Operator's Manual

Sc Series Sub-Compact Tractor

Sc2450

Cub Cadet Yanmar LLC.
P.O. Box 361052
Cleveland, OH 44136-1052

PRINTED IN U.S.A

Version 1.0
Code No.: CY-0A041-U00500

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.

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands, after handling.

INTRODUCTION

Welcome to the World of Cub Cadet Yanmar Tractor

Thank you for purchasing our tractor product that has been designed and manufactured based on our state-of-the-art technology and rich expertise in developing and manufacturing tractor products.

Handle your tractor correctly by following the instructions contained in this *Operator's Manual* so that it provides you long years of reliable and faithful service.

This manual constitutes an indispensable part of your Cub Cadet Yanmar tractor product. Always keep the manual readily accessible.
Carefully study this manual to get familiar with the instructions and information contained in it. These instructions and information are helpful in using your tractor correctly and safely, and avoiding personal injury and other accidents during operation and servicing of the tractor.
When using any implement together with your tractor, also carefully study its operation manual so that you can use it safely, correctly and efficiently.
This manual is organized with sections arranged in a particular order so that you can better understand the safety messages and the controls on your tractor to help you operate your tractor correctly and safely. This manual will also help you answer questions about operation and servicing. An index is available at the end of this manual to assist you in quickly finding necessary information.
The machine shown in this manual may somewhat differ from your actual machine. However, this manual will still assist you in understanding the instructions associated with your tractor.
Before delivery of your machine, your Cub Cadet Yanmar dealer has performed a pre-delivery check to ensure that your tractor can long remain problem-free.

All information, descriptions, specifications, drawings, illustrations, and pictures in this manual are based on the latest information available at the time this manual was published. Yanmar reserves the right to make changes at any time without prior notice.
© 2009 Yanmar Co., Ltd.
Yanmar licenses the usage rights of this manual in North America to CUTSCO (Compact Utility Tractor Supply LLC).
© 2009

PICTOGRAPHS

To help assist the operator in operating the tractor, various easy-to-understand pictographs have been developed and are used throughout this manual. They are listed below together with their meanings.

Safety alert symbol

<Instrument panel>

Turn signal

Fuel level

Revolutions per minute

Engine coolant warning light

Preheater pilot light

Engine oil pressure

Alternator/battery charging light

<Starter key switch>

Engine start

Engine run

Engine shut-off

Preheating

<Lights>

Turn signal

Headlight

<Lights>

Headlight beam

Headlight and work light

Hazard warning light

<Levers and knobs>

Slow

Fast

Hydro Static Transmission (HST) pressure locked position

Hydro Static Transmission (HST) pressure released position

Position for moving only the Mid-Power Take Off (PTO)

Position for moving the Mid- and Rear-Power Take Off (PTO) at the same time

Position for moving only the Rear-Power Take Off (PTO)

Position control raised position

Position control lowered position

Hydraulic flow control/stop

4-wheel drive on

2-wheel drive on

TABLE OF CONTENTS

1. SAFETY PRECAUTIONS 1-1

About This Manual 1-1

Safety Precautions for the Tractor 1-2

1. Safety-Alert Symbol 1-2
2. Precautions Before Operating Your Tractor 1-3
3. Safe Practices for Operating Your Tractor 1-4
4. Operate Your Tractor on Slopes 1-6
5. Travel on a Road 1-7
6. Safe Practices for Parking Your Tractor 1-7
7. Operate the Power Take Off (PTO) 1-8
8. Use the 3-Point Hitch (Option) 1-8
9. Safety Frame (Roll-Over Protective Structure) (ROPS) Precautions 1-8
10. Safe Practices for Servicing Your Tractor 1-9
11. Understand the Tractor Safety Decals 1-11

- Safety-Alert Symbol 1-11
- Care of DANGER, WARNING and CAUTION Decals 1-11

2. SERVICE THE PRODUCT 2-1

3. SPECIFICATIONS 3-1

Specifications of the Tractor 3-1

1. Specifications Table 3-1
2. Traveling Speeds (Reference) 3-2

4. IMPLEMENT CAPACITIES 4-1

5. NAMES AND FUNCTIONS OF COMPONENTS 5-1

Tractor Control Overview 5-1

1. Overview 5-1
2. Operator Station Controls 5-2

- Names of Components 5-2
- Function of Components 5-3

3. Instrument Panel, Switches and Hand Controls 5-11

6. PRE-OPERATION CHECK 6-1

Pre-Operation Check of Tractor 6-1

1. Pre-Operation Check 6-1
2. Precautions Before the Operation 6-1
3. Routine Check 6-1
4. Prevent Damage to the Plastic Surfaces and Painted Surfaces 6-1

7. OPERATE THE ENGINE 7-1

1. Start the Engine 7-2
   - ■ Opening/Closing the Fuel Shut-Off Valve 7-2
   - ■ Adjust the Operator's Seat 7-2
   - ■ Reverse the Operator's Seat 7-2
   - ■ Fasten the Retractable Seat Belt 7-4
   - ■ Engage the Parking Brake 7-5
   - ■ Check the Lights on the Instrument Panel 7-8
   - ■ Warm Up the Engine in Cold Weather 7-9
2. Shut Down the Engine 7-10
3. Restart a Stalled Engine 7-11

8. OPERATION 8-1

Operate the Tractor 8-1

1. Operate a New Tractor 8-2
2. Raise and Lower the Roll-Over Protective Structure (ROPS) 8-3
   - ■ Lower (Fold Down) the Roll-Over Protective Structure (ROPS) 8-3
   - ■ Raise (Unfold) the Roll-Over Protective Structure (ROPS) 8-4
3. Operate the Tractor 8-5
   - ■ Function of Implement Lock Lever 8-7
   - ■ Engage the Cruise Control 8-9
   - ■ Disengage the Cruise Control 8-9
4. Stop the Tractor 8-10
   - ■ Stop in an Emergency 8-10
5. Verify During Driving 8-11
   - ■ Fuel Gauge 8-12
   - ■ Engine Coolant Warning Light 8-12
   - ■ Hour Meter 8-13
6. Park the Tractor 8-14
   - ■ Apply the Parking Brake 8-14
   - ■ Release the Parking Brake 8-14
7. Safe Practices for Operation 8-15
   - ■ Engage the Differential Lock 8-15
   - ■ Disengage the Differential Lock 8-15
   - ■ Hydro Static Transmission (HST) Pressure Release Lever 8-20
   - ■ Uphill/Downhill 8-23
   - ■ Steep Downhill 8-23
8. Accessory 8-24
   - ■ 12V DC Outlet 8-24

9. POWER TAKE OFF (PTO) 9-1

1. Operate the Power Take Off (PTO) 9-1
   - ■ Rear- Power Take Off (PTO) 9-2
   - ■ Mid- Power Take Off (PTO) 9-2
   - ■ Engage the Power Take Off (PTO) 9-2
   - ■ Disengage the Power Take Off (PTO) 9-4
2. Install an Implement to the Power Take Off (PTO) Drivelines 9-5
3. Operate the Power Take Off (PTO) while the Tractor is Traveling in the Reverse Direction (Reverse Override Function) 9-5

10.3-POINT HITCH (Option) 10-1

1. 3-Point Hitch 10-1
   - ■ Right Lift Link 10-2
   - ■ Top Link 10-2
   - ■ Sway Link 10-2
   - ■ Hitch 10-2

11.HYDRAULIC SYSTEM 11-1

1. 3-Point Hitch Control System 11-1
   - ■ Operate the 3-Point Hitch Control/Cutting Height Adjustment Lever to Raise or Lower the 3-Point Hitch 11-1
   - ■ Hydraulic Flow Control/Stop Knob 11-2

12.TIRES, WHEELS AND BALLAST 12-1

1. Tires 12-1
   - ■ Tire Inflation Pressure 12-2
   - ■ Wheel Bolt Tightening Torque 12-2
2. Ballast 12-3
   - ■ Front Ballast 12-3
   - ■ Rear Ballast 12-4

13.MAINTENANCE 13-1

1. Maintenance Check List 13-1
   - ■ Tractor 13-1
2. Lubricants 13-3
3. Replacement Parts 13-3

14.PERIODIC SERVICE 14-1

- ◤ Warranty and Repair of the Engine 14-1

Periodic Service of the Tractor 14-2

1. Open/Close the Hood 14-2
   - ■ Open the Hood 14-2
   - ■ Close the Hood 14-3
2. Daily Checks 14-4
   - ■ Visual Checks 14-4
   - ■ Refill the Fuel Tank 14-4
   - ■ Check the Engine Oil Level 14-8
   - ■ Check the Transmission/Hydraulic Oil Level 14-9
   - ■ Check the Radiator Hoses and Clamps 14-10
   - ■ Clean the Radiator Cooling Fins and Screen 14-10
   - ■ Clean the Rear Grille Screen 14-11
   - ■ Check the Cooling System 14-12
   - ■ Check the Fuel Line 14-13
   - ■ Check the Intake Air Hoses and Clamps 14-13
   - ■ Check the Safety Interlock System 14-14
   - ■ Check and Adjust the Brake 14-16
   - ■ Check the Seat Belt and Roll-Over Protective Structure (ROPS) 14-16
   - ■ Check the Wheel Bolt Tightening Torque 14-17
   - ■ Check the Inflation Pressure 14-17
   - ■ Check the Light Bulbs 14-18
   - ■ Check the Tie-rod Rubber Boots 14-18
   - ■ Check and Clean the Electrical System 14-18
   - ■ Adjust Front Axle Pivot 14-19

- Check the Hydraulic Hoses 14-20

3. First 50 Hours 14-22
   - Change the Engine Oil 14-22
   - Replace the Engine Oil Filter 14-22
   - Change the Transmission/Hydraulic Oil 14-22
   - Replace the Transmission/Hydraulic Oil Filter 14-22
4. Every 50 Hours 14-22
   - Check the Front Axle Oil Level 14-22
   - Checking the Fuel/Water Separator 14-23
   - Adjust the Fan Belt 14-24
   - Grease and Lubricate 14-25
5. Every 100 Hours 14-27
   - Engine Oil 14-27
   - Change the Engine Oil 14-27
   - Clean the Fuel/Water Separator 14-28
   - Service the Air Cleaner Element 14-29
6. Every 200 Hours 14-31
   - Replace the Engine Oil Filter 14-31
   - Adjust the Toe-in 14-32
7. Every 300 Hours 14-33
   - Transmission/Hydraulic Oil 14-33
   - Change the Transmission/Hydraulic Oil and Replace the Transmission/Hydraulic Oil Filter 14-33
8. Every 500 Hours 14-35
   - Front Axle Case Oil 14-35
   - Change the Front Axle Case Oil 14-35
   - Replace the Fuel Filter Element (in the Fuel/Water Separator) 14-36
   - Replace the Fuel Filter 14-36
9. Every 1000 Hours 14-37
   - Coolant 14-37
   - Flush the Cooling System 14-38
   - Change the Coolant 14-40
10. Every 1 Year 14-41
   - Replace the Air Cleaner Element 14-41
   - Flush the Cooling System 14-41
   - Change the Coolant 14-41
11. Every 2 Years 14-41
   - Replace the Radiator Hoses and Clamp 14-41
   - Replace the Fuel Line 14-41
   - Replace the Intake Air Hose 14-41
   - Replace the Hydraulic Hoses 14-41
   - Replace Power Steering Hose 14-41

15.SERVICE THE ELECTRICAL SYSTEM 15-1

1. Battery 15-1
   - ■ Special Note for the Battery 15-1
   - ■ Service the Battery Safely 15-2
   - ■ Inspect the Battery 15-3
   - ■ Remove and Install the Battery 15-3
   - ■ Clean the Battery and Terminals 15-4
   - ■ Use a Booster Battery 15-5
2. Fuses 15-6
   - ■ Replace the Accessory Fuses 15-6
   - ■ Check the Alternator Fuse and the Main Fuse 15-6
3. Bulb 15-7
   - ■ Replace the Headlight Bulb 15-7
   - ■ Replace the Work Light Bulb 15-8
   - ■ Replace the Tail Light Bulb 15-9
   - ■ Replace the Turn Signal/Hazard Lights Bulb 15-9
   - ■ Replace the Instrument Panel Light Bulb 15-10
4. Headlights 15-10
   - ■ Adjust the Headlights 15-10

16.STORE THE TRACTOR 16-1

1. Safe Practices for Storage 16-1
   - ■ Fuel 16-2
   - ■ Engine 16-2
2. Prepare the Stored Tractor for Operation 16-3

17.TROUBLESHOOTING 17-1

1. Guide in Using the Troubleshooting Table 17-1

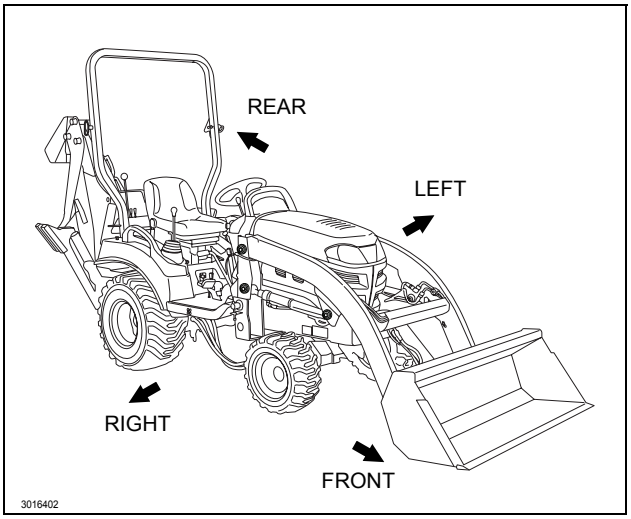
18.OPTIONS 18-1

19.INDEX 19-1

1. SAFETY PRECAUTIONS

About This Manual

This *Operator's Manual* presents you messages that help you remain aware of potential hazards and possible machine damage in operating and servicing your machine. Carefully study all the information in it so that you can avoid personal injury and damaged properties.



NOTE

- Unless otherwise stated, the expressions–right-hand side, left-hand side, front side, and rear side, used throughout this manual see the sides relative to the direction of forward movement with the tractor.
- **All pictures in this manual show the tractor with the front loader and backhoe installed. Refer to the front loader and backhoe Operator's Manuals for the safe operating instructions and all other information relating to these attachments.**

⚠ WARNING

Avoid injury:

- **Always remove the backhoe before installing the mid-mount mower.**
- **The tractor can be used when the front loader and either the mid-mount mower or the backhoe is installed.**
- **Never install the mid-mount mower and the backhoe at the same time.**

Safety Precautions for the Tractor

1. Safety-Alert Symbol

The safety-alert symbols appear with most safety statements. It means attention, become alert, your safety is involved!
Please read and strictly observe the message that follows the safety-alert symbols.

⚠ DANGER

Indicates a hazardous situation which, if not avoided, *will* result in death or serious injury.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, *could* result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the machine, personal property and/or the environment or cause the equipment to operate improperly.

IMPORTANT: Means that implement or property damage could occur if instructions are ignored.

NOTE: Provides useful information.

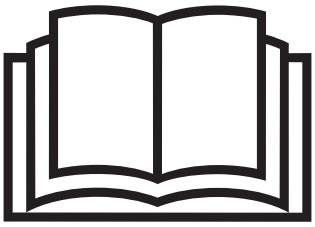
WARNING: READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR TRACTOR. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.

WARNING: The engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

DANGER: Your tractor was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. To help prevent accidents, read and take the following precautions before operating this tractor. Failure to observe the following safety instructions could result in serious injury or death.

2. Precautions Before Operating Your Tractor

1. Understand the performance and limitations of your tractor. Carefully study this *Operator's Manual* and learn the instructions in it before operating or servicing your tractor. Keep the *Operator's Manual* in an easily accessible place.



2. Strictly follow the statements given in the DANGER, CAUTION and WARNING safety decals attached to the tractor.
3. For operator safety, always install the Roll-Over Protective Structure (ROPS).
   Keep the seat belt fastened while operating the tractor with the Roll-Over Protective Structure (ROPS). This practice will reduce the possibility of injury or death in the event of roll-over accident.
   If the Roll-Over Protective Structure (ROPS) has been removed for any reason, be sure to reinstall all the associated parts before operating the tractor.
   Do not alter the Roll-Over Protective Structure (ROPS). The altered Roll-Over Protective Structure (ROPS) may fail to provide the designed protection.
   Replace the damaged Roll-Over Protective Structure (ROPS) immediately. Contact your local Cub Cadet Yanmar dealer for technical assistance.
   NEVER alter or repair the Roll-Over Protective Structure (ROPS). Welding, bending, drilling, grinding, or cutting may weaken the Roll-Over Protective Structure (ROPS). Contact your local Cub Cadet Yanmar dealer for technical assistance.
4. Always fasten the seat belt while operating the tractor with the Roll-Over Protective Structure (ROPS).
   Check the seat belt for any damage. Replace the damaged seat belt immediately. Contact your local Cub Cadet Yanmar dealer for technical assistance.
   Do not use the seat belt if the tractor does not have the Roll-Over Protective Structure (ROPS).
5. Check overhead clearance carefully before driving under power lines, wires, bridges or low hanging tree branches, before entering or leaving building, or in any other situation where the operator and/or Roll-Over Protective Structure (ROPS) may be struck, which could result in serious injury.
6. Make sure that any person who will operate the tractor studies this *Operator's Manual* before operation. Know the controls and how to stop the machine quickly.
7. Make sure that any person or obstacle is not under or around the tractor before and during operation. Be sure to maintain sufficient overhead clearance above the tractor.
8. Do not operate your tractor and/or implement installed to it while you are under the influence of alcohol, drug, medicine or controlled substance(s) or when you are not fit for operation of your tractor.
9. For operation, wear close-fitting clothing. When operating the tractor or working around the tractor, do not wear loose-fitting clothes or jewelry, or baggy or damaged clothing. When caught by a moving part of the tractor, an accident can result. Cut-off pants or shorts do not provide protection against flying debris. Never operate the tractor in bare feet, sandals, or sneakers. Wear additional protections including non-slip safety boots or shoes, and safety goggles and gloves, etc. as appropriate or required by currently applicable local laws and regulations. Wear ear protection in a noisy environment to prevent hearing damage and reduce operator fatigue.
10. NEVER allow a passenger on any portion of the tractor.
11. Remain seated in the operator's station when operating the tractor.
12. Make sure that the brakes, other mechanical components are free from misadjustment and excessive wear. Replace any excessively worn or damaged component immediately. At regular intervals, check that all the nuts, bolts and screws are appropriately tightened. (For details, see "Chapter 13. MAINTENANCE")

13. Always keep your tractor clean. Dust, grease or grass clippings accumulated on your tractor can lead to fire accidents or personal injury.

14. Use the handholds and running board steps when getting on and off the tractor to help prevent accidental falls. Keep the running boards clear of mud and debris.
15. Only use the implements that satisfy the requirements in this manual or are approved by your Cub Cadet Yanmar dealer. (See “4. IMPLEMENT CAPACITIES”)
16. When using only front or rear mounted implements, install an appropriate weight(s) or counter balance to the front or rear of your tractor to prevent upsetting of the tractor. If you choose to use the front loader, mount an implement or ballast to the 3-point hitch in order to get the tractor to stabilize. Observe the instructions about safety in the manual for the implement to be used.
17. Do not attempt to modify your tractor. Modification can deteriorate the performance and/or safety of your tractor, possibly leading to personal injury or property damage.

3. Safe Practices for Operating Your Tractor

1. Starting Your Tractor

1. Remain seated in the operator’s station when starting the engine, or actuating the levers or controls. Do not start the engine or operate controls while standing beside the tractor.
2. Before starting the engine, make sure that the forward and reverse drive pedal are in the neutral positions, the parking brake is engaged, and the Power Take Off (PTO) is disengaged.
3. Always keep the seat belt fastened around your waist whenever the tractor has the Roll-Over Protective Structure (ROPS).
4. Start the engine of your tractor only by using the starter key switch. Do not attempt to start the engine by short-circuiting across the starter solenoid terminals with a jumper wire, or by bypassing the safety start switch. This defeats the safety interlock circuit and the tractor may begin to move and/or the Power Take Off (PTO) shafts may begin to rotate, possibly leading to personal injury or property damage.
5. Do not run or idle the engine in a confined area that is poorly ventilated or not ventilated at all. The engine emits carbon monoxide gas that is colorless, odorless and can cause death.

6. Before operation, check that all the safety features are functioning correctly. Never tamper with safety devices. Check their proper operation regularly. Contact your Cub Cadet Yanmar dealer if safety devices malfunction.
7. Avoid accidental contact with control pedals while the engine is running, as this can cause unexpected movement of the tractor.
8. Never leave a running machine unattended.
9. Do not attach or use towed equipment by a drawbar or a drawing device/attachment. Usage of the drawbar or drawing device/attachment is/are not allowed in this tractor.

2. Working with Your Tractor

1. Make sure that all the covers and guards are in correct position. Replace any missing or damaged cover immediately.
2. Before turning or when traveling on a rough terrain, or before stopping, decrease the tractor speed in order to prevent upsetting.
3. Use extra caution when operating over rough ground, when crossing ditches or slopes, and when turning corners.
4. Do not attempt to turn with the differential lock engaged. Attempting to turn the tractor while the differential lock is engaged can lead to a roll-over.
5. Stay clear of ditches, holes, embankments or ponds. A hazard of tractor upset can occur more easily if the ground is soft or wet. Before entering an area covered with tall grass, walk the area to detect any obstacles.
6. Always watch where you are going, especially at blind corners, trees, or other objects that can obscure your vision. Remain alert when you are approaching the end of a row, trees or any obstacle.
7. When two or more people are working in one area, always keep in good communication with each other.
8. Do not get on or off a moving tractor.
9. Make certain all tractor lights are illuminated when operating at night.

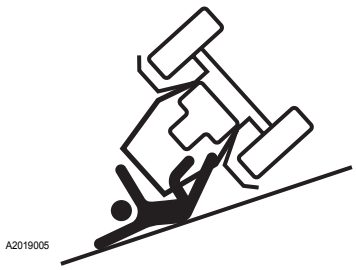
3. Considerations for Safety of Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine. They do not understand the dangers. Never assume they will remain where you last saw them.

1. Keep children out of the operating area and in the watchful care of an adult other than the operator.
2. Be alert if a child enters the work area, stop your tractor immediately.
3. Never allow a child to ride on the tractor. They may fall off and be seriously injured or interfere with safe machine operation.
4. Never allow children under 16 years old to operate the machine. Children 16 years and over should only operate machine under close parental supervision and proper instruction.
5. Be extremely careful when backing the tractor. Before and during backing, look back and downward. A child may be in your path.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure your vision of a child or other hazard.
7. Never allow a child to play on the tractor or implement.
8. Keep children away from hot or running engines. They may suffer burns.
9. Park your tractor on a solid, flat and level place. Engage the parking brake securely, remove the key from the starter key switch to prevent unauthorized operation. If parking on a slope is unavoidable, park the tractor across the slope and chock the wheels.

4. Operate Your Tractor on Slopes

On a slope, the tractor is less stable and more prone to tip-over, possibly leading to serious injury or death. Remain very cautious when your tractor is on any slope.



DO:

- Operate up and down slopes, not across.
- Remove obstacles such as rocks, limbs, etc.
- Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. Tall grass can hide such obstacles.
- Place the transmission in the slow range when climbing or descending slopes.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction. Rapid engagement or braking could cause the front of the machine to lift and rapidly flip over backwards which could cause serious injury.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the Power Take Off (PTO) and proceed slowly straight down the slope.
- To avoid upset, move backward up a steep slope. If backing on the slope is not comfortable, do not attempt to continue. Avoid an extremely steep slope.
- When moving forward to escape from a ditch, or deep mud, or when traveling on a steep slope, the risk of the tractor upsetting backward is high. Always move backward to escape these situations. In the four-wheel drive mode, special caution is needed to avoid false confidence in the tractor's ability to climb slopes.

DO NOT:

- Do not mow near drop-offs, ditches or embankments. The mower could suddenly turn over if a wheel goes over the edge of a cliff or ditch, or if an edge caves in.

⚠ WARNING

- **Before approaching a slope, select an appropriate speed setting. Be sure to run the tractor at a lower speed on slopes.**
- **Suddenly starting the tractor on an uphill can cause the front wheels to jump off the ground, and this situation poses an extreme danger. To avoid this problem, run the engine at a lower speed, and gently start the tractor.**
- **Do not park the tractor on a slope. If parking on a slope is unavoidable, chock the tires, and engage the parking brake securely.**

5. Travel on a Road

1. Disengagement of the 4-wheel drive is recommended.
2. Remember that the braking characteristics differ between the two and four wheel drive modes. Be aware of the current drive mode and use carefully.
3. Before turning, always slow down the tractor. High-speed turn may cause the tractor to tip over.
4. When traveling on a road, be sure that the Slow Moving Vehicle (SMV) emblem is on the tractor and is clearly visible. Use the hazard lights and turn lights as required by the currently effective local laws or regulations.
5. Strictly observe all the currently effective local traffic and safety laws and regulations.
6. Turn ON the headlights as required by the currently effective local laws or regulations.
7. Always travel at a speed that allows you to maintain control of the tractor.
8. Avoid engaging differential lock while traveling on a road. It may cause the operator to lose control of the tractor.
9. While traveling on a road, do not suddenly turn the steering wheel. Such an action can lead to loss in the stability of the tractor, and can cause an extremely dangerous situation.
10. While on a road, do not attempt to operate an implement. During transportation, put the 3-point hitch control/cutting height adjustment lever in its raised position and lock it with the position stop knob. Do not fully close the hydraulic flow control/ stop knob.

6. Safe Practices for Parking Your Tractor

1. Disengage the Power Take Off (PTO), lower the implement to the ground, set the forward and reverse drive pedal in the neutral positions, engage the parking brake securely, stop the engine and remove the key from the starter key switch.
2. Before leaving your tractor, be sure the tractor is completely stopped.
3. Do not park on a steep slope. Rather, park on solid, flat, level ground whenever possible. If parking on a slope is unavoidable, park the tractor across the slope, and lower the implement to the ground and chock the wheels.
4. Allow the tractor to cool at least 5 minutes before being stored.

7. Operate the Power Take Off (PTO)

1. Before getting off the tractor, connecting/ disconnecting an implement, adjusting, cleaning or servicing a Power Take Off (PTO)-driven implement, make sure that all the moving components are at a standstill.
2. Ensure that the Power Take Off (PTO) shaft cover is always in place. Replace the Power Take Off (PTO) shaft cap only when the shaft is at a standstill.

3. Before installing or operating Power Take Off (PTO)-driven implement, carefully study the manufacturer's *Operator's Manual* and the safety decals on the implement.
4. When installing the Power Take Off (PTO)- driven implements, engage the parking brake securely and chock the four wheels. Do not approach or access any rotating component.

8. Use the 3-Point Hitch (Option)

1. Use the 3-point hitch only in conjunction with the implement that is specifically designed for use with the 3-point hitch.
2. Before using a 3-point hitch mounted implement, the appropriate counterbalance may need to be installed on the front of the tractor.

9. Safety Frame (Roll-Over Protective Structure) (ROPS) Precautions

Your tractor is equipped with a Roll-Over Protective Structure (ROPS) which must be maintained in a fully functional condition. Check overhead clearance carefully before driving under power lines, wires, bridges or low hanging branches, before entering or leaving buildings, or in any other situation where the operator and/or Roll-Over Protective Structure (ROPS) may be stuck, which could result in serious injury.

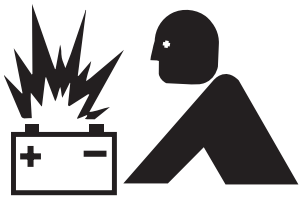
1. Never modify the Roll-Over Protective Structure (ROPS) in any way.
2. Never attempt to straighten or reweld any part of the main frame or retaining brackets that have been damaged. Doing so may weaken the structure and endanger your safety.
3. Never secure any parts on the main frame or attach the safety frame with anything other than the special fasteners specified.
4. Never attach ropes, chains, or cables to the Roll-Over Protective Structure (ROPS) for pulling purposes.
5. Although the Roll-Over Protective Structure (ROPS) provides the operator the maximum protection possible, never take unnecessary risks.

10. Safe Practices for Servicing Your Tractor

Before starting any servicing work, park your tractor on solid, level ground, engage the parking brake securely, disengage the Power Take Off (PTO), lower the implement to the ground, set the forward and reverse drive pedal to the neutral position, stop the engine and remove the key from the starter key switch.

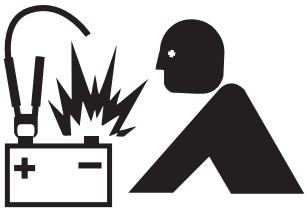
1. Always keep a first-aid kit and a fire extinguisher readily available.
2. Before accessing the engine, muffler, radiator or other possibly hot components, wait until the tractor has fully cooled off.

3. Use extreme care in handling diesel fuels. They are extremely flammable and the vapors are explosive. Use only an approved container.
4. Be sure to stop the engine before refueling. After refueling, replace fuel cap securely and wipe off any spilled fuel before starting the engine as it may cause a fire or explosion.
5. Do not smoke while refueling. Keep any spark or open flame away from the fuel tank.
6. Never refuel the machine indoors because fuel vapors will accumulate in the area.
7. Never store the fuel container or machine inside where there is an open flame or spark, such as a gas hot water heater, space heater or furnace.
8. Do not smoke while working around the battery. Keep any spark or open flame away from the battery. The battery emits hydrogen and oxygen gas, in particular, during recharging and can pose a hazard of explosion.



9. Prior to “jump starting” a tractor that has a fully depleted battery, read and follow all the instructions in “Chapter 15. SERVICE THE ELECTRICAL SYSTEM”.
10. Carefully loosen the radiator cap to the first stop, and allow excessive pressure to escape, and only then remove the radiator cap. If the tractor is equipped with a coolant reserve tank, add coolant or water to the reserve tank, not to the radiator (See “Check the Cooling System” on page 14-12 in “Chapter 14. PERIODIC SERVICE”).

11. Before working on or around electric components, first disconnect the battery ground cable.
12. To prevent a spark occurring from short-circuit, disconnect the battery grounding (–) terminal first and reconnect last.



13. The operator must not mount a tire onto a rim. Only qualified personnel should do this task.
14. Always keep the tires at a correct pressure level. Do not exceed the recommended tire pressure specified in the *Operator’s Manual*.

15. Keep the tractor securely supported while changing the wheels. Be sure to tighten the wheel bolts at the specified tightening torque.

16. Avoid working under any hydraulically supported devices. Such devices can settle, suddenly leak down, or be accidentally lowered. If working beneath the tractor, or an implement, is unavoidable, be sure to support the tractor or implement with appropriate stands or lift apparatus.
17. High pressure hydraulic fluid, when released, can penetrate human skin, possibly leading to serious personal injury. Before disconnecting any hydraulic line, fully release the internal pressure. Before exerting a pressure to the hydraulic system, make sure that all connections are tight and all the lines, pipes and hoses are free from fissure/crack or any other damage.

18. Check brake operation frequently. Adjust and service as required.
19. Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
20. Observe proper disposal laws and regulations. Prior to disposal, determine the proper method to dispose of waste from your local Environmental Protection Agency. Recycling centers are established to properly dispose of materials in an environmentally safe fashion.
21. Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Properly dispose of the containers immediately following the draining of fluids.
22. DO NOT pour oil or other fluids into the ground, down a drain or into a stream, pond, lake or other body of water. Observe Environmental Protection Agency regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, tires and other harmful waste.
23. We do not recommend the use of a pressure washer or garden hose to clean your unit. They may cause damage to electrical components; spindles; pulleys; bearings; or the engine. The use of water will result in shortened life and reduce serviceability.

WARNING: YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

11. Understand the Tractor Safety Decals

■ Safety-Alert Symbol

The tractor safety decals illustrated in this section are provided in critical areas on the tractor so that people including the operator can remain always aware of potential hazards.
The tractor safety decals contain the words DANGER, WARNING and CAUTION together with the safety-alert symbols. DANGER and WARNING stand for the most serious hazards.
The *Operator's Manual* also contains special safety messages that explain potential hazards about which the operator must remain cautious. These messages are presented together with the word CAUTION and the safety-alert symbols.

■ Care of DANGER, WARNING and CAUTION Decals

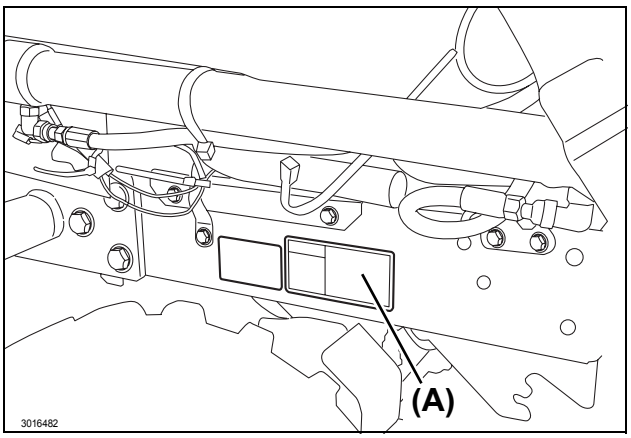
1. Always keep all the danger, warning and caution decals clean and clearly legible.
2. Clean the danger, warning and caution decals with soap water, and wipe dry with clean soft cloth.
3. Replace damaged or missing danger, warning and caution decals with new decals available from your local Cub Cadet Yanmar dealer.
4. If a component having a danger, warning or caution decals is replaced with a new one, make sure that a new decal is on the same location as on the old component.
5. Affix a new danger, warning or caution decals flat on a clean, dry surface, squeezing out trapped air.

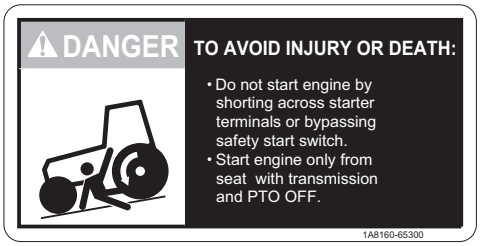
(A) CY-1A8160-65300

⚠ DANGER

TO AVOID INJURY OR DEATH:

- Do not start engine by shorting across starter terminals or bypassing safety start switch.
- Start engine only from seat with transmission and PTO OFF.

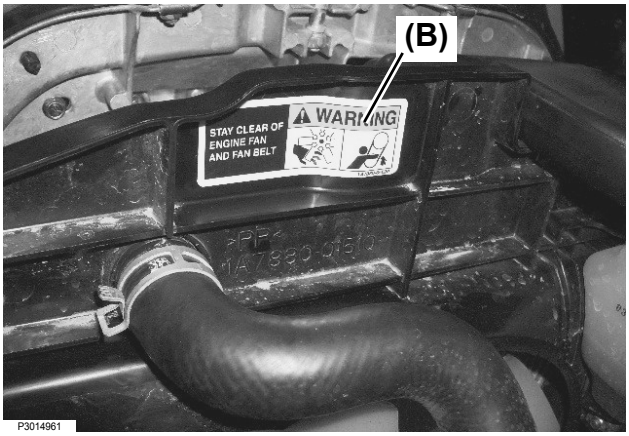




(B) CY-1A7880-65610

⚠ WARNING

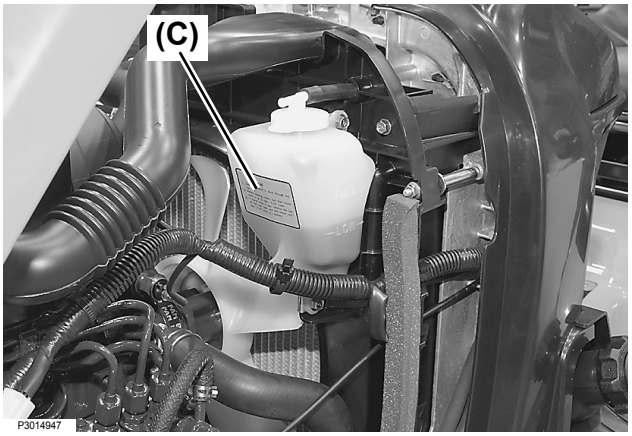
STAY CLEAR OF ENGINE FAN AND FAN BELT



(C) CY-124764-44810

⚠ CAUTION

1. Adding of water is done through the sub-tank.
2. Before starting, make sure that water level is up to the “Full” mark.
3. If water level is low, remove the cap of the sub-tank and add water until the “Full” mark is reached.



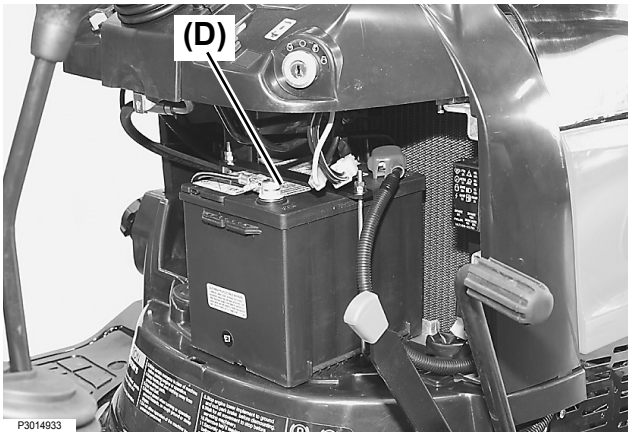
P3014947

CAUTION
1. Adding of water is done through the sub-tank.
2. Before starting,make sure that water level is up to the "Full" mark.
3. If water level is low,remove the cap of the sub-tank and add water until the "Full" mark is reached.

(D) CY-1A8160-51520

⚠ DANGER/POISON (E)

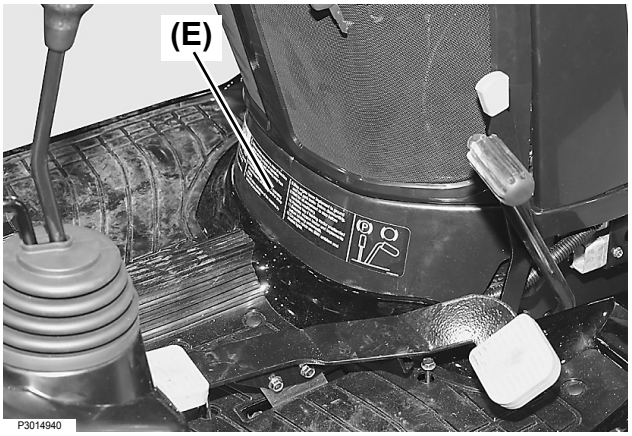
- SHIELD EYES: EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.
- NO SPARKS, FLAMES, SMOKING.
- SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.
- FLUSH EYES IMMEDIATELY WITH WATER. SEEK MEDICAL HELP RIGHT AWAY.
- KEEP OUT OF REACH OF CHILDREN. DO NOT TIP.
- KEEP VENT CAPS TIGHT AND LEVEL.



P3014933

P3013722a

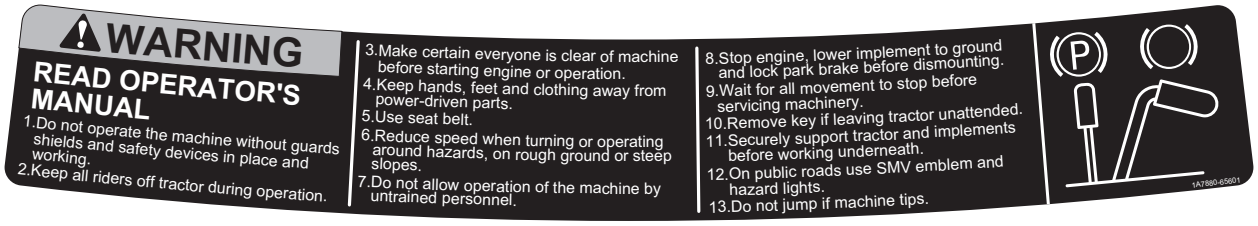
(E) CY-1A7880-65601



⚠ WARNING

READ OPERATOR'S MANUAL

1. Do not operate the machine without guard shields and safety devices in place and working.
2. Keep all riders off tractor during operation.
3. Make certain everyone is clear of machine before starting engine or operation.
4. Keep hands, feet and clothing away from power-driven parts.
5. Use seat belt.
6. Reduce speed when turning or operating around hazards, on rough ground or steep slopes.
7. Do not allow operation of the machine by untrained personnel.
8. Stop engine, lower implement to ground and lock park brake before dismounting.
9. Wait for all movement to stop before servicing machinery.
10. Remove key if leaving tractor unattended.
11. Securely support tractor and implements before working underneath.
12. On public roads use SMV emblem and hazard lights.
13. Do not jump if machine tips.

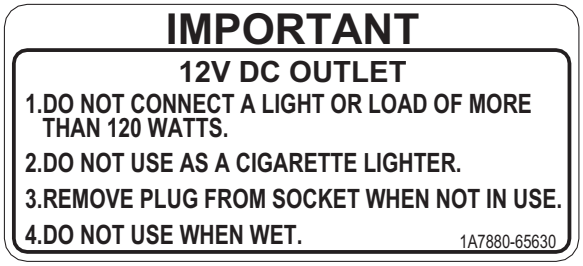


(F) CY-1A7880-65630

IMPORTANT

12V DC OUTLET

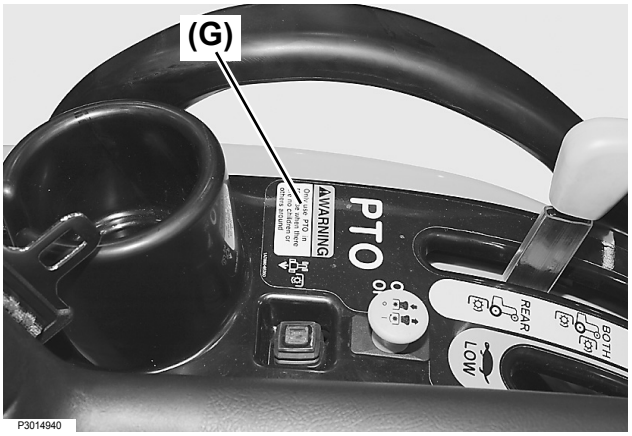
1. DO NOT CONNECT A LIGHT OR LOAD OF MORE THAN 120 WATTS.
2. DO NOT USE AS A CIGARETTE LIGHTER.
3. REMOVE PLUG FROM SOCKET WHEN NOT IN USE.
4. DO NOT USE WHEN WET.



(G) CY-1A7880-65351

⚠ WARNING

Only use PTO in reverse when there are no children or others around

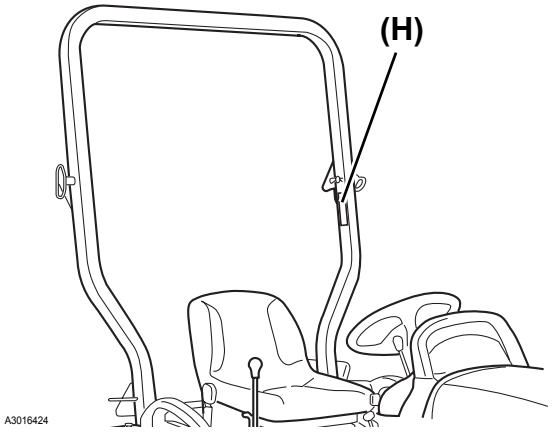


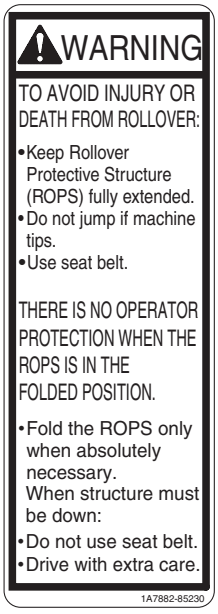
(H) CY-1A7882-85230

⚠ WARNING

TO AVOID INJURY OR DEATH FROM ROLLOVER:
- Keep Rollover Protective Structure (ROPS) fully extended.
- Do not jump if machine tips.
- Use seat belt.

THERE IS NO OPERATOR PROTECTION WHEN THE ROPS IS IN THE FOLDED POSITION.
- Fold the ROPS only when absolutely necessary.
- When structure must be down:
  - Do not use seat belt.
  - Drive with extra care.



