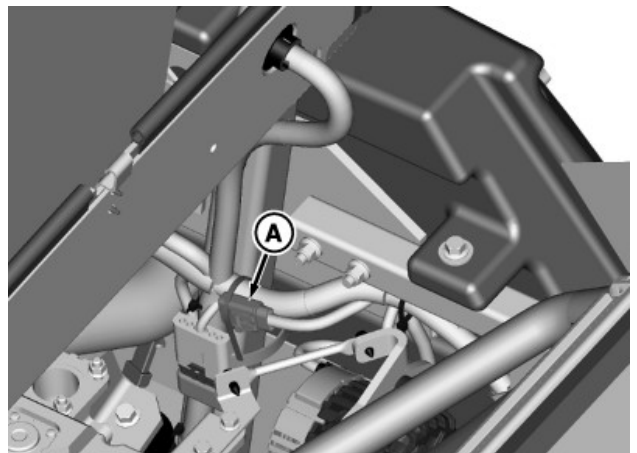


TCT010637—UN—24MAR14

6. Fuse (D) is a 15 amp fuse and controls the work lamps on the steering column.
7. Fuse (E) is a 15 amp fuse that controls all other electrical functions.
8. Test fuses with a voltmeter or test lamp and replace if burned out.
9. Install cover onto electrical control box.
10. Install cover to the left side of the machine with the screws removed earlier.
11. Install or lower seat platform.
12. Close engine cover.

#### Replacing 12-Volt Power Outlet Fuse

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Open engine cover.



TCT010617—UN—24MAR14

3. Locate the 12 volt power outlet fuse (A) tied back to the harness on the right hand side.

## Service Electrical



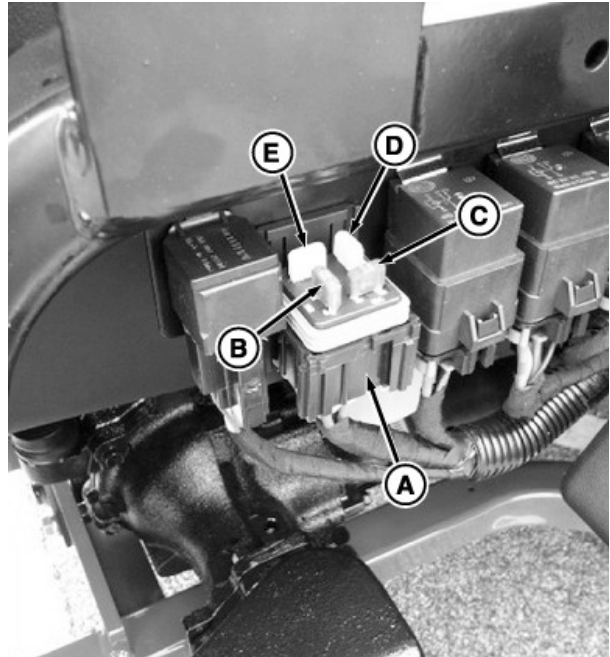
TCT010638—UN—24MAR14

4. Pull out lock tab (B) and pull base of fuse holder down from cap.
5. Test fuse using a voltmeter or test lamp. Both sides of fuse should be hot with key switch in RUN position.
6. Replace fuse if burned out (10 amp).
7. Install fuse holder in cap.
8. Close engine cover.

OUMX068,000068E-19-01APR14

### Checking and Replacing Fuses (1570, 1575, 1580, 1585)

1. Park machine safely. (See Parking Safely in the SAFETY section.)
2. Open engine cover.



TCT009088—UN—24MAR14

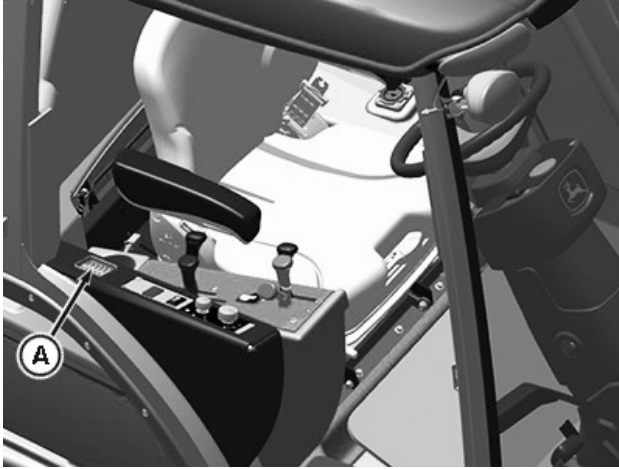
3. Locate the electrical control box (A) on the right side of the engine compartment.
4. Remove cover from electrical control box.
5. Fuse (B) is a 10 amp fuse and is for the Auxiliary Power Outlet.
6. Fuse (C) is a 15 amp fuse and is for the Vehicle Controller (VCU).
7. Fuse (D) is a 20 amp fuse and is for the Key Switch Power.
8. Fuse (E) is a 25 amp fuse and is for the Engine Controller (ECU).
9. Test fuses with a voltmeter or test lamp and replace if burned out.
10. Install cover onto electrical control box.
11. Close engine cover.

OUMX068,000068C-19-01APR14

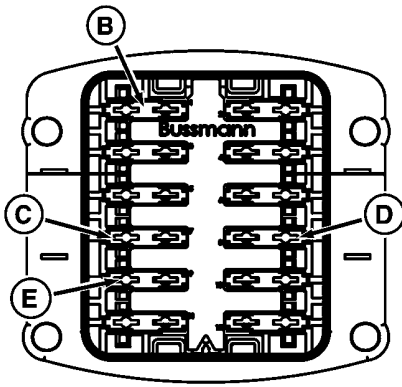
### Checking and Replacing Cab Fuses (1575, 1585)

1. Park machine safely. (See Parking Safely in the SAFETY section.)

## Service Electrical



APY65196—UN—26JUL21



TCT010639—UN—24MAR14

- A—Fuse Panel
- B—Position 1 (20 Amp)
- C—Position 7 (30 Amp)
- D—Position 8 (20 Amp)
- E—Position 9 (20 Amp)

2. Locate the fuse panel (A) just to the right of seat.
3. Fuse (B) is a 20 amp fuse and controls the Windshield Wiper and Radio.
4. Fuse (C) is a 30 amp fuse and controls the Worklights, Turn Signals/Flashers, and Beacon Light (if equipped).
5. Fuse (D) is a 20 amp fuse and controls the Dome Light and Right Blower.
6. Fuse (E) is a 20 amp fuse and controls the Left Blower.
7. Test fuses with a voltmeter or test lamp and replace if burned out.
8. Never replace fuses with larger amp value. Replace with same type of fuse.

SR99263,00009DE-19-21JUL21

## Service Miscellaneous

### 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.

### Required Fuel Properties

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

**Cetane number of 45 minimum.** Cetane number greater than 47 is preferred, especially for temperatures below  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 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  $10^{\circ}\text{C}$  ( $18^{\circ}\text{F}$ ) below the fuel cloud point.

**Fuel lubricity** should pass a maximum scar diameter of 0.52 mm (0.018 in) as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm (0.020 in) 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 5000 mg/kg (5000 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 injury! Avoid severe injury or death due to the fire and explosion risk from using E-Diesel fuel.**

### 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 greater than 37 kW

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is REQUIRED.

### Sulfur Content for other 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. Contact your dealer.

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

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

MK71445,0000080-19-01AUG18

### 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.

### 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.

### Engines 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 blends above B20 cannot be used.

### 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

## Service Miscellaneous

engine oil. Biodiesel blends up to B20 must be used within 90 days of 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.

MK71445,0000081-19-01AUG18

### Filling Fuel Tank

**CAUTION:** Fuel vapors are explosive and flammable:

- Shut engine off before filling fuel tank.
- Allow engine to cool before refueling.
- Do not smoke while handling fuel.
- Keep fuel away from flames or sparks.
- Fill fuel tank outdoors or in well ventilated area.
- Clean up spilled fuel immediately.
- Use clean approved non-metal container to prevent static electric discharge.

**IMPORTANT:** Dirt and water in fuel can cause engine damage:

- Clean dirt and debris from the fuel tank opening.
- Use clean, fresh, stabilized fuel.
- Fill the fuel tank at the end of each day's operation to keep condensation out of the fuel tank.
- If using a funnel, make sure it is plastic and has no screen or filter.

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

1. Park machine safely. (See Parking Safely in the SAFETY section.)

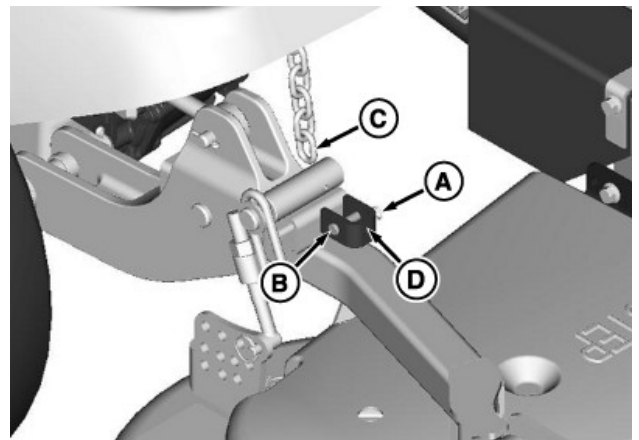
2. Allow engine to cool.
3. Remove any trash from area around fuel tank cap.
4. Remove fuel tank cap slowly to allow any pressure built up in tank to escape.
5. Fill fuel tank only to bottom of filler neck. Do not overfill.
6. Install fuel tank cap.
  - Gas models: Turn cap until clicks.

