# Operator's Manual

## Ex Series Compact Tractor

# Ex2900
# Ex3200

***Cub Cadet Yanmar LLC.***
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**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.

# TABLE OF CONTENTS

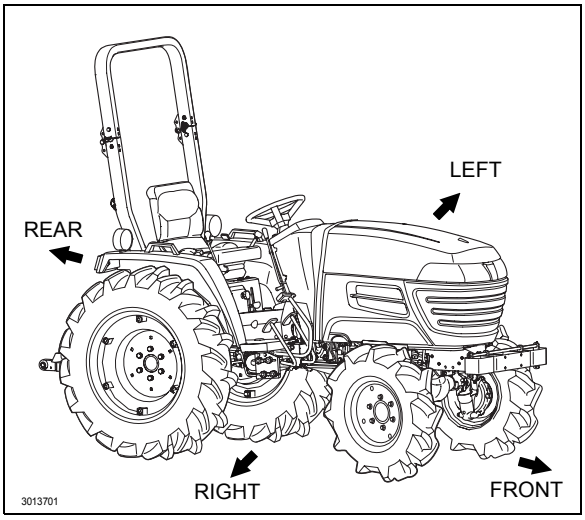
# 1. SAFETY PRECAUTIONS

## 1. 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 positively 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 refer to the sides relative to the direction of forward movement with the tractor.



## 2. Safety Alert Symbol

The safety alert symbol 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 symbol.

**⚠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.

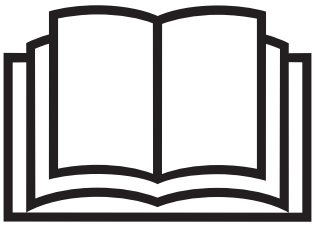
**WARNING: READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR TRACTOR. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.**

**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.

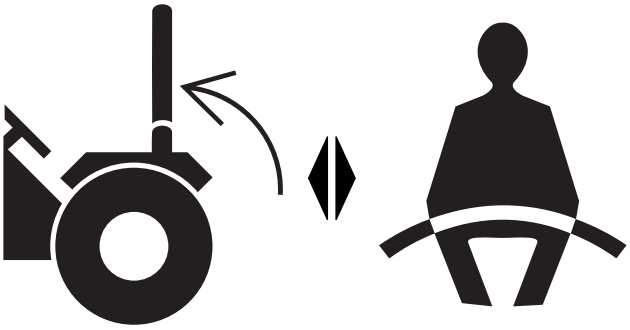
**DANGER:** Your tractor was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. To help prevent accidents, read and take the following precautions before operating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

## 3. 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. Do not operate the tractor with the Roll-Over Protective Structure (ROPS) in the folded position.
   Keep the seat belt fastened while operating the tractor with the Roll-Over Protective Structure (ROPS) up. 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.
   The foldable Roll-Over Protective Structure (ROPS) may be temporarily folded down when absolutely necessary for areas with height limitations. Remember that when the Roll-Over Protective Structure (ROPS) is in the folded position, the Roll-Over Protective Structure (ROPS) does not provide operator protection and the seat belt should not be worn.
   For operator safety, always keep the Roll-Over Protective Structure (ROPS) in the upright and locked position.
   NEVER alter or repair the Roll-Over Protective Structure (ROPS). Welding, bending, drilling, grinding, or cutting may weaken the Roll-Over Protective Structure (ROPS) structure. 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) up.
   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 foldable Roll-Over Protective Structure (ROPS) is in the folded position or 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 (other than a usual operator) 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, clutch and 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 "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 front or rear mounted implements, install an appropriate weight(s) 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. Remember that a narrower tread width can lead to greater possibility of upsetting of the tractor. To positively stabilize your tractor, select a maximum possible tread width appropriate for your intended application. (For details, see the "Wheel Adjustment" on page 12-2)
18. 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.

# 4. 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 all the levers are in the neutral positions, the parking brake is engaged securely, and the clutch and the Power Take Off (PTO) are disengaged.
3. Always keep the seat belt fastened around your waist whenever the Roll-Over Protective Structure (ROPS) is in the upright and locked position.
4. If you must start the tractor where there is a height limitation, as soon as possible return the Roll-Over Protective Structure (ROPS) to the upright and locked position and fasten the seat belt.
5. Start the engine of your tractor only by using the starter key switch. Do not attempt to start the tractor 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.
6. 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.

7. 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.

8. Avoid accidental contact with control pedals while the engine is running, as this can cause unexpected movement of the tractor.
9. Never leave a running machine unattended.

## 2. Working with Your Tractor

1. Tow an implement only with the drawbar. Do not hitch via the axle housing. The tractor can upset, leading to serious injury or death. Make certain the drawbar pin is locked in place.
2. Any towed vehicle with a total weight exceeding that of the tractor should be equipped with its own braking system that is operational from the tractor seat.
3. Make sure that all the covers and guards are in position. Replace any missing or damaged cover immediately.
4. Before turning or when traveling on a rough terrain, or before stopping, decrease the tractor speed in order to prevent upsetting.
5. Use extra caution when operating over rough ground, when crossing ditches or slopes, and when turning corners.
6. 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.
7. 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.
8. 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.
9. When two or more people are working in one area, always keep in good communication with each other.
10. Do not get on or off a moving tractor.
11. Make certain all tractor lights are illuminated when operating at night.

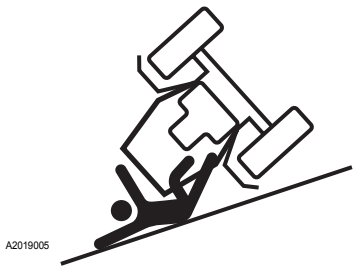
## 3. Considerations for Safety of Children

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 starter key switch to prevent unauthorized operation. If parking on a slope is unavoidable, park the tractor across the slope and chock the wheels.

## 5. Operating 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 low range. When climbing or descending slopes. Always keep machine in gear when going down slopes to take advantage of engine braking action.
- 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.
- To improve stability on a slope, select the widest possible tread. Observe the instructions for appropriate ballasting. (For details, see "TIRES, WHEELS AND BALLAST")

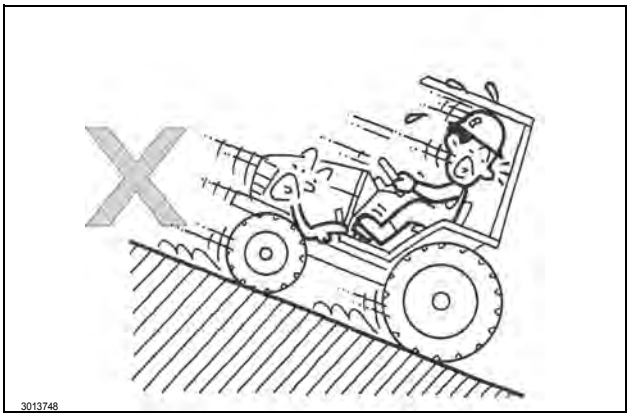
**DO NOT:**

- 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. NEVER attempt a shift change action on a slope. Otherwise, the tractor can suddenly go downhill out of control.**
- **On a slope, do not set the range shift lever to the "N" (neutral) position.**
- **When climbing or descending a slope, do not disengage the clutch or shift the gears. Disengaging the clutch or shifting the gears to neutral position can cause the tractor to be out of control.**
- **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.**

If the clutch pedal is depressed



## 6. Traveling 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 you 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 lever in its raised position and lock it with the position stop knob. Do not fully close the hydraulic flow control / stop knob to hold an implement in the raised position while the tractor is traveling with the implements.
    Doing so could cause damage to the hydraulic lift circuit.
11. When towing another implement, connect a safety chain to the implement and mount a Slow Moving Vehicle (SMV) emblem on it.

## 7. Safe Practices for Parking Your Tractor

1. Disengage the Power Take Off (PTO), lower the implement to the ground, shift all the levers to their neutral positions, engage the parking brake securely, shut down the engine and remove 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 storing.

## 8. Operating 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 stationary Power Take Off (PTO)-drive implements, be sure to engage the parking brake securely and securely place chocks in front and behind the rear wheels. Do not approach or access any rotating component.

## 9. Using the 3-Point Hitch

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.
3. While on a road, do not attempt to operate an implement. During transportation, 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 to hold an implement in the raised position while the tractor is traveling with the implements. Doing so could cause damage to the hydraulic lift circuit.

## 10. 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.

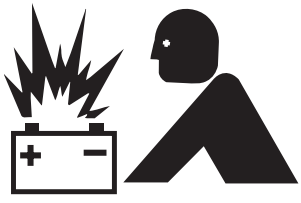
1. Never modify the Roll-Over Protective Structure (ROPS) in any way.
2. Never attempt to straighten or reweld any part of the main frame or retaining brackets that have been damaged. Doing so may weaken the structure and endanger your safety.
3. Never secure any parts on the main frame or attach the 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 you the maximum protection possible, never take unnecessary risks.

## 11. Safe Practices for Servicing Your Tractor

Before starting any servicing work, park your tractor on solid, level ground, engage the parking brake securely, lower the implement to the ground, set all the levers to the neutral position, shut down the engine and remove the starter key switch.

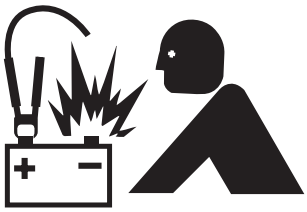
1. Always keep a first-aid kit and a fire extinguisher readily available.
2. Before accessing the engine, muffler, radiator or other possibly hot components, wait until the tractor has fully cooled off.

3. Use extreme care in handling gasoline and diesel fuels. They are extremely flammable and the vapors are explosive. Use only an approved container.
4. Be sure to shut down 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 the “7. OPERATING THE ENGINE”.
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 “Checking the Cooling System”).

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 or adjusting the wheel tread width. 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.**

# 12. Understanding 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 symbol. 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 symbol.

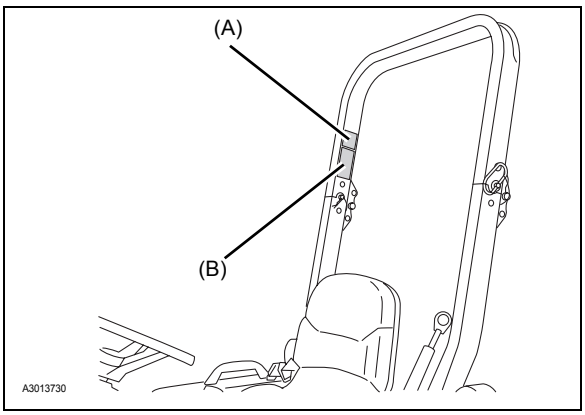
## ■ Care of DANGER, WARNING and CAUTION Decals

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) CY1A8160-85170**

## WARNING

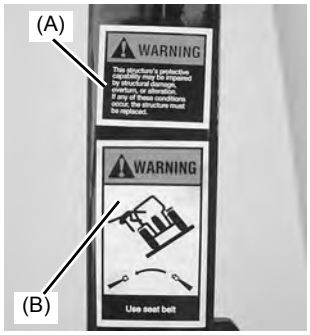
This structure's protective capability may be impaired by structural damage, overturn, or alteration.
If any of these conditions occur, the structure must be replaced.




**(B) CY1A8160-85180**

## WARNING

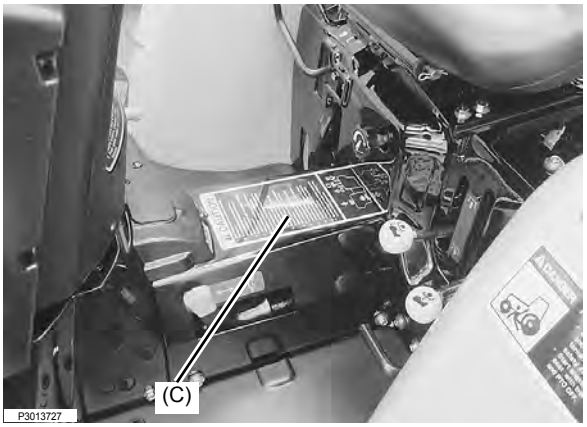
Use retractable seat belt.

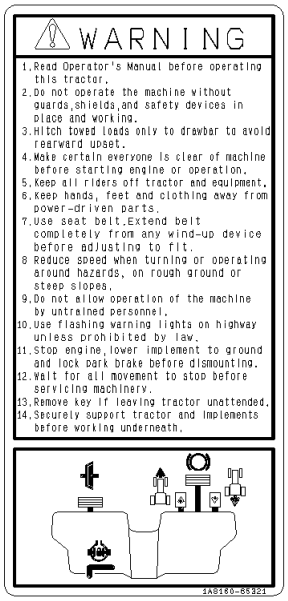



**(C) CY1A8160-65321**

## WARNING

1. Read Operator's Manual before operating this tractor.
2. Do not operate the machine without guards, shields, and safety devices in place and working.
3. Hitch towed loads only to drawbar to avoid rearward upset.
4. Make certain everyone is clear of machine before starting engine or operation.
5. Keep all riders off tractor and equipment.
6. Keep hands, feet and clothing away from power - driven parts.
7. Use seat belt. Extend belt completely from any wind - up device before adjusting to fit.
8. Reduce speed when turning or operating around hazards, on rough ground or steep slopes.
9. Do not allow operation of the machine by untrained personnel.
10. Use flashing warning lights on highway unless prohibited by law.
11. Stop engine, lower implement to ground and lock park brake before dismounting.
12. Wait for all movement to stop before servicing machinery.
13. Remove key if leaving tractor unattended.
14. Securely support tractor and implements before working underneath.



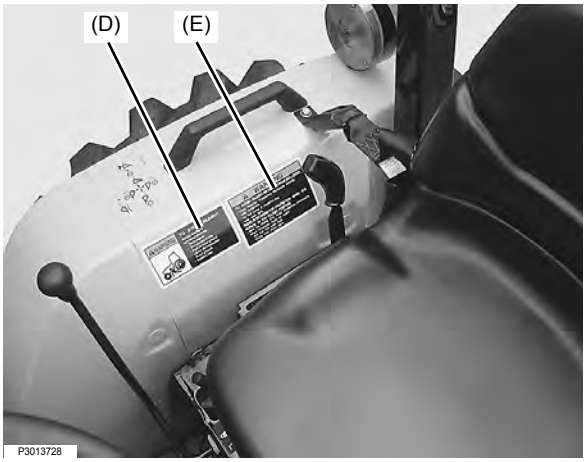
**(D) CY1A8160-65310**

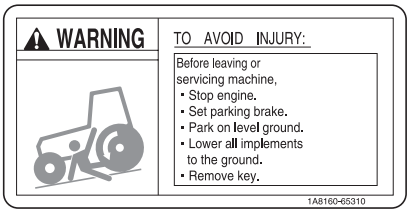
## WARNING

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.




**(E) CY1A8160-65350**

## WARNING

TO AVOID INJURY OR DEATH FROM ROLL-OVER:

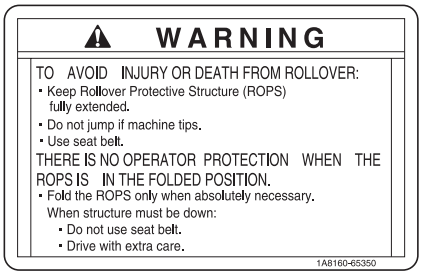
- ●Keep Rollover Protective Structure (ROPS) fully extended.
- ●Do not jump if machine tips.
- ●Use retractable seat belt.

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 retractable seat belt.
- ●Drive with extra care.

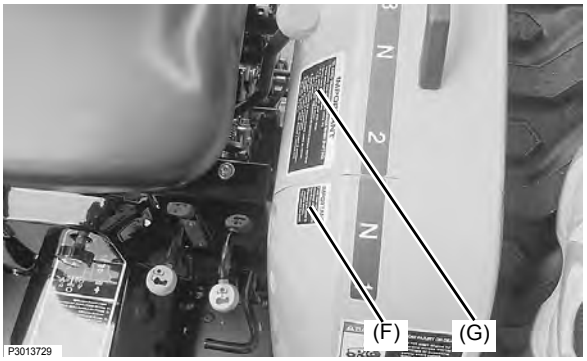



**(F) CY1A8160-65370**

## IMPORTANT

If diff lock does not disengage when removing foot from pedal;

- ●Depress brake pedal to equalize traction.
- ●Then release the pedal.



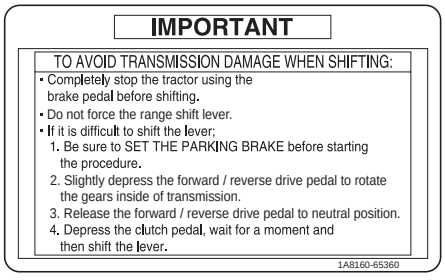


**(G) CY1A8160-65360**

## IMPORTANT

TO AVOID TRANSMISSION DAMAGE WHEN SHIFTING:

- ●Completely stop the tractor using the brake pedal before shifting.
- ●Do not force the range gear shift lever.
- ●If it is difficult to shift the lever;
  1. Be sure to SET THE PARKING BRAKE before starting the procedure.
  2. Slightly depress the forward / reverse drive pedal to rotate the gears inside of transmission.
  3. Release the forward / reverse drive pedal to NEUTRAL position.
  4. Depress the clutch pedal, wait for a moment and then shift the lever.

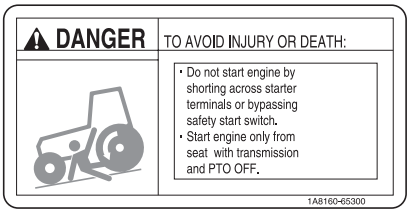


**(H) CY1A8160-65300**

## DANGER

TO AVOID INJURY OR DEATH:

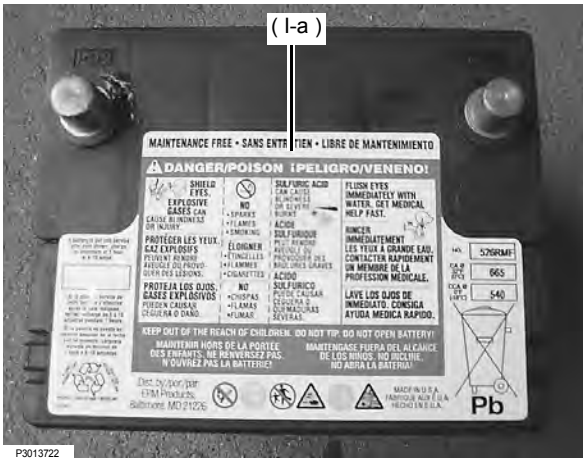
- Do not start engine by shorting across starter terminals or bypassing safety start switch.
- Start engine only from seat with transmission and PTO OFF.


**(I-a) CY1A8160-51520**

## DANGER/POISON (E)

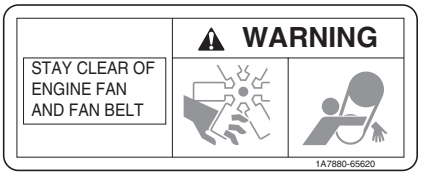
- SHIELD EYES: EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.
- NO SPARKS, FLAMES, SMOKING.
- SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.
- FLUSH EYES IMMEDIATELY WITH WATER. SEEK MEDICAL HELP RIGHT AWAY.
- KEEP OUT OF REACH OF CHILDREN. DO NOT TIP.
- KEEP VENT CAPS TIGHT AND LEVEL.




**(I-b) CY1A7880-65620**

## WARNING

STAY CLEAR OF ENGINE FAN AND FAN BELT

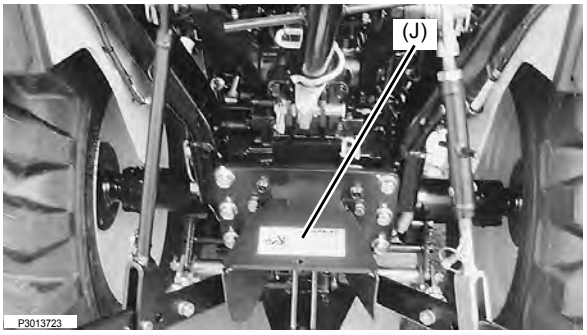



**(J) CY198220-65621**

## WARNING

AVOID INJURY FROM PTO:

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





**(K) CY124764-44810**

## 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.

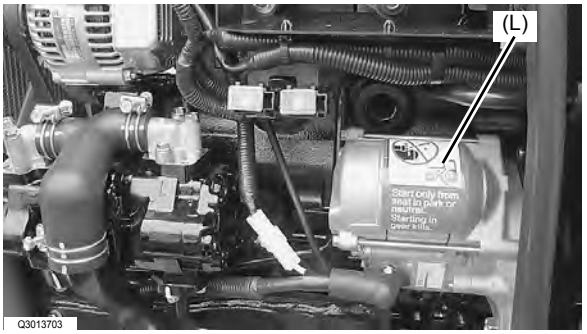

(K)

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.

**(L) CY119629-77091**

## DANGER

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



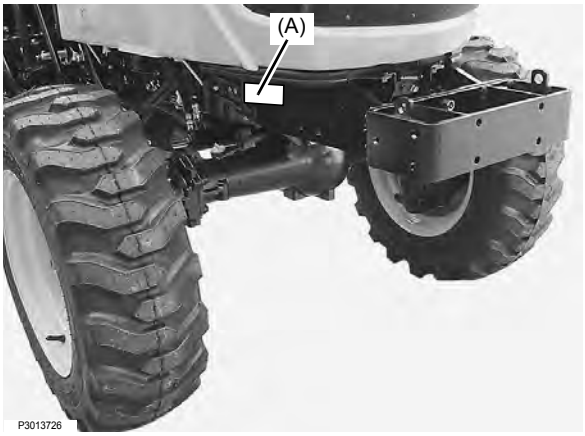

(L)

DANGER

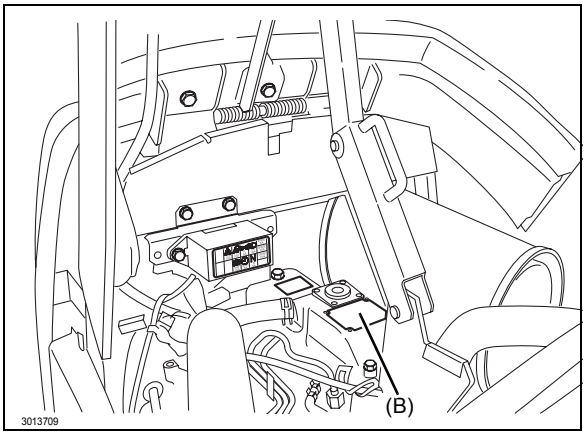
Start only from seat in park or neutral. Starting in gear kills.

# 2. SERVICING THE TRACTOR

Your Cub Cadet Yanmar dealer wants to remain committed to the tractors our customers have purchased and intends to support our customers in fully developing the performance of their Cub Cadet Yanmar tractors. After carefully studying this manual, the customers themselves will be able to do a certain portion of the regular maintenance work.
When parts / components or major service work is needed, contact your local Cub Cadet Yanmar dealer for technical assistance.
For information about the service work, contact your local Cub Cadet Yanmar dealer. When ordering a part / component, inform your local Cub Cadet Yanmar dealer of the tractor and engine serial numbers. Find both serial numbers and enter them in the following table.




| | Type | Serial No. |
|---|---|---|
| Tractor | | |
| Engine | | |
| Date of Purchase | | |
| Name of Dealer | | |




***(A) Tractor identification plate with tractor serial number***
***(B) Engine serial number***

# 3. SPECIFICATIONS

## 1. Specifications Table

| Model | | | | Ex2900 | Ex3200 |
|---|---|---|---|---|---|
| Power Take Off (PTO) Power | | | hp (kW) | 22.7 (17.0) | 25.5 (19) |
| Engine | Maker | | | YANMAR | |
| | Model | | | 3TNV88 | |
| | Type | | | Direct Injection, Vertical, Water-Cooled, 4 Cycle Diesel | |
| | Number of Cylinders | | | 3 | |
| | Bore and Stroke | | in. (mm) | 3.5×3.5 (88×90) | |
| | Total Displacement | | cu. in. (L) | 100.2 (1.642) | |
| | Gross Power | | hp (kW) | 28.7 (21.4) | 31.5 (23.5) |
| | Net Power | | hp (kW) | 27.4 (20.4) | 29.6 (22.1) |
| | Rated Revolution | | rpm | 2600 | |
| | Maximum Torque | | ft•lb (N•m) | 69.4 (94.1) | 74.5 (101) |
| | Battery | | | 12V BP24 , CCA: 540 A | |
| | Fuel | | | Diesel Fuel No.1-D , No.2-D | |
| Capacities | Fuel Tank | | US gal (L) | Approximately 6.3 (24) | |
| | Engine Oil | | US qt (L) | Approximately 4.2 (4.0) | |
| | Engine Coolant | | US qt (L) | Approximately 4.7 (4.5) | |
| | Transmission Oil | | US gal (L) | Approximately 5.4 (20.3) | |
| Dimensions | Overall Length (without 3-Point Hitch) | | in. (mm) | 109.5 (2780) | |
| | Overall Width (with R4 Tires) | | in. (mm) | 59.1 (1500) | |
| | Overall Height (with Roll-Over Protective Structure (ROPS), R4 Tires) | | in. (mm) | 87.8 (2230) | |
| | Overall Height (with R4 Tires) (Top of Steering Wheel) | | in. (mm) | 54.2 (1390) | |
| | Wheel Base | | in. (mm) | 61.0 (1550) | |
| | Min. Ground Clearance (with R4 Tires) | | in. (mm) | 10.0 (255) | |
| | Tread (with R4) | Front | in. (mm) | 38.3 (974) | |
| | | Rear | in. (mm) | 43.9 (1114) | |
| Weight (with Roll-Over Protective Structure (ROPS) and R4 Tires) | | | lb (kg) | 2495 (1134) | 2500 (1136) |

| | | | | |
|---|---|---|---|---|
| Traveling System | Tire | Ag (R1) | Front | 7-14 |
| | | | Rear | 11.2-24 |
| | | Turf (R3) | Front | 25×8.50-14 |
| | | | Rear | 13.6-16 |
| | | Industrial (R4) | Front | 25×8.50-14 |
| | | | Rear | 15-19.5 |
| | Clutch | | | Dry Type Single Stage |
| | Steering | | | Power Steering |
| | Transmission | | | Hydrostatic Transmission, 3 Range Speeds |
| | Brake | | | Wet Multi-Plates |
| | Minimum Turning Radius | | ft (m) | 8.7 (2.7) |
| Hydraulic Unit | Hydraulic Control System | | | Position Control |
| | Pump Capacity (main) | | US gal/min (L/min) | Approximately 5.6 (21.1) |
| | Pump Capacity (steering) | | US gal/min (L/min) | Approximately 4.3 (16.4) |
| | 3-Point Hitch | | | Category 1 |
| | Max. Lift Force | Lift Point | lb. (kg) | 1250 (568) |
| | | 24 in. Behind Lift Point | lb. (kg) | 1100 (500) |
| | System Pressure | | psi (MPa) | 2030 (14) |
| Power Take Off (PTO) | Rear | Shaft Size | | SAE 1-3/8, 6-Splines |
| | | Type | | Continuous Live with Overrunning Clutch |
| | | Speed / Engine | rpm | 540 / 2592 |
| | Mid | Shaft Size | | SAE 16/32, 15-Splines |
| | | Type | | Continuous Live |
| | | Speed / Engine | rpm | 2100 / 2630 |

## 2. Traveling Speeds

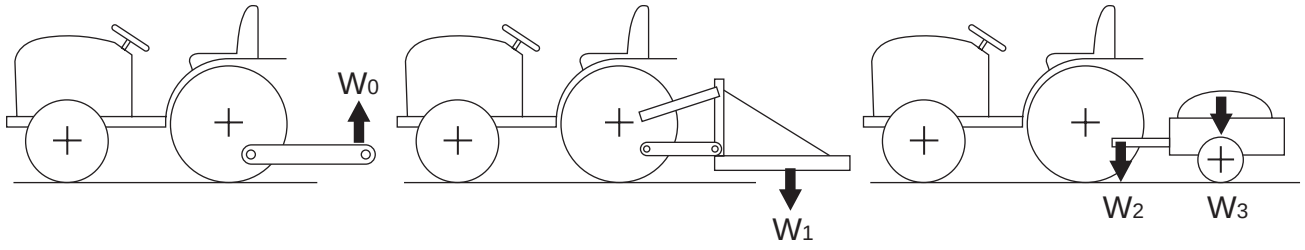
(At rated engine rpm)

| Model | | Ex2900 / 3200 | | | | | |
|---|---|---|---|---|---|---|---|
| Rear Tire Size | | 11.2-24 (Ag) | | 13.6-16 (Turf) | | 15-19.5 (Industrial) | |
| | Range Shift Lever | mph | km/h | mph | km/h | mph | km/h |
| Forward | 1 | 4.0 | 6.5 | 3.4 | 5.6 | 3.5 | 5.7 |
| | 2 | 6.9 | 11.1 | 5.9 | 9.5 | 6.1 | 9.8 |
| | 3 | 13.2 | 21.3 | 11.3 | 18.3 | 11.7 | 18.8 |
| Reverse | 1 | 4.0 | 6.5 | 3.4 | 5.6 | 3.5 | 5.7 |
| | 2 | 6.9 | 11.1 | 5.9 | 9.5 | 6.1 | 9.8 |
| | 3 | 13.2 | 21.3 | 11.3 | 18.3 | 11.7 | 18.8 |