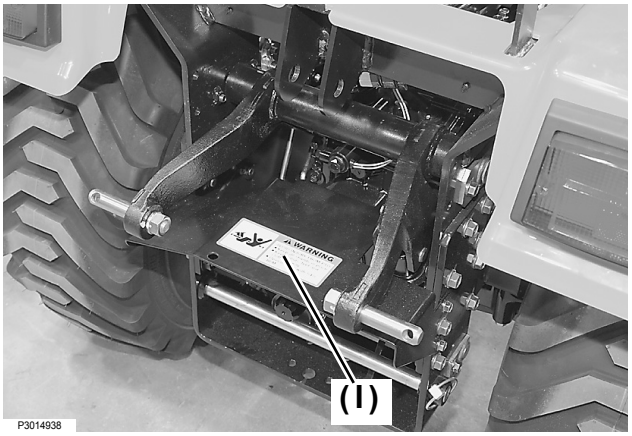


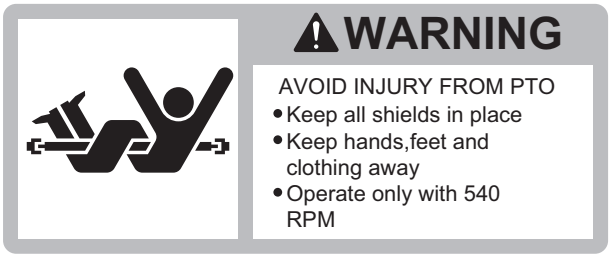
(I) CY-198220-65621

⚠ WARNING

AVOID INJURY FROM PTO

- Keep all shields in place
- Keep hands, feet and clothing away
- Operate only with 540 RPM





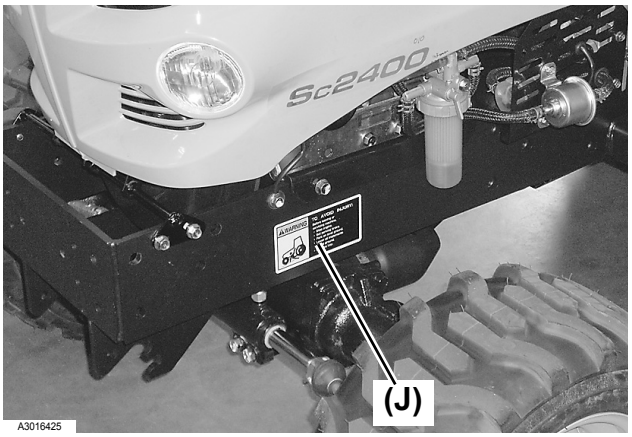
(J) CY-1A8160-65310

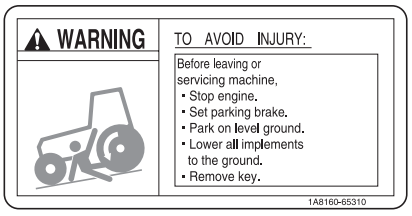
⚠ WARNING

TO AVOID INJURY:

Before leaving or servicing machine,

- Stop engine.
- Set parking brake.
- Park on level ground.
- Lower all implements to the ground.
- Remove key.



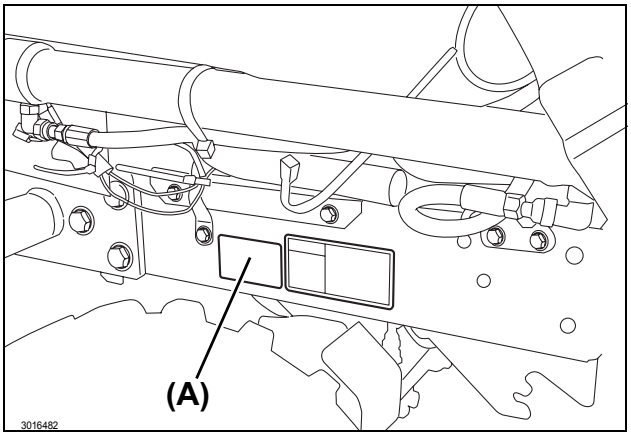


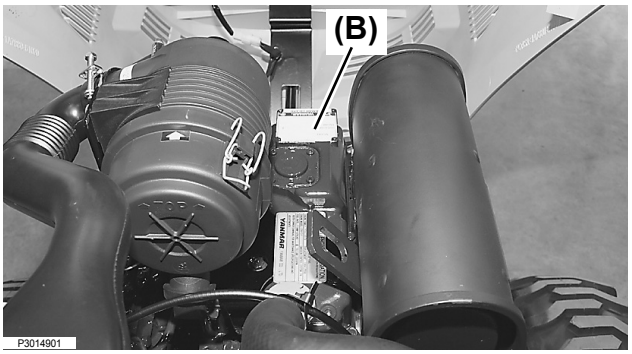
2. SERVICE THE PRODUCT

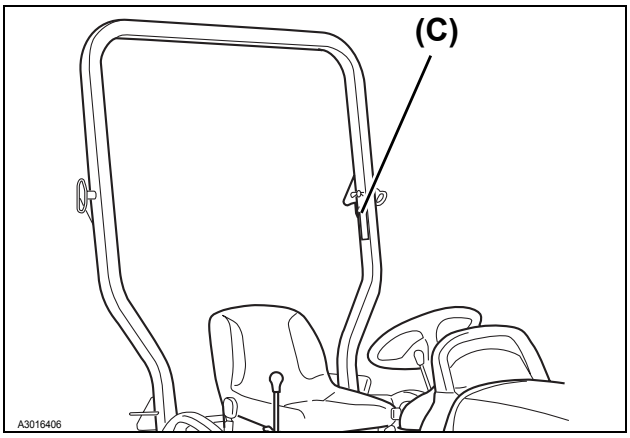
Your Cub Cadet Yanmar dealer is committed to delivering the best possible service to our customers, including the enabling of optimal performance of the tractor.
After carefully reading this manual, the tractor owner can be expected to perform certain service operations.
However, when parts and components and major jobs are required, contact your local Cub Cadet Yanmar dealer.
Specify the serial numbers of the tractor and that of the Roll-Over Protective Structure (ROPS). Find the serial numbers and enter them into the following table.

	Type	Serial No.
Tractor		
Engine		
Roll-Over Protective Structure (ROPS)		
Date of Purchase		
Name of Dealer		

(A) Tractor identification plate with tractor serial number
(B) Engine serial number
(C) Roll-Over Protective Structure (ROPS) serial number







3. SPECIFICATIONS

Specifications of the Tractor

1. Specifications Table

Model				Sc2450
Power Take Off (PTO) Power			hp (kW)	16.5 (12.3)
Engine	Maker			YANMAR
	Model			3TNV72
	Type			Indirect Injection, Vertical, Water-Cooled, 4 Cycle Diesel
	Number of Cylinders			3
	Bore and Stroke		in. (mm)	2.834 × 2.913 (72 × 74)
	Total Displacement		cu. in. (L)	55.1 (0.903)
	Gross Power		hp (kW)	24.0 (17.9)
	Net Power		hp (kW)	20.4 (15.0)
	Rated Revolution		min^{-1}(rpm)	3300
	High Idle Speed		min^{-1}(rpm)	3470
	Low Idle Speed		min^{-1}(rpm)	1150
	Maximum Torque		ft•lbs (N•m)	38.3 (52.3)
	Battery			12V BP24 , CCA: 540 A
	Fuel			Diesel Fuel No.1-D , No.2-D
Capacities	Fuel Tank		US gal (L)	Approximately 5.8 (22)
	Engine Oil		US qt (L)	Approximately 2.5 (2.4)
	Engine Coolant		US qt (L)	Approximately 3.4 (3.2)
	Transmission/Hydraulic Oil		US gal (L)	Approximately 2.0 (7.5)
Dimensions	Overall Length (without 3-Point Hitch)		in. (mm)	82.7 (2100)
	Overall Length (with 3P)		in. (mm)	95.5 (2425)
	Overall Width (with R4 Tires)		in. (mm)	44.5 (1130)
	Overall Height (with Roll-Over Protective Structure (ROPS), R4 Tires)		in. (mm)	83.46 (2120)
	Overall Height (with R4 Tires) (Top of Steering Wheel)		in. (mm)	49.9 (1267)
	Wheel Base		in. (mm)	55.1 (1400)
	Min. Ground Clearance (with R4 Tires)		in. (mm)	7.5 (190)
	Tread (with R4)	Front	in. (mm)	34.6 (879)
		Rear	in. (mm)	32.2 (820)
Weight (with Roll-Over Protective Structure (ROPS) and R4 Tires)			lb (kg)	1344 (610)

Traveling System	Tire	Ag (R1)	Front	18 × 8.50-10
			Rear	26 × 12.00-12
		Turf (R3)	Front	18 × 8.50-10
			Rear	26 × 12.00-12
		Industrial (R4)	Front	18 × 8.50-10
			Rear	26 × 12.00-12
	Clutch			–
	Steering			Power Steering
	Transmission			Hydrostatic Transmission, 2 Range Speeds
	Drive			Selected 4WD
	Brake			Wet plates
	Minimum Turning Radius		ft (m)	7.2 (2.2)
	Differential Lock			Foot Pedal Control
Hydraulic Unit	Hydraulic Control System Type			Position Control
	Pump Capacity (main)		US gal/min (L/min)	Approximately 3.4 (13.2)
	Pump Capacity (steering)		US gal/min (L/min)	Approximately 3.4 (13.2)
	3-Point Hitch			Limited Category Ⅰ
	Max. Lift Force	Lift Point	lb. (kg)	1036 (470)
		24 in. Behind Lift Point	lb. (kg)	661 (300)
	System Pressure		psi (MPa)	1813 (12.5)
Power Take Off (PTO)	Type			Electric Clutch
	Rear	Shaft Size		SAE 1-3/8, 6-Splines
		Type		Independent
		Speed/Engine	min^{-1}(rpm)	540 / 3111
	Mid	Shaft Size		SAE 16/32, 15-Splines
		Type		Independent
		Speed/Engine	min^{-1}(rpm)	2100 / 3338

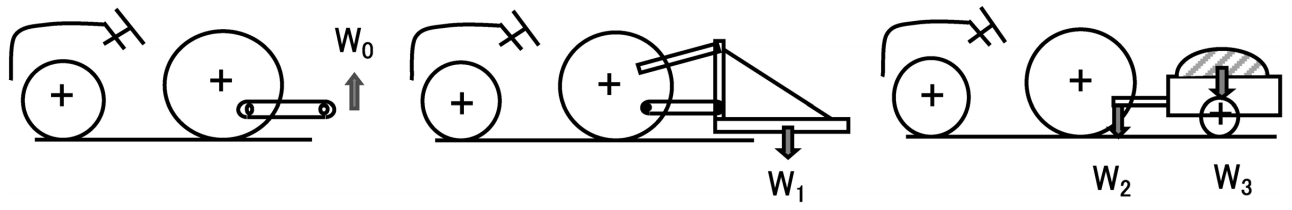
2. Traveling Speeds (Reference)

Model		Sc2450	
	Range Gear Lever	mph	km/h
Forward	Slow	0-6.0	0-9.7
	Fast	0-9.3	0-15
Reverse	Slow	0-3.6	0-5.8
	Fast	0-5.6	0-9

4. IMPLEMENT CAPACITIES

The Cub Cadet Yanmar tractor has been carefully tested in the configuration equipped with implements sold or approved by Cub Cadet Yanmar and has proven to perform properly. Do not use any implement that has not been sold or recommended by a Cub Cadet Yanmar dealer, or that fails to satisfy the specified values given below. Never mount an implement that is not approved for the Cub Cadet Yanmar tractor. Using unapproved implements could result in malfunction, failure, and damage to the tractor and/or implement, and increase the possibility of injury to the operator or other people. The Cub Cadet Yanmar warranty does not cover any malfunction or failure that results from use of an unapproved implement.

	24in. Behind Lift Point Maximum Lifting Capacity	Implement Weight	Maximum Vertical Hitch Load	Maximum Gross Towing Load
	W_0	W_1	W_2	W_3
lb	661	As specified in the list below.	551	1763
kg	300		250	800



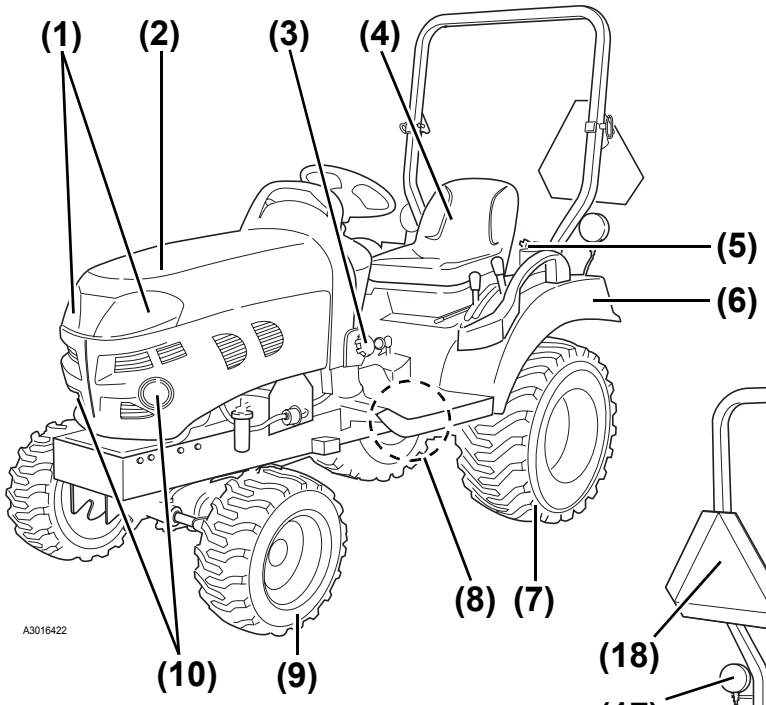
A3013714a

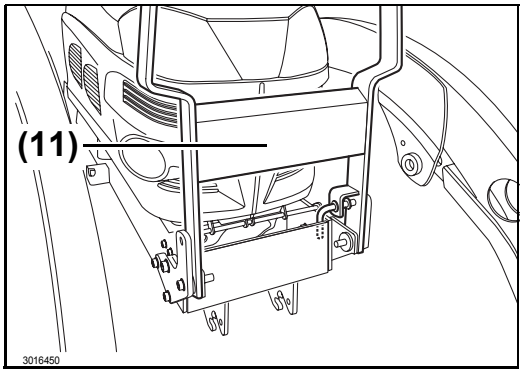
Implement		Remarks	Unit	Amount	
Front - End Loader		Maximum Lift Capacity (at Pivot)	lb (kg)	700	317
		Maximum Overhang (Pivot - Front Tire Center)	in. (mm)	40	1022
		Maximum Weight	lb (kg)	441	200
		Maximum Oil Pressure	psi (MPa)	1885	13
Mower	Mid - Mount	Maximum Cutting Width	in. (mm)	60	1524
		Maximum Weight	lb (kg)	254	115
	Rear - Mount	Maximum Cutting Width	in. (mm)	48	1219
		Maximum Weight	lb (kg)	351	159
Rotary Tiller		Maximum Tilling Width	in. (mm)	42	1067
		Maximum Weight	lb (kg)	342	155
Box Scraper (Box Blade)		Maximum Cutting Width	in. (mm)	48	1219
		Maximum Weight	lb (kg)	254	115
Rear Blade		Maximum Cutting Width	in. (mm)	60	1524
		Maximum Weight	lb (kg)	176	80
Backhoe		Maximum Lift Capacity with boom and dipperstick fully extended no more than 36 in. (91 cm) above ground level.	lb (kg)	205	93
		Maximum Weight	lb (kg)	551	250

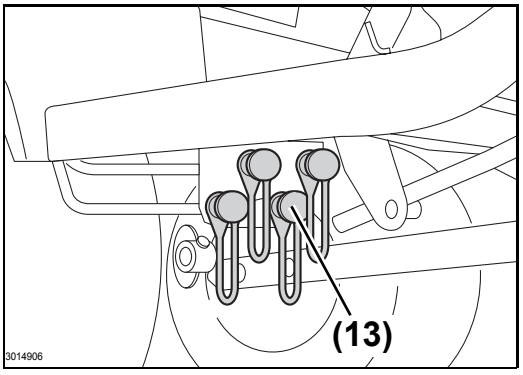
5. NAMES AND FUNCTIONS OF COMPONENTS

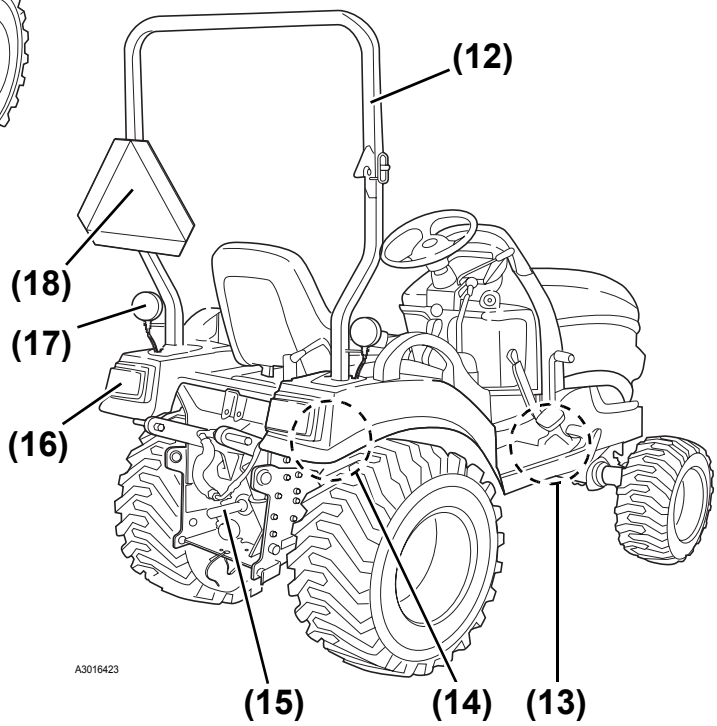
Tractor Control Overview

1. Overview





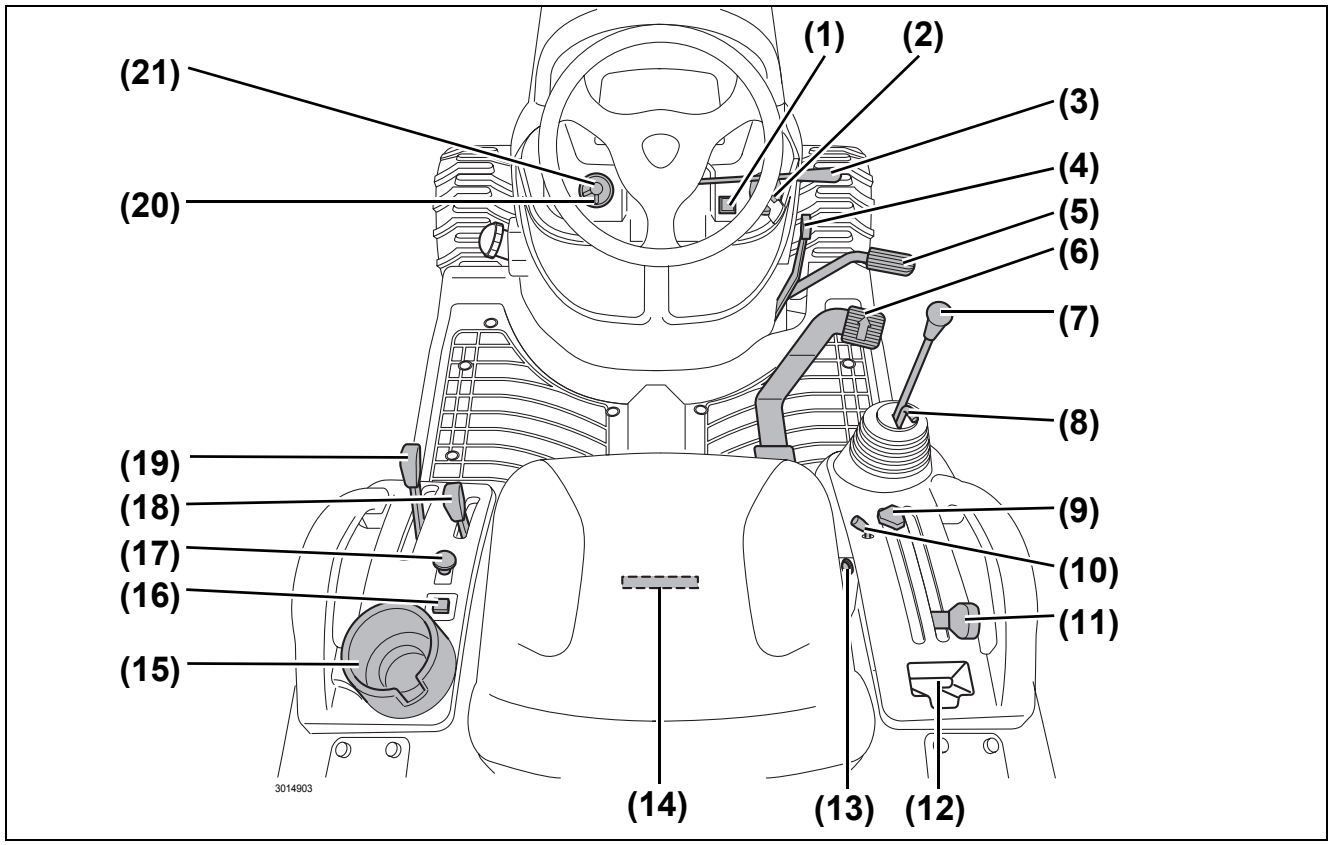




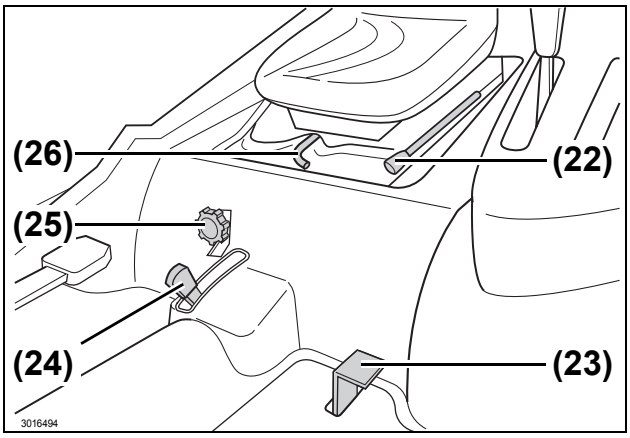
(1) Headlights
(2) Hood
(3) Fuel inlet
(4) Seat
(5) Seat belt
(6) Fender
(7) Rear tires
(8) Mid-Power Take Off (PTO)
(9) Front tires
(10) Work lights
(11) Hood guard
(12) Roll-Over Protective Structure (ROPS)
(13) Hydraulic quick couplers (Option)
(14) 12V DC outlet (for additional rear work light)
(15) Rear Power Take Off (PTO) shaft
(16) Tail lights
(17) Turn signal/hazard lights
(18) Slow Moving Vehicle (SMV) emblem

2. Operator Station Controls

■ Names of Components



(1) Hazard lights button switch
(2) Starter key switch
(3) Throttle control lever
(4) Parking brake lever
(5) Brake pedal
(6) Forward and reverse drive pedal
(7) Implement control lever
(8) Implement lock lever
(9) Position stop knob
(10) Cruise control lever
(11) 3-point hitch control/cutting height adjustment lever
(12) Storage compartment
(13) 12V DC outlet
(14) Hydro Static Transmission (HST) pressure release lever
(15) Cup holder
(16) Reverse - override - switch
(17) Power Take Off (PTO) switch
(18) Range gear lever
(19) Mid-/Rear-Power Take Off (PTO) select lever

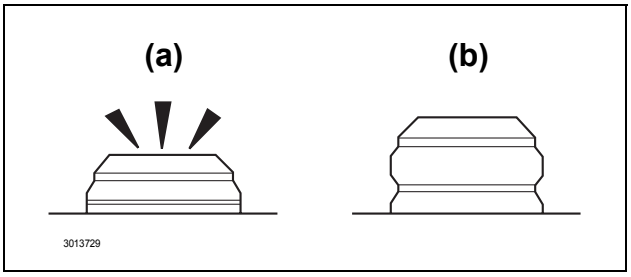


(20) Turn signal switch
(21) Headlight/work light switch
(22) Seat adjustment lever
(23) Differential lock foot pedal
(24) 4-wheel drive lever
(25) Hydraulic flow control/stop knob
(26) Seat lock lever

■ Function of Components

(1) Hazard lights button switch

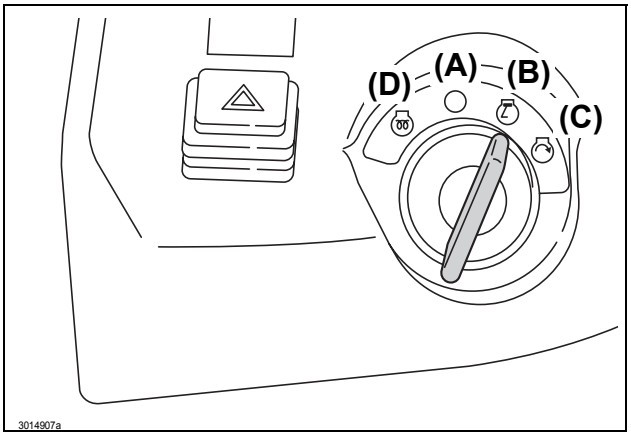
Depress the red button to turn the hazard lights ON. Pressing this button will cause the button to light up and the hazard lights at the rear of tractor to flash. (The hazard lights remain flashing even when the starter key switch is in the OFF position. Remember that allowing the turn signal/hazard lights to flash for an extended period can lead to loss of battery voltage.)



(a) ON
(b) OFF

(2) Starter key switch

This switch is used to start and stop the engine.



(A) OFF position:
The engine must be off.

(B) ON position:
When the key has been turned to this position, the engine oil pressure warning light and the alternator/battery charging light and the engine coolant warning light will illuminate.

(C) START position:
When the key is turned to this position, the starter starts turning the flywheel and then the engine begins to run. Once the engine has started, release the key.

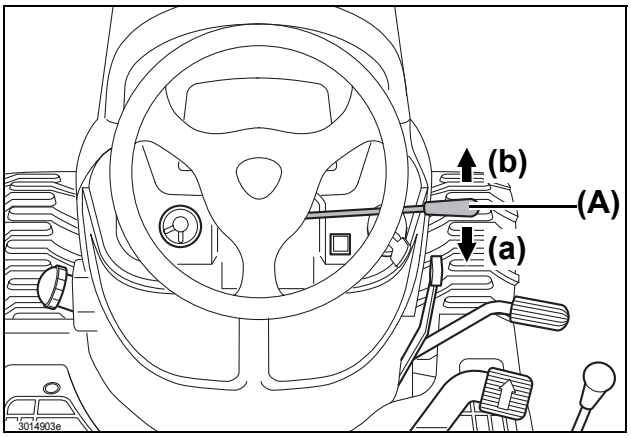
(D) Preheating position:
Preheating time should be determined according to outside air temperature. For details, see the table below.

Temperature (°F (°C))	Preheating Time (sec.)
Over 32 (0)	2 to 3
Below 32 (0)	4

(A) OFF position
(B) ON position
(C) START position
(D) Preheating position

(3) Throttle control lever

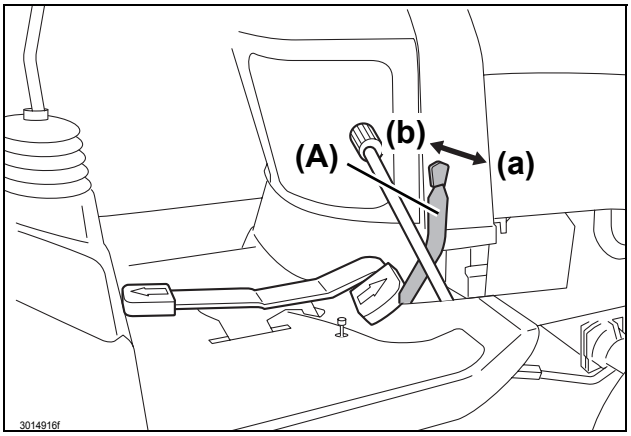
Use the throttle control lever to change the engine speed. While monitoring the tachometer, change the engine speed as required.



(A) Throttle control lever
(a) To increase the engine speed: pull the throttle control lever backward.
(b) To decrease the engine speed: push the throttle control lever forward.

(4) Parking brake lever

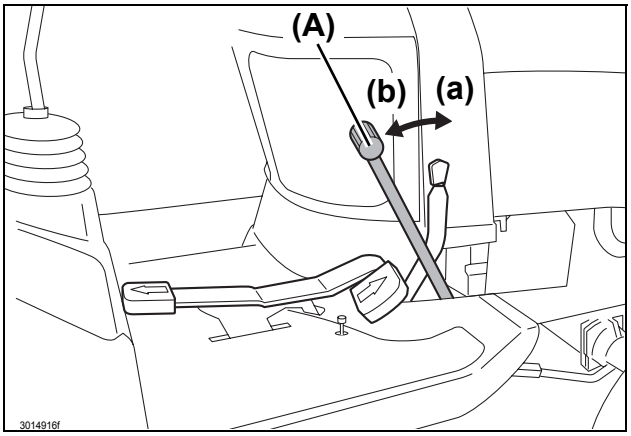
This lever is used when parking the tractor.



(A) Parking brake lever
(a) To engage the parking brake: Fully pull the parking brake lever backward.
(b) To unlock the parking brake: Fully push the parking brake lever forward.

(5) Brake pedal

This pedal is used to stop and park the tractor.



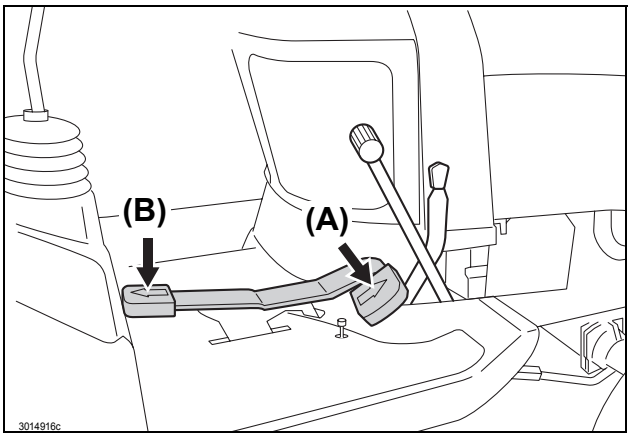
(A) Brake pedal
(a) To apply the brakes: Depress the brake pedal.
(b) To release the brakes: Release foot from the brake pedal.

(6) Forward and reverse drive pedal

The tractor accelerated speed depends on how far the drive pedal is pressed.

(A) To move forward:
Depress the forward side of the forward and reverse drive pedal.

(B) To move backward:
Depress the reverse side of the forward and reverse drive pedal.



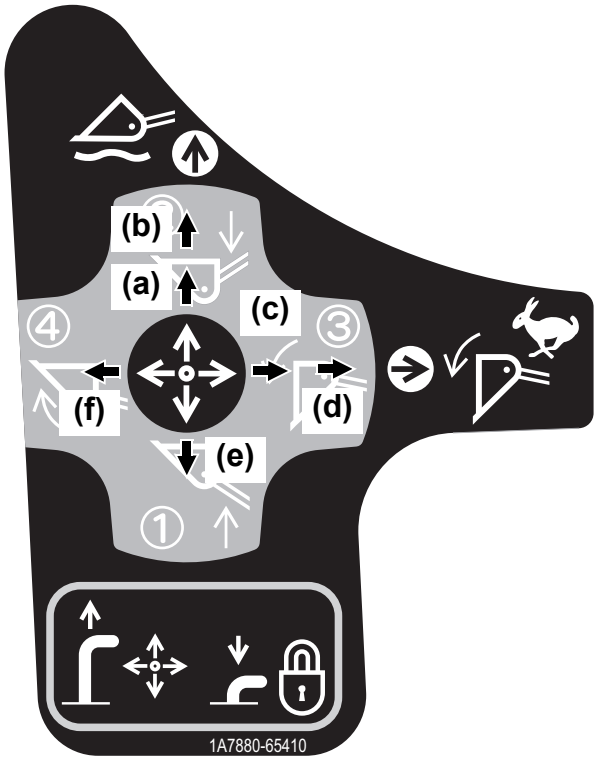
(A) Forward side of the forward and reverse drive pedal
(B) Reverse side of the forward and reverse drive pedal

IMPORTANT

- When the drive pedal is released, the transmission will automatically return to the NEUTRAL position.

(7) Implement control lever

The implement control valve has a float position. When the implement control valve is in this position, implements such as blades or front loaders, lowered to the operating position, are allowed to follow ground contours.
Push the implement control lever forward beyond the valve detent position to the float position.



(a) Lower
(b) Float
(c) Dump
(d) Dump faster
(e) Raise the implement
(f) Curl

IMPORTANT: Avoid damage.

- Prevent damage or contamination to the female quick couplers. ALWAYS leave the color-coded hose ends connected to the couplers when the couplers are not in use.

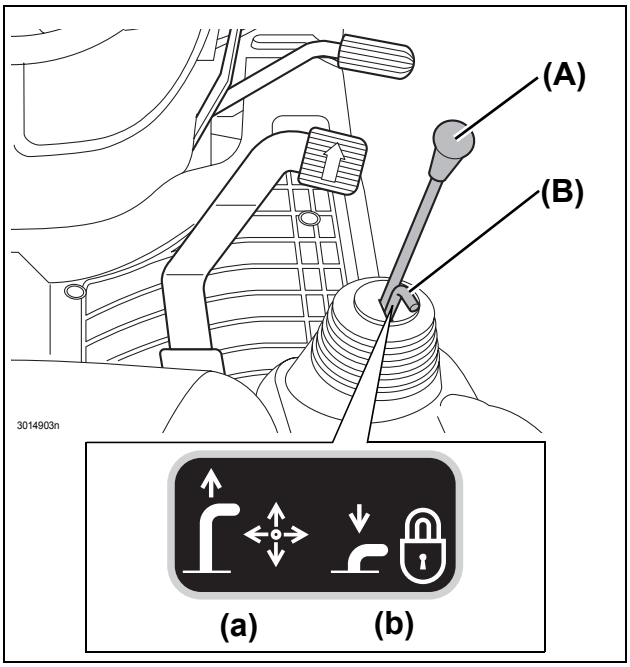
NOTE

- When the implement control lever is released, it returns to its NEUTRAL position.

(8) Implement lock lever

When fixing the implement control lever at its NEUTRAL position, use the implement lock lever.

(A) Implement control lever
(B) Implement lock lever



IMPORTANT: Avoid damage.

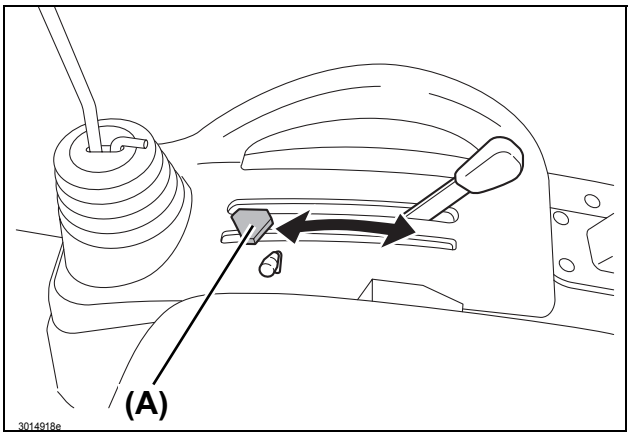
- Do not attempt to operate the implement control lever when the implement control lever has been locked.
- When the implement control lever has been locked with the implement lock lever, move the implement control lever with light force to ensure that it has been securely locked.

(a) To unlock the implement control lever: Pull up the implement lock lever.
(b) To lock the implement control lever: Push down the implement lock lever when the implement control lever is in its NEUTRAL position.

(9) Position stop knob

This knob is used to secure the implement installed with the 3-point hitch in its raised position, or to limit the range of operation of the 3-point hitch control/ cutting height adjustment lever.

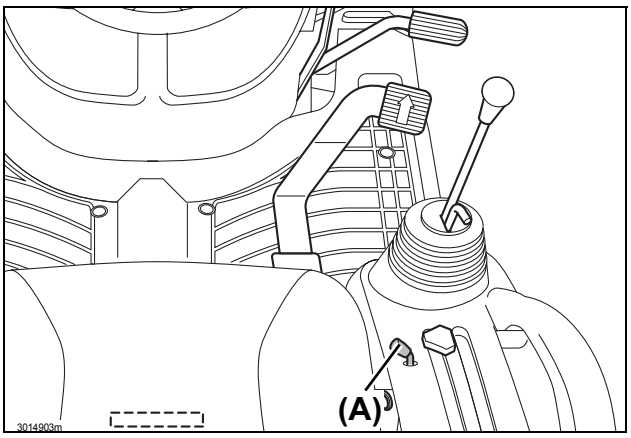
(A) Position stop knob



(10)Cruise control lever

The cruise control is a feature that regulates forward tractor travel to a specific speed.

(A) Cruise control lever



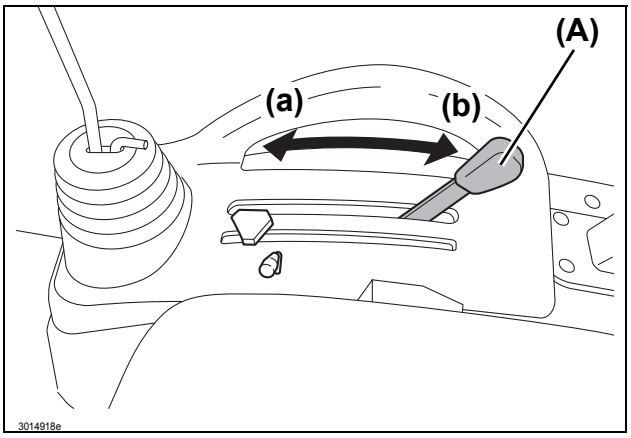
(11)3-point hitch control/cutting height adjustment lever

Use the 3-point hitch control/cutting height adjustment lever, when raising or lowering the Mid- or Rear-mounted implement.

(A) 3-point hitch control/cutting height adjustment lever

(a) Moving the 3-point hitch control/cutting height adjustment lever forward will lower the implement.

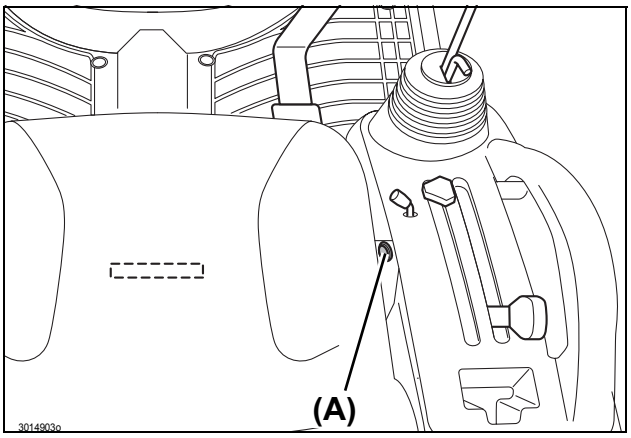
(b) Moving the 3-point hitch control/cutting height adjustment lever backward will raise the implement to raise higher.



(13)12V DC outlet

This can be used as a power source for electrical goods.

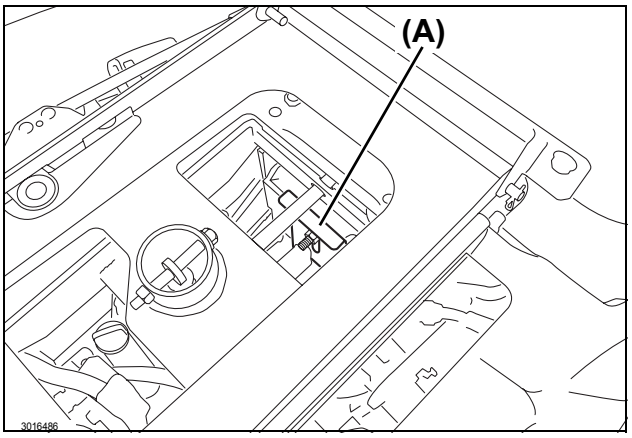
(A) 12V DC outlet



(14)Hydro Static Transmission (HST) pressure release lever

Hydraulic pressure in the Hydro Static Transmission (HST) brakes the axles when the engine is not running, so that the tractor cannot be moved. When the hydraulic pressure in the transmission is released by pressing the Hydro Static Transmission (HST) pressure release lever, the tractor can be moved.

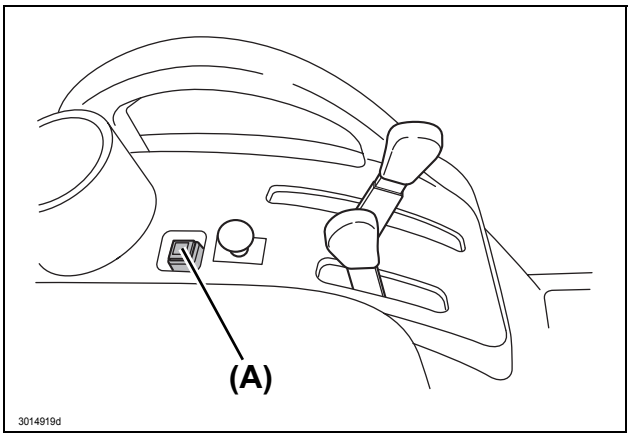
(A) Hydro Static Transmission (HST) pressure release lever



(16)Reverse-override-switch

Normally, reversing the tractor stops the Mid-Power Take Off (PTO) and the Rear-Power Take Off (PTO). To drive the Power Take Off (PTO) while reversing the tractor, use the reverse-override-switch.

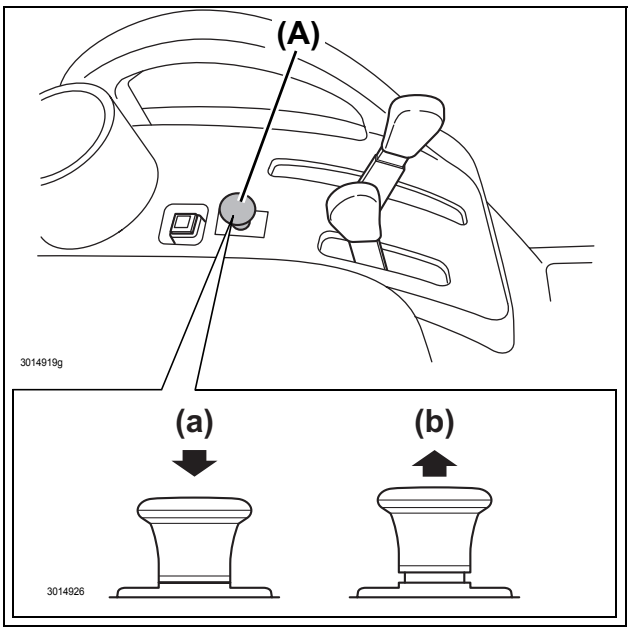
(A) Reverse-override-switch



(17)Power Take Off (PTO) switch

This switch is used to rotate the Power Take Off (PTO).

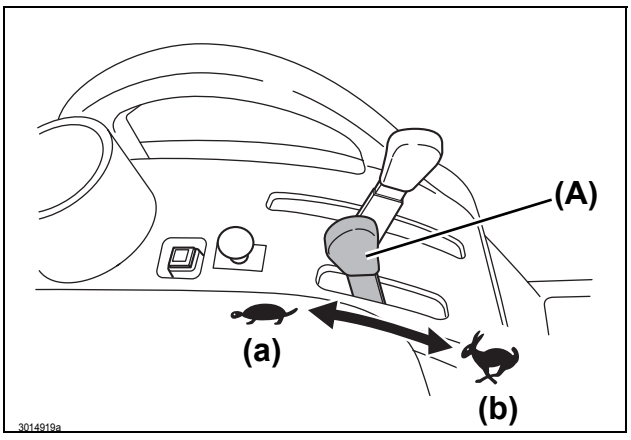
(A) Power Take Off (PTO) switch
(a) Turn off: Push the switch.
(b) Turn on: Pull the switch.



(18)Range gear lever

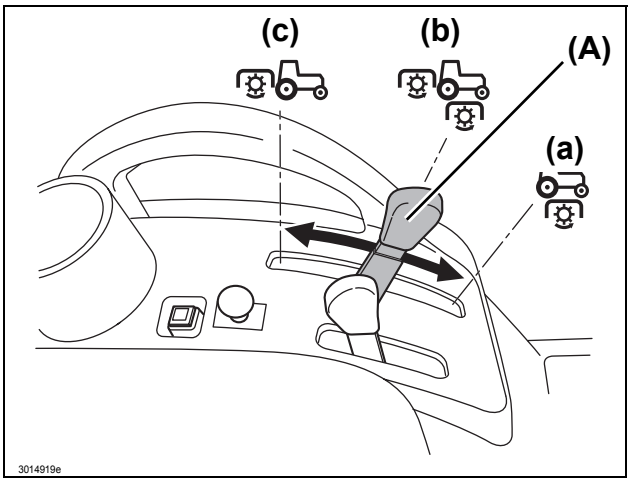
Use the range gear lever to select the speed that best suits the intended operation.