OUC1023,00004CB-19-05AUG16

### Using Service Latches

**CAUTION:** Avoid Injury! Unlatch service chain before moving the machine to avoid possible injury. The machine can become unstable when driving on slopes or at high speeds with front attachment raised or removed. Travel at slow speeds and avoid sudden braking with attachment raised or removed. The PTO continues to run after the attachment is raised. Turn off PTO when not in use.

1. Stop machine on a level surface, not a slope.
2. Turn off PTO switch.
3. Raise mower deck to highest level.
4. Lock the park brake.
5. Stop the engine and remove the key.
6. Wait for engine and all moving parts to stop before you leave the operator's seat.

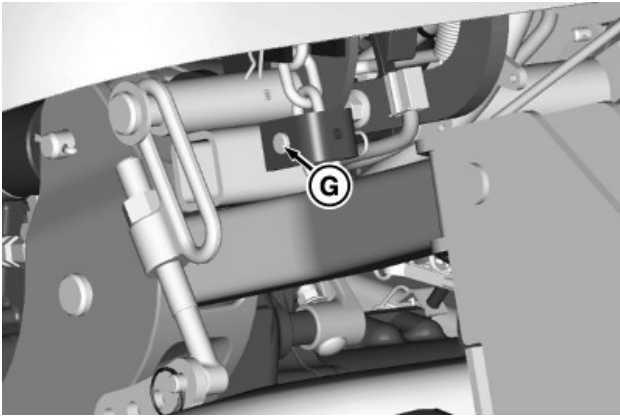


TCT010375—UN—20FEB14

7. Remove spring pin (A) and clevis pin (B) from mower deck lift arm.
8. Insert bottom link of service latch chain (C) into welded bracket (D) on mower deck lift arm.

## Service Miscellaneous

**NOTE:** Service latch chain has 7 links to accommodate all configurations. Select chain link that provides the tightest fit.



TCT010376—UN—20FEB14

9. Install clevis pin (G) through bracket and chain, and secure with spring pin.

OUMX068,00003B5-19-20FEB14

### Servicing Cab Air Conditioner

**NOTE:** Compressor is filled with oil at the factory, you do not need to add oil.

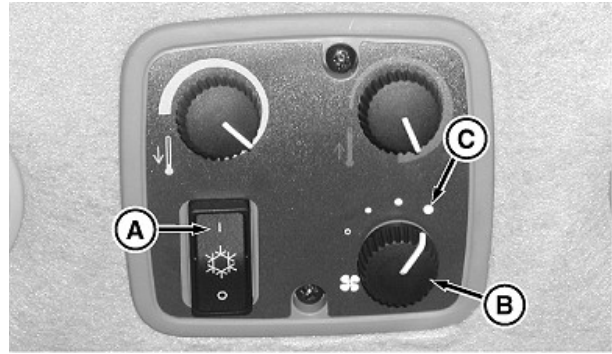
#### Air Conditioner Checks

Check the following if air conditioner will not cool, or if cooling is intermittent:

**IMPORTANT: Avoid damage! R134a refrigerant must be used. This requires special equipment and procedures. See your John Deere dealer.**

**NOTE:** Some oil seepage from compressor shaft seal, on the lower front, is normal.

1. If air conditioner clutch slips after machine has been in storage, compressor may be stuck.
  - Stop engine and turn ignition switch to stop (off) position.
  - Raise hood and rotate clutch hub back and forth to free compressor.



TCT008316—UN—13AUG13

2. Run engine at 2000 rpm. Push top half of A/C and defrost switch (A) and set blower control knob (B) to high position (C). If cooling is intermittent, clean hood grille, radiator and condenser. If problem is not solved, see your John Deere dealer.
3. Inspect operator enclosure (cab) filter for restriction. If problem persists, see your John Deere dealer to have evaporator core cleaned.

### Cleaning Air Conditioner Condenser

**CAUTION:** Avoid injury! Compressed air can cause debris to fly a long distance.

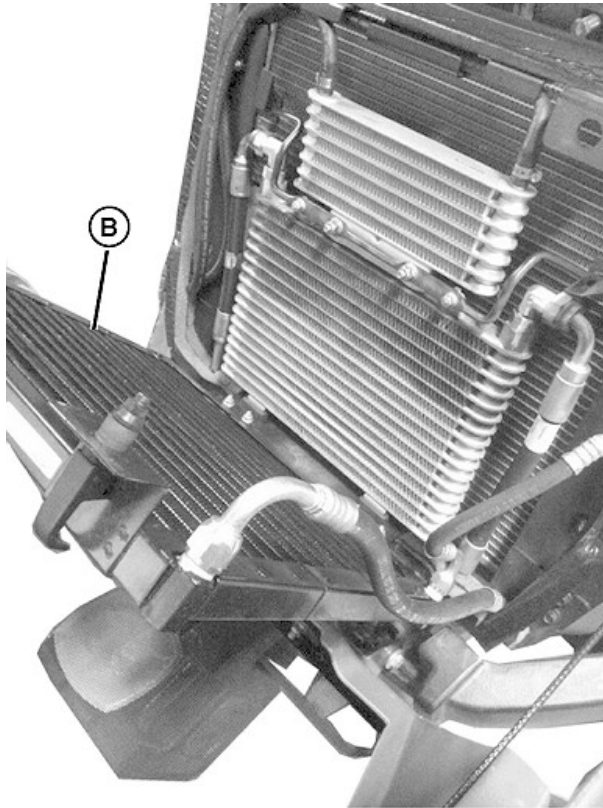
- Clear work area of bystanders.
- Wear eye protection when using compressed air for cleaning purposes.
- Reduce compressed air pressure to 210 kPa (30 psi).



TCT007885—UN—21MAR14

## Service Miscellaneous

1. Rotate handle (A) up and towards front of machine to release latch on air conditioner condenser (B).

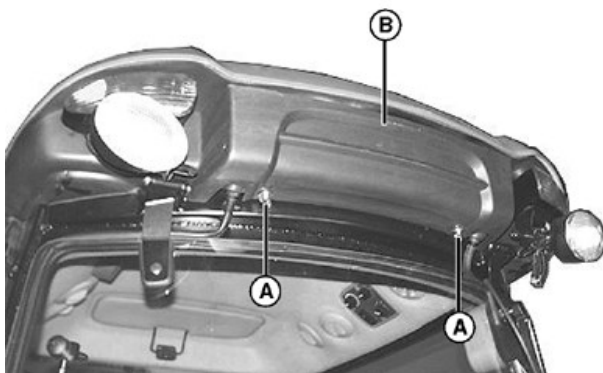


TCT008317—UN—13AUG13

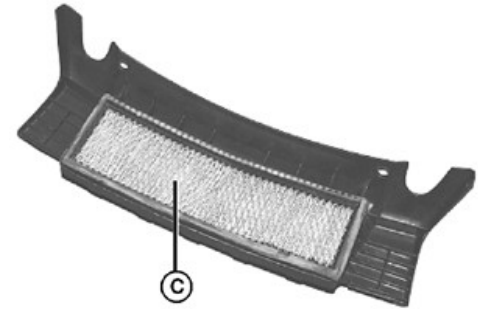
2. Swing air conditioner condenser (B) forward, as shown.
3. Check air conditioner condenser (B) for dirt and debris. Clean condenser using a brush or compressed air.
4. If a more thorough cleaning is necessary, clean both sides of condenser with compressed air or water. Straighten any bent fins.

OOU2005,0000112-19-18DEC14

### Cleaning Cab Air Filter



LVAL13682—UN—08NOV10

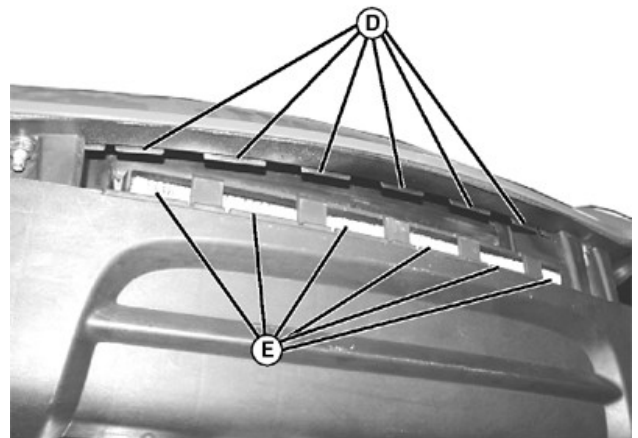


LVAL13683—UN—08NOV10

A—Wing Bolt (2 used)  
B—Filter Base  
C—Filter

1. Remove two wing bolts (A), washers, and filter base (B).
2. Remove filter (C) from filter base, and clean with compressed air. Inspect filter for damage. Replace if necessary.
3. Install filter back into filter base.