# 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 proved 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.

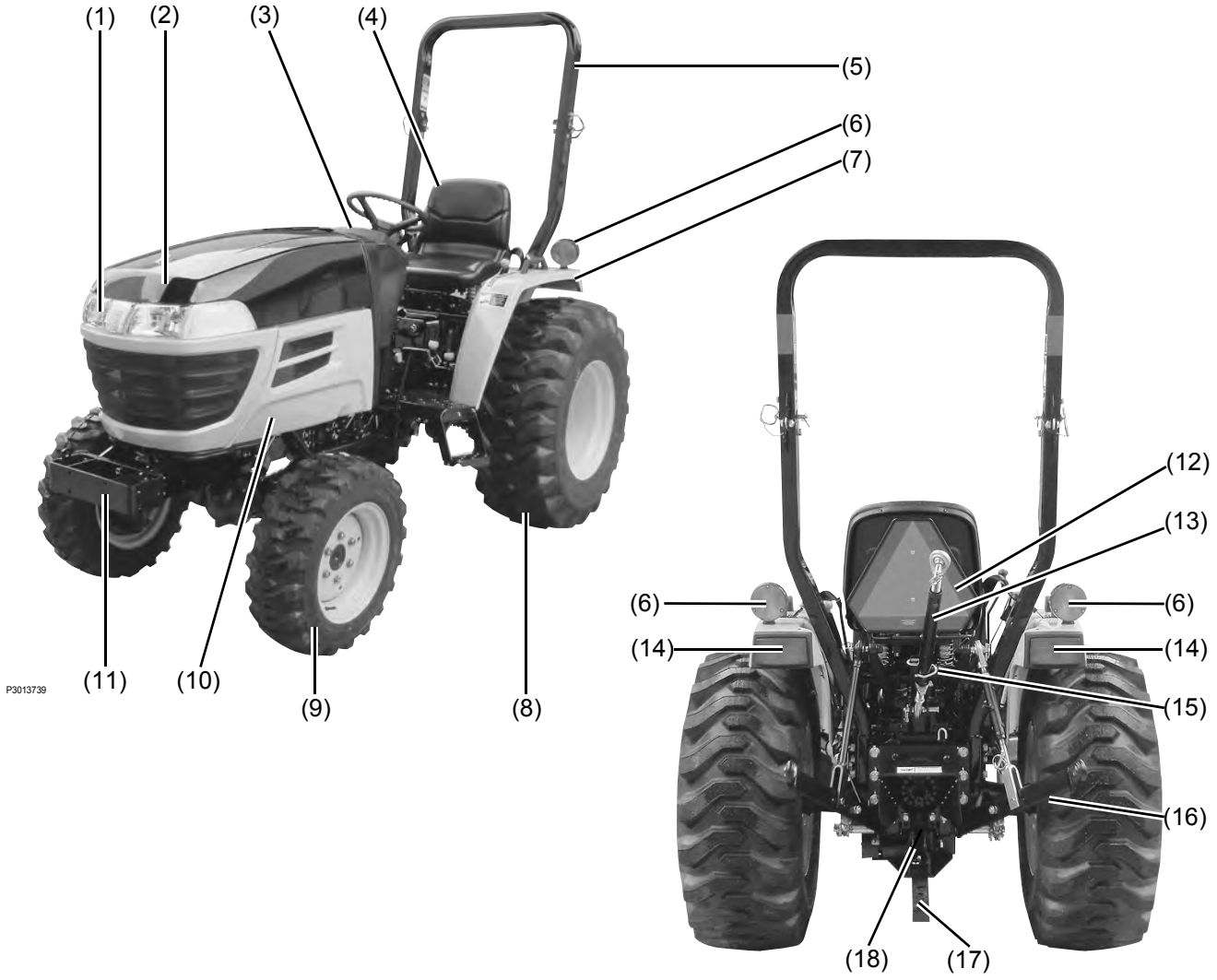
| | Lower Link End Maximum Lifting Capacity | Implement Weight and Size | Maximum Drawbar Load | Trailer Loading Weight Maximum Capacity |
|---|---|---|---|---|
| | $W_0$ | $W_1$ | $W_2$ | $W_3$ |
| lb | 1250 | As specified in the list shown in the next page | 726 | 2200 |
| kg | 568 | | 330 | 1000 |



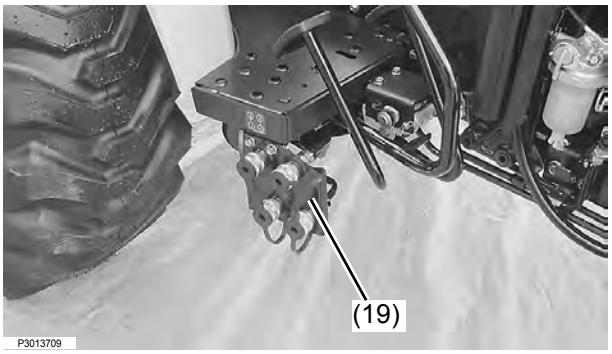
| Implement | | Remarks | Unit | Amount |
|---|---|---|---|---|
| Trailer | | Maximum Load Capacity | lb (kg) | 2200 (1000) |
| | | Maximum Drawbar Load | lb (kg) | 726 (330) |
| Mower | Rotary-Cutter (Brush Hog) | Maximum Cutting Width | in. (mm) | 60 (1525) |
| | | Maximum Weight | lb (kg) | 570 (260) |
| | Flail Mower | Maximum Cutting Width | in. (mm) | 50 (1270) |
| | | Maximum Weight | lb (kg) | 650 (295) |
| | Sickle Bar | Maximum Cutting Width | in. (mm) | 72 (1829) |
| | | Maximum Weight | lb (kg) | 620 (280) |
| Rotary Tiller | | Maximum Tilling Width | in. (mm) | 60 (1525) |
| | | Maximum Weight | lb (kg) | 550 (250) |
| Box Scraper Box Blade | | Maximum Cutting Width | in. (mm) | 60 (1525) |
| | | Maximum Weight | lb (kg) | 530 (240) |
| Rear Blade | | Maximum Cutting Width | in. (mm) | 72 (1829) |
| | | Maximum Weight | lb (kg) | 300 (135) |
| Landscape Rakes | | Maximum Cutting Width | in. (mm) | 72 (1829) |
| | | Maximum Weight | lb (kg) | 300 (135) |
| Post Hole Digger | | Maximum Digging Depth | in. (mm) | 48 (1220) |
| | | Maximum Weight | lb (kg) | 200 (90) |
| Broadcaster | | Maximum Tank Capacity | US gal (L) | Approximately 53 (200) |
| | | Maximum Weight | lb (kg) | 220 (100) |
| Disk Harrow: Pull-Type | | Maximum Harrowing Width | in. (mm) | 60 (1525) |
| | | Maximum Weight | lb (kg) | 550 (1210) |
| Manure Spreader | | Maximum Capacity | lb (kg) | 2200 (1000) |
| Cultivator | | Maximum Width | in. (mm) | 60 (1525) |
| | | Maximum Weight | lb (kg) | 350 (160) |
| Bottom Plow | | Maximum Width | in. (mm) | 12in.×2 |
| | | Maximum Weight | lb (kg) | 500 (230) |
| Front-End Loader | | Maximum Lift Capacity (at Pivot) | lb (kg) | 900 (410) |
| | | Maximum Overhang (Pivot ~ Front Tire Center) | in. (mm) | 32 (810) |
| | | Maximum Weight | lb (kg) | 870 (395) |
| | | Maximum Oil Pressure | psi (MPa) | 2175 (15) |
| Backhoe | | Maximum Digging Depth | in. (mm) | 90 (2285) |
| | | Maximum Weight | lb (kg) | 980 (445) |
| | | Maximum Oil Pressure | psi (MPa) | 2175 (15) |
| Mid-Mower | | Maximum Cutting Width | in. (mm) | 60 (1525) |
| | | Maximum Weight | lb (kg) | 450(205) |

# 5. NAMES AND FUNCTIONS OF COMPONENTS

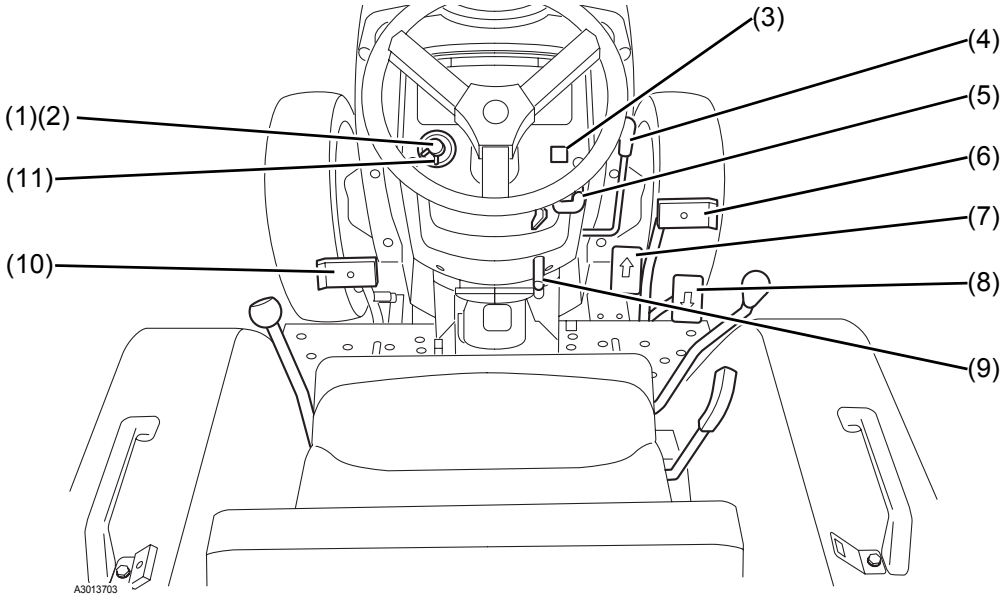
## 1. Appearance

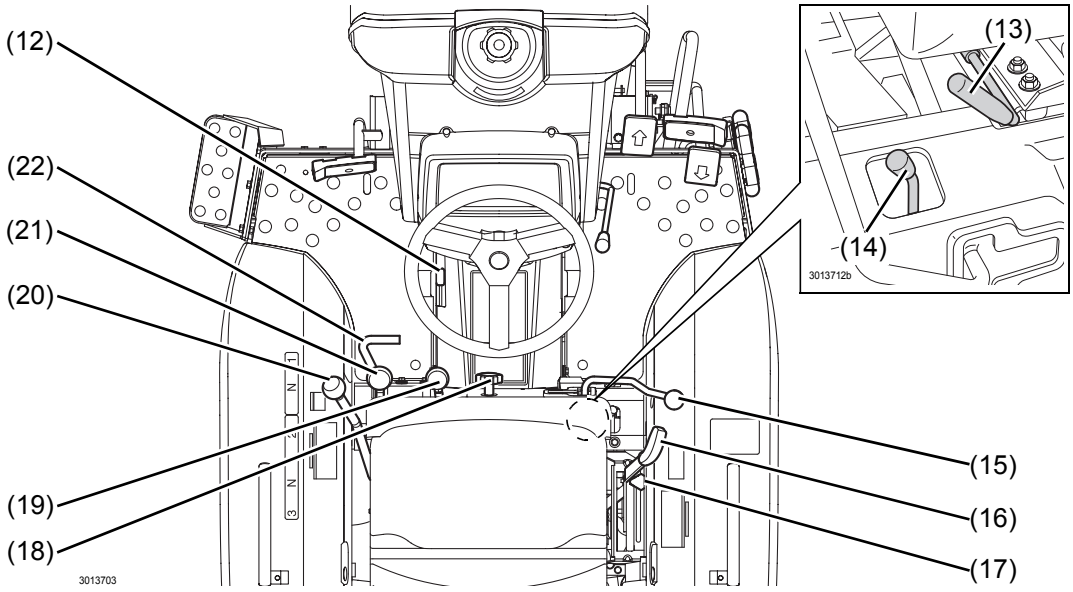



(1) Headlights
(2) Hood
(3) Fuel inlet
(4) Seat
(5) Roll-Over Protective Structure (ROPS)
(6) Turn signal / Hazard lights
(7) Fender
(8) Rear tires
(9) Front tires
(10) Side panel
(11) Front weight hitch
(12) Slow Moving Vehicle (SMV) emblem
(13) Top link
(14) Tail lights
(15) Top link retainer
(16) Lower links
(17) Drawbar
(18) Rear Power Take Off (PTO) shaft
(19) Hydraulic quick couplers



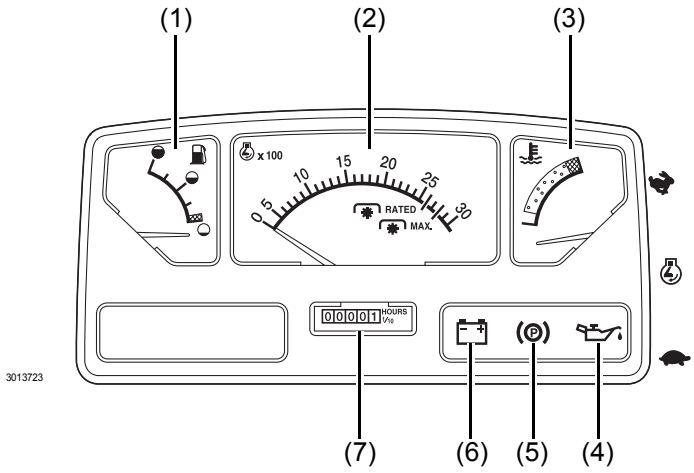
## 2. Operator Station Controls




(1) Multi-function switch
(2) Headlight switch
(3) Hazard lights button switch
(4) Throttle control lever
(5) Cruise control lever
(6) Brake pedal
(7) Forward drive pedal
(8) Reverse drive pedal
(9) Parking brake lever
(10) Clutch pedal
(11) Turn signal switch
(12) 4-wheel drive lever
(13) Seat adjustment lever
(14) Hydraulic lock lever
(15) Implement control lever
(16) 3-point hitch control lever
(17) Position stop knob
(18) Hydraulic flow control / stop knob
(19) Rear Power Take Off (PTO) engagement lever
(20) Range shift lever
(21) Mid-Power Take Off (PTO) engagement lever (option)
(22) Differential lock foot pedal

## 3. Instrument Panel, Switches and Hand Controls




**(1) Fuel Gauge**
This gauge indicates level of fuel in the fuel tank.

**(2) Tachometer**
This meter indicates the current engine speed in increments of 100 rpm.

**(3) Engine Coolant Temperature Gauge**
This gauge indicates the current engine coolant temperature.

**IMPORTANT:**

- If the pointer of the engine coolant temperature gauge is in the red zone or the reading is rapidly increasing, immediately decrease the load of the tractor. To lower the coolant temperature, run the engine at idle until the reading on the gauge falls in the green zone.
  Next, shut down the engine. Allow it to cool off, and only then, check the following points.
  (1) The coolant water level in the radiator and sub-tank is adequate.
  (2) The radiator and radiator screen are free from dust deposition.
  (3) The fan belt is correctly tensioned.
  For more details about the maintenance procedure, refer to the PERIODIC SERVICE section.
- If the pointer of the engine coolant temperature gauge enters the red zone again or the reading rapidly increases again, stop the engine and immediately contact your local Cub Cadet Yanmar dealer for technical assistance.

**(4) 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 shut down the engine and contact your local Cub Cadet Yanmar dealer for technical assistance.

**(5) Parking Indicator Light**
This light illuminates when the parking brake is engaged securely.

**NOTE:**

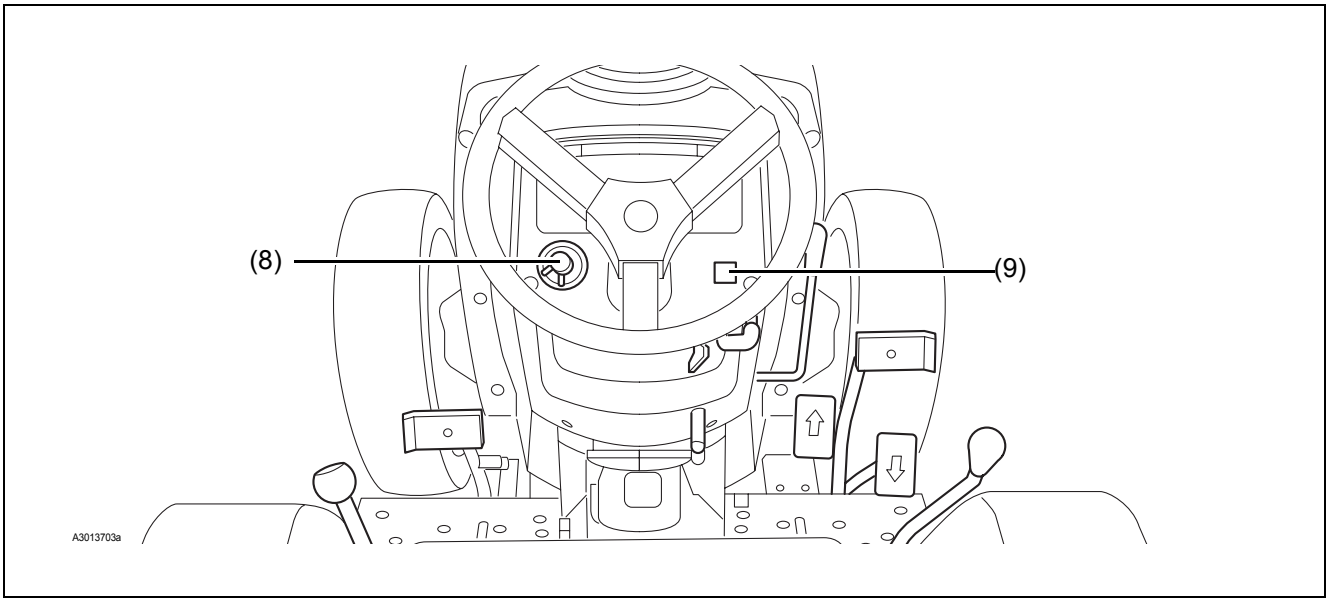
- Remember that even if the parking brake lever is in the “LOCKED” position, the parking brake itself may not be engaged.

**(6) Alternator / Battery Charging Light**
This light remains lit when the starter key switch is in the ON position and the engine is OFF.

**IMPORTANT:**

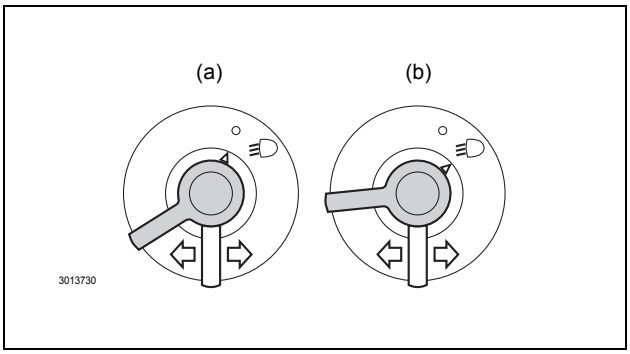
- If this light illuminates while the engine is running, the power generated by the alternator is too low. Fully push the throttle control lever forward and increase the engine speed.
- If the light still remains lit, immediately shut down the engine and contact your local Cub Cadet Yanmar dealer for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

**(7) 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 2600 rpm.

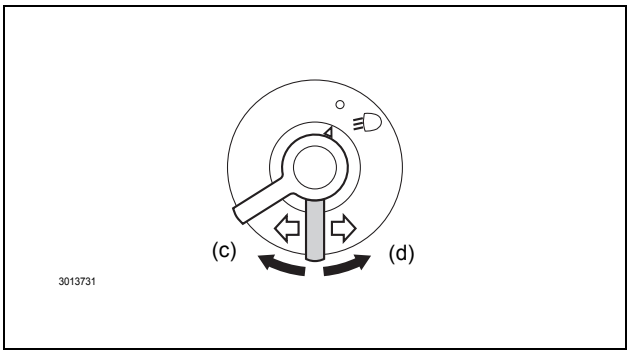



**(8) Headlight / Turn Signal Switch**

Use the blue lever to turn ON/OFF the headlights. Pushing this lever up will turn the headlights ON, and moving it down will turn the headlights OFF.
The yellow lever is the turn signal switch. To signal a right turn, move the lever to right; to signal a left turn, move the lever to left.



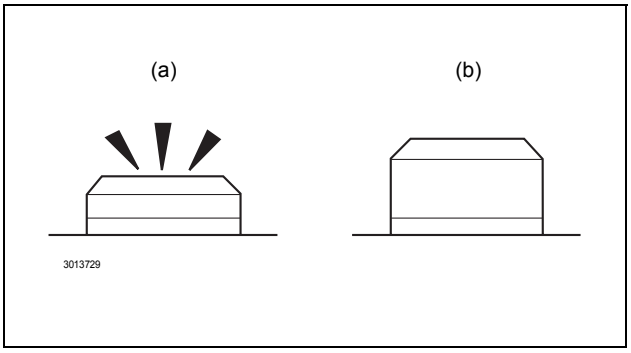

*(a) OFF*
*(b) ON*




*(c) To signal a left turn, move the lever to left*
*(d) To signal a right turn, move the lever to right*

**(9) 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*

# 6. PRE-OPERATION CHECK

## 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 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. OPERATING THE ENGINE

**⚠DANGER**

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.

**⚠WARNING**

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

ALWAYS ensure that all the levers are in NEUTRAL, the parking brake is engaged securely, and the clutch and Power Take Off (PTO) are disengaged before starting the engine.

ALWAYS keep the retractable seat belt fastened whenever the Roll-Over Protective Structure (ROPS) is in the upright and locked position.

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, check that all the safety features are functioning correctly. Make corrections as necessary.

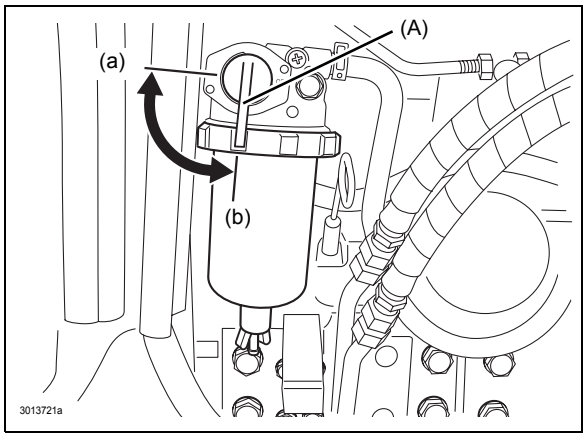
## 1. Starting the Engine

### 1. Open the fuel shut-off valve.

### ■ Opening / Closing the Fuel Shut-Off Valve

- Open the valve: Turn the valve lever to the "ON" position.
- Close the valve: Turn the valve lever to the "OFF" position.

***(A) Fuel shut-off valve***
*(a) "OFF" (closed) position*
*(b) "ON" (open) position*

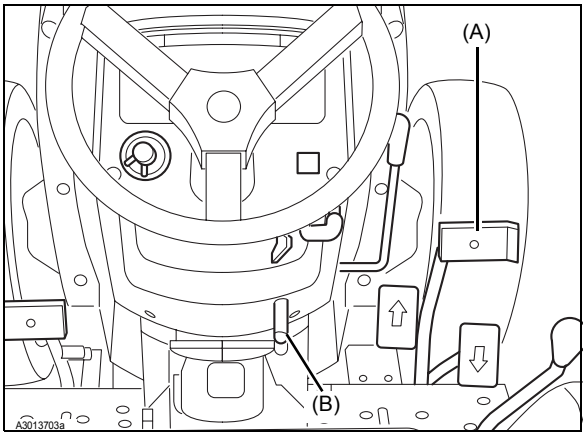


## 2. Engage the parking brake securely.

### ■ Engaging the Parking Brake

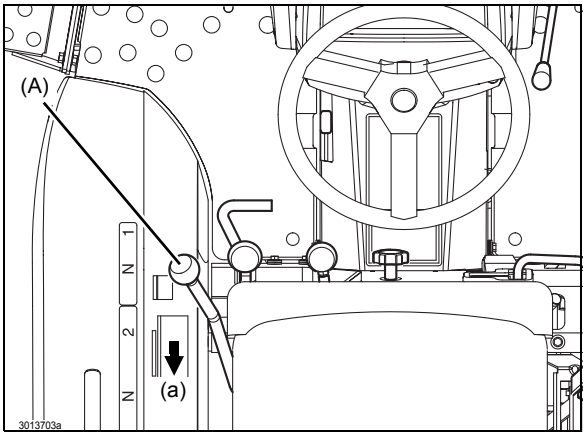
1. Pull up the parking brake lever.
2. Fully depress the brake pedal.
3. Remove foot from the brake pedal and ensure that the brake has been fully locked.

***(A) Brake pedal***
***(B) Parking brake lever***



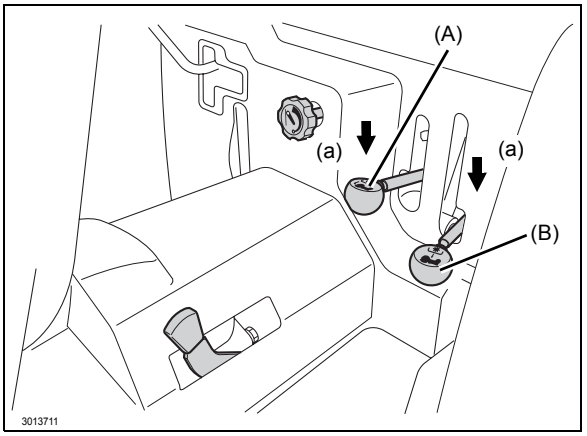

## 3. Set the range shift lever to the NEUTRAL position.

***(A) Range shift lever***
*(a) Neutral position*



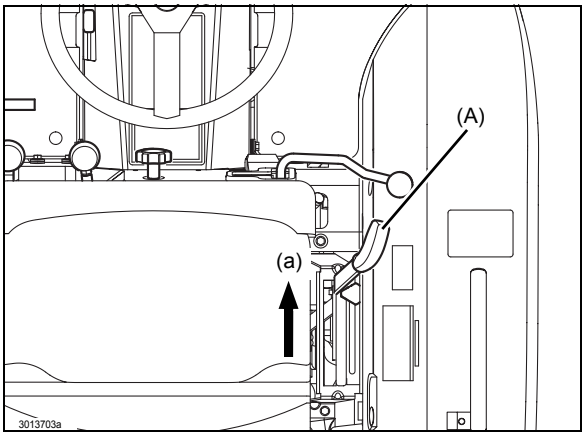

## 4. Set the Power Take Off (PTO) engagement lever to the OFF position.

***(A) Rear Power Take Off (PTO) engagement lever***
***(B) Mid Power Take Off (PTO) engagement lever (option)***
*(a) OFF position*




## 5. Fully move the 3-point hitch control lever forward to the lowest position to lower the implements installed to the rear- and mid-mounts to the ground.

***(A) 3-point hitch control lever***
*(a) Lowest position*

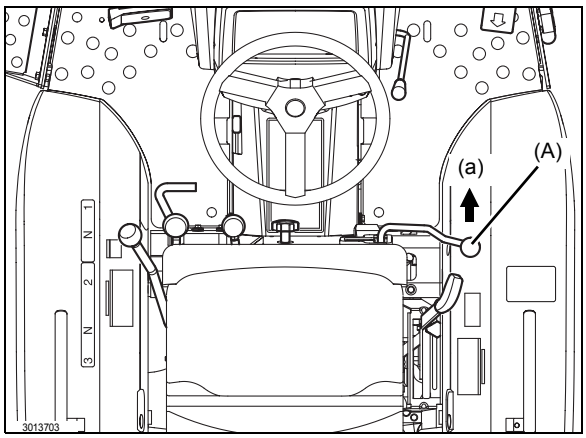



## ⚠CAUTION

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

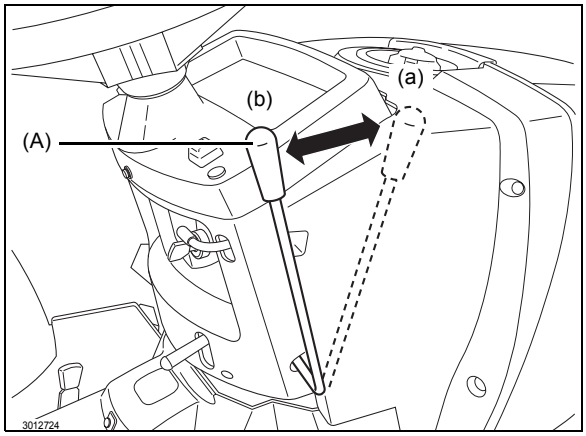
**6. If the tractor has any implements that use the implement control valve, lower them to the ground (including the front-mounted one).**

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



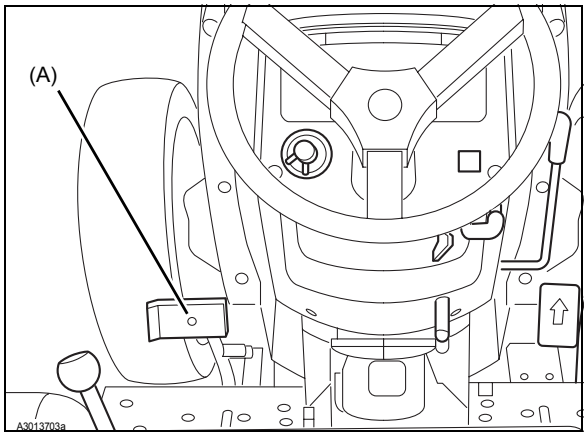

**7. Pull the throttle control lever by 1/3 to 1/2 stroke.**

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

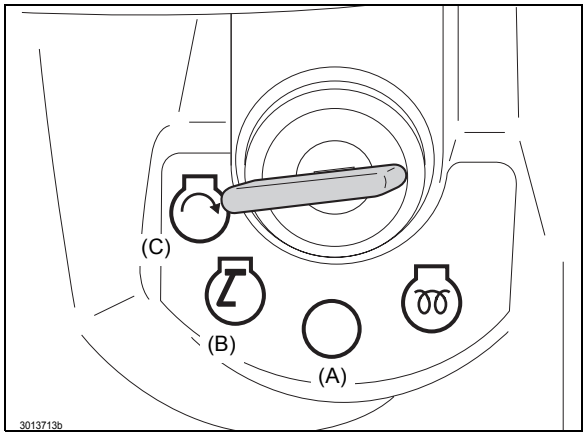



**8. Depress the clutch pedal.**

***(A) Clutch pedal***



## 9. Turn the starter key switch to the START position.




**(A) OFF position:**
The engine must not run.
**(B) ON position:**
When the starter key switch has been turned to this position, the engine oil pressure warning light and battery charge indicator light will illuminate.
**(C) START position:**
When the starter key switch is turned to this position, the starter starts running to turn the flywheel and the engine begins to run. Once the engine has started, release the starter key switch.

***(A) OFF position***
***(B) ON position***
***(C) START position***

## 10. Once the engine has successfully started, release the key.

## 11. After the engine has started, warm up the engine for 5 minutes at 1200 to 1500 rpm without connecting a load.

### ■ Warming 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, refer to the table below.

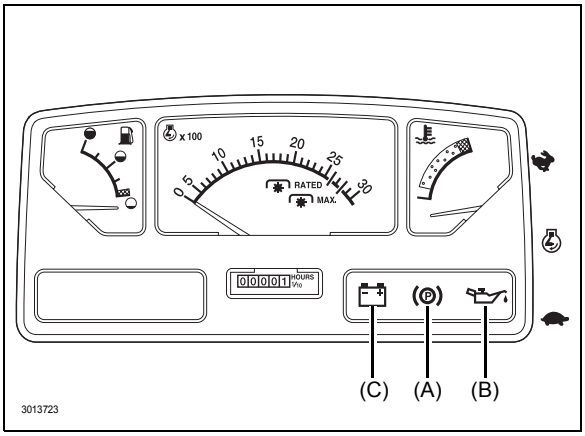
| Temperature | Warming-up Time |
|---|---|
| Over 32°F (0°C) | At least 5 minutes |
| 32 to 14°F (0 to –10°C) | 5 to 10 minutes |
| 14 to –4°F (–10 to –20°C) | 10 to 15 minutes |
| Below –4°F (–20°C) | More than 15 minutes |

**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.

## ■ Checking the Lights on the Instrument Panel

1. When the parking brake is in the locked state, the parking indicator light turns ON.
2. The engine oil pressure light turns ON.
3. The alternator / battery light turns ON.




***(A) Parking indicator light***
***(B) Engine oil pressure warning light***
***(C) Alternator / Battery charging light***

**NOTE:**

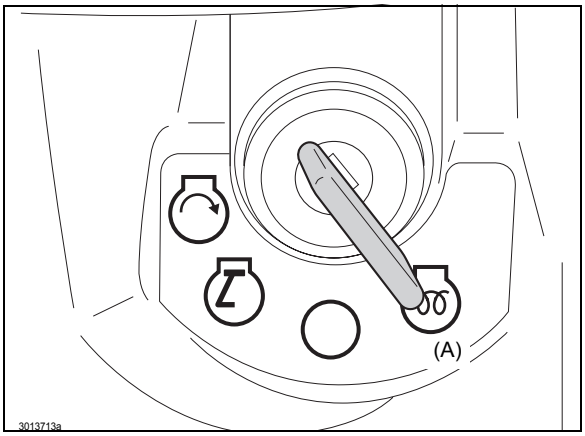
- The engine oil pressure light turns OFF within 5 seconds after the engine is started.
- The alternator / battery charging light turns OFF within 10 seconds after the engine is started.