(A) Range gear lever
(a) SLOW : Used for heavy-load operation.
Low traveling speed.
(b) FAST : Used for light-load operation.
High traveling speed.



(19)Mid-/Rear-Power Take Off (PTO) select lever

This lever is used to select the Mid- or Rear-Power Take Off (PTO), depending upon the implement being used.



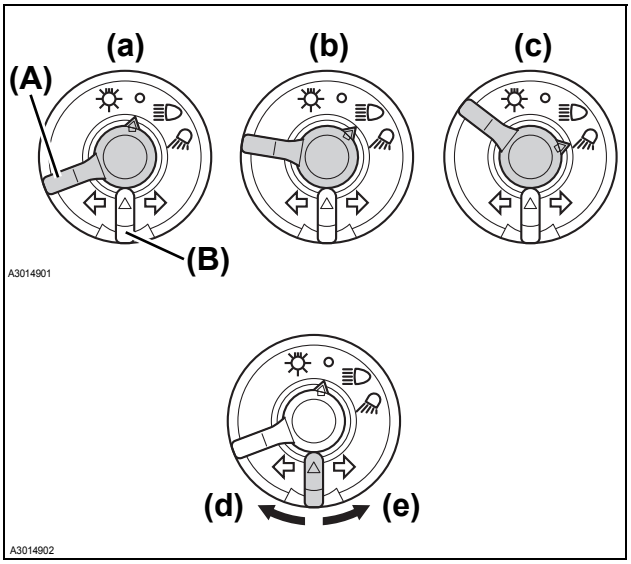
(A) Mid-/Rear-Power Take Off (PTO) select lever
(a) Operating the Mid-Power Take Off (PTO) alone
(b) Operating the Mid-Power Take Off (PTO) and the Rear-Power Take Off (PTO) at the same time
(c) Operating the Rear-Power Take Off (PTO) alone

(20)Turn signal switch

(21)Headlight/work light switch

Use the blue lever to turn ON/OFF the headlights and work lights. Turning the blue lever to the (b) position illuminates the headlights and turning it to the (c) position illuminates the work lights and headlights at the same time.

- The yellow lever is a turn signal switch.
- Move the turn signal switch right to signal a right turn.
- Move the turn signal switch left to signal a left turn.
- The tail light illuminates while the turn signal light is illuminated or blinked, the tail light similarly illuminates or flashes.



(A) Blue lever (Headlight/work light switch)
(B) Yellow lever (Turn signal switch)
(a) OFF
(b) Headlights ON
(c) Headlights and work lights ON
(d) To signal a left turn, move the lever to left
(e) To signal a right turn, move the lever to right

(22)Seat adjustment lever

See “Adjust the Operator's Seat” on page 7-2.

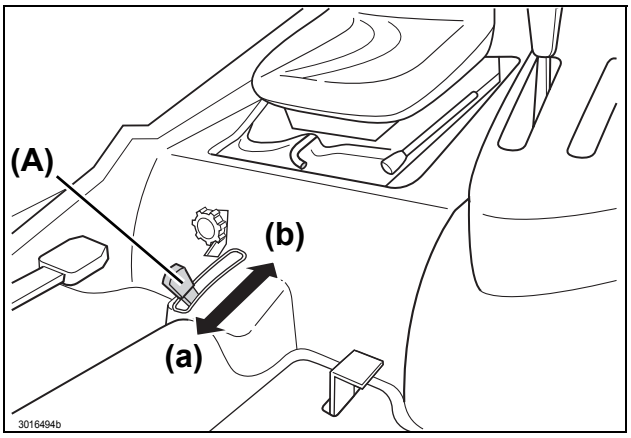
(23)Differential lock foot pedal

See “Differential Lock” on page 8-15.

(24)4-wheel drive lever

In the 4-wheel drive mode, all the four wheels are powered to obtain better traction on difficult-to-travel ground.

The 4-wheel drive lever can be set to the ON or OFF position only when the tractor is at a standstill.



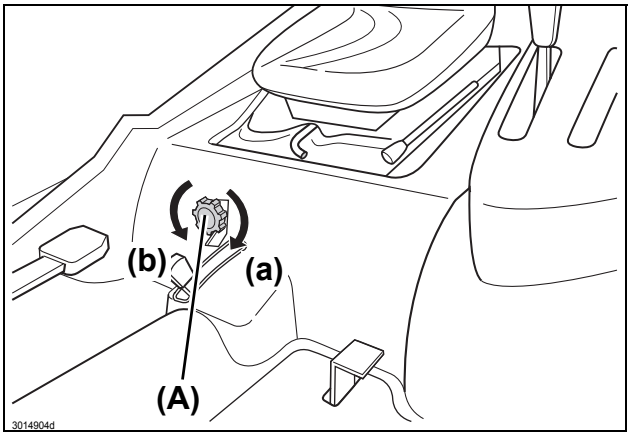
(A) 4-wheel drive lever
(a) 4-wheel drive mode
(b) 2-wheel drive mode

IMPORTANT: Avoid damage.

- ALWAYS keep the 4-wheel drive lever in the OFF position when traveling on a paved surface.
- ALWAYS disengage the 4-wheel drive lever when not needed to prevent premature wear of the front tires.
- NEVER install tire chains to the front wheels. Chains will hit and can damage the tractor.
- If disengaging the 4-wheel drive lever is difficult, stop the tractor, turn the steering wheel right and left several times. Then attempt to disengage the 4-wheel drive lever again.
- To minimize tire wear, drive in the 4-wheel drive mode only when absolutely necessary. Driving the tractor on a paved road in the 4-wheel drive mode can accelerate wear of the tires.
- To obtain better traction, keep the front tires at the maximum allowable pressure.
- When the 4-wheel drive lever is in the ON position, braking will apply to all four wheels.

(25)Hydraulic flow control/stop knob

The lowering speed of the lower link is governed by the position of the hydraulic flow control/stop knob. Also, this knob is used to stop the lower link at an intended position.

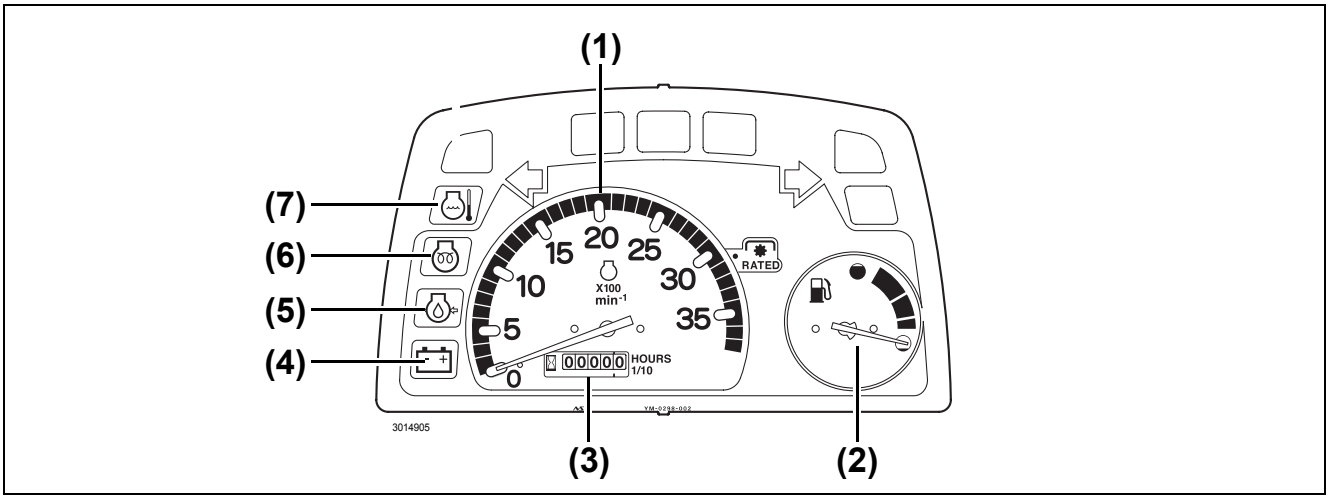


(A) Hydraulic flow control/stop knob
(a) Turning the knob clockwise will cause the lowering speed to decrease.
Tighten the knob by fully turning clockwise to stop the lower link.
(b) Turning the knob counterclockwise will cause the lowering speed to increase.

(26)Seat lock lever

See “Reverse the Operator's Seat” on page 7-2.

3. Instrument Panel, Switches and Hand Controls



(1) Tachometer

This meter indicates the current engine speed in increments of 100 min^{-1}(rpm).

(2) Fuel gauge

This gauge indicates level of fuel in the fuel tank, while the starter key switch is in the ON position.

(3) Hour meter

This meter indicates the total accumulated operating hours. This indication is based on the assumption that the engine runs at a speed of 3300 min^{-1}(rpm).

(4) Alternator/battery charging light

This light remains lit when the starter key switch is in the ON position and the engine is OFF.

IMPORTANT

- If this light illuminates while the engine is running, the power generated by the alternator is too low. Fully pull the throttle control lever backward and increase the engine speed. If the light still remains lit, immediately stop the engine and contact your local Cub Cadet Yanmar dealer for technical assistance.

(5) Engine oil pressure warning light

This light remains lit when the starter key switch is in the ON position and the engine is OFF.

IMPORTANT

- If this light illuminates while the engine is running, the engine oil pressure is too low. Immediately stop the engine and contact your local Cub Cadet Yanmar dealer for technical assistance.

(6) Preheater pilot light

This light illuminates when the engine starter key switch is turned to the preheating position. Preheating time should be determined according to outside air temperature. For details, see the table below.

Temperature (°F (°C))	Preheating Time (sec.)
Over 32 (0)	2 to 3
Below 32 (0)	4

(7) Engine coolant warning light

This light illuminates when engine coolant temperature becomes abnormally high.

IMPORTANT

- If the engine coolant warning light does turn on, reduce the load on the tractor immediately, run the engine at an idle until the light turns off, and shut off the engine. Wait until the engine has cooled off completely, and check to see that there is:
  (1) Sufficient coolant in the radiator and reserve tank
  (2) No clogging of the radiator fins and screen
  (3) Sufficient tension in the fan belt
  See “Chapter 14. PERIODIC SERVICE” for more information on maintenance procedures.
- If the coolant warning light turns on again even after being sure of the checkpoints above, shut off the engine immediately and contact your local Cub Cadet Yanmar dealer.

6. PRE-OPERATION CHECK

Pre-Operation Check of Tractor

1. Pre-Operation Check

- Check the tractor for damage, excessive wear, cracks, missing parts, exposed wiring and any other problems, including leaks.
- Check the joints and connections for looseness.
- Check that all the lights illuminate.
- Check that all the safety-alert decals are in correct position.

If any problem is detected, contact your local Cub Cadet Yanmar dealer, and correct the problem. NEVER operate the tractor when a problem has been indicated.

2. Precautions Before the Operation

- ALWAYS be aware of the limitations of the performance of the tractor.
- Operate the tractor, keeping in mind “SAFETY FIRST!”.

3. Routine Check

- Check the safety features.
- Check the tire pressure.
- Check that the remaining diesel fuel is sufficient for the intended operation.
- Check the engine oil level.
- Check the transmission/hydraulic oil level.
- Check the coolant level.
- Remove grass clippings and debris from the tractor.
- Clean the air cleaner element.
- Check the tractor for any leaks such as oil, coolant and fuel.
- Check the radiator for possible blockage.
- Check the retractable seat belt and the Roll-Over Protective Structure (ROPS) for any problem.

If any problem is detected, contact your local Cub Cadet Yanmar dealer and correct the problem.

4. Prevent Damage to the Plastic Surfaces and Painted Surfaces

- Only wipe off the tractor after washing.
- Chemical agents such as pesticides can damage the plastic surfaces and painted surfaces. NEVER spray chemical agents near the machine.
- NEVER spill diesel fuel onto the tractor. Diesel fuel can damage the plastic surfaces and painted surfaces. ALWAYS wipe up spilled diesel fuel immediately.

7. OPERATE THE ENGINE

⚠ WARNING

NEVER run or idle the engine in a confined area that is poorly ventilated or not ventilated at all. The engine emits carbon monoxide as that is colorless, odorless and can cause death.

ALWAYS remain seated in the operator's station when starting the engine or actuating the levers or controls.

Always ensure that your foot is removed from the forward and reverse pedal, the parking brake is engaged and Power Take Off (PTO) switch is in the OFF position before the engine is started.

While operating the tractor, make sure to keep the seat belt fastened with the Roll-Over Protective Structure (ROPS) equipped. This will reduce the possibility of injury or death in the event of an accident such as an overturn or roll-over.

Start the engine of your tractor only with the starter key switch. NEVER attempt to start the tractor engine by short-circuiting across its terminals with a jumper or by bypassing the safety start switch.

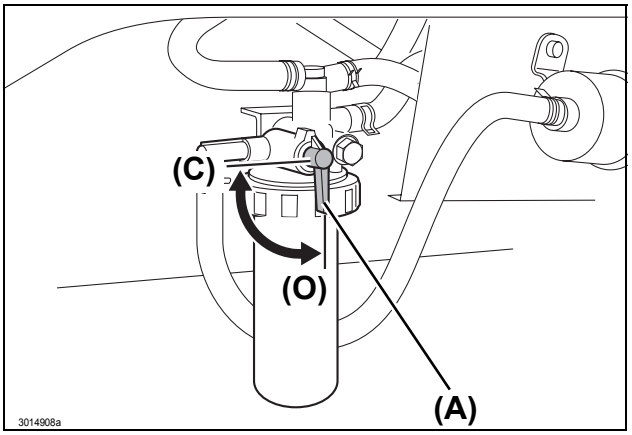
Before operation, make sure that all the safety features are functioning correctly. Make corrections as necessary.

1. Start the Engine

1. Open the fuel shut-off valve.

■ Opening/Closing the Fuel Shut-Off Valve

- To open the valve, turn the valve lever to the vertical position.
- To close the valve, turn the valve lever to the horizontal position.

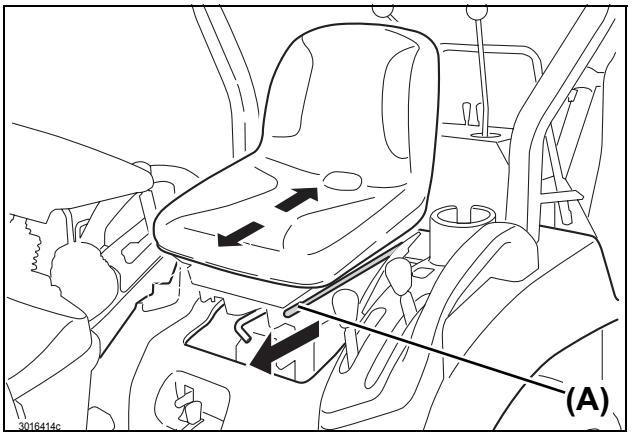


(A) Valve lever
(O) Open
(C) Close

2. Sit on the seat.

■ Adjust the Operator's Seat

1. Engage the parking brake securely and stop the engine.
2. Sit on the seat.
3. Pull the seat adjustment lever to the left.
4. Move the seat forward and backward to find the optimal position and then release the seat adjustment lever.
5. While remaining seated, confirm that various control levers can be comfortably operated. If any control lever cannot be operated comfortably, readjust the seat position as necessary.



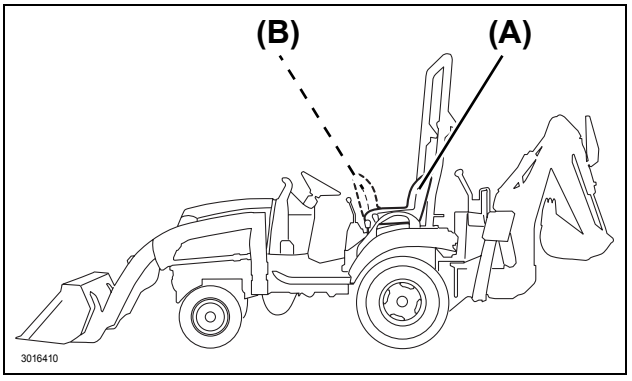
(A) Seat adjustment lever

IMPORTANT

- After adjusting the seat position, always make sure that the seat is securely locked in place.

■ Reverse the Operator's Seat

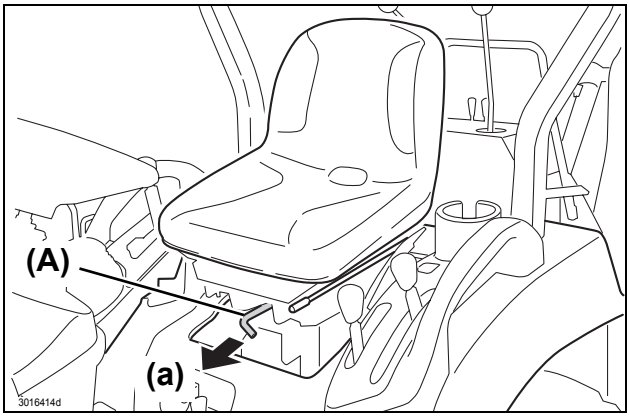
The following procedure can be used to turn the operator's seat around for backhoe operation.



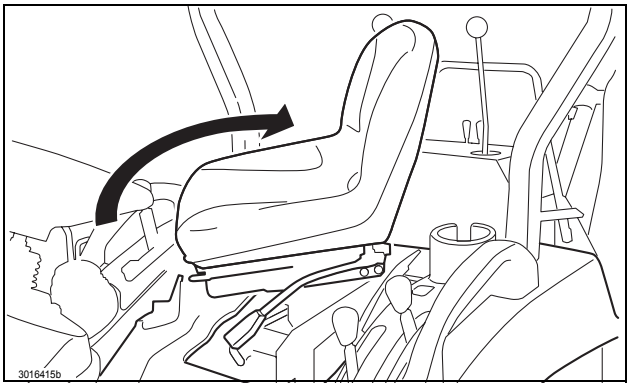
(A) Operator's seat
(position for driving the tractor and operating the front loader)
(B) Operator's seat
(position for backhoe operation)

1. Slide the seat backward completely.
   Pull the seat lock lever out to release the seat lock as shown in the illustration.

   (A) Seat lock lever
   (a) Release the lock



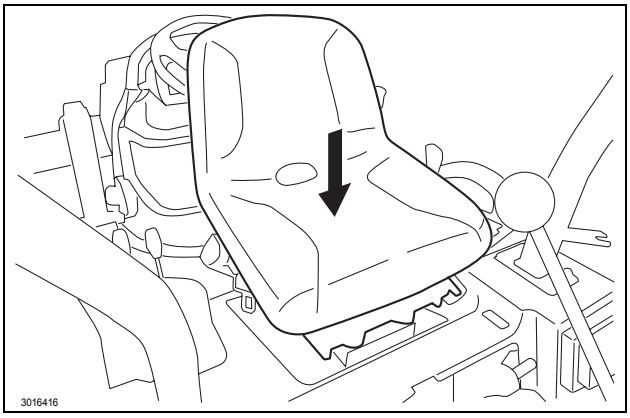
2. The seat must be raised mechanically and can be rotated as shown in the illustration. (clockwise only)



3. Turn the seat slowly until it is facing the opposite direction.
   Confirm the seat position is locked automatically.

NOTE

●Whenever seated, the seat is lowered approx. 0.59 in. (15mm)

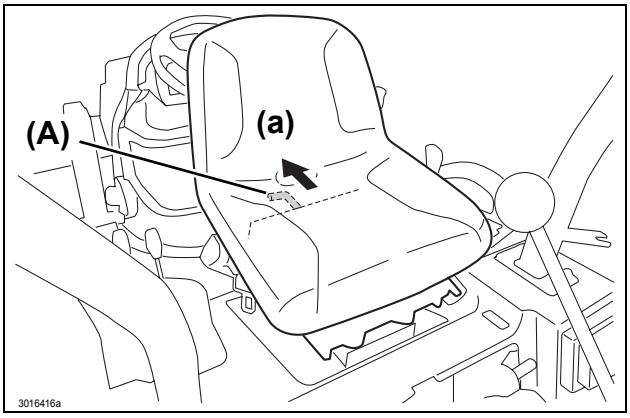


NOTE

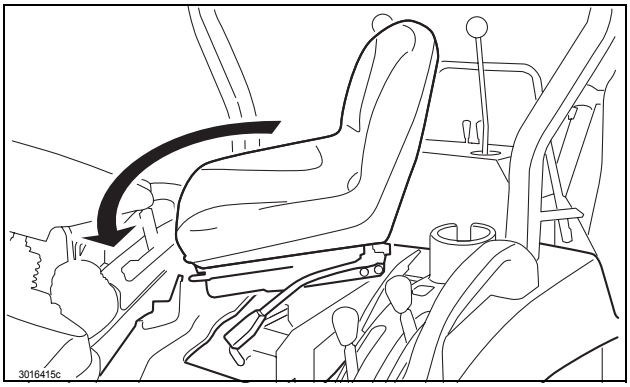
●For tractor operation;

1. Slide the seat backward completely.
   Pull the seat lock lever out to release the seat lock as shown in the illustration.

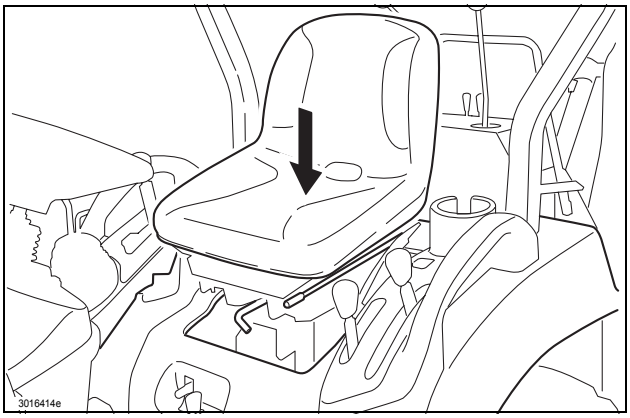
   (A) Seat lock lever
   (a) Release the lock



2. The seat must be raised mechanically and can be rotated as shown in the illustration (counterclockwise only).



3. Turn the seat until it is facing the opposite direction. Once it is oriented in a straight position, push down on the seat using both hands.
4. Make sure that the seat is securely locked in place.



■ Fasten the Retractable Seat Belt

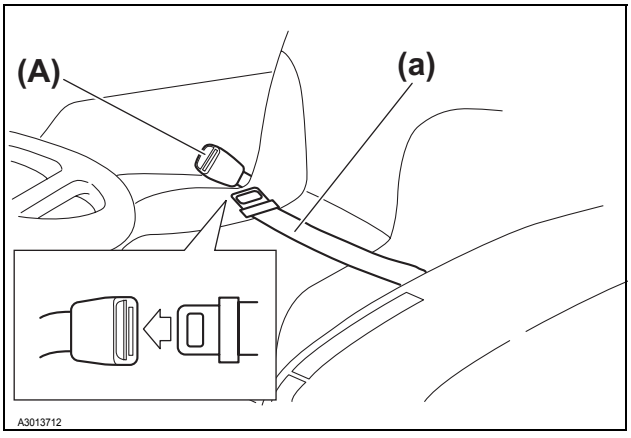
⚠ WARNING

Avoid injury:

- **While operating the tractor, make sure to keep the seat belt fastened with the Roll-Over Protective Structure (ROPS) equipped. This will reduce the possibility of injury or death in the event of an accident such as an overturn or roll-over.**
- **NEVER use the retractable seat belt when operating the tractor without the Roll-Over Protective Structure (ROPS).**

1. Draw out the right and left segments of the retractable seat belt from the retracted positions on both sides of the operator's seat.
2. Connect both segments of the belt with the buckle, being careful to avoid twisting of the belt, adjust the belt length, being suitable for the operator.

(A) Buckle
(a) Adjust the belt length



⚠ WARNING

- **If the retractable seat belt is situated far away from the operator's abdominal area, a dangerous situation can be present in the event of an accident. ALWAYS ensure that the retractable seat belt is in the lowest possible position to the operator's abdominal area.**
- **The retractable seat belt must be used by the operator only. NEVER use the retractable seat belt for two or more persons or to hold an object to the operator.**

3. Remove foot from the forward and reverse drive pedal and set the pedal to the NEUTRAL position.

NOTE

- With the parking brake engaged, the forward and reverse drive pedal is locked in the NEUTRAL position.

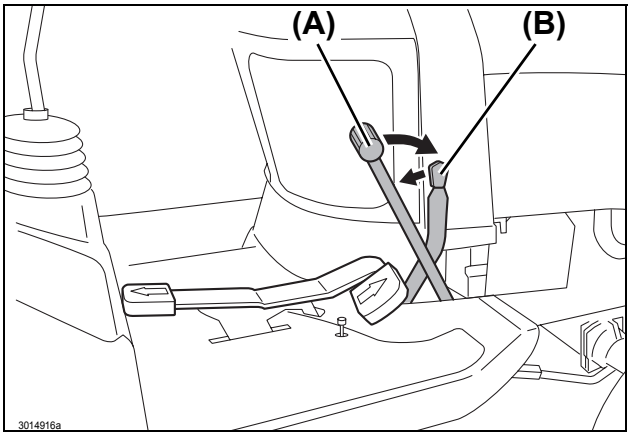
4. Engage the parking brake securely.

■ Engage the Parking Brake

1. Fully depress the brake pedal.
2. Fully pull the parking brake lever backward to engage the parking brake securely.
3. Remove foot and make sure that the brake is fully locked.

NOTE

- Applying the parking brake engages the differential lock at the same time.

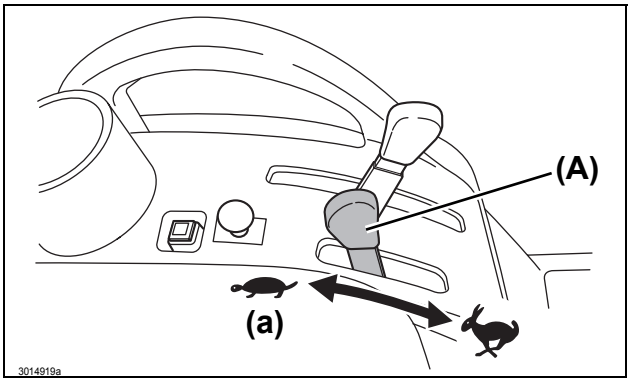


(A) Brake pedal
(B) Parking brake lever

IMPORTANT: Avoid damage.

- NEVER step on the forward and reverse drive pedal while the parking brake is engaged.

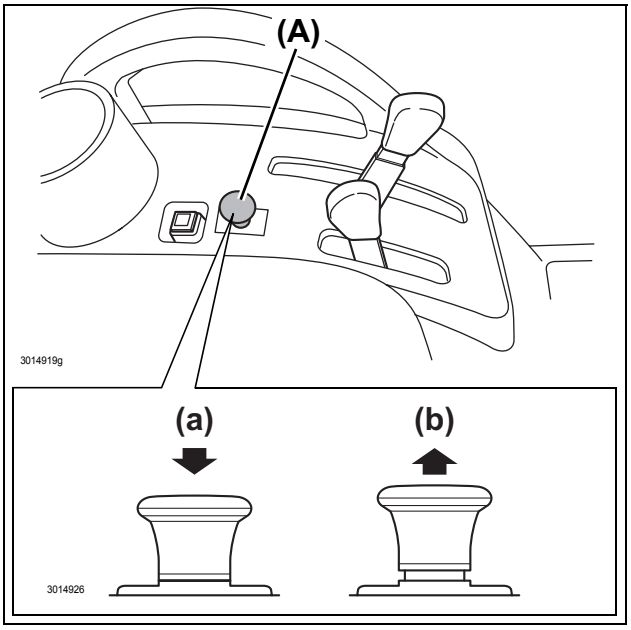
5. Set the range gear lever to the Slow position.



(A) Range gear lever
(a) Slow position

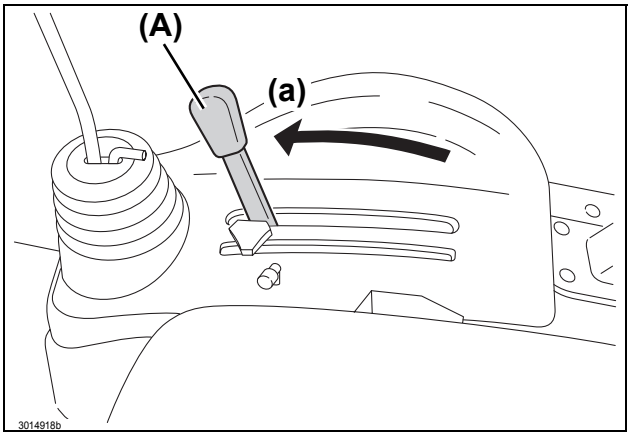
6. Turn off the Power Take Off (PTO) switch.

Push in and set the Power Take Off (PTO) switch to the OFF position.



(A) Power Take Off (PTO) switch
(a) OFF position
(b) ON position

7. Fully push the 3-point hitch control/ cutting height adjustment lever forward to the lowest position and lower the mid- or rear-mounted implements to the ground.



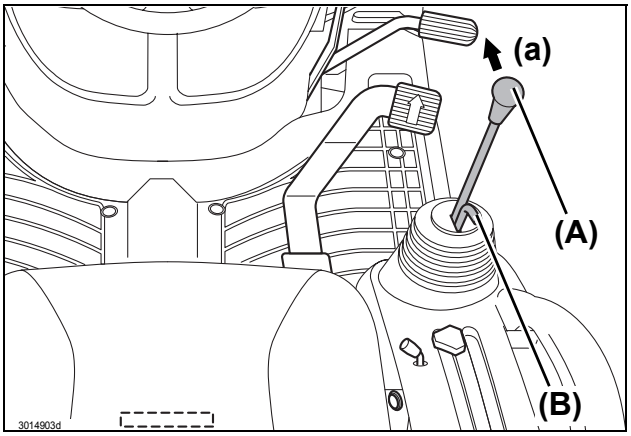
(A) 3-point hitch control/cutting height adjustment lever
(a) Lowest position

⚠ WARNING

- **In order to prevent a turnover accident, completely lower the implements to the ground.**

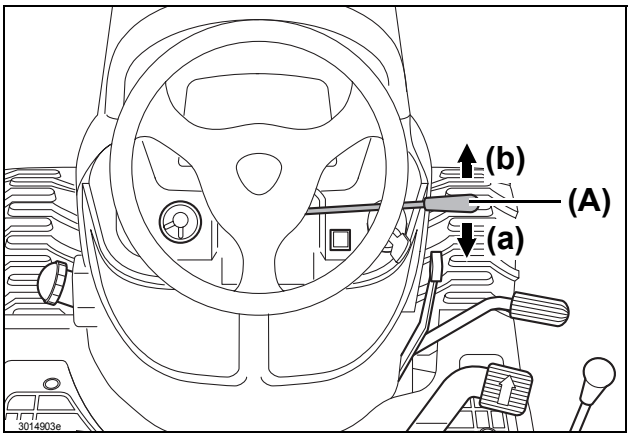
8. If the tractor has any implements that use the implement control lever, lower them to the ground. Then, set the implement control lever to the NEUTRAL position and push in the implement lock lever to lock.

(A) Implement control lever
(B) Implement lock lever
(a) Lower the implement to the ground



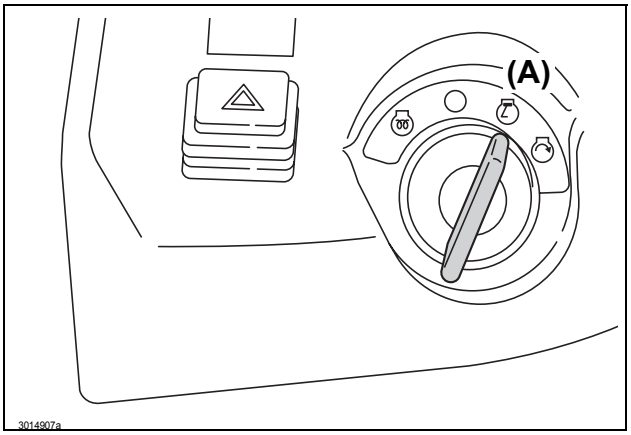
9. Set the throttle control lever about halfway.

(A) Throttle control lever
(a) To increase the engine speed, pull the throttle control lever backward.
(b) To decrease the engine speed, push the throttle control lever forward.



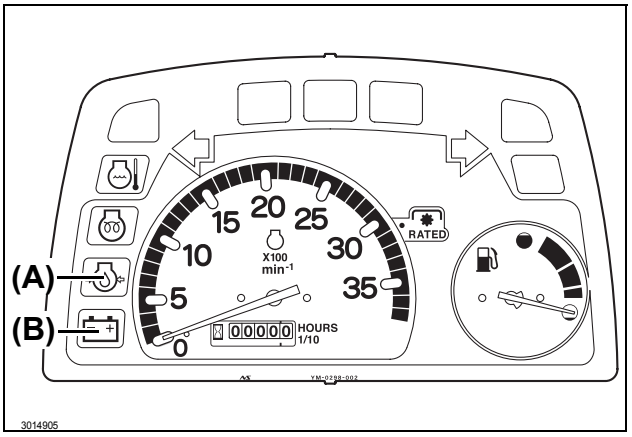
10. Insert the key into the starter key hole and turn the key to the ON position.

(A) ON position



■ Check the Lights on the Instrument Panel

When the key is turned to the ON position:
1. The engine oil pressure warning light turns ON.
2. The alternator/battery charging light turns ON.



(A) Engine oil pressure warning light
(B) Alternator/Battery charging light

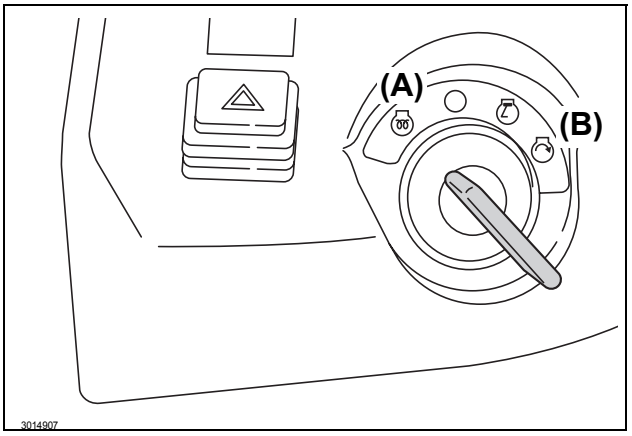
NOTE

- The engine oil pressure warning light turns off within 5 seconds after the engine is started.
- The alternator/battery charging light turns off within 10 seconds after the engine is started.

IMPORTANT: Avoid damage.

- When the engine oil pressure warning light does not turn OFF within 10 seconds after the engine is started, the engine oil pressure is too low. Immediately stop the engine and contact your local Cub Cadet Yanmar dealer for technical assistance.
- When the alternator/battery charging light does not turn OFF within 15 seconds after the engine is started, the power generated by the alternator is too low. Increase the engine speed to its maximum so as to increase the power. If the light still remains lit, immediately stop the engine and contact your local Cub Cadet Yanmar dealer for technical assistance.

11. Turn the key to the PREHEATING position and energize the glow plug to preheat the engine.



(A) Preheating position
(B) START position

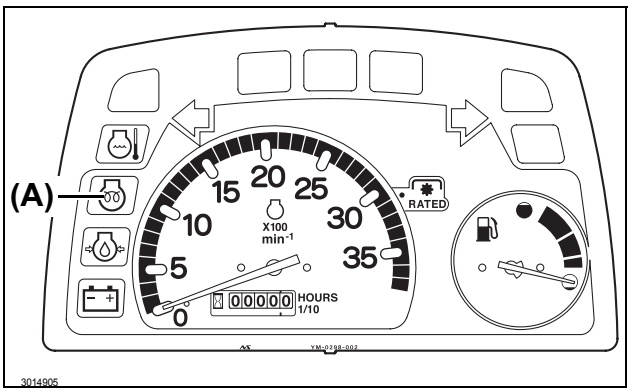
Preheating time should be determined according to outside air temperature. For details, see the table below.

Temperature (°F (°C))	Preheating Time (sec.)
Over 32 (0)	2 to 3
Below 32 (0)	4

NOTE

- While turning the key to the preheating position, the preheater pilot light turns ON. Also, the engine oil pressure warning light and the alternator/battery charging light turn ON.

(A) Preheater pilot light



12. Turn and hold the key to the START position. After the engine is successfully started, release the key.

IMPORTANT: Avoid starter damage.

- Do not hold the key in the START position for more than 15 seconds at a time. Any longer attempt will overheat the starter motor.
- If the engine is difficult to start at a low temperature etc., hold the key in the START position for 30 seconds. If the engine fails to start, wait at least 30 seconds before the second attempt to allow for battery voltage recovery.
- If the engine still fails to start with four consecutive attempts, the starter may be not functioning. (See “Chapter 17. TROUBLESHOOTING”).

13. After the engine has started, warm up the engine for 5 minutes at 2000 to 2400 min^{-1}(rpm) without loading.

■ Warm Up the Engine in Cold Weather

In cold weather, warm up the engine for much longer than 5 minutes so that the hydraulic system shows its performance. For the appropriate warming up time, see the table below.

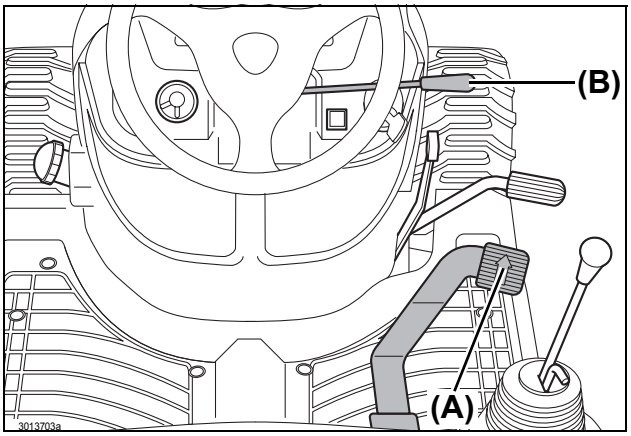
Temperature (°F (°C))	Warming-up Time (min.)
Over 32 (0)	At least 5
32 to 14 (0 to –10)	5 to 10
14 to –4 (–10 to –20)	10 to 15
Below –4 (–20)	More than 15

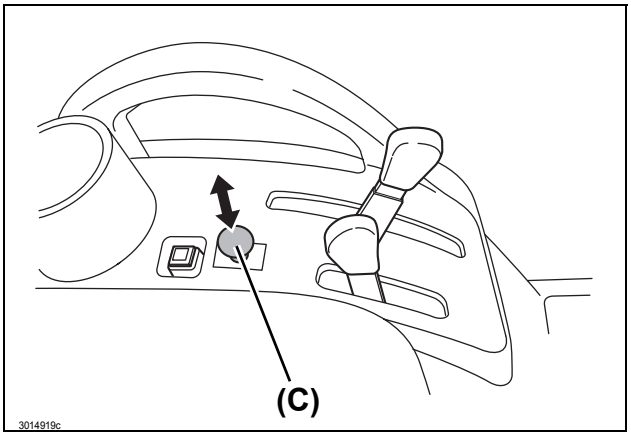
NOTE

- The engine may run slightly louder and emit pale blue exhaust during warming-up. This is considered normal operation. The amount of pale blue exhaust varies depending on the ambient temperature.
- Idling the engine for a long time causes waste of fuel and carbon accumulation in the engine.

2. Shut Down the Engine

1. **Remove foot from the forward and reverse drive pedal.**
2. **After the tractor has completely stopped, turn off the Power Take Off (PTO) switch, lower the implement (if installed) to the ground and then engage the parking brake securely.**
3. **Run the engine at a lowest possible speed for at least 2 minutes.**
4. **Turn the key to the OFF position.**
5. **Remove the key from the starter key switch.**
6. **Make sure that the engine and other components have stopped running. NEVER leave the operator's seat while any components are running.**





(A) Forward and reverse drive pedal
(B) Throttle control lever
(C) Power Take Off (PTO) switch

3. Restart a Stalled Engine

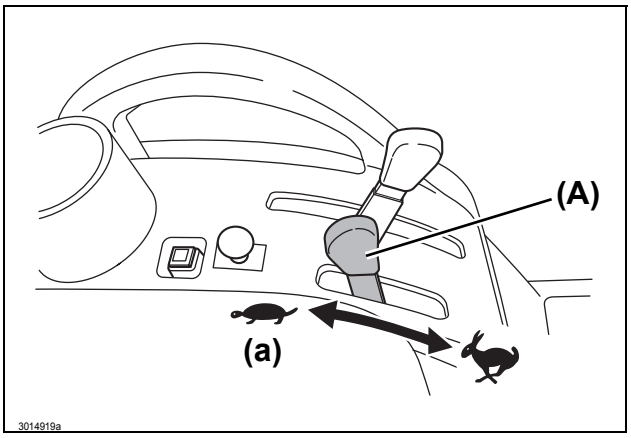
IMPORTANT: Avoid engine damage.

- If the engine stalls while operating under load, immediately restart the engine to prevent overheating of the engine.

1. Engage the parking brake securely.

2. Set the range gear lever to the slow position.

(A) Range gear lever
(a) Slow position

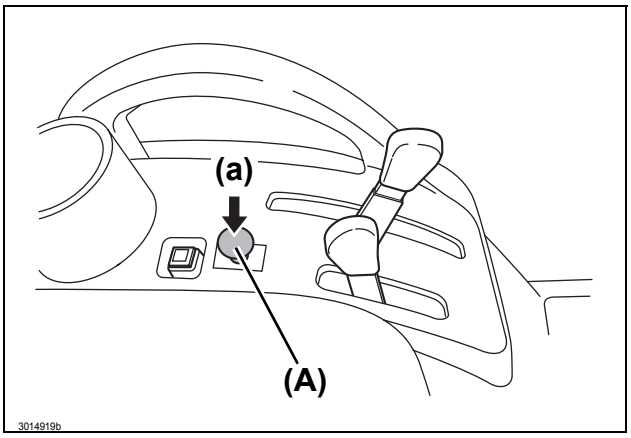


3. Turn off the Power Take Off (PTO) switch.

⚠ WARNING

- **To prevent a possible accident, fully lower all the implements to the ground.**

(A) Power Take Off (PTO) switch
(a) OFF position



4. Restart the engine.
Resume the operation; or run the engine for 1 to 2 minutes at the lowest possible running speed, and then stop the engine.

8. OPERATION

Operate the Tractor

⚠ WARNING

ALWAYS decrease tractor speed before turning, when traveling on a rough terrain or before stopping to prevent roll-over.

Do not attempt to turn with the differential lock engaged. Attempting to turn the tractor while the differential lock is engaged can lead to a roll-over.

ALWAYS stay clear of ditches, holes, embankments or ponds. A roll-over can occur more easily if the ground is soft or wet. Before entering an area covered with tall grass, walk the area to detect any obstacles.

ALWAYS be extremely careful about the direction you are traveling and avoid obstacles. Remain alert when you are approaching the end of a row, trees or any obstacle.

ALWAYS maintain good communication with all others working the same area before and during operation of the tractor.

Do not get in or out of the moving tractor.

Accident Hazard

ALWAYS remain alert to behaviors of children when operating the tractor because they are usually very curious about moving machines.

ALWAYS remember that children may have moved from a point you last viewed them.

ALWAYS keep children off the work area, and a person other than the operator should always watch them.

If any child enters the current work area, stop your tractor immediately.

NEVER allow children to ride the moving tractor. They may tamper with the controls or can fall off the tractor and be run over by the tractor.

NEVER allow children to operate the tractor.

NEVER allow children to play on the tractor or implement.

ALWAYS be extremely careful when backing the tractor up. Before backing up, look back and below the tractor. Children may be in your path.

1. Operate a New Tractor

The service life of the tractor is governed by how adequately it is handled and maintained.
Of course, any newly manufactured tractor has been tested; however, various parts must be broken in. Therefore, operate the tractor at low speeds for the first 50 operating hours, and avoid heavy work or operation before the various parts have been sufficiently run. The manner the tractor is operated in during the breaking-in period greatly affects the effective life of the tractor. Therefore, to develop maximum design performance and attain the longest life of the tractor, the tractor needs to be correctly broken in. Handle the new tractor, strictly observing the following instructions.

1. Do not run the tractor at full speed during the first 50 operating hours period

- NEVER suddenly start or brake.
- In cold weather, ALWAYS fully warm up the engine. After warm-up, start operation of the tractor.
- NEVER run the engine at a speed higher than needed.
- On rough roads or terrains, slow the tractor down as necessary. Do not run the tractor at a high speed.

The above-mentioned precautions apply not only to newly manufactured tractors but also to tractors that have been actively used. Nevertheless, we recommend that newly manufactured tractors be operated by strictly observing these instructions/ recommendations.