**IMPORTANT: Avoid Damage! Be sure the six tabs (D) on the roof panel fit into the slots (E) on filter base.**



LVAL13684—UN—08NOV10

D—Tabs  
E—Slots

4. Install filter base, making sure six tabs (D) on roof panel are installed into slots (E) in filter base. Secure base assembly back into roof panel with two washers and wing bolts.

OUMX258,0000A7B-19-21MAR13

### Cleaning and Repairing Metal Surfaces

#### Cleaning:

Follow automotive practices to care for your vehicle painted metal surfaces. Use a high-quality automotive

## Service Miscellaneous

wax regularly to maintain the factory look of your vehicle's painted surfaces.

### Repairing Minor Scratches (surface scratch):

1. Clean area to be repaired thoroughly.

**IMPORTANT: Do not use rubbing compound on painted surfaces.**

2. Use automotive polishing compound to remove surface scratches.
3. Apply wax to entire surface.

### Repairing Deep Scratches (bare metal or primer showing):

1. Clean area to be repaired with rubbing alcohol or mineral spirits.
2. Use paint stick with factory-matched colors available from your authorized dealer to fill scratches. Follow directions included on paint stick for use and for drying.
3. Smooth out surface using an automotive polishing compound. Do not use power buffer.
4. Apply wax to surface.

OUC1023,00004CD-19-14MAR13

## Cleaning Plastic Surfaces

**IMPORTANT: Improper care of machine plastic surfaces can damage that surface:**

- Do not wipe plastic surfaces when they are dry. Dry wiping will result in minor surface scratches.
- Use a soft, clean cloth (bath towel, diaper, automotive mitt).
- Do not use abrasive materials, such as polishing compounds, on plastic surfaces.

1. Rinse hood and entire machine with clean water to remove dirt and dust that may scratch the surface.
2. Wash surface with clean water and a mild liquid automotive washing soap.
3. Dry thoroughly to avoid water spots.
4. Wax the surface with a liquid automotive wax. Use products that specifically say "contains no abrasives."

**IMPORTANT: Do not use a power buffer to remove wax.**

5. Buff applied wax by hand using a clean, soft cloth.

OUC1023,00004CE-19-14MAR13

## Checking Cab Rollover Protection System Installation

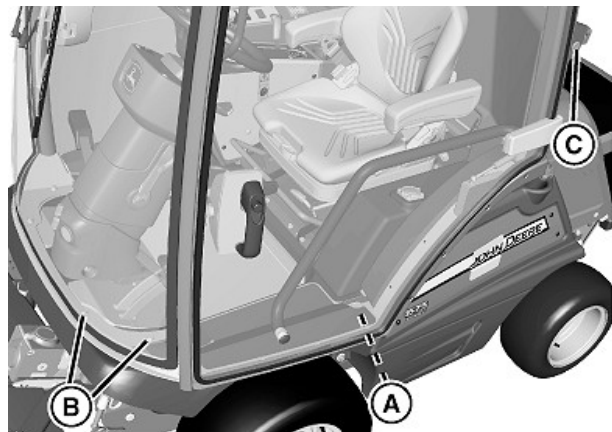
**⚠ CAUTION: Avoid injury! To maintain operator protection and ROPS certification:**

- Do not repair or revise the ROPS.
- Any alteration of the ROPS must be approved by the manufacturer.

**IMPORTANT: Avoid damage! Make certain all parts are installed correctly. If cab protection system is loosened or removed for any reason, tighten mounting capscrews to specification.**

The protection offered by cab protection system will be impaired if cab protection system is subjected to structural damage, as in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged cab protection system should be replaced, not reused. Any alteration to the cab protection system must be approved by the manufacturer.

1. When installation of equipment on a machine necessitates loosening or removing cab protection system, mounting capscrews should be tightened to specification.
2. Inspect cab protection system mounting hardware every 500 hours for proper torque or replacement.



TCT008318—UN—13AUG13

3. Lift up rubber floor mat (A) to access front mounting hardware.
4. Check two front mounting hardware locations (B).
5. Check mounting pivot hardware (C).
6. Tighten the mounting hardware to 260 N·m (192 lb.-ft.).
7. Repeat on opposite side of cab.

OUC2005,0000113-19-06MAR14

## Service Miscellaneous

### Removing and Installing Front Wheels

**⚠ CAUTION:** Remove wheels safely.

- Use a safe lifting device and support machine securely on jack stands.
- Block front and rear of wheel not raised to prevent machine movement.
- Wheel can be heavy or difficult to handle when removing.

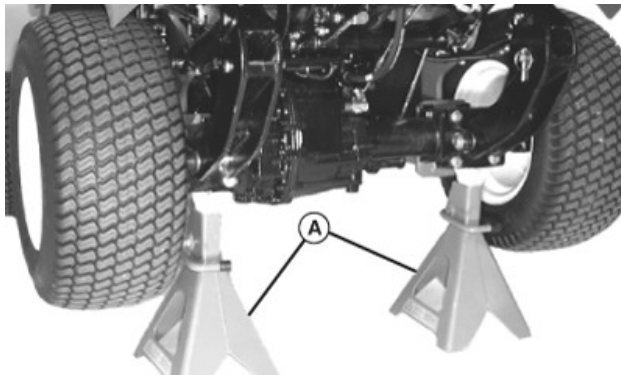
#### Raising Front of Machine

1. Park machine safely. (See Parking Safely in the Safety section.)
2. Remove attachment from the machine.
3. Block rear tires.



TCAL43399—UN—14MAR13

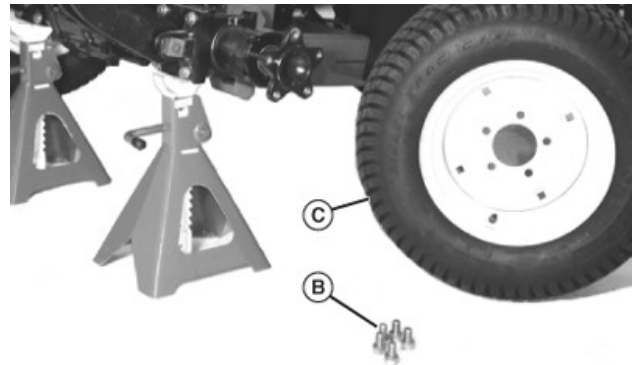
4. Using a floor jack on the frame behind the front wheel, lift machine until front tire is off the ground. Do not use jack on transaxle or oil filter will be damaged.



TCAL43400—UN—14MAR13

5. Install jack stands (A) under left and right side of the front axle.

### Removing Front Wheels



TCAL43401—UN—14MAR13

1. Remove front wheel bolts (B), washers, and reinforcement plate.
2. Remove front wheel (C) from the front axle.

### Installing Front Wheels

**⚠ CAUTION:** Remove wheels safely.

- Use a safe lifting device and support machine securely on jack stands.
- Block front and rear of wheel not raised to prevent machine movement.
- Wheel can be heavy or difficult to handle when removing.



TCAL43402—UN—14MAR13

1. Install wheels onto axle hubs with valve stems (A) facing outward. Make sure that there is a washer installed on each wheel bolt (B), and install bolts into the reinforcement plate, wheel, and hub.
2. Tighten front wheel bolts to specifications using a torque wrench.

#### Specification

Front Wheel Bolts—Torque. . . . . 122 N·m (90 lb·ft)

3. Lower machine to ground and remove floor jack.
4. Remove wheel blocks from rear tires.
5. Check wheel bolt torque:
  - After traveling 30 m (100 ft) while changing direction.

## Service Miscellaneous

- After 3—10 hours of use.
- Often during the next 100 hours of operation.

OUC1023,00004D0-19-13MAR20

### Removing and Installing Rear Wheels

**CAUTION:** Remove wheels safely.

- Use a safe lifting device and support machine securely on jack stands.
- Block front and rear of wheel not raised to prevent machine movement.
- Wheel can be heavy or difficult to handle when removing.

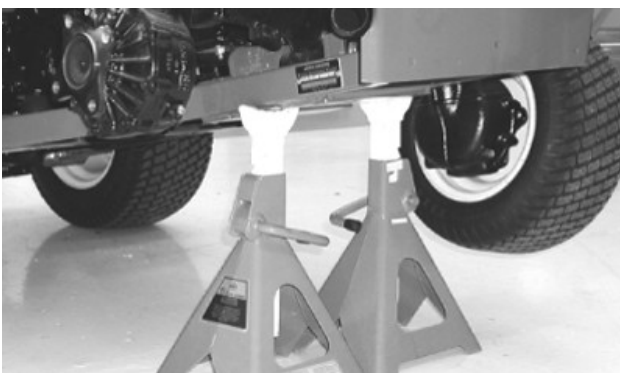
#### Raising Rear of Machine

1. Park machine safely. (See Parking Safely in the SAFETY section.)



TCAL43403—UN—14MAR13

2. Using a floor jack at the center of the rear frame, lift machine until rear tires are off ground. Alternatively, the rear frame plate (A) can be used as a jacking or lifting point, but care must be taken not to damage the muffler (B).