## ⚠WARNING

- **If the engine oil pressure light fails to turn OFF within 10 seconds after the engine is started, shut down the engine and detect the cause. If no specific cause is detected, but a problem still persists, contact you local Cub Cadet Yanmar dealer for technical assistance.**

## 2. Starting the Engine in Cold Weather

Use the glow plug when the air temperature is 23°F (–5°C) or lower.




1. Move the key switch to the GLOW position (A). Hold the key switch in the GLOW position for no more than 20 seconds.
2. Move the key switch to the START position and start the engine.

**IMPORTANT: Avoid starter damage.**

- NEVER operate the starter for more than 20 seconds. If the engine fails to start, wait for 2 minutes before attempting to start the engine again. If the engine still fails to start after four unsuccessful attempts, the starter may be not functioning. (See “17. TROUBLESHOOTING” ).

***(A) Glow position***

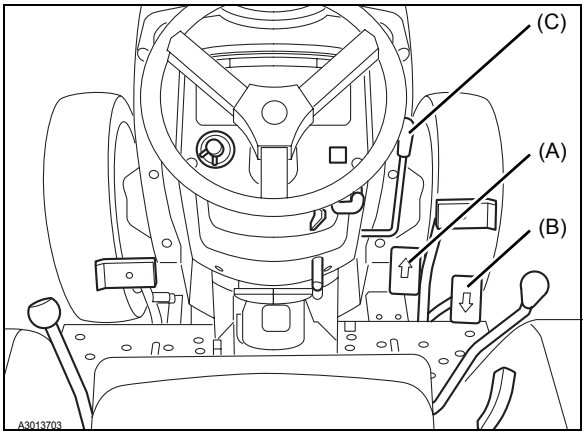
If the user intends to operate the tractor at a temperature lower than 0°F (–18°C), the optional engine oil heater can be mounted to the tractor.
For information about the optional engine oil heater, contact your local Cub Cadet Yanmar dealer.

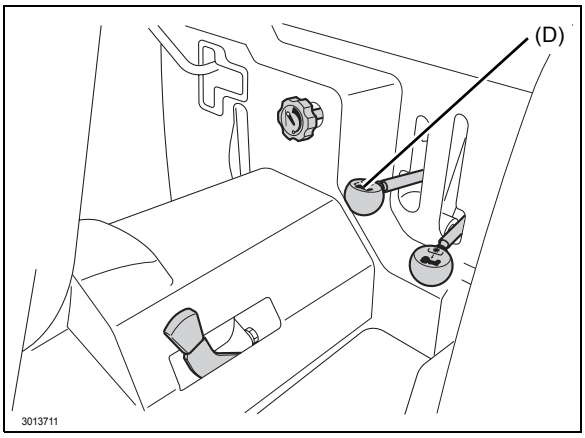

Start up the engine according to the procedure in the “COLD STARTING” decal attached to the tractor.

***(B) “COLD STARTING” decal***

## 3. Shutting Down the Engine

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



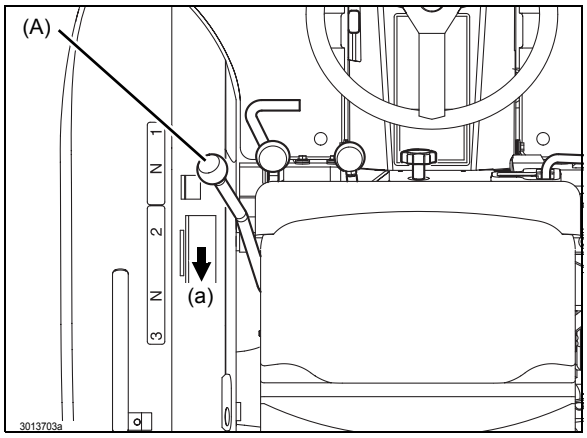

***(A) Forward drive pedal***
***(B) Reverse drive pedal***
***(C) Throttle control lever***
***(D) Rear Power Take Off (PTO) engagement lever***

## 4. Restarting a stalled Engine

**IMPORTANT: Avoid engine damage.**

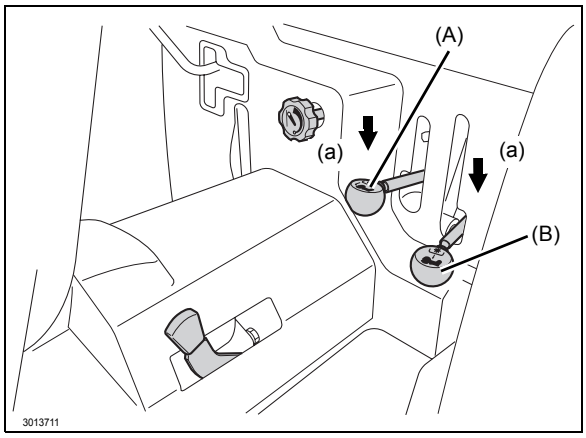
- If the engine stalls while operating under load, immediately restart the engine to prevent over-heating of the engine.

**1. Turn the range shift lever to the NEUTRAL position.**




***(A) Range shift lever***
*(a) Neutral position*

**2. Move the Power Take Off (PTO) engagement lever to the OFF position.**




***(A) Rear Power Take Off (PTO) engagement lever***
***(B) Mid Power Take Off (PTO) engagement lever (option)***
*(a) OFF position*

**3. Restart the engine, and resume the operation; or run the engine for 1 to 2 minutes at the lowest possible running speed, and then shut down the engine.**

# 8. OPERATING THE TRACTOR

**⚠DANGER**

ALWAYS use the drawbar to tow an implement.
NEVER attach a load to the axle housing.

**⚠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 sure of the current travel direction and avoid obstacles. Remain alert when approaching the end of a row, trees or any obstacle.

---

ALWAYS maintain good communication with all others working in 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 a child may have moved from a point where he/she was last viewed.

---

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 a child to ride the moving tractor. He/she may tamper the controls or can fall off the tractor and be run over by the tractor.

---

NEVER allow children to operate the tractor.

---

NEVER allow a child 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. A child may be on your path.

# 1. Operating 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 tractors 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, refer to the “13. MAINTENANCE”.

# 2. Raising and Lowering the Roll-Over Protective Structure (ROPS)

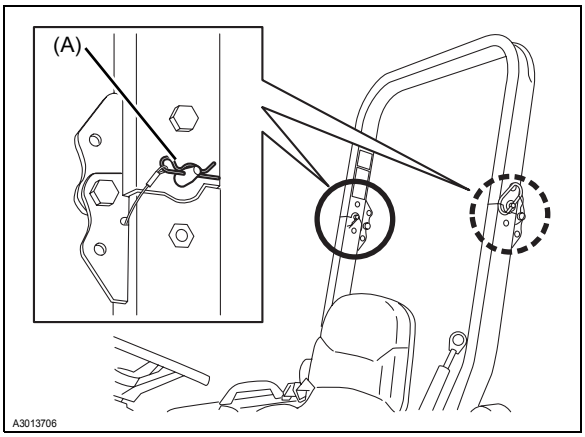
## ⚠WARNING

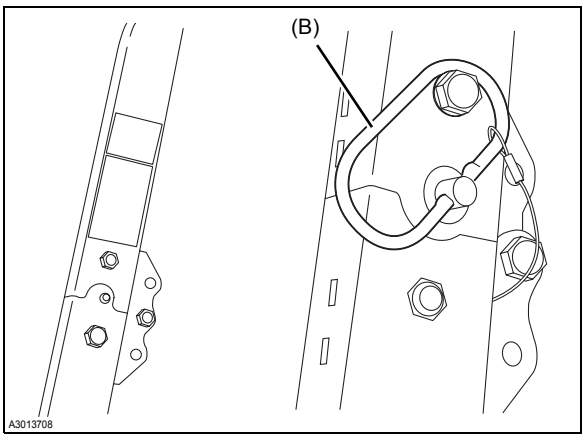
**Avoid injury:**

- **NEVER operate the tractor with the Roll-Over Protective Structure (ROPS) in the lowered (folded) position unless the tractor needs to be 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.

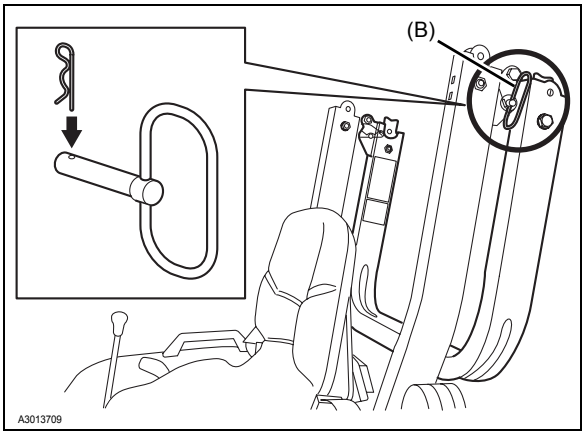
NEVER use the retractable seat belt if the foldable Roll-Over Protective Structure (ROPS) is in the folded position or the tractor does not have the Roll-Over Protective Structure (ROPS).




## 1. Lowering (Folding Down) the Roll-Over Protective Structure (ROPS)

1. Pull out the cotter pin 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).
3. Lower (fold) the Roll-Over Protective Structure (ROPS).
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 cotter pin 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.

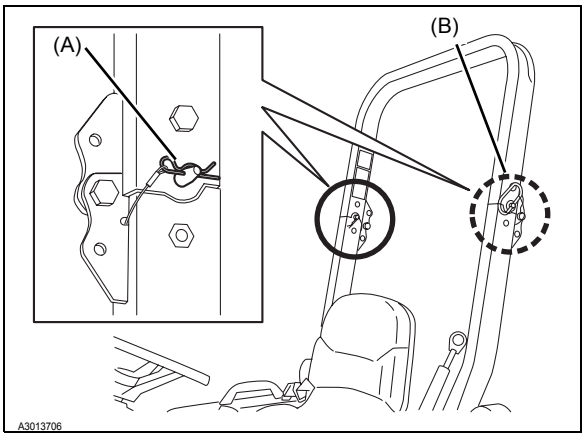
***(A) Cotter pin***
***(B) Insert pin***

## 2. Raising (Unfolding) the Roll-Over Protective Structure (ROPS)

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

   ***(A) Cotter pin***
   ***(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 cotter pins 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. Operation of the Tractor

## ⚠CAUTION

**Avoid injury:**

- **Before starting or operating the tractor, always check the area around the tractor for bystanders and obstacles. Disengage the Power Take Off (PTO) and raise the implement.**

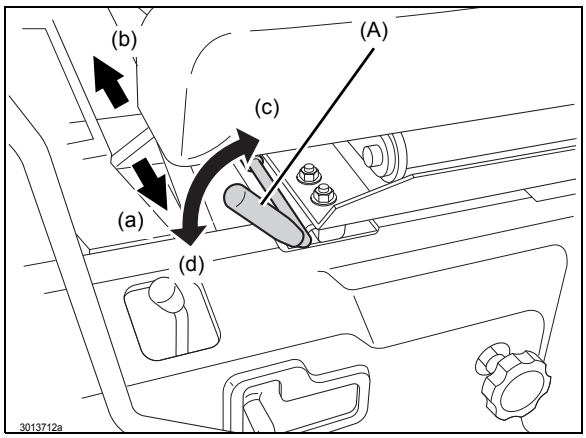
**IMPORTANT: Avoid damage.**

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

## 1. Adjust the operator's position.

### ■ Adjusting the Operator's Seat

1. Sit on the seat.
2. Raise the seat adjustment lever.
3. Move the seat forward and backward to find the optimal position, and then lower the seat adjustment lever. (The seat can be adjusted in 0.78 in. (20 mm) × 5 steps increments.)
4. While remaining seated, confirm that various control levers can be comfortably operated. If operation of any control lever is not comfortable, readjust the seat position as necessary.




***(A) Seat adjustment lever***
*(a) Toward the front*
*(b) Toward the rear*
*(c) Loosen*
*(d) Lock*

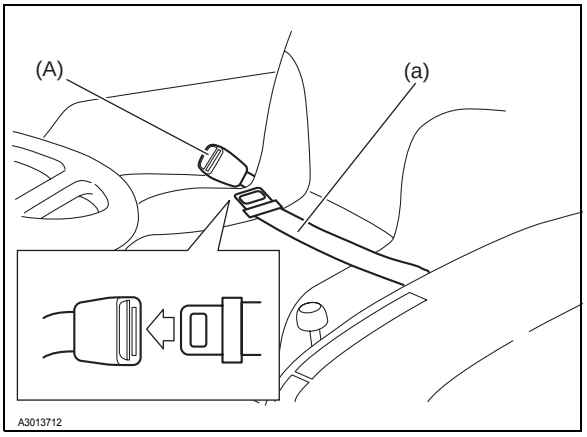
## ■ Fastening the Retractable Seat Belt

**⚠WARNING**

**Avoid injury:**

- **ALWAYS keep the retractable seat belt fastened while operating the tractor with the Roll-Over Protective Structure (ROPS) in the upright position. 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) or with the foldable Roll-Over Protective Structure (ROPS) in the folded position.**

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.



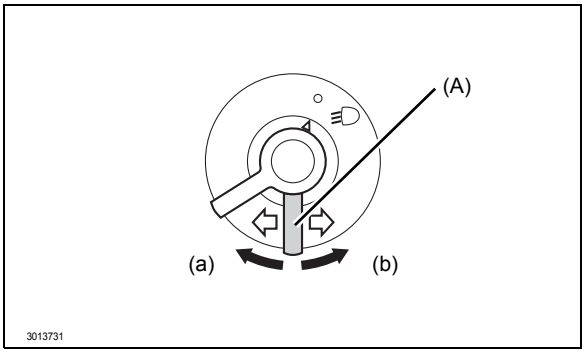

***(A) Buckle***
*(a) Adjust the belt length*

**⚠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.**

## 2. Using the turn signal, headlight switches and hazard lights button switch.

## ■ Turn Signals

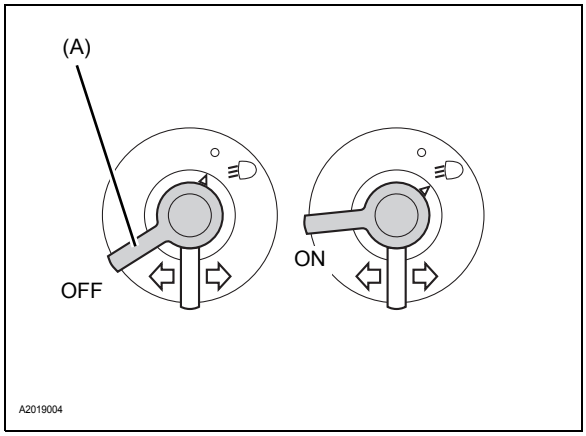



***(A) Turn signals switch***
*(a) Move the turn signals switch to the left to signal a left turn of the tractor.*
*(b) Move the turn signals switch to the right to signal a right turn of the tractor.*

## ■ Headlights

Move the headlight lever up to turn OFF the headlights, and down to turn ON the headlights.

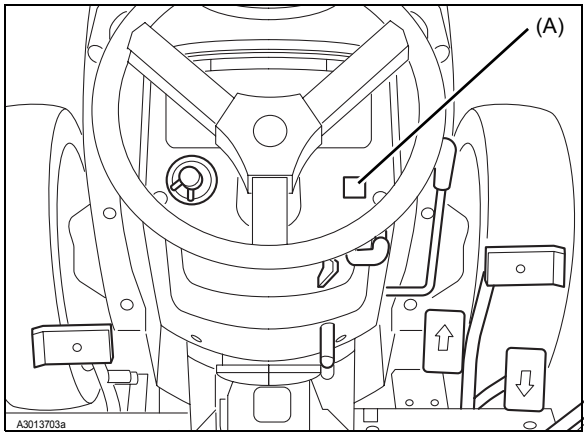
***(A) Headlight lever***




## ■ Hazard Lights

Pushing the hazard lights button switch will cause the hazard lights to flash.

***(A) Hazard lights button switch***




### 3. Start the engine.

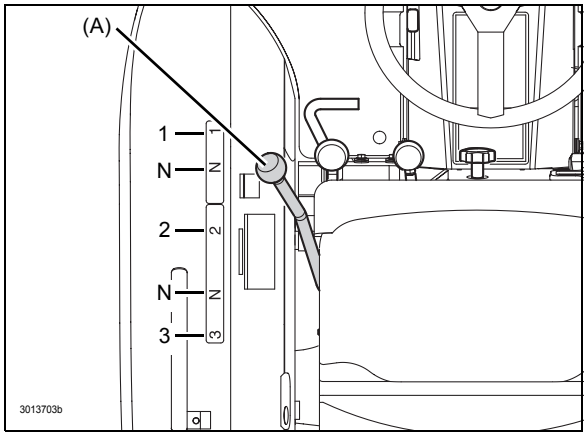
Start the engine by referring to “7. OPERATING THE ENGINE”.

### 4. Select travel speed.

## ■ Range Shift Lever

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

***(A) Range shift lever***




1. **Heavy-duty operation:** Used for heavy-load operation. Low traveling speed.
2. **Medium-duty operation:** Used for medium-load operation. Medium traveling speed.
3. **Light-duty operation:** Used for light-load operation. High traveling speed.

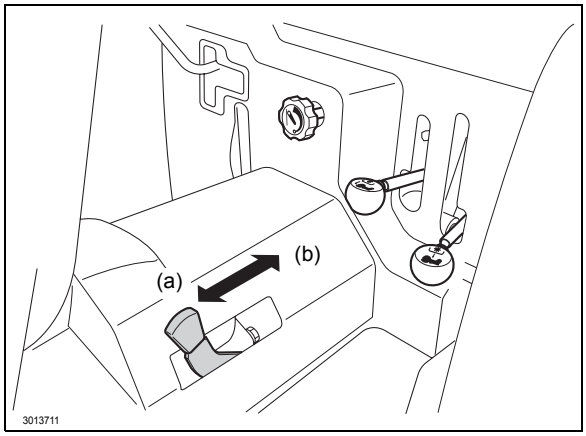
**N: Neutral position:** Before stating the engine, make sure that the range shift lever is in the neutral position.

**IMPORTANT**

- Before changing the range shift lever setting, make sure that the tractor is at a standstill.
- When the range shift lever is not smoothly actuated, depress the clutch pedal.

## ■ 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) 2-wheel drive mode*
*(b) 4-wheel drive mode*

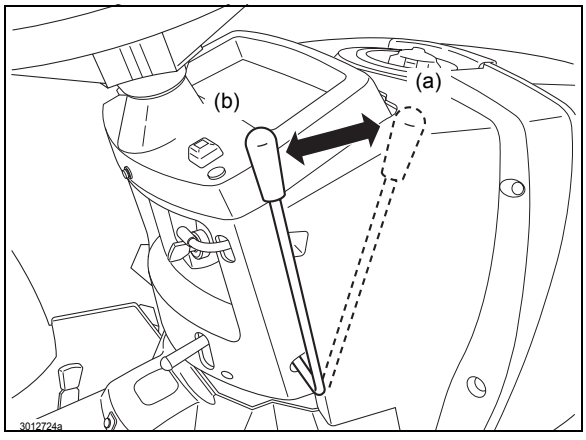
**IMPORTANT: Avoid damage.**

- 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.

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

## ■ Throttle Control Lever

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

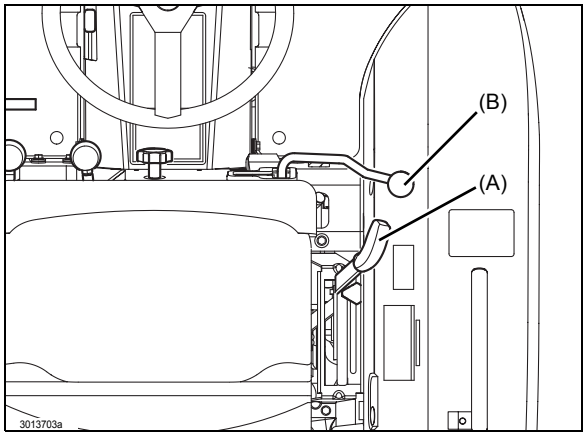



*(a) To increase the engine speed : Push the throttle control lever forward.*
*(b) To decrease the engine speed : Pull the throttle control lever backward.*

## 6. Raise the implement.

1. Move the 3-point hitch control lever backward to raise the implements installed to the rear-and mid-mounts.
2. If the tractor has any implements that use the implement control valve, raise them using the implement control lever.

***(A) 3-point hitch control lever***
***(B) Implement control lever***




## 7. Disengage the parking brake.

1. Depress the parking brake lever downward.

**NOTE:**

●Now, the parking brake lever incompletely lowers.

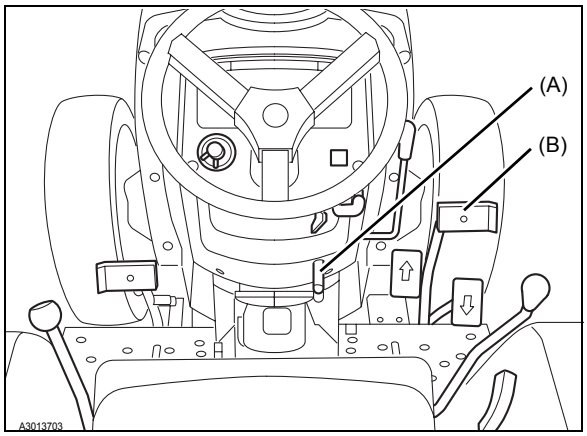
2. Fully depress the brake pedal.

NOTE:

●Now, the parking brake lever completely lowers.

3. Remove foot from the brake pedal. Check that the brake pedal is unlocked.

***(A) Parking brake lever***
***(B) Brake pedal***




## ⚠CAUTION

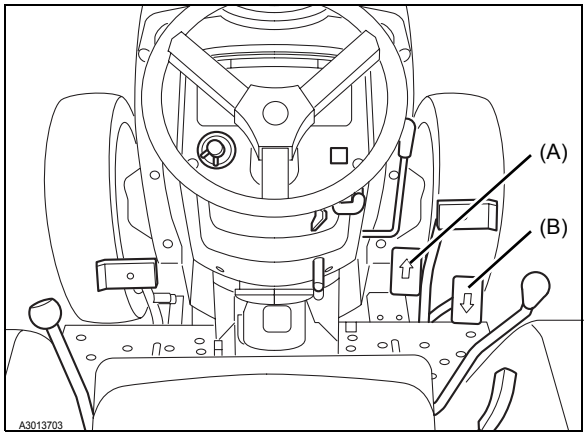
**●Do not drive the tractor with the parking brake engaged. Otherwise, the clutch disk can be damaged.**

## 8. Release foot from the brake pedal.

## 9. Slowly depress the forward or reverse drive pedal.

## ■ Drive Pedals

The tractor accelerated speed depends on how far the drive pedal is pressed.
(A) To move forward: depress the forward drive pedal.
(B) To move backward: depress the reverse drive pedal.




***(A) Forward drive pedal***
***(B) Reverse drive pedal***

**IMPORTANT:**

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

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

## 11. Using the cruise control.

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**

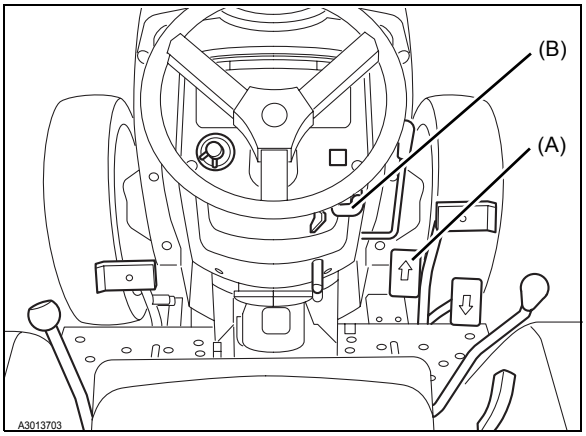
**Avoid injury:**

- **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.**

## ■ Engaging the Cruise Control

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

***(A) Forward drive pedal***
***(B) Cruise control lever***




## ■ Disengaging the Cruise Control

1. Depress the forward drive pedal.
2. Step on the forward drive pedal and check that the cruise control lever 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.
- In principle, disengage the cruise control by depressing the brake pedal.
- Also, the cruise control can be disengaged when the operator depresses the forward drive pedal. Note, however, that the reverse drive pedal is useless for this purpose.
- Do not strongly step on the reverse drive pedal when the cruise control is in the locked state.

# 4. Stopping Travel of the Tractor

**⚠WARNING**

**Avoid injury:**

- **Slow down before making a turn.**

1. **Release the forward / reverse drive pedals.**
2. **Idle the engine.**
3. **Depress the clutch pedal to disengage the clutch and then depress the brake pedal.**
4. **After the tractor has completely stopped, disengage the Power Take Off (PTO).**
5. **Turn the starter key switch to the OFF position.**
6. **Remove the starter key switch.**

**IMPORTANT:**

- Leave the operator's seat only after ensuring the engine and other components have stopped rotating.

## ■ Emergency Stop Procedure

1. Release the forward / reverse drive pedals.
2. Disengage the clutch, and depress the brake pedal.
3. Turn the starter key switch 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. Parking the Tractor

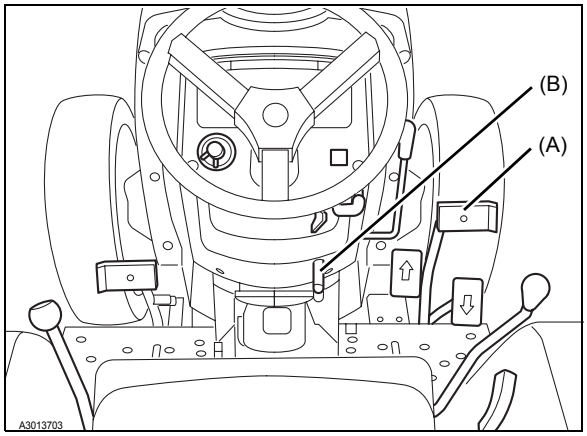
## ■ Engaging the Parking Brake

**⚠CAUTION**

**Avoid injury:**

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

1. Disengage the Power Take Off (PTO), lower the implement to the ground, shift all the levers to their neutral positions, engage the parking brake securely, shut down the engine and remove the key from the starter switch.
2. Before leaving your tractor, be fully sure that your tractor is at a standstill.
3. 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.
4. ALWAYS park your tractor on a solid, flat and level place. Engage the parking brake securely, remove the starter key switch and chock the wheels. If parking on a slope is unavoidable, park the tractor across the slope.
5. Release the brake pedal. Check that the parking brake is fully locked.




***(A) Brake pedal***
***(B) Parking brake lever***

## ■ Disengaging the parking brake.

1. Depress the parking brake lever downward.

**NOTE:**

- Now, the parking brake lever incompletely lowers.

2. Fully depress the brake pedal.

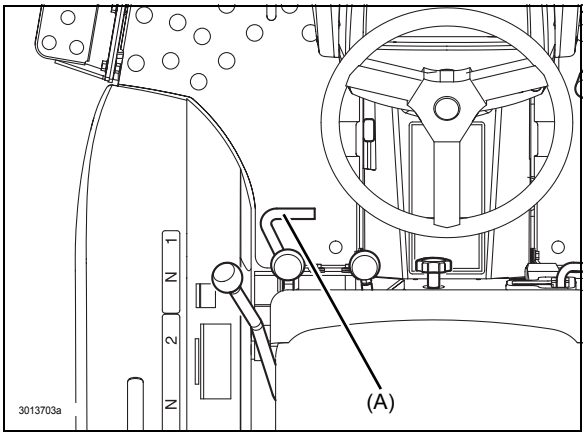
NOTE:

- Now, the parking brake lever completely lowers.

3. Remove foot from the brake pedal. Check that the brake pedal is unlocked.

# 6. Safe Practices for Operation

## 1. Differential Lock




*(A) Differential lock foot pedal*

**⚠WARNING**

**Avoid injury. To prevent tipping of the tractor:**

- **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.

### ■ Engaging the Differential Lock

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

### ■ Disengaging 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. Safely Driving the Tractor on Roads

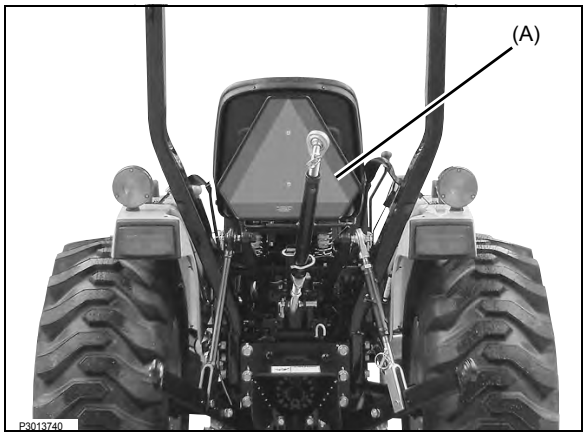
### ⚠WARNING

**Avoid injury. 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, use the flashing hazard lights and 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 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 towed implement 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 a slope, rough road, sharp turns or when transporting a heavy rear-mounted implement.
- Adjust the tread width of rear wheels to attain maximum stability.
- 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.
- 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 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. During transportation, 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 to hold an implement in the raised position while the tractor is traveling with the implements.
  Doing so could cause damage to the hydraulic lift circuit.

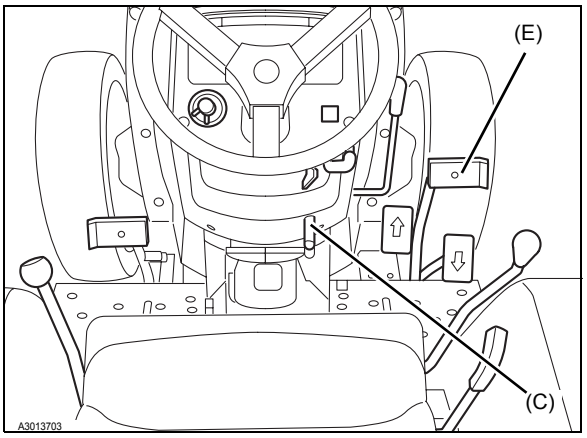
## 3. Pushing or Towing the Tractor

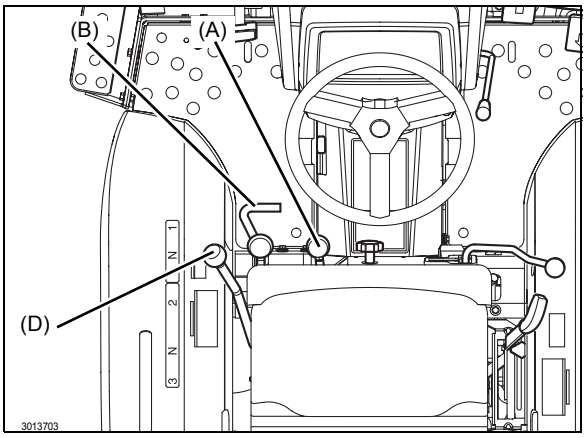
**⚠WARNING**

- **When towing the tractor, NEVER exceed 10 mph (16 km/h). Whenever possible, let someone on the tractor operate the steering and brakes of the towed tractor.**

1. Disengage the Power Take Off (PTO).
2. Disengage the differential lock.
3. Disengage the parking brake.
4. Set the range shift lever to the NEUTRAL position.
5. Disengage the 4-wheel drive lever.