2. Changing the lubricating oil for the new tractor

The quality of the lubricating oil in any new tractor is very important. Various parts on a new tractor have not been fully broken in, and are not fully fitted with each other. As a result, small metal shavings may occur while the new tractor is operated, and may lead to premature wear or damage of the associated parts or components. Therefore, Cub Cadet Yanmar recommends that the lubricating oil be changed earlier than in the ordinary oil change schedule.
For the recommended oil change schedule, see “Chapter 13. MAINTENANCE”.

2. Raise and Lower the Roll-Over Protective Structure (ROPS)

⚠ WARNING

- **ALWAYS operate the tractor with the Roll-Over Protective Structure (ROPS) in the raised (unfolded) position unless the tractor is being operated in a low clearance situation.**

Keep the retractable seat belt fastened while operating the tractor with the Roll-Over Protective Structure (ROPS) in the raised position. This practice will reduce the possibility of injury or death in the event of roll-over accident. If the Roll-Over Protective Structure (ROPS) has been removed for any reason, be sure to reinstall all the associated parts before operating the tractor. NEVER alter the Roll-Over Protective Structure (ROPS). The altered Roll-Over Protective Structure (ROPS) may fail to provide the designed protection. Replace the damaged Roll-Over Protective Structure (ROPS) immediately. Contact your local Cub Cadet Yanmar dealer for technical assistance.

NEVER use the retractable seat belt if the foldable Roll-Over Protective Structure (ROPS) is in the folded position or the tractor does not have the Roll-Over Protective Structure (ROPS).

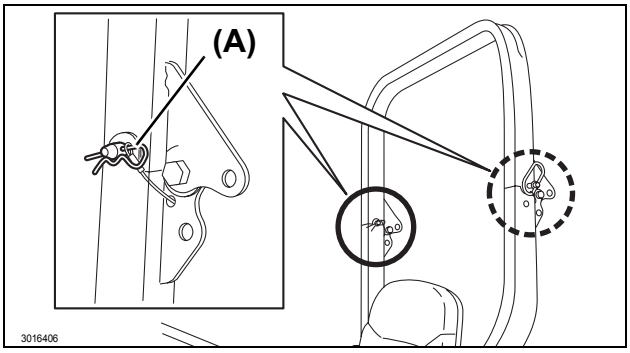
■ Lower (Fold Down) the Roll-Over Protective Structure (ROPS)

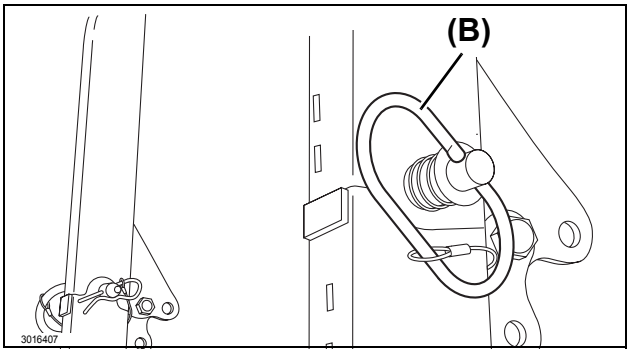
NOTE

- The Roll-Over Protective Structure (ROPS) can be folded down only by 90 degrees.

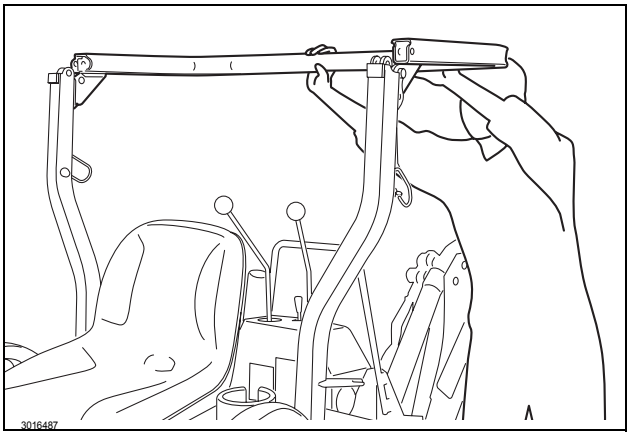
1. Pull out the hairpin clip from each of the insert pins on both sides of the Roll-Over Protective Structure (ROPS).
2. Pull out the insert pins from both sides of the Roll-Over Protective Structure (ROPS).

(A) Hairpin clip
(B) Insert pin





3. Lower (fold) the Roll-Over Protective Structure (ROPS).

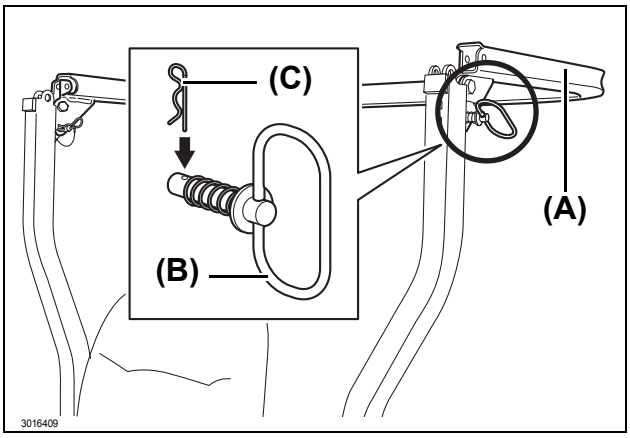


⚠ WARNING

To avoid personal injury:

- **Always use both hands to hold the Roll-Over Protective Structure (ROPS) securely and fold the Roll-Over Protective Structure (ROPS) slowly and carefully.**

4. There are folded Roll-Over Protective Structure (ROPS) retaining holes on both sides of the lowered Roll-Over Protective Structure (ROPS). Install the insert pins into these holes.
5. There are holes on both ends of the insert pin. Install the hairpin clip into these holes.



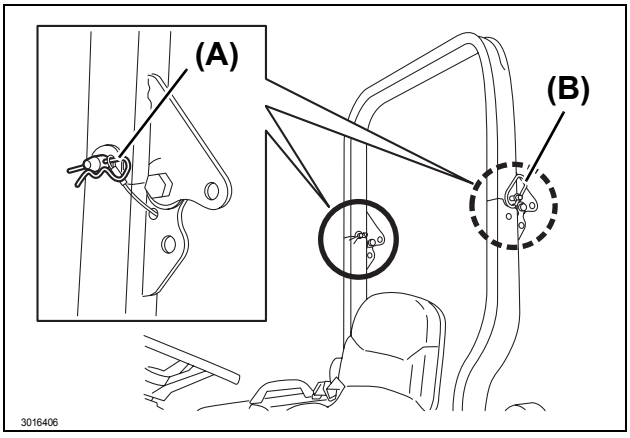
NOTE

- To secure the play-absorbing vibration-insulating rubber block, pull the upper bolt to the near side and insert the pins.

(A) Roll-Over Protective Structure (ROPS)
(B) Hairpin clip
(C) Insert pin

■ Raise (Unfold) the Roll-Over Protective Structure (ROPS)

1. Pull out the hairpin clip from each of the insert pins on both sides of the Roll-Over Protective Structure (ROPS).



(A) Hairpin clip
(B) Insert pin

2. Pull out the insert pins from both sides of the Roll-Over Protective Structure (ROPS).
3. Raise (unfold) the Roll-Over Protective Structure (ROPS).
4. There are unfolded Roll-Over Protective Structure (ROPS) retaining holes on both sides of the raised Roll-Over Protective Structure (ROPS). Install the insert pins into these holes.
5. There are insert pin jam holes on both ends of the insert pin. Install the hairpin clip into these holes.

NOTE

- To secure the play-absorbing vibration-insulating rubber block, pull the upper bolt to the near side and insert the pins.

3. Operate the Tractor

⚠ WARNING

Avoid injury:

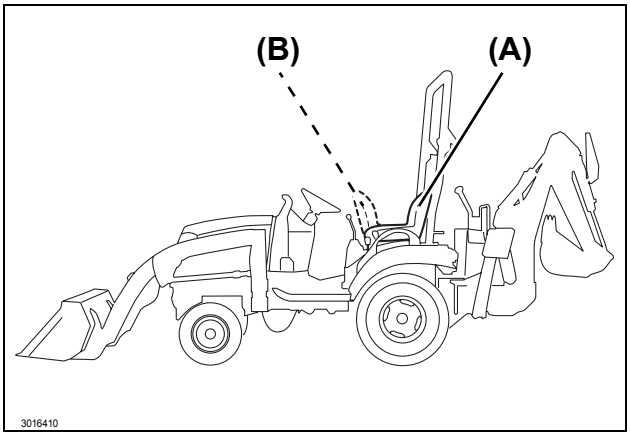
- **Before starting or operating the tractor, always check the area around the tractor for obstacles and any person nearby. Turn off the Power Take Off (PTO) switch and raise the implement.**

IMPORTANT: Avoid damage.

- To prevent damage to the transmission, stop the tractor completely before shifting the range gear lever.

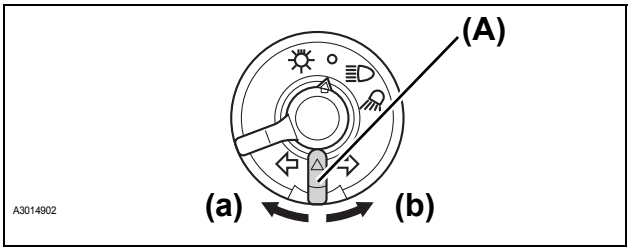
1. Adjust the operator's seat position, sit on the seat, and fastens the seatbelt.

For the adjusting method of the seat position, see "Adjust the Operator's Seat" on page 7-2, and for the fastening method of the seat belt, see "Fasten the Retractable Seat Belt" on page 7-4. See "Reverse the Operator's Seat" on page 7-2 to adjust the seat to the position of the backhoe.



(A) Tractor driving position
(B) Backhoe position

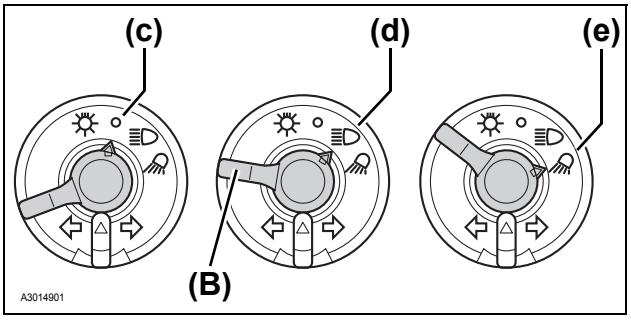
2. Use the turn signal switch, headlight/ work light switch, hazard lights button switch as necessary.



(A) Turn signal switch

(a) Move the turn signal switch to the left to signal a left turn of the tractor.

(b) Move the turn signal switch to the right to signal a right turn of the tractor.

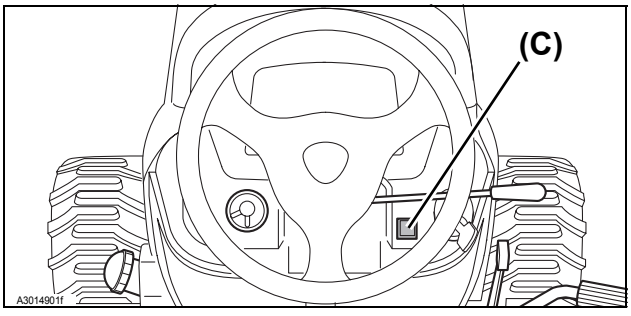


(B) Headlight/work light switch

(c) OFF

(d) Turning the blue lever to (b) position illuminates the headlights.

(e) Turning the blue lever to (c) position illuminates the headlights and work lights at the same time.

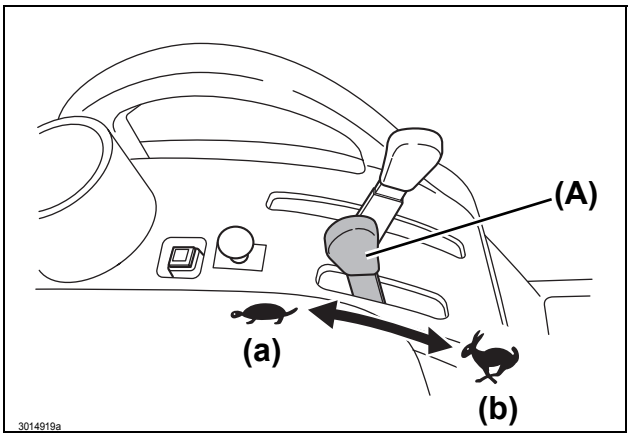


(C) Hazard lights button switch

3. Start the engine.

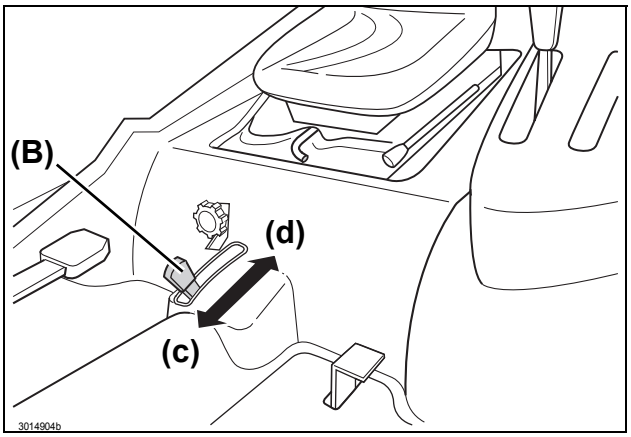
Start the engine by referring to “Chapter 7. OPERATE THE ENGINE”.

4. Use the range gear lever and the 4-wheel drive lever to select the travel speed.



(A) Range gear lever
(a) SLOW : Used for heavy-load operation.
Low traveling speed.
(b) FAST : Used for light-load operation.
High traveling speed.

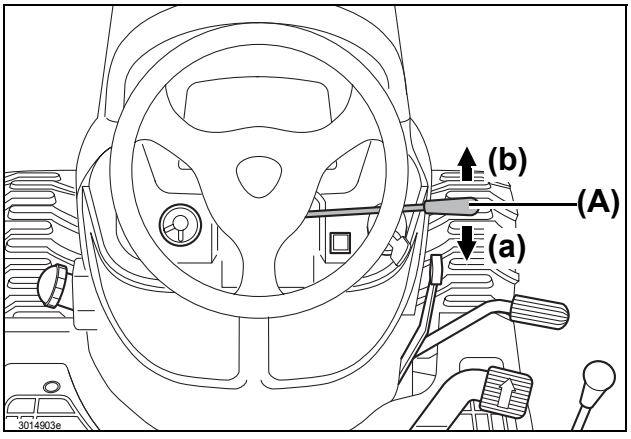
(B) 4-wheel drive lever
(c) 4-wheel drive mode
(d) 2-wheel drive mode



IMPORTANT: Avoid damage.

- ALWAYS keep the 4-wheel drive lever in the 2-wheel drive mode when traveling on a paved surface.
- ALWAYS disengage the 4-wheel drive lever put in the 2-wheel drive mode when not needed to prevent premature wear of the front tires.
- NEVER install tire chains to the front wheels. Chains will hit and can damage the tractor.
- If disengaging the 4-wheel drive lever is difficult, stop the tractor, turn the steering wheel right and left several times. Then attempt to disengage the 4-wheel drive lever again.
- To minimize tire wear, drive in the 4-wheel drive mode only when absolutely necessary. Driving the tractor on a paved road in the 4-wheel drive mode can accelerate wear of the tires.
- To obtain better traction, keep the front tires at the maximum allowable pressure.
- When the 4-wheel drive lever is in the 4-wheel drive mode, braking will apply to all four wheels.

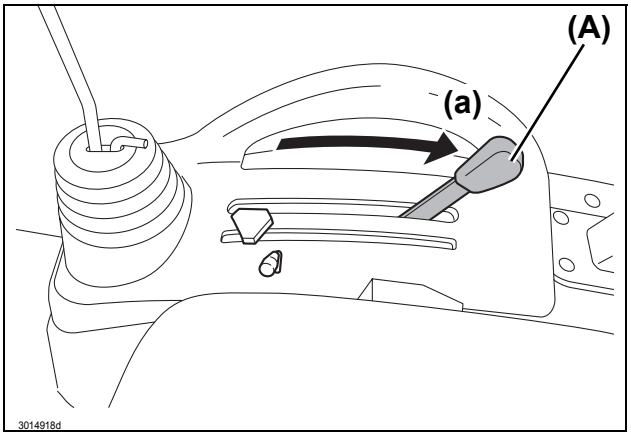
5. Adjust the throttle control lever to attain an intended speed.



(A) Throttle control lever
(a) To increase the engine speed:
pull the throttle control lever backward.
(b) To decrease the engine speed:
push the throttle control lever forward.

6. Raise the implement.

1. Pull the 3-point hitch control/cutting height adjustment lever rearward and raise the mid- or rear- mounted implement to the raised position.



(A) 3-point hitch control/cutting height adjustment lever
(a) Raised position

2. If the tractor has any implements (ex. front loader) that use the implement control valve, pull up the implement lock lever to release locking and use the implement control lever to raise the implement.

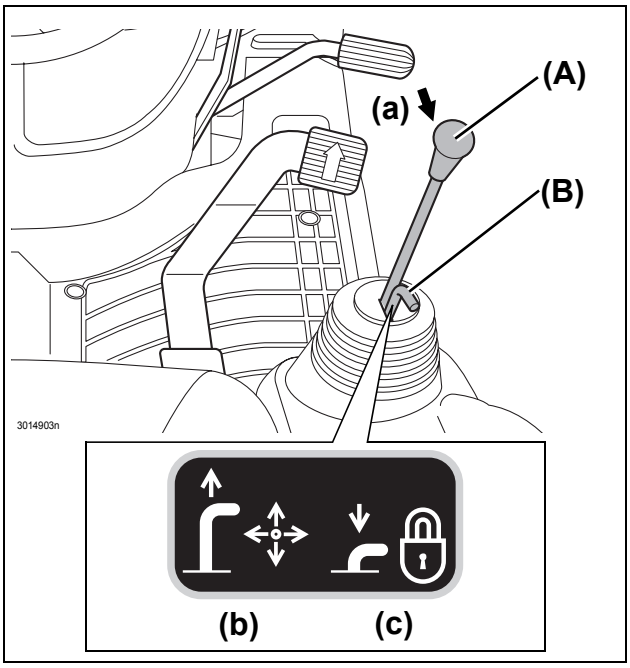
■ Function of Implement Lock Lever

⚠ WARNING

To prevent injury from crushing:

- **Never attempt to use the implement lock lever in order to perform maintenance or repair. This lock is for preventing the implement from being accidentally engaged during transport or when not being used. It will not prevent implement leak down.**

When fixing or adjusting the implement control lever to its NEUTRAL position, use the implement lock lever to lock the implement control lever in place.



(A) Implement control lever
(B) Implement lock lever

IMPORTANT: Avoid damage.

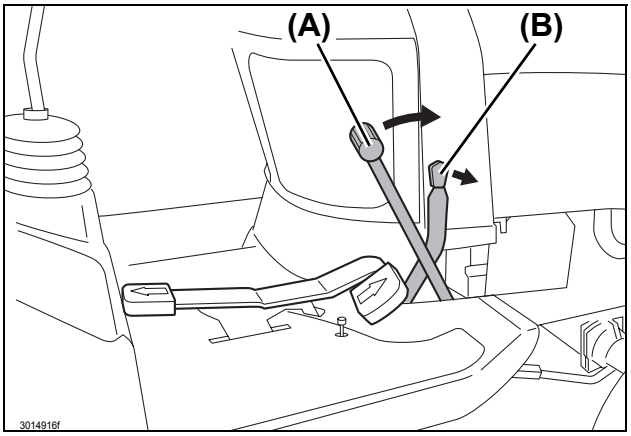
- Do not attempt to operate the implement control lever when the implement control lever has been locked.
- When the implement control lever has been locked with the implement lock lever, move the implement control lever with light force to ensure that it has been securely locked.

(a) Raising the implement
(b) To unlock the implement control lever: Pull up the implement control lock lever.
(c) To lock the implement control lever: Push down the implement lock lever when the implement control lever is in its NEUTRAL position.

7. Disengage the parking brake.

1. Fully depress the brake pedal.
2. Fully push the parking brake lever forward to unlock the parking brake.
3. Remove foot from the brake pedal. Make sure that the brake pedal is unlocked.

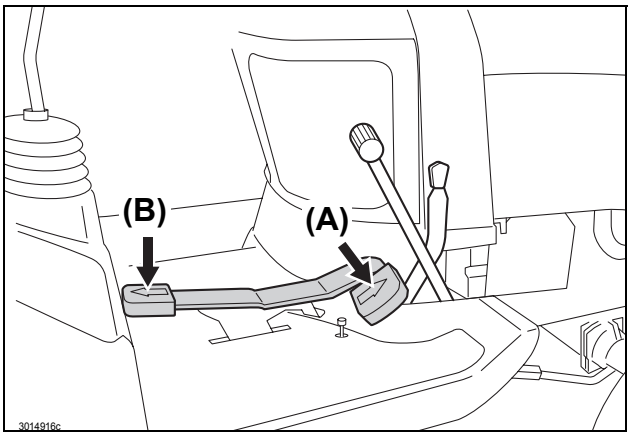
(A) Brake pedal
(B) Parking brake lever



8. Remove foot from the brake pedal.

9. Slowly depress the forward side of the forward and reverse drive pedal or reverse side of the forward and reverse drive pedal.

(A) Forward side of the forward and reverse drive pedal
(B) Reverse side of the forward and reverse drive pedal



IMPORTANT

- When the drive pedal is released, the transmission will automatically return to the NEUTRAL position.

10. Operate the steering wheel and travel to the intended destination.

11. Use the cruise control as necessary.

The cruise control is a feature that regulates forward tractor travel to a specific speed.

NOTE

- The cruise control is operative only when the tractor is traveling forward.

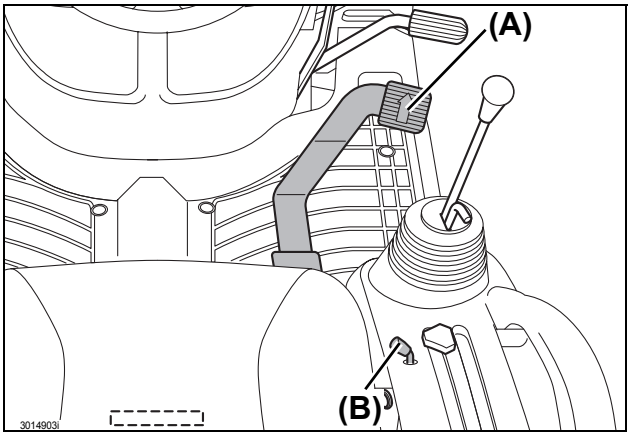
⚠ WARNING

- **Use the cruise control only when traveling in a vast open area.**
- **Turn OFF this feature before turning the tractor or when in areas that include many obstacles.**

■ Engage the Cruise Control

1. Depress the forward side of the forward and reverse drive pedal until an intended travel speed is reached.
2. Lift up the cruise control lever to engage the cruise control feature.
3. Remove foot from the forward side of the forward and reverse drive pedal.
4. Remove hand from the cruise control lever.

(A) Forward side of the forward and reverse drive pedal
(B) Cruise control lever



■ Disengage the Cruise Control

1. Depress the brake pedal.
2. Step on the forward side of the forward and reverse drive pedal and make sure the forward and reverse pedal is unlocked.

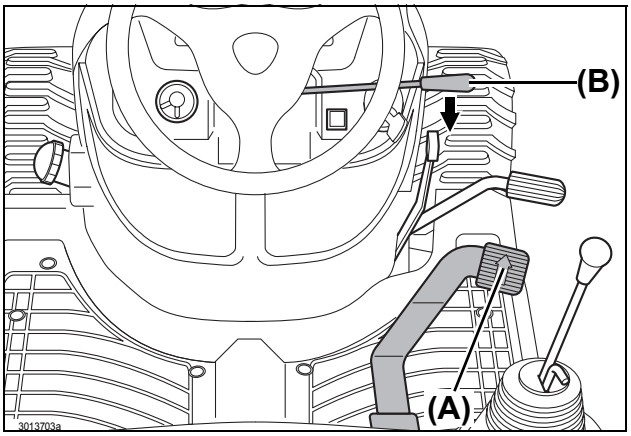
NOTE

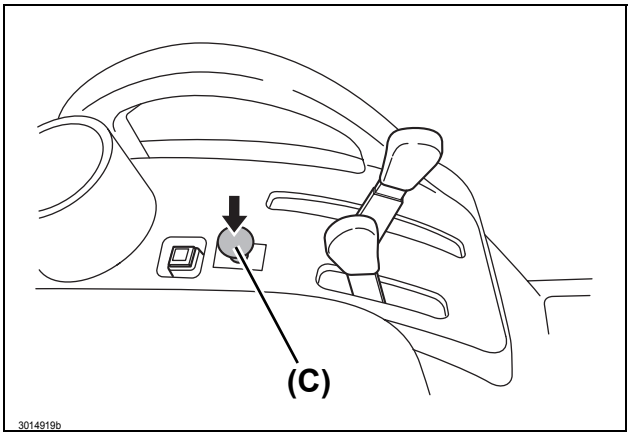
- The cruise control is disengaged when the operator depresses the brake pedal.
- If the cruise control lever is not readily disengaged, then step on the brake pedal several times.
- Also, the cruise control can be disengaged when the operator depresses the forward side of the forward and reverse drive pedal. Note, however, that the reverse side of the forward and reverse drive pedal can not be used for this purpose.
- Do not strongly step on the reverse side of the forward and reverse drive pedal when the cruise control is in the locked state.

4. Stop the Tractor

1. Slowly remove foot from the forward side of the forward and reverse drive pedal or reverse side of the forward and reverse drive pedal.
2. Fully push the throttle control lever forward to decrease the engine speed.
3. Step on and depress the brake pedal.
4. After the tractor has completely stopped, turn off the Power Take Off (PTO) switch.
5. Lower the implement (if equipped) to the ground.
6. Engage the parking brake securely.
7. Run the engine at a lowest possible speed for at least for two minutes.
8. Turn the key to the OFF position.
9. Remove the key from the starter key switch.
10. Make sure that the engine and other rotating component(s) have stopped running. NEVER leave the operator's seat while any component is running.

(A) Forward and reverse drive pedal
(B) Throttle control lever
(C) Power Take Off (PTO) switch





■ Stop in an Emergency

1. Remove foot from the forward side of the forward and reverse drive pedal or reverse side of the forward and reverse drive pedal.
2. Depress the brake pedal.
3. Turn the key to the OFF position.
4. Keep the brake pedal pressed until all the moving parts on the tractor come to a full stop.
5. Engage the parking brake securely.

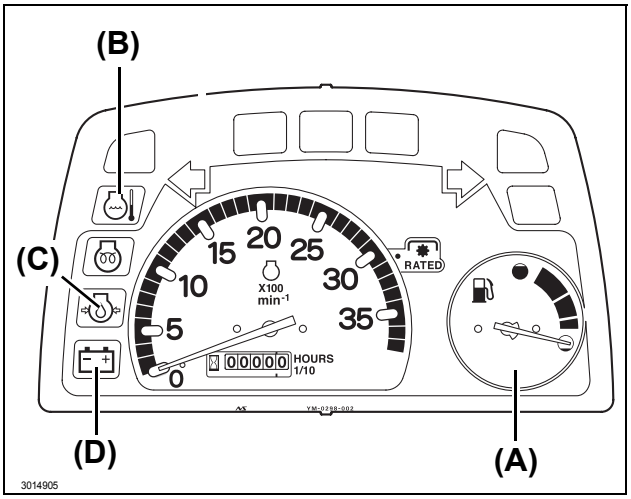
5. Verify During Driving

■**If any of the following occurs, shut off the engine immediately.**

- Suddenly the engine slows down or accelerates on its own.
- Any unusual noise is heard.
- Dark exhaust is suddenly emitted.

Regularly check the following during driving to ensure that all parts are functioning normally.

(A) Fuel gauge
(B) Engine coolant warning light



If any warning light turns on during operation, immediately shut off the engine and detect the cause according to the procedure given below. Never attempt to move or start the tractor while any warning light remains “ON”.

Engine oil pressure warning light (C)
This warning light will turn on if the engine's oil pressure drops below a predetermined level.
If this occurs during operation of the tractor and the light remains lit even when the engine is accelerated to over 1100 min^{-1} (rpm) (without load), check the level of engine oil.
(See “Check the Engine Oil Level” on page 14-8.)

Alternator/battery charging light (D)
This warning light will turn on if the alternator is not charging the battery properly.
If this occurs during operation of the tractor, check the electrical charging system or contact your local Cub Cadet Yanmar dealer.

NOTE

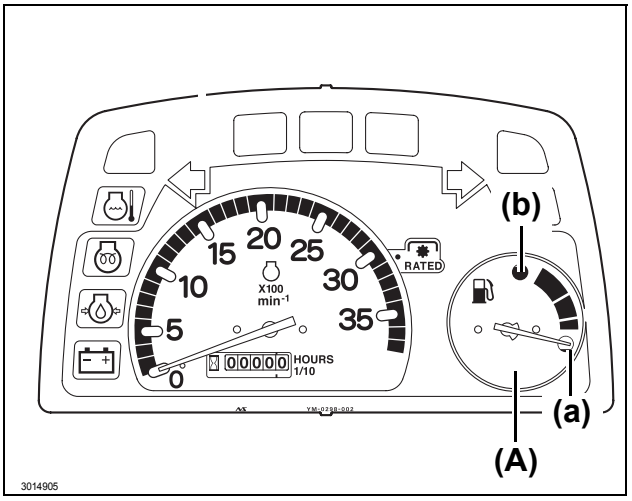
- Contact your local Cub Cadet Yanmar dealer for technical assistance on checking and servicing of the tractor.

■ Fuel Gauge

Once the starter key is turned to the ON position, the needle on this gauge will first jump to “empty” (in order to indicate that the gauge is operating properly) and move to a position that indicates the actual fuel level.

IMPORTANT

- Never allow the fuel tank to become completely empty or air may enter the fuel system and necessitate bleeding of the whole fuel system. (See “Refill the Fuel Tank” on page 14-4.)



(A) Fuel gauge
(a) Empty
(b) Full

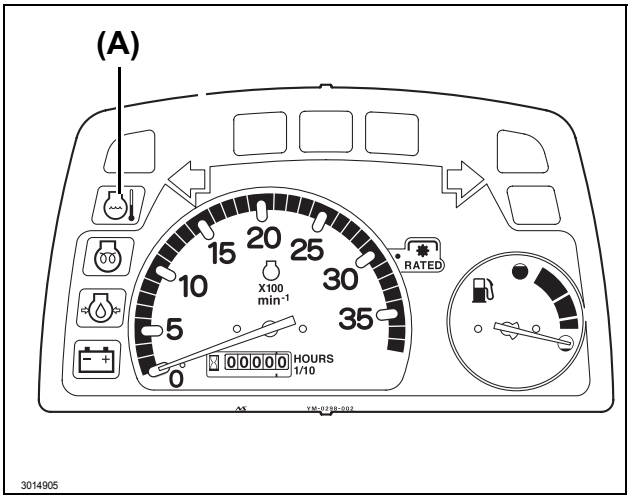
■ Engine Coolant Warning Light

This warning light will turn on if the temperature of the engine's coolant exceeds a predetermined level.

⚠ WARNING

To avoid personal injury:

- **Always allow the temperature of the coolant to drop sufficiently before attempting to remove the radiator cap.**
- **Always loosen the cap slightly first in order to release the internal pressure before attempting to remove the radiator cap completely.**



IMPORTANT

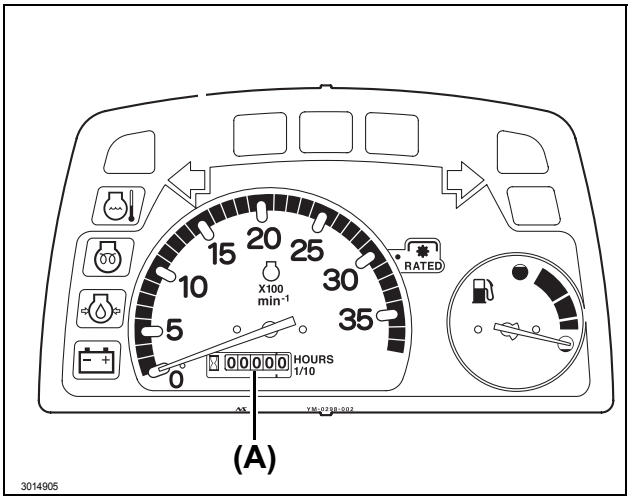
- If the engine coolant warning light does turn on, reduce the load on the tractor immediately, run the engine at an idle until the light turns off, and shut off the engine. Wait until the engine has cooled off completely, and check to see that there is:
  (1) Sufficient coolant in the radiator and reserve tank
  (2) No clogging of the radiator fins and screen
  (3) Sufficient tension in the fan belt
  See “Chapter 14. PERIODIC SERVICE” for more information on maintenance procedures.
- If the coolant warning light turns on again even after being sure of the checkpoints above, shut off the engine immediately and contact your local Cub Cadet Yanmar dealer.

(A) Engine coolant warning light

■ Hour Meter

When the key is turned to the ON position with the engine not yet running, this 6-digit meter shows the number of hours that the tractor has been in use. The final digit indicates 1/10 of an hour.

(A) Hour meter



6. Park the Tractor

■ Apply the Parking Brake

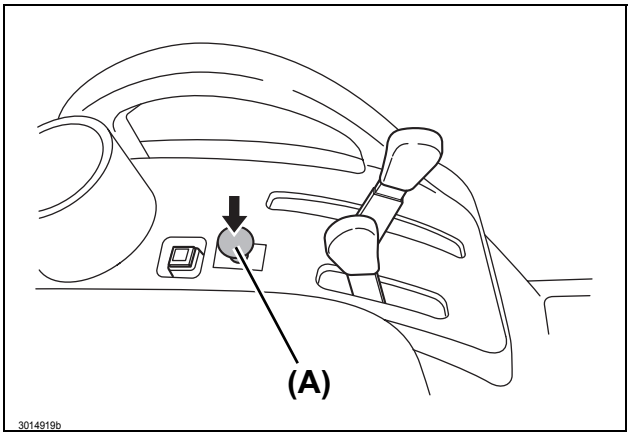
⚠ CAUTION

Avoid injury:

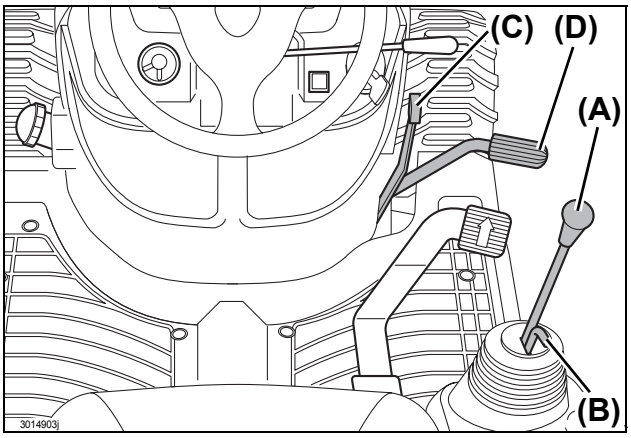
- **ALWAYS engage the parking brake securely before leaving the tractor unattended.**

1. Turn off the Power Take OFF (PTO) switch.

(A) Power Take Off (PTO) switch



2. Lower the implement to the ground, set the implement control lever to the NEUTRAL position and push in the implement lock lever to lock.
3. Engage the parking brake securely.
4. Turn the key to the OFF position.
5. Remove the key from the starter key switch.
6. Remove foot from the brake pedal. Make sure that the parking brake has been fully engaged.
7. Before leaving the tractor, be fully sure that the tractor is at a standstill.



(A) Implement control lever
(B) Implement lock lever
(C) Parking brake lever
(D) Brake pedal

IMPORTANT

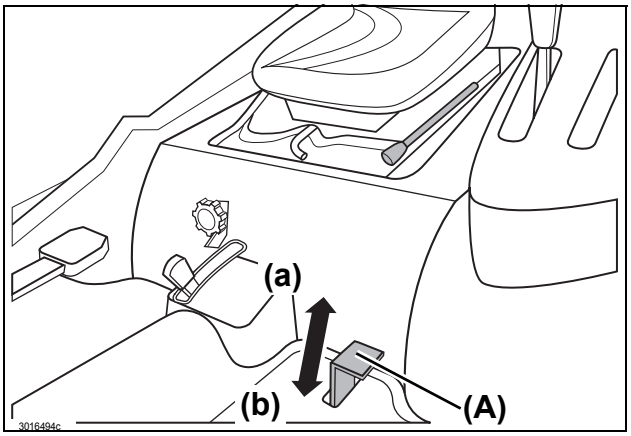
- NEVER park on a steep slope. ALWAYS park on a solid, flat, level ground whenever possible. If parking on a slope is unavoidable, park the tractor across the slope, and lower the implement to the ground.

■ Release the Parking Brake

1. Fully depress the brake pedal.
2. Fully push the parking brake lever forward to unlock the parking brake.
3. Remove foot from the brake pedal. Make sure that the brake pedal is unlocked.

7. Safe Practices for Operation

1. Differential Lock



(A) Differential lock foot pedal
(a) disengage
(b) engage

⚠ WARNING

To prevent the tractor from overturning:
- **Do not attempt to turn with the differential lock engaged.**
- **Do not engage the differential lock while the tractor is traveling at a high speed.**

The differential lock is actuated to provide greater traction when rear wheels begin to slip. Engaging the differential lock will cause the right and left rear axles to be locked and simultaneously rotate at a same speed, allowing the tractor to develop maximum traction force.

IMPORTANT: Avoid damage.
- To prevent damage to the differential gears, NEVER engage the differential lock while the tractor is traveling at a high speed, or when only one wheel is rotating.
- The differential lock is designed to be used for short durations. Its prolonged use can damage the differential gears.

■ Engage the Differential Lock

1. Stop or slowly drive the tractor.
2. Depress the differential lock foot pedal.

■ Disengage the Differential Lock

Remove foot from the differential lock foot pedal.

IMPORTANT
- When using the differential lock, decrease the engine speed.
- To prevent transmission damage, do not use the differential lock when only one rear wheel is rotating.
  - If the differential lock does not disengage when the foot is removed from the differential lock foot pedal, lightly step on the brake pedal several times.

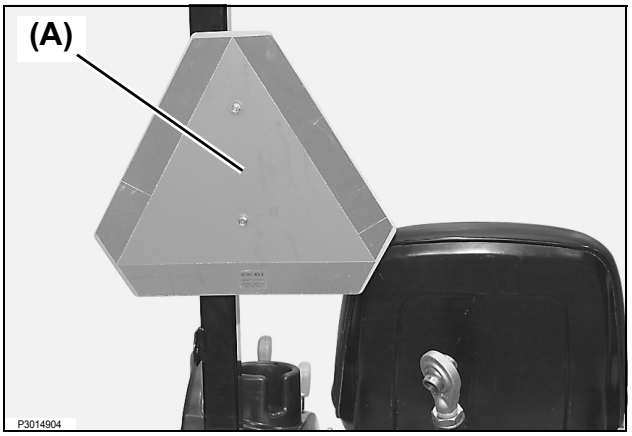
2. Drive the Tractor on Roads Safely

⚠ WARNING: Avoid injury!

Exercise due caution when driving the tractor at a transport speed.

- **We recommend that the user/operator use the turn signal/hazard lights when traveling on public roads. Before operating the tractor on a public roadway, be aware of relevant state or local regulations in effect. An implement safety lighting kit is available from your local Cub Cadet Yanmar dealer.**
- **If local laws permit road travel, use the flashing hazard lights and Slow Moving Vehicle (SMV) emblems when traveling on public roadways.**

- When operating the tractor on a roads, strictly observe the following precautions:
  - ALWAYS ensure that right side and left side brakes are equally adjusted.
  - ALWAYS ensure that the Slow Moving Vehicle (SMV) emblem and hazard lights are clean and clearly visible. If a towed or rear-mounted implement jeopardizes visibility of these safety devices, install the Slow Moving Vehicle (SMV) emblem and hazard lights on the implement.



(A) Typical example of installed Slow Moving Vehicle (SMV) emblem

- Turn the hazard lights and headlights ON, unless prohibited by law.
- Secure the implement being towed with lock hitch pins and safety chains.
- Drive the tractor slowly so that the tractor is under control at all times. Slow down for travel on slopes, rough roads, sharp turns or when transporting a heavy rear-mounted implement.
- Disengage the 4-wheel drive to prevent excessive tire wear.
- NEVER coast downhill.
- Check whether the front wheel gearing is engaged.
- Remember that the braking characteristics differ between the 2- and 4-wheel drive modes. ALWAYS be aware of the current drive mode and use it properly.
- ALWAYS slow down before turning. High-speed turns may cause the tractor to tip over.
- ALWAYS ensure that the Slow Moving Vehicle (SMV) emblem is on the tractor and is clearly visible.

- Strictly observe all the currently effective local traffic and safety laws and regulations.
- ALWAYS travel at a speed that allows the tractor to remain controlled and stable.
- Avoid engaging the differential lock while traveling on roads as this can cause the tractor to become uncontrollable.
- While traveling on roads, do not turn the steering wheel suddenly as this can lead the tractor to become unstable and result an extremely dangerous situation.
- While on roads, NEVER attempt to operate an implement. During driving on road with an implement attached to the 3-point hitch, put the 3-point hitch control lever in its raised position and lock it with the position stop knob. Do not fully close the hydraulic flow control/stop knob in order to keep any implements in their raised position while the tractor is traveling.
  Closing the knob could cause damage to the hydraulic lift circuit.
- When driving the tractor on roads, NEVER exceed 10 mph (16 km/h).

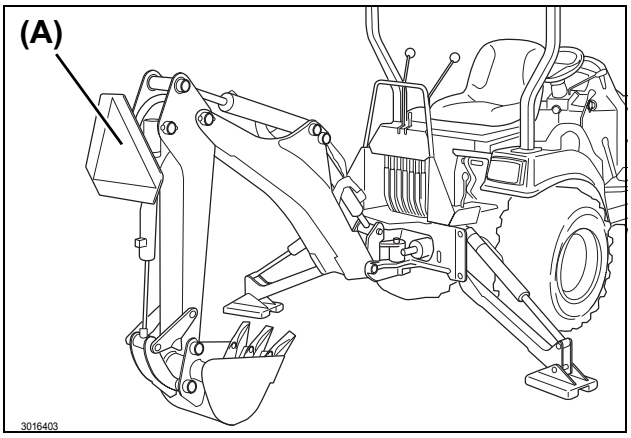
3. Drive the Tractor on Roads Safely (when with backhoe)

⚠ WARNING

Be cautious when driving the tractor at a transport speed:

- **We recommend that the user/operator use the turn signal/hazard lights when traveling on public roads. Before operating the tractor on a public roadway, be aware of relevant state or local regulations in effect. An implement safety lighting kit is available from your local Cub Cadet Yanmar dealer.**
- **If local laws permit road travel, flash the hazard lights and display the Slow Moving Vehicle (SMV) emblems when traveling on public roadways.**

- When operating the tractor on a road, strictly observe the following precautions:
  - ALWAYS ensure that the Slow Moving Vehicle (SMV) emblem and hazard lights are clean and clearly visible. If a towed or rear-mounted implement jeopardizes visibility of these safety devices, install the Slow Moving Vehicle (SMV) emblem and hazard lights on the implement.



(A) Typical example of installed Slow Moving Vehicle (SMV) emblem

- Turn the hazard lights and headlights ON, unless prohibited by law.
- Drive the tractor slowly so that the tractor is under control at all times. Slow down for travel on a slope, rough road, sharp turns or when transporting a heavy rear-mounted implement.
- Disengage the 4-wheel drive to prevent excessive tire wear.
- NEVER coast downhill.
- Check whether the front wheel gearing is engaged.
- Remember that the braking characteristics differ between the 2- and 4-wheel drive modes. ALWAYS be aware of the current drive mode and use properly.
- ALWAYS slow down before turning. High-speed turns may cause the tractor to tip over.
- Strictly observe all the currently effective local traffic and safety laws and regulations.
- ALWAYS travel at a speed that allows the tractor to remain controlled and stable.
- Avoid engaging differential lock while traveling on a road. Your tractor can lose control.