TCAL43404—UN—14MAR13

3. Install jack stands under left and right side of the rear frame.
4. Lower machine onto jack stands.

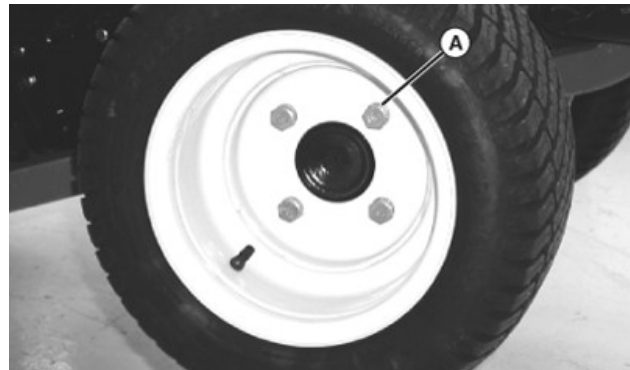
#### Removing Rear Wheels – 2WD



TCAL43405—UN—14MAR13

1. Remove rear wheel bolt and washer (A) from the center of the rear wheel.
2. Pull wheel and tire assembly straight off the rear axle.

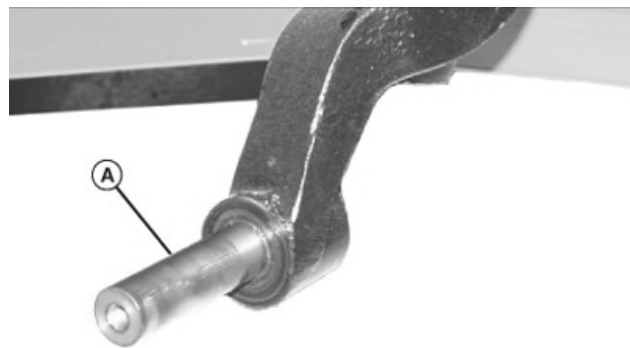
#### Removing Rear Wheels – 4WD



TCAL43406—UN—14MAR13

Remove wheel bolts and washers (A). Remove wheel from the rear axle.

#### Installing Rear Wheels – 2WD

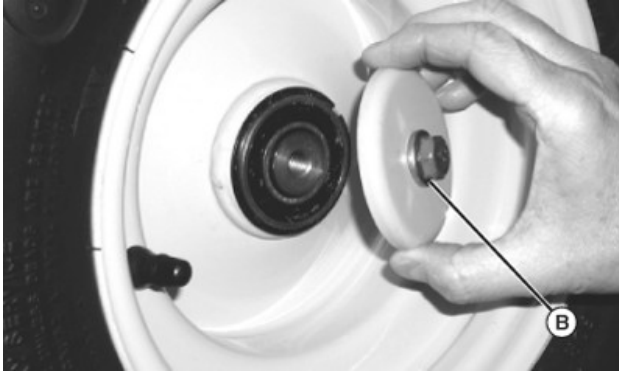


TCAL43407—UN—14MAR13

1. Apply recommended grease to the rear axle shaft (A) before installing rear wheel.
2. Install rear wheel onto the axle hub with valve stem facing outward.

## Service Miscellaneous

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TCAL43408—UN—14MAR13

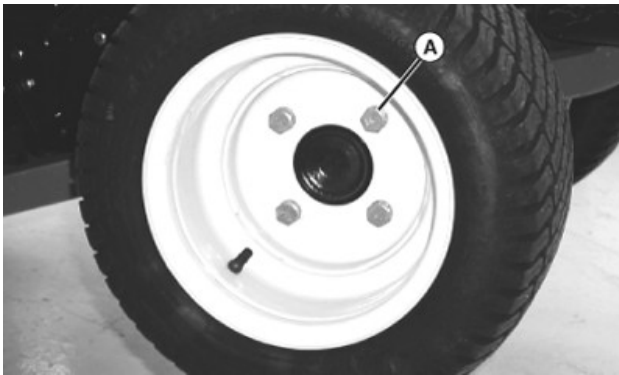
3. Install washer and wheel bolt (B). Tighten rear wheel mounting bolt to specifications using torque wrench.

### Specification

Rear Wheel Bolts—Torque. . . . . 82 N·m (60 lb·ft)

4. Raise up machine at center of the rear frame.  
Remove jack stands, and lower machine to the ground.

### Installing Rear Wheels – 4WD



TCAL43409—UN—14MAR13

1. Install rear wheel onto the axle hub with valve stem facing outward.
2. Install washers and wheel bolts. Tighten rear wheel mounting bolts (A) to specifications using torque wrench.

### Specification

Rear Wheel Bolt—Torque. . . . . 122 N·m (90 lb·ft)

3. Jack up the machine at center of the rear frame.  
Remove jack stands, and lower machine to the ground.

OUO1023,00004D1-19-13MAR20

# Troubleshooting

## Using Troubleshoot Chart

If you are experiencing a problem that is not listed in this chart, see your Technical Manual or authorized dealer for service.

MP47322,00F467B-19-03AUG23

## Engine

| IF                                                          | CHECK                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poor Engine Performance                                     | Dirt in fuel system or fuel is old. Replace fuel with fresh stabilized fuel. Obtain fuel from another supplier before suspecting machine problems. Suppliers blend fuels differently and changing suppliers will generally solve any performance problems<br>Fuel blended for cold or warm climate may contribute to performance problems if used in the wrong season, especially if fuel is stored for several months or more. Obtain fresh fuel. |
| Engine Will Not Start<br>(Starter Does Not Engage)          | Seat switch not being actuated due to seat spring adjustment being too stiff.<br>PTO switch is on.<br>Master brake pedal is not depressed.<br>Electrical problem - See Electrical Troubleshooting section.                                                                                                                                                                                                                                         |
| Engine Will Not Start<br>(Starter Engages and Turns Engine) | Fuel shutoff valve is in OFF position.<br>Out of fuel or improper fuel.<br>Plugged fuel filter.<br>Electrical problem - See Electrical Troubleshooting section.                                                                                                                                                                                                                                                                                    |
| Engine Is Hard To Start                                     | Improper use of choke or engine preheater.<br>Plugged fuel filter.<br>Stale or improper fuel.                                                                                                                                                                                                                                                                                                                                                      |
| Engine Runs Unevenly                                        | Choke not fully off.<br>Fuel line or fuel filter plugged.<br>Stale or dirty fuel.<br>Fuel injector clogged.<br>Air cleaner element plugged.                                                                                                                                                                                                                                                                                                        |
| Engine Misses Under Load                                    | Choke not fully off.<br>Stale or dirty fuel.<br>Plugged fuel filter.                                                                                                                                                                                                                                                                                                                                                                               |
| Engine Overheats                                            | Engine air intake screen plugged.<br>Engine coolant level is low.<br>Engine oil level is low or too high.<br>Engine operated too long at slow idle speed.                                                                                                                                                                                                                                                                                          |
| Engine Will Not Idle                                        | Choke not used properly.<br>Fuel level too low.<br>Air cleaner element dirty.<br>Operator rising off the seat without park brake locked.                                                                                                                                                                                                                                                                                                           |
| Engine Knocks                                               | Stale fuel.<br>Engine overloaded.<br>Low engine speed.                                                                                                                                                                                                                                                                                                                                                                                             |
| Engine Stops or Misses when Operating on Hillsides          | Fuel level too low.<br>Operator rising off the seat.                                                                                                                                                                                                                                                                                                                                                                                               |
| Engine Backfires                                            | Operator rising off the seat.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Engine Loses Power                                          | Engine overheating.<br>Too much oil in engine.<br>Dirty air cleaner.<br>Travel speed is too fast for conditions.<br>Improper fuel.                                                                                                                                                                                                                                                                                                                 |
| Black Exhaust Smoke                                         | Choke not fully off.<br>Air filter element is dirty.                                                                                                                                                                                                                                                                                                                                                                                               |

OUC1023,00004D3-19-15MAR13

# Troubleshooting

## Electrical

| IF                          | CHECK                                                                                                         |
|-----------------------------|---------------------------------------------------------------------------------------------------------------|
| Starter Does Not Engage     | Brake pedal is not depressed.<br>PTO switch is in ON position.<br>Battery not charged.<br>Fuse is blown.      |
| Battery Will Not Charge     | Dead cell in the battery.<br>Battery cables and terminals are dirty.<br>Low engine speed or excessive idling. |
| Indicator Lamps Not Working | Light plug disconnected.<br>Loose or burned-out bulb.                                                         |

OUC1023,00004D4-19-15MAR13

## Machine

| IF                                        | CHECK                                                |
|-------------------------------------------|------------------------------------------------------|
| Machine Will Not Move with Engine Running | Transaxle bypass valve plate is in engaged position. |

OUC1023,00004D5-19-15MAR13

## Troubleshooting Guide for Common DTC's

Below is a list of most common Diagnostic Trouble Codes (DTC) with a possible solution. If the listed solution does not solve the code, or you experience a code not listed here, consult appropriate technical manual or contact your local John Deere dealer.