***(A) Power Take Off (PTO) engagement levers***
***(B) Differential lock foot pedal***
***(C) Parking brake lever***
***(D) Range shift lever***
***(E) Brake pedal***



## 4. Transporting the Tractor on a Trailer

**⚠WARNING**

**Avoid injury:**

- **Exercise extreme care when loading or unloading the tractor to or from a trailer or truck.**
- **Close the fuel shut-off valve.**

**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.

## 5. Operating on Slopes

**⚠WARNING**

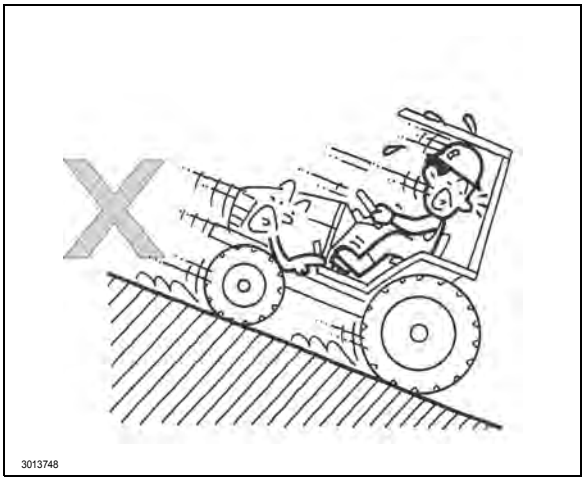
**Avoid injury. Be extremely cautious when driving the tractor on a slope:**

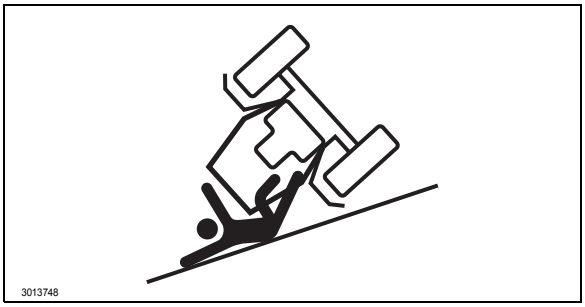
- **To increase the traction power and provide 4-wheel braking feature, engage the 4-wheel drive lever before driving the tractor on a slope. Remember that although the 4-wheel drive lever greatly assists in approach to a steep slope, there is greater possibility of a tip over.**
- **To improve braking power on sloped, frozen, wet or graveled surfaces, engage the 4-wheel drive lever. Add ballast 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 15 degrees.**
- **Even on a slope that is not steeper than 15 degrees, do not turn or change the traveling direction, or park square to the slope.**

## ⚠WARNING

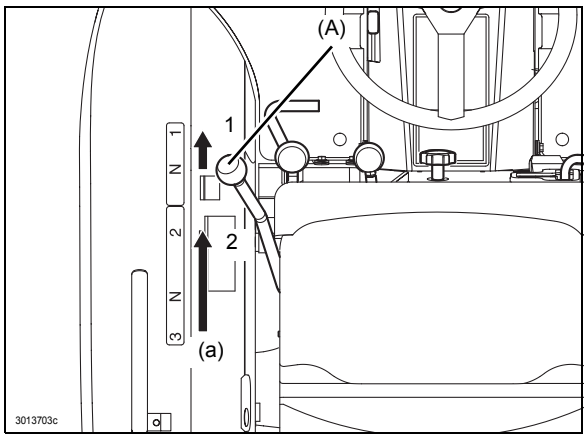
- **Before approaching a slope, select an appropriate speed setting. NEVER shift on a slope. Otherwise, the tractor may suddenly go downhill and go out of control. Be sure to travel at a lower speed on a slope.**
- **On a slope, NEVER move the range shift lever to the NEUTRAL position.**
- **On a slope, NEVER step on the clutch pedal. Otherwise, the tractor may suddenly go downhill and go out of control.**
- **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 slowly start the tractor in motion.**
- **NEVER park the tractor on a slope. If parking on a slope is unavoidable, chock the tires, engage the parking brake securely.**
- **On a slope, the tractor is unstable and more prone to tip-over, possibly leading to severe injury or even death. Remain very cautious when your tractor is on any slope.**
- **To avoid tip over, move backward on a steep slope. If backing on the slope is not comfortable, do not attempt to continue. Avoid an extremely steep slope.**
- **When exiting a ditch, deep mud or traveling on a steep slope, the risk of the tractor roll-over is high. In four-wheel drive mode, special caution is needed.**
- **Slowly move on any slope. NEVER change speed or direction quickly.**
- **When climbing or descending a slope, NEVER disengage the clutch or shift the gears. Disengaging the clutch or shifting the gears to NEUTRAL position can cause the tractor to lose control.**
- **To keep the tractor stable on a slope, ALWAYS select the widest possible tread. Observe the instructions for proper ballasting. (For details, see the "12. TIRES, WHEELS AND BALLAST")**

**If the clutch pedal is depressed**



1. Before approaching a slope, select a lower gear setting.




***(A) Range shift lever***
*(a) Shift to a lower speed*

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

### ■ Uphill / Downhill

Start slowly. Ensure that the transmission is in a slow setting. Run the engine at a lower speed.

### ■ Steep Downhill

To be able to apply the engine brake, turn the range shift lever to the lowest speed range.

**⚠WARNING**

- **When backing up a slope, keep the tractor parallel with the gradient of the slope.**

## 6. About the Power Steering

**⚠WARNING**

- **While the engine is running on the tractor equipped with the power steering feature, the steering wheel can turn with a minimum force. 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.

# 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. NEVER replace the Power Take Off (PTO) shaft cap when the shaft is moving.

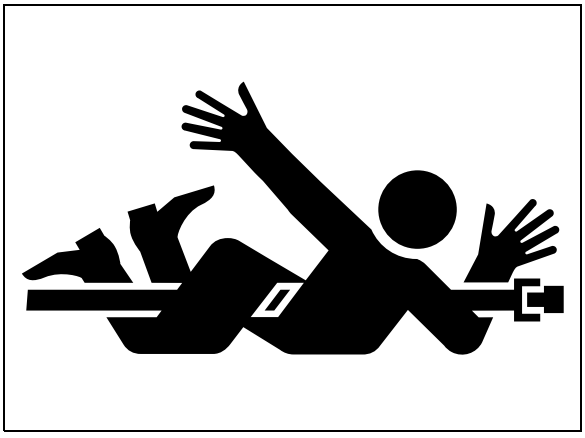
ALWAYS engage the parking brake securely and put wheel chocks in front and behind the rear wheels. NEVER approach or touch any rotating component.

## 1. Operating the Power Take Off (PTO)

**⚠WARNING**

**Be careful to avoid injury:**

- **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 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.**



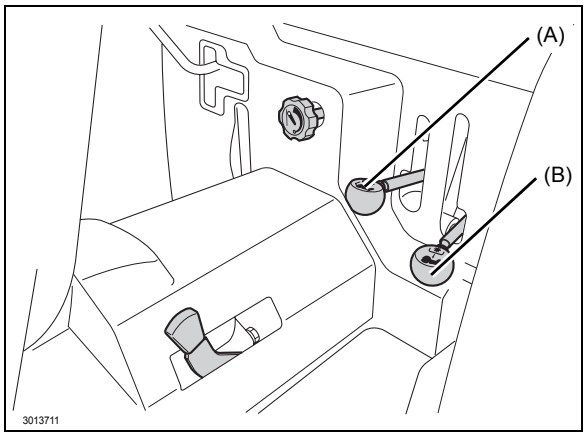
**⚠CAUTION**

- **Do not run the engine at 2800 rpm or more while the Power Take Off (PTO) is engaged.**

## ■ Engaging the Power Take Off (PTO) (when the operator is seated on the operator's seat)

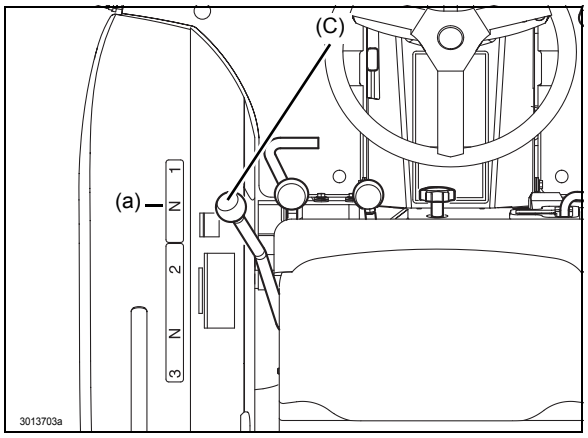
**NOTE:**

●When either the Mid-Power Take Off (PTO) engagement lever or Rear Power Take Off (PTO) engagement lever is in the engaged position, the engine will not start. This situation is considered normal operation. When the engine is running, and if the operator rises from the operator's seat with either Power Take Off (PTO) engaged, the safety interlock system will engage and the engine will stop: as a result, all the moving components will stop moving.




***(A) Rear Power Take Off (PTO) engagement lever***
***(B) Mid-Power Take Off (PTO) engagement lever***

1. Sit on the operator's seat.
2. Engage the parking brake securely.
3. Turn the range shift lever to the NEUTRAL position.




***(C) Range shift lever***
*(a) NEUTRAL position*

4. Start the engine.
5. Adjust the engine speed to 1500 rpm or lower.
6. To connect either Power Take Off (PTO), fully depress the clutch pedal to disengage the clutch.
7. Slightly lower the intended Power Take Off (PTO) engagement lever directly downward. Next, horizontally move the lever outward (to the right with the left-hand lever or to the left with the right-hand lever). Then, raise the Power Take Off (PTO) engagement lever.
8. Carefully release the clutch pedal to engage the selected Power Take Off (PTO).
9. Adjust the throttle control lever to run the implement at an intended speed.

**NOTE:**

When the engine runs at the rated speed 2600 rpm

●The speed of the Mid-Power Take Off (PTO) is approximately 2100 rpm.

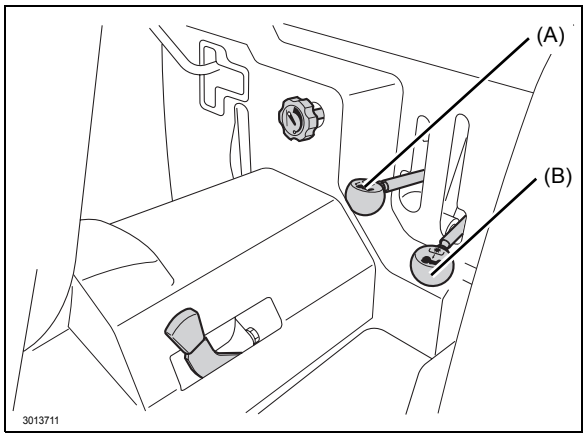
●The speed of the Rear- Power Take Off (PTO) is approximately 540 rpm.

### ■ Disengaging the Power Take Off (PTO) (when the operator is seated on the operator's seat)

1. Run the engine at a low speed.
2. Fully depress the clutch pedal to disengage the clutch.
3. Push the selected Power Take Off (PTO) engagement lever downward, then horizontally and pull the lever slightly upward to the disengaged position.

***(A) Rear Power Take Off (PTO) engagement lever***
***(B) Mid-Power Take Off (PTO) engagement lever***

4. Release the clutch pedal.




## 2. Installing 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 driveline shafts. An incorrectly installed implement can promote wear of the driveline and/or damage the tractor.

## 3. Using the Power Take Off (PTO) while the Tractor is Parked (when the operator is not seated on the operator's seat)

Follow the instructions below when using the Power Take Off (PTO) when the tractor is in the parked state (for example, for pump, for post hole digger).
In this mode, only the Rear Power Take Off (PTO) can be operated, the Mid-Power Take Off (PTO) is inoperable.

### ⚠CAUTION

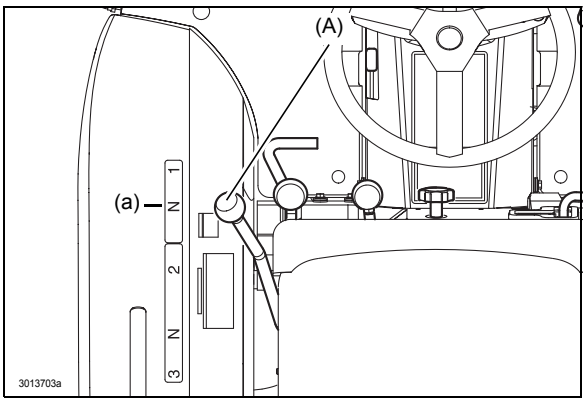
- **Engage the parking brake securely, and keep the transmission in the neutral position.**

**IMPORTANT:**

- Remember that while the operator is not seated on the operator's seat, the Mid-Power Take Off (PTO) cannot be operated though the Rear Power Take Off (PTO) remains operative. When the operator attempts to engage the Mid-Power Take Off (PTO) while not seated on the operator's seat, the safety interlock system will engage and the engine will stop: as a result, all the moving components will stop moving.

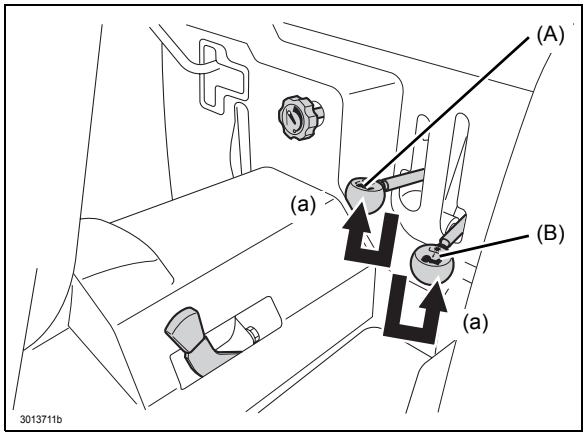
1. Engage the parking brake securely.
2. Chock the tires.
3. Move the range shift lever to the NEUTRAL position.

***(A) Range shift lever***
*(a) NEUTRAL position*

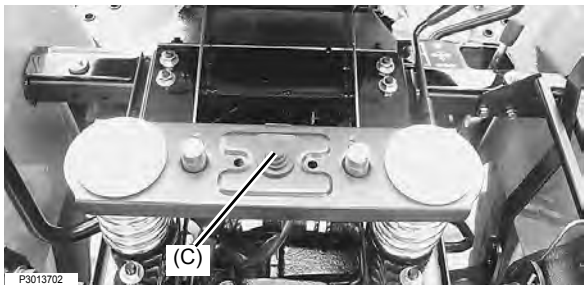


4. Move each Power Take Off (PTO) engagement lever to the OFF position.

***(A) Rear Power Take Off (PTO) engagement lever***
***(B) Mid-Power Take Off (PTO) engagement lever (option)***
*(a) OFF position*

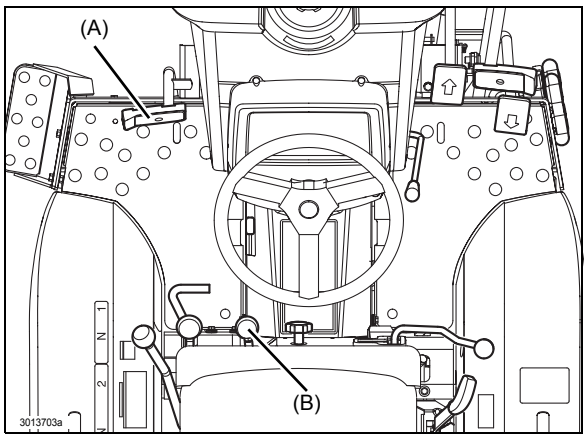



***(C) Switch plunger (Seat safety switch)***




5. Sit on the operator's seat.
6. Start the engine.
7. Fully depress the clutch pedal and pull the Rear Power Take Off (PTO) engagement lever to the engaged position.

***(A) Clutch pedal***
***(B) Rear Power Take Off (PTO) engagement lever***




8. Adjust the engine speed so that the Power Take Off (PTO) runs at a recommended speed.
9. Before stopping the engine and leaving the tractor, idle the engine.

If the parking brake is engaged, then the engine will not stop even when the operator rises from the operator's seat.
The engine will remain running only when Mid-Power Take OFF (PTO): N and Range shift: N and Parking: ON.
Be sure to keep the cap installed while the Power Take OFF (PTO) is not mounted.
The cover can be tilted upward.

# 10. 3-POINT HITCH AND DRAWBAR

**⚠WARNING**

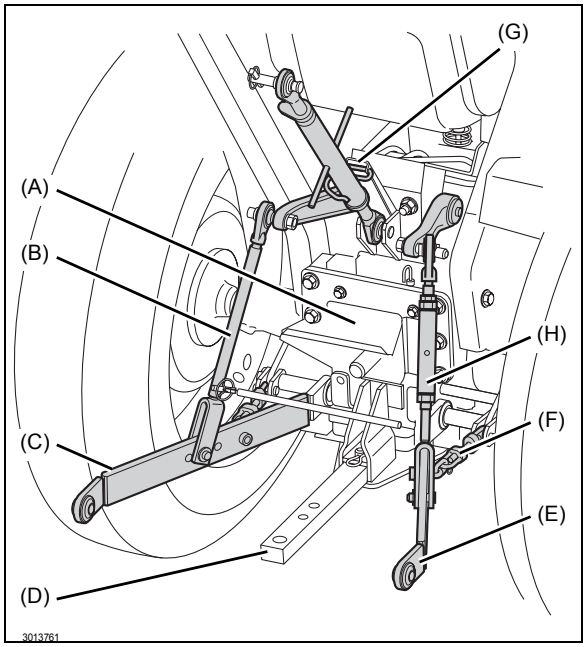
ALWAYS install an appropriate counterbalance to the front of the tractor, if necessary, when using a 3-point hitch-mounted implement.

During transportation, put the 3-point hitch control lever in its raised position and lock it with the position stop knob. Do not fully close the hydraulic flow control / stop knob to hold an implement in the raised position while the tractor is traveling with the implements.
Doing so could cause damage to the hydraulic lift circuit.

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

## 1. 3-Point Hitch

***(A) Power Take Off (PTO) shield***
***(B) Lift link (left)***
***(C) Lower link (left)***
***(D) Drawbar***
***(E) Lower link (right)***
***(F) Sway link***
***(G) Top link retainer***
***(H) Lift link (right)***




### 1. Prepare the Implement Being Mounted

**NOTE:**

- The forward-backward length of the drawbar can be adjusted.
  If being too near to the mounted implement, remove the drawbar.

**⚠CAUTION**

**To prevent an accident, observe the following instructions:**

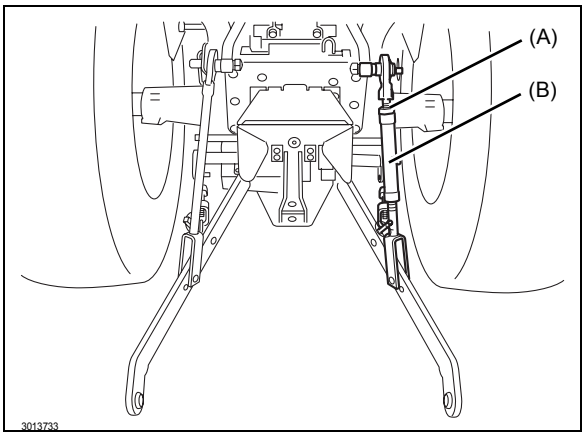
- **ALWAYS shut down the engine. Ensure that the engine has stopped rotating.**
- **Check that no other parts are moving. If any part or component is still moving, wait until it comes to complete stop.**
- **Park the tractor safely on flat, solid ground.**
- **After the implement and the 3-point hitch have been installed, check for possible interference with the Power Take Off (PTO) shaft and other machine components. If interference is found, correct it.**

## 2. Using the 3-Point Hitch

### ■ Adjusting 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 length of lift link until the implement mounted to the 3-point hitch is level.
5. Retighten the locknut.

***(A) Locknut***
***(B) Turnbuckle***




### ■ Top Link

Adjust the angle of the attached implement by lengthening or shortening the top link. The appropriate length of the top link varies depending on each implement.

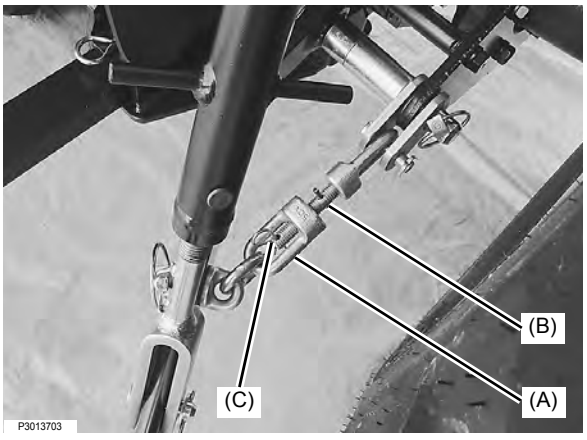
### ■ Sway Links

**NOTE:**

- For the procedure for adjusting the sway links, study the implement operator's manual. When the sway links have been correctly adjusted, side sway of the implement is controlled by the adjustment of the links.

1. Lower the rear-mounted implement.
2. Safely stop the machine.
3. Remove the R pin.
4. Gradually adjust the turnbuckles on the both sway links to adjust the lateral sway of the implement.
5. Reinstall the R pin.

***(A) Sway links***
***(B) Turnbuckle***
***(C) R pin***



## 2. Drawbar

The drawbar has two adjusting holes that allow the user to adjust the drawbar length.

**⚠WARNING**

**Avoid injury:**

- **Only hitch a towed load to the drawbar to avoid tip-over. NEVER use the safety chain to tow a load.**

### ■ Maximum Allowable Load on the Drawbar

The drawbar may be overloaded when it is equipped with a very heavy unit such as a single-axle trailer. Also, the load exerted onto the drawbar can significantly increase depending on the tractor travel speed or quality of the ground. Make sure that the maximum vertical load working on the drawbar does not exceed 730 lb (330 kg).

### ■ Adjusting the Drawbar

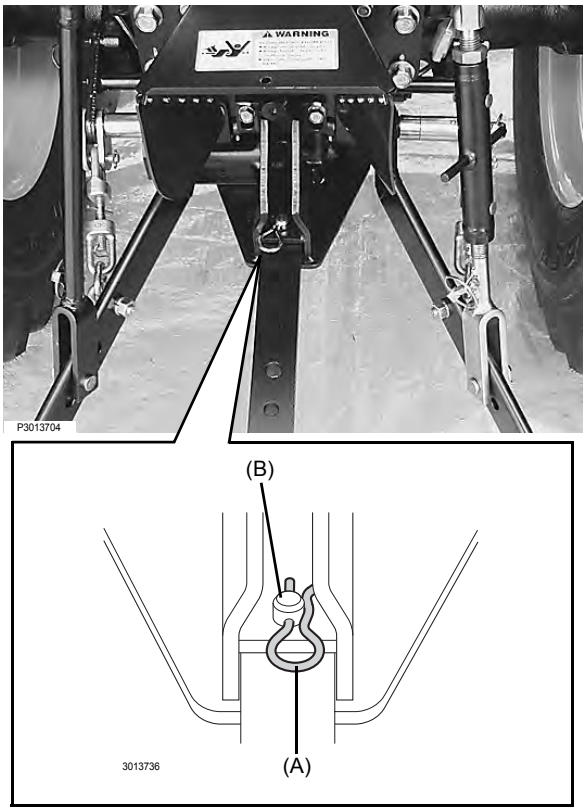
**NOTE:**

- If the tractor is equipped with the Mid-Power Take OFF (PTO), the drawbar cannot move forward to the "SHORT" position.

The drawbar has two adjusting holes that allow the user to adjust the drawbar length.

1. Remove the lock ring and pin.
2. Adjust the drawbar to the intended length.
3. Insert the pin and install the lock ring.

***(A) Lock ring***
***(B) Pin***




**⚠WARNING**

**To prevent an accident:**

- **NEVER tow a load connected to the top link or rear axle. Otherwise, the tractor can tip over, which can cause death or serious injury.**

**NOTE:**

- Do not use a floating-type or non-standard drawbar.

## 3. Using the Safety Chain

### ⚠WARNING

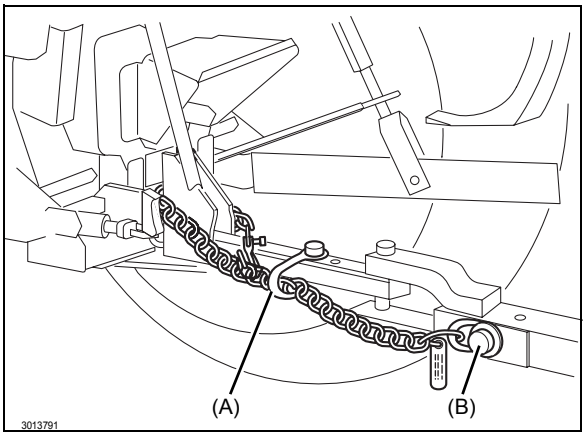
**Avoid injury:**

- **Only hitch a towed load to the drawbar to avoid tip over. NEVER use the safety chain to tow a load.**

**IMPORTANT: Avoid damage.**

- ALWAYS secure the towed implement to the drawbar. The safety chain is intended to control the towed implement if it is accidentally disconnected from the drawbar.
- ALWAYS use a chain whose strength is rated greater than the gross weight of the towed implement.
- ALWAYS replace or repair the safety chain if any of the chain links or connectors are broken, elongated or damaged.

1. Use appropriate adapter parts to connect the safety chain to the tractor drawbar support and to the towed implement. Provide sufficient slack to allow for turning.
2. Mount additional attaching points for the safety chain on the drawbar to eliminate excessive slack as necessary.
3. Remove and store the safety chain when it is not in use.




***(A) Intermediate support***
***(B) Towed machine attaching point***

**NOTE:**

- For safety purposes, any implements or trailers towed by the tractor drawbar should be equipped with a safety chain in case of accidental uncoupling of the implement from the tractor. The tensile strength of the chain should be greater than weight of the implement or trailer, fully loaded. A chain shackle of the same or greater strength of the safety chain can be added to the tractor drawbar bracket. This will allow the implement or trailer safety chain to be attached to the tractor. Purchase and install the chain shackle to the drawbar bracket for safety purposes.

# 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

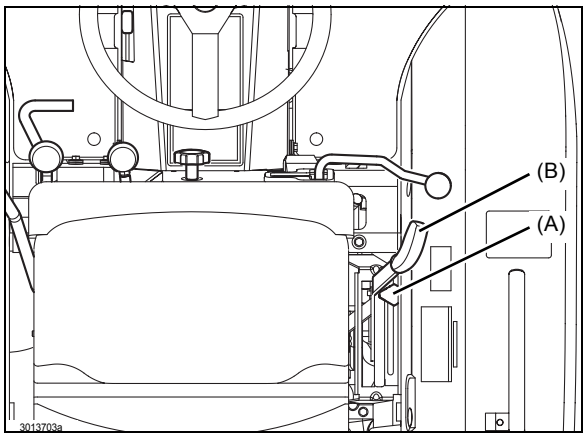
**IMPORTANT:**

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

### ■ Operating the 3-Point Hitch Control Lever to Raise or Lower the 3-Point Hitch

1. Shift the 3-point hitch control lever to the intended position.
2. Adjust the position stop knob to set the lowest position of the implement to a given height.

***(A) Position stop knob***
***(B) 3-point hitch control lever***




**NOTE:**

- Moving the 3-point hitch control lever forward will cause the implement to lower.
- Moving the 3-point hitch control lever backward will cause the implement to raise higher.

## ■ Hydraulic Flow Control / Stop Knob

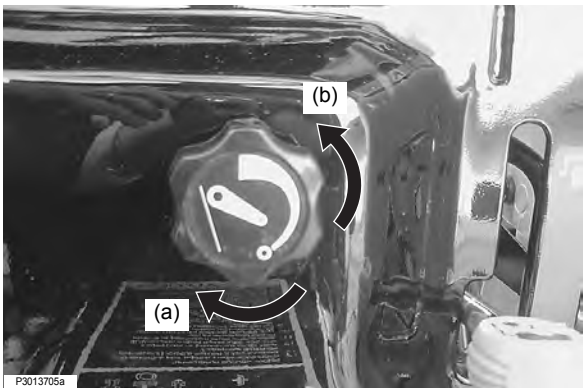
### ⚠WARNING

- **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.**
- **While on a road, do not attempt to operate an implement. During transportation, 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 to hold an implement in the raised position while the tractor is traveling with the implements. Doing so could cause damage to the hydraulic lift circuit.**

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

**IMPORTANT:**

- When a heavy load is installed to the 3-point hitch and the tractor runs on rough terrain, the hydraulic system may be damaged.




*(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

**Be careful to avoid injury:**

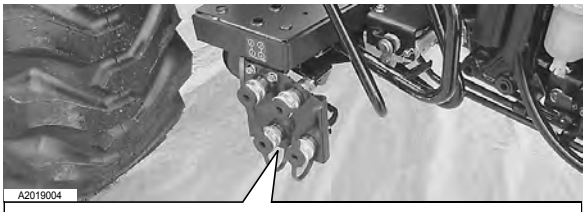
- **NEVER use the hydraulic flow control / stop knob for holding an implement in the raised position for maintenance. Loss of hydraulic pressure may cause the implement to drop suddenly. Lower the implement onto solid blocks or remove before starting any maintenance.**

# 2. Controlling the Implement Control Valve

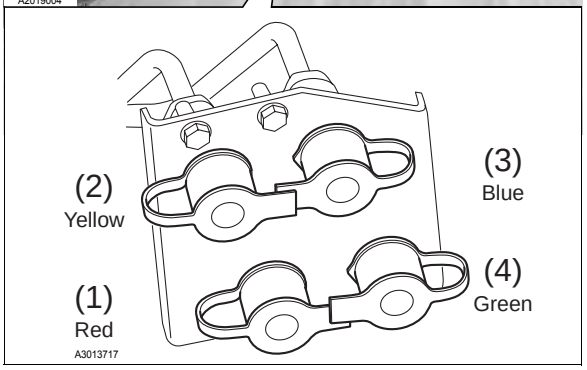
## ■ Implement Control Lever


***(A) Implement control lever***

These couplers are used in pairs of 1 and 2, and 3 and 4. If, after the couplers and hydraulic lines have been connected, the connected implement moves in a direction opposite to an expected direction, then connect the coupler 1 to the hydraulic line that was previously connected to the coupler 2, and connect the coupler 2 to the hydraulic line that was previously connected to the coupler 1. Repeat this procedure for the couplers 3 and 4.

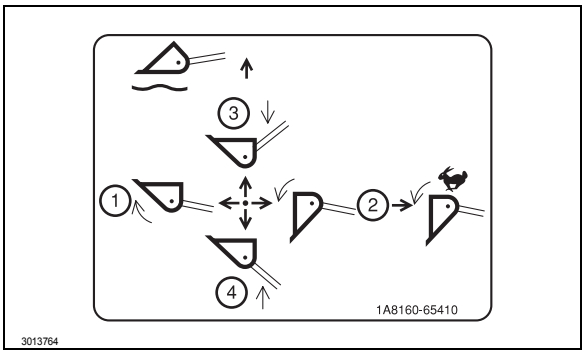



***(1)~(4) Hydraulic quick coupler***




**IMPORTANT:**

- NEVER connect the coupler 1 to the coupler 3, or the coupler 2 to the coupler 4. Contact your local Cub Cadet Yanmar dealer for technical assistance.