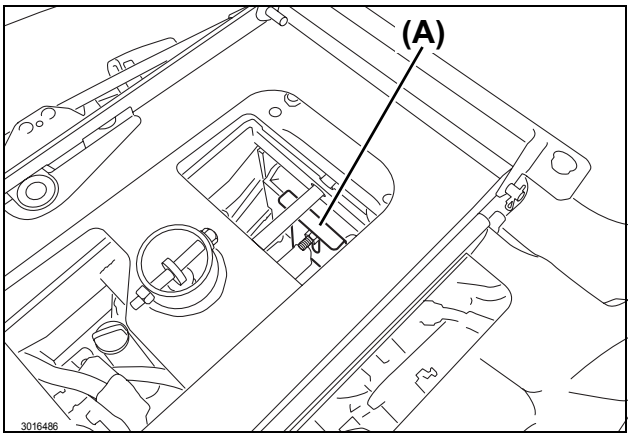
- While traveling on a road, do not suddenly turn the steering wheel. Such an action can lead to loss in the stability of the tractor, and can cause an extremely dangerous situation.
- While on a road, NEVER attempt to operate an implement. Keep the 3-point hitch in the raised position during transport.

4. Move the Tractor Manually while the Engine is Stopped

⚠ WARNING

Setting the Hydro Static Transmission (HST) pressure release lever to the ON position makes the tractor freely move.

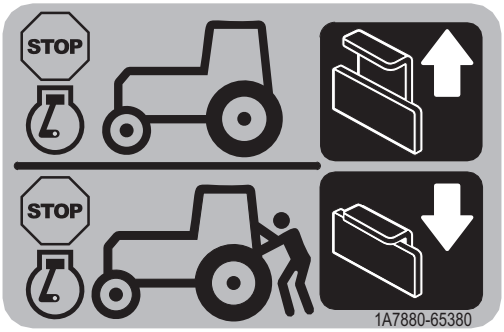
- **Do not operate the Hydro Static Transmission (HST) pressure release lever on a slope. Setting the Hydro Static Transmission (HST) pressure release lever to the ON position on the slope makes the axles freely move, so that the tractor will be out of control.**
- **Before setting the Hydro Static Transmission (HST) pressure release lever to the ON position, park the tractor in a flat place and engage the parking brake securely.**



(A) Hydro Static Transmission (HST) pressure release lever

⚠ WARNING

- **Do not operate the Hydro Static Transmission (HST) pressure release lever while the engine is running.**



IMPORTANT: Avoid damage.

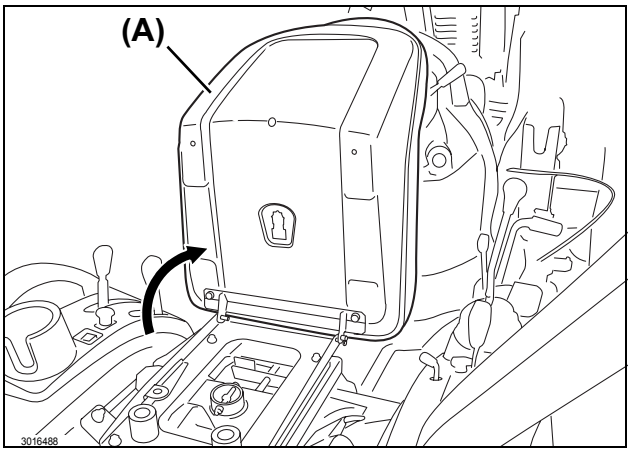
- Moving the tractor in an improper way may damage the transmission. Move the tractor by hand only.
  - Do not move the tractor with using other machine.
  - Do not tow the tractor.

■ Hydro Static Transmission (HST) Pressure Release Lever

Hydraulic pressure in the Hydro Static Transmission (HST) brakes the axles when the engine is not running, so that the tractor cannot be moved.
When the hydraulic pressure in the transmission is released by pressing the Hydro Static Transmission (HST) pressure release lever, the tractor can be moved.
To move the tractor, observe the following procedure:

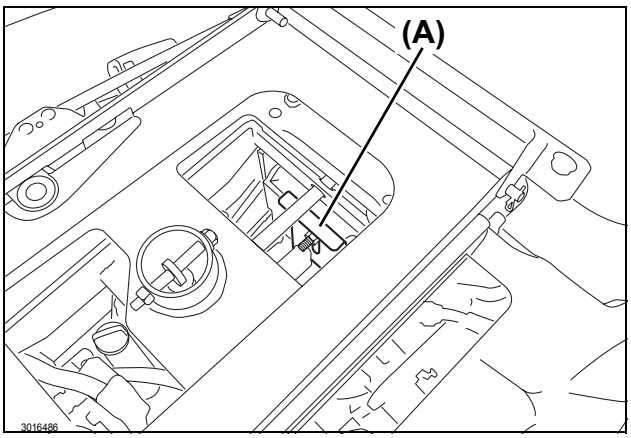
1. Make sure that the engine is stopped.
2. Tilt the seat forward.

(A) Seat

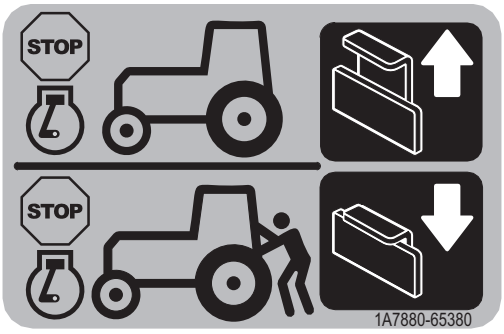


3. Fully depress the Hydro Static Transmission (HST) pressure release lever.

(A) Hydro Static Transmission (HST) pressure release lever



4. Disengage the parking brake.
5. Move the tractor.
6. After moving the tractor, fully pull up the Hydro Static Transmission (HST) pressure release lever.
7. Engage the parking brake securely.



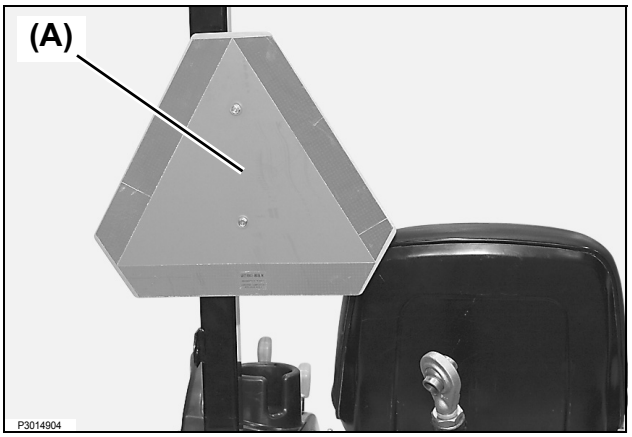
5. Transport the Tractor on a Trailer

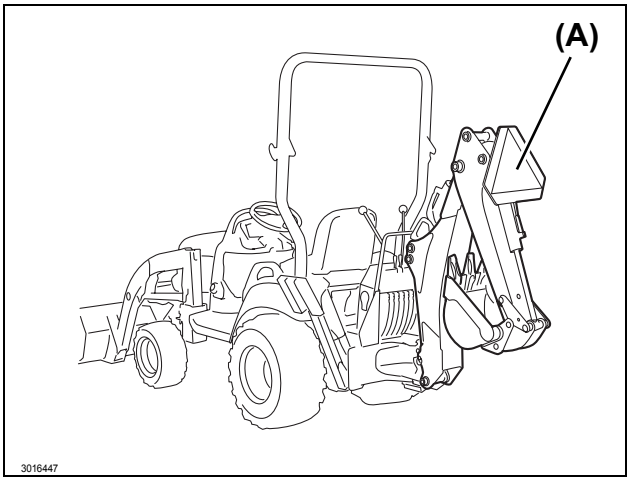
The instructions given in this page are limited to a practice recommended for transporting the tractor correctly alone or with front loader, backhoe and front loader/backhoe on a trailer.

⚠ WARNING

To prevent serious personal injury or death:

- **Always follow the cautions below.**
  - **Be sure to raise and center the boom, close the dipperstick, curl the bucket, and lock the boom and swing before attempting to transport the tractor.**
  - **Use chains and chain binders to tie down the tractor, front loader and backhoe securely to the trailer or truck. Do not put any hold down chains anywhere on the backhoe assembly.**
  - **Before starting to travel or transporting the tractor, verify and take note of the height of the backhoe to ensure it meets the clearance requirement of each underpass, etc.**
- **Exercise extreme care when loading or unloading the tractor to or from a trailer or truck.**
- **Close the fuel shut-off valve.**





(A) Typical example of installed Slow Moving Vehicle (SMV) emblem

NOTE

- Use a heavy-duty trailer to transport the tractor.

1. Drive the tractor forward onto the trailer.
2. Lower any implement onto the trailer deck.
3. Engage the parking brake securely.
4. Turn off the engine.
5. Remove the key from the starter key switch.
6. Close the fuel shut-off valve.
7. Tie down the tractor to the trailer with heavy-duty straps, chains or cables. Direct both front and rear straps down and outward from the tractor.

IMPORTANT

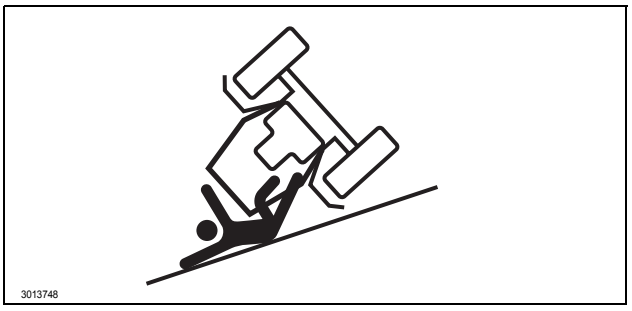
- The trailer must have signs and lights required by law.
- When transporting the tractor on a trailer, the Slow Moving Vehicle (SMV) emblem may have to be removed to comply with local laws. For details, please consult your local Cub Cadet Yanmar dealer.

6. Operate on Slopes and Rough Terrain

⚠ WARNING

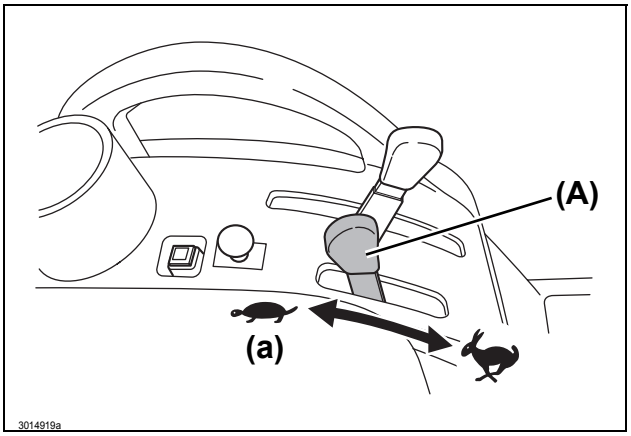
Be extremely cautious when driving the tractor on a slope and rough terrain.

- **To increase traction power and provide 4-wheel braking, engage the 4-wheel drive before driving the tractor on a slope and rough terrain. Remember that, although 4-wheel drive greatly assists in approach to a steep slope, there is greater possibility of the tractor tipping over.**
- **To improve braking power on sloped, frozen, wet or graveled surfaces, engage the 4-wheel drive. Add weight to the tractor as necessary and travel at a lower speed to prevent skidding and loss of steering control.**
- **While driving the tractor, do not attempt to climb a slope that is steeper than 11 degrees.**
- **Even on a slope that is less than 11 degrees, do not turn or change the traveling direction, or park perpendicular to the slope.**
- **Before approaching a slope, select an appropriate speed setting (be sure to travel at a lower speed when on a slope). NEVER shift gears while on a slope as this can cause the tractor to become uncontrollable and suddenly roll downhill.**
- **Suddenly starting the tractor on an uphill slope can cause the front wheels to lift off the ground and result an extremely dangerous situation. To avoid this problem, run the engine at a lower speed and slowly start the tractor in motion.**
- **NEVER park the tractor on a slope. If parking on a slope is unavoidable, chock the tires and set the parking brake securely.**
- **On a slope, the tractor is unstable and more prone to tipping over, possibly leading to severe injury or even death. Remain very cautious when your tractor is on any slope.**
- **To prevent the tractor from tipping over, travel backward on steep slopes. If traveling backward on the slope is difficult, do not attempt to continue. Avoid extremely steep slopes.**
- **When exiting a ditch or deep mud, or when traveling on a steep slope, the risk of the tractor tipping over is high. Special caution is especially required in 4-wheel drive mode.**
- **Slowly move on any slope. NEVER change speed or direction quickly.**
- **When backing up a slope, keep the tractor parallel with the gradient of the slope.**



1. Before approaching a slope, set the range gear lever to the slow position.

(A) Range gear lever
(a) Slow position

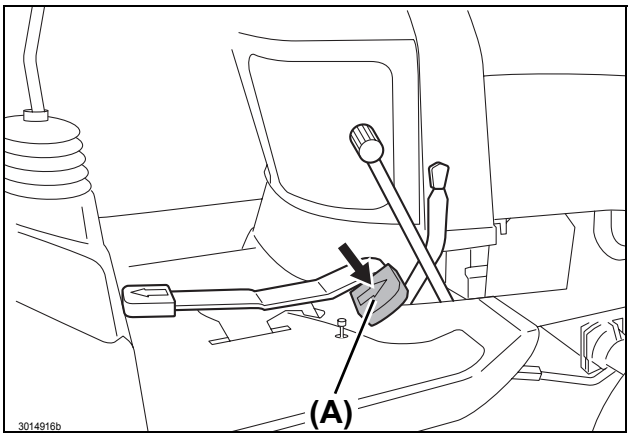


2. Lightly depress the forward side of the forward and reverse drive pedal to start moving.

IMPORTANT

●Always slowly drive the tractor on a slope.

3. ALWAYS travel slowly on a slope.
4. Drive the tractor according to the type of a slope, as instructed below:



■ Uphill/Downhill

Make sure that the range gear lever is in the slow position. Run the engine at a lower speed.

■ Steep Downhill

To be able to apply the engine brake, turn the range gear lever to the slow position.

(A) Forward and reverse drive pedal

7. About the Power Steering

⚠ WARNING

- **NEVER operate the steering wheel suddenly, especially while traveling on a paved road. Otherwise, an accident can occur.**

The power steering feature is operative only when the engine is running. Note that when the engine is running at a lower speed, the steering wheel will need slightly greater force. This is considered normal operation.

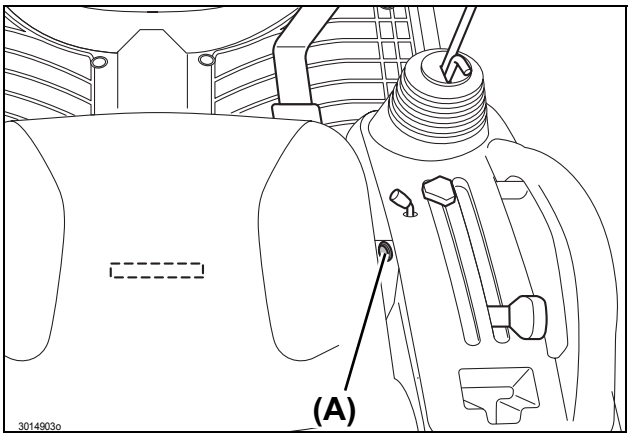
IMPORTANT

- Fully turning the steering wheel will cause the relief valve to trip and an audible signal will sound. This situation may be ignored only for a short duration. NEVER operate the steering in relief for a prolonged period.
- Turning the steering wheel while the tractor is not running can promote damage on the tires and rims. Avoid such an action whenever possible.

8. Accessory

■ 12V DC Outlet

This can be used when the key switch is in “ON” position.
It can be used as a power source for electrical goods.



(A) 12V DC outlet

IMPORTANT: Avoid damage.

- Do not connect a light or load of more than 120 watts.
- Do not use as a cigarette lighter.
- Do not use when wet.
- Long-term usage of the 12V DC outlet with the engine stopped causes the battery to run out.

9. POWER TAKE OFF (PTO)

⚠ WARNING

ALWAYS ensure all moving components have stopped rotating before connecting, disconnecting, adjusting, cleaning or servicing any Power Take Off (PTO)-driven implement.

ALWAYS follow the Power Take Off (PTO)-driven implement operation manuals and safety decals and instructions before installing or operating any Power Take Off (PTO)-driven implements.

ALWAYS ensure the Power Take Off (PTO) shaft cover is installed. ALWAYS wait until the shaft has completely stopped moving before attempting to replace the Power Take Off (PTO) shaft cap.

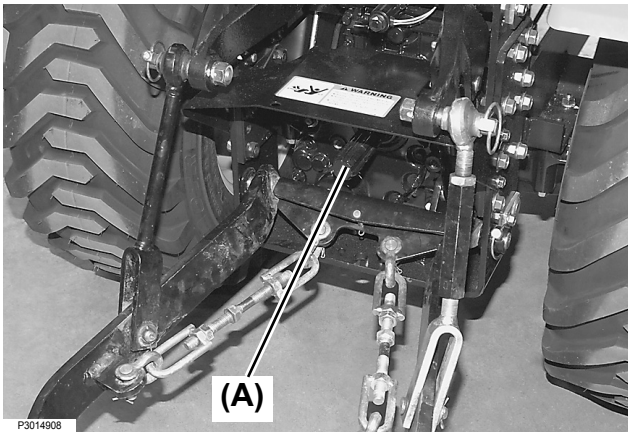
ALWAYS set the parking brake securely and put wheel chocks in front and behind the rear wheels. NEVER approach or touch any rotating component.

1. Operate the Power Take Off (PTO)

⚠ WARNING

- **Before connecting, disconnecting, adjusting or cleaning any Power Take Off (PTO)-driven implement, be sure to disengage the Power Take Off (PTO), shut down the engine, and make sure that all the components have stopped their rotation.**
- **Do not approach rotating drivelines.**
- **Entanglement with a rotating driveline can lead to serious injury or even death.**
- **Keep hands, feet and clothing away from the rotating driveline.**
- **Make sure that all shields and guards are in position and are correctly used.**
- **Do not run the engine at 3520 min^{-1}(rpm) or more while the Power Take Off (PTO) is engaged.**

■ Rear- Power Take Off (PTO)

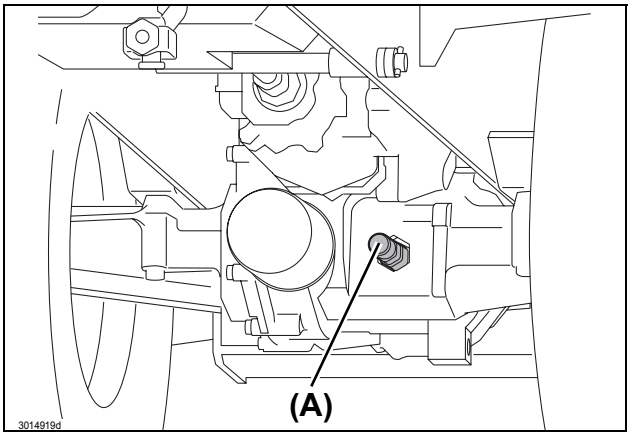


(A) Rear- Power Take Off (PTO) shaft

NOTE

●3-point hitch is option.

■ Mid- Power Take Off (PTO)



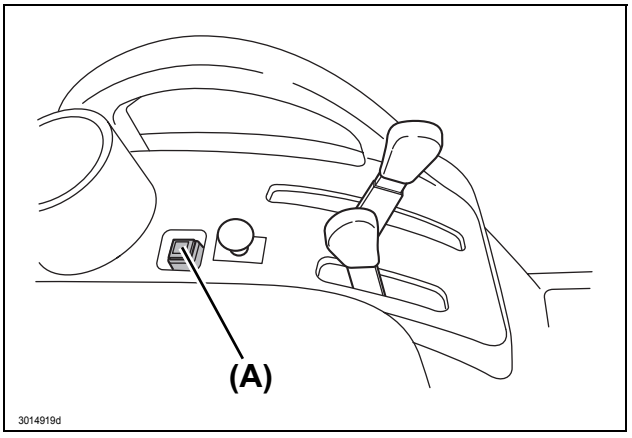
(A) Mid- Power Take Off (PTO) shaft

■ Engage the Power Take Off (PTO)

NOTE

●This tractor cannot drive the Power Take Off (PTO) unless the operator sits on the seat. When the operator leaves the seat while the Power Take Off (PTO) is engaged, the safety interlock system stops the implement and the engine.

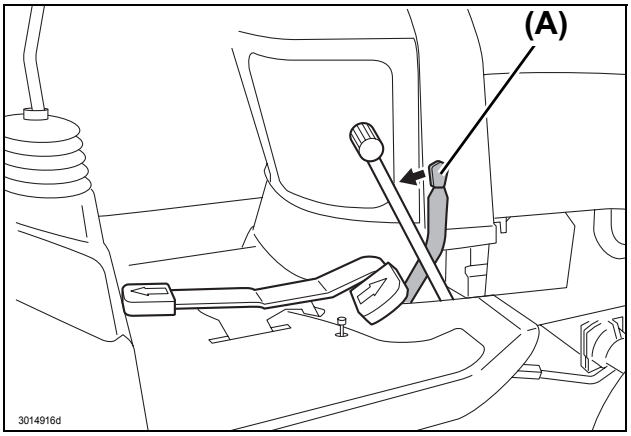
●Normally, reversing the tractor stops the Mid-Power Take Off (PTO) and the Rear-Power Take Off (PTO). To drive the Power Take Off (PTO) while reversing the tractor, use the reverse-override-switch.



(A) Reverse-override-switch

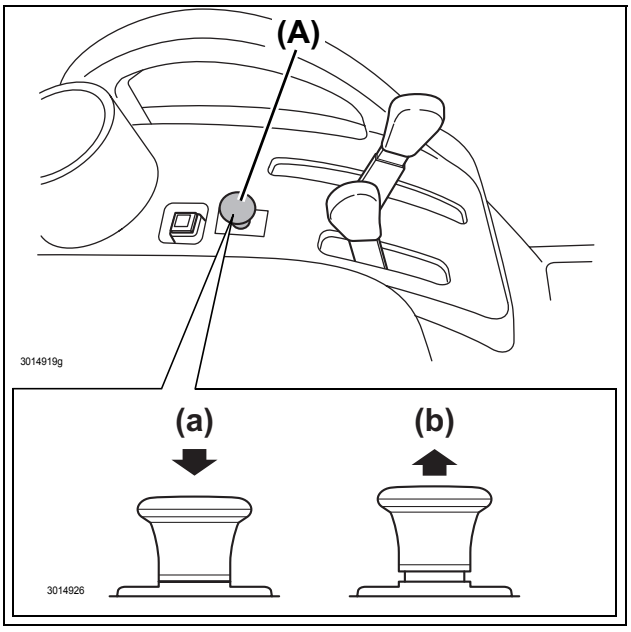
1. Sit on the operator's seat.
2. Engage the parking brake securely.

(A) Parking brake lever



3. Push in the Power Take Off (PTO) switch to set it to the OFF position.

(A) Power Take Off (PTO) switch
(a) OFF position
(b) ON position



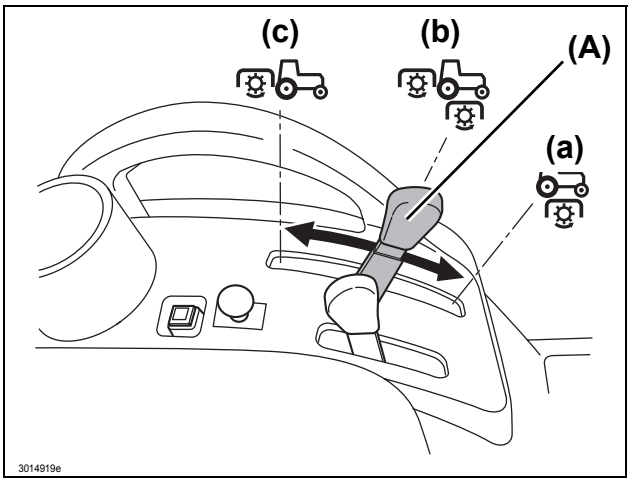
4. Start the engine.
5. Adjust the engine speed to 1500 min^{-1}(rpm) or lower.

IMPORTANT

- In order to reduce any shock at the time of driving the Power Take Off (PTO), make sure to reduce the engine speed before turning ON the Power Take Off (PTO) switch.

6. According to an implement to be used, operate the Mid-/Rear-Power Take Off (PTO) select lever.

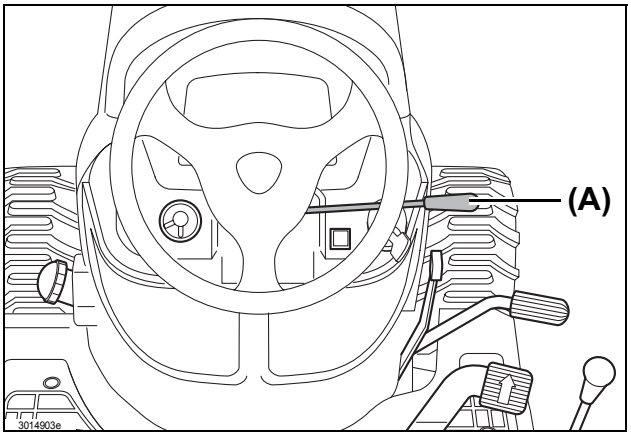
(A) Mid-/Rear-Power Take Off (PTO) select lever
(a) Operating the Mid-Power Take Off (PTO) alone
(b) Operating the Mid-Power Take Off (PTO) and the Rear-Power Take Off (PTO) at the same time
(c) Operating the Rear-Power Take Off (PTO) alone



7. Pull up the Power Take Off (PTO) switch to set it to the ON position.

8. While watching the instrument panel, adjust the engine speed suitable for operating with the throttle control lever.

(A) Throttle control lever



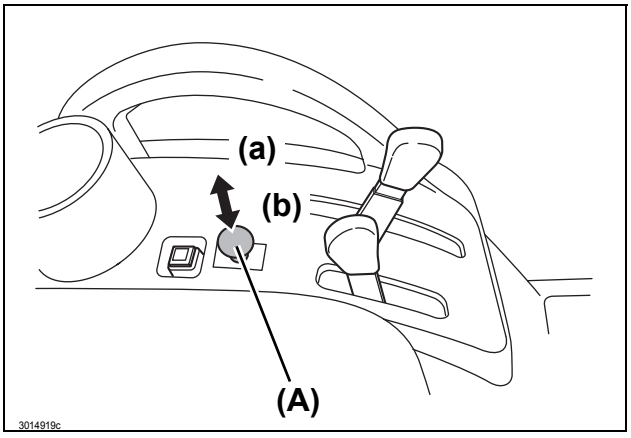
NOTE

- When the engine speed is 3300 min^{-1}(rpm), the Mid-Power Take Off (PTO) rotates at approximately 2100 min^{-1}(rpm).
- When the engine speed is 3100 min^{-1}(rpm), the Rear- Power Take Off (PTO) rotates at approximately 540 min^{-1}(rpm).

■ Disengage the Power Take Off (PTO)

1. Run the engine at a low speed.
2. Push in the Power Take Off (PTO) switch to set it to the OFF position.

(A) Power Take Off (PTO) switch
(a) ON position
(b) OFF position



2. Install an Implement to the Power Take Off (PTO) Drivelines

IMPORTANT: Avoid damage.

- Observe the driveline manufacturer's installation instructions for driveline mounting angle and the length of overlaps on the two-part driveline shafts. An incorrectly installed implement can promote wear of the driveline and/or damage the tractor.

3. Operate the Power Take Off (PTO) while the Tractor is Traveling in the Reverse Direction (Reverse Override Function)

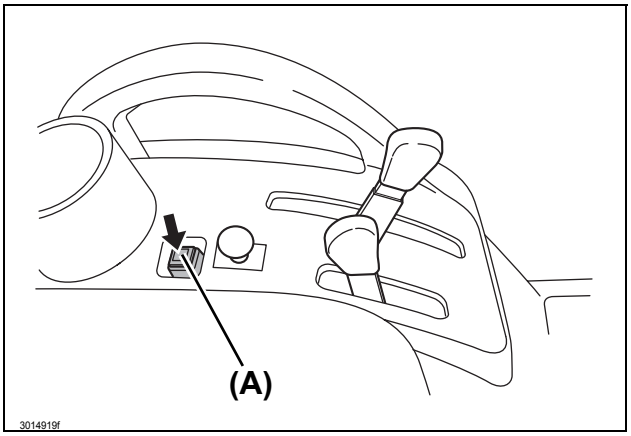
⚠ WARNING

- **Use EXTREME caution to check that anyone or any object is not present in the rear area when using the Power Take Off (PTO) in reverse.**

Normally, reversing the tractor stops the Mid-Power Take Off (PTO) and the Rear-Power Take Off (PTO). To drive the Power Take Off (PTO) while reversing the tractor, observe the following instructions:

1. Press the reverse-override-switch to enable the reverse override function.
2. The switch illuminates and the Mid-Power Take Off (PTO) and the Rear-Power Take Off (PTO) can be driven during reverse movement.

(A) Reverse-override-switch



⚠ CAUTION

- **Once the reverse-override-switch is activated, the reverse override function cannot be disabled unless the engine is stopped.**

10. 3-POINT HITCH (Option)

⚠ WARNING

ALWAYS install an appropriate counterbalance to the front of the tractor, if necessary, when using a 3-point hitch-mounted implement.

During transportation, put the 3-point hitch control/ cutting height adjustment lever in its raised position and lock it with the position stop knob. Do not fully close the hydraulic flow control/stop knob.

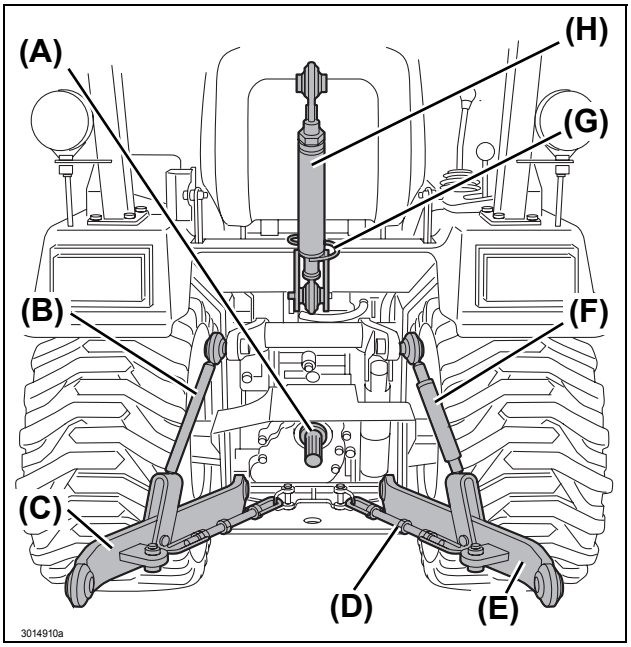
ALWAYS use implements designed for a 3-point hitch. NEVER use unapproved implements with the 3-point hitch. Contact your local Cub Cadet Yanmar dealer for technical assistance.

1. 3-Point Hitch

⚠ WARNING

Avoid injury:

- **Make sure to stop the engine and then remove the key. Make sure that the engine has been stopped completely.**
- **Make sure that no other parts are moving. If any part or component is still moving, wait until it comes to complete stop.**
- **Installation/removal of an implement must be performed in a flat and solid place.**
- **After the implement and the 3-point hitch have been installed, check for possible interference with the Power Take Off (PTO) shaft and other machine components. If interference is found, correct it.**



(A) Rear-Power Take Off (PTO) shaft
(B) Left lift link (Option)
(C) Left lower link (Option)
(D) Sway links (Option)
(E) Right lower link (Option)
(F) Right lift link (Option)
(G) Top link retainer
(H) Top link

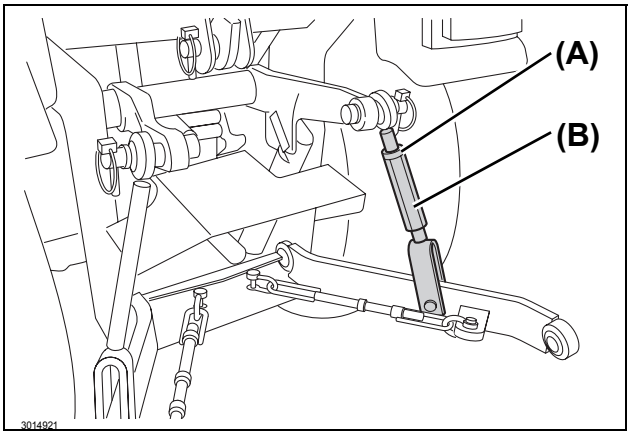
■ Right Lift Link

⚠ WARNING

- **Chock the four wheels to secure the tractor, before servicing the right lift link.**

1. Lower the rear-mounted implement.
2. Safely stop the machine.
3. Loosen the locknut.
4. Turn the turnbuckle to adjust the right lift link length until the implement mounted to the 3-point hitch is level.
5. Retighten the locknut.

(A) Locknut (Option)
(B) Turnbuckle (Option)



■ Top Link

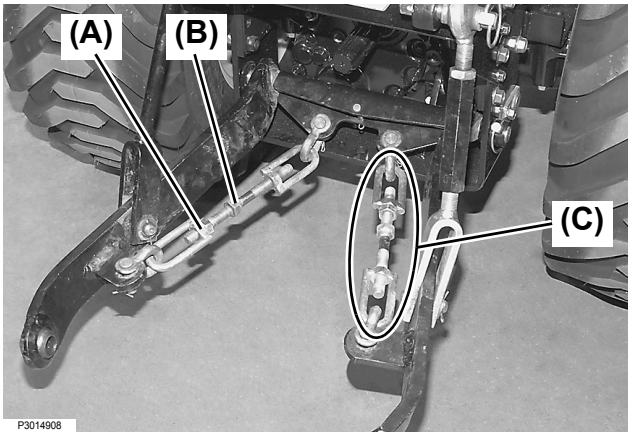
For adjusting the posture of the implement, use the top link. The posture can be adjusted by turning the turnbuckle to elongate or contract the link.
Installation position and length of the top link depend on the implement. Adjust them according to the instruction manual of the implement.

■ Sway Link

Adjust lateral sway of the implement by turning the turnbuckle of the sway links to elongate or contract the sway links.

1. Lower the rear-mounted implement.
2. Safely stop the machine.
3. Loosen the locknut.
4. Adjust the sway link length by turning the turnbuckle, so that the implement has correctly lateral sway.
5. After adjusting the lateral sway of the implement, tighten the locknut.

(A) Locknut
(B) Turnbuckle
(C) Sway link



■ Hitch

⚠ WARNING

- **Do not tow anything by the use of the top link or rear axle. Otherwise, the tractor can tip over to cause serious injury or death.**
- **The hitch hole should only be used for towing light loads. (Maximum towing load: 552 lb (250 kg))**
- **For maximum allowable weight to be towed, see "Chapter 4. IMPLEMENT CAPACITIES".**

11. HYDRAULIC SYSTEM

⚠ WARNING

ALWAYS fully release the internal hydraulic pressure before disconnecting a hydraulic line. ALWAYS ensure that all connections are tight and all the hydraulic lines, pipes and hoses are free from wear or damage.

1. 3-Point Hitch Control System

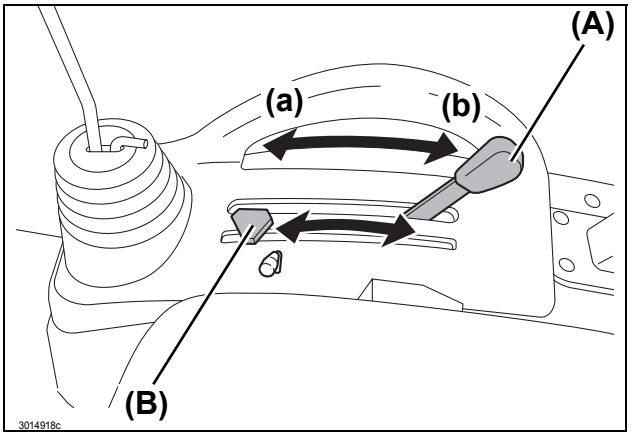
IMPORTANT

- NEVER operate the 3-point hitch control/cutting height adjustment lever before the engine has been sufficiently warmed up.
- If the 3-point hitch control/cutting height adjustment lever is operated before the engine has been warmed up, the hydraulic system can be damaged or develop a failure.
- If abnormal hydraulic noise occurs after the 3-point hitch has been raised, then misadjustment or failure of the hydraulic system should be suspected. In such a case, immediately stop operation and contact your local Cub Cadet Yanmar dealer to service or repair the tractor.

■ Operate the 3-Point Hitch Control/Cutting Height Adjustment Lever to Raise or Lower the 3-Point Hitch

Use the 3-point hitch control/cutting height adjustment lever, when raising or lowering the Mid- or Rear-mounted implement.

1. Shift the 3-point hitch control/cutting height adjustment lever to the intended position.
2. Adjust the position stop knob to set the lowest position of the implement to the desired height.

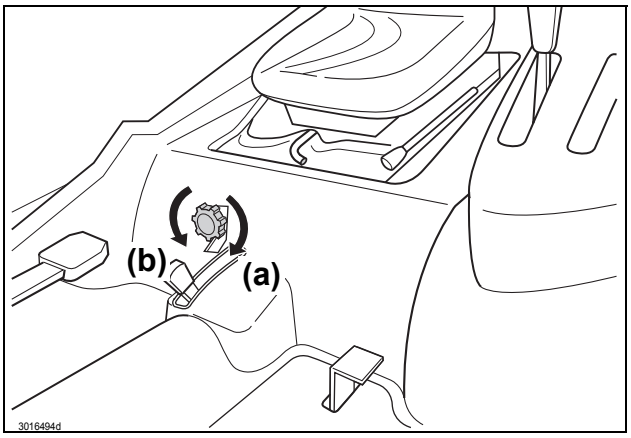


(A) 3-point hitch control/cutting height adjustment lever
(B) Position stop knob
(a) Moving the 3-point hitch control/cutting height adjustment lever forward will lower the implement.
(b) Moving the 3-point hitch control/cutting height adjustment lever backward will raise the implement to raise higher.

■ Hydraulic Flow Control/Stop Knob

⚠ WARNING

- **Lowering the 3-point hitch too fast can lead to accident or failure.**
- **Adjust the hydraulic flow control/stop knob so that the time for lowering the implement from the highest position to the lowest position becomes 2 seconds or longer.**



The lowering speed of the lower link is governed by the position of the hydraulic flow control/stop knob. Also, this knob is used to stop the lower link at an intended position.

(a) Turning the knob clockwise will cause the lowering speed to decrease.
Tighten the knob by fully turning clockwise to stop the lower link.
(b) Turning the knob counterclockwise will cause the lowering speed to increase.

⚠ WARNING

- **NEVER use the hydraulic flow control/stop knob for holding an implement in the raised position for maintenance. Loss of hydraulic pressure may cause the implement to drop suddenly. Lower the implement onto solid blocks or remove before starting any maintenance.**

IMPORTANT

- For prolonged front loader work with a weight attached to the lower link, raise the lower link to any position and fully tighten the hydraulic flow control/stop knob.

12. TIRES, WHEELS AND BALLAST

⚠ WARNING

Mounting the tire is dangerous work. Qualified professional personnel should mount the tire on the rim using proper equipment.

ALWAYS keep the tires inflated to the correct pressure. NEVER exceed the recommended inflation pressure specified in this *Operator's Manual*.

When servicing or replacing the tire(s), ALWAYS keep the tractor securely supported.

ALWAYS keep the wheel bolts tightening torque to the specified torque.

1. Tires

⚠ WARNING

Avoid injury:

- **Mounting the tire is dangerous work. Qualified professional personnel should mount the tire on the rim using proper equipment.**

IMPORTANT

- Only use the tires approved by Cub Cadet Yanmar dealers.
- When intending to use tires whose size is different from that of the original tires, contact your local Cub Cadet Yanmar dealer for the information about front drive gear ratio.

■ Tire Inflation Pressure

⚠ WARNING

- **ALWAYS keep the tires inflated to the correct pressure. NEVER exceed the recommended inflation pressure specified in this *Operator's Manual*.**

Inflation pressure gradually reduces as time elapses. Check the pressure of each tire before starting the day's operation and inflate the tires as necessary to the recommended pressures. If the tire pressures significantly decrease though the tires are correctly inflated every day, immediately contact your local Cub Cadet Yanmar dealer to inspect or replace the problem tire(s).
Before front loader work, make sure to check the tire pressure and, if necessary, inflate the tire(s) to the recommended pressure.
For the appropriate inflation pressure, see the following table:

	Tire size	Inflation pressure (psi(kgf/cm^2))	Inflation pressure when an implement such as the front loader has been attached to the front of the machine (psi(kgf/cm^2))
Front	18 × 8.50 - 10	20 (1.4)	22 (1.5)
Rear	26 × 12.00 - 12	20 (1.4)	22 (1.5)

■ Wheel Bolt Tightening Torque

⚠ WARNING

- **ALWAYS keep the wheel bolts tightened to the specified torque.**
- **With the wheel bolts loosened, do not drive the tractor.**

Before starting day’s operation, check tightening torque of each of the tire wheel bolts and, if necessary, retighten to the specified torque. For the specified torque, see the following table:

Front wheel bolt (ft•lb (N•m))	52 - 59 (70 - 80)
Rear wheel bolt (ft•lb (N•m))	52 - 59 (70 - 80)

2. Ballast

■ Front Ballast

To mount the front ballast, the optional front weight hitch is required.
To improve stability and traction, add ballast indicated in the table below. (Front End Weights)
Heavy pulling and rear-mounted implements can cause the front wheels to lift. To cope with this situation, add ballast so that reliable steering control is maintained and tip-over of the tractor is prevented.
Remove the ballast when no longer necessary.

NOTE

- For information about the optional front weight hitch, contact your local Cub Cadet Yanmar dealer.

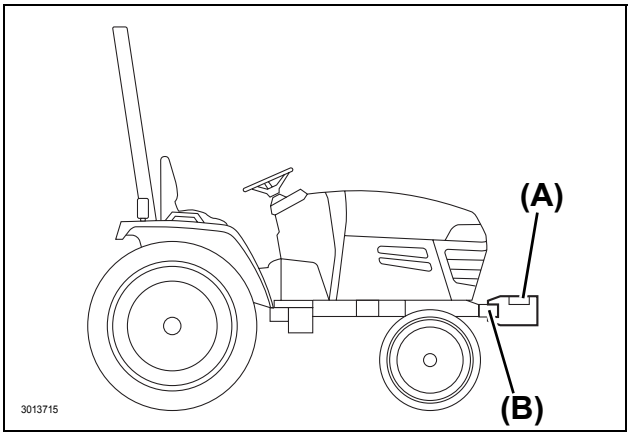
Front End Weights (Option)

The front end weights can be mounted to the optional front weight hitch. For the appropriate number of weights, see the table below as reference only.
For accurate number of front weight, contact your local Cub Cadet Yanmar dealer.

Implement Name	Number of Weight
42" Rotary Tiller	0
48" Box Scraper	0
60" Rear Blade	0
48" Grooming Mower	4
Post hole digger	0

NOTE

- One (1) weight = 44 lb (20 kg)



(A) Front end weights (option)
(B) Front weight hitch (option)

⚠ WARNING

- **NEVER overload the tires. (Maximum front axle load (Right + left): 1570 lb (712 kg))**
- **NEVER add weight in excess of the limits indicated below.**

Maximum Weight

⚠ WARNING

- **NEVER overload the tires.**
- **NEVER add weight in excess of the limits indicated below.**

Maximum weight: 176 lb (80kg) (44 lb × 4 pcs)

■ Rear Ballast

Using Liquid Weight for the Tires

⚠ WARNING

Avoid injury:

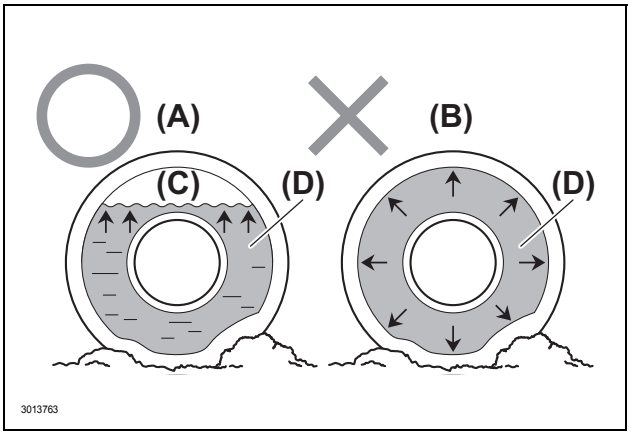
- **Installation of liquid weight requires special implement and training. An exploding tire can lead to injury. Contact your local Cub Cadet Yanmar dealer or a tire service store to do this task.**
- **When using the front loader, always put liquid weight in the rear wheels. Failure to add sufficient liquid weight may result in overturning.**

IMPORTANT: Avoid damage.