| DTC Code | DTC Description                 | Possible Solution                                                                                                               |
|----------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 70.14    | Park Brake Off, Start On        | Depress parking brake to start machine.                                                                                         |
| 100.1    | Engine Oil Pressure Low         | Verify oil level and type in engine crankcase is correct.                                                                       |
| 110.0    | Engine Coolant Temperature High | Verify engine coolant level is correct in radiator and overflow bottle.                                                         |
| 168.16   | Battery Voltage High            | Check voltage, test alternator.                                                                                                 |
| 168.18   | Battery Voltage Low             | Check voltage, test battery and alternator.                                                                                     |
| 677.4    | Starter Relay-Short to Ground   | Check electrical connectors in start circuit for moisture. Verify no exposed wires are shorting out.                            |
| 677.14   | Crank Time Exceeded             | Crank time of engine should not exceed 30 seconds.                                                                              |
| 677.31   | Starter Cool Down               | Allow starter to cool down for several minutes.                                                                                 |
| 920.3    | Buzzer-Short to High Side       | Check electrical system.                                                                                                        |
| 920.4    | Buzzer-Short to Ground          | Check electrical system.                                                                                                        |
| 931.3    | Fuel Pump-Short to High         | Check electrical system.                                                                                                        |
| 931.4    | Fuel Pump-Short to Ground       | Check electrical system.                                                                                                        |
| 1504.31  | PTO On-Operator Not In Seat     | Operator must remain in seat. Turn off PTO, restart machine with operator remaining in seat.                                    |
| 1638.0   | Hydraulic Oil Temperature High  | Investigate for debris on radiator oil cooler. Allow engine to run so hydraulic oil is being circulated through cooling system. |
| 3695.14  | Filter Cleaning Required        | Verify machine Filter status is in Auto Mode. Check DPF level and clean filter using parked regeneration if required.           |
| 3702.01  | Parked Regeneration Stopped     | Verify regeneration should be stopped. If needed restart regeneration.                                                          |
| 3720.16  | Ash Clean Required              | Carry out parked regeneration. Contact dealer if DTC persists after regeneration.                                               |
| 3719.00  | Service Required                | Contact John Deere dealer service organization.                                                                                 |
| 3719.16  | Parked Cleaning Required        | Carry out parked regeneration. Contact dealer if DTC persists after regeneration.                                               |

# Troubleshooting

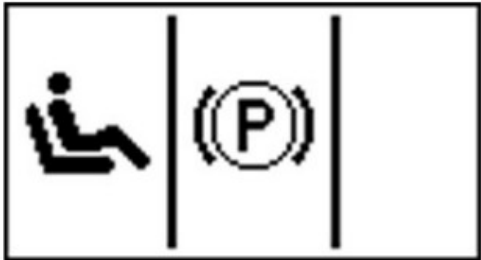
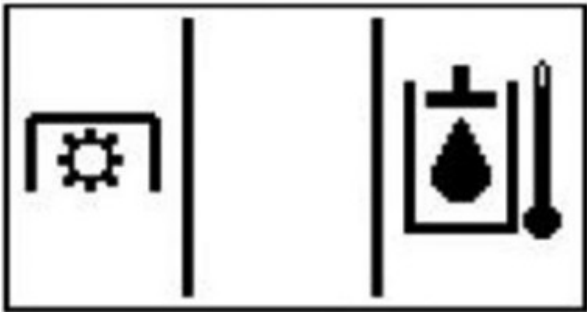
| DTC Code | DTC Description                    | Possible Solution                                              |
|----------|------------------------------------|----------------------------------------------------------------|
| 3941.14  | PTO On-Seat On                     | Turn PTO off, check interlocks and turn PTO switch ON again.   |
| 3941.31  | PTO On-Parking Brake On            | Release parking brake if intent is to use machine to mow, etc. |
| 516124.3 | Engine Run Request-Short to High   | Check electrical system.                                       |
| 516124.4 | Engine Run Request-Short to Ground | Check electrical system.                                       |

OUMX068,000072A-19-29JUN22

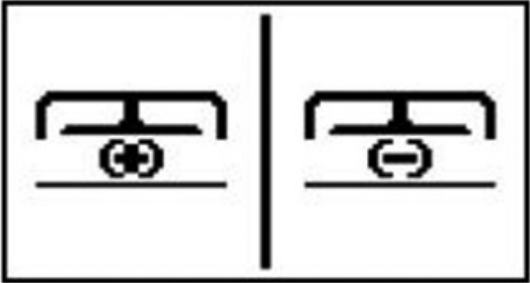
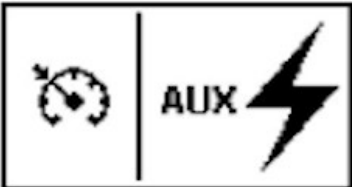
## Input and Output Status Menu

- I/O Status Menu displays current status information for inputs and outputs for enabled circuits. Each screen shows two or three switches and indicates their status.

- Status is either ON (black image on white background) or OFF (white image on black background).

| Screen Description                                                                                   | Screen Graphic                                                                                                  |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Left: Seat Switch<br>Center: Park Brake Input                                                        |  <p>TC101637—UN—30OCT20</p>  |
| Left: Key Run Position Switch<br>Center: Engine Run Request Output<br>Right: Fuel Pump Enable Output |  <p>PY44603—UN—11SEP17</p>  |
| Left: PTO switch input<br>Right: Hydraulic Oil Over Temperature Switch Input                         |  <p>TC101638—UN—30OCT20</p> |

# Troubleshooting

| Screen Description                                                                 | Screen Graphic                                                                       |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Left Icon: PTO Solenoid (+) output<br>Right Icon: PTO Solenoid (-) output          |    |
| Left: Key Switch Crank Position Status<br>Right: Crank Output Status               |   |
| Left: Cruise Control ON/OFF Switch Input<br>Right: Cruise Control SET Switch Input |  |
| Left: Cruise Control Magnet Output<br>Right: Auxiliary Relay Output                |  |

APY42005—UN—25AUG20

PY44605—UN—11SEP17

TC101639—UN—30OCT20

TC101640—UN—30OCT20

MX00654,000040C-19-30OCT20

# Storage

## Storing Safety

**⚠ CAUTION:** Fuel vapors are explosive and flammable. Engine exhaust fumes contain carbon monoxide and can cause serious illness or death:

- Run the engine only long enough to move the machine to or from storage.
- Machine fires and structure fires can occur if a machine is stored before allowing it to cool, or if debris is not removed from around the engine and muffler, or if stored near combustible materials.
- Do not store vehicle with fuel in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing the machine in any enclosure.

OUO1023,00004D6-19-14MAR13

## Preparing Machine for Storage

1. Repair any worn or damaged parts. Replace parts if necessary. Tighten loose hardware.
2. Repair scratched or chipped metal surfaces to prevent rust.
3. Remove grass and debris from machine.
4. Clean under the deck and remove grass and debris from inside chute and bagger.
5. Wash the machine and apply wax to metal and plastic surfaces.
6. Run machine for five minutes to dry belts and pulleys.
7. Apply light coat of engine oil to pivot and wear points to prevent rust.
8. Lubricate grease points and check tire pressure.

OUO1023,00004D7-19-14MAR13

## Preparing Fuel and Engine For Storage

### Fuel:

If you have been using “Stabilized Fuel,” add stabilized fuel to tank until the tank is full.

*NOTE: Filling the fuel tank reduces the amount of air in the fuel tank and helps reduce deterioration of fuel.*

If you are not using “Stabilized Fuel:”

1. Park machine safely in a well-ventilated area. (See Parking Safely in the SAFETY section.)

*NOTE: Try to anticipate the last time the machine will be used for the season so very little fuel is left in the fuel tank.*

2. Turn on engine and allow to run until it runs out of fuel.
3. For machines equipped with key switch, turn key to off position.

**IMPORTANT:** Stale fuel can produce varnish and plug carburetor or injector components and affect engine performance.

- Add fuel conditioner or stabilizer to fresh fuel before filling tank.
4. Mix fresh fuel and fuel stabilizer in separate container. Follow stabilizer instructions for mixing.
  5. Fill fuel tank with stabilized fuel.
  6. Run engine for a few minutes to allow fuel mixture to circulate through carburetor on gas engine or fuel injectors on diesel engine.

### Engine:

Engine storage procedure should be used when vehicle is not to be used for longer than 60 days.

1. Change engine oil and filter while engine is warm.
2. Service air filter if necessary.
3. Clean debris from engine air intake screen.
4. On gas engines:
  - Remove spark plugs. Put 30 mL (1 oz) of clean engine oil in cylinder(s).
  - Install spark plugs, but do not connect spark plug wires.
  - Crank the engine five or six times to allow oil to be distributed.
5. Clean the engine and engine compartment.
6. Remove battery.
7. Clean the battery and battery posts. Check the electrolyte level, if your battery is not maintenance free.
8. Close fuel shut-off valve, if your machine is equipped.
9. Store the battery in a cool, dry place where it will not freeze.

*NOTE: The stored battery should be recharged every 90 days.*

10. Charge the battery.

# Storage

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**IMPORTANT: Prolonged exposure to sunlight could damage the hood surface. Store machine inside or use a cover if stored outside.**

11. Store the vehicle in a dry, protected place. If vehicle is stored outside, put a waterproof cover over it.

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OUO1023,00004D8-19-14MAR13

## Storage for BioDiesel Fuel

**IMPORTANT: Biodiesel fuel must be used within three months of the date of production by the fuel supplier.**

**Before placing a biodiesel fueled machine in long term storage (without operating the engine):**

- Drain all biodiesel fuel from the fuel tank.
- Fill the tank with conventional petroleum fuel as indicated in the Operator's Manual.
- Start the engine and run for a minimum of five hours.