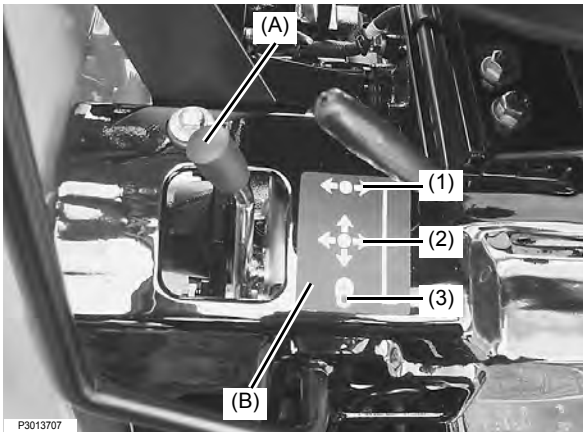

The implement control valve has a “float” position. When the implement control valve is in this position, implements such as blades or loaders, lowered to the operating position, are allowed to follow ground contours.
Push the implement control lever forward beyond the valve detent position to the “float”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

**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.

## 1. Using the Hydraulic Lock Lever

Use the hydraulic lock lever to adjust the shift direction of the implement control lever in accordance with particular operating conditions or situations.




***(A) Hydraulic lock lever***
***(B) Shift pattern decal***

(1) To limit the implement control lever to the right-left movement:
Pull the lock lever outward (rightward), and then fully rearward as shown on the attached shift pattern.
(2) To allow the movement of the implement control lever in all the directions: Move the lock lever to the center position as shown on the shift pattern decal.
(3) To prevent the movement of the implement control lever in all the directions: Move the lock lever fully forward as shown on the shift pattern decal.

**IMPORTANT: Avoid damage.**

- When the movement of the implement control lever is limited by the hydraulic lock lever, do not forcibly move the implement control lever in any direction other than its allowable direction.

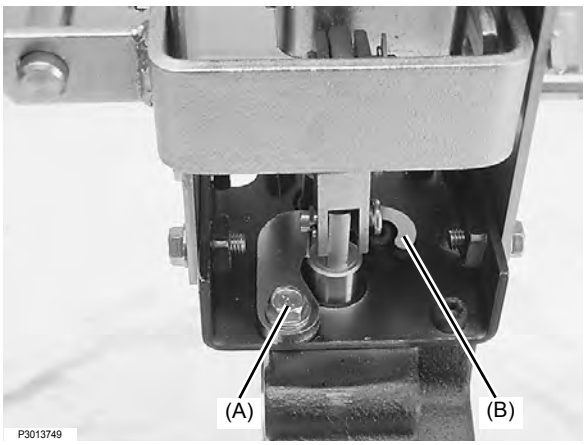
## 2. Regenerative System

### ■ Using the Implement Control Valve Regenerative Circuit

The implement control valve has a built-in regenerative circuit. “Regenerative” means that pressure is applied to both sides of the implement control valve cylinder.
The implement control valve can be adjusted to the “regenerative” position to allow the implements such as loaders to dump the bucket faster.

1. Remove the screw and lockout plate situated immediately below the implement control lever and rock shaft control lever.

**Lock in position**




***(A) Screw***
***(B) Lockout plate***

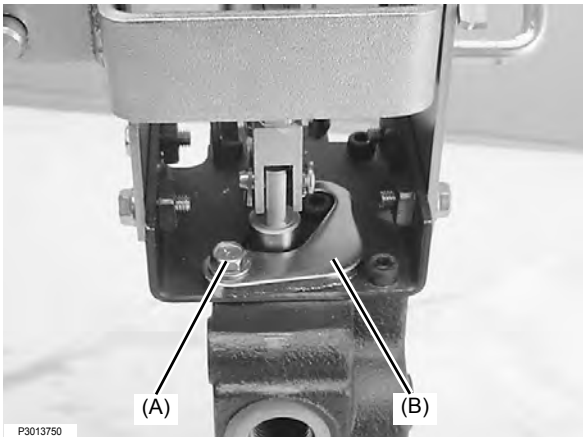
2. Turn over the lockout plate and install the screw as shown in the photo.
3. Tighten the screw.

**⚠DANGER**

**Avoid injury:**

- **Escaping high pressure oil can penetrate the skin and cause severe injury. Avoid this hazard by relieving pressure prior to connection of hydraulic or other high pressure lines. Retighten all the connections before applying pressure.**
- **Use a piece of cardboard to detect leaks. Protect hands and body against high pressure fluids.**
- **If an accident should occur, immediately seek medical attention. Any high pressure fluid injected into the skin must be surgically removed within a few hours; otherwise, gangrene may occur.**

**Lock out position**




## 3. Connecting the Implement Hydraulic Hoses

**⚠DANGER**

**Avoid injury:**

- **Before all the hydraulic system pressure has been fully relieved, do not attempt to connect the hoses to the hydraulic quick couplers.**

1. Park the tractor safely.
2. Fully relieve hydraulic pressure by moving the implement control lever forward and backward and right to left several times.
3. For the correct procedure to connect the hydraulic hoses to the couplers, refer to the implement instruction manual.

**NOTE:**

- Fit the rubber plug into an unused port.

# 12. TIRES, WHEELS AND BALLAST

**⚠WARNING**

NEVER attempt to mount a tire on a rim. Contact a reputable tire repair facility.

---

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

ALWAYS keep the tractor securely supported while changing the wheels or adjusting the wheel tread width.

---

ALWAYS keep the wheel bolts tightened to the specified torque.

## 1. Tires

**⚠WARNING**

**Be careful to avoid injury:**

- **Do not mount a tire on a rim. Have a qualified professional with the proper equipment mount the tire on the rim.**
- **Always keep the correct tire pressure. Do not exceed the recommended tire pressure specified in the operator's manual.**

**IMPORTANT:**

- Only use the tires approved by Cub Cadet Yanmar dealers.

Three tire sizes are provided for the front wheels of the Cub Cadet Yanmar tractor and another three tire sizes are available for the rear wheels. The recommended tire air pressures for these tires are as specified in the table below. Remember that tire air pressure gradually decreases 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 air pressures significantly decrease though the tires are correctly inflated every day, immediately request your local Cub Cadet Yanmar dealer to inspect or replace the problem tire(s).

| | Tire size | Tire air pressure |
|---|---|---|
| Front | 25X8.50-14(R4)(Industrial),**6PR** | 50 psi (3.5 kgf/cm$^2$) |
| | 25X8.50-14(R3)(Turf),**4PR** | 22 psi (1.5 kgf/cm$^2$) |
| | 7-14 (R1)(Agricultural),**6PR** | 36 psi (2.5 kgf/cm$^2$) |
| Rear | 15-19.5 (R4) (Industrial),**6PR** | 30 psi (2.1 kgf/cm$^2$) |
| | 13.6-16(R3) (Turf),**4PR** | 14 psi (1.0 kgf/cm$^2$) |
| | 11.2-24 (R1) (Agricultural),**4PR** | 18 psi (1.3 kgf/cm$^2$) |

## 2. Wheel Adjustment

Each tire size has specific adjustment settings that must not be changed.

### ■ Checking the Wheel Bolt Tightening Torque

**⚠WARNING**

- **After wheel tread adjustment or tire replacement, be sure to tighten wheel bolts to the specified torque. In addition, periodically check the wheel bolt torque according to the following procedure:**

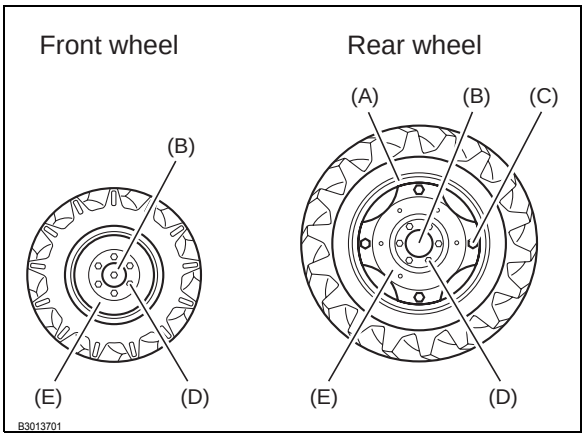
### Service Intervals

- Regular Interval : Before day's operation
- After adjusting the wheel tread or replacing the tires: After 1 hour of operation and every 4 hours after that until appropriate tightening torque values are reached and maintained.

### Specified Torque

| | | |
|---|---|---|
| Bolt fixing the disk to the axle | Front wheel | 127-141 ft•lb (172-191 N•m) |
| | Rear wheel | 123-151 ft•lb (167-205 N•m) |
| Bolt fixing the rim to the disk (Only R1 tire) | Rear wheel | 146-205 ft•lb (198-278 N•m) |

***(A) Rim***
***(B) Axle***
***(C) Bolt fixing the rim to the disk (Only R1 tire)***
***(D) Bolt fixing the disk to the axle***
***(E) Disk***

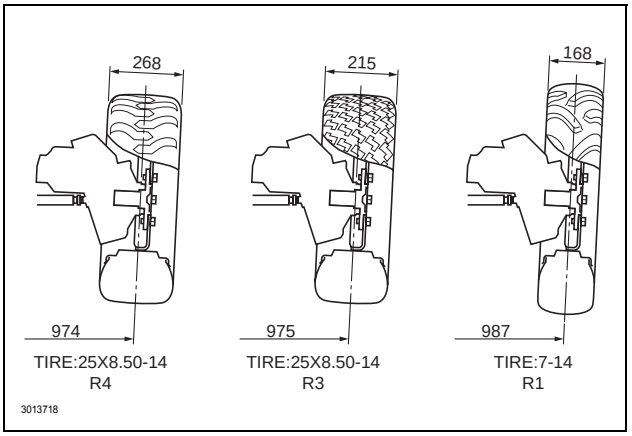


## ■ Tread Centerline Width

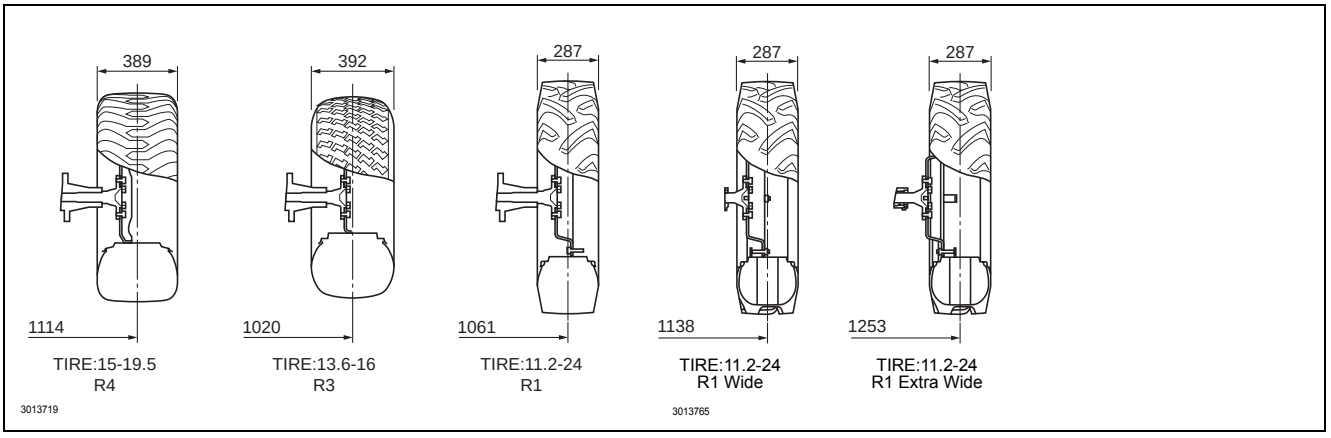
| Tire | | Standard Setting | |
|---|---|---|---|
| | | Rear | Front |
| R1 | – | 41.8 in. (1061mm) | 38.9 in. (987mm) |
| | Wide | 44.8 in. (1138mm) | – |
| | Extra Wide | 49.3 in. (1253mm) | – |
| R3 | | 40.2 in. (1020mm) | 38.4 in. (975mm) |
| R4 | | 43.9 in. (1114mm) | 38.3 in. (974mm) |

Wide and extra wide are achieved by changing the method of assembling the rims and the disk.

**<Front Wheels>**



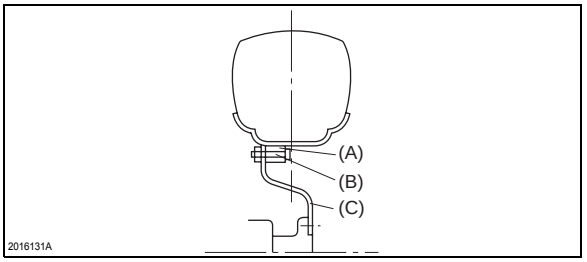

**<Rear Wheels>**

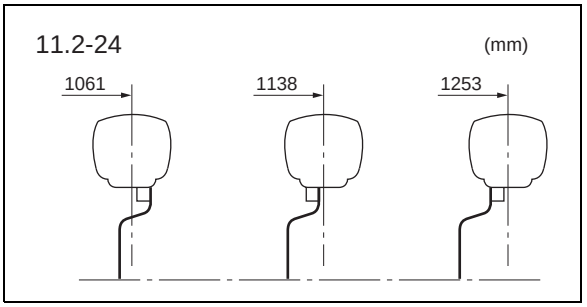



## ■ Adjusting the Rear Tread

The rear tread can be adjusted to any of three settings by altering the mounting positions of the rims and disks.

***(A) Rim***
***(B) Bolt***
***(C) Disk***



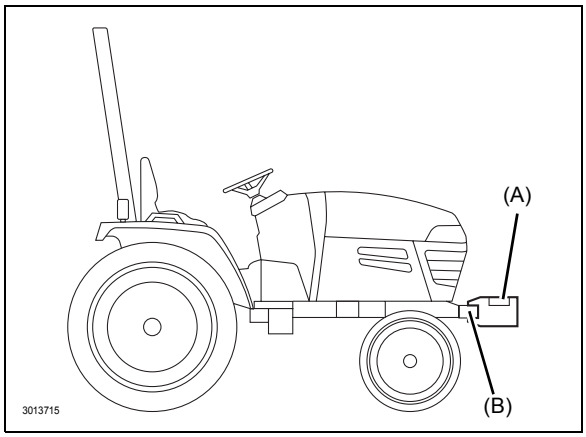



# 3. Ballast

## ■ Front Ballast

To improve stability and traction, add ballast as needed. 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.

**Front End Weights (option)**
The front end weights can be installed on the bumper. For an appropriate number of weights, see the information given below on this page.




Required number of front end weights when mounting Cub Cadet Yanmar implements

| No | Implement Name | Number of Weight |
|---|---|---|
| 1 | 60" Rotary Cutter | 5 |
| 2 | 72" Grooming Mower | 5 |
| 3 | 60" Flail Mower | 3 |
| 4 | 60" Box Scraper | 0 |
| 5 | 72" Rear Blade | 0 |
| 6 | 60" Landscape Rakes | 0 |
| 7 | 66" Rotary Tiller | 0 |
| 8 | Broad Caster | 0 |
| 9 | Post Hole Digger | 0 |

***(A) Front end weights (option)***
***(B) Bumper***

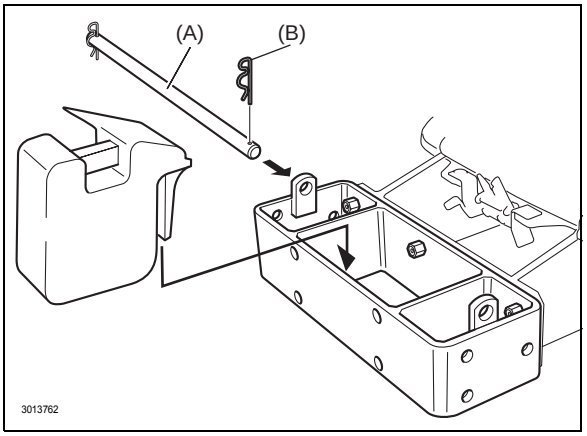
**⚠WARNING**

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

For the front ballast, refer to the information about maximum weight provided below.
For the rear ballast, refer to “Using Liquid Weight for the Tires” in page 12-5.

## ■ Maximum Weight

Usually, five 44 lb (20 kg) weights can be installed on the tractor. If the extension is used, four additional 44 lb (20 kg) weights can be installed. In other words, a total of nine 44 lb (20 kg) weights can be installed on the tractor for an additional total weight of 396 lb (180 kg).
For the information about the extension and weights being installed, contact your local Cub Cadet Yanmar dealer.




***(A) Rod***
***(B) Cotter pin***

**NOTE:**

- The extension is optional.

## ■ Using Liquid Weight for the Tires

### ⚠WARNING

**Avoid injury:**

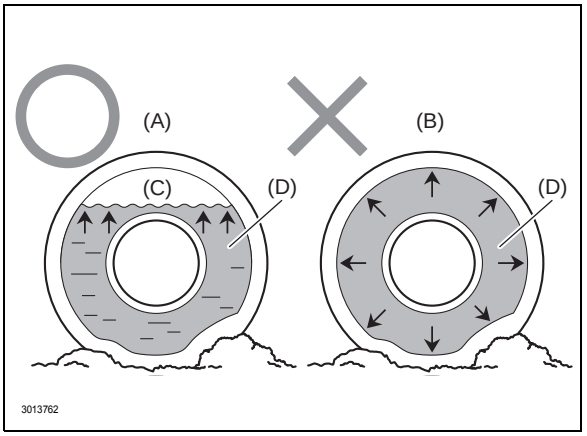
- **Installation of liquid ballast requires special implement and training. An exploding tire can lead to injury. Contact your local Cub Cadet Yanmar dealer or a tire service store to do this task.**

**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 and less expensive.
- A water solution of calcium chloride offers a safe, economical 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***

# 13. MAINTENANCE

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

## 1. Maintenance Check List

| No | Topic | | Time | Service Intervals | | | | | | | | | | | | | | | | | | | | | | After purchase | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Daily | Hours | | | | | | | | | | | | | | | | | | | | | 1 year | 2 years |
| | | | | | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | | |
| 1 | Engine oil level | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| | Engine oil | Change | 50/200hr and Every 200hr after | | ✔ | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | |
| 2 | Engine oil filter | Replace | 50/200hr and Every 200hr after | | ✔ | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | |
| 3 | Transmission oil filter | Replace | 50/300hr and Every 300hr after | | ✔ | | | | | ✓ | | | | | | ✓ | | | | | | ✓ | | | | |
| 4 | Transmission oil level | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| | Transmission oil | Change | 50/300hr and Every 300hr after | | ✔ | | | | | ✓ | | | | | | ✓ | | | | | | ✓ | | | | |
| 5 | Transmission strainer | Clean | 50/300hr and Every 300hr after | | ✔ | | | | | ✓ | | | | | | ✓ | | | | | | ✓ | | | | |
| 6 | Front axle case oil level | Check | Every 50hr | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| | Front axle case oil | Change | Every 500hr | | | | | | | | | | | ✓ | | | | | | | | | | ✓ | | |
| 7 | Greasing and lubricating | – | Every 50hr | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 8 | Wheel bolt torque | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Battery condition | Check | Every 50hr | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 10 | Air filter element | Clean | Every 100hr | | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | |
| | | Replace | Every 1 year | | | | | | | | | | | | | | | | | | | | | | ✓ | |
| 11 | Fuel / water separator | Check | Every 50hr | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | | Clean | Every 100hr | | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | | |
| 12 | Fuel filter | Replace | Every 500hr | | | | | | | | | | | ✓ | | | | | | | | | | ✓ | | |
| 13 | Fan and alternator belt | Adjust | Every 50hr | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| 14 | Brake | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Clutch | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Radiator hose and clamp | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| | | Replace | Every 2 years | | | | | | | | | | | | | | | | | | | | | | | ✓ |
| 17 | Power steering line | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| | | Replace | Every 2 years | | | | | | | | | | | | | | | | | | | | | | | ✓ |
| 18 | Fuel line | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| | | Replace | Every 2 years | | | | | | | | | | | | | | | | | | | | | | | ✓ |
| 19 | Air intake hose | Check | Every 200hr | | | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | |
| | | Replace | Every 2 years | | | | | | | | | | | | | | | | | | | | | | | ✓ |
| 20 | Toe-in | Adjust | Every 200hr | | | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | | | ✓ | | |
| 21 | Engine valve clearance | Adjust | Every 1000hr | | | | | | | | | | | | | | | | | | | | | ✓ | | |

| No | Topic | | Time | Service Intervals | | | | | | | | | | | | | | | | | | | | | After purchase | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Hours | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Daily | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1 year | 2 years |
| 22 | Fuel injection nozzle | Check | Every 1000hr | | | | | | | | | | | | | | | | | | | | ✓ | | |
| 23 | Fuel injection pump | Check | Every 1000hr | | | | | | | | | | | | | | | | | | | | ✓ | | |
| 24 | Cooling system | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | |
| | | Flush | Every 1000hr or 1 year | | | | | | | | | | | | | | | | | | | | ✓ | ✓ | |
| 25 | Coolant | Change | Every 1000hr or 1 year | | | | | | | | | | | | | | | | | | | | ✓ | ✓ | |
| 26 | Tire air pressure | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | |
| 27 | Radiator cooling fins / screen | Clean | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | |
| 28 | Front grille screen | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | |
| 29 | Fuse | Replace | Service as required | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Light bulb | Replace | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Safety interlock system | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | |
| 32 | Seat belt and ROPS | Check | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | |
| 33 | Refueling | – | Daily | ✓ | | | | | | | | | | | | | | | | | | | | | |

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

## 2. Lubricants

| No. | Locations | Capacities | Lubricants | |
|---|---|---|---|---|
| 1 | Fuel | Approximately 6.3 US gal (24.0 L) | No.2-D diesel fuel<br>No.1-D diesel fuel if temperature is below 14°F (–10°C) | |
| 2 | Coolant | Approximately 1.2 US gal (4.5 L) | High Quality Permanent Type Antifreeze (Ethylene Glycol with corrosion and rust inhibitor chemicals)<br>Coolant Mixture Ratio<br>Distilled Water 50% : Antifreeze 50% | |
| 3 | Engine crankcase (with filter) | Approximately 1.1 US gal (4.0 L) | API Service Classifications CF or higher<br>SAE 10W-30 or SAE 10W-40 | |
| 4 | Transmission case | Approximately 5.4 US gal (20.3 L) | Cub Cadet Hydraulic/Transmission Fluid | |
| 5 | Front axle case | Approximately 1.2 US gal (4.7 L) | Cub Cadet GEAR LUBE<br>or SAE 80W-90 gear oil | |
| 6 | Greasing | No. of greasing points | Capacity | Type of grease |
| | Front axle pivot | 1 | Until grease overflows | Cub Cadet 251H Grease or General all purpose grease NLGI grade No.2 |
| | Tie rod end | 2 | | |
| | Clutch pedal | 1 | | |
| | Brake pedal | 1 | | |
| | Brake pedal shaft | 2 | | |
| | Top link | 1 | | |

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

# 3. Replacement Parts

## 1. Technical Document

**[U.S.A. and Canada]**
When wanting to obtain a copy of Parts Catalog or Technical Manual for your 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 your tractor. These numbers are those previously entered in the “2. SERVICING THE TRACTOR” of this manual.

# 14. PERIODIC SERVICE

**⚠WARNING**

**Explosion Hazard**

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.

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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.

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ALWAYS park your tractor on a solid, level ground, engage the parking brake securely, disengage the Power Take Off (PTO) lower the implement to the ground, set all the levers to the neutral position, shut down the engine and remove the starter key switch before starting any service work.

## ■ Warranty and Repair of the Engine

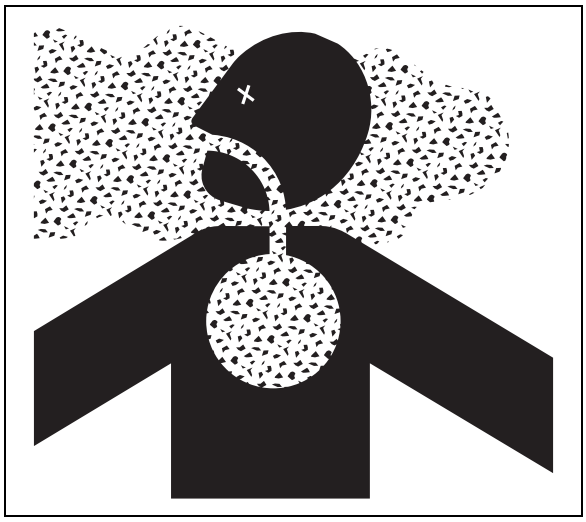
A maintenance, inspection, repair or replacement service of engine emission control devices and systems may be performed at the owner's expense by any qualified off-road engine repair shop or mechanic. Warranty repairs must be executed by an authorized Cub Cadet Yanmar dealer.

**⚠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.**



# 1. Opening / Closing the Hood and Side Panels

## 1. Opening / Closing the Hood

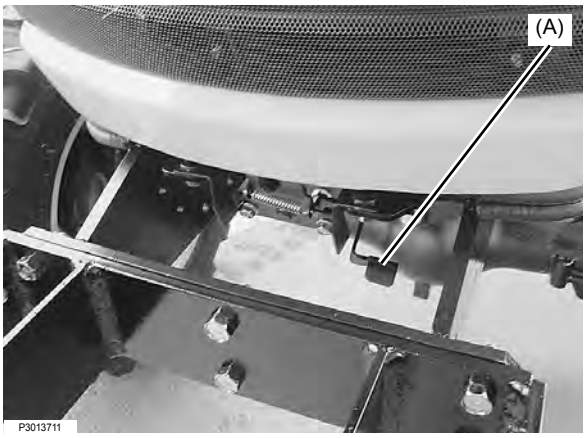
**⚠CAUTION**

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

### ■ Opening the Hood

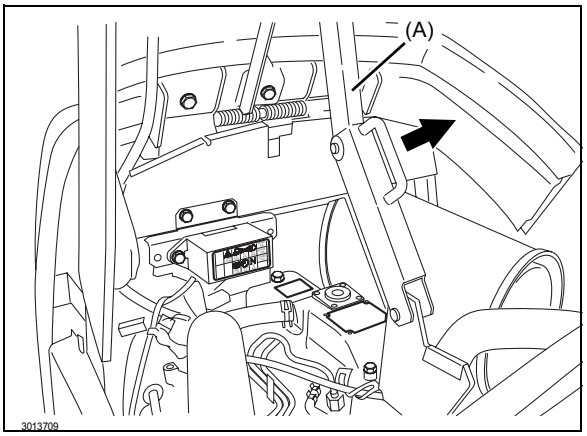
1. Pull the hood release lever upward. The hood lock will be released.

***(A) Hood release lever***




2. Lift up the hood with both hands. The hood support will automatically lock when the hood is fully raised.

***(A) Hood support***




**⚠CAUTION**

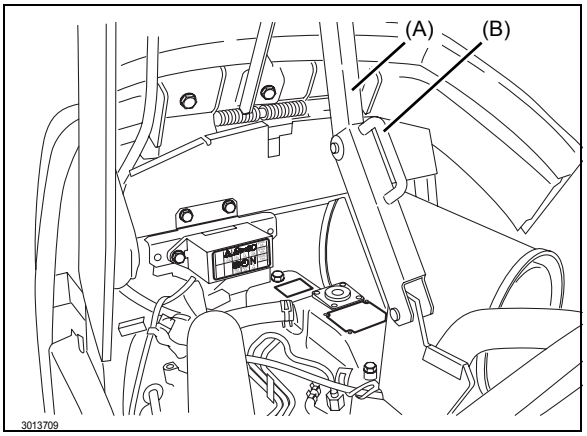
**Avoid injury:**
**●Avoid contact with the hood while it is rising. Otherwise, the hood support can be unlocked.**

## ■ Closing the Hood

1. Lift up the hood slightly, grasp the grip at the middle of the hood support and pull forward to unlock the hood support.

   ***(A) Hood support***
   ***(B) Grip***

2. Lower the hood and firmly press downward on the upper front portion of the hood until the hood latch locks the hood in the closed position.
3. Attempt to lift the hood to make sure the hood latch has locked the hood in the closed position.



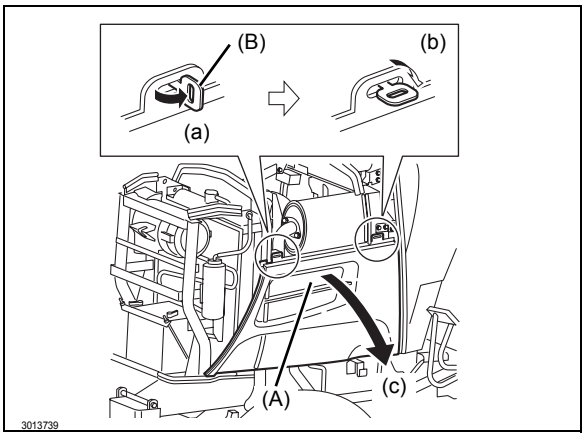

**⚠CAUTION**

- **When closing the hood, avoid pinching fingers with the hood or hood support.**
- **Support hood with other hand while unlocking support link.**

## 2. Opening / Closing the Side Panels

Lift the tabs on the right and left side panels (total of four positions; two per cover), turn them 90°, and then remove the engine side panels.
To reinstall the engine side panels, fit them in position, turn the tabs by 90° in the opposite direction.

*(a) Lift up*
*(b) Turn*
*(c) Open the side panel*
***(A) Side panel***
***(B) Tab***

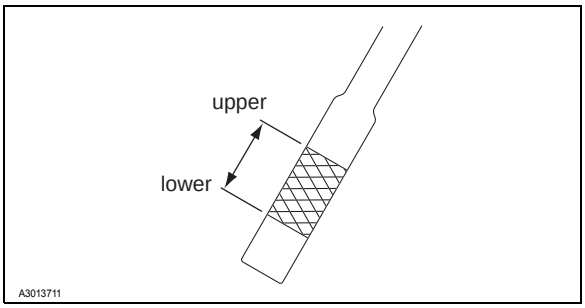


# 2. Daily Checks

## ■ Checking the Engine Oil Level

**IMPORTANT: Avoid damage.**

- ALWAYS check the oil level daily. 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.



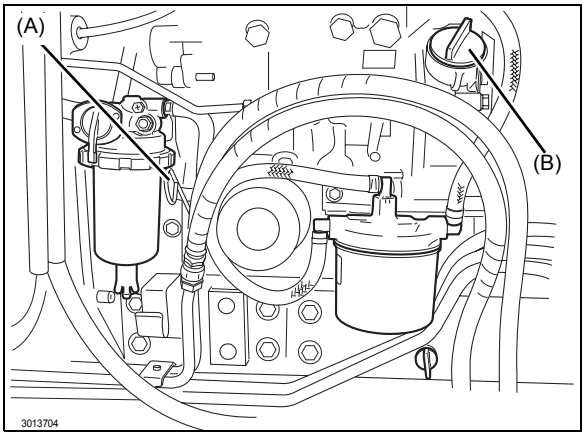

**NOTE:**

- Check the oil level twice a day if the engine is run longer than 4 hours a day.
- Ensure that the engine is cold when checking the engine oil level.

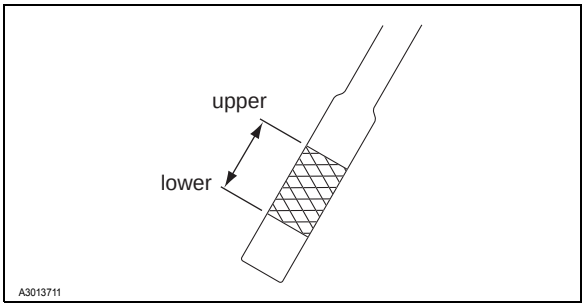
1. Park the tractor on a level surface.
2. Raise the hood.