- NEVER exceed the maximum load ratings indicated on the tires.
- ALWAYS cover rim completely with the liquid to prevent corrosion, but do not exceed 75 %. A larger amount of the liquid causes a limited air space to be left in the tire, and which is too small to absorb shocks, possibly leading to damaged tire.

NOTE

- We do not recommend that alcohol be used as the ballast. Calcium chloride solution is heavier.
- A water solution of calcium chloride offers a safe ballast, and will prevent freezing. If properly used, it will not damage tires, tubes or rims.
- A mixture of 3.5 lb of calcium chloride and approximately 1 US gal of water (0.4 kg/L) will not fully freeze at a temperature above –50°F (–45°C).
- Fill tubeless tires at least to the valve stem height (at least 75 %). Smaller amount of the solution results in partly exposed rims, possibly leading to corrosion of the rim.



(A) Correct: 75 %-full The remaining air can be compressed like a cushion.
(B) Incorrect: 100 %-full Water cannot be compressed.
(C) Air
(D) Water

IMPORTANT

- To avoid transmission from damage, do not use rear wheel weight and liquid ballast at the same time.

13. MAINTENANCE

●For the checkpoints (✔) listed below, check and service at the intervals indicated in the table.
●For the inspection and maintenance procedures, see “Chapter 14. PERIODIC SERVICE”.

1. Maintenance Check List

■ Tractor

No	Topic		Time Interval	Service Intervals																								After Purchase	
				Daily	Hours																							1 year	2 years
					5	15	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000		
1	Refueling the fuel tank		Daily	✔																									
2	Engine oil level	Check	Daily	✔																									
	Engine oil	Change	50/100hr and Every 100hr				✔	✔		✔		✔		✔		✔		✔		✔		✔		✔		✔			
3	Engine oil filter	Replace	50/200hr and Every 200hr				✔			✔				✔				✔				✔				✔			
4	Transmission/ hydraulic oil level	Check	Daily	✔																									
	Transmission/ hydraulic oil	Change	50/300hr and Every 300hr				✔					✔						✔						✔					
5	Transmission/ hydraulic oil filter	Replace	50/300hr and Every 300hr				✔					✔						✔						✔					
6	Front axle case oil level	Check	Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
	Front axle case oil	Change	Every 500hr													✔										✔			
7	Front axle pivot	Adjust	Daily	✔																									
8	Fuel/water separator	Check	Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
		Clean	Every 100hr					✔		✔		✔		✔				✔		✔		✔		✔		✔			
		Replace	Every 500hr													✔										✔			
9	Fuel filter	Replace	Every 500hr													✔										✔			
10	Air cleaner element	Clean	Every 100hr					✔		✔		✔		✔		✔		✔		✔		✔		✔		✔			
		Replace	Every 1 year																									✔	
11	Fan belt	Adjust	Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
12	Radiator hose and clamp	Check	Daily	✔																									
		Replace	Every 2 years																										✔
13	Radiator cooling fins/screen	Clean	Daily	✔																									
14	Front grille screen	Clean	Daily	✔																									
15	Cooling system	Check	Daily	✔																									
		Flush	Every 1000hr or a year																							✔	✔		
16	Coolant	Change	Every 1000hr or a year																							✔	✔		
17	Fuel line	Check	Daily	✔																									
		Replace	Every 2 years																										✔
18	Intake air hose	Check	Daily	✔																									
		Replace	Every 2 years																										✔
19	Safety interlock system	Check	Daily	✔																									

No	Topic		Time Interval	Service Intervals																								After Purchase	
				Hours																									
				Daily	5	15	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1 year	2 years
20	Greasing and lubricating		Every 50hr				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
21	Brake	Check	Daily	✔																								
22	Seat belt & Roll-Over Protective Structure (ROPS)	Check	Daily	✔																								
23	Wheel bolt torque	Check	Daily	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		
24	Inflation pressure	Check	Daily	✔																								
25	Toe-in	Adjust	Every 200hr							✔				✔				✔				✔				✔		
26	Engine valve clearance	Adjust	Every 1000hr																							✔		
27	Fuel injection nozzle injection pressure	Check	Every 1000hr																							✔		
28	Fuel injection pump	Check	Every 1000hr																							✔		
29	Light bulb	Check	Daily	✔																								
30	Hydraulic hose	Check	Daily	✔																								
		Replace	Every 2 years																									✔

For assistance in periodic maintenance procedures, contact your local Cub Cadet Yanmar dealer.

2. Lubricants

No.	Locations	Capacities	Lubricants	
1	Fuel	Approximately 5.8 US gal (22 L)	No.2-D diesel fuel No.1-D diesel fuel if temperature is below 14°F (–10°C)	
2	Coolant	Approximately 3.4 US qt (3.2 L)	High Quality Permanent Type Antifreeze (Ethylene Glycol with corrosion and rust inhibitor chemicals) Coolant Mixture Ratio Distilled Water 50 % : Antifreeze 50 %	
3	Engine crankcase (with filter)	Approximately 2.5 US qt (2.4 L)	API Service Classifications CF or higher SAE 10W-30 or SAE 10W-40	
4	Transmission case	Approximately 2.0 US gal (7.5 L)	Cub Cadet Hydraulic/Transmission Fluid	
5	Front axle case	Approximately 2.6 US qt (2.5 L)	Cub Cadet GEAR LUBE or SAE 80W-90 gear oil	
6	Greasing	No. of greasing points	Capacity	Type of grease
	Drive pedal	1	Until grease overflows	Cub Cadet 251H EP Grease or General all purpose grease NLGI grade No.2

(Specifications and design are subject to change without prior notice for improvement.)

3. Replacement Parts

1. Technical Document

[U.S.A. and Canada]

To obtain a copy of Illustrated Parts List or Technical Manual for the tractor, contact your local Cub Cadet Yanmar dealer.

2. Parts

We recommend the use of the Cub Cadet Yanmar authentic parts and lubricants that are available from your local Cub Cadet Yanmar dealer.

When ordering a part, tell your local dealer the machine serial number and engine serial number for the tractor. These numbers are those previously entered in “Chapter 2. SERVICE THE PRODUCT”.

14. PERIODIC SERVICE

⚠ WARNING

NEVER smoke around the battery or during refueling. Keep sparks or open flames away from the battery and fuel tank. The battery emits hydrogen and oxygen during recharging and can pose a serious hazard.

NEVER work under any hydraulically supported devices. Such devices can settle, suddenly leak or be accidentally lowered. ALWAYS support the tractor securely with rugged stands or other appropriate means.

ALWAYS allow the tractor to fully cool down before accessing the engine, muffler, radiator or other hot components.

ALWAYS park your tractor on a solid, level ground, engage the parking brake securely, turn off the Power Take Off (PTO) switch, lower the implement to the ground, set the forward and reverse drive pedal to the NEUTRAL position, stop the engine and remove the key from the starter key switch before starting any service work.

■ Warranty and Repair of the Engine

A maintenance, inspection, repair or replacement service of engine emission control devices and systems may be performed at the owner's expense by any qualified off-road engine repair shop or mechanic. Warranty repairs must be executed by an authorized Cub Cadet Yanmar dealer.

⚠ WARNING

Avoid personal injury:

- **Engine emission gas contains carbon monoxide that, if inhaled, can cause severe poisoning or even death.**
- **NEVER run the engine in a poorly ventilated, enclosed indoor space.**
- **To release the engine emission gas to an outdoor area, connect an extension pipe to the engine exhaust pipe.**
- **Allow fresh outside air to flow into the work space to remove the engine emission gas from that space.**

NEVER inhale the emission gas.

Periodic Service of the Tractor

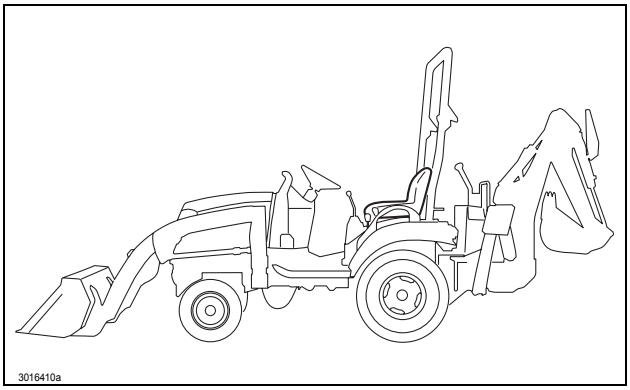
1. Open/Close the Hood

⚠ WARNING

- **Do not open the hood while the engine is running.**
- **Do not touch the hot muffler or exhaust pipe.**

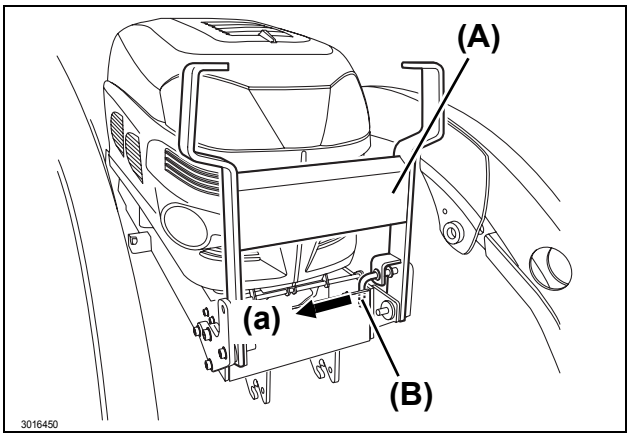
■ Open the Hood

1. Lower the front loader down to the ground and make sure that the bucket is also level with the ground.



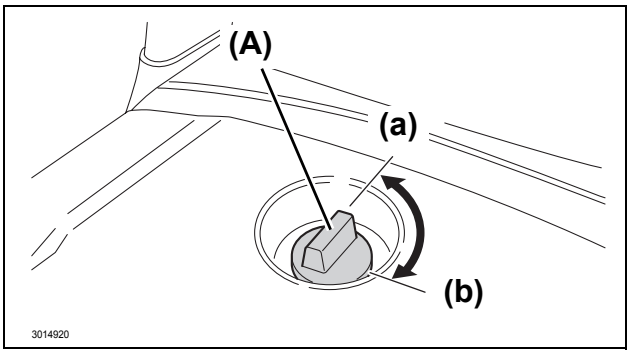
2. Tilt the hood guard forward toward the tractor body while pulling the lever fully in the direction of (a).

(A) Hood guard
(B) Lever
(a) Pull



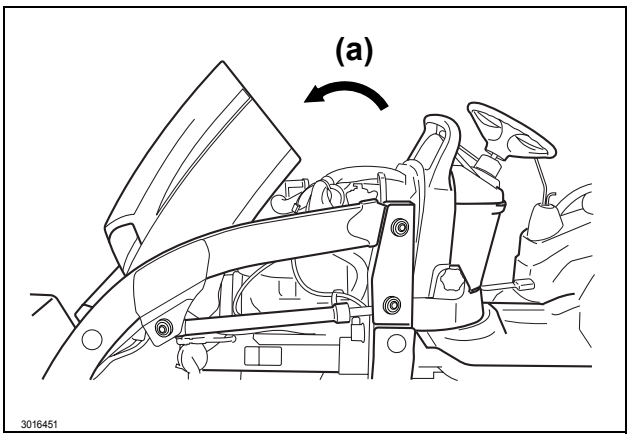
3. Turn the hood open/close knob clockwise while slightly pushing the upper portion of the hood. The hood lock will be released.

(A) Hood open/close knob
(a) Close
(b) Open



4. Lift up the hood with both hands and tilt it forward.

   (a) Tilt the hood forward



■ Close the Hood

1. Lower the front loader down to the ground and make sure that the bucket is also level with the ground.
2. Lift up the hood with both hands and tilt it toward the engine side.
3. Lock the hood open/close knob by turning it counterclockwise while slightly pushing the upper portion of the hood.
4. Lift the hood guard until a locking sound is heard.

⚠ CAUTION

- **When closing the hood, avoid pinching fingers with the hood.**

NOTICE

- Periodically clean around the hood open/close knob. Accumulation of soil or dust can cause the knob to be difficult to turn.

2. Daily Checks

Always complete the designated daily checkpoints before attempting to start or operate the tractor. Failure to complete these checkpoints could result in personal injury or decrease the service life of the tractor and its parts.

⚠ WARNING

To avoid personal injury:

- **Before attempting to check or service the tractor, always make sure it is on a level surface, the engine is shut off, the parking brake is engaged, and full weight of the implement is on the ground.**

■ Visual Checks

Before service or operation, always check under and around the tractor for parts that may have come loose, build-up of grease or dirt, leakage, and broken or worn parts.

■ Refill the Fuel Tank

IMPORTANT: Avoid damage.

- NEVER use a galvanized container to store fuel. Diesel fuel in a galvanized container reacts with the zinc coating in the container to generate zinc flakes. If the fuel contains water, a zinc gel will also occur. The zinc gel and flakes will quickly clog the fuel filter and damage the fuel injection nozzle and fuel pump.

Diesel Fuel Specifications

Diesel fuel should comply with the following specifications. The table lists several worldwide specifications for diesel fuels.

Diesel Fuel Specification	Location
No. 2-D, No. 1-D, ASTM D975-94	USA
EN590:96	European Union
ISO 8217 DMX	International
BS 2869-A1 or A2	United Kingdom
JIS K2204 Grade No.2	Japan
KSM-2610	Korea
GB252	China

Additional Technical Fuel Requirements

- The fuel cetane number should be equal to 45 or higher.
- The sulfur content must not exceed 0.5 % by volume. Less than 0.05 % is preferred.
- *Bio-Diesel fuels. See "Bio-Diesel Fuels" on page 14-6.*
- NEVER mix kerosene, used engine oil, or residual fuels with the diesel fuel.
- The water and sediment in the fuel should not exceed 0.05 % by volume.
- Keep the fuel tank and fuel-handling equipment clean at all times.
- Poor quality fuel can reduce engine performance and/or cause engine damage.
- Fuel additives are not recommended. Some fuel additives may cause poor engine performance. Consult your Yanmar dealer for more information.
- Ash content not to exceed 0.01 % by volume.
- Carbon residue content not to exceed 0.35 % by volume. Less than 0.1 % is preferred.
- Total aromatics content should not exceed 35 % by volume. Less than 30 % is preferred.
- PAH (polycyclic aromatic hydrocarbons) content should be below 10 % by volume.
- Metal content of Na, Mg, Si, and Al should be equal to or lower than 1 mass ppm. (Test analysis method JPI-5S-44-95)
- Lubricity: Wear mark of WS1.4 should be Max. 0.018 in. (460 µm) at HFRR test.

Bio-Diesel Fuels

In Europe and in the United States, as well as some other countries, non-mineral oil based fuel resources such as RME (Rapeseed Methyl Ester) and SOME (Soybean Methyl Ester), collectively known as FAME (Fatty Acid Methyl Esters), are being used as extenders for mineral oil derived diesel fuels.

Cub Cadet Yanmar approves the use of bio-diesel fuels that do not exceed a blend of 5 % (by volume) of FAME with 95 % (by volume) of approved mineral oil derived diesel fuel. Such bio-diesel fuels are known in the marketplace as B5 diesel fuels.

These B5 diesel fuels must meet certain requirements.

1. The bio-fuels must meet the minimum specifications for the country in which they are used.
   - In Europe, bio-diesel fuels must comply with the European Standard EN14214.
   - In the United States, bio-diesel fuels must comply with the American Standard ASTM D-6751.
2. Bio-fuels should be purchased only from recognized and authorized diesel fuel suppliers.

Precautions and concerns regarding the use of bio-fuels:

1. Free methanol in FAME may result in corrosion of aluminum and zinc FIE components.
2. Free water in FAME may result in plugging of fuel filters and increased bacterial growth.
3. High viscosity at low temperatures may result in fuel delivery problems, injection pump seizures, and poor injection nozzle spray atomization.
4. FAME may have adverse effects on some elastomers (seal materials) and may result in fuel leakage and dilution of the engine lubricating oil.
5. Even bio-diesel fuels that comply with a suitable standard as delivered, will require additional care and attention to maintain the quality of the fuel in the equipment or other fuel tanks. It is important to maintain a supply of clean, fresh fuel. Regular flushing of the fuel system, and/or fuel storage containers, may be necessary.
6. The use of bio-diesel fuels that do not comply with the standards as agreed to by the diesel engine manufacturers and the diesel fuel injection equipment manufacturers, or bio-diesel fuels that have degraded as per the precautions and concerns above, may affect the warranty coverage of your engine.

⚠ WARNING

Remember that fuel vapor is explosive and flammable:

- **Stop the engine before refilling the fuel tank.**
- **NEVER smoke while handling fuel.**
- **Keep the fuel away from an open flame or sparks.**
- **Refuel outdoors or in a well-ventilated area.**
- **Wipe away spilled fuel immediately.**
- **To prevent static electric discharge, use a clean approved non-metal fuel container.**
- **To prevent static electric discharge, use a clean approved plastic funnel that has no metallic screen mesh or filter.**

IMPORTANT Be careful to avoid damage.

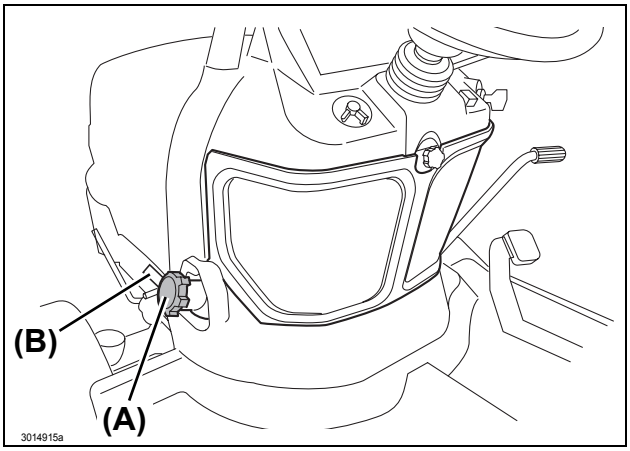
- Dirt and water in the fuel can damage the engine.
- Remove dirt and debris from the fuel tank opening.
- Use clean, fresh, stabilized fuel.
- At the end of operation for the day, fill the fuel tank to prevent condensation from occurring in the fuel tank.
- When filling the fuel tank or container use a non-metallic funnel that has a plastic mesh strainer.

1. Park the tractor safely and securely.
2. Allow the engine to cool off for several minutes before refueling.
3. Remove the fuel tank cap.
4. Fill the tank with fresh fuel to the bottom of filler neck.

IMPORTANT

- NEVER overfill the fuel tank.

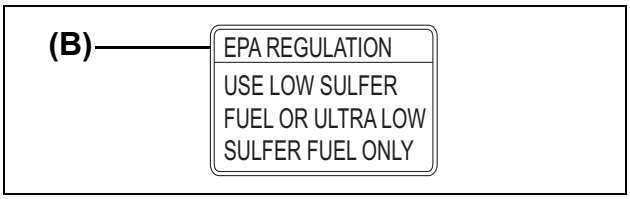
5. Replace the fuel tank cap.



(A) Fuel tank cap
(B) EPA regulation label CY-114110-07760

EPA REGULATION

USE LOW SULFER FUEL OR ULTRA LOW SULFER FUEL ONLY



■ Check the Engine Oil Level

IMPORTANT: Avoid damage.

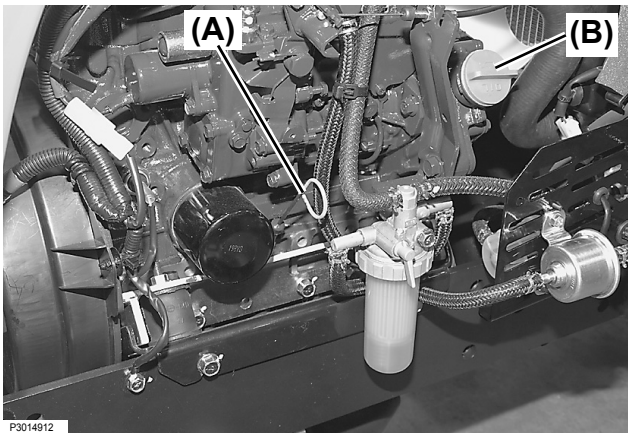
- ALWAYS check the oil level before day's operation. If the oil level is low, a serious engine problem can occur.
- ALWAYS check the oil level before operation.
- ALWAYS check the oil level when the engine is cold and not running.
- ALWAYS maintain the oil level between the lower and the upper marks.
- ALWAYS shut the engine down and allow to cool before adding the engine oil.

1. Park the tractor safely and securely.
2. Open the hood.

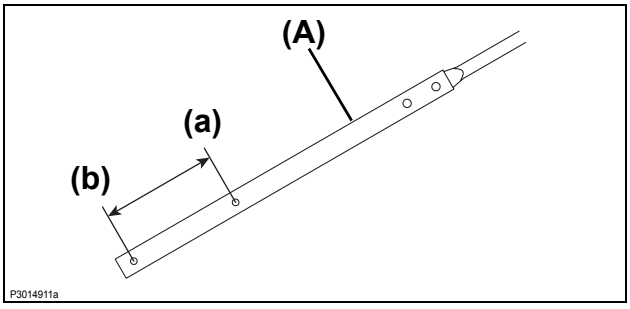
IMPORTANT: Avoid damage.

- Prevent dirt and other contaminants from entering the engine. Clean the area around the dipstick before removing it.

3. Remove the dipstick. Clean the dipstick blade with a clean paper towel or shop rag.
4. Insert the dipstick completely.
5. Remove the dipstick again.
6. Check the oil level on the dipstick. The oil level should be kept between the lower and the upper marks on the dipstick.
7. If the oil level is low:
   (1) Remove the oil fill cap.
   (2) Refill the specified oil until the oil level reaches between the lower and upper marks.



(A) Dipstick
(B) Oil fill cap
(a) Upper mark
(b) Lower mark



NOTE

- NEVER overfill the engine with oil.

8. If the oil level exceeds the upper mark, drain the oil to a correctly level.
9. Replace the dipstick.
10. Close the hood.

■ Check the Transmission/Hydraulic Oil Level

IMPORTANT: Avoid damage.

- ALWAYS check the oil level before day's operation. If the oil level is low, a serious transmission problem can occur.
- ALWAYS check the oil level before operation.
- ALWAYS check the oil level when the engine is cold and not running.
- ALWAYS maintain the oil level between the high and low marks.
- ALWAYS shut the engine down and allow to cool before adding the transmission/hydraulic oil.

1. Park the tractor safely and securely. Allow the tractor to cool off for at least 1 hour.
2. Tilt the seat forward.

IMPORTANT: Avoid damage.

- Prevent dirt and other contaminants from entering the transmission. Clean the area around the dipstick before removing it.

3. Remove the dipstick.
4. Thoroughly wipe the dipstick clean with a rag. Only insert the dipstick into the hole. At this point, do not fasten the dipstick into the hole.

NOTE

- The dipstick is integrated with the oil fill cap.

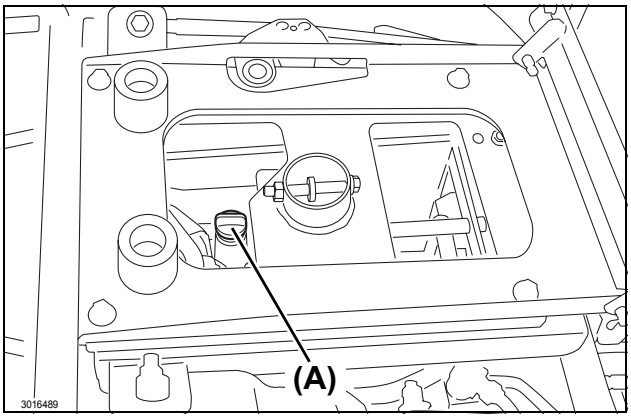
5. Check the oil level on the dipstick. The oil level should be between the high and low marks on the dipstick.
6. If the oil level is low:
   Clean the area around the oil fill cap, then remove the fill cap from the transmission housing.
   Add Cub Cadet Hydraulic/Transmission Fluid through the fill port until the oil level is appropriate.

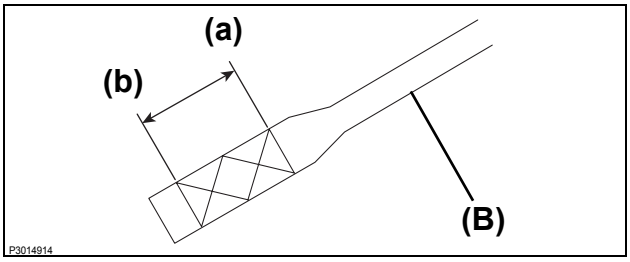
NOTE

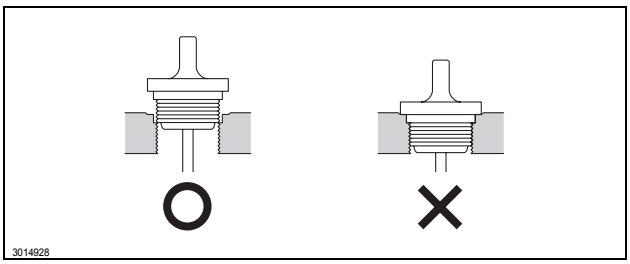
- NEVER overfill.

7. Replace and tighten the dipstick.

(A) Oil fill cap
(B) Dipstick
(a) High mark
(b) Low mark







■ Check the Radiator Hoses and Clamps

⚠ WARNING

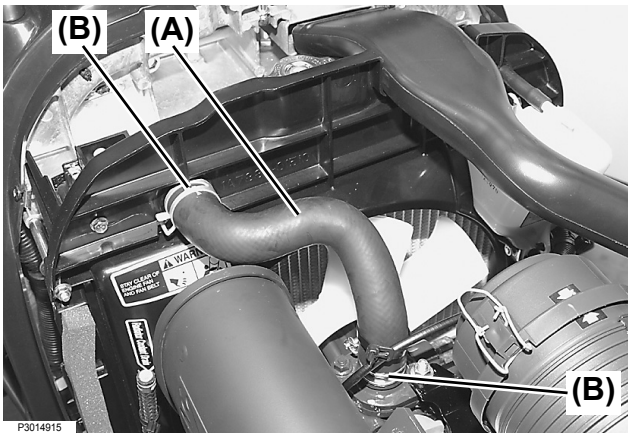
- **ALWAYS stop the engine, allow it to cool and remove the key from the starter key switch before checking the radiator hoses and clamps.**

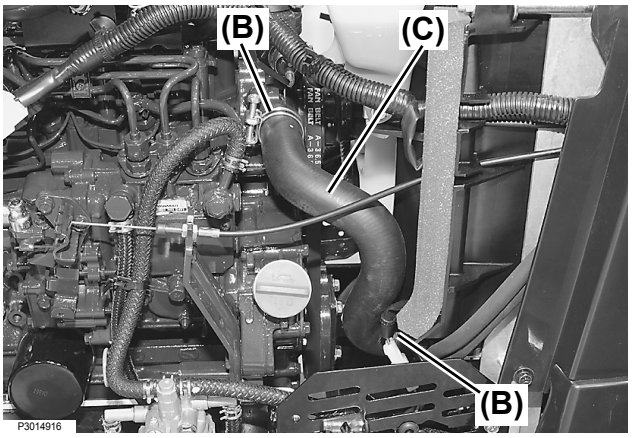
1. Park the tractor safely and securely.
2. Open the hood.

NOTE

- Visually check the hoses for cracks and wear. Squeeze the hoses to check for evidences of deterioration. Hoses should not be hard and brittle nor soft or swollen.

3. Check the upper radiator hose for any damage including cracking. Replace the damaged hose.
4. Check the hose clamps as necessary.
5. Check the lower radiator hose for any damage including cracking. Replace the damaged hose.
6. Check the hose clamps as necessary.
7. Close the hood.





(A) Upper radiator hose
(B) Hose clamps
(C) Lower radiator hose

■ Clean the Radiator Cooling Fins and Screen

⚠ CAUTION

- **ALWAYS stop the engine and remove the key from the starter key switch before cleaning the radiator cooling fins and screen.**

⚠ WARNING

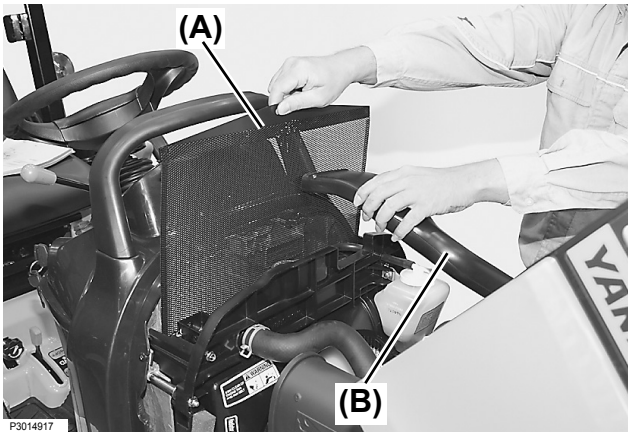
Avoid injury. Compressed air can cause debris and dirt to powerfully fly a long distance:

- **NEVER allow bystanders near the tractor.**
- **When using compressed air for cleaning, ALWAYS ensure adequate air inflow to prevent engine overheating, or wear protective goggles.**
- **Reduce compressed air pressure to 30 psi (210 kPa).**

IMPORTANT: Avoid damage.

- The cooling fins, screen must remain clean in order to ensure adequate air inflow to prevent engine overheating.

1. Park the tractor safely and securely.
2. Allow the engine to cool completely.
3. Open the hood.
4. Lift up the intake air hose and then move it to the sideway. Then, raise the radiator cooling screen and remove it.
5. Clean the screen with compressed air, brush or cloth.
6. Remove any dirt and debris from the fins at the front and rear of the radiator and from the fan with compressed air.



IMPORTANT: Avoid damage.

- When using compressed air, be careful not to damage the cooling fins.

7. Reinstall the radiator cooling screen and the intake air hose.
8. Close the hood.

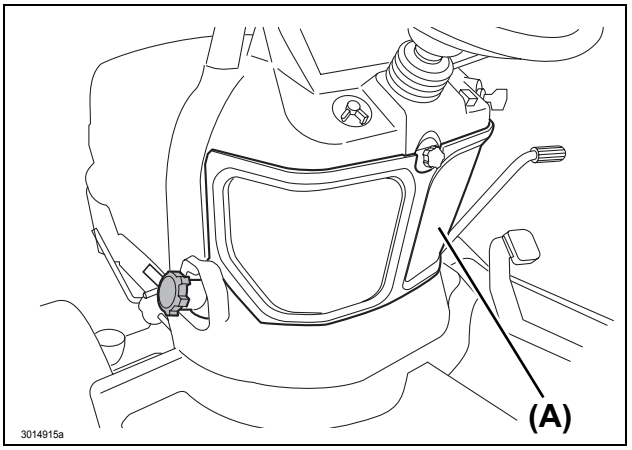
(A) Radiator cooling screen
(B) Intake air hose

■ Clean the Rear Grille Screen

IMPORTANT: Avoid damage.

- Clean the grille to prevent the engine from overheating and ensure adequate air inflow.

1. Check the grille for dirt, grass clippings and debris.
2. Clean the grille with a brush or cloth.



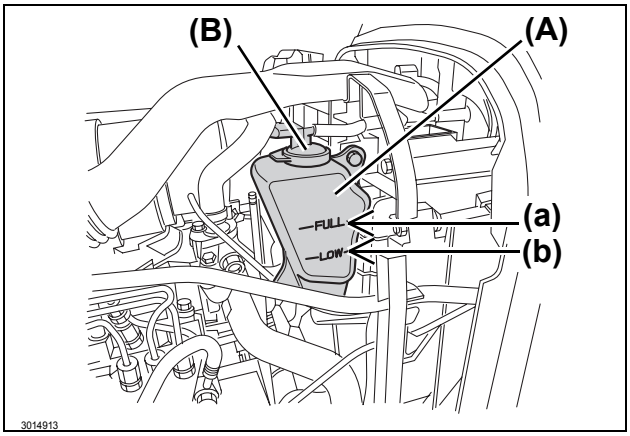
(A) Rear grille screen

■ Check the Cooling System

⚠ WARNING

- **ALWAYS allow radiator to cool before removing the radiator tank cap. The radiator will be hot and can cause burns. When the radiator tank cap is removed, pressure build-up in the cooling system can cause the coolant to spray out explosively.**
- **ALWAYS shut the engine down and allow it to cool.**
- **NEVER remove the radiator tank cap before the radiator and the engine are sufficiently cool such that they can be touched with bare hands.**
- **Loosen the radiator tank cap carefully to the first stop, allowing excessive pressure to escape. Only then remove the radiator tank cap. If the tractor is equipped with a coolant reserve tank, add coolant or water to the reserve tank, not to the radiator.**

1. Park the tractor safely and securely.
2. Allow the engine to cool down.
3. Open the hood.
4. Check that the coolant level of the reserve tank is between the FULL line and the LOW line.
5. When necessary, remove the reserve tank cap and add the coolant.
6. Add pre-diluted coolant which is a 50:50 antifreeze-water mixture.
   Use High Quality Permanent Type Antifreeze (Ethylene Glycol with corrosion and rust inhibitor chemicals).
7. Reinstall the reserve tank cap.
8. Close the hood.

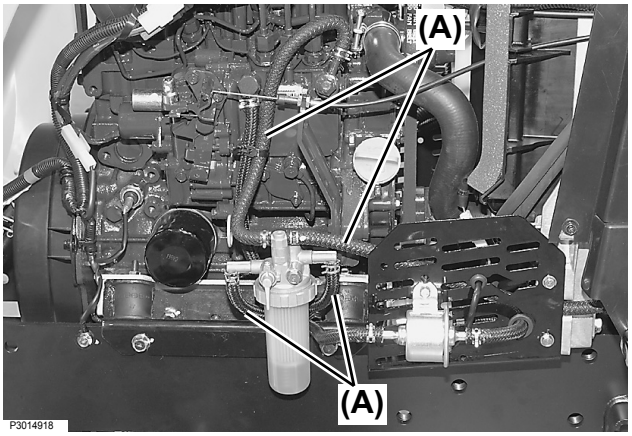


(A) Reserve tank
(B) Reserve tank cap
(a) FULL line
(b) LOW line

■ Check the Fuel Line

Open the hood and then check:
- ●The rubber hose for oil leakage
- ●The rubber hose for any damage

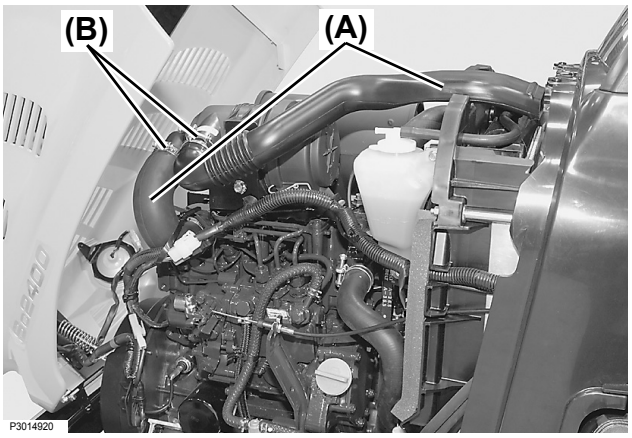
(A) Fuel line



■ Check the Intake Air Hoses and Clamps

1. Park the tractor safely and securely.
2. Open the hood.
3. Ensure that the hose and the hose clamps are in good condition.
4. Check the hose clamps for looseness.
5. Close the hood.

(A) Intake air hose
(B) Hose clamps



■ Check the Safety Interlock System

⚠ WARNING

To avoid personal injury, do as follows:

- **Read the "Safety Precautions" in the front of this manual.**
- **Read the danger, warning and caution statements on the safety-alert symbols on the tractor.**
- **To avoid possible poisoning from exhaust fumes, NEVER operate the engine in an enclosed place that lacks adequate ventilation.**
- **NEVER start the engine while standing on the ground. ALWAYS start the engine from the operator's seat.**
- **Before starting the engine, ALWAYS set the forward and reverse drive pedal to the "NEUTRAL" position and the Power Take Off (PTO) switch to the "OFF" position.**

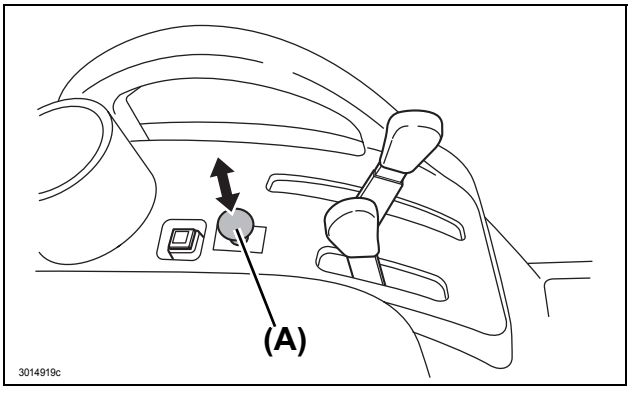
Check the following points to be sure that the machine is in the normal state and ready to start. If a fault is detected on the machine, do not operate the machine and contact your local Cub Cadet Yanmar dealer for technical assistance.

Before checking the safety interlock system, perform the following procedure.

1. Sit on the operator's seat.
2. Park the tractor safely on a solid, flat, level ground.
3. Engage the parking brake securely.
4. Turn off the Power Take Off (PTO) switch.
5. Set the forward and reverse drive pedal to the NEUTRAL position.
6. Stop the engine.

1. Power Take Off (PTO) Safety Switch

1. Pull up the Power Take Off (PTO) switch to set it to the ON position.
2. Turn the key to the START position.
3. Make sure that the starter motor does not crank.
4. Turn the key to the OFF position.
5. Push in the Power Take Off (PTO) switch to set it to the OFF position.
6. Turn the key to the START position.
7. Make sure that the starter motor starts running.



(A) Power Take Off (PTO) switch

2. Parking Brake Safety Switch

1. Disengage the parking brake.
2. Turn the key to the START position.
3. Make sure that the starter motor does not crank.
4. Turn the key to the OFF position.
5. Engage the parking brake securely.
6. Turn the key to the START position.
7. Make sure that the starter motor starts running.

3. Drive Pedal Safety Switch

1. Turn the key to the START position to run the engine.
2. Pull up the Power Take Off (PTO) switch to set it to the ON position.
3. Disengage the parking brake.
4. Slowly step on the reverse side of the forward and reverse drive pedal.
5. Make sure that the PTO is not running.

4. Drive Pedal and Seat Safety Switch

1. Turn the key to the START position to run the engine.
2. Make sure that the Power Take Off (PTO) switch is in the OFF position.
3. Raise up slightly off the seat (Do not get off the machine).
4. Slowly step on the drive pedal.
5. Make sure that the engine stops after around one second.

5. Seat Safety Switch

1. Turn the key to the START position to run the engine.
2. Pull up the Power Take Off (PTO) switch to set it to the ON position.
3. Raise up slightly off the seat (Do not get off the machine).
4. Make sure that the engine stops after around one second.

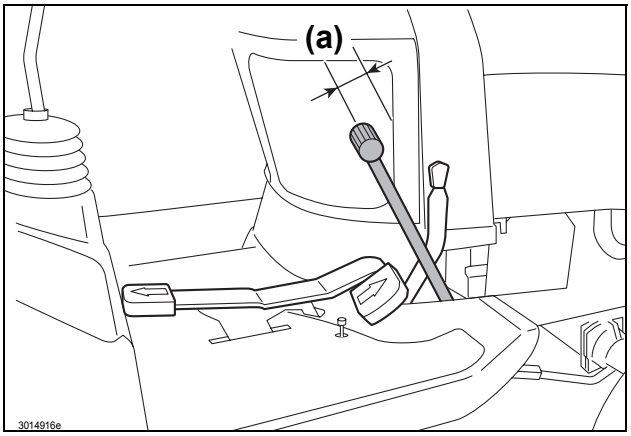
■ Check and Adjust the Brake

⚠ CAUTION

- **Before checking the brake pedal, park the tractor safely on solid, level ground, stop the engine and remove the key from the starter key switch.**

Check if the play of the brake is between 0.8 and 1.2 in. (20 and 30 mm).
If not, contact your local Cub Cadet dealer for technical assistance.

(a) 0.8 to 1.2 in. (20 to 30 mm)



■ Check the Seat Belt and Roll-Over Protective Structure (ROPS)

1. Before operating the tractor, always make sure that the seat belt and Roll-Over Protective Structure (ROPS) mounting hardware are in correct working order.
2. Replace any damaged hardware.

■ Check the Wheel Bolt Tightening Torque

⚠ WARNING

- **To prevent possible roll-over of the tractor, check the rim, hub and wheel bolts before starting day's operation.**

Before starting day's operation, check tightening torque of each of the tire wheel bolts and, if necessary, retighten to the specified torque.
Check the tightening torque after the first 5, 15 and 50 hours and thereafter every 50 hours of operation. If necessary, retighten to the specified torque.
For the specified torque, see the following table.

Front wheel bolt (ft•lb (N•m))	52 - 59 (70 - 80)
Rear wheel bolt (ft•lb (N•m))	52 - 59 (70 - 80)

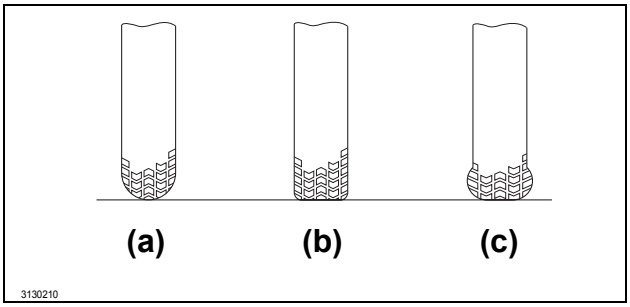
■ Check the Inflation Pressure

⚠ WARNING

- **ALWAYS keep the tires inflated to the correct pressure. NEVER exceed the recommended inflation pressure specified in this *Operator's Manual.***

Adjust the front and rear tires to the standard pressure. Check the tires for fissures and any other damages. Before front loader work, make sure to check the tire pressure and, if necessary, inflate the tire(s) to the recommended pressure.

(a) Too high
(b) Standard
(c) Too low



Inflation pressures

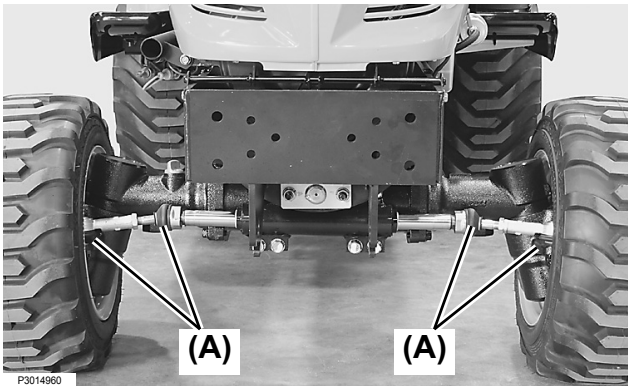
	Tire size	Inflation pressure (psi(kgf/cm^2))	Inflation pressure when an implement such as the front loader has been attached to the front of the machine (psi(kgf/cm^2))
Front	18 × 8.50 - 10	20 (1.4)	22 (1.5)
Rear	26 × 12.00 - 12	20 (1.4)	22 (1.5)

■ Check the Light Bulbs

1. Inspect the lights for blown bulbs and damaged lenses.
2. Replace a broken bulb or lens.

■ Check the Tie-rod Rubber Boots

Check the tie-rod rubber boots for any break.
If any break is found, contact your local Cub Cadet Yanmar dealer for technical assistance.



(A) Tie-rod rubber boots

■ Check and Clean the Electrical System

⚠ WARNING

To avoid personal injury:

- **Always replace damaged wires or connections immediately and tighten any loose terminal or connector. Loose or damaged wires, terminals or connectors can influence the performance of or cause damage to electrical components, result in a dead battery or a short circuit, which, consequently, can pose a fire hazard.**
- **Never use a fuse with a larger capacity than that recommended and do not attempt to bypass the fuse system. Doing so could result in personal injury, damage to electrical components or even pose a fire hazard.**
- **Carefully plug and unplug any wiring connection that is protected by a waterproof plug and ensure that they are sealed securely and properly after assembly.**
- **Regularly clean around the battery, all electrical wiring, the engine and the exhaust system before attempting to start or operate the tractor. Any accumulated dirt, fuel, grease or other deposits in these areas poses a fire hazard.**

Never allow high-pressure water to directly contact the battery, wiring, terminals, connectors, electrical components, or the instrumental panel. Doing so can cause an electrical malfunction.

Regularly check the following points:

1. Wiring harness clamps: Replace if necessary.
2. Wiring insulation: Replace if cracked or otherwise damaged.
3. Connectors and terminals: Tighten if loose, clean if contaminated, and replace if damaged or discolored.
4. Instrument panel: Make sure all switches and gauges are operating correctly.
   Contact your local Cub Cadet Yanmar dealer in regard to maintenance, diagnosis and repair.