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OUO1023,00004D9-19-14MAR13

## Removing Machine From Storage

1. Check tire pressure.
2. Check engine oil level.
3. Check battery electrolyte level, if your battery is not maintenance free. Charge battery if necessary.
4. Install battery.
5. On gas engines: Check spark plug gap. Install and tighten plugs to specified torque.
6. Lubricate all grease points.
7. Open fuel shut-off valve, if your machine is equipped.
8. Run the engine 5 minutes without the mower or any attachments running to allow oil to be distributed throughout engine.
9. Be sure all shields and guards or deflectors are in place.

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OUO1023,00004DA-19-14MAR13

# Specifications

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## Engine

### 1550 Engine

|                     |                                     |
|---------------------|-------------------------------------|
| Engine Model Number | Yanmar 3TNV80F                      |
| Engine Type         | 4-Cycle, 3-Cylinder, In-Line Diesel |
| Displacement        | 1.267 L (77.3 cu in.)               |
| Bore                | .80 mm (3.15 in.)                   |
| Stroke              | .84 mm (3.31 in.)                   |
| Valve Clearance     | 0.2 mm (0.008 in.)                  |
| Cooling             | Liquid Cooled                       |
| Injection Type      | Indirect                            |
| Air Cleaner         | Dry, Replaceable Dual Element       |
| Starting Aid        | Glow Plugs                          |

### 1570, 1575, 1580, 1585 Engine

|                     |                                     |
|---------------------|-------------------------------------|
| Engine Model Number | Yanmar 3TNV88C                      |
| Engine Type         | 4-Cycle, 3-Cylinder, In-Line Diesel |
| Displacement        | 1.642 L (100.2 cu in.)              |
| Bore                | .88 mm (3.46 in.)                   |
| Stroke              | .90 mm (3.54 in.)                   |
| Valve Clearance     | 0.2 mm (0.008 in.)                  |
| Cooling             | Liquid Cooled                       |
| Injection Type      | Direct                              |
| Air Cleaner         | Dry, Replaceable Dual Element       |
| Starting Aid        | Glow Plugs                          |

OUMX068,000067B-19-21MAR14

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## Capacities

|                                                          |                   |
|----------------------------------------------------------|-------------------|
| Fuel Tank                                                | 60.5 L (16.0 gal) |
| Coolant (1550)                                           | 7.1 L (7.5 qt)    |
| Coolant (1570, 1575, 1580, 1585)                         | 7.6 L (8.0 qt)    |
| Hydrostatic Transmission (2WD)                           | 8.5 L (9 qt)      |
| Hydrostatic Transmission (1550, 1570; 4WD)               | 8.7 L (9.2 qt)    |
| Hydrostatic Transmission (1575, 1580, 1585)              | 10.0 L (10.5 qt)  |
| Rear Axle (4WD)                                          | 4.7 L (5 qt)      |
| Engine Oil Capacity 1550 (with Filter)                   | 3.1 L (3.3 qt)    |
| Engine Oil Capacity 1570, 1575, 1580, 1585 (with Filter) | 4.1 L (4.3 qt)    |
| Cab Refrigerant                                          | 1.13 kg (2.5 lbs) |

OJ02005,000007D-19-09NOV18

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## Tightening Torques

|                           |                    |
|---------------------------|--------------------|
| All Wheels (Except Below) | 122 N•m (90 lb•ft) |
| Rear Wheels - 2WD         | 82 N•m (60 lb•ft)  |

SB31882,0000272-19-13MAR20

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# Specifications

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## Travel Speeds

### 1550, 1570, 1575

|               |                    |
|---------------|--------------------|
| Forward ..... | 19.3 km/h (12 mph) |
| Reverse ..... | .8 km/h (5 mph)    |

### 1580, 1585

|                            |                      |
|----------------------------|----------------------|
| Forward (Low Range) .....  | 12.9 km/h (8 mph)    |
| Forward (High Range) ..... | 24.1 km/h (15.0 mph) |
| Reverse (Low Range) .....  | .8 km/h (5 mph)      |
| Reverse (High Range) ..... | .8 km/h (5 mph)      |

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MX00654,00002E8-19-11MAR20

## Tire Dimensions

### 1550, 1570

|                                    |              |
|------------------------------------|--------------|
| Front Drive Tires - Standard ..... | .23x10.50-12 |
| Front Drive Tires - Optional ..... | .23x8.50-12  |
| Front Drive Tires - Dual .....     | .23x8.50-12  |
| Rear Tires - 2WD .....             | .18x8.50-8   |
| Rear Tires - 4WD .....             | .18x8.50-10  |

### 1575

|                                    |             |
|------------------------------------|-------------|
| Front Drive Tires - Standard ..... | .23x10.5-12 |
| Rear Tires .....                   | .18x8.5-10  |

### 1580, 1585

|                                    |           |
|------------------------------------|-----------|
| Front Drive Tires - Standard ..... | .26x12-12 |
| Rear Tires .....                   | .20x10-10 |

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OUO2005,0000081-19-30JUL13

## Tire Inflation Pressures

### 1550

|                            |                   |
|----------------------------|-------------------|
| Front and Rear Tires ..... | .140 kPa (20 psi) |
|----------------------------|-------------------|

### 1570, 1575

|                                  |                   |
|----------------------------------|-------------------|
| Front .....                      | .140 kPa (20 psi) |
| Rear Tires - 2 wheel drive ..... | .140 kPa (20 psi) |
| Rear Tires - 4 wheel drive ..... | .220 kPa (32 psi) |

# Specifications

## 1580, 1585

|            |                   |
|------------|-------------------|
| Front      | .210 kPa (30 psi) |
| Rear Tires | .220 kPa (32 psi) |

OUO2005,000007E-19-18DEC14

## Dimensions

|                                      |                    |
|--------------------------------------|--------------------|
| Height (With Cab)                    | .2.2 m (86.6 in.)  |
| Width (With Standard Tires)          | .1.3 m (51.7 in.)  |
| Length (Without Mower Deck)          | .2.2 m (86.6 in.)  |
| Wheelbase                            | .1.3 m (49.2 in.)  |
| Weight (Without Mower Decks or Fuel) | .844 kg (1860 lb.) |
| Ground Clearance (1550, 1570, 1575)  | .16.5 cm (6.5 in.) |
| Ground Clearance (1580, 1585)        | .17.8 cm (7 in.)   |

OUO2005,0000082-19-17MAR14

# Warranty

## Product Warranty

John Deere offers a standard warranty on new John Deere products. For a copy of the product warranty statement or for details on the warranty terms and conditions for products purchased in the United States and Canada, please contact your local John Deere Dealer or utilize the following resources:

### United States

#### Website:

[http://www.deere.com/en\\_US/services\\_and\\_support/warranty/warranty.page](http://www.deere.com/en_US/services_and_support/warranty/warranty.page)

**Toll Free:** 1-800-537-8233

#### Dealer Locator:

<http://dealerlocator.deere.com/servlet/country=US>

### Canada

#### Website (English):

[http://www.deere.ca/en\\_CA/services\\_and\\_support/service\\_plans\\_warranties/service\\_plans\\_warranties.page](http://www.deere.ca/en_CA/services_and_support/service_plans_warranties/service_plans_warranties.page)

#### Website (French):

[http://fr.deere.ca/en\\_CA/services\\_and\\_support/service\\_plans\\_warranties/service\\_plans\\_warranties.page](http://fr.deere.ca/en_CA/services_and_support/service_plans_warranties/service_plans_warranties.page)

**Toll Free:** 1-800-537-8233

#### Dealer Locator:

<http://dealerlocator.deere.com/servlet/country=CA>

**Emission-related warranties are included in this Operator's Manual, and applicable if required by law or regulation.**

For products purchased in a country other than the United States or Canada, please contact your local John Deere dealer for assistance.

## John Deere, California and U.S. EPA Emission Control System Warranty (Non-Road Diesel)

### Your Warranty Rights and Obligations:

The California Air Resources Board (CARB), the United States Environmental Protection Agency (EPA) and John Deere are pleased to explain the **emission control system warranty** on your 2020, 2021, or 2022 model year industrial compression-ignition engine. California-certified, new off-road compression-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. In the remaining forty nine (49) states, new non-road compression-ignition engines must be designed, built and equipped to meet the United States EPA emissions 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, the air induction system, the electronic control system, EGR (exhaust gas recirculation) system and the diesel particulate filter system. Also included may be hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, John Deere will repair your off-road compression-ignition engine at no charge to you including diagnosis, parts and labor.

### Manufacturer's Warranty Period:

2020, 2021, or 2022 model year off-road compression-ignition engines are warranted for the periods listed below. If any emission-related part on your engine is found to be defective during the applicable warranty period, the part will be repaired or replaced by John Deere.