**IMPORTANT: Avoid damage.**

- When the oil level is checked, dirt and dust can enter the engine. Clean the area around the dipstick before removing it.




3. Remove the side panel on the right side of the engine.
4. Remove the dipstick. Clean the dipstick blade with a clean rag.
5. Reinstall the dipstick.
6. Remove the dipstick again.
7. Read the oil level on the dipstick. The oil level should be between the lower and the upper marks on the dipstick.
8. If the oil level is low:
   (1) Remove the oil fill cap.
   (2) Add the specified oil until the oil level is in the operating range on the dipstick.




### *NOTICE*

- NEVER overfill the engine with oil.

9. If the oil exceeds the upper mark level on the dipstick, drain to a proper level.
10. Reinstall the dipstick.
11. Reinstall the side panel.
12. Lower the hood.

***(A) Dipstick***
***(B) Oil fill cap***

## ■ Inspecting the Transmission Oil Level

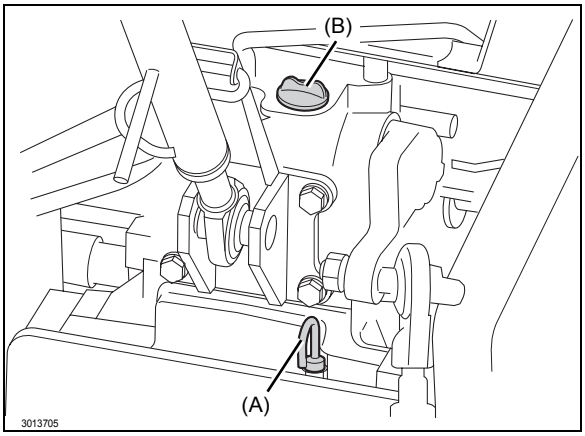
1. Park the tractor safely. Allow the tractor to cool off for at least 1 hour.

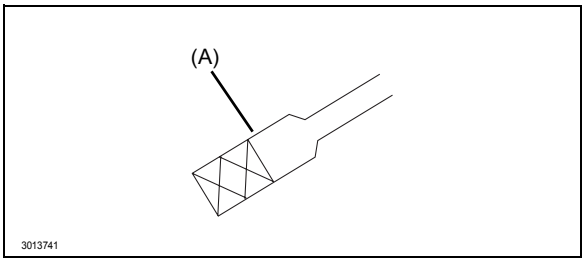
**IMPORTANT: Avoid damage.**

- Prevent dirt and other contaminants from entering the transmission. Clean the area around the dipstick before removing it.
- NEVER overfill the transmission.

2. Remove the dipstick.
3. Read the oil level on the dipstick. The oil level should be between the high and low levels on the dipstick.

4. When 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.
5. Reinstall and tighten the oil fill cap. Reinsert the dipstick.




***(A) Dipstick***
***(B) Oil fill cap***

## ■ Checking the Wheel Bolt Tightening Torque

**⚠WARNING**

**Avoid injury:**

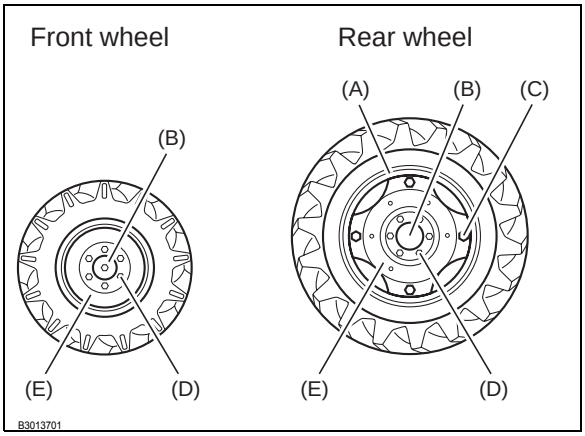
- **To prevent possible roll-over of the tractor, check the rim, hub and wheel bolts at regular intervals.**

### Service Intervals

- Regular Interval : Before day's operation
- After adjusting the wheel tread or replacing the tires:
  After 1 hour of operation and every 4 hours after that until appropriate tightening torque values are reached and maintained.

## Specified Torque

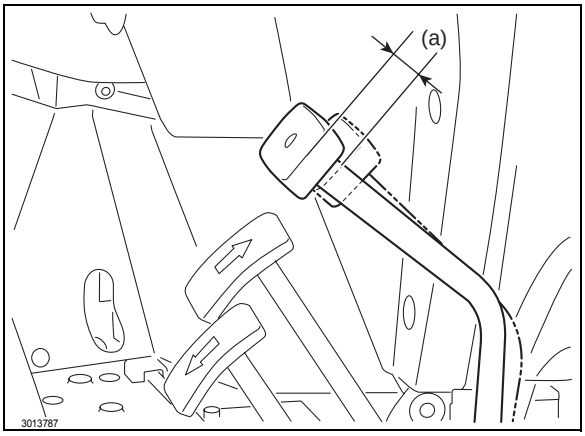
| | | |
|---|---|---|
| Bolt fixing the disk to the axle | Front wheel | 127-141 ft•lb (172-191 N•m) |
| | Rear wheel | 123-151 ft•lb (167-205 N•m) |
| Bolt fixing the rim to the disk (Only R1 tire) | Rear wheel | 146-205 ft•lb (198-278 N•m) |

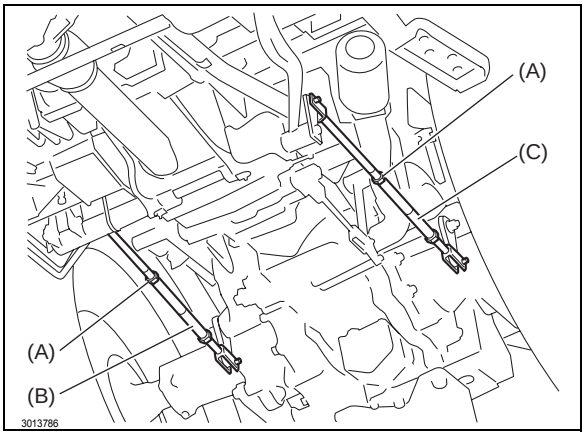



***(A) Rim***
***(B) Axle***
***(C) Bolt fixing the rim to the disk (Only R1 tire)***
***(D) Bolt fixing the disk to the axle***
***(E) Disk***

## ■ Checking and Adjusting the Brake

Adjust the play of the brake pedal to 1.2 ± 0.2 in. (30 ± 5 mm).
To adjust the left brake pedal, adjust the turnbuckle on the left brake rod assembly. To adjust the right brake pedal, adjust the turnbuckle on the right brake rod assembly.

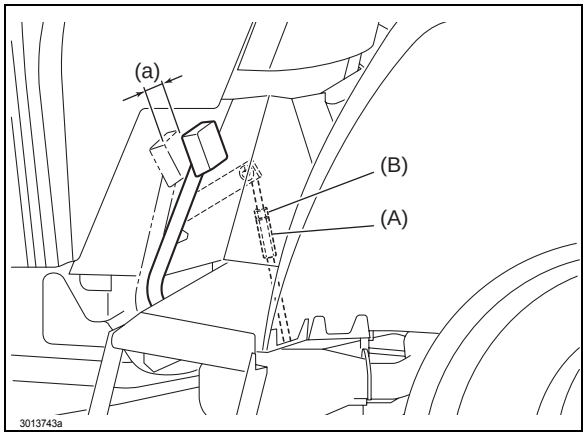



***(A) Nut***
***(B) Right turnbuckle***
***(C) Left turnbuckle***
*(a) 1.2 ± 0.2 in. (30 ± 5 mm)*

## ■ Checking and Adjusting the Clutch

1. Stop the tractor, and chock the tires.
2. Shut down the engine, and remove the starter key switch.
3. Engage the parking brake securely and check that the parking brake is locked.
4. Lightly step on the clutch pedal to check that the play at the end of clutch pedal falls in a range of 0.59 to 0.98 in. (15 to 25 mm).
5. If the play needs to be adjusted, loosen the nut on the turnbuckle of the clutch rod. Adjust as necessary, then lightly retighten the nut against the turnbuckle.
6. Check that the play at the end of clutch pedal falls in a range of 0.59 to 0.98 in. (15 to 25 mm). Then, fully tighten the nut on the turnbuckle, and check the play again.




***(A) Turnbuckle***
***(B) Nut***
*(a) 0.59 to 0.98 in. (15 to 25 mm)*

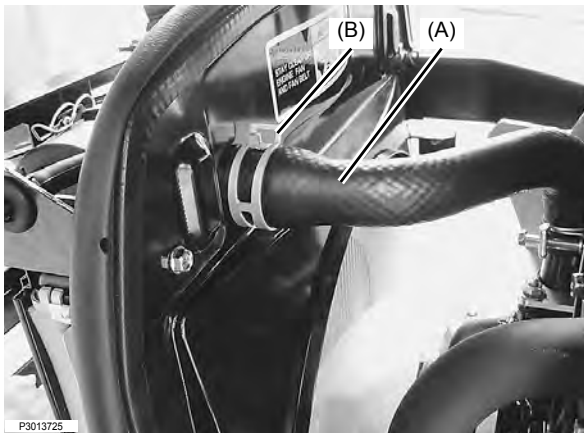
## ■ Checking the Radiator Hoses and Clamps

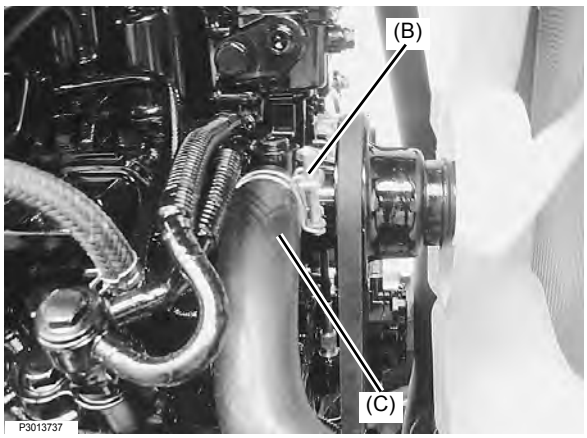
1. Park the tractor safely.
2. Raise the hood.
3. Remove the side panel from the right side of the engine.

**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.

4. Check the upper radiator hose for any damage including cracking. Replace the damaged hose.
5. Check the hose clamps as necessary.
6. Check the lower radiator hose for any damage including cracking. Replace the damaged hose.
7. Check the hose clamps as necessary.
8. Reinstall the side panel.
9. Lower the hood.



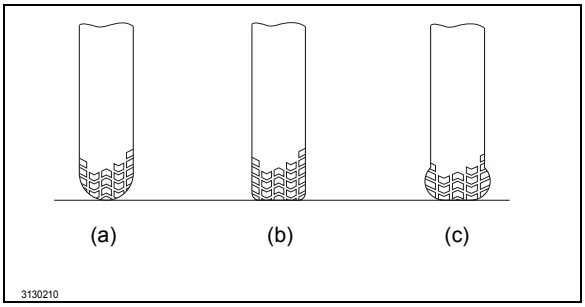




***(A) Upper radiator hose***
***(B) Hose clamps***
***(C) Lower radiator hose***

## ■ Checking the Tire Air Pressure

Adjust the front and rear tires to the standard pressure.
Check the tires for fissures and any other damages.

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




**Tire pressures**

| | Tire size | Tire air pressure |
|---|---|---|
| Front | 25X8.50-14(R4) (Industrial),**6PR** | 50 psi (3.5 kgf/cm$^2$) |
| | 25X8.50-14(R3) (Turf),**4PR** | 22 psi (1.5 kgf/cm$^2$) |
| | 7-14 (R1) (Agricultural),**6PR** | 36 psi (2.5 kgf/cm$^2$) |
| Rear | 15-19.5 (R4) (Industrial),**6PR** | 30 psi (2.1 kgf/cm$^2$) |
| | 13.6-16(R3) (Turf),**4PR** | 14 psi (1.0 kgf/cm$^2$) |
| | 11.2-24 (R1) (Agricultural),**4PR** | 18 psi (1.3 kgf/cm$^2$) |

## ■ Cleaning the Radiator Cooling Screen, Cooling Fins and Oil Cooler Pipe

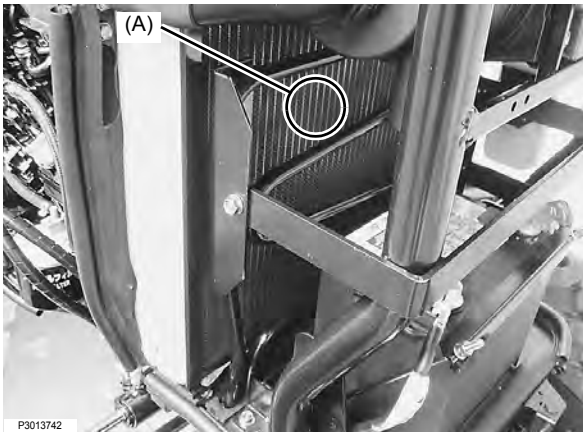
**⚠CAUTION**

**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 wear protective goggles.**
- **Reduce compressed air pressure to 30 psi (210 kPa).**

**IMPORTANT: Avoid damage.**

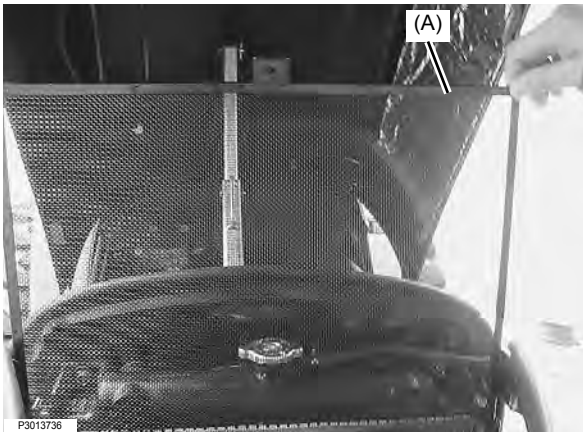
- The cooling screen, fins and pipe must remain clean in order to ensure adequate air inflow to prevent engine overheating.




### 1. Cleaning the Radiator Cooling Screen

1. Park the tractor safely.
2. Allow engine to cool completely.
3. Raise the hood.
4. Raise and remove the radiator screen.
5. Clean the screen with compressed air, brush or cloth.

***(A) Radiator screen***



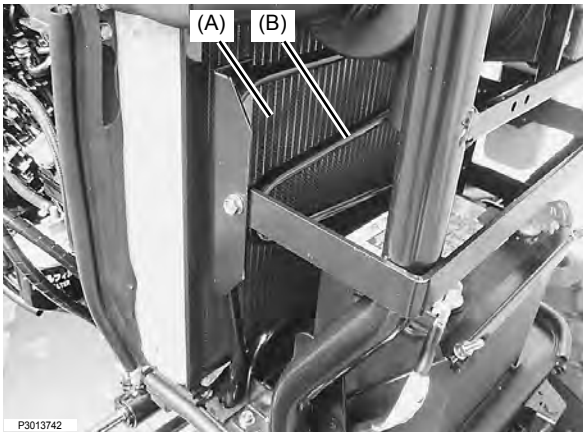

### 2. Cleaning the Radiator Cooling Fins

1. Raise the hood.
2. Remove both engine side panels.

**IMPORTANT: Avoid damage.**

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

3. Remove any dirt and debris from the fins at the front and rear of the radiator and from the fan with compressed air.
4. By using compressed air, remove any dirt and debris from the oil cooler pipe (only Ex3200).
5. Reinstall the radiator cooling screen.
6. Reinstall both engine side panels.
7. Lower the hood.




***(A) Fins***
***(B) Oil cooler pipe (only Ex3200)***

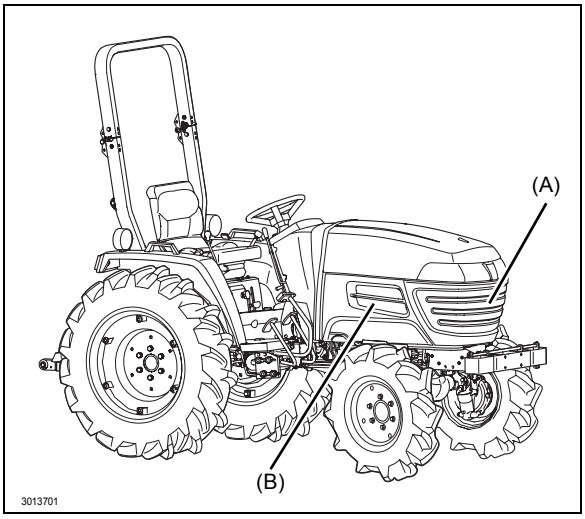
## ■ Cleaning the Grille and Side Screens

**IMPORTANT: Avoid damage.**

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

1. Check the grille and both side panel screens for dirt, grass chippings and debris.
2. Clean the grille and side screens with a brush or cloth.

***(A) Grill***
***(B) Side panel screens***




## ■ Checking the Fuel line

Open the hood upper and side panels, and then check:
- The rubber hose for oil leakage
- The rubber hose for any damage

## ■ Checking the Power Steering line

Open the hood upper and side panels, and then check:
- The rubber hose and joints for oil leakage
- The rubber hose for any damage

## ■ Checking 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.

## ■ Checking the Headlights, Hazard Lights, etc.

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

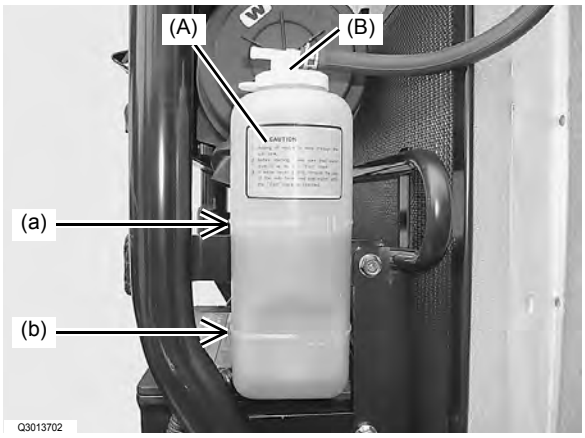
## ■ Checking the Cooling System

**⚠CAUTION**

**Avoid injury.**

- **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.**

1. Park the tractor safely.
2. Allow the engine to cool down.
3. Raise the hood.
4. Remove the side panel from the right side of the engine.
5. Check that the coolant level of the reserve tank is between the FULL line and the LOW line.
6. When necessary, remove the reserve tank cap and add the coolant.
7. 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).
8. Reinstall the reserve tank cap.
9. Lower the hood.




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

## ■ Refilling 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.

In cold climate, use Grade No. 1-D diesel fuel, and in warm climate, use Grade No. 2-D diesel fuel. The cetane number of the diesel fuel used must be 45 or higher.

When the air temperature drops below –4°F(–20°C) or the altitude of the work site exceeds 5000 ft (1500 m), use a diesel fuel whose cetane value is 50 or higher.

The sulfur content must not exceed 0.5 % by volume. Less than 0.05 % is preferred.

**Bio-diesel Fuels**

In the United States, 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 Yanmer 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 market place as B5 diesel fuels.

### ⚠WARNING

**Avoid personal injury. Remember that fuel vapor is explosive and flammable:**

- **Shut down 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.**

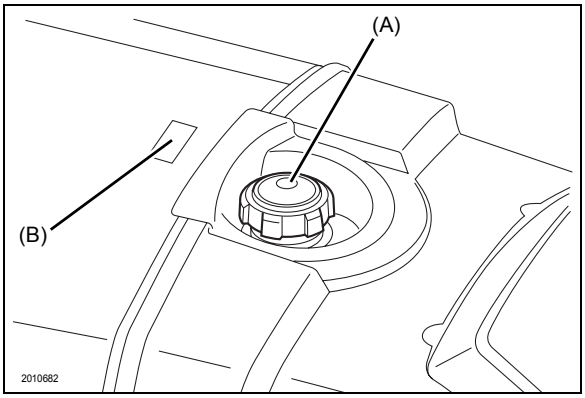
- Dirt and water in the fuel can damage the engine.
- Remove dirt and debris from the fuel tank opening.
- Use clean, fresh, stabilized fuel.
- At the end of operation for the day, fill the fuel tank to prevent condensation from occurring in the fuel tank.
- When filling the fuel tank or container use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

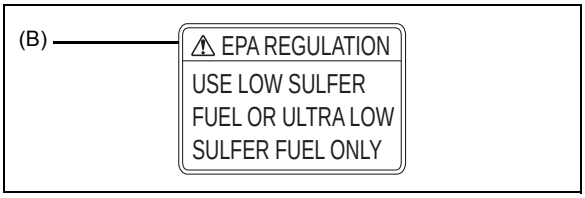
1. Park the tractor safely.
2. Allow the engine to cool off for several minutes before refueling.
3. Remove the fuel tank cap.
4. Fill the tank with fresh fuel to the bottom of filler neck.

**IMPORTANT:**

●NEVER overfill the fuel tank.

5. Reinstall the fuel tank cap.




***(A) Fuel tank cap***
***(B) EPA regulation label CY114110-07760***

**EPA REGULATION**

USE LOW SULFER FUEL OR ULTRA LOW SULFER FUEL ONLY

## ■ Inspection Procedure for Safety Interlock System

### ⚠CAUTION

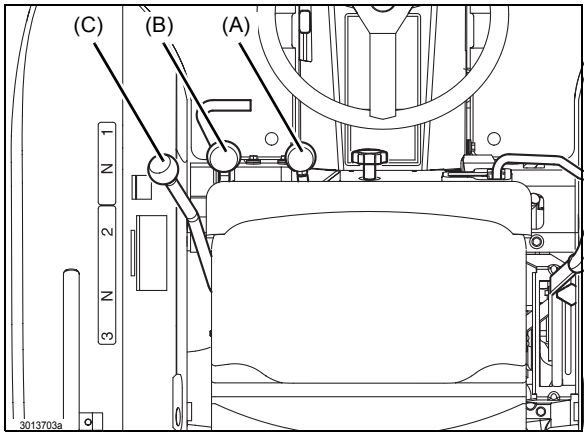
**To avoid personal injury, do as follows:**

- **Read the "Safety Precautions" at the head of this manual.**
- **Read the danger, warning and caution statements on the safety alert decals 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 all the levers to the "NEUTRAL" positions and the Power Take Off (PTO) engagement lever 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 actuating the Power Take Off (PTO) engagement lever, fully depress the clutch pedal and disengage the clutch.

## 1. Range Shift Lever Neutral Switch

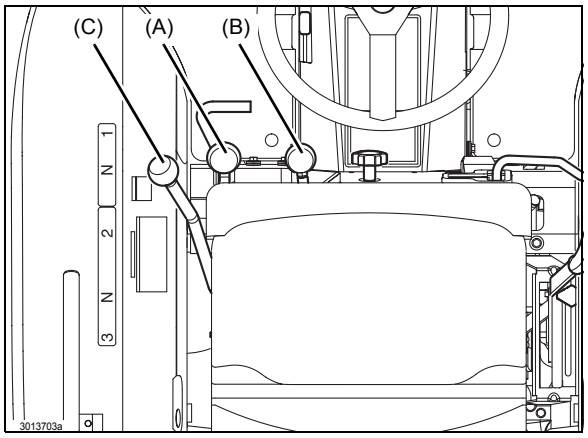
1. Sit on the operator's seat.
2. Disengage the Rear Power Take Off (PTO) engagement lever (OFF position). If the machine has the Mid-Power Take Off (PTO) engagement lever, also disengage it.
3. Bring the range shift lever into the 1st, 2nd or 3rd speed setting.
4. Turn the starter key switch to the START position.
5. Check that the starter motor does not start.
6. Turn the range shift lever to the NEUTRAL position and check that engine starts.




***(A) Rear Power Take Off (PTO) engagement lever***
***(B) Mid-Power Take Off (PTO) engagement lever (option)***
***(C) Range shift lever***

## 2. Mid-Power Take Off (PTO) Engagement Lever Switch (option)

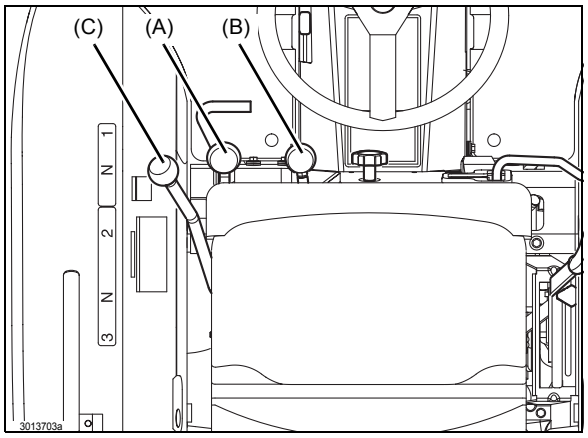
1. Sit on the operator's seat.
2. Engage the Mid-Power Take Off (PTO) engagement lever (ON position).
3. Disengage the Rear Power Take Off (PTO) engagement lever (OFF position).
4. Move the range shift lever into the NEUTRAL position.
5. Turn the starter key switch to the START position.
6. Check that the starter motor does not start.
7. Disengage the Mid-Power Take Off (PTO) engagement lever and check that the starter motor starts running.




***(A) Mid-Power Take Off (PTO) engagement lever (option)***
***(B) Rear Power Take Off (PTO) engagement lever***
***(C) Range shift lever***

## 3. Rear Power Take Off (PTO) Engagement Lever Switch

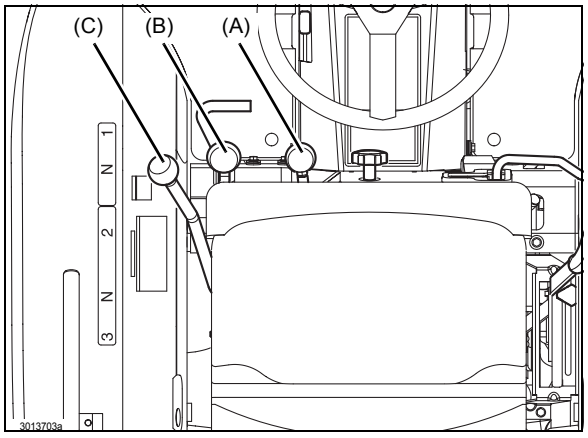
1. Sit on the operator's seat.
2. If the machine has the Mid-Power Take Off (PTO) engagement lever, disengage it (OFF position).
3. Engage the Rear Power Take Off (PTO) engagement lever (ON position).
4. Move the range shift lever into the NEUTRAL position.
5. Turn the starter key switch to the START position.
6. Check that the starter motor does not start.
7. Turn the Rear Power Take Off (PTO) engagement lever OFF and check that the starter motor starts running.




***(A) Mid-Power Take Off (PTO) engagement lever (option)***
***(B) Rear Power Take Off (PTO) engagement lever***
***(C) Range shift lever***

## 4. Seat Safety Switch

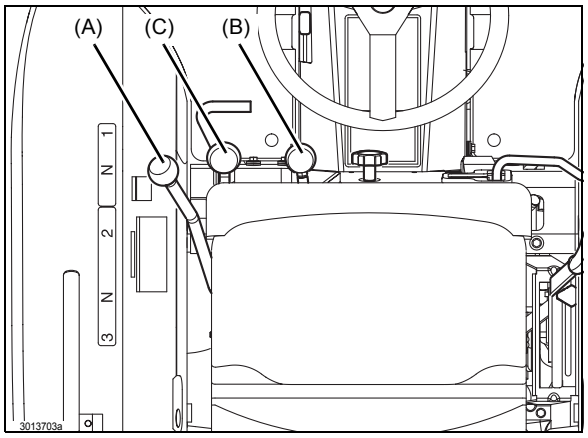
1. Disengage the Rear Power Take Off (PTO) engagement lever (OFF position). If the machine has the Mid-Power Take Off (PTO) engagement lever, also disengage it.
2. Move the range shift lever into the NEUTRAL position.
3. Turn the starter key switch to the START position (remove all weight from the operator's seat).
4. Check that the starter motor does not start.
5. Apply a load to the seat and check that the starter motor starts running.




***(A) Rear Power Take Off (PTO) engagement lever***
***(B) Mid-Power Take Off (PTO) engagement lever (option)***
***(C) Range shift lever***

### 5. Checking the Operation of the Seat Safety Switch

1. Move the range shift lever into the NEUTRAL position.
2. Disengage the Rear Power Take Off (PTO) engagement lever (OFF position). If the machine has the Mid-Power Take Off (PTO) engagement lever, disengage it.
3. Sit on the operator's seat.
4. Turn the starter key switch to the START position.
5. Check that the engine starts.
6. Remove all weights from the operator seat.
7. The solenoid switch responsible for stopping the engine should be activated, and the engine must stop running. If it does not, contact your local Cub Cadet Yanmar dealer for repair.




***(A) Range shift lever***
***(B) Rear Power Take Off (PTO) engagement lever***
***(C) Mid-Power Take Off (PTO) engagement lever (option)***

## 3. First 50 Hours

### ■ Change the Engine Oil

For the maintenance work, see “Engine Oil” on page 14-25.

### ■ Replacing the Engine Oil Filter

For the maintenance work, see “Changing the Engine Oil and Filter” on page 14-25.

### ■ Replacing the Transmission Oil Filter

For the maintenance work, see “Changing the Transmission Oil and Filter, Cleaning the Transmission Oil Strainer” on page 14-27.

### ■ Changing the Transmission Oil

For the maintenance work, see “Changing the Transmission Oil and Filter, Cleaning the Transmission Oil Strainer” on page 14-27.

### ■ Cleaning the Transmission Strainer

For the maintenance work, see “Changing the Transmission Oil and Filter, Cleaning the Transmission Oil Strainer” on page 14-27.

# 4. Every 50 Hours

## ■ Checking 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.
2. Allow the tractor to cool off for at least 1 hour and the oil to settle.

**IMPORTANT: Avoid damage.**

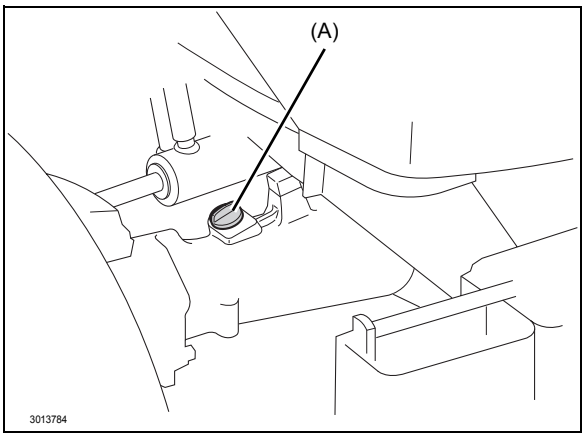
- Dirt and debris in the oil may damage the transaxle. Clean the area around the dipstick before removing it.