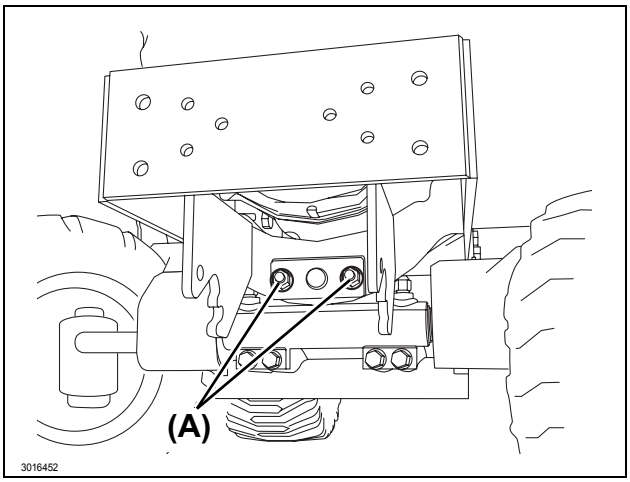
■ Adjust Front Axle Pivot

If the front axle pivot pin has been adjusted incorrectly, vibration can be triggered on the front wheels, possibly leading to vibration in the steering wheel.

Adjusting procedure

Tighten the adjusting bolts to the torque of 106.2 ft•lbs to 132.8 ft•lbs (78.4 to 98.0 N•m). Make sure that the free play on the front axle in the forward/ reverse direction measures about 0.024 in. (0.6 mm).

(A) Adjusting bolt



■ Check the Hydraulic Hoses

⚠ WARNING

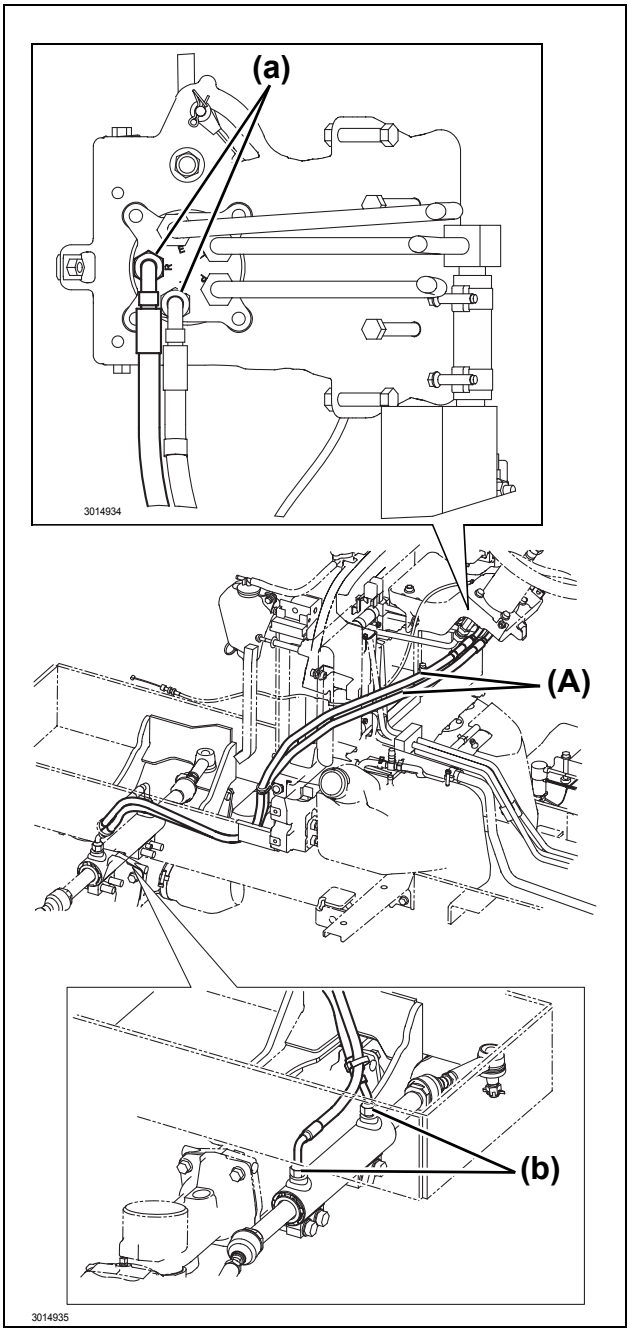
- **When checking for oil leakage, use a sheet(s) of paper, etc.**
- **ALWAYS wear protective goggles and gloves.**

Check the conditions of the hydraulic hoses.
Check for oil leakage. If any, tighten the bolts to the specified torque as described below.

1. Power Steering Hoses

(a) 9/16-18UNF	25 - 28 N•m (18.4 - 20.7 ft•lbs)
(b) 9/16-18UNF	23 - 27 N•m (17.0 - 19.9 ft•lbs)

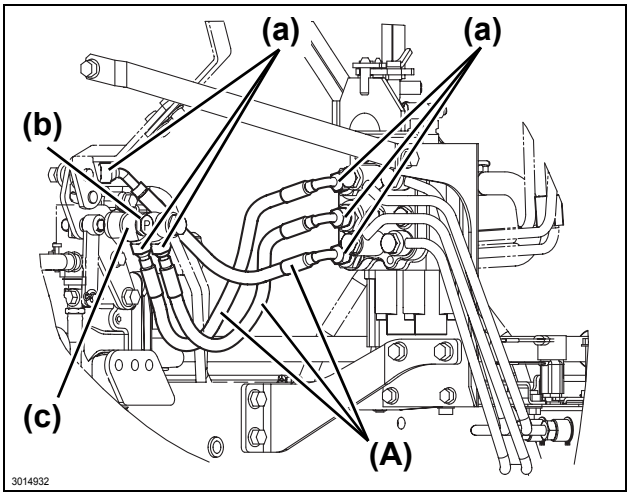
(A) Power steering hose



2. Implement Control Valve Hoses

(a) 9/16UNF - 14.5	23 - 27 N•m (17.0 - 19.9 ft•lbs)
(b) 9/16UNF - 14.5	39 - 49 N•m (28.8 - 36.1 ft•lbs)

(A) Implement Control Valve hose



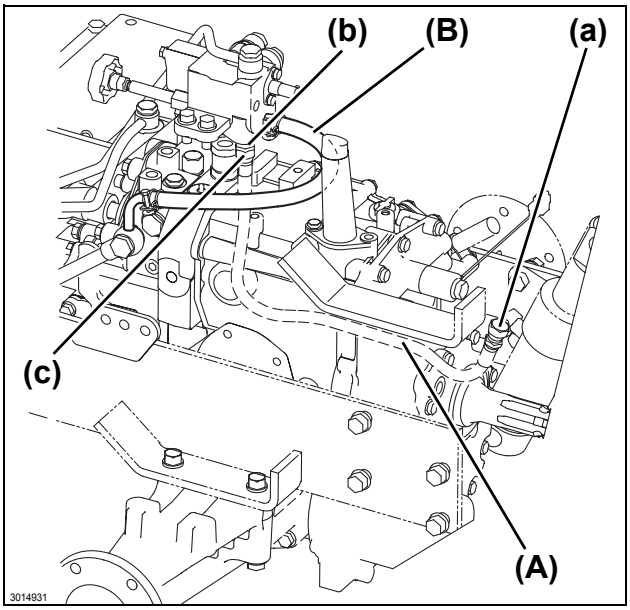
NOTE

- When changing the orientation of (c) is necessary for replacing the hose, it may be preferable to loosen the pipe fitting bolt. In such a case, replace the copper gasket.

3. Lift Cylinder Hose and Drain Hose

(a) G1/4	22.6 - 27.5 N•m (16.7 - 20.3 ft•lbs)
(b) Connector PF1/4	22.6 - 27.5 N•m (16.7 - 20.3 ft•lbs)
(c) G1/4	22.6 - 27.5 N•m (16.7 - 20.3 ft•lbs)

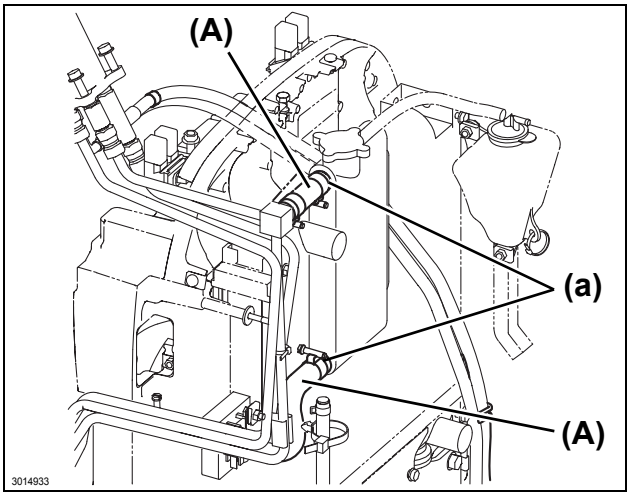
(A) Lift cylinder hose
(B) Drain hose



4. Oil Cooler Hoses

(a) Clamp	2.5 - 3.4 N•m (1.8 - 2.5 ft•lbs)

(A) Oil cooler hose



3. First 50 Hours

■ Change the Engine Oil

For the maintenance work, see “Engine Oil” on page 14-27.

■ Replace the Engine Oil Filter

For the maintenance work, see “Replace the Engine Oil Filter” on page 14-31.

■ Change the Transmission/Hydraulic Oil

For the maintenance work, see “Change the Transmission/Hydraulic Oil and Replace the Transmission/Hydraulic Oil Filter” on page 14-33.

■ Replace the Transmission/Hydraulic Oil Filter

For the maintenance work, see “Change the Transmission/Hydraulic Oil and Replace the Transmission/Hydraulic Oil Filter” on page 14-33.

4. Every 50 Hours

■ Check the Front Axle Oil Level

IMPORTANT: Avoid damage.

- Before checking the oil level, allow the oil to settle for 1 hour so that the current oil level can be accurately read on the dipstick. Recheck the oil level after operating the tractor for several hours.

1. Park the tractor safely and securely.
2. Allow the tractor to cool off for at least 1 hour and the oil to settle.

IMPORTANT: Avoid damage.

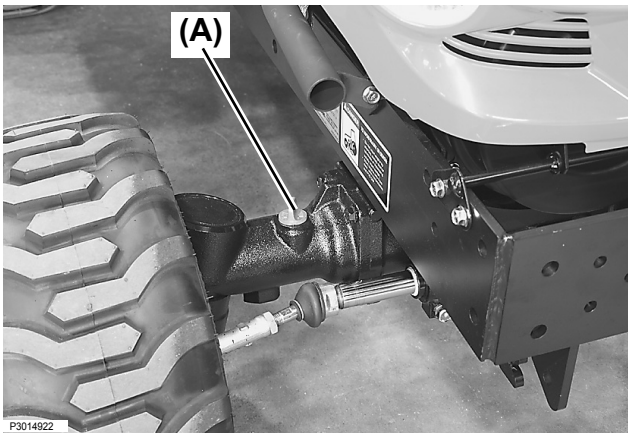
- Dirt and debris in the oil may damage the front axle. Clean the area around the dipstick before removing it.

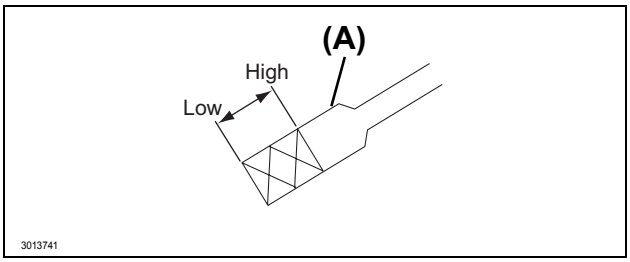
3. Loosen and remove the dipstick situated on the right side of the front axle.
4. Wipe the dipstick clean with a rag. Only insert the dipstick into the hole on axle. At this point, do not fasten the dipstick into the axle case.
5. Remove the dipstick again. Read the oil level on the dipstick. The oil level should be between the high and low level marks on the dipstick.

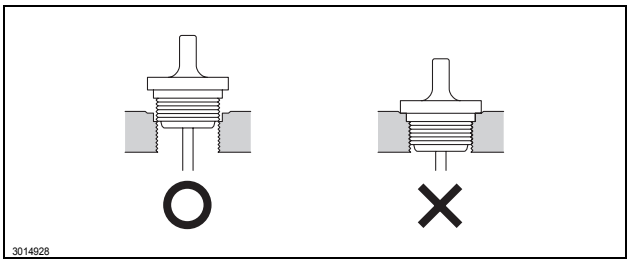
When the oil level is low:

- Add Cub Cadet GEAR LUBE or SAE 80W-90 gear oil through the fill opening until the oil level is appropriate.
- Reinstall and tighten the dipstick.

6. Operate the tractor for several hours, and then check the front axle oil level again.







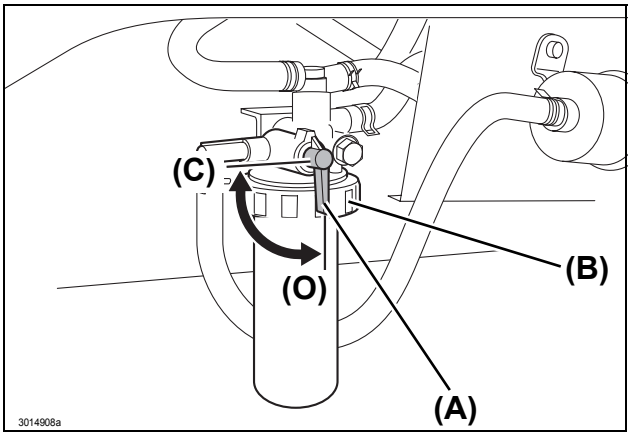
(A) Dipstick

■ Checking the Fuel/Water Separator

⚠ WARNING

- **Remember that vapor from diesel fuel is explosive and flammable.**
- **NEVER smoke while handling the fuel.**
- **Keep the fuel away from open flames or sparks.**
- **Before servicing, stop the engine.**
- **Before servicing, allow the engine to cool off.**
- **Work in a well-ventilated area.**
- **Immediately wipe away spilled fuel.**

1. Park the tractor safely.
2. Open the hood.
3. Turn the valve lever to the “Close” position.
4. Turn the locking collar counterclockwise to unlock the sediment bowl, then pull the sediment bowl downward to remove from the separator body.
5. When water and/or sediment is/are found in the sediment bowl, discard it together with fuel in the sediment bowl and clean the sediment bowl with diesel oil.
6. Reinstall the sediment bowl, and turn the valve lever to the “ON” position.
7. Close the hood.
8. Turn the key to the START position to crank the engine to bleed the air from the fuel system.



(A) Valve lever
(B) Sediment bowl locking collar
(O) Open
(C) Close

■ Adjust the Fan Belt

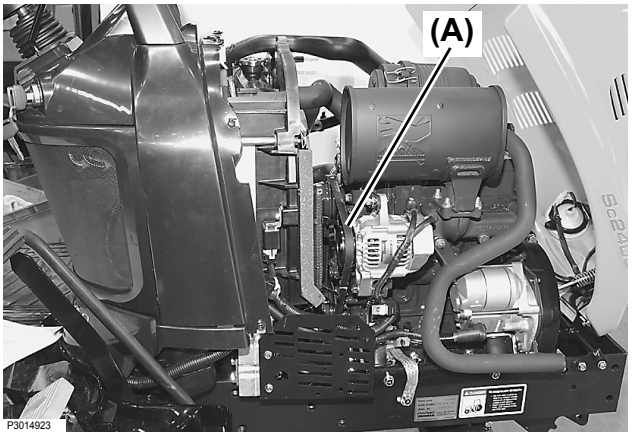
⚠ WARNING

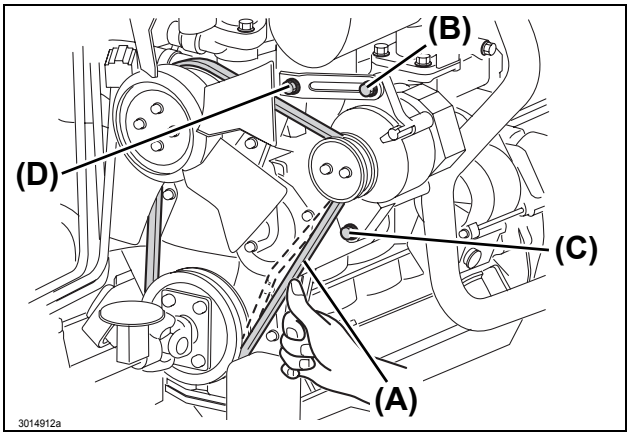
- **Fingers or loose clothing can be entangled with rotating parts. Before servicing, stop the engine and allow all the moving parts to stop completely.**

1. Check the Belt Tension

1. Park the tractor safely and securely.
2. Open the hood.
3. With a thumb, gently apply pressure to the midpoint of the belt between the pulleys. The belt should deflect inward by approximately 0.4 to 0.6 in. (10 to 15 mm).
4. If the deflection is not as specified, adjust the tension of the belt.

(A) Midpoint of the belt
(B) Adjusting bolt
(C) Mounting bolt (a)
(D) Mounting bolt (b)





2. Adjust the Belt Tension

1. Loosen the adjusting bolt.
2. Loosen the mounting bolts.
3. Exert an outward pressure to the alternator housing to attain the correct tension.
4. Retighten the mounting bolt (b), mounting bolt (a) and adjusting bolt in that order.
5. Check the belt tension. Adjust as necessary.
6. Close the hood.

3. Replace the Belt

If the belt is excessively worn, damaged or elongated, replace it with a new one. Contact your local Cub Cadet Yanmar for technical assistance.

■ Grease and Lubricate

IMPORTANT: Prevent damage.

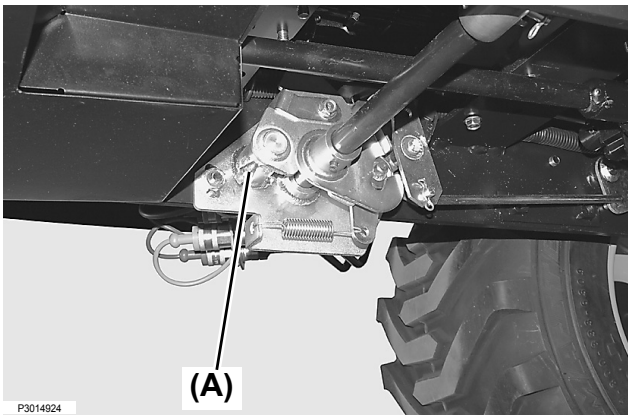
- Use the recommended Cub Cadet Yanmar greases to avoid failed or prematurely worn parts and components.
- The recommended Cub Cadet Yanmar greases perform efficiently in an average ambient temperature range from –20 to +275 °F (–29 to +135 °C)
- When operating the tractor outside this temperature range, contact your local Cub Cadet Yanmar dealer for applicable special-purpose greases.
  Use Cub Cadet 251H EP Grease or General all purpose grease NLGI grade No.2 or equivalent.

1. Lubricate Lube Fittings on the Tractor

[Extremely wet or muddy conditions]
Lubricate the lube fittings once every 10 operating hours or once a day.

[All other conditions]
Lubricate the lube fittings once every 50 operating hours.

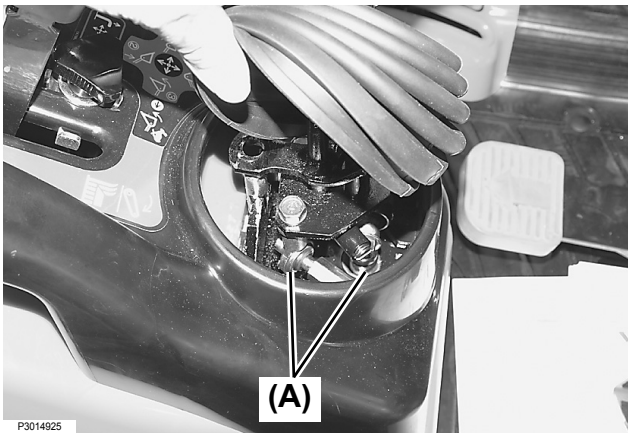
(A) Forward and reverse drive pedal rod end



2. Lubricate the Implement Control Lever Linkage

(A) Lubricate the implement control lever linkage

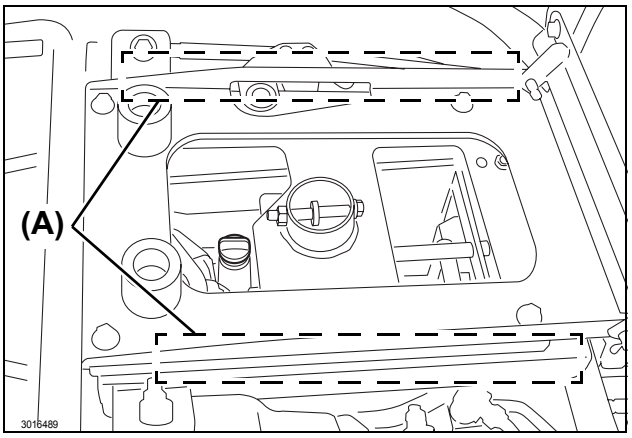
Lubricate the implement control lever linkage with Cub Cadet GEAR LUBE.



3. Lubricate the Seat Slide Rails

1. Pivot the operator's seat forward.
2. Lubricate the seat slide rails with SUPER LUBE® lubricant.
3. Lower the operator's seat.

(A) Seat slide rails



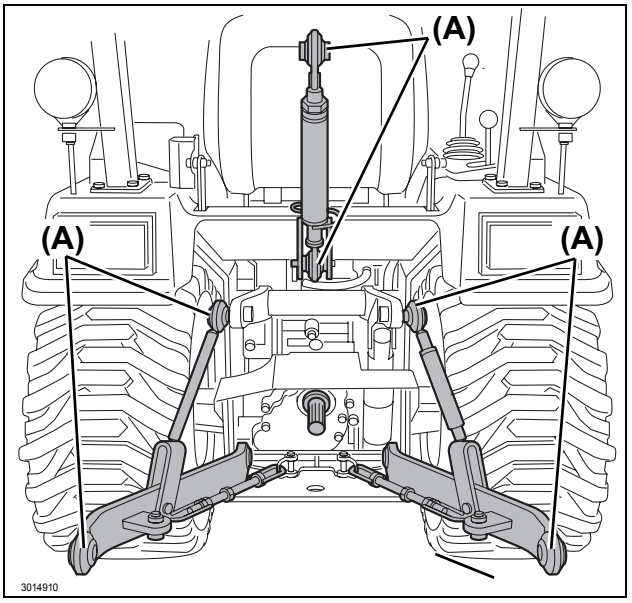
4. Lubricate the 3-Point Hitch (Option)

Lubricate the ball joints and drawbar with SUPER LUBE® lubricant.

(A) Ball joints

NOTE

- SUPER LUBE® is a registered trademark of Synco Chemical Corp®.



5. Every 100 Hours

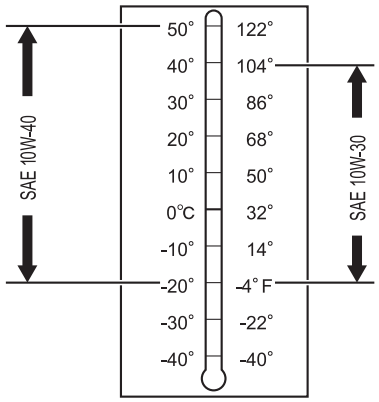
■ Engine Oil

Use an oil of the viscosity appropriate for the air temperature range expected until the next oil change interval.

Engine crankcase

Capacities	Lubricants
Approximately 2.5 US qt (2.4 L)	API Service Classifications CF or higher SAE 10W-30 or SAE 10W-40

The following oils are recommended:



■ Change the Engine Oil

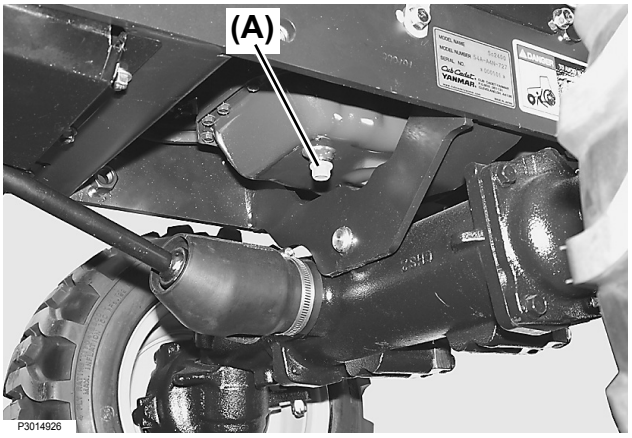
⚠ WARNING

- **When draining away the engine oil that is still hot, stay clear of the hot engine oil and other components to avoid burn.**

IMPORTANT: Avoid damage.

- Change the engine oil more frequently if the tractor is used in extremely demanding conditions:
  - Extremely dusty conditions
  - Frequent slow- or low-speed operation
  - Frequent short trips

1. Run the engine to warm up the engine oil.
2. Park the tractor safely on a level surface.
3. Open the hood.
4. Place an engine oil pan beneath the engine oil drain plug.



(A) Drain plug

5. Remove the drain plug by turning counterclockwise and allow the oil to drain.
6. Reinstall the drain plug. Do not over-tighten it.
7. Remove the oil fill cap.
8. Add approximately 2.5 US qt (2.4 L) of the engine oil.
9. Reinstall the oil fill cap.
10. Start and idle the engine to check for any leaks.
11. If there is any leakage, stop the engine, close the hood and contact your local Cub Cadet Yanmar for technical assistance.
12. Check the engine oil level and add more as necessary.
13. Close the hood.

■ Clean the Fuel/Water Separator

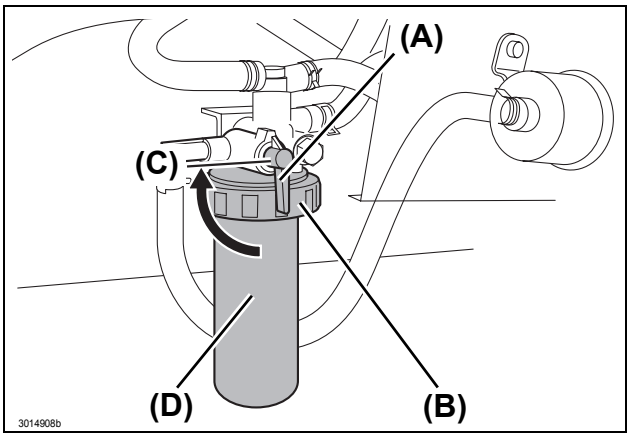
⚠ WARNING

- **Remember that vapor from diesel fuel is explosive and flammable.**
- **NEVER smoke while handling the fuel.**
- **Keep the fuel away from open flames or sparks.**
- **Before servicing, stop the engine.**
- **Before servicing, allow the engine to cool off.**
- **Work in a well-ventilated area.**
- **Immediately wipe away spilled fuel.**

NOTE

- Change the fuel filter if the fuel tank has been run dry.

1. Park the tractor safely and securely.
2. Open the hood.
3. Turn the valve lever to the “Close” position.
4. Turn the sediment bowl locking collar counterclockwise to unlock the sediment bowl, then pull the sediment bowl downward to remove from the separator body.
5. Discard fuel and sediment in the sediment bowl and then clean the sediment bowl with diesel oil.
6. Reinstall the sediment bowl, and turn the valve lever to the “ON” position.
7. Close the hood.
8. Turn the key to START position to crank the engine to bleed the air from the fuel system.



(A) Valve lever
(B) Sediment bowl locking collar
(D) Bowl
(C) Close

■ Service the Air Cleaner Element

⚠ CAUTION

●**Touching hot surfaces can lead to skin burn. If the engine has been running, the engine and its components will remain hot. Before servicing, allow the engine to cool off.**

IMPORTANT: Avoid damage.

●A damaged cleaner element may fail to catch dirt and dust, and contaminants can enter the engine:
- NEVER wash the air cleaner element.
- NEVER attempt to clean the air cleaner element by tapping against another object.
- ALWAYS replace the air cleaner element when it is contaminated, damaged or the seal is cracked.

1. Park the tractor safely and securely.
2. Allow the engine to cool off.
3. Open the hood.
4. Release the two latches that secure the canister cover to the air cleaner canister.

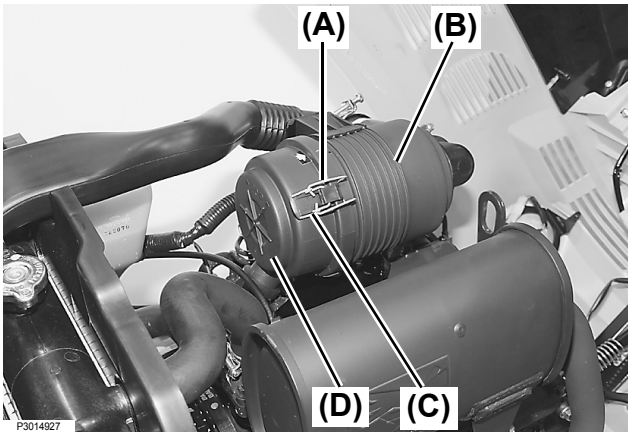
⚠ CAUTION

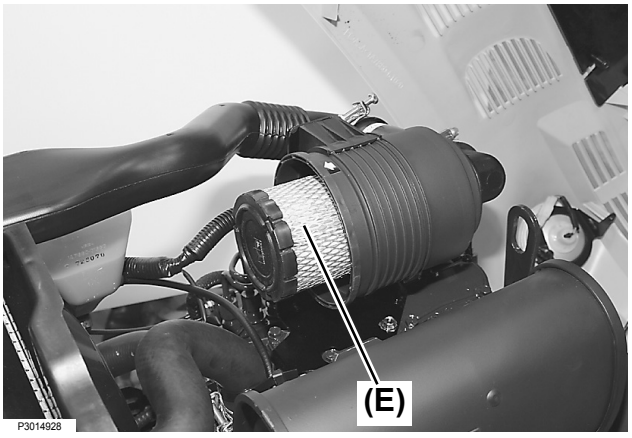
●**When removing the air cleaner canister cover or the air cleaner element, be careful not to injure hand.**

5. While holding down the electric cable, unlock the latch hooks from the air cleaner canister and remove the canister cover.

(A) Latch hook
(B) Air cleaner canister
(C) Latches
(D) Air cleaner canister cover
(E) Cleaner element

6. Slightly raise the bottom of the canister.





7. Blow air through the element from the inside out using 42 to 71 psi (0.29 to 0.49 MPa, 3.0 to 5.0 kgf/cm^2) compressed air to remove the particulates. Use the lowest possible air pressure to remove the dust without damaging the element.
8. Replace the element with a new one if the element is damaged, excessively dirty or oily.
9. Clean inside of the air cleaner canister and canister cover.
10. Reinstall the air cleaner element.
11. Replace the air cleaner canister cover. Make sure that the rubber dust unloading valve points downward.
12. For correct installation, follow the instruction molded onto the canister cover.
13. Hook the two latch hooks onto the air cleaner canister.
14. Push the top of the latches inward toward the canister cover to lock the latches and secure the canister cover.

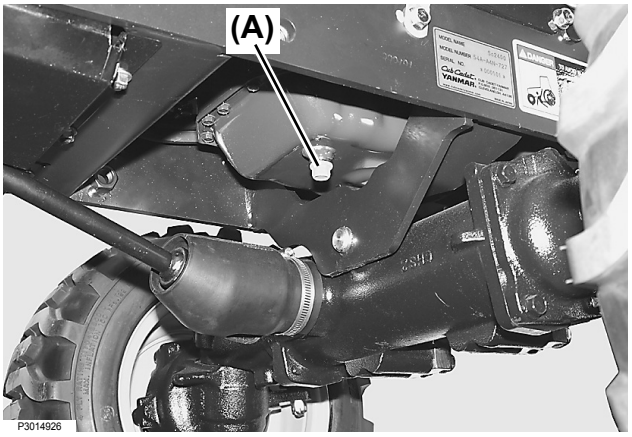
6. Every 200 Hours

■ Replace the Engine Oil Filter

⚠ WARNING

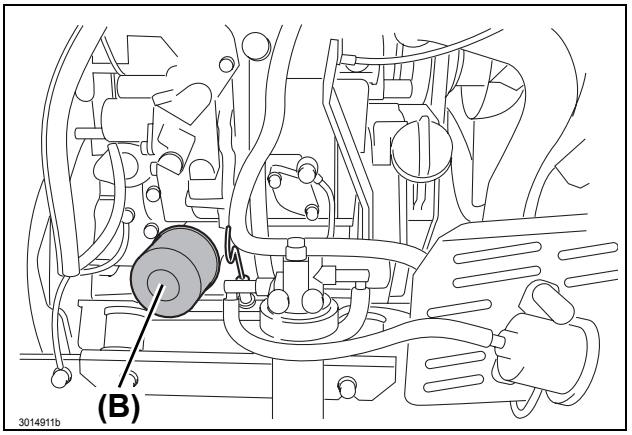
- ***When draining away the engine oil that is still hot, stay clear of the hot engine oil and other components to avoid burn.***

1. Completely drain the engine oil.
   See “Change the Engine Oil” on page 14-27.



(A) Drain plug

2. Wipe away dirt and dust from around the engine oil filter.



(B) Engine oil filter

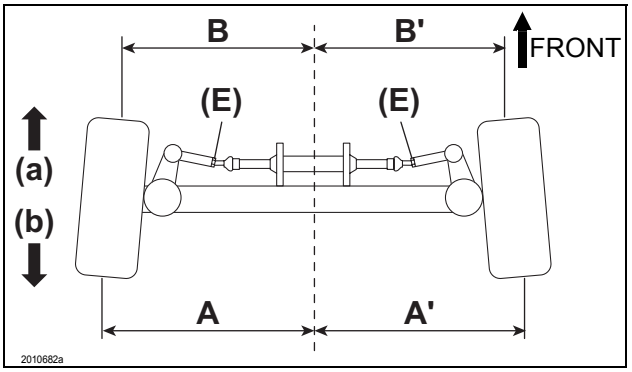
NOTICE

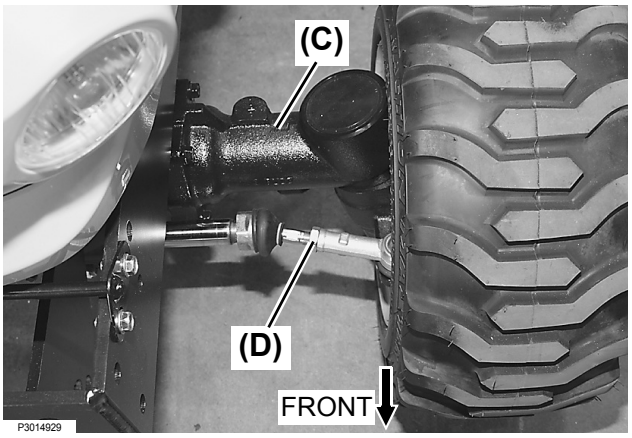
- Prevent dirt and debris from contaminating engine oil. Carefully clean the engine oil filter and the surrounding area before removing the engine oil filter.

3. Turn the filter counterclockwise to remove it.
4. Apply a small amount of clean engine oil onto the gasket of the new filter.
5. Install a new replacement oil filter by turning it clockwise until the gasket is seated against the filter base. Then turn the filter an additional one half turn.
6. Reinstall the drain plug. Do not over-tighten it.
7. Remove the oil fill cap.
8. Add approximately 2.5 US qt (2.4 L) of the engine oil.
9. Reinstall the oil fill cap.
10. Start and idle the engine to check for any leaks.
11. Stop the engine. Correct any leakage before operating the tractor.
12. Check the engine oil level and add more as necessary.
13. Lower and close the hood.

■ Adjust the Toe-in

Poorly adjusted toe-in can cause difficulty in steering action or abnormal sway of the steering wheel. Measure the dimensions A, A', B and B' on the front wheels, and check that the dimensional difference "A - B" "A' - B'" falls in a range of 0 to 0.3 in. (0 to 7 mm). If this dimension is not met, loosen the locknuts on the right and left tie-rod ends, and adjust the length of threaded portions. When the toe-in falls in the range of 0 to 0.3 in. (0 to 7 mm), secure this adjustment by retightening the locknuts.





(C) Front axle
(D) Locknut
(Tightening torque: 44 to 51 ft•lb (59 to 69 N•m))
(E) Tie-rod
(a) Front
(b) Rear

7. Every 300 Hours

■ Transmission/Hydraulic Oil

IMPORTANT: Avoid damage.

- Make sure to use Cub Cadet Hydraulic/Transmission Fluid for transmission.

Transmission/Hydraulic Oil

Capacities	Lubricants
Approximately 2.0 US gal (7.5 L)	Cub Cadet Hydraulic/Transmission Fluid

■ Change the Transmission/Hydraulic Oil and Replace the Transmission/Hydraulic Oil Filter

⚠ WARNING

- **When draining away the transmission/ hydraulic oil that is still hot, stay clear of the hot transmission/hydraulic oil and other components to avoid burn.**

IMPORTANT: Avoid damage.

- NEVER remove the cap from the fill port unless absolutely necessary. Contaminated transmission/ hydraulic oil can cause the transmission to be damaged or fail.
- Whenever changing or replacing the transmission/ hydraulic oil and transmission/hydraulic oil filter, always bleed the transmission/hydraulic oil in order to avoid malfunction of transmission.

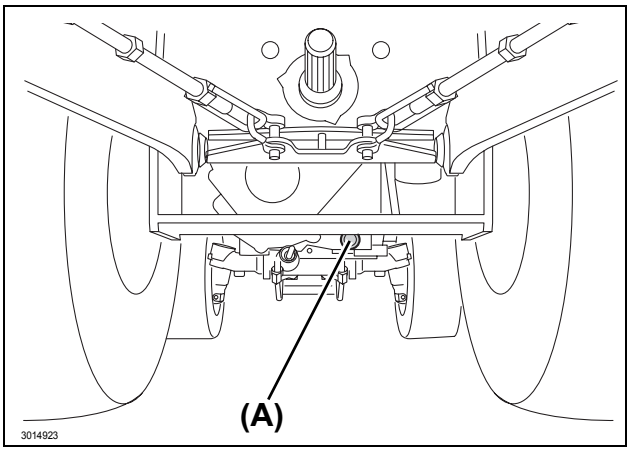
1. Run the engine for several minutes to warm up the transmission/hydraulic oil.
2. Park the machine safely.

NOTE

- The transmission contains approximately 2.0 US gal. (7.5 L) of oil.

3. Put a drain pan underneath the transmission drain plug. Remove the drain plug, and allow the oil to fully drain away.

(A) Transmission drain plug



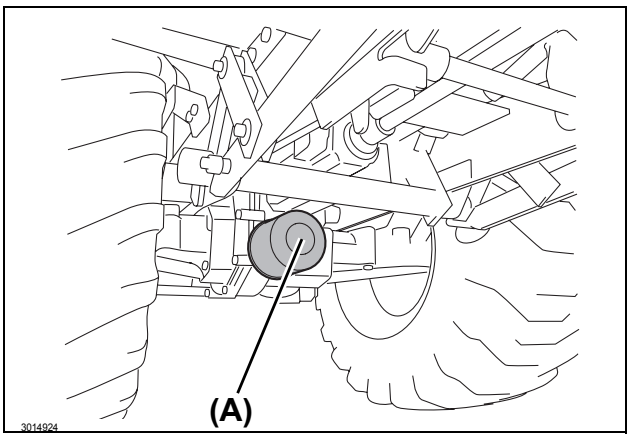
4. Turn the transmission/hydraulic oil filter counterclockwise with the filter wrench to remove.
5. Install a new transmission/hydraulic oil filter and turn clockwise by hand. Tighten the filter with a filter wrench to a torque of 28.9 lb•ft (4 kgf•m).

NOTE

●After hand-tightening, only tighten by 2/3 turn with the filter wrench.

(A) Transmission/hydraulic oil filter

6. Reinstall and tighten the transmission drain plug.
7. Clean the area around the oil fill cap, then remove the oil fill cap from the transmission housing.
8. ADD approximately 2.0 us gal (7.5L) of the transmission/hydraulic oil.
9. Reinstall the oil fill cap.
10. Start the engine and idle it for about 40 seconds.
11. Run the engine at the high idle speed for about 40 seconds.
12. Then, run the engine at the low idle speed and slowly step on the forward and reverse drive pedal several times.
13. Again run the engine at the high idle speed and slowly step on the forward and reverse drive pedal several times.
14. Stop the engine. If any leakage is found, contact your local Cub Cadet Yanmar dealer for technical assistance.
15. After leaving the engine for 5 minutes or more, check the transmission/hydraulic oil level and add more as necessary.



8. Every 500 Hours

■ Front Axle Case Oil

IMPORTANT

●Make sure to use Cub Cadet GEAR LUBE or SAE 80W-90 gear oil for front axle case oil.

Front Axle Case Oil

Capacities	Lubricants
Approximately 2.6 US qt (2.5 L)	Cub Cadet GEAR LUBE or SAE 80W-90 gear oil

■ Change the Front Axle Case Oil

⚠ WARNING

●**When draining away the front axle case oil that is still hot, stay clear of the hot transmission/ hydraulic oil and other components to avoid burn.**

1. Operate the tractor to warm up the front axle case oil.
2. Park the tractor safely.

NOTE

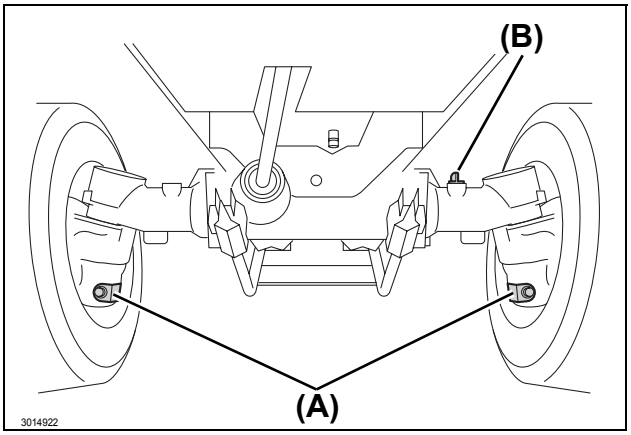
●The front axle case contains approximately 2.6 US qt (2.5 L) of oil.
●Be sure to change the oil in both right and left front axles.

3. Place drain pans underneath the axle drain plugs on both sides of the front axle.
4. Remove the axle drain plugs and allow the oil to fully drain.
5. Make sure that the oil has fully drained. Dispose of waste properly. Reinstall and tighten the drain plugs.
6. Remove the dipstick located on the right side of the front axle.
7. Add Cub Cadet GEAR LUBE or SAE 80W-90 gear oil through the fill port to the specified level.
8. Reinstall and tighten the dipstick.
9. Check the front axle case oil level again.

IMPORTANT: Avoid damage.

●Before checking the oil level, allow the oil to settle for 1 hour so that the current oil level can be accurately checked on the dipstick. Recheck the oil level after operating the tractor for several hours.

10. Again, check the axle case oil level.



(A) Axle drain plugs
(B) Dipstick

■ Replace the Fuel Filter Element (in the Fuel/Water Separator)

1. Park the tractor safely and securely.
2. Open the hood.
3. Turn the valve lever to the “Close” position.
4. Turn the locking collar counterclockwise to unlock the sediment bowl, then pull the sediment bowl downward to remove from the separator body.
5. Discard fuel and sediment in the sediment bowl and then clean the sediment bowl with diesel oil.
6. Remove the old fuel filter element from the separator body.
7. Install a new fuel filter element to the separator body.
8. Reinstall the sediment bowl, and turn the valve lever to the “ON” position.
9. Close the hood.
10. Turn the key to the START position to crank the engine to bleed the air from the fuel system.