MP47322,00F4690-19-01JUN22

| If your engine is certified as   | And its maximum power is | And its rated speed is | Then its warranty period is                                                                                                                                      |
|----------------------------------|--------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Variable speed or constant speed | kW <19                   | Any speed              | 1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.   |
| Constant speed                   | 19 ≤ kW <37              | 3000 rpm or higher     | 1,500 hours or two (2) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of two (2) years.   |
| Constant speed                   | 19 ≤ kW <37              | Less than 3,000 rpm    | 3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years. |
| Variable speed                   | 19 ≤ kW <37              | Any speed              | 3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years. |
| Variable speed or constant speed | kW ≥ 37                  | Any speed              | 3,000 hours or five (5) years whichever comes first. In the absence of a device to measure the hours of use, the engine has a warranty period of five (5) years. |

# Warranty

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## Warranty Coverage:

This warranty is transferable to each subsequent purchaser for the duration of the warranty period. Repair or replacement of any warranted part will be performed at an authorized John Deere service provider.

Warranted parts not scheduled for replacement as required maintenance in the owner's manual shall be warranted for the warranty period. Warranted parts scheduled for replacement as required maintenance in the owner's manual are warranted for the period of time prior to the first scheduled replacement. Any warranted parts scheduled for replacement as required maintenance that are repaired or replaced under warranty shall be warranted for the remaining period of time prior to the first scheduled replacement. Any part not scheduled for replacement that is repaired or replaced under warranty shall be warranted for the remaining warranty period.

During the warranty period, John Deere is liable for damages to other engine components caused by the failure of any warranted part during the warranty period.

Any replacement part that is functionally identical to the original equipment part in all respects may be used in the maintenance or repair of your engine, and shall not reduce John Deere's warranty obligations. Add-on or modified parts that are not exempted may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty.

## Warranted Parts:

This warranty covers engine components that are a part of the emission control system of the engine as delivered by John Deere to the original retail purchaser. Such components may include the following:

- (A) Fuel injection system (including Altitude compensation system)
- (B) Cold start enrichment system
- (C) Intake manifold and Air intake throttle valve
- (D) Turbocharger systems
- (E) Exhaust manifold
- (F) Positive crankcase ventilation system
- (G) Charge Air Cooling systems
- (H) Exhaust Gas Recirculation (EGR) systems
- (I) Exhaust gas after treatment (diesel particulate filter system)
- (J) Electronic Control units, sensors, solenoids and wiring harnesses used in above systems
- (K) Hoses, belts, connectors and assemblies used in above systems
- (L) Emission Control Information Labels

Since emissions related parts may vary slightly between models, certain models may not contain all of these

parts and other models may contain the functional equivalents.

## Exclusions:

Failures other than those arising from defects in material or workmanship are not covered by this warranty. The warranty does not extend to the following: malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, or use of fuels and lubricating oils not meeting specified standards, accident-caused damage and replacement of expendable items made in connection with scheduled maintenance. John Deere disclaims any responsibility for incidental or consequential damages such as loss of time, inconvenience, loss of use of equipment/engine or commercial loss.

## Owner's Warranty Responsibilities:

**As the off-road compression-ignition engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual.** John Deere recommends that you retain all documentation, including receipts, covering maintenance on your off-road compression-ignition engine, but John Deere cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

John Deere may deny your warranty coverage if your off-road compression-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

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

You are responsible for initiating the warranty process. You must present your engine to a John Deere service provider as soon as a problem exists. The warranty repairs should be completed by the dealer as expeditiously as possible.

If you have a question about your emissions warranty coverage, how to make an emissions warranty claim or how to make arrangements for emissions-related authorized repairs, you should contact your John Deere Turf and Utility retailer, or the John Deere Customer Contact Center at 1-800-537-8233, or e-mail John Deere from <https://www.deere.com/en/our-company/contact-us/>.

MK71445.000033E-19-25JUN20

## Tire Warranty

John Deere warranty applies for tires available through the John Deere parts system. For tires not available through the John Deere parts system, the tire manufacturer's warranty applicable to your machine

# Warranty

may not apply outside the U.S. (See your John Deere dealer for specific information.)

MX00654,0000314-19-21AUG14

## Limited Battery Warranty For Factory Installed Batteries

*NOTE: Applicable in North America only. For complete machine warranty, reference a copy of the John Deere warranty statement. Contact your John Deere dealer to obtain a copy.*

### TO SECURE WARRANTY SERVICE

The purchaser must request warranty service from a John Deere dealer authorized to sell John Deere batteries, and present the battery to the dealer with the top cover plate codes intact.

### FREE REPLACEMENT PERIOD

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within the FREE REPLACEMENT PERIOD will be replaced free of charge. Installation costs will be covered by warranty if the unserviceable battery was installed by a John Deere factory or dealer and the replacement battery is installed by a John Deere dealer.

### PRO RATA ADJUSTMENT (batteries with letter code identification only)

Any new battery which becomes unserviceable (not merely discharged) due to defects in material or workmanship within the Pro Rata Warranty Period will be replaced upon payment of the battery's current list price less a pro rata credit for unused months of service. The applicable adjustment period is determined from the Warranty Code printed at the top of the battery and table below. Installation costs are not covered after the battery warranty period has ended.

### THIS WARRANTY DOES NOT COVER

- A. Breakage of the container, cover, or terminals.
- B. Depreciation or damage caused by lack of reasonable and necessary maintenance or by improper maintenance.
- C. Transportation, mailing, or service call charges for warranty service.
- D. Batteries that are merely discharged.

### LIMITATION OF IMPLIED WARRANTIES AND PURCHASER'S REMEDIES

To the extent permitted by law, neither John Deere nor any company affiliated with it makes any warranties, representations, or promises as to the quality, performance or freedom from defect of the products covered by this warranty. IMPLIED WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT APPLICABLE, SHALL BE LIMITED IN DURATION TO THE APPLICABLE ADJUSTMENT PERIOD SET FORTH HERE. THE PURCHASER'S ONLY REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON JOHN DEERE BATTERIES ARE THOSE SET FORTH HERE. IN NO EVENT WILL THE DEALER, JOHN DEERE OR ANY COMPANY AFFILIATED WITH JOHN DEERE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. (Note: Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages. So these limitations and exclusions may not apply to you.) This warranty gives you specific legal rights, and you may also have some rights which vary from state to state.

### NO DEALER WARRANTY

The selling dealer makes no warranty of its own and the dealer has no authority to make any representation or promise on behalf of John Deere, or to modify the terms or limitations of this warranty in any way.

### WARRANTY TERMS TABLE

*NOTE: If your battery is not labeled with a warranty code, it is a warranty code 6.*

| Warranty Code | Free Replacement Period | Pro Rata Warranty Period |
|---------------|-------------------------|--------------------------|
| A             | 90 Days                 | 40 Months                |
| B             | 90 Days                 | 36 Months                |
| C             | 90 Days                 | 24 Months                |
| D             | 12 Months               | 48 Months                |
| E             | 90 Days                 | 12 Months                |
| F             | 90 Days                 | 60 Months                |
| G             | 12 Months               | 60 Months                |
| H             | 12 Months               | 60 Months                |
| 6             | 6 Months                | 0 Months                 |
| 12            | 12 Months               | 0 Months                 |
| 18            | 18 Months               | 0 Months                 |

OUMX068,0000504-19-10MAY17

## Warranty

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# John Deere Quality Statement

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## John Deere Quality

John Deere equipment is more than just a purchase, it's an investment in quality. That quality goes beyond our equipment to your John Deere dealer's parts and service support. This support is needed to keep you a satisfied customer.

That's why John Deere has initiated a process to handle your questions or problems, should they arise. The following three steps will help guide you through the process.

### Step 1

#### Refer to your operator's manual

A. It has many illustrations and detailed information on the safe and proper operation of your equipment.

B. It gives troubleshooting procedures, and specification information.

C. It gives ordering information for parts catalogs, service and technical manuals.

D. If your questions are not answered in the operator's manual, then go to Step 2.

### Step 2

#### Contact your dealer

A. Your John Deere dealer has the responsibility, authority, and ability to answer questions, resolve problems, and fulfill your parts and service needs.

B. First, discuss your questions or problems with your dealer's trained parts and service staff.

C. If the parts and service people are unable to resolve your problem, see the dealership manager or owner.

D. If your questions or problems are not resolved by the dealer, then go to Step 3.

### Step 3

#### Contact John Deere

A. Your John Deere dealer is the most efficient source in addressing any concern, but if you are not able to resolve your problem after checking your operator's manual and contacting your dealer, contact John Deere for assistance.

B. For prompt, effective service, please have the following ready before you call:

- The name of the dealer with whom you've been working.
- Your equipment model number.
- Number of hours on machine (if applicable).
- Your serial number which you recorded on the inside front cover of this manual.
- If the problem is with an attachment, your attachment identification number.

C. Then call 1-800-537-8233 (United States and Canada) and our advisor will work with your dealer to investigate your concern. If you are outside the United States and Canada, visit the following website:

<https://www.deere.com/en/global-country-selector/>

Select your country and then click on the Contact Us link at the bottom of the page.