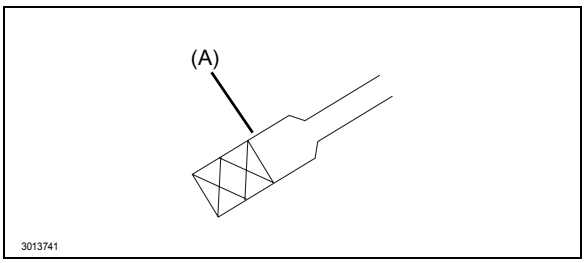
3. Loosen and remove the dipstick situated on the right side of the front axle.
4. Wipe the dipstick clean with a rag. Only insert the dipstick into the hole on axle. At this point, do not fasten the dipstick into the axle case.
5. Remove the dipstick again. Read the oil level on the dipstick. The oil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

## ■ Grease Specifications

**IMPORTANT: Prevent damage.**

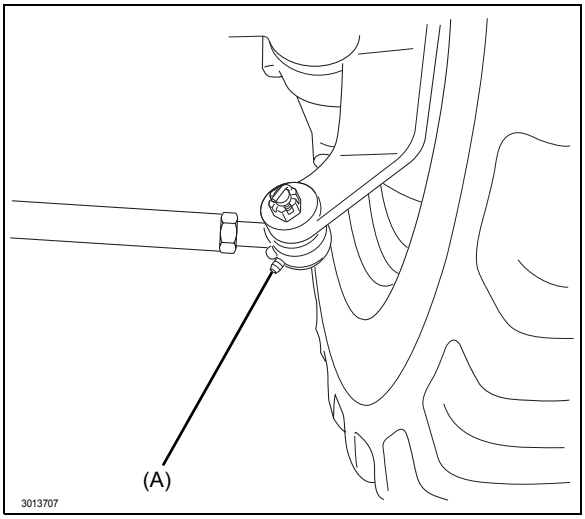
- Use the recommended Cub Cadet Yanmar greases to avoid failed or prematurely worn parts and components.
- The recommended Cub Cadet Yanmar greases perform efficiently in an average ambient temperature range from –20 to +275 °F (–29 to +135 °C)
- When intending to operate your tractor outside this temperature range, contact your local Cub Cadet Yanmar dealer for applicable special-purpose greases.

Use Cub Cadet 251H Grease or General all purpose grease NLGI grade No.2 or equivalent.

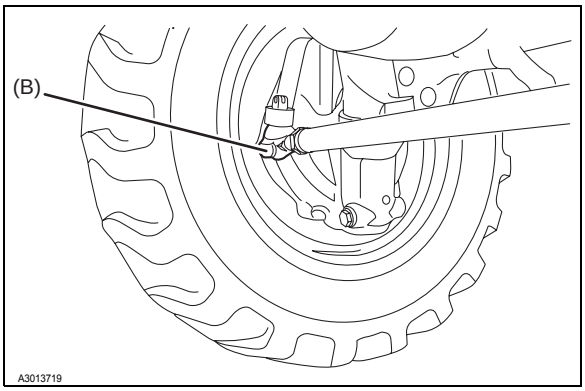
## 1. Lubricating Grease Fittings on the Tractor

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

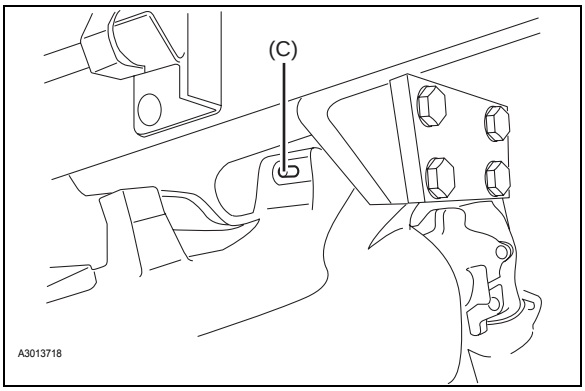
**[All other conditions]**
Lubricate the grease fittings once every 50 operating hours.




***(A) Right tie rod end***



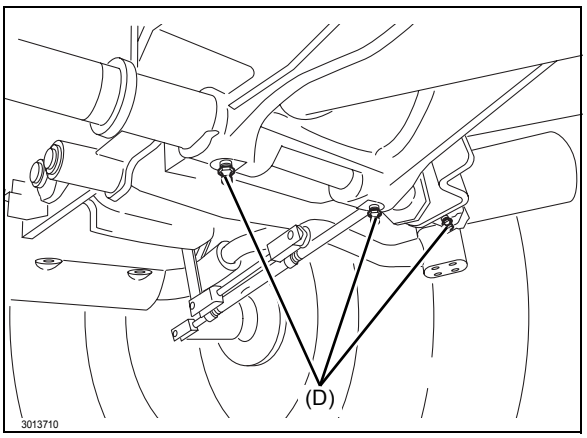

***(B) Left tie rod end***




***(C) Axle pivot pin***

**NOTE:**

- The link grease fittings are located below the foot platform on the tractor.




***(D) Link grease fittings***

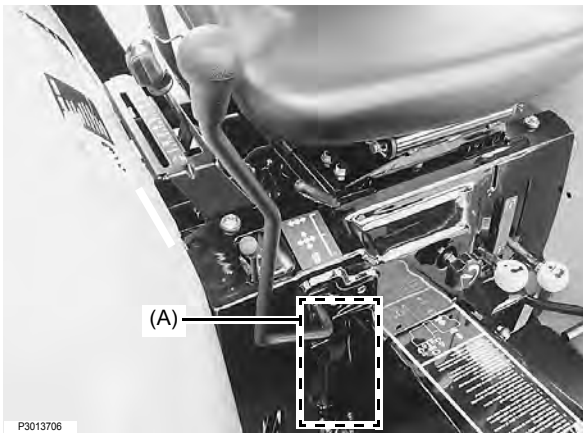
**NOTE:**

- Grease fittings are located on the cross-shaft below the center of the tractor.

## 2. Lubricating the Hydraulic Implement Control Valve Linkage

***(A) Lubricate the implement control valve linkage***

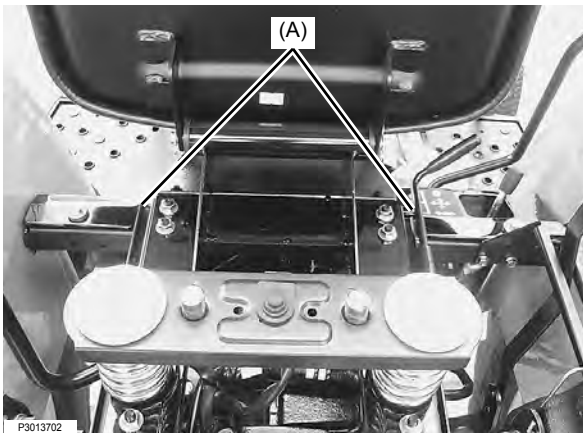
Lubricate the implement control valve linkage with Cub Cadet GEAR LUBE.




## 3. Lubricating 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.

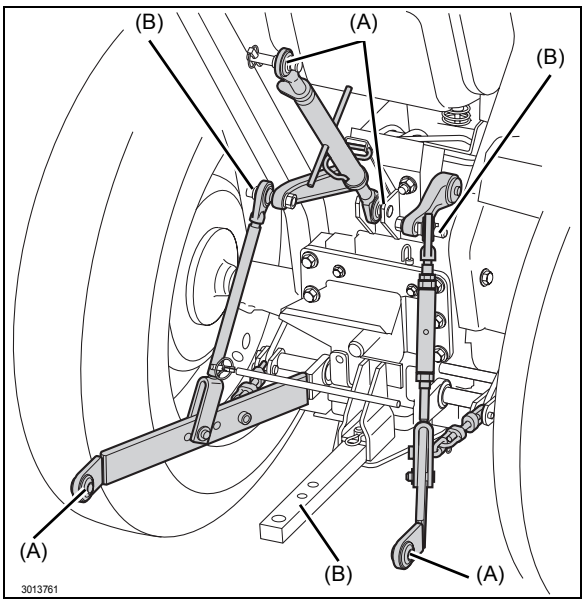
***(A) Seat slide rails***




## 4. Lubricating the 3-Point Hitch

Lubricate the ball joints and drawbar with SUPER LUBE lubricant.
SUPER LUBE is a registered trademark of Synco Chemical Corp.

***(A) Ball joints***
***(B) Drawbar***



## ■ Servicing the Fan and Alternator Belt

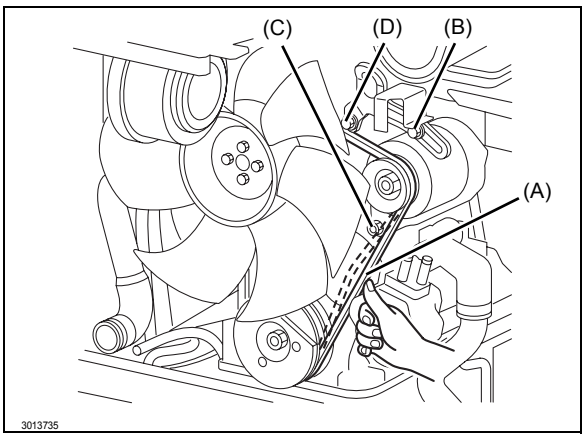
**⚠WARNING**

**Be careful to avoid injury:**

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

### 1. Checking the Belt Tension

1. Park the tractor safely.
2. Raise the hood.
3. Remove the side panel from the left side of the engine.
4. With a thumb, gently apply pressure to the midpoint of the belt between the pulleys. The belt should deflect inward by approximately 3/8 in. (9 mm).
5. If the deflection is not as specified, adjust the tension of the belt.




***(A) Midpoint of the belt***
***(B) Adjusting bolt***
***(C) Mounting nut***
***(D) Mounting bolt***

### 2. Adjusting the Belt Tension

1. Loosen the adjusting bolt.
2. Loosen the mounting bolt and nut.
3. Exert an outward pressure to the alternator housing to attain the correct tension.
4. Retighten the mounting bolt, mounting nut and adjusting bolt, in this order.
5. Check the belt tension.
6. Reinstall the side panel.
7. Lower the hood.

### 3. Replacing the Belt

**NOTE:**

- Replace an excessively worn, damaged or elongated alternator belt with a new one.

1. Park the tractor safely.
2. Raise the hood.
3. Disconnect the black negative (–) cable from the battery.
4. Remove both engine side panels.
5. Loosen the adjusting bolt.
6. Loosen the mounting bolt and nut.
7. Apply an inward pressure to the alternator housing.

8. Remove the belt from the alternator sheave, fan sheave and crankshaft sheave.
9. Route the defective belt over the fan, and then remove it.
10. Install a new belt over the fan and onto the sheaves.
11. Exert an outward pressure to the alternator housing to attain the correct tension.
12. Retighten the mounting bolt, mounting nut and adjusting bolt, in this order.
13. Check the belt tension. Adjust as necessary.
14. Reconnect the black negative (–) cable to the battery.
15. Reinstall both side panels.
16. Lower the hood.

## ■ Checking the Fuel / Water Separator

**⚠WARNING**

**Avoid injury:**

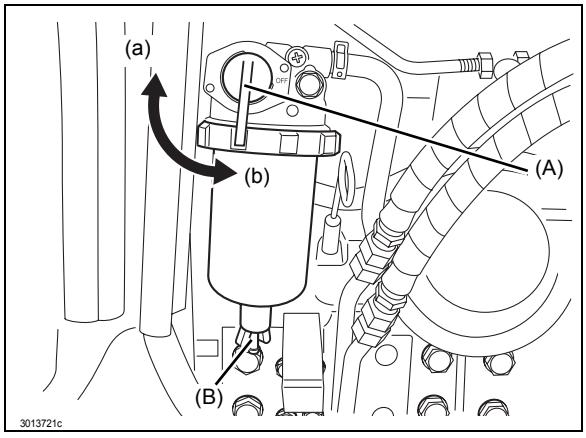
- **Remember that vapor from diesel fuel is explosive and flammable.**
- **NEVER smoke while handling the fuel.**
- **Keep the fuel away from open flames or sparks.**
- **Before servicing, shut down the engine.**
- **Before servicing, allow the engine to cool off.**
- **Work in a well-ventilated area.**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

**NOTE:**

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

1. Park the tractor safely.
2. Raise the hood.
3. Remove the side panel from the right side of the engine.
4. Turn the fuel shut-off valve to the “OFF” position (closed state).
5. Turn the drain cock at the bottom of the fuel / water separator to drain away the condensation.
6. Turn the drain cock to close, and turn the fuel shut-off valve to the “ON” position (open state) and bleed the possibly trapped air.

If necessary, contact your local Cub Cadet Yanmar dealer for technical assistance.




***(A) Fuel shut-off valve***
***(B) Drain cock***
*(a) “OFF” (closed) position*
*(b) “ON” (open) position*

## ■ Checking the Battery Condition

For the maintenance work, refer to “15-3 Inspecting the Battery”

# 5. Every 100 Hours

## ■ Servicing the Air Filter Element

**⚠CAUTION**

**Be careful to avoid injury:**

- **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 injury.**

A damaged filter element may fail to catch dirt and dust, and contaminants can enter the engine:

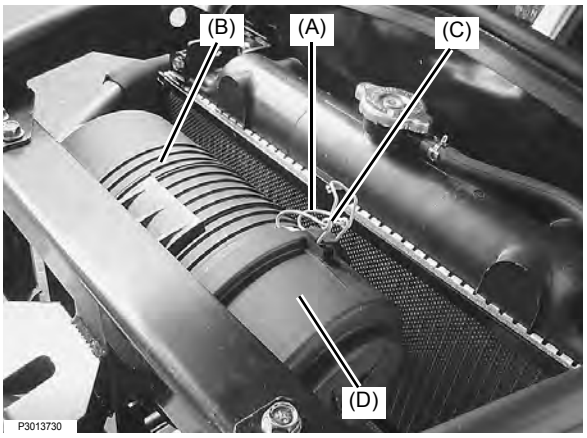
- NEVER wash the paper element.

**IMPORTANT: Avoid damage.**

- NEVER attempt to clean the paper element by tapping against another object.
- NEVER use compressed air to clean the paper element.
- ALWAYS replace the paper element when it is contaminated, damaged or the seal is cracked.

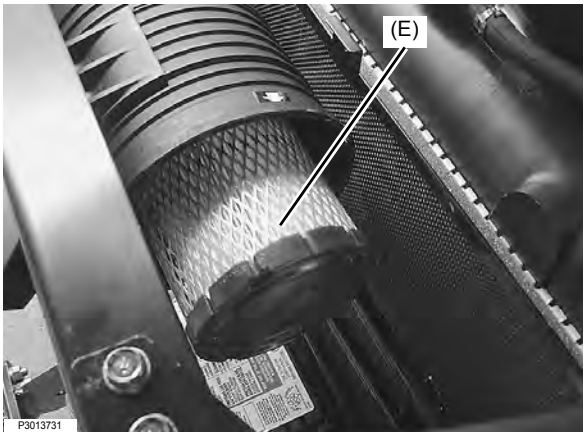
### 1. Servicing the Primary Air Filter Element

1. Park the tractor safely.
2. Allow the engine to cool off.
3. Raise the hood.
4. Release the two latches that secure the canister cover to the air cleaner canister.
5. Unhook 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) Primary element***

6. Slightly raise the bottom of the canister.
7. Clean the element by the procedure below:
   (1) When dry dust deposition is found on the element, apply compressed air from inside the element to blow away the dust. Keep the compressed air pressure below 205 kPa (2.1 kgf/cm$^2$, 30 psi).
   (2) If carbon or oil deposition is found on the element, immerse the element in detergent for 15 minutes, wash it several times in water, and then rinse in clean water and allow to dry. Once the element is fully dry, inspect its interior using a light to check for any damage.



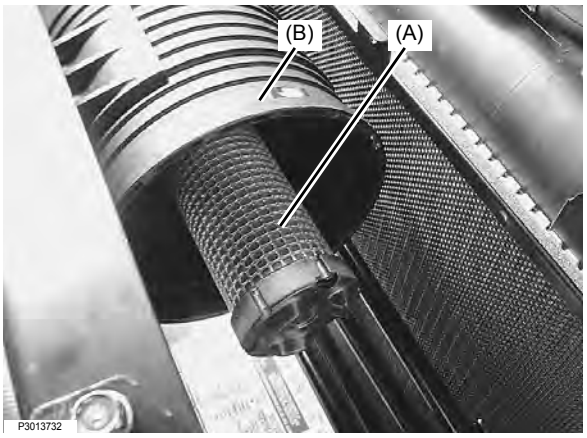
8. Reinstall the air cleaner element.
   If necessary, remove and discard the old primary element, and replace with a new primary filter element.
9. Reinstall the air cleaner canister cover. Make sure that the rubber dust unloading valve points downward.
10. For correct installation, follow the instruction molded onto the canister cover.
11. Hook the two latch hooks onto the air cleaner canister.
12. Lower the canister.
13. Push the top of the latches inward toward the canister cover to lock the latches and secure the canister cover.

**NOTE:**

●Replace at least once a year.

## 2. Servicing the Secondary Air Filter Element

1. Remove the air cleaner canister cover.
2. Remove the primary air filter element.
3. Clean the inside of the air filter element base.
4. Remove the secondary air filter element and then install a new one.




***(A) Secondary air filter element***
***(B) Air filter element base***

**IMPORTANT: Avoid damage.**

●Do not reuse the removed secondary air filter element.

5. Reinstall the primary air filter element.
6. Reinstall the air cleaner canister cover.
7. Lower the hood.

**NOTE:**

●Replace at least once a year.

**IMPORTANT:**

●The main purpose of the secondary filter is to protect the engine against dust that can occur as a result of removal of fouled-up primary filter. Therefore, in principle, do not draw out the secondary filter during a maintenance work for the primary filter.

## ■ Cleaning the Fuel / Water Separator and Replacing the Fuel Filter

**⚠WARNING**

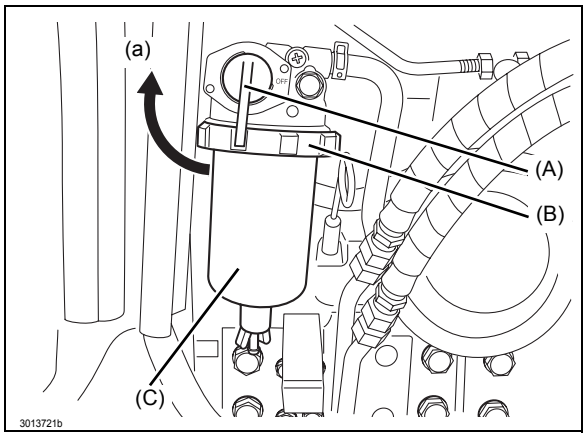
**Avoid injury:**

- **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, shut down 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. Set the fuel shut-off valve to the “OFF” (closed) position.
2. Put a drain pan below the fuel / water separator to catch any spilled fuel. Dispose of waste properly.
3. Turn the locking collar counterclockwise to unlock the sediment bowl, then pull the sediment bowl downward to remove from the separator body.
4. Remove the filter from the separator body. Discard filter.
5. Clean the sediment bowl.
6. Install the new filter onto the separator body.
7. Reinstall the sediment bowl and turn the locking collar clockwise to secure the sediment bowl.
8. Open the fuel shut-off valve.
9. Reinstall the side panel.
10. Lower the hood.




**NOTE:**

- The fuel system is self-bleeding.

11. Turn the starter key switch to START position to crank the engine to bleed the air from the fuel system.

***(A) Fuel shut-off valve***
***(B) Locking collar***
***(C) Sediment bowl***
*(a) “OFF” (closed) position*

# 6. Every 200 Hours

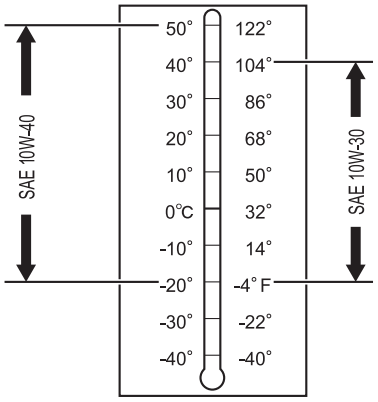
## ■ Engine Oil

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

**Engine crankcase**

| Capacities | Lubricants |
|---|---|
| Approximately 1.1 US gal (4.0 L) | API Service Classifications CF or higher<br>SAE 10W-30 or SAE 10W-40 |

The following oils are recommended:



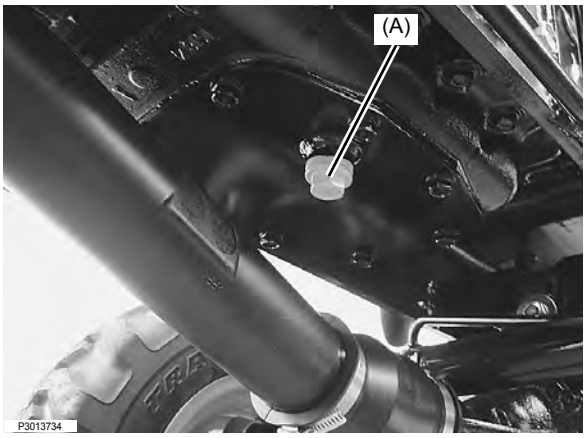

## ■ Changing the Engine Oil and Filter

**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 on a level surface.
3. Raise the hood.
4. Remove the side panel on the right side of the engine.
5. Place an engine oil pan beneath the engine oil drain plug.

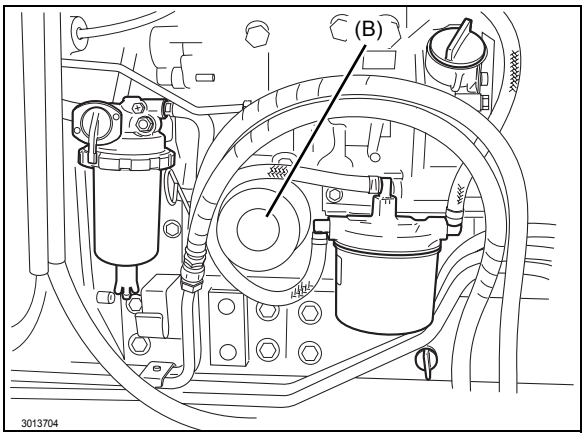



***(A) Drain plug***

**⚠WARNING**

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

6. Remove the drain plug by turning counterclockwise.
7. Fully drain the oil away from the drain plug.
8. Wipe away dirt and dust from around the oil filter.




***(B) Oil filter***

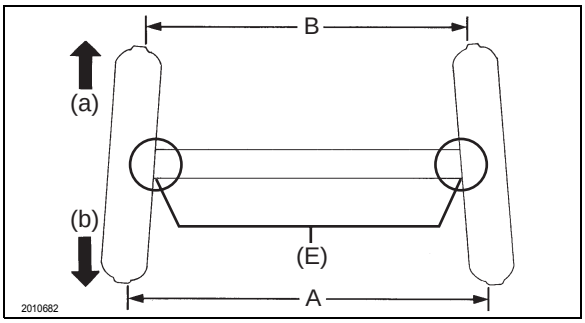
***NOTICE***

- *Carefully clean the areas surrounding the dipstick before removing the dipstick.*

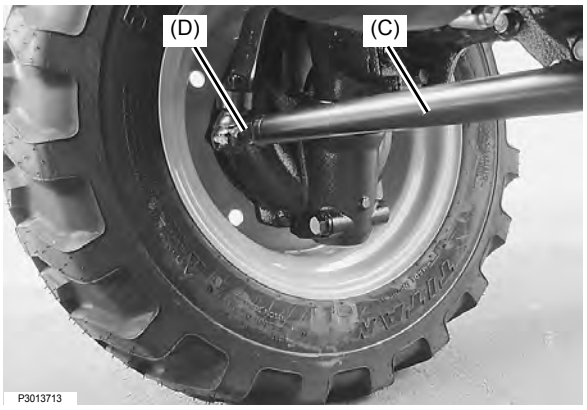
9. Turn the filter counterclockwise to remove it.

10. Apply a small amount of clean engine oil onto the gasket of the new filter.
11. 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.
12. Reinstall the drain plug. Do not over-tighten it.
13. Remove the oil fill cap.
14. Add approximately 1.1 US gal (4.0 L) of the engine oil.
15. Reinstall the oil fill cap.
16. Start and idle the engine to check for any leaks.
17. Shut down the engine. Correct any leakage before operating the tractor.
18. Check the engine oil level and add more as necessary.
19. Reinstall the side panel.
20. Lower the hood.

## ■ Inspecting and Adjusting the Toe-in



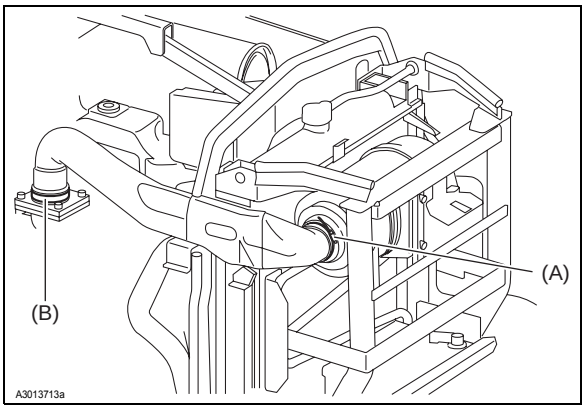

Poorly adjusted toe-in can cause difficulty in steering action or abnormal sway of the steering wheel. Measure the dimensions A and B on the front wheels, and check that the dimensional difference “A-B” falls in a range of 0.16 to 0.31 in. (4 to 8 mm). Otherwise, loosen the locknuts on the right and left tie-rod ends, and adjust the length of threaded portions. When the toe-in falls in the range of 0.16 to 0.31 in. (4 to 8 mm), secure this adjustment by retightening the locknuts.
In other words, make a mark at the same point (e.g.; center line of tire) on the front of both front tires. Make a mark at the comparable point on the rear of the each front tire.
Measure the distance between the marks on the front of the tire (measurement B). Then measure the distance between the marks on the rear of the tire (measurement A).
The measurement B should be 0.16 to 0.31 in. (4 to 8 mm) less than measurement A.




***(C) Front axle***
***(D) Locknut***
***(E) Tie-rod***
*(a) Front*
*(b) Rear*

## ■ Checking the Air Intake Hoses and Clamps

1. Park the tractor safely.
2. Raise the hood.
3. Remove the side panel from the right side of the engine.
4. Tighten the upper air intake hose clamp and lower air intake hose clamps.
5. Reinstall the side panel.
6. Lower the hood.




***(A) Upper air intake hose clamp***
***(B) Lower air intake hose clamps***

# 7. Every 300 Hours

## ■ Transmission Oil

**IMPORTANT:**

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

Transmission

| Capacities | Lubricants |
|---|---|
| Approximately 5.4 US gal (20.3 L) | Cub Cadet Hydraulic / Transmission Fluid |

## ■ Changing the Transmission Oil and Filter, Cleaning the Transmission Oil Strainer

### ⚠WARNING

**Avoid injury:**

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

**IMPORTANT: Avoid damage.**

- NEVER remove the cap from the fill port unless absolutely necessary. Contaminated hydraulic oil can cause the transmission to be damaged or fail.

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

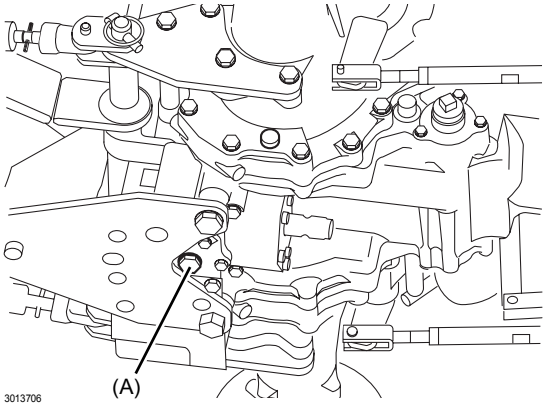
**NOTE:**

- The transmission contains approximately 5.4 US gal. (20.3 L) of oil.

3. Put a drain pan below each of the transmission drain plug and final drive drain plugs. Remove the plugs, and allow the oil to fully drain away.

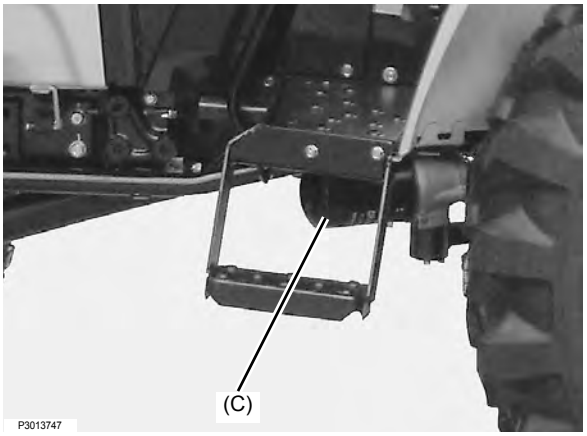
***(A) Transmission drain plug***
***(B) Final drive drain plugs***

**The illustration shows a Mid-Power Take Off (PTO)-type.**



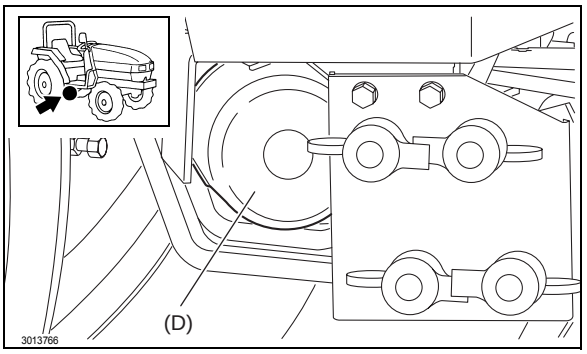

4. Turn the transmission oil filter with the filter wrench to remove.
5. Install a new transmission oil filter and turn clockwise by hand. Tighten the filter with the filter wrench to a torque of 28.9 lb•ft (4kgf•m).

***(C) Transmission oil filter 35 micron***
***(D) Transmission oil filter 10 micron***



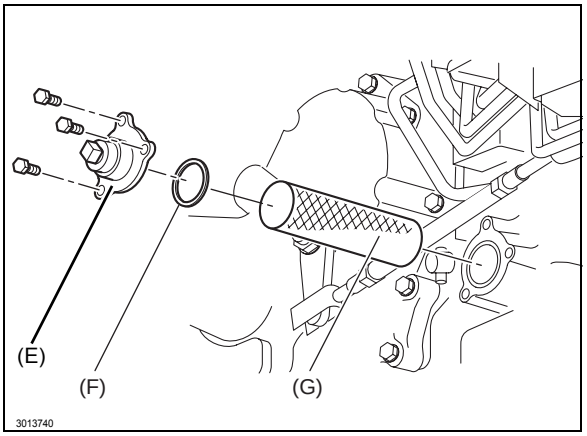

**NOTE:**

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



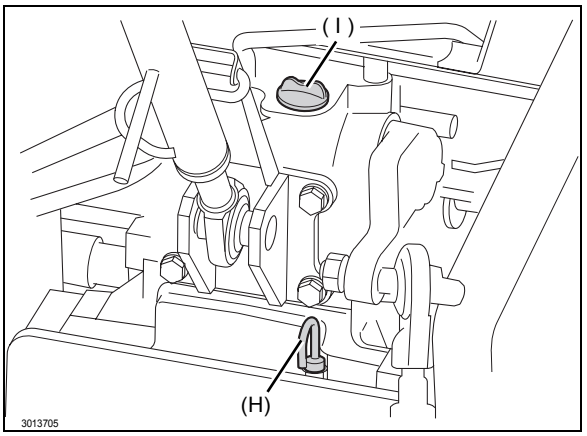

6. Loosen the three bolts, remove the transmission oil strainer cover, and draw out the O-ring and transmission oil strainer.