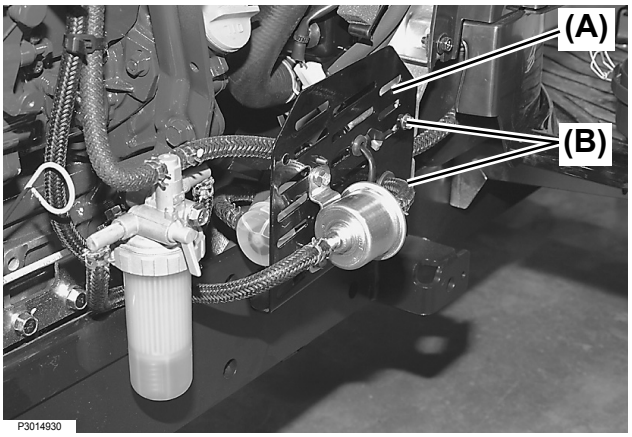
■ Replace the Fuel Filter

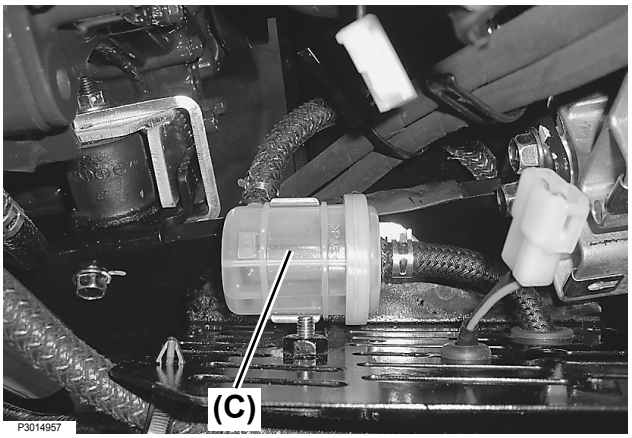
⚠ WARNING

- **Remember that vapor from diesel fuel is explosive and flammable.**
- **NEVER smoke while handling the fuel.**
- **Keep the fuel away from open flames or sparks.**
- **Before servicing, stop the engine.**
- **Before servicing, allow the engine to cool off.**
- **Work in a well-ventilated area.**
- **Immediately wipe away spilled fuel.**

Check fuel filter, if it is clogged by debris or contaminated by water, replace it.

1. Open the hood.
2. Remove the two bolts and remove the stay.
3. Remove the filter from the clamp.
4. Place an oil pan underneath the filter.
5. Disconnect the fuel hoses from the fuel filter.
6. Replace the new fuel filter, and plug it with fuel hoses.
7. Discard the old filter. Install the hose to a new filter.
8. Fit the filter in the clamp.
9. Reinstall the stay.





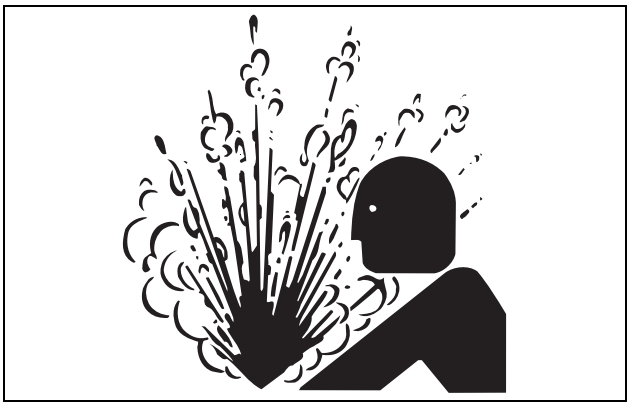
(A) Stay
(B) Bolts
(C) Fuel filter

9. Every 1000 Hours

■ Coolant

⚠ WARNING

- **Fluids released under pressure from the cooling system can cause severe burns. Pressure build-up in the cooling system can, when the radiator cap is removed, cause the coolant to gush out explosively.**
- **Stop the engine and allow it to cool off.**
- **Do not remove the radiator cap before the radiator and the engine are sufficiently cool such that they can be touched with bare hands. Carefully loosen the cap to the first stop to allow the pressure to be completely released. Only then, remove the cap completely.**



[The following coolants are recommended]

- High Quality Permanent Type Antifreeze (Ethylene Glycol with corrosion and rust inhibitor chemicals)

Before using the coolant, study the instructions and data on its container to be sure it is suitable for the engine.
Use a conditioned coolant, or before use, add a conditioner to the coolant.

Prepare the coolant according to the recommendation of your local Cub Cadet Yanmar dealer, and then pour this coolant into the radiator. This coolant is intended not only to cold the engine but also to protect the radiator against freezing down to your local climate.

Follow the instructions on the antifreeze container or contact your local Cub Cadet Yanmar dealer for technical assistance. NEVER exceed the maximum dilution ratio for the coolant. Exceeding the maximum dilution ratio can jeopardize effectiveness of the coolant.

■ Flush the Cooling System

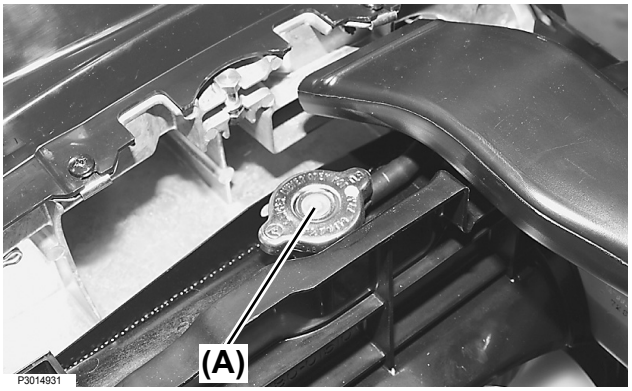
⚠ WARNING

- **ALWAYS allow radiator to cool before removing the radiator cap. The radiator will be hot and can cause burns. When the radiator cap is removed, pressure build-up in the cooling system can cause the coolant to spray out explosively.**
- **ALWAYS shut the engine down and allow it to cool.**
- **NEVER remove the radiator cap before the radiator and the engine are sufficiently cool such that they can be touched with bare hands.**
- **Loosen the radiator cap carefully to the first stop, allowing excessive pressure to escape. Only then remove the radiator cap. If the tractor is equipped with a coolant reserve tank, add coolant or water to the reserve tank, not to the radiator. (See "Check the Cooling System" on page 14-12).**

1. Drain the Cooling System

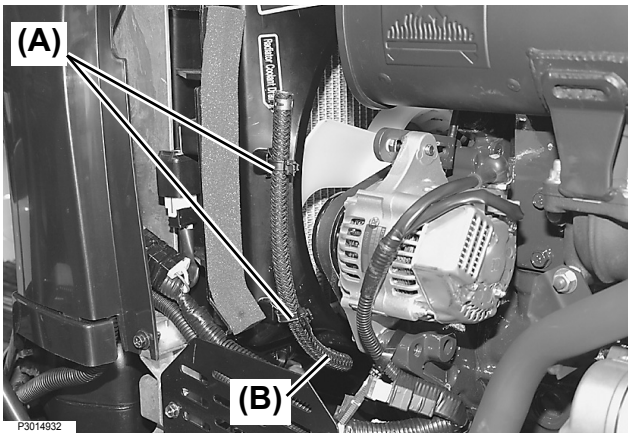
1. Park the tractor safely and securely.
2. Allow the engine to cool off.
3. Open the hood.
4. Carefully open the radiator cap to the first to release all the pressure.

(A) Radiator cap



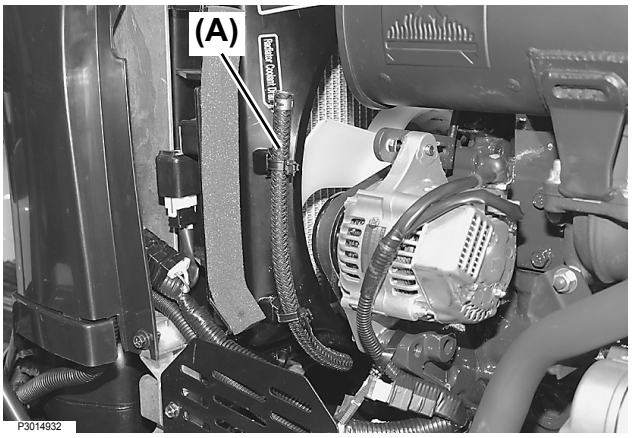
5. Remove the two clamps on the drain hose of the radiator.
6. Place a drain pan underneath the drain hose.
7. Point the drain hose downward and then unplug it.
8. Allow all the coolant to drain.
9. Remove the two bolts and the hose to remove the reserve tank. Drain coolant in the reverse tank.
10. Reinstall the reserve tank.
11. Plug the drain hose and fix it with the clamp.

(A) Drain hose clamps
(B) Drain hose



2. Flush the Cooling System

1. Fill the cooling system with water and common flushing/cooling liquid. Follow the flushing/cooling liquid manufacture's instructions.
2. Reinstall and retighten the radiator cap.
3. Start and run the engine until it reaches the operating temperature.



⚠ WARNING

- **The engine and coolant can be hot. Avoid contact with skin to prevent severe burns. ALWAYS wear safety glasses when draining the cooling system.**

4. Stop the engine.
5. Immediately drain the cooling system before rust and dirt settle in it. See “Drain the Cooling System” on page 14-38.
6. Plug the drain hose and fix it with the clamp.

(A) Drain hose

■ Change the Coolant

IMPORTANT: Avoid damage.

- Use of an incorrect coolant mixture can damage the radiator.
- NEVER operate the engine with plain water.
- NEVER use an antifreeze mixture with a concentration of more than 50 % water to coolant mixture.
- NEVER pour the coolant or water into the radiator while the engine is hot.

NOTE

- For adding coolant to the cooling system, use of High Quality Permanent Type Antifreeze (Ethylene Glycol with corrosion and rust inhibitor chemicals) is recommended.

For the correct mixture ratio, see the manufacturer's directions on the coolant container.

1. Allow the radiator to cool down.
2. Fill the cooling system. The cooling system capacity is approximately 3.4 US qt (3.2 L).
3. Reinstall and retighten the radiator cap.
4. Start and run the engine until it reaches the operating temperature.
5. Stop the engine.
6. Check the reserve tank coolant level, and add the coolant as necessary.
7. Lower the hood.

10. Every 1 Year

■ Replace the Air Cleaner Element

For the maintenance work, see “Service the Air Cleaner Element” on page 14-29.

■ Flush the Cooling System

For the maintenance work, see “Flush the Cooling System” on page 14-38.

■ Change the Coolant

For the maintenance work, see “Change the Coolant” on page 14-40.

11. Every 2 Years

■ Replace the Radiator Hoses and Clamp

For the maintenance work, see “Check the Radiator Hoses and Clamps” on page 14-10.

■ Replace the Fuel Line

For the maintenance work, see “Check the Fuel Line” on page 14-13.

■ Replace the Intake Air Hose

For the maintenance work, see “Check the Intake Air Hoses and Clamps” on page 14-13.

■ Replace the Hydraulic Hoses

For the maintenance work, see “Check the Hydraulic Hoses” on page 14-20.

■ Replace Power Steering Hose

Consult your local Cub Cadet Yanmar dealer for this service.

15. SERVICE THE ELECTRICAL SYSTEM

⚠ WARNING

- To avoid personal injury, do as follows:
- Read “Chapter 1. SAFETY PRECAUTIONS” at the head of this manual.
- Read the danger, warning and caution statements on the safety-alert symbols on the tractor.
- To avoid possible poisoning from exhaust fume, do not operate the engine in an enclosed place that lacks adequate ventilation.
- NEVER start the engine while standing on the ground. Be sure to start the engine only from the operator's seat.
- Before starting any servicing work, park your tractor on solid, level ground, engage the parking brake securely, turn off the Power Take Off (PTO) switch, lower the implement to the ground, set the forward and reverse drive pedal to the NEUTRAL position, stop the engine and from the starter key switch.

1. Battery

■ Special Note for the Battery

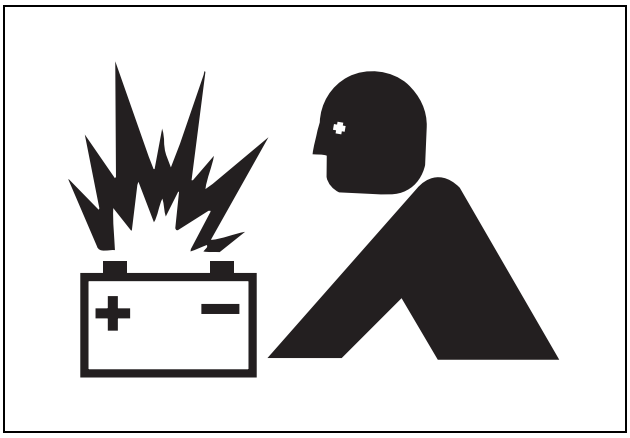
⚠ WARNING

- **The battery posts, terminals and associated accessories contain lead and lead compounds which are known to the State of California to cause cancer and reproductive harm. After handling the battery, wash hands thoroughly.**

■ Service the Battery Safely

⚠ WARNING

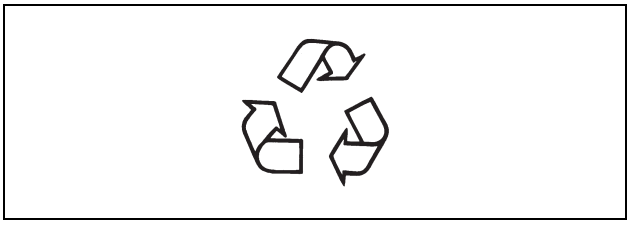
The battery electrolyte contains sulfuric acid, which is poisonous and can cause serious burn:
- **Wear protective goggles and gloves.**
- **NEVER expose skin.**
- **If electrolyte is accidentally swallowed, immediately seek medical attention.**
- **If the electrolyte has entered eyes, immediately flush with running water for 15-30 minutes and seek medical attention.**
- **If the battery electrolyte comes into contact with skin, immediately flush with a plenty of water and, if necessary, seek medical attention.**



Batteries may emit flammable/explosive gasses. Use extreme caution when handling batteries.
- **NEVER smoke near the battery.**
- **Wear protective goggles and gloves.**
- **NEVER allow any metal piece to contact across the battery posts.**
- **When disconnecting the battery cables, first remove the negative cable.**
- **When reconnecting the battery cables, connect the negative cable last.**

NOTICE

- Always remain aware of your environmental responsibility.
- For environmentally appropriate disposal of possibly hazardous materials on your tractor, such as its engine oil, diesel fuel and hydraulic fluid, follow the disposal guidelines of the EPA or other relevant governmental bodies. Consult the local authorities or waste disposal facility.
- NEVER dispose of the hazardous wastes from your tractor inappropriately; for example by dumping them into a sewer, on/into the ground or into the groundwater or any waterways.
- Failure to follow these instructions may seriously impact the environment.

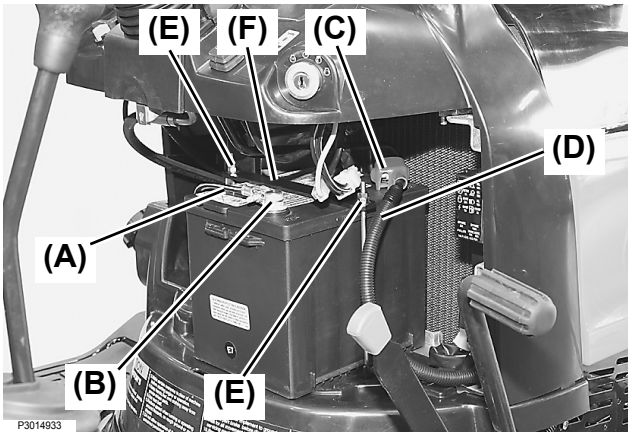


■ Inspect the Battery

The battery used on the tractor is a maintenance-free design. Do not add electrolyte or recharge it. When the engine is off, measure the voltage on the battery across the positive and negative posts. If the reading is 11 V or lower, replace the battery with a new one.

■ Remove and Install the Battery

(A) black/yellow negative (–) cable
(B) Negative terminal
(C) Red positive terminal cover
(D) Black positive (+) cable
(E) Threaded rods
(F) Bracket



1. Remove the Battery

1. Park the tractor safely and securely.
2. Open the rear grille screen.
3. Disconnect the black/yellow negative (–) cable from the battery.
4. Remove the nuts from threaded rods.
5. Remove the threaded rods and bracket.
6. Pull out the battery backward around 4 in. (100 mm).
7. Pull back the red positive terminal cover and disconnect the black positive (+) cable.
8. Remove the battery.

2. Install the Battery

1. Install the battery onto the tractor.
2. Connect the black positive (+) cable to the battery and then put the red positive terminal cover on the terminal.
3. Install the threaded rods and bracket and, retighten the nuts. Avoid over-tightening.
4. Connect the black/yellow negative (–) cable.
5. Apply petroleum jelly to the battery terminals to protect them against corrosion.
6. Close the rear grille screen.

■ Clean the Battery and Terminals

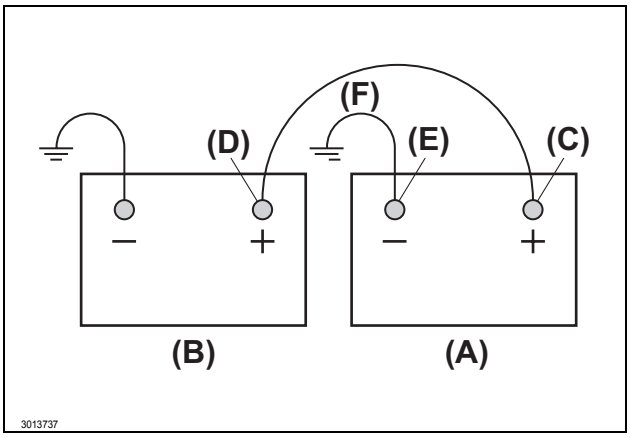
1. Disconnect the battery cables, black/yellow negative (–) cable first, and remove the battery.
2. Dissolve four tablespoons of baking soda in 1 gallon of water to prepare a solution. Use this solution to wash the battery. Be very careful not to allow the solution to enter the battery cells.
3. Rinse the battery with water and allow it to dry.
4. Clean the terminals and battery cable ends with wire brush to remove corrosion.
5. Apply petroleum jelly or silicone spray to the battery terminals to protect them against corrosion.
6. Install the battery.
7. Connect the black positive (+) cable first, then connect the black/yellow negative (–) cable.

■ Use a Booster Battery

⚠ WARNING

- **NEVER attempt to jump-start a frozen battery. Warm it to 60°F (16°C).**
- **NEVER connect the negative (–) booster cable to the negative (–) terminal of the discharged battery. Connect to an appropriate grounding point other than the discharged battery.**

(A) Booster battery
(B) Battery on a disabled vehicle
(C) Positive (+) post of booster battery
(D) Positive (+) post of battery on a disabled vehicle
(E) Negative (–) post of booster battery
(F) Other end of booster cable

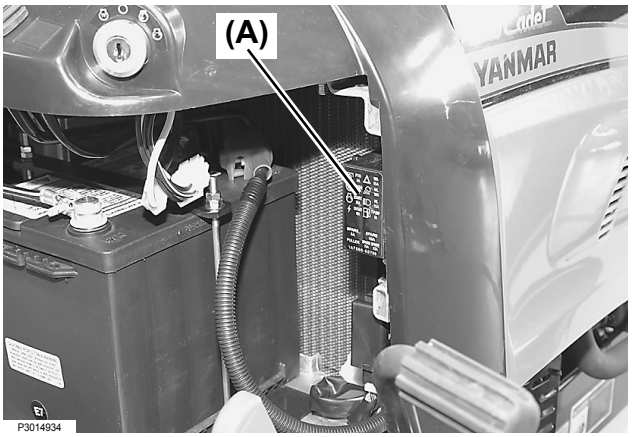


1. Connect the positive (+) booster cable to the positive (+) post on the booster battery.
2. Connect the other end of positive (+) booster cable to the positive (+) post of the battery on the disabled vehicle.
3. Connect the negative (–) booster cable to the negative (–) post on the booster battery.
4. Connect the other end of negative (–) booster cable to the metal frame of the disabled vehicle.
5. Start the engine of the disabled vehicle, and run the engine for several minutes.
6. Carefully disconnect the booster cables by performing the booster cables connection procedure in the reverse order (disconnect the negative cable first, and then the positive cable).

2. Fuses

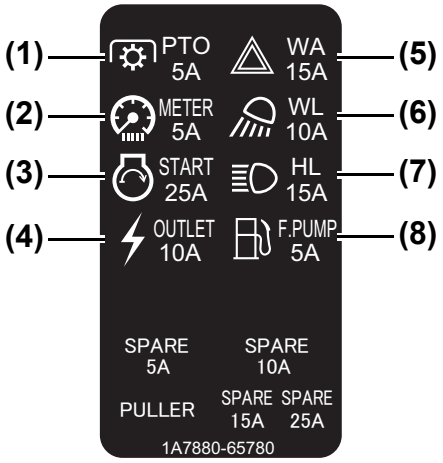
IMPORTANT: Avoid damage.

- Use of a fuse other than a correctly rated one may cause damage to the electrical system. Replace the blown fuse with a new fuse of the same amperage rating.



■ Replace the Accessory Fuses

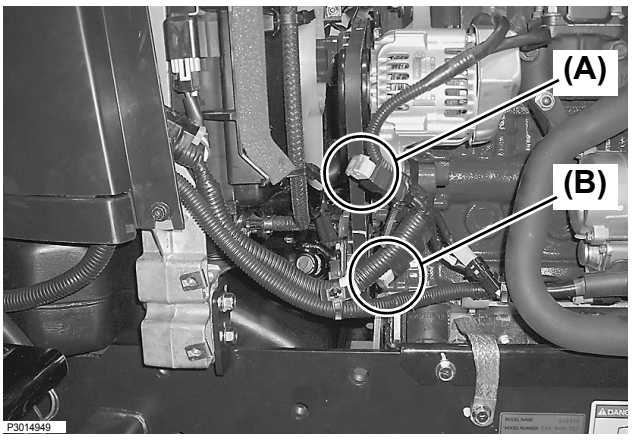
1. Park the tractor safely and securely.
2. Open the rear grille screen.
3. Grip both ends of the fuse holder cover and remove.
4. Locate the fuses by referring to the diagram at the right.
5. Remove the blown fuse from its socket.
6. Push the new fuse into the socket.
7. Reinstall the fuse holder cover.
8. Close the rear grille screen.



(A) Fuse holder cover
(1) PTO fuse: 5A
(2) Meter panel fuse: 5A
(3) Start relay fuse: 25A
(4) DC outlet fuse: 10A
(5) Warning light fuse: 15A
(6) Work light fuse: 10A
(7) Head light fuse: 15A
(8) Fuel pump fuse: 5A

■ Check the Alternator Fuse and the Main Fuse

1. Park the tractor safely and securely.
2. Open the hood.
3. Locate the fuses by referring to the picture at the right.
4. Check the fuses.



IMPORTANT: Avoid damage.

- The alternator fuse and the main fuse are of slow blow type. When any of these fuses has been blown, contact your local Cub Cadet Yanmar dealer.

(A) Alternator fuse: 60A
(B) Main fuse: 60A

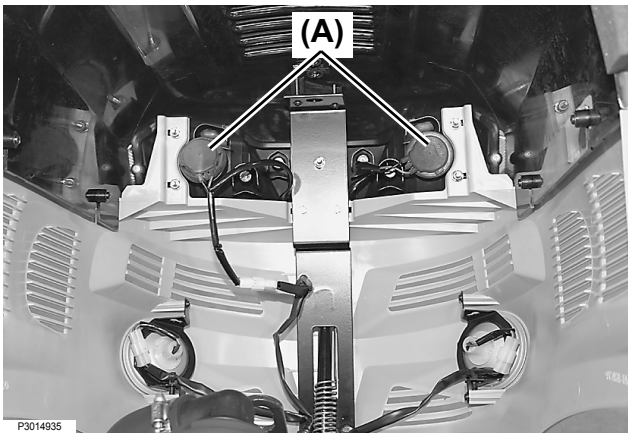
3. Bulb

■ Replace the Headlight Bulb

IMPORTANT: Avoid damage.

- NEVER touch the headlight bulbs with bare fingers, otherwise, the bulb may fail prematurely. When inspecting or replacing the bulb, use gloves or a piece of cloth to handle the bulb.

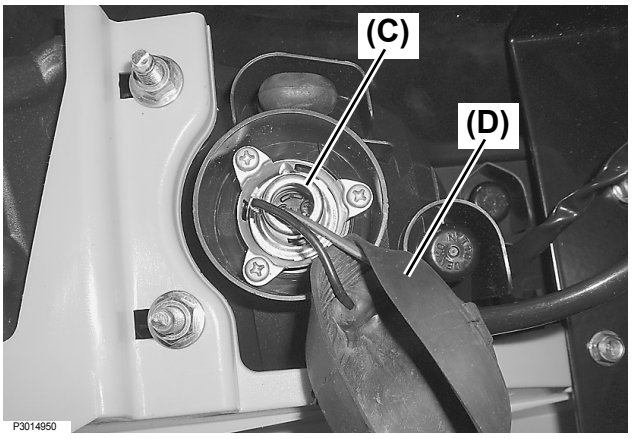
1. Park the tractor safely and securely.
2. Stop the engine and remove the key from the starter key switch.
3. Open the hood.
4. Remove the headlight cover.
5. Turn the headlight bulb socket counterclockwise slightly to remove it from the headlight bulb housing.



⚠ WARNING

- **The halogen light bulb contains compressed gas. If the glass has been scratched or is dropped, the bulb may shatter. Wear protective goggles and handle the bulb carefully when replacing it.**

6. Remove the old headlight bulb from the bulb socket.
7. Install new one into the bulb socket and fix it.
8. Turn the headlight bulb socket clockwise slightly and fix it to the bulb housing.
9. Put on the headlight cover on the headlight bulb housing and fix it.
10. Close the hood.
11. Check that the headlights light normally.

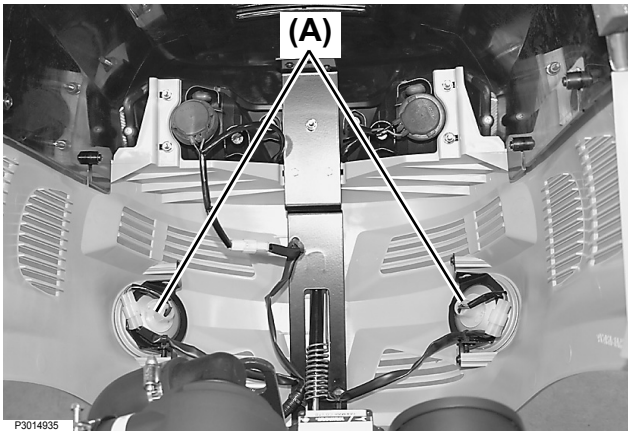


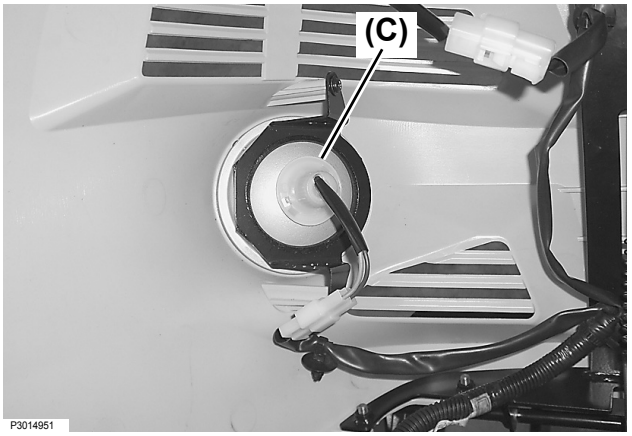
(A) Headlight assembly
(B) Headlight bulb
(C) Headlight socket
(D) Headlight cover

■ Replace the Work Light Bulb

1. Park the tractor safely and securely.
2. Stop the engine and remove the key from the starter key switch.
3. Open the hood.
4. Turn the work light socket counterclockwise slightly to remove it from the work light housing
5. Remove the bulb from the work light socket.
6. Install a new bulb into the work light socket.
7. Turn the work light socket clockwise slightly and fix it to the work light housing.
8. Close the hood.
9. Check that the work lights light normally.

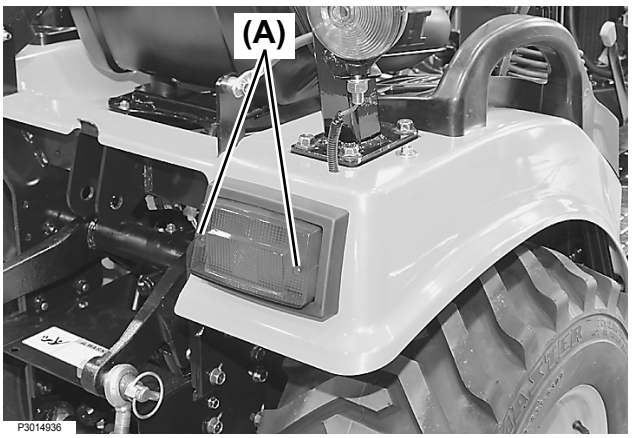
(A) Work light assembly
(B) Work light bulb
(C) Work light socket

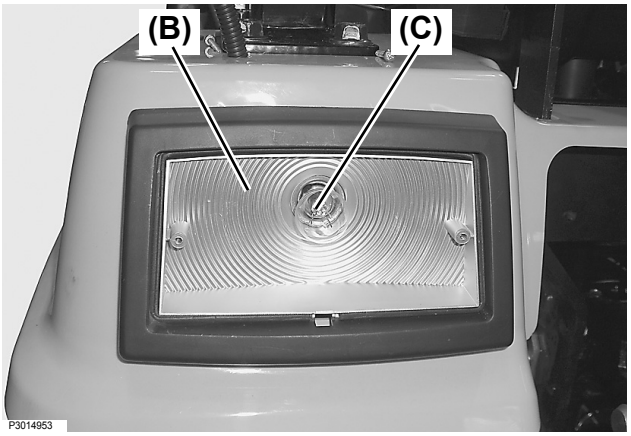




■ Replace the Tail Light Bulb

1. Park the tractor safely.
2. Stop the engine and remove the key from the starter key switch.
3. Remove the two screws and lens from the assembly.
4. Push down and rotate the bulb to remove it.
5. Push the new bulb into the socket and rotate to lock it into position.
6. Check that the tail light lights normally.
7. Reinstall the lens.





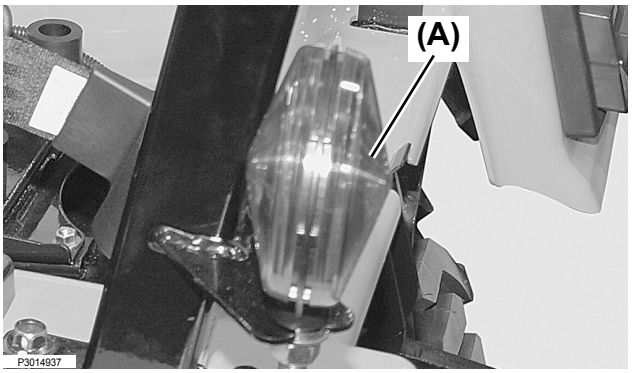
(A) Screw
(B) Lens
(C) Bulb

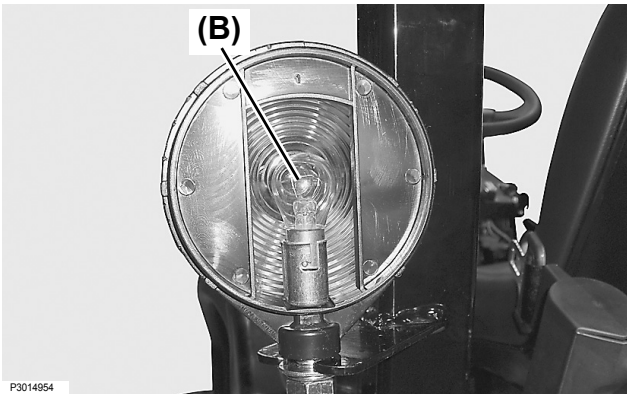
■ Replace the Turn Signal/Hazard Lights Bulb

NOTE

- The turn signal/hazard lights can be serviced after removing the front or rear lens assembly.

1. Park the tractor safely.
2. Stop the engine and remove the key from the starter key switch.
3. Remove the lens from the light assembly.
4. Push down and rotate the bulb to remove it.
5. Push the new bulb into the socket and rotate to lock it into position.
6. Check that the turn signal/hazard lights operate normally.
7. Install the lens.





(A) Lens
(B) Bulb

■ Replace the Instrument Panel Light Bulb

If any instrument panel bulb is blown, contact your local Cub Cadet Yanmar dealer for technical assistance.

4. Headlights

■ Adjust the Headlights

The headlights are fixed. If their adjustment is required, contact your local Cub Cadet Yanmar dealer for technical assistance.

16. STORE THE TRACTOR

1. Safe Practices for Storage

⚠ WARNING

- **Remember that vapor from diesel fuel is explosive and flammable.**
- **The exhaust from the engine contains carbon monoxide that can lead to carbon monoxide poisoning, possibly causing serious illness or even death. To avoid the danger of poisoning from the exhaust gas, NEVER run the engine in a closed building that is not positively ventilated.**
- **NEVER wash the tractor while the engine is running.**
- **Run the engine as shortly as possible when moving the tractor into and from the place of storage.**
- **When fuel is in the fuel tank, NEVER store the tractor in a building where fuel vapor can come into contact with open flame or spark.**
- **Before storing the tractor indoors, allow the engine to cool off.**

1. Prepare the Machine for Storage

If planning to store the tractor for a long period, follow the procedure described below.
The procedure is intended to ensure that the tractor is readily prepared for operation when it is removed from storage.

1. Repair any worn or damaged parts. Replace the parts as necessary. Tighten any loose bolts and nuts.
2. Repair scratched or chipped metal surfaces to prevent rusting.
3. Remove grass clippings and debris from the tractor.
4. Clean below the deck and remove grass clippings and debris from inside the chute and bagger.
5. Remove the ballast from the tractor.
6. Wash the tractor and apply wax to the metal and plastic surfaces.
7. Run the tractor for 5 minutes to dry the belts and pulleys.
8. Apply a light coat of clean engine oil to pivots and wear points to prevent rusting.
9. Lubricate the lube fittings.
10. Check the tire pressure. Adjust the tire pressure slightly higher than specified.
11. Change the engine oil and run the engine for about 5 minutes to circulate the oil throughout the entire engine block and the internal moving parts.
12. Lower any implement to the ground. Apply grease to the exposed areas on the hydraulic cylinder piston rods.

2. Prepare the Fuel and Engine for Storage

■ Fuel

If using stabilized fuel, fully fill the fuel tank with stabilized fuel.

NOTE

●By filling the fuel tank, the amount of air remaining in the tank decreases, and this can help prevent deterioration of the fuel in the tank.

If stabilized fuel has not been used.

1. Park the tractor safely and securely in a well-ventilated place.

NOTE

●Assuming that this is the last time the tractor is operated for the season, use all the fuel in the fuel tank.

2. Run the engine until all the fuel in the tank is used.
3. Turn the key to the OFF position.

IMPORTANT: Be very careful to avoid damage.

●In degraded fuel, varnish can occur and clog the fuel injector components and adversely affect engine performance.
●Mix stabilizer into fresh fuel before filling the fuel tank.

4. Mix fresh fuel and fuel stabilizer in a separate container. Observe the stabilizer manufacturer's instructions for mixing.
5. Fill the fuel tank with the stabilized fuel.
6. Run the engine for several minutes to allow the fuel-stabilizer mixture to be circulated through the fuel system.

■ Engine

If the tractor is scheduled to be stored for longer than 60 days, prepare the engine for storage.

1. Change the engine oil and filter while the engine is still warm.
2. Service the air filter if necessary.
3. Remove dust and debris from the engine air intake screen.
4. Clean the engine and engine compartment.
5. Remove the battery.
6. Clean the battery and battery posts. Check the electrolyte level.
7. Close the fuel shut-off valve.
8. Store the battery in a cool, dry, dark place. However, the temperature of that place must not become low enough to freeze the electrolyte in battery.
9. Store the tractor in a dry, safe place. If the tractor is stored outdoors, protect it with a waterproof cover. Jack up the tractor and place blocks under the front and rear axles to allow the tires to be lifted off the ground. Do not allow the tires to be exposed to direct sunlight or extremely high temperature.

2. Prepare the Stored Tractor for Operation

1. Check the tire pressure. If necessary, refill with compressed air.
2. Check the levels of engine oil, transmission/hydraulic oil and engine coolant.
3. Check the battery electrolyte level.
4. Check that the battery is adequately charged.
5. Install the battery.
6. Check the fan belt tension.
7. Lubricate all the lube fittings.
8. If the tractor has a fuel shut-off valve, open it.
9. Run the engine for 5 minutes while the mower or any implement is disengaged to allow the oil to be fully distributed throughout the entire engine. After stopping the engine, walk around the tractor and check for any evidence of oil or other leakage.
10. Make sure that all the shields, guards or deflectors are in place.

17. TROUBLESHOOTING

1. Guide in Using the Troubleshooting Table

The troubleshooting table given below is intended to provide a simple guide for the operator or owner. If any fault, failure or a problem that requires repair work has occurred, contact your local Cub Cadet Yanmar dealer for technical assistance.

1. Engine

	Symptom	Cause	Remedy
1	**Engine does not start or engine starts, but stalls immediately.**	● Diesel fuel is not flowing or is not flowing sufficiently to the engine.	• Check that there is sufficient fuel in the fuel tank. Refuel as necessary.
			• Check that the fuel filter is not clogged. Replace the clogged filter.
		● Air is trapped in the fuel system.	• Check the fuel line for looseness. Retighten any loose connections.
			• Bleed air from the fuel system.
		● Water contamination in the fuel system.	• Remove water from the fuel tank, fuel lines and fuel filter (replace filter as necessary). Refill the fuel tank with diesel fuel.
		● In cold weather, the engine oil viscosity is excessively high, which causes greater resistance. As a result, the engine speed is lower than normal.	• Use a less viscous engine oil; Be sure to change to a more viscous engine oil in summer. (Consult your local Cub Cadet Yanmar dealer for details.)
		● The power of the battery is too low and the starter fails to accelerate to a speed sufficient to start the engine.	• Clean the battery posts and terminals, then measure the voltage of the battery. If the voltage is 11 V or lower, replace the battery with a new one.
			• During cold weather, it is recommended to remove the engine from the tractor and store it indoors. Recharge the battery (as necessary) before installing it in the tractor.
2	**Engine starts, but fails to run smoothly or is not powerful.**	● Stale diesel fuel (owing to prolonged storage).	• Replace the diesel fuel.
		● Contaminated diesel fuel.	• Replace the diesel fuel. Replace fuel filter (as necessary).
		● Clogged air cleaner.	• Replace the air cleaner.
		● The fuel shut-off valve is not in the fully OPEN position.	• Fully open the fuel shut-off valve.
3	**Engine starts successfully, but stops suddenly.**	● No diesel fuel.	• Refuel.
		● The fuel shut-off valve is not in the OPEN position.	• Open the fuel shut-off valve.
4	**Blackish exhaust.**	● Poor diesel fuel quality.	• Replace the diesel fuel and fuel filter.
		● Too much engine oil.	• Drain the engine oil to the specified level.
		● Clogged air filter.	• Clean or replace the air filter.
5	**Pale bluish exhaust.**	● Faulty or defective injection nozzle.	• Contact your local Cub Cadet Yanmar dealer for technical assistance.
		● Poor diesel fuel quality.	• Replace the diesel fuel and fuel filter.

6	**Engine overheats.**	● Insufficient engine coolant.	• Add engine coolant.
			• Check the radiator and the lines to and from the radiator for leakage. If leakage is found, contact your local Cub Cadet Yanmar dealer for technical assistance.
		● Overloaded engine.	• Operate the tractor carefully and moderately. Avoid overloading.
		● Insufficiently tensioned fan belt, or broken fan belt.	• Adjust the fan belt to the specified tension value, or replace fan belt if broken or damaged.
		● The radiator core is blocked.	• Check for dirt accumulated in the radiator core and grille screen.
		● Poor engine coolant quality.	• It is possible that sludge has accumulated on the engine water jacket. Contact your local Cub Cadet Yanmar dealer for technical assistance.

2. Machine

	Symptom	Cause	Remedy
1	**Machine vibrates excessively.**	● Engine speed is too low	• Run the engine at an appropriate higher speed.
		● The Power Take Off (PTO) connecting the tractor with the mounted implement is not properly and securely connected.	• Disconnect the Power Take Off (PTO) shaft, and properly reconnect it. Check if excessive vibration reoccurs. If excessive vibration persists, immediately stop operation and contact your local Cub Cadet Yanmar dealer for technical assistance.
		● Water is trapped in the fuel filter (water sedimentor).	• Drain the fuel filter water sedimentor. Check for water in the fuel tank, drain as necessary.
		● The engine throttle cable and linakges have not been correctly adjusted.	• Contact your local Cub Cadet Yanmar dealer for technical assistance.
2	**Engine starts successfully, but the tractor fails to operate.**	● Parking brake is engaged.	• Disengage the parking brake.
		● Insufficient transmission/hydraulic oil, deteriorated transmission/hydraulic oil or clogged transmission/hydraulic oil filter.	• Check the amount and quality of the oil. Replace deteriorated oil. Refill as necessary. Check the filter for clogging, and replace the clogged filter with a new one.
		● Transmission/hydraulic oil is too cold.	• Start the engine. Operate the tractor when the engine has fully warmed up.

3. Brake

	Symptom	Cause	Remedy
1	**Brake does not function correctly.**	● Improperly adjusted brake pedal play.	• Properly adjust the brake pedal play.
		● Worn or damaged brake linkage.	• Contact your local Cub Cadet Yanmar dealer for technical assistance.
		● Excessively worn brake disk.	• Contact your local Cub Cadet Yanmar dealer for technical assistance.
		● Deteriorated transmission/hydraulic oil.	• Replace the transmission/hydraulic oil.
		● Degraded quality of transmission/ hydraulic oil.	• Replace the transmission/hydraulic oil.

4. Steering

	Symptom	Cause	Remedy
1	**Steering does not function correctly.**	● Uneven tire pressure.	• Adjust the tire pressure to the correct level.
		● Insufficient transmission/hydraulic oil, deteriorated transmission/hydraulic oil or clogged transmission/hydraulic oil filter.	• Check the amount and quality of the oil. Replace deteriorated oil. Refill as necessary. Check the filter for clogging, and replace the clogged filter with a good one.
		● Transmission/hydraulic oil is too cold.	• Start the engine, and warm up the transmission/hydraulic oil.
		● Insufficient lubrication of the steering linkage.	• Lubricate steering linkage.
		● Steering play is too great.	• Contact your local Cub Cadet Yanmar dealer for technical assistance.
		● Bent front axle.	• Contact your local Cub Cadet Yanmar dealer for technical assistance.

18. OPTIONS

Contact your local Cub Cadet Yanmar dealer for further details.

- 18 × 8.5-10 Turf Tire
- 26 × 12.0-12 Turf Tire
- Lower Radiator Hose Heater
- Rear Work Light
- Rear Wheel Weight

19. INDEX

REMARKS

●The following index terms will be added to the existing Sc2400.

3-Point Hitch Control/Cutting Height Adjustment Lever 5-7, 10-1
4-Wheel Drive Lever 5-10
Air Cleaner Element 14-29
Alternator 14-24
Alternator/Battery Charging Light 5-11
Battery 15-1
Brake Pedal 5-4
Coolant 14-37
Cruise Control Lever 5-6
Cruise Control 8-9
Differential Lock 8-15
Drive Pedal (Forward/Reverse) 5-5
Engine Oil Dipstick 14-8
Engine Oil Fill Cap 14-8
Engine Oil Filter 14-27
Engine Oil Pressure Warning Light 5-11
Fan Belt 14-24
Float 5-5
Fuel 13-3, 14-4
Fuel Cap 14-7
Fuel Shut-Off Valve 7-2
Fuel Filter 14-36
Fuel Gauge 5-11
Fuel/Water Separator 14-23
Glow 7-8
Hazard Light 15-9
Hazard Lights Button Switch 5-3
Headlight 15-10
Headlight Switch 5-9
Hood 14-2
Hour Meter 5-11
Hydraulic Flow Control/Stop Knob 5-10, 11-2
Hydro Static Transmission (HST) Pressure Release Lever 5-7, 8-20
Implement Control Lever 5-5
Inflation Pressure 12-2
Instrument Panel 5-11
Lift Link 10-2
Lubricant 13-3
Maximum Weight 12-3
Mid-/Rear-Power Take Off (PTO) Select Lever 5-9, 9-3
Parking Brake 7-5
Parking Brake Lever 5-4
Power Steering 8-24
Power Take Off (PTO) 9-1
Power Take Off (PTO) switch 5-8, 7-6
Range Gear Lever 5-8
Retractable Seat Belt 7-4
Reverse-Override-Switch 5-8, 9-2
Roll-Over Protective Structure (ROPS) 1-8, 8-3
Seat Adjustment Lever 7-2
Seat Safety Switch 14-15
Slow Moving Vehicle (SMV) Emblem 8-16, 8-18
Starter Key Switch 5-3
Sway Link 10-2
Tachometer 5-11
Tail Light 5-9, 15-9
Throttle Control Lever 5-4
Top Link 10-2
Top Link Retainer 10-1
Transmission/hydraulic Oil 14-33
Turn Signal Switch 5-9
Wheel Bolt Tightening Torque 12-2

Sc Series

Sc2450

Cub Cadet Yanmar LLC.
P.O. Box 361052
Cleveland, OH 44136-1052