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SP66632,00043A7-19-14JUN23

# Service Record

## Record Service Dates

| Oil Change | Oil Filter Change | Lubricate Machine | Air Cleaner Element<br>Check/Clean | Fuel Filter Change | Coolant Change |
|------------|-------------------|-------------------|------------------------------------|--------------------|----------------|
|            |                   |                   |                                    |                    |                |
|            |                   |                   |                                    |                    |                |
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TH84124,000022B-19-05SEP12

# Index

|                                              |                                                 |
|----------------------------------------------|-------------------------------------------------|
| <b>A</b>                                     | <b>E</b>                                        |
| Adjustment, Altitude ..... 64                | Electrical Troubleshooting ..... 99             |
| Air Cleaner Elements, Servicing ..... 70     | Electrolyte Level, Checking Battery ..... 85    |
| Alternator Belt, Adjusting ..... 76          | Emissions                                       |
| Attachment, Raising and Lowering ..... 55    | Required language                               |
| Axle Pivot Pin, Lubricating ..... 61         | EPA ..... 2                                     |
|                                              | Engine Cover, Opening ..... 35                  |
| <b>B</b>                                     | Engine oil                                      |
| Battery and Terminals, Cleaning ..... 86     | Checking                                        |
| Battery, Removing and Installing ..... 85    | 1550 ..... 65                                   |
| Battery, Service Safely ..... 85             | 1570, 1575, 1580, 1585 ..... 66                 |
| Battery, Using Booster ..... 86              | Filter, changing                                |
| Belt, Replacing Alternator ..... 77          | 1550 ..... 66                                   |
| Biodiesel fuel ..... 90                      | 1570, 1575, 1580, 1585 ..... 67                 |
| Brake Pedal Linkage, Lubricating ..... 63    | Engine Troubleshooting ..... 98                 |
| Brake, Testing Park ..... 30                 | Engine, Starting ..... 56                       |
| Brakes, Using ..... 53                       | Engine, Stopping ..... 56                       |
| Break-In Service Intervals ..... 59          | Exhaust Filter, Service                         |
|                                              | Filter, Service Exhaust ..... 77                |
| <b>C</b>                                     | <b>F</b>                                        |
| Cab air filter, cleaning ..... 93            | Filter Restriction Indicator, Checking ..... 70 |
| Cab controls ..... 33                        | Four Wheel Drive (1550, 1570 and 1575) ..... 36 |
| Cab, Checking ROPS Installation              | Four Wheel Drive (1580 and 1585) ..... 36       |
| ROPS Installation, Checking Cab ..... 94     | Fuel                                            |
| Cab, Entering and Exiting ..... 29           | Biodiesel ..... 90                              |
| Cab, Servicing Air Conditioner               | Diesel ..... 90                                 |
| Air Conditioner, Servicing Cab ..... 92      | Fuel filter                                     |
| Certification ..... 10                       | 1550, servicing ..... 75                        |
| Clean Out Areas ..... 24                     | Fuel filter                                     |
| Cleaning Oil Cooler and Radiator ..... 69    | 1570, 1575, 1580 and 1585, changing ..... 75    |
| Controllers                                  | Fuel safety ..... 22                            |
| Setup                                        | Fuel Shutoff Valve, Using ..... 54              |
| PDU                                          | Fuel Storage ..... 102                          |
| Pass codes ..... 39                          | Fuel system                                     |
| Coolant                                      | Priming ..... 76                                |
| Diesel Engine                                | Fuel Tank, Filling ..... 91                     |
| Light Duty ..... 72                          | Fuses                                           |
| Coolant Level, Checking ..... 73             | Checking and replacing                          |
| Cooling System, Service Safely ..... 73      | 1550 ..... 87                                   |
| Cooling System, Servicing ..... 74           | 1570, 1575, 1580, 1585 ..... 88                 |
| Creep Adjust ..... 80                        | Cab, 1575 and 1585 ..... 88                     |
| <b>D</b>                                     | <b>G</b>                                        |
| Diagnostic Trouble Codes (DTC) List ..... 99 | Grease ..... 61                                 |
| Diesel fuel ..... 90                         |                                                 |
| Diesel particulate filter (DPF) regeneration | <b>H</b>                                        |
| functionality ..... 50                       | Hose and Clamp Check, Air Intake ..... 71       |
| Display                                      | Hose Check, Radiator ..... 72                   |
| Using ..... 37                               | Hydrostatic Linkage, Lubricating ..... 62       |
| Display                                      |                                                 |
| Pop-up notifications ..... 44                | <b>K</b>                                        |
| Display, using                               | Key switch, using                               |
| 1550 ..... 36                                | 1550 ..... 32                                   |
| DPF Load Level ..... 50                      | 1570, 1575, 1580, 1585 ..... 33                 |
| Dust Unloading Valve, Cleaning ..... 71      |                                                 |

# Index

|                                   |    |
|-----------------------------------|----|
| <b>L</b>                          |    |
| Labels, safety with text .....    | 8  |
| Labels, safety without text ..... | 12 |

|                                              |    |
|----------------------------------------------|----|
| <b>M</b>                                     |    |
| Metal Surfaces, Repairing and Cleaning ..... | 93 |
| Moving Machine .....                         | 56 |

|                                  |    |
|----------------------------------|----|
| <b>O</b>                         |    |
| Oil Level, Transaxle .....       | 79 |
| Oil, Changing Transaxle .....    | 79 |
| Oil, Engine .....                | 64 |
| Operator controls                |    |
| 1570, 1580 .....                 | 25 |
| 1575 and 1585 (Cab Models) ..... | 26 |
| Operator Training Required ..... | 16 |

|                                                   |    |
|---------------------------------------------------|----|
| <b>P</b>                                          |    |
| PDU                                               |    |
| Setup                                             |    |
| Pass Codes .....                                  | 39 |
| Pedal, Using Traction Assist .....                | 54 |
| Pedals, Using Hydrostatic .....                   | 53 |
| Plastic and Painted Surfaces, Avoid Damage To ... | 29 |
| Plastic Surfaces, Cleaning .....                  | 94 |
| Preparation .....                                 | 16 |
| PTO Shaft, Lubricating .....                      | 62 |
| PTO switch, testing                               |    |
| 1570, 1575, 1580, 1585 .....                      | 30 |
| PTO switch, using                                 |    |
| 1570, 1575, 1580, 1585 .....                      | 32 |

|                                           |    |
|-------------------------------------------|----|
| <b>R</b>                                  |    |
| Rear Axle Oil .....                       | 81 |
| Rear Axle Oil Level .....                 | 81 |
| Rear Axle Oil, Changing .....             | 81 |
| Regeneration                              |    |
| Inhibiting Active .....                   | 49 |
| Replacement parts .....                   | 3  |
| Reverse and Forward Pedal Adjusting ..... | 80 |
| ROPS, Raising and Lowering .....          | 55 |

|                                                    |    |
|----------------------------------------------------|----|
| <b>S</b>                                           |    |
| Safety Labels, Warning - Avoid Crushing - TCU31702 |    |
|                                                    | 13 |
| Safety labels, with text .....                     | 8  |
| Safety labels, without text .....                  | 12 |
| Safety Systems, Testing .....                      | 29 |
| Safety, tire .....                                 | 22 |
| Screen, Cleaning Engine Cover .....                | 68 |
| Seat Platform, Raising and Lowering .....          | 65 |
| Seat Slides, Lubricating .....                     | 63 |
| Seat, Adjusting .....                              | 31 |
| Seat, Adjusting (Deluxe Suspension) .....          | 30 |

|                                               |     |
|-----------------------------------------------|-----|
| Service Information, Emissions .....          | 64  |
| Service latches, using .....                  | 91  |
| Service Timer                                 |     |
| Using .....                                   | 48  |
| Shutoff Valve, Fuel, Using .....              | 54  |
| Spark arrestor, using .....                   | 17  |
| Status menu, input/output .....               | 100 |
| Steering Column Tilt- Lock, Lubricating ..... | 63  |
| Steering column, adjusting .....              | 32  |
| Steering Cylinder, Lubricating .....          | 61  |
| Steering Spindle, Lubricating .....           | 62  |
| Storage, Preparing Machine for .....          | 102 |
| Storage, Removing Machine from .....          | 103 |
| Storing Safety .....                          | 102 |
| Switch, Testing Seat and Park Brake .....     | 30  |

|                                              |    |
|----------------------------------------------|----|
| <b>T</b>                                     |    |
| Throttle Lever, Using .....                  | 33 |
| Tie Rod Toe- In Adjustment .....             | 83 |
| Tie Rod, Lubricating .....                   | 61 |
| Tilt- Lock Adjustment, Steering Column ..... | 84 |
| Tow loads safely .....                       | 20 |
| Trailing the Machine .....                   | 57 |
| Transaxle Drive Shaft, Lubricating .....     | 62 |
| Transaxle Oil .....                          | 79 |
| Troubleshooting chart .....                  | 98 |
| Troubleshooting guide, common DTC's .....    | 99 |

|                                                             |     |
|-------------------------------------------------------------|-----|
| <b>W</b>                                                    |     |
| Warranty, product .....                                     | 107 |
| Water Separator, Draining (1570, 1575, 1580 and 1585) ..... | 75  |
| Wheel Removal and Installation, Front .....                 | 95  |
| Wheel Removal and Installation, Rear .....                  | 96  |

## Notes

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## Notes

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