***(E) Transmission oil strainer cover***
***(F) O-ring***
***(G) Transmission oil strainer***




7. Clean the oil strainer with kerosene or diesel oil.
8. Insert the transmission oil strainer, insert the O-ring sparingly coated with the transmission oil, and then reinstall the transmission oil strainer cover.
9. Reinstall and tighten the transmission drain plug, and final drive drain plugs.
10. Clean the area around the oil fill cap, then remove the oil fill cap from the transmission housing.

***(H) Dipstick***
***(I) Oil fill cap***




11. Add approximately 5.4 US gal (20.3 L) of the transmission oil.
12. Reinstall the oil fill cap.
13. Start and idle the engine to check for any leaks.
14. Shut down the engine. Correct any leakage before operating the tractor.
15. Check the transmission 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 1.2 US gal (4.7 L) | Cub Cadet GEAR LUBE or SAE 80W-90 gear oil |

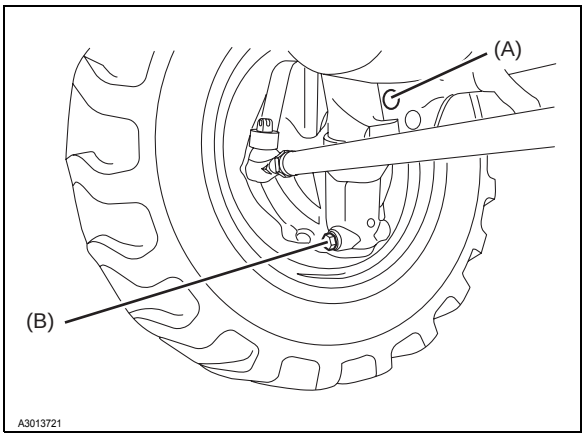
## ■ Changing the Front Axle Case Oil

1. Operate the tractor to warm up the front axle oil.
2. Park the tractor safely.
3. Place a drain pan below the differential drain plug.

**NOTE:**

- The front axle contains approximately 1.2 US gal (4.7 L) of oil.
- Be sure to change the oil in both right and left front axles.

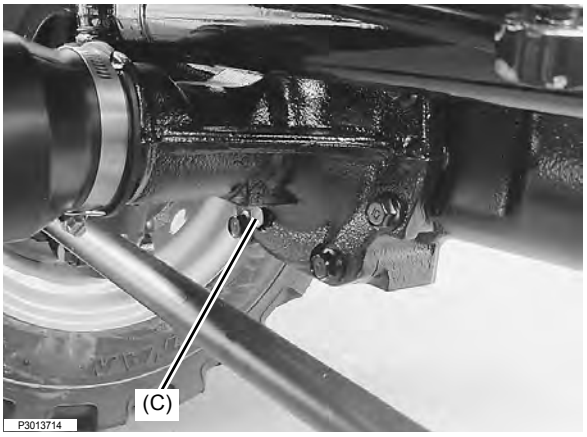
4. Remove the differential drain plug, and allow the oil to fully drain.




**NOTE:**

- Remember that the oil will drain away only when the ventilation plug (A) has been already removed and the drain plug (B) is additionally removed.

5. Place drain pans below the axle drain plugs on both sides of the front axle.
6. Remove the axle drain plugs and allow the oil to fully drain.
7. Make sure that the oil has fully drained. Dispose of waste properly. Reinstall and tighten the drain plugs (B) and (C).
8. Remove the dipstick located on the right side of the front axle.
9. Add Cub Cadet GEAR LUBE or SAE 80W-90 gear through the fill port to the specified level.
10. Reinstall and tighten the dipstick.
11. Check the axle 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 read on the dipstick. Recheck the oil level after operating the tractor for several hours.

12. Again, check the axle oil level.

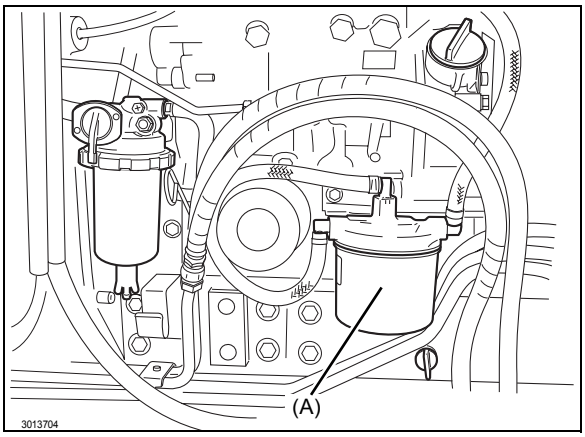
***(A) Ventilation plug***
***(B) Axle drain plugs***
***(C) Differential drain plug***

## ■ Replacing the Fuel Filter

**⚠WARNING**

**Avoid injury:**

- **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, shut down the engine.**
- **Before servicing, allow the engine to cool off.**
- **Work in a well-ventilated area.**
- **Immediately wipe away spilled fuel.**




Replace the fuel filter every 500 hours.

***(A) Fuel filter***

**NOTE:**

- When replacing the fuel filter, prevent the fuel from draining away by closing the fuel shut-off valve.

# 9. Every 1000 Hours

## ■ Servicing the Cooling System

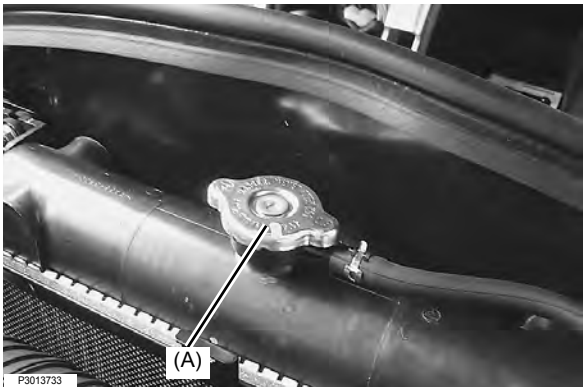
**⚠CAUTION**

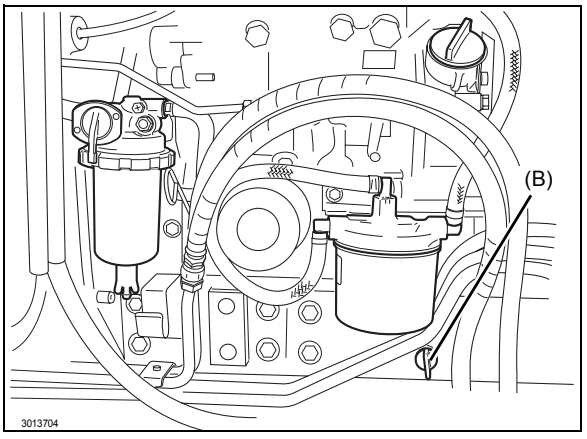
**Avoid injury.**

- **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 "Checking the Cooling System" on page 14-11).**

### 1. Draining the Cooling System

1. Park the tractor safely.
2. Allow the engine to cool off.
3. Raise the hood.
4. Remove the side panel from the right side of the engine.
5. Carefully open the radiator cap to the first to stop to release all the pressure.
6. Tightly close the radiator cap.
7. Open the radiator petcock. Drain the coolant into a drain pan.
8. Put a drain pan below the drain plug at the right side of the engine. Allow all the coolant to drain.
9. To promote draining of the coolant from the reserve tank, remove the radiator cap.
10. Close the radiator petcock.




***(A) Radiator cap***
***(B) Radiator petcock***

## 2. Flushing the Cooling System

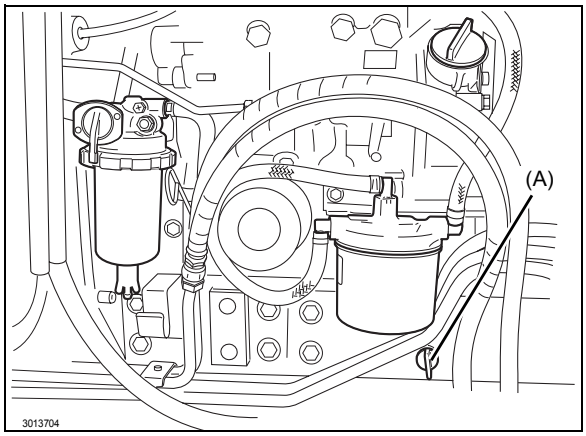
1. Fill the cooling system with water and common flushing / cooling liquid. Follow the manufacturer's instructions.
2. Reinstall and retighten the radiator cap.
3. Start and run the engine until it reaches the operating temperature.

**⚠CAUTION**

**Avoid injury:**

- **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. Shut down the engine.
5. Open the radiator petcock and remove the drain plug.
6. Immediately drain the cooling system before rust and dirt in it settle.
7. Close the radiator petcock, and reinstall the drain plug.




***(A) Radiator petcock***

## 3. Filling the Cooling System

**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.

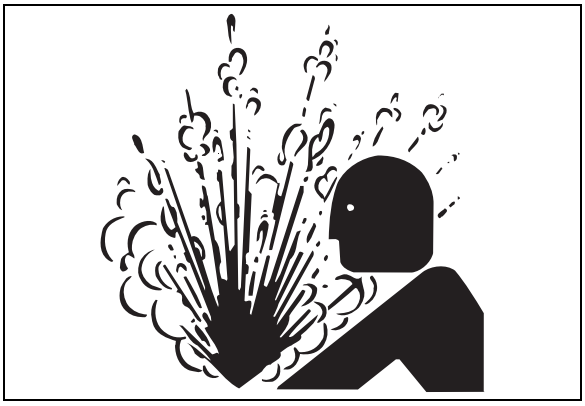
1. Allow the radiator to cool down.
2. Fill the cooling system. The cooling system capacity is approximately 1.2 US gal (4.5 L).
3. Reinstall and retighten the radiator cap.
4. Start and run the engine until it reaches the operating temperature.
5. Shut down the engine.
6. Check the reserve tank coolant level, and add the coolant as necessary.
7. Reinstall the side panel.
8. Lower the hood.

## ■ Recommended Engine Coolant

**⚠CAUTION**

**Avoid injury:**

- **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.**
- **Shut down 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 by mixing 50% antifreeze with 50% distilled or deionized water, and then pour this coolant into the radiator. This coolant is intended not only to cool the engine but also to protect the radiator against freezing down to a temperature of –34°F (–37°C).

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.

## ■ Adjusting the Engine Valve Clearance

Contact your local Cub Cadet Yanmar dealer.

## ■ Checking the Fuel Injection Nozzle

Contact your local Cub Cadet Yanmar dealer.

## ■ Checking the Fuel Injection Pump

Contact your local Cub Cadet Yanmar dealer.

# 10. General Maintenance

**NOTE:**

- Replace the air cleaner element at least once a year.
- Replace the cooler flushing liquid at least once a year.
- Replace the radiator hoses at least once every two years.
- Replace the fuel hoses at least once every two years.
- Replace the air intake hose at least once every two years.
- Replace the PST hose at least once every two years.

## ■ Selecting the Rotational Direction of Front Tires

**⚠WARNING**

**Avoid personal injury:**

- **Before removing a wheel, securely support the tractor on suitable stands.**

A tractor equipped with directional rotation type tires (such as bar tires) has rotational direction arrows on the tire sidewalls. In most work conditions, install the tires so that the direction arrows point in the direction of travel.
When intending to use your tractor mainly for loader operations, the direction of the tires may be reversed to extend tire life and improve traction power for backing out of compost piles.

## ■ Changing Wheel Spacing and Tread Width

**⚠WARNING**

**Avoid personal injury:**

- **Before removing a wheel, securely support the tractor on suitable stands.**

**IMPORTANT: Avoid damage.**

- Ensure the tires rotate in correct direction. Arrows on sidewall must point in the direction of forward rotation.

**NOTE:**

- Adjust the water ballast to a narrower tread. It is not recommended that the water ballast be adjusted to a wider tread.

**Rear Wheel Positions:**
Wider Position: Install the wheel so that the valve stem is situated outside.
Narrower Position: Install the wheel so that the valve stem is situated inside.

# 15. SERVICING THE ELECTRICAL SYSTEM

**⚠WARNING**

- To avoid personal injury, do as follows:
- Read the “1. SAFETY PRECAUTIONS” at the head of this manual.
- Read the danger, warning and caution statements on the safety alert decals 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 the engine, always set all the levers to the “NEUTRAL” positions and the Power Take Off (PTO) engagement lever in the “OFF” position.

## 1. Battery

### ■ Special Note for the Battery

**⚠WARNING**

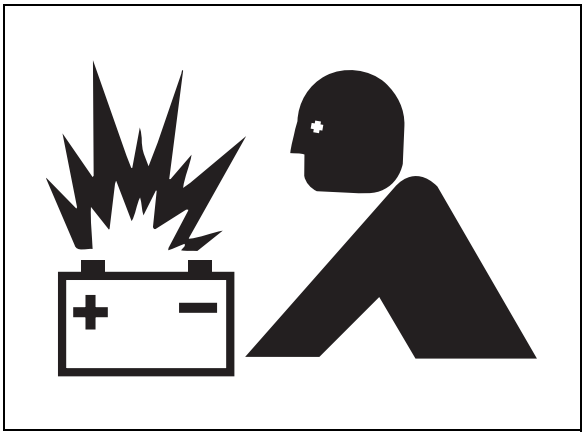
- **The battery posts, terminals and associated accessories contain lead and lead compounds which are known to the State of California to cause cancer and reproductive harm. After handling the battery, wash your hands thoroughly.**

## ■ Servicing the Battery Safely

### ⚠WARNING

**Avoid personal injury. 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.**

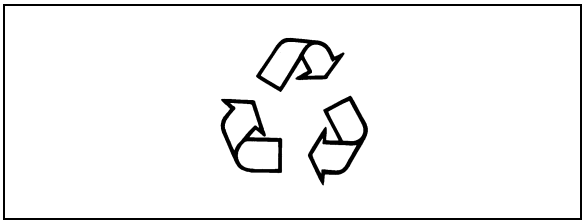


**Batteries may emit flammable/explosive gasses. Use extreme caution when handling batteries.**

- **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.

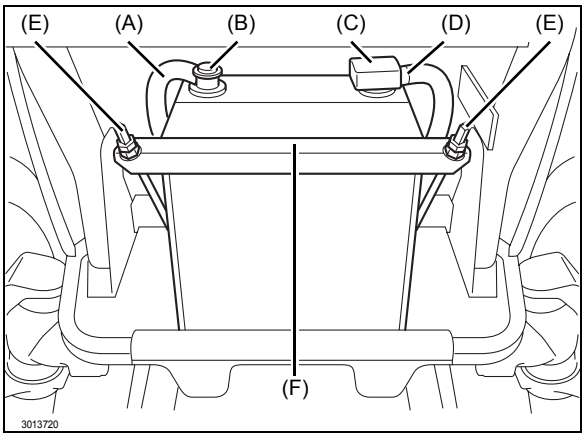


## ■ Inspecting the Battery

The battery used on your 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.

## ■ Removing and Installing the Battery

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




### 1. Removing the Battery

1. Park your tractor safely.
2. Raise the hood.
3. Disconnect the black negative (–) cable from the battery first.
4. Pull back the red positive terminal cover and disconnect the red positive (+) cable.
5. Remove the nuts, threaded rods and bracket. Remove the battery hold-down assembly.
6. Remove the battery.

## 2. Installing the Battery

1. Install the battery onto the tractor.
2. Inspect the battery vent to be sure that the vent holes are open.
3. Connect the positive (+) cable to the battery first, and then the negative (–) cable.
4. Apply petroleum jelly to the battery terminals to protect them against corrosion.
5. Install the battery hold-down assembly. Avoid over-tightening.
6. Lower the hood.

### ■ Cleaning the Battery and Terminals

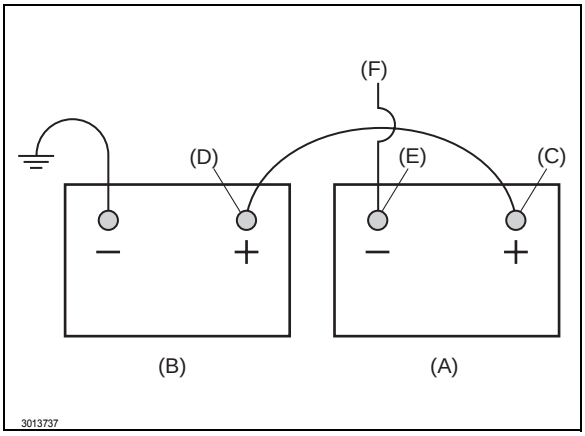
1. Disconnect the battery cables, negative (–) cable first, and remove the battery.
2. Dissolve four tablespoons of baking soda in 1 gallon of water to prepare a solution. Use this solution to wash the battery. Be very careful not to allow the solution to enter the battery cells.
3. Rinse the battery 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 positive (+) cable first, then connect the negative (–) cable.

## ■ Using a Booster Battery

### ⚠WARNING

**Avoid personal injury:**

- **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).

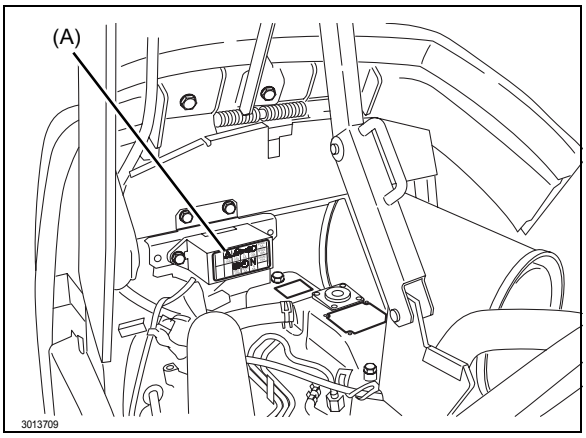
# 2. Fuses

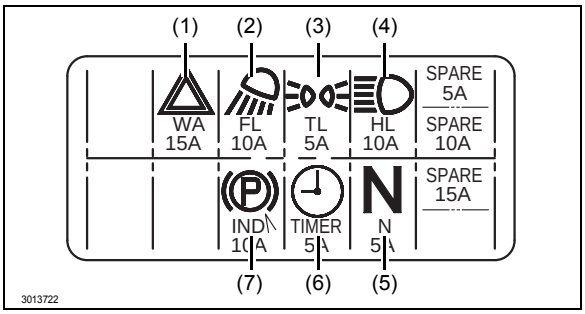
**IMPORTANT: Avoid damage.**

- 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.

## ■ Replacing the Accessory Fuses

1. Park the tractor safely.
2. Raise the hood.
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. Lower the hood.



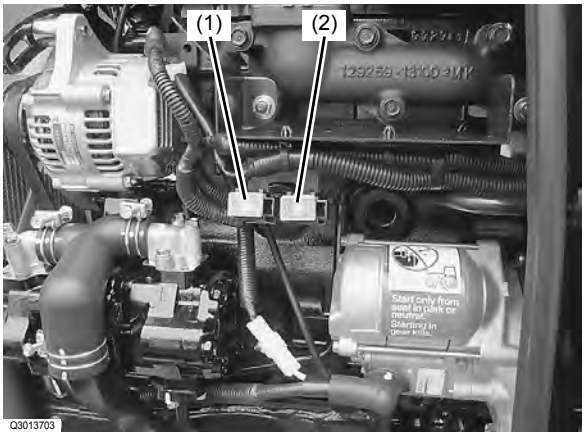

***(A) Fuse holder cover***
***(1) Warning light fuse: 15A***
***(2) Flood light fuse: 10A***
***(3) Tail light fuse: 5A***
***(4) Head light fuse: 10A***
***(5) Neutral switch fuse: 5A***
***(6) Timer relay fuse: 5A***
***(7) Indicator light fuse: 10A***

## ■ Checking the Alternator Fuse and the Main Fuse

1. Park the tractor safely.
2. Raise the hood.
3. Remove the left side panel.
4. Locate the fuses by referring to the picture at the right.
5. 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.




***(1) Alternator fuse: 80A***
***(2) Main fuse: 80A***

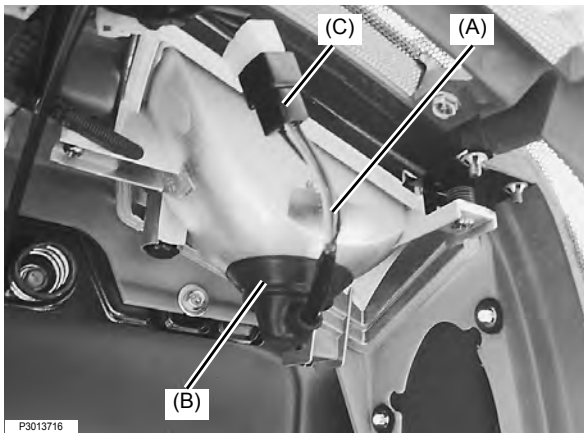
# 3. Bulb

## ■ Replacing the Headlight Bulb

**IMPORTANT: Avoid damage.**

- NEVER touch the headlight bulb 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 your tractor safely.
2. Stop the engine and remove the key.
3. Raise the hood.
4. Remove the clips that hold the front hood to the frame.
5. Carefully remove the hood from the mounting studs. To do so, move the top of hood forward.
6. Disconnect the tractor wire harness from the electrical connector of the failed headlight bulb assembly.
7. Remove the boot and retaining ring.




**⚠WARNING**

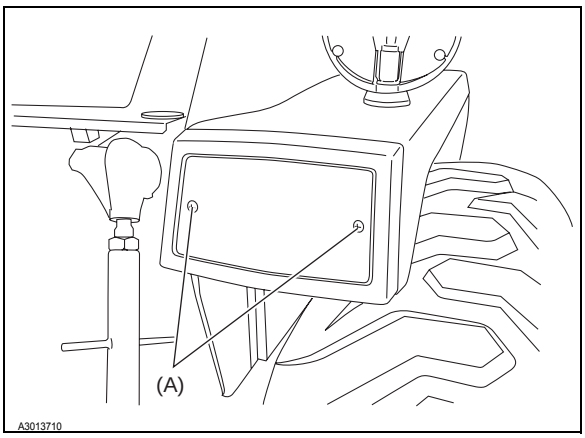
**Avoid personal injury:**

- **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.**

8. Remove the bulb assembly from the socket.
9. Install the new bulb assembly in the socket.
10. Install the retaining ring and boot.
11. Install the wire harness to the bulb assembly.
12. Check that the headlight lights normally.
13. Lower the hood.

***(A) Leads***
***(B) Boot***
***(C) Connector***

## ■ Replacing the Tail Light Bulb

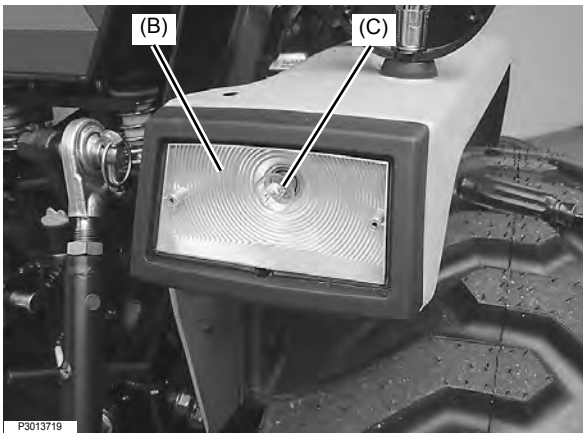



**NOTE:**

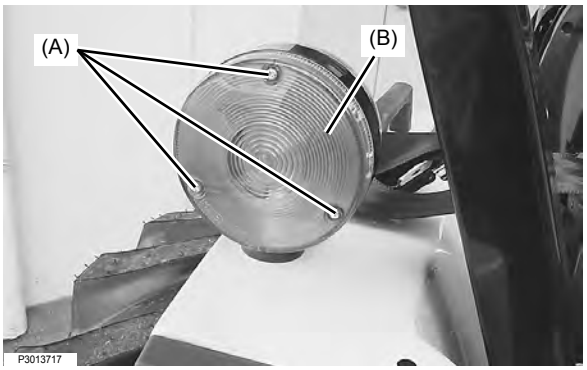
- The tail light can be serviced after removing the front or rear lens assembly.

1. Park your tractor safely.
2. Stop the engine and remove the key.
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. Install the lens.

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




## ■ Replacing the Turn Signal / Hazard Lights Bulb

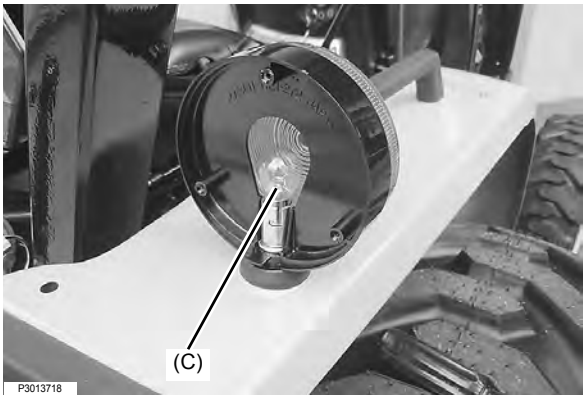



**NOTE:**

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

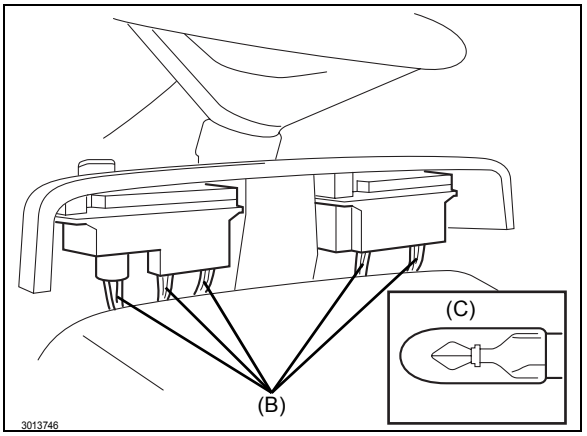
1. Park your tractor safely.
2. Stop the engine and remove the key.
3. Remove the three screws and lens from the light assembly.
4. Push down and rotate the bulb to remove it.
5. Push the new bulb into the socket and rotate to lock it into position.
6. Check that the turn signal / hazard lights operate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

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



## ■ Replacing the Instrument Panel Light Bulb

1. Park your tractor safely.
2. Remove the dashboard.
3. Stop the engine and remove the key.
4. Remove the four screws from the instrument panel housing. Carefully move the housing rearward.
5. Locate the failed light bulb.
6. Remove the bulb holder from the socket on instrument panel. Do not twist.
7. Push the new bulb into the socket.
8. Install the bulb holder to the instrument panel.
9. Check that the instrument panel light operates normally.
10. Install the instrument panel housing.


***(A) Screw (4 used)***
***(B) Bulb holder***
***(C) New bulb***

**NOTE:**

- If only an insufficient work space is available, the steering wheel may be temporarily removed.

# 4. Headlights

## ■ Adjusting the Headlights

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

# 16. STORAGE

## 1. Safe Practices for Storage

**⚠WARNING**

**Be careful to avoid injury:**

- **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. Preparing 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 grease 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. Preparing 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 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 starter key switch 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.

**IMPORTANT: Avoid damage.**

●ALWAYS disengage the clutch before storing the tractor. If the clutch is engaged for a long period, the clutch plate may develop rust, causing the clutch to not disengage when the tractor is operated next time.

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. Preparing 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 grease 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. How to Use the Troubleshooting Table

**The troubleshooting table given below is intended to provide a simple guide. 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 to the engine. | • Check that fuel is in the fuel tank. Refuel as necessary. |
| | | | • Check if the fuel filter is clogged. Replace the clogged filter. |
| | | ● Air is trapped in the fuel. | • Check the fuel line for looseness. Retighten any loose connection. |
| | | ● Water is trapped in the fuel. | • Remove water from the fuel. Refill the diesel fuel. |
| | | ● In cold weather, the engine oil viscosity is excessively high, and this causes greater resistance. As a result, the engine speed does not increase. | • 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.) |
| | | ● The power of the battery is too low and the starter fails to accelerate to a speed sufficient for starting the engine. | • Clean the battery posts and terminals, then measure the voltage on the battery. If the voltage is 11 V or lower, replace the battery with a new one. |
| 2 | **Though the engine has started, it fails to run smoothly or it is not powerful.** | ● Stale diesel fuel (owing to prolonged storage) | • Replace the diesel fuel. |
| | | ● Contaminated diesel fuel | • Replace the diesel fuel. |
| | | ● 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 | **The engine has successfully started but suddenly stopped.** | ● 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 quality of diesel fuel | • 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** | ● Failed injection nozzle | • Contact your local Cub Cadet Yanmar dealer for technical assistance. |
| | | ● Poor quality of diesel fuel | • Replace the diesel fuel and fuel filter. |

| | | | |
|---|---|---|---|
| 6 | **The 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. |
| | | ● The engine is overloaded. | • Operate the tractor carefully. Avoid overloading. |
| | | ● Insufficiently tensioned fan belt | • Adjust the fan belt to the specified tension value; or replace it. |
| | | ● The radiator core is blocked. | • Eliminate the cause of blocking. |
| | | ● Poor quality of engine coolant | • Possibly, sludge has accumulated on the engine water jacket. Contact your local Cub Cadet Yanmar dealer for technical assistance. |

## 2. Machine

| | Symptom | Cause | Remedy |
|---|---|---|---|
| 1 | **The machine excessively vibrates.** | ● Engine speed is too low. | • Run the engine at a higher appropriate speed. |
| | | ● The Power Take Off (PTO) connecting the machine with the mounted implement is not securely connected. | • Disconnect the Power Take Off (PTO) shaft, and 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. |
| | | ● The engine throttle has not been correctly adjusted. | • Contact your local Cub Cadet Yanmar dealer for technical assistance. |
| 2 | **Engine has successfully started, but the machine fails to operate.** | ● Parking brake is in the engaged state. | • Disengage the parking brake. |
| | | ● Insufficient transmission oil, deteriorated transmission oil or clogged transmission 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 oil is too cold. | • Start the engine, and warm up. Only then, operate the tractor. |
| 3 | **3-point hitch does not rise at all.** | ● Insufficient transmission oil, deteriorated transmission oil or clogged transmission 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 oil is too cold. | • Start the engine, and warm up. |
| | | ● Excessively heavy implement on the 3-point hitch | • Use an implement of an acceptable weight. |
| 4 | **3-point hitch lowers too slowly.** | ● Hydraulic pressure stop valve is in an insufficiently open position. | • Open the hydraulic pressure stop valve. |
| 5 | **3-point hitch does not lower at all.** | ● Hydraulic pressure stop valve is in the closed position. | • Open the hydraulic pressure stop valve to an appropriate position. |
| 6 | **3-point hitch lowers too fast.** | ● Hydraulic stop valve is in an excessively open position. | • Close the hydraulic pressure stop valve to an appropriate position. |

## 3. Brake

| | Symptom | Cause | Remedy |
|---|---|---|---|
| 1 | **Brake does not function correctly.** | ● Misadjusted brake | • Adjust the play of the brake pedal. |
| | | ● 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 oil | • Replace the transmission oil. |
| | | ● Degraded quality of transmission oil | • Replace the transmission 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 oil, deteriorated transmission oil or clogged transmission 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 oil is too cold. | • Start the engine, and warm up. |
| | | ● Under lubricated steering linkage | • Lubricate steering linkage. |
| | | ● Play is too great. | • Contact your local Cub Cadet Yanmar dealer for technical assistance. |
| | | ● Bent axle | • Contact your local Cub Cadet Yanmar dealer for technical assistance. |

# 18. INDEX


## Ex Series Compact Tractor

# Ex2900 / Ex3200

***Cub Cadet Yanmar LLC.***

***P.O.Box 361052***

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